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UMI

ECONOMIC IMPACT ANALYSIS OF SPECIAL EVENTS ON HOST COMMUNITY:

A CASE STUDY OF THE 1995 KODAK ALBUQUERQUE

INTERNATIONAL BALLOON FIESTA

A THESIS

SUBMITTED TO THE FACULTY OF THE GRADUATE SCHOOL

OF THE UNIVERSITY OF MINNESOTA

BY

YINGMIAO YU

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

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SEPTEMBER 1997

UNIVERSITY OF MINNESOTA

This is to certify that I have examined this copy of a doctoral thesis by

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and have found that it is complete and satisfactory in all respects,
and that any and all revisions required by the final
examining committee have been made.

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ABSTRACT

Kodak Albuquerque International Balloon Fiesta (KAIBF) was the largest ballooning event in the world. One of the study purpose is to measure the economic impact of festival visitors' expenditures. To estimate the total economic impact more accurately, adjustments were made on some visitors' expenditures (e.g., local visitors). Micro IMPLAN was used to assess the total economic impact of the visitors' expenditures made at the event site and in Albuquerque. Some in-depth studies include examining the impact distribution among the local industries and the economic impact accounted for by each visitor expenditure item.

The second purpose of this study is to analyze the economic characteristics (e.g., import tendency, labor intensity, and employee compensation) of the balloon festival. The last study purpose is to determine whether segments of a festival visitor base are significantly different in terms of their spending behavior. Variables including travel purpose, place of origin, lodging spending, attendance behavior, and primary reason for visit were used to segment the market.

The study result shows that the economic impact resulting from the balloon festival visitors tended to be concentrated in the service sectors. The impact on some tourism unrelated industries, such as real estate, owner-occupied dwellings, and hospitals, were mainly caused by the induced effect. The study result suggests that the balloon festival-related industries contain some of the typical characteristics of a service-oriented industry, such as labor-intensive, low paid, low import tendency, and strong backward linkages. In addition, this study identifies significantly different spending patterns between

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the visitors who had spent money for lodging and those who did not. The spending behavior is also different between the visitors who only attended the event grounds once and those who repeated their attendance.

The study result denotes that the cumulative effects of visitors' expenditures in a regional economy is mainly determined by its economic condition. Therefore, hosting a large-scale special event in a small community may not benefit the local economy, because the small community tends to have a high degree of import propensity which usually causes high leakages and benefits other regions.

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CHAPTER I
INTRODUCTION

Background

Festivals and special events have emerged as significant components of the tourism industry. Increasing attention has been given to the role of special events as tourist attractions and their potential for tourism development. As Getz (1991) points out, these events can also be viewed as part of the new wave of alternative tourism. Since the 1980/s, the study of festivals and special events has become a growing and diverse subject. The study of their socio-economic impact has been one of the major research emphases, and impact studies of some "mega" or hallmark events have been published (Ritchie & Aitken, 1984; Ritchie & Lyons, 1990; Jeong, 1992; Hall, 1989). Lately, more attention has been given to community-run festivals or special events because they are considered potential tools for community development. Communities with limited natural tourist attractions can create special events to lure tourists.

The significance of short-term special events to a local economy has long been recognized by researchers, local agents, and various tourism industries. Evidence from previous research proves that special events provide several functions, including expansion of tourism in the low season, alternative tourist attractions, local leisure needs, image making, urban renewal, rural development, product promotion or selling, cultural preservation, and community economic development, (Ritchie, 1984; Long & Perdue, 1990; Bos, 1994; Mihalik & Ferguson, 1994; Wicks, 1995). However, the economic benefit is usually a major concern when hosting a special event.

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The economic impact of a special event is defined as the net change in the economy resulting from the expenditures attributed to that special event. There are basically two components that contribute to the economic impact of a special event on the local economy. The first is the amount of money that local industries receive from nonresident visitors. The second is the money these industries spend to buy their inputs locally. Similarly, economic impact can occur either as the result of attracting nonresidents' expenditures into the economy, or by reducing the leakage of residents' dollars from the economy (Long & Perdue, 1990). Research on the economic impact of events has increased markedly in recent years, with the publication of many studies collecting information on visitors' characteristics and direct expenditure behavior (Goeldner & Long, 1987; Murphy & Carmichael, 1991; Goderie, 1994). Though some other studies have focused on estimating the secondary effect, few of them have gone beyond presenting the total economic effect on output, income, and number of jobs created by the event. Which industries are directly affected, which are indirectly affected by the event, and which benefit due to the induced effect, as well as how industries are linked to each other in the economy, have been neglected in the economic impact analysis of tourism, recreation, and special events.

Several methods, including survey and non-survey input-output models, economic base analysis, the borrowed multiplier approach, and some newly-developed computerized models have been used in recreation, tourism, and event studies to measure direct and secondary effects (Johnson & Moore, 1993; West, 1993; Kanters & Botkins, 1992; Mak, 1989; Pomeroy et al., 1988; Stoll et al., 1988; Mescon & Vozikis, 1985; Gartner & Holecek, 1983). In most of previous studies, there was little justification of the choice of economic

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assessment model and visitor data collection method. Continual evaluation of models for assessing economic impact is essential for accurate measurement. Richardson, Long, and Perdue (1989) state "The research challenge is not only to create and test models that measure recreation impacts, but to identify methods by which this important information can be collected and processed in a systematic, cost-efficient, and understandable way at local levels and by local personnel (Richardson et al., 1989)."

A review of the literature reveals that the input-output model has been effective in identifying the interactions between tourism or recreation activity and the other industries in an economy (Alward et al., 1985). The IMPLAN (IMpact Analysis for PLANning) model, a computerized ready-made input-output model, has been successfully used in assessing the economic impact of tourist activities. However, in previous special event studies, the IMPLAN model has been used to present only the total economic impact based on the output, income, and employment variables; other useful information, such as the spatial distribution of visitors' expenditures, the distribution of economic impact among the local industries, the multiplier effects, the interindustry relationships, and the economic characteristics (e.g., linkage, leakage, labor intensity, and import tendency) of a special event were not discussed. In addition, many IMPLAN users understand the operation and theory only vaguely. Therefore, its assumptions and limitations have been rarely addressed. A detailed interpretation of the impact results has been lacking. As a result, many researchers misinterpret or exaggerate their impact estimates.

Turco (1992) stated that future research should clearly define the local economy under study (i.e., town, county, region, etc.), and that only spending that remains within the designated area should be considered. Visitors'

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spending outside of the local area is not attributable to the local economy and should not be included in the impact analysis. The failure to identify how visitors' expenditures are disbursed in different geographic regions could lead to significant overestimation of the economic benefits of special events to the host community. Thus, the following study will identify the portions of visitors' expenditures spent at the special event site (the festival grounds) and in the local area (the city of Albuquerque).

Furthermore, there are several additional questions that need to be addressed. Is it appropriate to exclude all of the local visitors' expenditures in the economic impact analysis? Would including the expenditures made by nonlocal visitors whose primary visiting purpose were not for the special event (nonprimary visitors) result in overestimation? Under what conditions should local visitors' expenditures and nonlocal visitors' spending be included in the economic impact study? These issues may significantly affect the total amount of economic impact.

Purpose of The Study

The Albuquerque International Balloon Fiesta (AIBF) was first held in 1972 with a small gathering of 13 balloons, and has now grown into the largest balloon event in the world. Besides expanding in size, this event is also identified as the most photographed event on earth (Turco, 1993). To reflect this unique characteristic, the name Kodak was added to the Albuquerque International Balloon Fiesta (KAIBF) in 1992. The KAIBF is held annually in Albuquerque, New Mexico, starting on the first weekend of October and continuing for nine days. It includes several special features such as Mass

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Ascensions, Balloon Glow, Night Magic Glow, the Special Shape Rodeo, as well as a musical concert, daily balloon competitions, and food, beverages, and souvenir sales.

According to the 1993 KAIBF study, which was conducted by Dr. Douglas Turco and his team from Illinois State University, this balloon event is economically and socially significant (Turco, 1993). The statistics show that in 1993, this event attracted 1.6 million spectators and 950 balloon pilots from 48 states and 18 countries operating 650 hot-air balloons. About 25 million still photographs were taken during the 1993 event. About 910,000 nonlocal visitors came and spent a total of $141,000,000 in the Albuquerque area (Turco, 1993). The visitor profiles showed that this event attracts entire families. In addition, the balloon festival also helps to promote the image of the city of Albuquerque by exposing it in many different media to many other countries.

This study (1995 KAIBF) has three major purposes. The first is to measure the total economic impact of a large-scale, short-term tourism event, the 1995 Kodak Albuquerque International Balloon Fiesta (KAIBF), on the city of Albuquerque. The intention is to estimate the spatial distribution of expenditures made by visitors. A 'ready-made,' non-survey input-output model, IMPLAN, will be used to assess the total economic impact of the festival visitors' expenditures made at the event site and in Albuquerque. The direct, indirect, and induced effects in terms of output, income, and employment will be derived to measure the total economic impact of this event. To know how much each individual industry in the city of Albuquerque is affected directly or indirectly by this festival, and which benefited as a result, the economic impact distribution among the local industries will be examined. In addition, this study also attempts to estimate the total economic impact accounted for by each visitor

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expenditure (i.e., food, lodging, transportation, shopping, gasoline, entertainment, and film) and analyze the distribution of the impact produced by each visitor expenditure item.

To determine the geographic distribution of visitor expenditures, only visitors' expenditures made at the local area can be included in the impact assessment. In this study, the city of Albuquerque is defined as the local community. Visitors' expenditures made at the event site, as well as those spent in the city of Albuquerque, will be used to assess the total economic impact on Albuquerque. While many studies have been conducted to estimate the total economic effects of tourism, recreation, or special events, only a few have attempted to examine the spatial distribution of visitors' expenditures (Long & Perdue, 1990; Turco, 1992). Spatial distribution of visitors' expenditures refers to the geographic location of economic effects, both within and beyond the event site. The total amount of money spent by visitors in connection with a tourist activity may be significant, but not all the visitors' expenditures take place in the local community. Direct expenditures are geographically distributed, because special event visitors travel and make purchases at home, en route, and at the event site. Indirect effects of visitor expenditures are likely to occur in a broader area due to inter-regional industry linkages (Turco, 1992). Part of the money may go outside of the local area to buy products or services to support an economic activity. Only part of the income that is used to buy products or services in the local area stays in the local economy. Therefore, only expenditures made in local areas should be calculated in a local economic impact study.

The second purpose of this study is to analyze the import propensity, employee compensation, labor intensity, and the linkage of this festival activity

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to the other industries in the city of Albuquerque. Detailed analysis of the economic characteristics of this special event (KAIBF) can help to identify the advantages and disadvantages of hosting a special event.

The third purpose of this study is to examine the spending patterns of different segments of visitors. Visitors will be categorized based on their demographic characteristics, purpose of visiting (the festival, visiting friends or relatives, vacation, or business), length of stay, lodging spending (spending dollars for lodging or spending nothing for lodging), attending behavior (repeat visitors or one-time visitors), and primary purpose of their visit (visiting primarily for the festival, planning the trip to coincide with the festival, or visiting for other reasons). The literature shows that different kinds of tourists often differ in their characteristics and their spending patterns. Previous studies have also found that special event visitors often differ in their characteristics and spending patterns. According to Getz (1992), event visitors tend to spend more money than regular tourists during their trips. The unique character of a particular special event may affect the purchases of the visitors. For instance, sporting event attendees may buy more sporting goods than arts and crafts event visitors do. Accordingly, event visitors may have different patterns of expenditure behavior and may produce a different impact on the local economy.

Statement of the Problem

Studies of the economic impact of tourism or recreation activities started in the 1960's (Krauf, 1963). These studies have since attracted the attention of researchers; at the same time, however, the misuse of multipliers has been a cause of concern. Several methods have been used to derive the multipliers,

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but there has often been little justification for the economic impact assessment method. The majority of previous studies have focused on assessing the total economic impact in terms of output, income, and number of jobs generated by a specific tourist or recreation activity. Very few went beyond merely estimating the total economic impact. (Veit, 1978; Ruiz, Weisskoff, Alward, Hussain, & Maki, 1994). The analysis of the interindustry relationship, which includes the multiplier effect, linkage, and leakage has not been performed in economic impact studies of tourist activities and special events. Overemphasis on presentation of the total impact, rather than on interpretation of the resulting estimates and description of the application limitations, has often resulted in misunderstanding of the study results. Moreover, some researchers have used the resulting estimates to justify or promote the tourist activity or special event. As a consequence, many previous economic impact studies provided little information for improving the future planning, management, and development of tourism, recreation, and special events.

The analysis of the indirect and induced effect helps to identify the effects of change on each industry caused by a specific activity or activities. However, previous economic impact studies of special events have neglected to differentiate between indirect and induced effects. The indirect effect is the measurement of backward linkages of a given industry to local input sources; it denotes linkages to local input suppliers. The induced effect indicates the levels of value added and income generated per unit of industry output. The larger the export, the smaller the indirect effect, while large induced effects contribute to large total multipliers for the high value-added export-producing industries (Ruiz et al., 1994). To know the potential of a specific activity for economic development, the questions of how and to what extent money flows

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throughout and outside the local economy need to be answered. This study will therefore include analysis of the multiplier effect, the linkage, and the leakage.

The misuse of multipliers is not, of course, the sole cause of inaccurate results. Uncritical acceptance of certain questionable assumptions can also lead to unreliable estimates and misinterpretation of economic impact. One of these issues is the tendency to exclude the expenditures of nonlocal festival visitors who travel for reasons other than to attend the event from the economic impact assessment. It is assumed that they would visit the local community even if the festival did not occur, and their expenditures are therefore not included in economic impact calculation. However, it must be kept in mind that in some cases the nonprimary visitors (those festival visitors who state that their primary purpose for visiting is not for the special event) may choose to time their trips to coincide with the special event. In this case, it is unknown whether they extend their trips or increase their spending in the local area because of the event. However, their spending at the festival grounds should be considered new money to the local area because this portion of their expenditures was expected and included in their travel budget. Hence, this expenditures should be included in the economic impact measurement.

In addition, in regional economic impact studies, researchers have tended to exclude local residents' expenditures from their impact estimates. For instance, Dawson, Blahna, and Keith (1993) excluded the expenditures of respondents who resided in the Great Basin National Park area from their economic impact analysis. They suggested that only non-local visitors' expenditures generate new money for the study area, and therefore that only this portion of the expenditures should be calculated in the economic impact. It is usually assumed that if the residents had not spent the money at the event,

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they would have spent it later by purchasing other products or services in the local area. However, a special event may lure local residents to spend their money at home rather than traveling outside of the local area. This part of local residents' expenditures may otherwise leak out of the region. As this part of the expenditures is attributable to the special event, excluding these expenditures causes researchers to underestimate the economic impact.

Despite the many efforts that have been made to estimate the economic impact of tourism, recreation, or special events, only a few have examined the spatial distribution of visitors' expenditures in the impact study (Long & Perdue, 1990; Turco, 1992). Spatial distribution of economic impact refers to the geographic location of direct and secondary economic effects generated by the visitors' expenditures within and outside of the event. Direct effects are geographically distributed because special event visitors often make purchases during all phases of a trip: at home, en route, and at or near the event site. Indirect impact is likely to take place far from the location of the direct effect due to interregional industry linkages (Turco, 1992). Though expenditures made outside the local area may also have an impact on the local economy due to the interactions of industries, it is generally assumed that only the visitors' expenditures made in the local area affect the local economy.

Without considering the spatial distribution of visitors' expenditures, the resulting impact will be overestimated. To consider the spatial distribution issue in the economic impact assessment, the local area (examining area) needs to be defined. To determine the spatial distribution of visitors' expenditures (direct impact), researchers used to ask visitors "How much did you spend in the local area?" In this study, the local area is defined as Albuquerque. The question "How much did you spend in Albuquerque?" will be asked to identify the

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visitor's expenditure spent in the local community. A computerized input-output model, IMPLAN, will be used to estimate the total impact. The spatial distribution of visitors' expenditures made at the event site as well as those spent in the local community (Albuquerque) will be identified and the total impacts resulting from those expenditures will be measured.

In the previous literature, the economic impacts of tourism, recreation, and special events were understood on the basis of total output, income, and employment. Little is known of an event's significance to each individual industry in the economy examined. Without understanding the impact distribution in the local economy, local businesses are unaware of the total impact, due to the festival, on each individual industry. Therefore, it is important to know the distribution of the impacts among local industries. In addition, to gain a better picture of the interindustry relationships among local industries, it is essential to examine the economic impact of each visitor expenditure (i.e., food, lodging, shopping, transportation, entertainment, etc.).

Special event visitors are not homogeneous. Different categories of visitors may have different spending patterns, and may produce different impacts on the local economy. In this study, some meaningful ways to segment the event visitors, including those that have not been explored before, will be examined. The visitor group's spending patterns and travel behavior will be analyzed based on their lodging spending (spending dollars for lodging or spending nothing for lodging), attendance behavior (repeat attendance or one-time attendance), primary reason for visit (visiting primarily for the festival, planning the trip at the same time as the balloon festival, or visiting for other reasons), place of origin (in-state, out-of-state, or international), and travel purpose (festival, visiting friends and relatives, vacation, or business) .

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The study assessing the economic effects of tourism on Puerto Rico's economy conducted by the Puerto Rico IMPLAN Study Team indicated that the tourism industry generated more low-compensated workers earning more total income when compared with other industries (Ruiz, 1994). In other words, the tourism industry in Puerto Rico was "labor-intensive" and "low-pay." Stoll, Bergstrom, and Jones (1988) also found that the recreational boating industry in Texas is labor-intensive. However, the economic characteristics of the balloon festival activity in Albuquerque are unknown. Financially, not every community can benefit from special events. Some communities may benefit from large sport events, some from small community art events, and others may not be able at all to gain any advantage from holding an event. Identifying the economic characteristics (e.g., interindustry linkages, leakages, labor intensity, and employment compensation) of a special event will help local communities recognize the advantages and disadvantages in holding a special event.

Objectives

The objectives of this study include:

1. To examine the expenditure patterns and travel behavior of nonresident visitors based on the variables of travel purpose, place of origin, lodging spending, attendance behavior, and primary reason for visiting.

2. To assess the total economic impact resulting from the balloon festival visitors' expenditures.

The following sub-objectives will be also accomplished.

2a. To measure the spatial distribution of visitors' expenditures made at the event site as well as in the city of Albuquerque, and to estimate the

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economic impacts resulting from those expenditures. The direct, indirect, and induced effects based on the variables of output, income, and employment will be examined.

2b. To identify the local industries that are most affected by the expenditures of the balloon festival visitors. That is, to examine the distribution of the impacts among local industries.

2c. To estimate the impact of each individual spending item.

2d. To analyze the interindustry relationship within the local economy, as well as the linkage of the balloon festival to the rest of the local industries.

3. To examine the economic characteristics (e.g., linkages, leakages, import tendency, labor intensity, and employee payment) of the balloon festival-related industries.

Research Hypotheses

The following are the null hypotheses formed for this study.

1. Ho: There is no significant difference in the average expenditures made by the visitor groups who traveled for different reasons (e.g., Fiesta, visiting relatives and friends, vacation, and business).

2. Ho: There is no significant difference in the average length of stay made by the various visitor groups who traveled for different purpose (e.g., Fiesta, visiting relatives and friends, vacation, and business).

3. Ho: There is no significant difference among international visitors, out-of-state visitors, and in-state visitors in their average expenditures.

4. Ho: There is no significant difference among international visitors, out-of-state visitors, and in-state visitors in their average length of stay.

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5. Ho: There is no significant difference between visitors who spent money for lodging and those who did not in their average expenditures.

6. Ho: There is no significant difference between visitors who spent money for lodging and those who did not in their average length of stay.

7. Ho: There is no significant difference between repeat visitors and one-time visitors in their average expenditures.

8. Ho: There is no significant difference between repeat visitors and one-time visitors in their average length of stay.

9. Ho: There is no significant difference among the average expenditures made by the visitors who traveled mainly for the balloon festival, those who timed their trips to coincide with the balloon festival, and those who visited for other purposes.

10. Ho: There is no significant difference among the average length of stay made by visitors who traveled mainly for the balloon festival, those who timed their trips to coincide with the balloon festival, and those who visited for other purposes.

Definition of Terms

1. Economic Impact: "Economic impact" is defined as the net change in the local area as a result of spending attributable to the special event.

2. Total Economic Impacts: Includes the primary (direct) and secondary (indirect and induced) economic effects caused by the special event.

3. Local Community (local area): The geographical areas which were affected economically, socially, and environmentally by the special event. In this study, it is defined as the city of Albuquerque.

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4. Local visitor: "Local visitors" "resident" is defined as a visitor who lives in the city that hosts the special event, in this case, the city of Albuquerque.

5. Nonlocal visitor: This is defined as a visitor who resided outside of Albuquerque.

6. Primary visitor: A nonresident visitor who visited primarily for the special event.

7. Nonprimary visitor group: A nonresident visitor who visited primarily for purposes other than the special event.

8. On-site expenditure: The part of visitor's expenditure spent on the festival grounds.

9. Off-site expenditure: The part of visitor's expenditure spent in the local area (Albuquerque).

Importance of the Study

1. A close evaluation of economic impact models and visitor data collection will provide tourism event planners and researchers with a more solid and feasible approach.

2. An international special event can generate significant economic impact, such as bringing in foreign exchange and producing tax revenue. Studying the economic impact of a large-scale international event helps the public, as well as public agencies, become aware of the economic benefits of special events.

3. Examining the economic characteristics of a short-term special event and its role in a local community helps to identify the advantages and disadvantages of hosting a special event program and provide strategies for future planning.

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4. The analysis of the local economic structure (e.g., multiplier effect, linkages, and leakages) provides event organizers a better knowledge about local economic resources. This information can help event organizers and local government identify the strength and weakness of the local economy and hence make better use of the local resources to bring greater economic impact to the local community.

5. Studying the spatial distribution of visitor expenditure helps identify how much money is gained by a local community. The results may increase support from local residents, businesses, and government for hosting a special event.

6. Studying the distribution of impact among the local industries as well as the impact of each spending item can help to identify how and how much local industries will be affected by this special event. It can provide useful marketing information for local industries. It can also help to develop new sponsorship and to maintain the sponsorship.

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CHAPTER II

REVIEW OF LITERATURE

Economic Impact of Special Events

Nature and Scope of Special Events

There are no universally accepted definitions of "festival," "special event," and "fair." Today, the definitions of these terms have become blurred, and their usage is sometimes interchangeable. Getz (1991) provided a detailed discussion of the definitions of "festival," "special event," and "fair." He defined special events and festivals as open to the public; themed celebrations; having predetermined opening or closing dates, taking place once a year, or more or less frequently, and consisting of several separate activities. They may or may not take place in a permanent place; they could be indoor or outdoor; and they have different degrees of involvement by participants and spectators. In Getz's terms, "A special event is a one-time or infrequently occurring event outside the normal program or activities of the sponsoring or organizing body. A special event is an opportunity for a leisure, social, or cultural experience outside the normal range of choices or beyond everyday experience." (Getz, 1991)

Festivals and events are similar in certain respects, but they also have unique characteristics. All festivals are in the public domain, as opposed to private celebrations and parties. According to this definition, a festival can be a special event, but not all special events are festivals. Fairs have a long tradition of their own, as periodic exhibitions and markets. They were often associated with early religious celebrations, and now usually include entertainment and amusements (Getz, 1991).

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Although differing in some degree, festivals and fairs share the characteristics of special events as indicated above. As Getz (1991) states "a special event is a tangible thing encompassing visitor activities, entertainment, sensory stimulation, and products and services being sold and consumed. It usually has a theme that conveys messages about the experiences visitors might gain by attending the event. " In general, the definition of "special event" is broader than those of "festival" and "fair." Thus, the term "special event" will be used in this paper.

"Special event" or "festival" is an emerging component in the tourism industry. Information obtained from the FestList inventory, an unpublished database compiled with the assistance of the Department of Geography at the University of South Carolina, shows that there are over 12,000 recurring festivals, plus many other special events, staged throughout the United States each year (Janiskee, 1994). Although the goals of hosting an event may vary depending on the community and organizers, one goal of most of the events is the economic benefits it will bring. Economic benefits are the primary reason for fostering privately-run events. It is expected that an event will attract visitors from outside the community, and that the visitors will make expenditures in this community.

Economic Significance of Special Events

Tourism has long been recognized as an economic development tool. It generates income, employment, and tax revenues. At the national level, tourism has been developed as a tool for earning foreign exchange; in local regions, tourism is often used to revitalize a declining economy. The economic

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significance of tourism has prompted numerous economic impact studies. Those who are concerned with tourism development are often interested in evaluating the economic impact of tourist activities (Bradbury & Molloy, 1995; Fletcher, 1989; Fleming & Toepper, 1990; Eadington, 1991).

The increased demand for outdoor activities in the United States also requires research on the impact of expenditures made to satisfy this need (Alward & Lofting, 1989). The decreasing tax support for park and recreation services also stimulates the public park agencies to examine the economic impact of recreation activities (Loomis, 1989; Taylor, Phillips, & Young, 1991; Kanters & Botkin, 1992; Dawson et al., 1993). As a result, greater emphasis is being put on developing potential income-generating activities and estimating the economic impact of recreational activities.

Special events directly or indirectly affect the economy of the host community in various ways. They play an important role in tourism development, as they can attract visitors to the area. They may heighten visitors' experiences and attract them to stay longer and spend more money in the host community. Special events have also became a popular strategy for extending tourism during the slow season. A successful event can help enhance a positive image of the host community, leading to its better perception as a tourism destination. Hence, the study of the economic impact of special events has become more important (Gitelson & Frisby, 1988; Turco, 1991; Yardley, MacDonald, & Clarke, 1990; Boggs & Wall, 1985). Recognizing that economic impact studies are becoming popular for illustrating the benefits of tourism-related activities leads to the application of more accurate economic impact analysis models, such as regional input-output models, to tourism, recreation, and special events.

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Economic Impact Assessment of Visitors' Expenditures of A Special Event

It should be noted that the expenditure of visitor is just one of the various expenditures associated with a special event. Other types include the expenditures of event organizers, vendors, operators, and sponsors. The economic impact of visitors' expenditures is defined as the net change in the host economy as a result of visitor spending associated with a special event. According to this definition, only the new money injected into the local area by event visitors from outside the area is attributable to an event. The expenditures by local residents represent only a recycling of money that is already there, and hence should not be included in multiplier calculations. It is assumed that if the residents had not spend the money at the event, they would still have spent it later by purchasing other products or services in the local area. Consequently, in regional economic impact studies, researchers have tended to exclude local residents' expenditures in their impact estimates. They suggest that only the nonlocal visitors' expenditure is the new money to the study area, and only this portion of the expenditure can be calculated in the economic impact assessment. However, some researchers have suggested including some part of local visitors' expenditures in the economic impact measurement (Coopers and Lybrand, 1989; Hatten, 1987). For instance, Hatten (1987), in his study of economic impact of Vancouver's Expo '86, concluded that 10% of the expenditures of Vancouver's residents was attributable to the event.

To find out the portion of local residents' expenditures attributable to the festival, Coopers and Lybrand (1989) asked the residents if their spending during the festival was higher or lower than on ordinary days. The higher

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portion is deemed to be the positive expenditure benefit to the local area, and should be added to the total direct expenditures; while the lower portion should be subtracted from the total direct visitors' expenditures. However, this method is questionable, partly because people may not be able to determine the amount of their ordinary daily spending. It is also inappropriate to associate the cause of the difference in ordinary spending exclusively with the special event only; some other factors may also cause fluctuation in their daily spending. Therefore, in this study, the author suggests that a better way to identify residents' expenditures that are attributable to the special event is to ask them a more specific question, such as "Would you have still traveled outside of the local area had the event not occurred in the local area?" Money spent by residents may be seen as a recycling of money that is already there, but a special event may lure local residents to spend their discretionary money at home rather than outside of the local area. This part of the residents' expenditures may have leaked out of the region if the event had not occurred.

Another debatable issue in economic impact assessment is whether to include only those nonlocal visitors who visit primarily for the event, and whether those who visit for other reasons should be excluded. Some local visitors may be planning a visit to the event host area, and time their visit to coincide with the special event. Other event visitors may not know about the event before their visit, but become attracted to the event site during their visit. Some researchers suggested that those visitors whose primary purpose of travel was not for the event be excluded from the economic impact analysis, and only the money spent by visitors who travel specifically or primarily for the special event (primary visitors) should be included in the impact study. This view has ignored the fact that nonprimary visitors may have planned their trips

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to coincide with the festival. It is very possible that this group of visitors may have traveled to a different area if the festival had not occurred in the study area. Eliminating this portion of visitors' expenditures completely from the impact calculation may underestimate the total impact of a special event. The literature shows that none of the previous studies have addressed this portion of expenditures.

Spatial Distribution of Visitors' Expenditures

While many studies have endeavored to estimate the total economic effects of special events, relatively few studies have attempted to examine the spatial distribution of economic impacts (Stevens & Rose, 1985; Long & Perdue, 1990; Turco, 1992). Spatial distribution of the economic impact refers to the geographic location of the direct and indirect economic effects generated by visitors' expenditures. Direct effects are geographically distributed because visitors often make purchases during all phases of a trip: at home, en route, and at or near the event site. Indirect impact usually takes place far from the location of the direct effect, due to interregional leakages (Turco, 1992). Therefore, the spatial distribution of the direct and secondary effects needs to be considered in the economic impact analysis.

The total amount of money spent by visitors in connection with a tourist activity may be significant, but not all the visitors' expenditures take place in the local community. Though expenditures made outside the local area may also affect the local economy due to the interactions of industries, it is generally assumed that only the visitors' expenditures made in the local area affect the local economy. Considering the spatial distribution of visitors' expenditures in

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the impact study helps to identify how much is gained by the study region. The failure to identify how economic effects are disbursed to different geographic areas can lead to an overestimate of the economic benefits of special events to the host community.

Visitors' expenditures are usually spread out in four areas: the home community, on route to the destination, the destination community, and the recreation site in which tourist activity takes place. In many cases, there is little expenditure made at the recreation site, but for special events, the expenditure produced at the festival grounds is substantial. A considerable share of festival visitors' money is spent at the festival grounds for foods, drinks, souvenirs, and other items. Therefore, the event site may be the smallest meaningful area for impact analysis. A large amount of visitors' expenditures are made in the area adjacent to the recreation site, which is sometimes termed the "economic support area." According to Stevens and Roses, the support area can be a small community, a state, or the entire country. To delineate the support area, two possible approaches, trading area and labor service area, were suggested by Stevens and Roses (1985). One possibility is to define the trading area where the majority of economic interaction takes place as the economic support area. Another approach is to consider the area where the majority of the labor force resides as the economic support area. The result from either approach proves that the economic support area is usually closely related to common statistically measured units such as the Metropolitan Statistical Area. Due to the limitation of data collection, the researchers are likely to use the political boundary as the cutoff point (Stevens & Rose, 1985).

Economic impact can not be assessed without defining a specific geographic area. In a regional economic impact analysis, only the portion of

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expenditures occurring in the local area is attributable to the local community. Though visitors' expenditures that occur outside of the study area may also affect the local economy due to inter-regional interactions, it is usually assumed that only the expenditures made in the local area affects the local economy.

To study spatial distribution, it is essential to define the "local community." The "local community" is the area which is most affected by the economic activities. The geographic (spatial) distribution of expenditures can be derived by asking the question, "How much did you spend in the local community?", instead of only asking "How much did you spend?" Long & Perdue (1990) asked the former question when they examined the spatial distribution of visitors' expenditure effects associated with a rural arts and crafts festival, the 1986 Carbondale Mountain Fair in Colorado. This study found that 74.9% of the total expenditures by survey respondents was spent with non-local operators, while only 25.1% of the expenditures were attributable to the community economy. The results clearly indicate that a significant proportion of visitors' expenditures associated with a rural festival may not contribute to the local community.

A more comprehensive study in spatial distribution of expenditures was conducted by Turco (1992). In the economic impact study of the 1990 New Mexico State Fair, Turco measured the spatial distribution of expenditure effects on the local community, Bernalillo County. A nonresident allied business survey was conducted to ascertain the on-site expenditures of non-local vendors. He found that some of the resident spending leaked from the local economy via nonresident vendors, and some of the money was extracted from the local economy by non-resident entertainment groups after their spending in the local area was subtracted from the calculation. In addition, Turco also

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identified the amount of money that event organizers spent outside of the community (Turco, 1992).

As addressed above, researchers have tended to consider the issue of spatial distribution by examining the spending made at the smallest impact area, the festival grounds. In a large-scale special event, it is more important to consider this issue within a broader area, such as the local community, or the so-called the "economic support area" which usually attracts a larger amount of visitors' expenditures than at the festival grounds alone. Turco (1992) recommended that future economic impact study should clearly define the local economy under study, and that only spending occurring within the designated area should be considered economic gain.

Theoretical Bases for Assessing Economic Impacts

The total economic impact includes the direct effect and the secondary effect (indirect and induced effect). To estimate the direct economic impact, visitor surveys or secondary data collection methods are used to record the total number of event visitors, party size, length of stay, and expenditure on each item. To assess the secondary impact, multiplier effects are usually used. An economic impact analysis involves (1) using a reliable data collection method to obtain total direct expenditures of event participants, and (2) selecting an appropriate economic impact assessment model to generate multipliers.

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Data Collection Methods

The reliability of economic impact estimate is mainly determined by the accuracy of the expenditure data and the theoretical solidity of the economic impact assessment model. Estimation of visitors' expenditures may be accomplished by two approaches: demand-related or supply-related approaches (Tyrrell, 1985). "Demand-side" refers to the expenditures by consumers, while "supply-side" relates to business receipts. The information collected in a visitor survey usually includes number of attendees, visitor spending pattern at the event, length of stay, and visitor profile. The information collected from the supply-related approach can be gathered from the ticket count, business receipts, accounting records, financial statements of vendors and participating groups, or employee payment records.

The supply-side approach is usually taken by a business industry survey, or by obtaining financial receipts from event organizers, operators, vendors, or sponsors. The subjects of a business survey usually include those businesses corporations, such as lodging, food stores, restaurants, gas stations, ground transportation, car rental companies, retail shops, and entertainment businesses which are affected by visitors' spending. Before conducting a business survey, the number of firms in each industry group and the homogeneity of each industry group needs to be examined. According to Turco and Kelsey (1992), the chosen subjects should represent businesses on the high-, medium-, and low-end cost scale.

Traditionally, the business survey approach is less frequently used in tourism, recreation, and special event study (Stoll, Bergstrom & Jones, 1988; Johnson, Obermiller & Radtke, 1989; Mescon & Vozikis, 1985). This is due to

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the difficulties encountered when conducting a business survey. For example, Johnson, Obermiller and Radtke (1989), studied the economic impact of tourism sales on a coastal region of Oregon, and asked business owners to estimate the portion of sales to tourists. The accuracy of the portion of each business sales attributable to tourists is questionable, because there is no industry that produces products or services exclusively for tourists. Local businesses usually serve both tourists and nontourists, and sell products to both local and nonlocal people. Therefore, it is difficult for local businesses to differentiate tourists from nontourists and residents from nonresidents.

Several data collection methods, including on-site interviews, on-site questionnaire surveys, post-event mail surveys, and expenditure diaries, have been used to collect visitors' expenditure information in festival or special event studies. During method selection, some major difficulties such as non-response rate, incompleteness of questionnaire, recall problem, and alteration of visitor's spending pattern should be considered. The selection of a data collection method should also depend on the character of the festival or special event.

An on-site personal interview involves a group of interviewers who ask visitors questions as they are entering, on, or leaving the event grounds. A questionnaire is usually designed to accompany the personal interviews. Interviewers usually need to be well-trained to avoid biases. Random sampling is normally required to ensure the representativeness of the study population. The results of the data collection will be different if conducted at a different time or in a different location. For example, interviews that are conducted in different locations, such as at the entrance, on the event grounds, or at the exit may cause different results. Therefore, the collecting time and location need to be considered during the data collection.

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Conducting the interview at the entrance is less preferred, as visitors usually cannot predict their on-site spending precisely when they have just arrived at the event grounds. In contrast, conducting the interview at the exit has the potential for collecting more accurate information at the event site; however, a low response rate is the major problem associated with the "exit interview". Psychologically speaking, visitors are less likely to participate in the interview when they are about to leave the event grounds. Therefore, conducting the interviews when visitors are visiting at the event grounds can minimize the problem of underestimation and also increase the participation rate. When conducting interviews on the event grounds, it is important not to destroy visitors' leisure experiences. In addition, as different type of visitors tend to visit at particular times of the day, on particular days of the week, or at specific locations on the grounds, the selection of appropriate sampling time, days, and locations is critical for the reliability of the study.

The on-site self-administered questionnaire method is similar to the personal interview method in several ways except that no interviewers are involved. Compared to the personal interview method, this method allows visitors more time to recall their spending. The visitors may feel more comfortable answering some sensitive questions. However, this method usually suffers from low response rate and incomplete questionnaires.

The expenditure diary is a logbook provided to some selected event visitors to trace their spending made during their visit. If well recorded, this method has high potential to reach accurate estimates of expenditures. However, the biggest drawback of this method is that it will alter visitors' spending behavior, because the visitors will become more sensitive about their spending.

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The mail survey is usually conducted after the event is over (Fesenmaier et al., 1989). Often, the names and addresses of the survey participants are collected during their visit to the festival grounds. The questions are then mailed to the visitors at their home addresses. Although it has the advantage of low cost, this method faces a recall problem. It is likely that visitors tend to underestimate their spending when asked for information after considerable time has passed since their visit (Turco, 1992). Nonresponse bias caused by a low response rate is another major problem with post-event mail surveys. Usually, follow-up cards are mailed to participants to increase the response rate. For instance Bos (1994), in his study of three events in the Netherlands, used the post-event mail survey to collect visitors' information and their expenditures. The visitors willing to participate received a questionnaire and a postage-free international envelope within two weeks. The response rate of these three studies varied from 46% to 72%, which is relatively high compared with other studies using the survey method.

Economic Impact Assessment Models

A survey of visitors is more commonly used than a survey of businesses for estimating the economic impact of festival visitors' expenditures. Festival visitors usually buy admission tickets, food and beverages, souvenirs, entertainment services, gasoline, transportation, parking, lodging, and shopping etc. Many studies have been conducted to estimate visitors' direct expenditures made during the trip (Gitelson et al., 1988; Uysal, Murphy & Carmichael, 1991; Pomeroy, & Potts, 1992).

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The secondary impact is determined by the multiplier effect. Without calculating the secondary effect (indirect and induced effects), the impact estimate is insufficient to reflect an accurate level of economic activity produced by a special event and therefore could not provide useful information for decision making. For instance, an economic impact study of Great Basin National Park (Dawson et al., 1993) concluded that even though the increase in visitors did increase visitors' expenditures in the local community, it caused only relatively small increases in the local economic activity if the secondary effect was also considered. This low cumulative effect is mainly caused by the low diversity of business in this community. As a result, there is a high dependency on imported goods and services from outside the region to satisfy the requirements of local industry and household demand. This phenomenon is called "leakage", and it is only reflected in the secondary effect. Therefore, to calculate the secondary effect, several economic impact assessment models have been developed and utilized. The input-output method is among the methods that are more commonly used for estimation of the multiplier effect of recreation or tourist activities. Other methods include the economic base analysis method, the econometric method, and the borrowed multiplier approach. These four approaches will be briefly addressed.

The Concept of The Multiplier and Its Application

The total amount of visitors' expenditures is just a part of the economic effect of a tourist activity; it is not the total effect. In any tourist activity, some part of the visitors' spending that occurs in the local economy may flow outside of the region to buy products or services. Only the part of the money which buys

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products or services from the local area will stay in that local area; other money will leak to other areas. Hence, to calculate the total economic impact of a tourist activity properly, it is important to understand the operation of the regional economy and the factors influencing the economic effects. Among those factors, the multiplier effect which shows a region's interindustry relationship is the key concept in economic impact analysis.

An economy comprises many industries that purchase from and sell to other industries, located both within and outside of the area. Therefore, the expenditure of visitors made in any one area does not stop as soon as the dollar has been spent. When money is injected from outside, it stimulates more business activities among the industries in this area; hence, it creates additional business sales, employment, income, and government tax revenue in the area. This monetary circulation produces the multiplier effect.

The multiplier acknowledges the difference between the initial effect of a change and the total effect of that change. It indicates the way in which an expenditure in one sector filters throughout the economy, stimulating other sectors to purchase or produce more products or services. This idea is based on the Keynesian principle of the recirculation of a proportion of income by an area's recipients into consumption spending, which then stimulates more employment and income (Bull, 1991). In other words, the multiplier recognizes the secondary effect in addition to the direct effect. It takes into account the interrelationships of industries within an economy. Therefore, to estimate the total economic impact of an economic activity, the multipliers need to be derived first.

Fletcher and Snee identify six tourism multipliers: output, sales, income, employment, government revenue, and imports (Hughes, 1994). Among them,

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the output, income, and employment multipliers are more frequently indicated in the economic impact assessment. Output multipliers indicate the total output of an industry. They provide a clear picture of the interdependency of the industries within an economy. The larger the output multiplier, the greater the dependence of a particular sector on the rest of the regional economy. Although addressed in most of the economic impact studies, the output multiplier is not regarded by researchers as being as important as the income and employment multipliers. The output multiplier generally serves as an indicator of industry interdependency within an economy. The income multiplier represents the total amount of additional income generated in an area by an initial spending. The employment multiplier states the total number of jobs created per unit of tourist spending.

The total economic impact of visitor expenditure is the sum of primary (direct) and secondary (indirect and induced) effects. The direct impact is the direct consequence of visitors' spending for goods and services, such as food, lodging, retail shopping, gasoline, and tickets. It indicates the production changes associated with the immediate effects of the injection of visitors' expenditures. It is not necessarily equal to the initial visitors' expenditures, because some of the injected money may leak out of the local area even in the first round of production. Therefore, the direct impact is usually smaller than the initial injection of visitors' expenditures.

The visitors' initial spending usually goes through several rounds in an economy, with part of it leaking out of the area in each round to pay for products or services elsewhere. This circulation stops after several rounds, when only a negligible amount of money remains in an economy. Successive rounds of economic activity are termed the "indirect effect." The amount of visitors'

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expenditures used to pay for products or services from outside the area is called leakage.

Induced effect is the increase in employment and household income that results from the economic activity stimulated by the direct and indirect effects. The increased household income, if not saved, will increase further consumption and then provide additional stimuli for economic activity. The process may recur several times before its effect is too small to measure. For each round of spending, leakage will occur from the regional economy until little or no further respending is possible.

The size of the multiplier varies from industry to industry and region to region. It is determined by various factors, such as the size of the impact area, the proportion of goods and services imported into the region for visitors' consumption, the nature of visitors' spending, the adequacy of local service-related industries, and the patterns of economic behavior of event visitors and local residents (Hall, 1992). The larger the region is, the greater the self-sufficiency of that economy in providing tourist-related facilities and services. Therefore, the multipliers are usually higher where a greater proportion of the spending is in sectors with strong linkages to other industries and businesses. Multipliers are lower at rural communities than at urban areas, because rural areas usually contain fewer industries to support an economic activity. As a result, rural areas tend to import goods and services from outside the region to meet the production and consumption needs, thus causes leakages.

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Borrowed Multiplier Approach

Since the introduction of the multiplier, the problem of multiplier abuse has been addressed. In some previous economic impact studies of tourism, recreation, and special events, some researchers have utilized multiplier values from other areas or from other events and applied them to their own studies. The researchers usually assumed that the two different regions' economies are similar, or that the two different studies share similar characteristics. To measure the secondary effects, simply multiply the borrowed multipliers by the estimates of direct impact. In several of the previous recreation special event studies, the researchers borrowed multipliers from other areas and applied them to their own (Yardley, MacDonald & Clark, 1990; Mescon & Vezikis, 1985; Gartner & Holecek, 1983). In a local area where a multiplier is unavailable, borrowing a multiplier from a state or other region with similar economy is common. For instance, Gartner & Holecek (1983) used the statewide average multiplier 2.25 for measuring the total economic impact of the 1980 Greater Michigan Boat and Fishing Show on the Detroit metropolitan area. As the statewide average multipliers tend to be larger than those for even dominant regions within a state, a smaller multiplier of 2.00 was decided for their study. In another study, Yardly et al. (1990) employed a conservative multiplier of 1.2, which was reduced from the multiplier 1.52 borrowed from the city of Sarnia, Canada. It is noticeable that to avoid criticism for exaggerating the economic impact, some researchers have tended to use a conservative multiplier when using the borrowed multiplier approach. They usually reduced the multiplier rate which was borrowed from somewhere else. The result generated by the borrowed multiplier approach is so rough that its accuracy is questionable.

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Some researchers suggested that a multiplier derived for a specific area should not be applied to another area because economic areas are different and the same effects are not likely to occur (Fleming & Toepper, 1990). Schaffer (1979) suggested that, for the multipliers to be transferable, the two areas must have similar labor forces, residential patterns, labor force skills, local propensities of consumption, local business types, etc.. Therefore, caution should be taken in interpreting a multiplier that is borrowed from another area or another study. With the advent of computerized nonsurvey economic assessment models, the borrowed multiplier approach has been used less often.

There are several approaches used to generate multipliers: the economic base analysis, the econometric method, the input-output analysis, and some other ad hoc approaches. Though the ad hoc approaches are simpler and easier than others, their reliability and transferability is subject to question. Therefore, in the following section, only the economic base, econometric, and input-output approaches will be discussed.

Economic Base Analysis (E.B.A.)

The basic assumption of this approach is that all the industries in an economy can be divided into "basic" or "nonbasic" industries. The exporting industries that serve markets outside the region constitute the "basic sector", and those industries that serve markets inside the region constitute the "non-basic sector." The exports can be in various forms, such as nonresident's spending in the local region, labor force flowing out of the region, agricultural

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products sold outside of the region, etc. The economic growth of a region is totally determined by the level of exports from that region.

Since this theory regards all regional economic activity as either "basic" or "nonbasic," the basic output plus the nonbasic output equals the total output for the region. The same concept can be applied to income and employment in an economy. The ratio of basic output to nonbasic output is called the economic base ratio, or base ratio (Bendavid-Val, 1991). Hence, the output, income, and employment multiplier can be derived by the ratio of the total output to the basic output, the ratio of the total income to the basic income, and the ratio of the total employment to the basic employment, respectively. In other words, to estimate the total output, simply multiply the basic output by the output multiplier. The same procedure applies to the assessment of income and employment effect. The Seaport's Marketing Division (1982) derived the multiplier by using the economic base method to measure total economic impact of a cruise industry at Port Miami.

The major criticism of this theory is subjectivity in determining the basic and nonbasic sector. Its assumption that all types of exports have the same multiplier effect regardless of their industrial source is also questionable (Frechtling, 1994). Although it is simple to use, the major drawback of this theory has caused researchers to turn away from using it in tourism economic impact assessment. Because of its high level of sectoral aggregation, economic base analysis is inappropriate for analyzing the economic effect of any particular economic activity (Hernandez Diaz, 1988). In addition, most tourism industries serve both local people and nonlocal people; they are mixed industries that serve both a regional and a nonregional market. In estimating the economic impact, the researcher encounters the problem of deciding the

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basic and nonbasic sectors of tourist activity. It is inappropriate to divide the tourism industries into those which are totally basic and those which are totally nonbasic but neglect those industries which are mixed in nature. Hence, this method has become less frequently used in tourism impact analysis.

Econometric Method

The econometric method is technically more complex than the economic base analysis approach in generating multipliers. The regional econometric model is a regression model which, based on models of the national economy, employs many equations and much time-series data to produce regional econometric models. Because of its complexity, the multiple equation regional econometric model has seldom been employed in tourism studies to generate multipliers (Glickman, 1977). Coppers and Lybrand (1989), in their study of the economic impacts of eight festivals in Canada, used a five-year econometric simulation to estimate the gross domestic products of each region.

Input-Output (I/O) Model and Its Applications

Input-output methods have a long history. An early input-output table was developed in 1758 by a French economist. The first empirical input-output study in the United States was published by Wassily Leontief in 1936 to describe the economic interdependencies in an economy. Since then, this tool has been modified and empirically implemented in a variety of academic disciplines, in both the public and private sectors, and in different countries. The I/O model can be used to measure the economic effects caused by the

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output change of a sector or sectors in an economy. The application of I/O models in assessing the economic impacts of tourism or recreation activities has become popular in the last decade.

The theoretical framework of input-output analysis is General Equilibrium Analysis. This approach provides a fairly comprehensive framework, as it takes into account the interrelationships in the economy. Instead of viewing each market in isolation, general equilibrium analysis assumes that each separate market is more or less dependent on other markets (Browing & Browing, 1991). In other words, the markets are interrelated; changes in one market affect other markets, which in turn affect the original market. General equilibrium analysis reveals how various individual markets are integrated to form an equilibrium economic system.

In an input-output analysis, all industries play two roles in an economy: the producer and the purchaser. The fundamental concepts are that one industry's purchases are another industry's sales, and that a greater output of one product needs greater inputs for that product (Hastings & Brucker, 1993). The flow of goods and services among industries is quantified in an I/O table to show the amount of purchases an industry or sector needs to produce its final products or services. This interindustry relationship is called the input-output relation, because it indicates the total amount of input an industry or sector required to produce its output (Yan, 1969). In this model, the levels of activity in an economy are the result of changes caused by forces outside the model. That is, any changes of the sectors' production and purchasing within an economy is determined by the forces outside the model (Hastings & Brucker, 1993).

An input-output model contains three tables: the transactions requirements table, the direct requirements table (technical coefficients table),

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and the total requirements table (interdependence coefficients). The transactions table is the basic feature of the I/O model. It presents the flow of products or services from producing industries to purchasing industries, and the final demand. It provides most of the useful information about the regional economy. The other two tables, the direct requirements table and the total requirements table, are developed from the transactions table. The direct requirements table shows the portion of inputs that must be purchased by each sector to produce one unit of output. As this table is stated in terms of the percentage of total expenditures made by a sector for various inputs, the production relationship and interdependency can be identified easily. Hence, the direct effect of a change in final demand for the output of any industry or industries on an economy can be measured. From the direct requirements table, the table of total effects (direct, indirect, and induced) can be developed. The main function of the total requirements table is to show the total amount of direct and indirect effects, which are calculated by adding up all of the successive rounds of output increases. Furthermore, the multiplier of each industry is also shown in the total requirements table (the interdependency coefficients table), which is also called the Leontief Inverse.

The I/O multiplier indicates the total effects of a dollar of sale generated by a particular sector on the final demand after several rounds of purchasing and production. The I/O model can produce three types of multipliers (type I, type II, and type III multipliers) for several variables: output, income, employment, government revenue, etc.. The type I multiplier is the ratio of direct and indirect effects to the direct effect. Both type II and type III multipliers represent the ratio of direct, indirect, and induced effect to the direct effect, but these multipliers are derived from different models.

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The type I multiplier comprises only the direct and indirect effects, because the households are not part of the production system; the households are part of the final demand. Therefore, the purchases of households are not determined by the production function but by consumer preferences (Pomeroy et. al., 1988). The difference between type II and type III multipliers is that the type II multiplier is generated by a closed model, while the type III multiplier is produced in an open model. As the induced effects are calculated differently in these two models, the resulting multipliers are different.

The type II multiplier is computed from a model in which households are treated as a sector or an industry, and are therefore inside of the production system. Hence, besides direct and indirect effects, induced effects can also be calculated. This model is called the closed I/O model. The induced effects are shown in the total requirements table after the model is modified by including the households as part of the production system. When using a type II multiplier, it should be noticed that as production increases, household incomes increase; the increases in household incomes lead to increased consumer spending. The increase in consumer spending would generate more production, and then create the induced effects. However, the induced effects in the type III multiplier are derived from the "open model," which is based on changes in employment and population. For instance, the IMPLAN type III multiplier is derived by converting direct and indirect effects to changes in employment based on each sector's employment-to-output ratio. Employment change is then multiplied by the region's population-to-employment ratio, converting it into population change. Population change is multiplied by average regional per-capita consumption rate by the initial final demand changes, then multiplying this by the Leontief Matrix to generate the first round

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of induced effect, and then repeating the process (Borgen & Cooke, 1991). The type III multiplier is usually more accurate than the type II multiplier.

When applying an I/O model, it is important to note the assumptions behind it. A fundamental underlying relationship of input-output analysis is that the amount of product produced by a given sector in the economy is determined by the amount of that product that is purchased by all the users of the product. That is, the amount of input purchased by any particular sector is determined by the amount of output produced by that same product. The linear relationships between inputs and outputs across the economy imply that there is no substitution of production factors. The input-output model is a static equilibrium model, and no investment activity, changing technology, or price effects are included in the analysis (Otto & Johnson, 1993). Regarding the induced effects, it is assumed that the consumers will spend their new incomes in the same pattern that had characterized their previous spending. In addition, another assumption of the input-output model is that every industry in an economy is functioning at full employment; therefore, an increase in final demand will cause each sector to increase its demand for labor.

The input-output model provides several types of information. It provides important information on individual sectoral size and interaction with the rest of the economy. It shows the characteristics of industries in terms of their sales, wages, and employment. It can be used to estimate the economic impact of an activity, or to predict the result of any planned activity. Input-output tables are able to reveal the interrelationships of one industry with the other industries in an economy. Therefore, the input-output model has been a popular instrument in many countries for deriving the multiplier effects of tourist activities (Hitchcock, King & Parnwell, 1993). In the case of tourism, the input-output

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model is able to show linkages between tourists' expenditures and other sectors in an economy. This model measures the direct, indirect, and induced economic effects in terms of total output, income, employment, and value added. It can also examine the import tendency of a specific industry and identify the leakages.

Because of the greater accuracy of this model compared to others, it has been widely applied to economic impact assessments for tourism, recreation, and special events (Socher, 1987; Dryden, 1978; West, 1993; Mescon, 1985; Pomeroy et al., 1988; Stoll et al., 1988). Mescon (1985) used a regional input-output model developed by the Regional Science Research Institute to examine the economic impact of the cruise industry at the port of Miami. The I/O model can also be used with other models for economic impact study. For instance, West (1993) used an integrated modeling framework, an extension of the input-output model, to estimate the economic significance of tourist activity in the Queensland economy. This integrated modeling framework combines the social accounting matrix (SAM) with econometric relationships. According to West (1993), input-output models have also been applied in many tourism studies in Austria. Fletcher (1989) described the usefulness of this model to study the economic impact of tourism, and he also demonstrated its flexibility by drawing upon examples of tourism-based input-output models.

Survey, non-survey, and hybrid input-output models

Based on the origin of data sources, input-output models can be classified in three groups: survey, non-survey, and hybrid models. Survey input-output models employ primary data sources to construct the transactions

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table. Primary data is usually collected by interviews or a questionnaire survey of regional industries. Non-survey methods provide an initial input-output table which is then supplemented by survey data or region-specific data to create a more accurate input-output table (Miernyk, 1987). Non-survey I/O models usually use the national input-output data as bases to produce regional input-output tables. Hybrid models usually use surveys to obtain the largest regional I/O coefficients and secondary data for the rest of the table. This method incorporates the elements of both survey and non-survey methods. For instance, some primary data was collected by Lichty and Steinnes (1982) to identify the proportion of sales to resident and nonresident tourists in Ely, Minnesota. The information was then used to modify the general I/O model to derive a more accurate multiplier related to tourism industry.

Originally, I/O models meant survey I/O model, as the non-survey I/O models were not introduced until 20 years ago (Brucker, Hastings & Latham, 1993). To construct a survey I/O requires a large amount of data, money, and time. To trace the flow of goods and services, and the monetary transactions within a region, it is very time-consuming to collect the primary information of business firms within a specific region. Because the data requirement expands as the square of the number of industries increases (Braschler & Devino, 1993), it is very common to spend one or two years to collect primary data.

Because constructing an I/O model requires a lot of human resources and knowledge, and a large budget, researchers with limited sources have been forced to use the less expensive and simpler methods to assess the economic impact. Many ad hoc and short-cut methods have been developed to be used for regional economic impact analysis. Since those ad hoc or short-cut methods were usually developed for a particular economic activity in a

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particular time and area, lack of accuracy and generalizability are major concerns. Therefore, economic specialists were motivated to develop non-survey I/O models.

The non-survey I/O models are developed from secondary data sources, mainly from the federal government. Usually the national model is used as a basis to develop a state model, and the county model is then derived from the state model. The nonsurvey approach assumes that the average relationships between industries at the national level will be approximately the same at the county level. The process of adjusting national coefficients to regional coefficients is called regionalization. The most commonly used regionalizing techniques include: (1) supply-demand pooling, (2) the location quotient, and (3) regional purchase coefficients (Braschler & Devino, 1993). For instance, IMPLAN 1.1 uses the supply-demand pool approach, RIMS II adapts the location quotients, while the REMI model, IMPLAN 2.0, and the later version use regional purchase coefficients (RPCs) to generate regional coefficients.

The simple net trade approach, supply demand pooling, assumes that every industry in a regional economy supplies as much of the local demand as possible before export happens. It also assumes that all local industries buy locally first, before importing from outside. That is, imports will only occur after local demand is met, and the excess supply is always exported. The location quotient (LQ) is the proportion of employment in an industry relative to the U.S. proportion of employment in the same industry (Treyz, 1993). If the location quotient is equal to 1.0, the region is assumed to be self-sufficient; no export or import activities are conducted in that region. If the location quotient is greater than 1.0, the industry exports part of its output; on the contrary, if the LQ is less than 1.0, the industry needs to import some of the input for this industry from the

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outside area. In assessing the economic impact of coastal tourism and recreation activities on South Carolina's economy, Pomeroy, Uysal, and Lamberte (1988) used this method to regionalize the national I/O table to the one appropriate for South Carolina.

Using the regional purchase coefficients method, the local output purchased to meet local demand is determined econometrically by using national Census Transportation Data and other secondary data. The regional purchase coefficient for a product or service is the proportion of demand for that product or service within a region that is supplied by the region to itself. After estimating the proportion of demand supplied locally, the remainder of demand is assumed to be met through imports, and the difference between total output and the amount of output consumed locally is assumed to be exported (Pederson, 1990).

The increasing need for conducting regional economic impact assessments has led to the development of more conceptually solid non-survey I/O models such as RIMS II, ADOTMATR, RSRI, IMPLAN etc. (Henry & Johnson, 1993). The introduction of these non-survey ready-made computerized I/O models has reduced the time required to conduct an economic impact assessment. The expanded market demand for these ready-made models has also decreased the money required to purchase them.

The accuracy of nonsurvey input-output model has long been discussed. A survey-based model is generally assumed to be more accurate than a non-survey model. Studies have been done to estimate the closeness of non-survey models to survey models. They show that there is no consistent pattern of one non-survey model being more similar to the survey-based model than any others. The only pattern identified was that the estimates of total regional

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production changes and income impacts were closer to the survey models than were the estimates of employment impact (Otto & Johnson, 1993). Though survey I/O models have potential to be more accurate than nonsurvey ones, errors caused by missing data, small sample size and their level of aggregation may occur in survey I/O model.

Ready-Made Computerized Models (TEIM, TDSM, RIMS II, REMI, IMPLAN) for Economic Impact Analysis

The costs in time and money required to estimate the economic impact have been reduced by vast changes in computer technology. The application of computer modeling for the specific purpose of evaluating the potential impact of tourism has been under continuous development. Five popular computerized models, TEIM, RIMS II, TDSM, REMI, and IMPLAN, have been adapted to measure the economic impact of tourist activities. Each model is capable of providing tourism impact information. It is unlikely that there is one best model for all users. Selection of one model over the others depends on the nature of the model, purpose of the study, budget, and economic conditions of the specific area studied.

TEIM

The Travel Economic Impact Model (TEIM) was developed in 1972 by the US Travel Data Center. Since 1977, this model has been used to conduct annual estimates of U.S. domestic traveler spending for the entire nation, and for various states, counties, and cities. This is the only tourism impact model

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which regularly produces annual estimates for all states. This model contains four components: the Travel Expenditure Component (TEC), Economic Impact Component (EIC), Fiscal Impact Component (FIC), and City/County Impact Component (CIC). From these four components, information about U.S. visitor spending, business receipts, employment, payroll income, and government tax revenue generated by travel spending are provided for the federal, state, and local areas (Frechtling, 1994). Since 1977, the US Census Bureau has consistently conducted a National Travel Survey and Censuses of Service Industries and Retail Trade. The tourist spending estimates include all U.S. resident travel expenditures on overnight trips away from home, and day trips 100 miles or more away from the traveler's origin. The national data is first provided to the state, and then to the local level. To produce county or city estimates of travel impact, the state totals in each impact category are distributed to a particular locality based upon available measures of business activity in the area (Ritchie & Goeldner, 1987). In other words, the local tourism spending estimates are derived from statewide estimates, and the state estimates from the national estimates according to the proportion of the travel-related industries found there.

The major advantage of this model is that it is particularly designed for the travel industry. The 19 travel expenditure items are directly related to 15 types of tourism industry; however, some important travel-related expenses such as sports equipment and clothing, and some other indirectly tourism-related industries are not estimated in the model due to insufficient data. The lack of comprehensive travel-related spending categories of this model makes it inappropriate for estimating the economic impact of a specific kind of tourism or recreation activity. Although this model is capable of estimating the impacts of

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travel spending based on employment, income, and government tax revenues, it does not consider the secondary impact of tourism spending.

TDSM

The Tourism Development Simulation Model (TDSM) was originally developed for a regional Sea Grant project (Connecticut, Rhode Island, Massachusetts, and New Hampshire) to provide a method for state and local agencies to estimate the impact of coastal tourism at the local level in the Northeast. The structure of the TDSM model is similar to input-output analysis, which establishes and develops relationships between sales in a given industry and total sales in the economy, total jobs, income, tax revenues, and public revenue expenditures resulting from these sales (Uysal et al., 1992). The economic impact arising from the purchases made by visitors is measured in terms of sales of goods and services, and income in the form of wages, and salaries, employment, and tax revenues. The proper definition of tourist and firms is required for this model. It is also necessary to obtain basic information about the tourism industry and the number of local industries in the local community. Once the basic impact information is available (the number of local firms with industry parameters and the visitor characteristics with expenditure items), the immediate results can be calculated.

Uysal et al. (1992) used this model to measure the economic benefits of tourism expenditures in Beaufort County, South Carolina. According to their study, TDSM is simple, user-friendly, and cost-efficient, and it does not require a great deal of technical knowledge to use. Another major advantage of this model is its unique site- and tourism-specific capacity, which make it most

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useful in a small geographic area. Although this model has several attributes that make it suitable for impact assessment in local tourism areas, it does have some limitations. Its major limitation is that it only measures the direct economic impact while the secondary impacts can not be calculated. In addition, the unavailability of the database for some regions has limited the use of the model to the subregion of the Northeast (Rhode Island-Connecticut). Empirical application of TDSM in other regions has been limited.

RIMS II

The Regional Industrial Multiplier System (RIMS) was developed in the 1970s by the US Department of Commerce, Bureau of Economic Analysis (BEA), for estimating regional input-output multipliers. In the mid-1980's, an improved version known as RIMS II (Regional Input-Output Modeling System) was introduced. The data sources of RIMS II are mainly derived from (1) BEA's national I/O table which shows the input and output structure of more than 500 U.S. industries, and (2) BEA's four-digit Standard Industrial Classification (SIC) county wage-and-salary data (US Department of Commerce, 1992).

The Location Quotient (LQ) technique is used in this model as a regionalizing process to generate the regional multipliers. Type II multipliers, which include direct, indirect, and induced effects, are used to show the total economic effect. Using RIMS II, multipliers can be estimated for any region composed of one or more counties and for any industry in the national I-O table. Mak (1989) stated that RIMS II was designed to generate output, income, and employment multipliers and to estimate the total economic impact.

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RIMS II has been empirically tested; it has been widely used in both the public and private sectors, and in different fields such as the impact of transportation use, construction, manufacturing plant, and defense expenditures (U.S. Department of Commerce, 1992). Mak (1989) used this model to derive the multipliers, and applied the Travel Economic Impact Model (TEIM) to estimate the total impact of travel expenditures on output, income, and employment in all 50 states and DC.

REMI

The REMI model was first developed by Regional Economic Models, Inc. as the Massachusetts Economic Policy Analysis Model. This model was also developed for every state for the National Cooperative Highway Research Project and became publicly available in 1980 (Treyz & Rickman, 1992). Later development and improvement helped this model gain wide popularity for regional economic impact study, policy analysis, and regional forecasting.

The REMI combines the input-output model and the econometric forecasting model in its operation. It uses a 490-sector input-output model to estimate the direct effect and the first round of indirect economic changes; then, the changes in employment, output, and income are passed to an econometric forecasting module that simulates the remaining indirect effect and induced effects to the end of the forecast period. The initial change can be specified for any of the 490 sectors in the I/O table, and the final results are presented at either the 14-sector or 53-sector level of aggregation (Crihfield & Campbell, 1991). REMI has been used to estimate the economic effects of economic

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development projects, transportation infrastructure use, environmental policies, government tax changes, and other policy analysis.

REMI uses various data sources, including: County Business Patterns, published by the Bureau of the Census, the Censuses of Manufactures, Transportation, and Government, the Survey of Current Business, the Bureau of Economic Analysis employment, wage, and income series, ES-202 establishment employment, wage, and salary data, and others. The reliance on regional time-series data makes REMI a dynamic forecasting model which can be used to trace the time path of economic impact and in forecasting, besides being useful in impact analysis.

REMI uses Regional Purchase Coefficients (RPCs) to regionalize the technical coefficients from the national level to the regional level. Type III multipliers are obtained by the REMI model. These type III multipliers are different from those generated by the IMPLAN model. REMI's multipliers include induced investment expenditures, government expenditures, and endogenous export and import propensity (Rickman & Schwer, 1993).

IMPLAN

IMPLAN (IMpact analysis for PLANning) is also a computer-based nonsurvey input-output system developed for PC users. Its menu-driven design makes it easy to operate. Technical support and database are provided by the Minnesota IMPLAN Group, Inc.. This model provides a database for constructing a 528-industry transactions table and related intermediate and final demand, value-added, import, and export sectors for any county or combination of counties in the U.S. (Maki et al., 1989).

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IMPLAN comprises two components: (1) the input-output model system and (2) the national, state, and county database. The model system allows users to construct their own I/O tables based on different regional economies, such as those of a nation, state, county, or many counties. The database of IMPLAN includes comprehensive geographic coverage of data from 3100 counties in the U.S. (Maki et al., 1989). The database is based on a very disaggregated 528-sector level of sector; however, it could also be aggregated to a less detailed level of industry. Users can decide the level of sectoral disaggregation based on the needs of the particular economic activity. This flexible feature has made the IMPLAN model suitable for analysis of various types of events.

IMPLAN can generate three kinds of input-output tables: directory requirement tables, total requirement tables, and transactions tables. The availability of the transactions table help users understand the interaction of industries within a regional economy and the interaction with their outside region. The regional Purchase Coefficients technique is used to down scale the national coefficients to regional coefficients. By calculating the Leontief Inverse (I-A), IMPLAN generates two types of multipliers: type I and type III multipliers based on the measures of industry output, personal income, total income, value added, and employment. The direct, indirect, induced, and total effects are addressed individually. Several reports from regional accounts and input-output accounts can also be generated by the IMPLAN model.

The IMPLAN type I multiplier shows the direct and indirect effects, while the type III multiplier shows the direct, indirect, and induced effects. The type II multiplier is replaced by the type III multiplier in the current IMPLAN version, because the previous assumption of linear relationship between income and

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consumption changes in a "closed model" causes overestimate of induced effects. In the closed model, from which type II multipliers are derived, the increase in outputs will raise income levels, which then causes an increase in household spending. The assumption of a stable population in the closed model also results in exaggeration of the total effects. To correct this exaggeration, IMPLAN uses the "open model" to generate multipliers (termed type III multipliers) different from type II multipliers. IMPLAN type III multipliers are typically five to fifteen percent smaller than type II multipliers (Crompton et al., 1994). Hence, the resulting IMPLAN type III multipliers are more accurate than the type II multipliers.

Due to continuing model improvement and the updating of the I/O tables and database, IMPLAN has becoming more frequently used in both the public and private sectors. For instance, the adoption of the Social Accounting Matrix (SAM) into IMPLAN enables researchers to evaluate the impact of public policies on income distribution. This model is not only used in the U.S., but its flexibility in model construction also allows users to construct their own input- output tables for regions outside of the U.S. such as Mexico (Maki, 1989). Micro IMPLAN also offers the option of constructing a hybrid model if more accurate regional business information is available.

The limitations of IMPLAN are typical of any static economic input-output model. It only presents a "snapshot" of the specified economy at a certain time, which implies that technology and trade relationships are static, prices are constant, and the structure of the economy does not change during the prediction period (Maki et al., 1989). Great caution is required when interpreting the multiplier effect.

The usage of IMPLAN has also been expanded to various study areas such as agriculture, forestry, environmental protection, recreation, tourism, special event, etc. for the purpose of economic impact analysis, project evaluation, and market analysis. For example, Radtke, Detering and Brokken (1985) used this model to compare the estimates of local personal income impacts that might result from increases in the federal grazing fee. Johnson & Sullivan (1993) conducted an economic impact of preserving two Civil War battlefield sites in the Shenandoah Valley of Virginia. The potential economic impact of developing a valley-wide historic battlefield site was assessed in this study. In addition, Kanters and Botkin also used the IMPLAN model to evaluate the economic impact of public leisure services on Illinois' economy (1992).

Previous studies show that the IMPLAN model has been successfully applied to estimate the total economic impact of tourism or recreation activities (Dawson et al., 1993; Turco, 1991; Pedersen, 1990; Kanters & Botkin, 1992). For instance, results from Dawson's (1993) study indicated that increasing the number of visitors to the Great Basin National Park was not the best tourism strategy to increase economic benefits to the local economy. The better strategy for park and community officials would have been to implement strategies for increasing visitor expenditures and the length of stay in the area. IMPLAN has also been more frequently used for studying the economic impacts of special events. For instance, Turco (1991) used this model to estimate the direct and secondary economic impacts on Bernalillo County generated by the 1990 New Mexico State Fair. Output, income, and employment multipliers for each expenditure category specific to Bernalillo County were derived from the IMPLAN model.

Bases For Selecting The Economic Assessment Model

The selection of an appropriate model is not only determined by the accuracy of the model in measurement. Other criteria, such as the characteristics of the economic activity, the study purposes, knowledge of the planners, the economic condition of the study, the generalizability of the model, etc., should be also considered. The suitability of the above mentioned five models (TEIM, TDSM, RIMS II, REMI, and IMPLAN) are compared based on the above criteria.

As one of the purposes of this study is to estimate the total (direct, indirect, and induced) economic effect of a special event, the TEIM and the TDSM models, which were developed to measure the direct economic impact, are apparently not suitable. Therefore, the choices are narrowed down to the RIMS II, REMI, and IMPLAN models. All three models are capable of producing the total economic impacts in terms of total output, income, and number of jobs created.

The accuracy of a model in measuring economic impacts is determined by the solidity of its theoretical framework and the reliability of its data sources. Since all three models use input data from reliable national and local public agencies, only the model construction process will be examined.

RIMS II and IMPLAN are non-survey input-output models; both models are cost-effective and user-friendly. Both models have the limitations which are typical of any input-output model. For instance, they provide only a "snapshot" of an economy at a specific time. Both models assume a linear relationship between inputs and outputs across the economy. Although both models share the same features of I/O model, the flexibility of the IMPLAN model in model

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construction and in regionalization processing makes it a better choice for this study. Both RIMS II and IMPLAN use BEA's national I-O table and BEA's four-digit Standard Industrial Classification (SIC) as the basis for deriving regional coefficients; however, IMPLAN also contains its own 528 industry codes. Regarding the regionalization process, the previous IMPLAN version used the supply-demand pool method, but its designers have adapted a new technique, Regional Purchasing Coefficients, that derives more accurate regional coefficients than supply-demand does. On the other hand, RIMS II still uses the Location Quotient method to derive the regional coefficients.

Theoretically, both IMPLAN and RIMS II are applicable to different geographic areas and different time periods. Empirically, both models have been applied in these circumstances. However, IMPLAN seems to be more flexible than RIMS II for several reasons. First, it allows the users to develop their own transactions tables if the ready-made table is not appropriate. It can also be used in organizing and manipulating databases for less-developed countries and regions with many data limitations (Maki et al., 1989).

The REMI combines the input-output model and the econometric forecasting model in its operation. It uses a 490-sector input-output model to estimate the direct effect and the first round of indirect economic changes; then, the changes in employment, output, and income are passed to an econometric forecasting module which simulates the remaining indirect effect and induced effect to the end of the forecast period. The dynamic nature of the REMI model in tracing the long-term economic impact provides it with a forecasting capacity unavailable in IMPLAN model. However, the complex structure of the REMI model makes it less practical for local communities, where planners usually have limited knowledge about its model construction.

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Both IMPLAN and REMI use the top-down approach to derive local data. This means that national accounts are constructed first, followed by state accounts, and then by county accounts (Crihfield and Campbell, 1991). Both models use the regional purchase coefficients technique (RPCs) to regionalize the technical coefficients. Although both models use BEA's national I/O technical coefficients and the same regionalizing approach (RPCs), the difference in the RPCs estimates causes the difference in multiplier effects between IMPLAN and REMI.

Though the initial economic change can be presented in an I/O table of 490-sectors, the resulting estimates of REMI can only be specified at either the 14-sector or 53-sector level. In the case of 53-sector level, the results are presented in 49 non-farm private industries, three government sectors, and the farm sector. On the contrary, the output estimates of IMPLAN include 528 intermediate sectors, 12 final demand sectors, and 6 primary supply sectors. It has the most disaggregated sectors. This reduces errors due to aggregation problems. Therefore, the IMPLAN model is more flexible in the level of disaggregation. This flexibility qualifies IMPLAN as a suitable model for use regarding various economic activities. In addition, of the above three models, IMPLAN is the only computerized model which shows the transactions table. The function of the transactions table is to illustrate the operation of a regional economy. It presents how industries interact within a regional economy.

Comparing the above five models, one may conclude that IMPLAN has several advantages over the other models for use in this study. In general, IMPLAN is conceptually simple, theoretical solid, flexible in model construction, and provides a suitable level of disaggregation. The IMPLAN model is also cost-effective and it can be applied in any community where the budget is a

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major concern. IMPLAN is also user-friendly; its technical support and updated database are provided by a IMPLAN maintaining group. Furthermore, IMPLAN has the potential to be applied in the areas outside of the U.S.. For all these reasons, therefore, IMPLAN is clearly the best option, and has accordingly been selected for use in the following study.

CHAPTER III

METHODOLOGY

One of the purposes of this study is to assess the spatial distribution of the economic impact generated from festival visitors' expenditures attributed to the 1995 Kodak Albuquerque International Balloon Fiesta (KAIBF). The distribution of the impact among local industries were examined. Detailed analysis on multiplier effects, linkages, and leakages were discussed in this study also. The second purpose is to investigate if spending patterns and travel behavior vary significantly among different segments of visitor groups based on the variables of travel purpose, place of origin, lodging spending, attendance behavior, and primary reason for visit. The final purpose is to examine the economic characteristics of this special event (KAIBF) in terms of labor intensity, import tendency, and employee's compensation. Visitor surveys were conducted to collect several types of information, such as visitors' demographic profile, travel patterns, and expenditures. A questionnaire was designed, and personal interviews were undertaken on the festival grounds by a group of trained interviewers. A statistical analysis was conducted to derive visitors' demographic profile and expenditure information. The IMPLAN model was utilized to estimate the total economic impacts of expenditures made by the balloon festival visitors.

Scope of the Study

The 25th Annual Kodak Albuquerque International Balloon Fiesta was held by KAIBF, Inc., on a 77-acre park leased from the city of Albuquerque, New

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Mexico during October 7th to October 15th. This balloon festival featured a musical concert, four mass ascensions, balloon glow, daily balloon competitions, and sales of food, beverages, and gift items. The majority of the activities started at 6:00 a.m. and continued until 12 noon. The concert, special shapes rodeo and balloon glows, however, were held in the afternoon or evening.

This study is limited to the city of Albuquerque, New Mexico. Only economic impacts produced at the festival grounds and in Albuquerque will be measured. The several limitations of this study include:

1. This study only measures the economic impact of the festival visitors' expenditures; other expenditures made by organizers, sponsors, vendors, event operators, and other agencies are not included. Social, environmental, and other intangible impacts are likewise not covered in this study.

2. This study was subjected to a static input-output analysis. This model assumes a linear and fixed production function, homogeneous industry output, and no resource constraints in the production process. The computerized I/O model, the IMPLAN model, can only present a "snapshot" of the specific economy at a certain time. It assumes that technology and trade relationships are static, prices are constant, and the structures of the economy do not change during the prediction period.

3. As the I/O model does not include an economic sector called "tourism," this industry is not defined in the Standard Industrial Classification nor in the IMPLAN I/O model. Therefore, the reported recreation expenditure data is not usually in the appropriate form to be input into IMPLAN economic impact analysis model. In this study, the selection of suitable IMPLAN industry codes was performed in consultation with several experts in this field. These experts

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include Douglas Olson and Scott Lindall from the Minnesota IMPLAN Group, Inc. and George Morse from Department of Agriculture and Applied Economics, University of Minnesota.

4. It should be noticed that the regional I/O model estimates the effects of an economic activity from only that region, the assumption being that there is no inter-regional trade. The effects spring from the interactions between one region and the adjoining regions are not included. By disregarding these interactions, the model underestimates the impact on the study area.

Data Collection Instrument

Sampling

To represent the appropriate daily proportion of the total visitor attendance in the Balloon Fiesta, the sampling of days, times, and daily sample size for the 1995 KAIBF study was systematically stratified to match Balloon Fiesta attendance figures over the past three years. The sampling days, hours, sample size, and number of interviewers are shown in the following table.

Two-hour sampling periods were randomly selected from all possible operation hours of the festival. The number of interviewers for each sampling period was determined by the sample size. This sampling strategy reduces the possibility of conducting a disproportionate number of interviews at participation times or days when the proportion of a particular group of visitors tends to be high. According to the previous KAIBF study, out-of-state visitors tended to visit on weekends (Turco, 1993). Therefore, sampling only on weekends may cause under-representativeness of in-state visitors (Table 1).

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Table 1   Sampling Time and Sampling Size

Date	Time	Sample Size	Number of Interview
Saturday, 10/7	6:00 - 10:00 a.m.	250	6-7
Sunday, 10/8	5:30 - 8:00 p.m.	150	5
Thursday, 10/12	6:00 - 10:00 a.m.	100	3-4
Friday, 10/13	4:30 - 7:00 p.m.	100	3-4
Saturday, 10/14	6:00 - 10:00 a.m.	150	5

Total   750

The cost of sampling is the major limitation controlling sample size. Increasing the size of a sample may reduce sampling errors, yet it should be noticed that most biases cannot be overcome simply by increasing sample size. The sample size (n=750) of this study is determined by considering an acceptable precision level (margin of error) while also balancing human and financial resource requirements.

Questionnaire Design

A possible problem facing a visitor's expenditure survey is that respondents may not be able to recall all of their expenditures during their trips correctly. Certain kinds of spending may be forgotten. To reduce the recall problem, the expenditure categories listed in the questionnaire included

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visitor's major expenditures made at the festival grounds as well as in the local area. The questionnaire designed for this study was developed by the researcher, under the guidance of Dr. Turco, to estimate the expenditures of festival visitors for all of the possible spending items, such as lodging, meals, groceries, alcoholic beverages, gasoline, retail shopping, entertainment, souvenirs, and films made at the event site and in the local community. Both on-site and off-site spending categories were determined by examining the previous KAIBF study, and others on tourism, recreation, and special events (Dawson et al., 1993; Turco, 1993: Stevens & Rose, 1985). In this study, on-site spending items were categorized as food and beverages, entertainment, souvenirs, and film, while off-site purchasing items included lodging, meal, gasoline, retail shopping, public transportation, film, and entertainment. To avoid excluding any possible expenditures that were not listed on the question, the visitors were asked to list "other" expenditure items they had made in the local community.

There were three components to the questionnaire (See Appendix A): spectator profile, consumer profile, and visitor impact survey. The questionnaire was designed for two different studies, a consumer behavior study and an economic impact study which were both sponsored by KAIBF Inc.. This paper focuses only on the economic impact study, and only information collected from the spectator profile and the visitor economic impact survey will be used. Visitor demographic information includes place of origin, age, gender, race, and income level. The visitor economic impact survey collected information on visitors' travel behavior and expenditures.

Question #2 asked the visitor's primary reason for visiting Albuquerque. In question #3, the nonprimary visitors were asked if they had scheduled their

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visits to coincide with the Balloon Fiesta. This was an attempt to identify the expenditure patterns of primary visitors, unplanned visitors (those happened to be in the area during the festival period), and those who planned their trips to coincide with the Fiesta. Question #4 asked visitors their length of stay in Albuquerque and in New Mexico. Question #5 asked for details of visitors' expenditures in the local area. Question #6 inquired about on-site expenditures, including food, entertainment, film and gifts made by residents and nonresidents. Expenditures for entertainment were primarily associated with paying the admission for the fourteen charged activities at the festival grounds.

The total number of visitors differs from the total attendance due to some repeat visits. Question #7 was an attempt to identify visitor's frequency of attending the festival grounds during the trip. As the survey questions were phrased in the future tense, visitors' expenditures were very likely to be underestimated. Therefore, question #8 asked how many more days the visitor would spend in Albuquerque if the day of the interview were not the last day of their trips. The information from Q #8 can provide a reference for future research. Furthermore, Q #9 was asked in order to identify those residents who would have traveled outside of the area if the event had not occurred (see Appendix A).

Data Collection Procedure

Personal interviews were conducted by a group of graduate students from the University of New Mexico Travel and Tourism Management Association. To reduce personal bias in the data collection procedure, all interviewers were required to attend a training session led by the principal

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investigator, Dr. Douglas Turco, an Associate Professor at Illinois State University.

Interviewers were instructed to approach every 11th adult visitor (age 16+) during 5 of the 9 days of the Balloon Fiesta and ask him or her to participate in the survey. Only those who had not participated the interview previously were qualified for the interview, so those who had previously been interviewed were politely dismissed by the interviewers. As the adult or head of a household was assured to have had better knowledge about each family or group's expenditures on the trip, they were selected to participate the interview.

In this study, systematic samplings of subjects were drawn at nine locations at the event site. Previous studies have shown that similar types of visitors tend to participate in specific kinds of activities, visit at specific times of the day or week, and gather at particular locations at an event site. Therefore, it is necessary to sample subjects not only during different hours and days, but also at different locations. Interviewers were instructed to complete 10 interviews at a designated location and then move to another interviewing location in a predetermined sequence.

Statistical Analysis

The SPSS computer software (Statistical Package for the Social Sciences) was used in this study to analyze the data gathered from the visitor survey. Each questionnaire was screened and coded, and only valid questionnaires were used for analysis. Several variables including purpose of travel, place of origin, lodging spending, attendance behavior, and primary reason for visit were selected to segment the market. Descriptive statistics were

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derived, and Crosstabulation, Chi-square test, and One-way Analysis of Variance (ANOVA) were used to test the hypotheses. The one-way ANOVA was employed to test these hypotheses, while for the multiple range test, the Scheffe test, the most conservative method, was used. The hypotheses are listed below.

1. Ho: There is no significant difference in average expenditure among visitor groups who traveled for different purposes (e.g., Fiesta, visiting relatives or friends, vacation, business, or others)

2. Ho: There is no significant difference in the average length of stay among various visitor groups (e.g., Fiesta, visiting relatives or friends, vacation, business, or others).

3. Ho: There is no significant difference in average expenditure among international visitors, out-of-state visitors, and in-state visitors.

4. Ho: There is no significant difference in average length of stay among international visitors, out-of-state visitors, and in-state visitors.

5. Ho: There is no significant difference in average expenditure between visitors who spent money for lodging and those who did not.

6. Ho: There is no significant difference in average length of stay between the visitors who spent money for lodging and those who did not.

7. Ho: There is no significant difference in average expenditure between repeat visitors and one-time visitors.

8. Ho: There is no significant difference in average length of stay between repeat visitors and one-time visitors.

9. Ho: There is no significant difference in average expenditure among visitors who traveled primarily for the balloon festival, those who timed

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their trips to coincide with the festival, and those who visited for other purposes.

10. Ho: There is no significant difference in average length of stay among visitors who traveled primarily for the balloon festival, those who timed their trips to coincide with the festival, and those who visited for other purposes.

Model Application

The IMPLAN input-output model was used to analyze the total economic impact of the expenditures generated by festival visitors. Given the nature of the IMPLAN model, a suitable county had to be selected to represent the city of Albuquerque. As the majority of Albuquerque is located in Bernalillo County, with only a minor part of it falling in Sandoval County, a regional IMPLAN model was developed by treating Bernalillo County as the local economic region. The county level data used for New Mexico is from 1992. In order to be consistent with the IMPLAN database, the 1995 expenditures were deflated to 1992 dollars using producer price deflators.

The total economic impact on the local area was attributed to two primary sources, the visitors' on-site and off-site expenditures. In this study, the economic impacts caused by the on-site expenditures and off-site expenditures were assessed separately. It should be noticed that the impact resulting from visitors' on-site expenditures is a rougher estimate than that resulting from off-site expenditures, because the leakage of on-site expenditures was not considered in this study. The residency of the vendors mainly determines the leakage of visitors' on-site expenditures. The portion of visitors' on-site

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expenditures received by nonlocal vendors may be carried out of the local area and constitutes a significant leakage of money.

To capture the spatial distribution of the total economic impact generated by balloon festival visitors' expenditures, the visitors were asked only to report their spending at the festival grounds, as well as in the city of Albuquerque. Expenditures made outside of Albuquerque, which causes an economic impact on other regions, is not included in this study. In order to measure the economic impact of visitors' off-site expenditures on the local area, only primary visitor groups' (group I) expenditures were included in the impact estimate. However, to determine the impact generated by on-site spending, two other visitor groups' expenditures were added to the impact analysis to reflect visitors' expenditures more accurately. The first adjustment is to include the on-site spending of nonlocal visitor groups who timed their trips to coincide with the Fiesta (group II) in the economic impact analysis. The second adjustment is to include the expenditures of local residents who stated that they would have traveled outside of the community if the event had not occurred (group III).

The author suggests that the on-site expenditures of the nonlocal visitor groups who planned their trips to coincide with the balloon festival be added to the impact study, because their on-site spending was planned as part of their travel budget. In other words, visiting the festival grounds was not likely to cause a reduction in their spending in the local area during their trips. Traditionally, local visitors' expenditures have been excluded from economic impact assessment, because it was assumed that the expenditures of local visitors are merely a recirculation of money already in the region. Their expenditures would have been limited to the local economy, with or without the balloon festival. However, ignoring all local residents' expenditures may lead to

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an underestimation of impact. For instance, in this study, some local visitors stated that they would have traveled outside the local area if the balloon festival had not occurred. This portion of their expenditures would thus have leaked out the local area if the balloon festival had not occurred. Therefore, the second adjustment in this economic impact study is to include the on-site expenditures made by the local residents who stated that they would have traveled outside of the local community had the balloon festival not occurred.

Visitors' expenditures collected from the visitor survey were submitted to the IMPLAN model, with a list of a 528 industries, to construct a regional I/O model of Bernalillo County and to estimate the total economic impact on the city of Albuquerque. Incorporating the IMPLAN input-output model in this study, which is based on the general equilibrium analysis, the researcher was able to identify the industries which were directly or indirectly affected by one specific economic activity, the KAIBF. The reports generated from the IMPLAN impact analysis were used to assess the economic impacts and to analyze the interindustry relationships. Several regional multipliers (i.e., total output, personal income, total income, and employment multiplier) and some other reports were also produced by the IMPLAN model to analyze the local economic structure. To be specific, the IMPLAN impact analysis attempts to answer the following research questions:

1. What was the spatial distribution of economic impacts resulting from festival visitors' expenditures on the festival grounds and in the city of Albuquerque?

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2. How was the economic impact distributed among local industries? How the local industries were affected directly or indirectly by the expenditures of the festival visitors?

3. How much of the economic impact did each individual spending item account for?

4. What was the interindustry relationship of the economic activity, KAIBF, to the local economy?

5. What were the economic characteristics of the balloon festival (i.e., linkage, leakage, import tendency, labor intensity, employee compensation etc.)?

CHAPTER IV

RESULTS AND DISCUSSION

Based on ticket sales, the 1995 KAIBF attracted about 474,903 visitors, or 13,198 travel parties, for a total of 1,282,239 visits to the festival grounds. Seven hundred and sixty-seven randomly selected visitors were interviewed at the festival grounds, and 751 provided usable responses. These samples were coded and analyzed by the Statistical Package for Social Science (SPSS) program. Visitor demographic profiles, expenditures, and travel information were obtained, and several market segments were also identified and analyzed. The respondents' self-reported expenditures were then used to conduct the economic impact analysis using the IMPLAN model.

Demographic Profiles of Respondents

Demographic Information

Forty-six percent of the respondents were residents of Albuquerque, and the other fifty-four percent of visitors were from elsewhere. Around five percent of the respondents resided in other places of New Mexico (outside of Albuquerque), 47% were out-of-state visitors, and 2% of them were foreign visitors. More out-of-state visitors came from Texas (8%), California (6%), and Colorado (4%) than any other states. The balloon festival attracted international visitors from Canada, Germany, England, France, Austria, and Japan. Around 68% of the respondents were between 25 to 54 years of age. Around 55% of the respondents were male. The majority of the visitors were Caucasian (78%), followed by Hispanic visitors (16%). The family income level of the festival

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visitors was mainly dispersed between $20,000 to $99,999 (80%), with the median between $40,000 to $69,999 (36%) (see Table 2-1).

Table 2-1 The Festival Visitor Profile

Place of origin		Gender	
Albuquerque	46.47%	female	45.10%
New Mexico (not Albuquerque)	4.84%	male	54.90%
Out-of-State	47.06%		
International	1.70%	Race	
		Caucasian	77.90%
Income		Hispanic	15.70%
less than $20,000	9.10%	African American	3.00%
$20,000 to $39,999	24.70%	Native American	1.50%
$40,000 to $69,999	36.00%	Asian American	1.90%
$70,000 to $99,999	19.50%		
$100,000 or more	10.70%	Age	
		18-24	7.70%
		25-34	21.90%
		35-44	25.90%
		45-54	20.20%
		55-64	14.70%
		over 65	8.60%

Visitors' Expenditure Patterns And Travel Behavior

"On-site expenditure" is defined as visitors' expenditures made at the event site. "Off-site expenditures" are the spending made outside of the event grounds, but still within the local area (Albuquerque). Because off-site

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expenditures are not applicable to local (Albuquerque) visitors, only data on on-site expenditures was sought from them. Each local travel party consisted of 3.5 people on the average, attended 2.7 times and spent $106.31 at the event site. Nearly half (47%) of the local visitor groups' total expenditures were spent for purchasing gift items, such as T-shirts, post cards, and calendars. Thirty-five percent of their expenditures was spent for food and beverages.

Based on the average group size (number of nonresident group member) of 3.1 people, the nonlocal travel party visited the festival grounds an average of 2.7 times, stayed 4.7 nights in Albuquerque, and spent $110 at the event site. The on-site expenditures accounted for 11% of nonlocal visitor groups' total expenditures in the city of Albuquerque ($895). Similar to the spending pattern of local travel parties, the major on-site spending items of nonlocal travel parties were gifts (52%), and food and beverages (34%). Lodging, food and beverages purchasing, and retail shopping were the major off-site expenditure items for nonlocal visitors. Out of $895, the average total off-site expenditures in Albuquerque area, $266 (30%) were spent for accommodations, $236 (26%) were used for eating and drinking, $180 (20%) were used for retail shopping, while the rest was spent on gasoline, public transportation, entertainment services, and film (24%).

On average, the nonlocal visitor group stayed 4.7 nights in Albuquerque and 3.9 nights in other places in New Mexico. When asked of their purpose of travel, slightly more than 70% of them identified "attend the Fiesta" as their primary reason for visiting Albuquerque. Sixteen percent of the nonlocal visitors primarily came to visit friends or relatives. The other ten percent stated that they came for vacation, or on business (see Table 2-2).

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Table 2-2   The Average Expenditures of Festival Visitors

	Local Visitors (46%)	Nonlocal Visitors (54%)
On-site (per visitor group)		
Food & Beverages	$ 36.72 (34%)	$37.34 (34%)
Entertainment	$ 11.71 (11%)	$10.58 (9%)
Film	$ 8.10 (8%)	$ 5.27 (5%)
Gift	$ 49.78 (47%)	$56.87 (52%)
Total	$ 106.31(100%)	$110.05(100%)
Off-site		
Lodging		$ 265.83 (30%)
Food & Beverages		$ 235.78 (26%)
Gasoline		$ 60.54 (7%)
Retail Shopping		$ 179.57 (20%)
Ground Transportation		$ 80.59 (9%)
Entertainment		$ 56.77 (6%)
Film		$ 15.50 (2%)
Total		$ 894.58 (100%)
Length of Stay (Days)		
In Albuquerque		4.69
In New Mexico		3.91
Group Size	3.51	3.89
Frequency of Attendance	2.69	2.70
Purpose of Travel		
Fiesta		72%
Friends/relatives		16%
Vacation		6%
Business		5%
Others		1%
		(100%)

Market Segmentation and Expenditure Pattern

Segmented By Travel Purpose

Do people who travel for different purposes differ in their expenditure patterns? All of the nonlocal visitors were included in this segmentation analysis. Based on the purpose of travel, four segments (i.e., the festival, visiting friends or relatives (VFR), vacation, and business) were identified and examined. The results from this study indicate that on-site spending was not significantly different among visitor groups who primarily traveled for the balloon festival, visiting friends and relatives, vacation, and business. However, the results from Scheffe test indicates that the off-site spending for lodging, restaurant, food and grocery, and entertainment were significantly different between the business visitor segment and the other three segments, while the total off-site expenditures were not significantly different among the festival visitor, VFR visitor, and vacation maker segments.

The business travel party were the biggest spenders, followed by the vacation visitor party, while the visiting friends and relatives (VFR) travel party spent the least. The business group spent an average of $1993 in the city of Albuquerque; that is significantly larger than the other three segments. The biggest portion (45%) of their off-site expenditures was spent for lodging ($905), which was significantly higher than the other three segments. The business travel party spent $148 per night for lodging in Albuquerque, which was also significantly higher than the VFR travel party ($44), primary festival travel party ($53), and vacation travel party ($53). The VFR travel party spent much less on restaurant and food purchasing ($173), compared to $237 for the primary festival travel party, $196 for vacation travel party, and $523 for the business

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travel party. It is interesting to note that the vacationers and business visitors spent more money for entertainment and recreation in the local area than the primary festival and VFR visitors. The business travel party spent $171 and vacation travel party spent $130 for entertainment, while the primary festival travel party and VFR travel party spent only $49 and $38, respectively. Though staying roughly the same number of nights in Albuquerque as the other segments did, the vacation party spent more than twice as much on transportation and car rental than the other segments did. Regarding the place of origin, none of the business respondents were from the state of New Mexico, and none of the VFR respondents were international visitors. Furthermore, the group sizes of these four segments were similar. The length of stay and frequencies of attendance did not significantly differ among these four segments (see Table 3).

Segmented By Place of Origin

Three segments were identified based on visitors' residency. These include In-state visitors, out-of-state visitors, and international visitors. The results in Table 4 show that the off-site expenditures (i.e., lodging, shopping, ground transportation, and film) and travel characteristics (i.e., length of stay and frequency of attendance) differ significantly among these three segments. International visitors, who traveled the longest distance, stayed longer in Albuquerque and in the state of New Mexico, visited the festival grounds more frequently, and spent more money at the event grounds and in Albuquerque than other segments.

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Each international travel group attended the festival grounds 5.6 times on the average, and spent a total of $1552 in Albuquerque. In addition to the lodging ($396) and food expenditures ($252), the ground transportation ($364), and shopping ($265) spending also constituted a large portion of the international travel parties' total off-site expenditures, this is relatively higher than that of the other two segments. Regarding on-site expenditures, the international visitors were more likely to purchase gift items than the other segments. They tended to take longer trips, and attended the balloon festival more frequently than the other two segments. They primarily came for the balloon festival (70%) or for a vacation (23%).

The nonlocal in-state visitors stayed much shorter than out-of-state and international visitors. On average, the in-state visitor groups stayed two nights in Albuquerque and less than one night (0.7 night) in the other areas of New Mexico. In contrast to the international visitor group, who on average attended the festival grounds 5.6 times, the in-state visitor groups attended the event ground only 1.8 times. Around 80% of the in-state visitor groups were the primary visitors, 14% of them were visiting their friends and relatives, and none of them came for business. Compared to the other segments, in-state visitors spent the least money on-site and off-site. They spent only $65 at the festival grounds while the international visitor group spent $163. Referring to the total off-site expenditures, the in-state visitor group spent relatively less ($288) than the out-of-state visitor group ($922) and the international visitor group ($1552). The in-state visitor group's lodging expenditure was significantly less than those of the other two segments.

The out-of-state visitor groups stayed an average of 5 nights in Albuquerque and 4 nights in other areas of New Mexico. They attended the

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balloon festival an average of 2.7 times. About three-quarters of the out-of-state visitors stated that "visiting Fiesta" was their primary reason for visiting, while 17% of them said that they mainly came to visit friends and relatives. The average lodging expenditure ($278), food spending ($247), and shopping ($186) of the out-of-state visitor party were significantly larger than those of the in-state visitor party ($65, $100, and $66, respectively).

Table 3   Market Segments & Expenditure Patterns of Nonlocal Visitors
(Segmented by Travel Purpose)

Purpose of Travel	Fiesta(73%)	Friends/relatives(16%)	Vacation(6%)	Business(5%)	Significance level
On-site (Per Visitor Group)					
Food & Beverages	$ 39.05 (34%)	$33.48 (35%)	$ 31.96 (27%)	$ 48.25 (38%)	
Entertainment	$ 10.89 (10%)	$ 3.07 (3%)	$ 17.92 (15%)	$ 6.25 (5%)	
Film	$ 4.93 (4%)	$ 7.62 (8%)	$ 5.83 (5%)	$ 6.88 (5%)	
Gifts	$ 59.63 (52%)	$52.23 (54%)	$ 62.63 (53%)	$ 66.25 (52%)	
Total	$114.50(100%)	$96.40(100%)	$118.34 (100%)	$127.63 (100%)	
Off-site					
Lodging	$245.24 (28%)	$ 219.24 (30%)	$ 223.75 (23%)	$905.33 (45%)	***
Food & Beverages	$237.24 (27%)	$ 172.72 (24%)	$ 195.92 (20%)	$523.13 (26%)	**
Gasoline	$ 54.82 (6%)	$ 84.75 (12%)	$ 87.29 (9%)	$ 55.44 (3%)	
Retail Shopping	$ 94.18 (22%)	$ 121.97 (17%)	$ 138.78 (14%)	$234.38 (12%)	
Ground Transportation	$ 74.37 (9%)	$ 75.20 (10%)	$ 175.71 (18%)	$ 61.56 (3%)	
Entertainment	$ 49.30 (6%)	$ 37.92 (5%)	$ 130.00 (13%)	$171.25 (9%)	***
Film	$ 14.84 (2%)	$ 9.15 (1%)	$ 23.54 (2%)	$ 42.19 (2%)	*
Total	$869.99(100%)	$720.95 (100%)	$974.99 (100%)	$1993.28 (100%)	***
Length of Stay (Days)					
In Albuquerque	4.62	4.95	4.25	6.13	
In New Mexico	3.62	4.30	5.38	5.13	
Attendance	2.89	2.16	2.38	3.43	
Place of Origin					
In-State	8%	7%	9%	0%	
Out-of-State	89%	93%	78%	94%	
International	3%	0%	13%	6%	
	(100%)	(100%)	(100%)	(100%)	

*p<.05.   **p<.01.   ***p<.001.

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Table 4 Market Segments & Expenditure Patterns of Nonlocal Visitors
(Segmented by Place of Origin)

	In-state (9%) Visitors	Out-of-State (87%) Visitors	International (4%) Visitors	Significance Level
On-site				
(per visitor group)				
Food & Beverages	$27.50 (42%)	$37.5(33%)	$57.93 (36%)	
Entertainment	$3.61 (6%)	$11.37 (10%)	$8.93 (5%)	
Film	$4.64 (7%)	$5.08 (5%)	$11.43 (7%)	
Gift	$29.31 (45%)	$58.60 (52%)	$84.64 (52%)	*
Total	$65.06 (100%)	$112.58 (100%)	$162.93 (100%)	*
Off-site				
Lodging	$64.48 (22%)	$278.29 (30%)	$395.77 (26%)	*
Food & Beverages	$99.93 (35%)	$247.26 (27%)	$251.54 (16%)	
Gasoline	$34.14 (12%	$61.67 (7%)	$90.54 (6%)	
Retail Shopping	$66.38 (23%)	$186.05 (20%)	$265.38 (17%)	*
Ground transportation	$7.48 (3%)	$75.89 (8%)	$364.23 (23%)	***
Entertainment	$8.62 (3%)	$58.87 (6%)	$110.23 (7%)	*
Film	$7.41 (2%)	$13.92 (2%)	$73.85 (5%)	***
Total	$288.44 (100%)	$921.95 (100%)	$1551.54 (100%)	***
Length of Stay (Days)				
In Albuquerque	2.00	4.88	6.23	***
In New Mexico	0.69	4.07	6.77	***
Frequency of Attendance	1.82	2.68	5.62	***
Purpose of Travel				
Fiesta	79%	74%	69%	
Friends/Relatives	14%	17%	0%	
Vacation	7%	5%	23%	
Business	0%	4%	8%	
Others				

*p<.05. **p<.01. ***p<.001.

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Segmented by Spending for Lodging

The "length of stay" responses may lead to an optimistic projection for hotel room needs if lodging spending is not considered. Examining visitors' spending for lodging helps to ascertain if the festival visitors stayed in any kind of accommodation during their trips. The result shows that 36% of the nonlocal visitors did not spend anything for lodging in Albuquerque; thus, it would be of particular interest to segment the market by visitor's lodging spending. The responses were classified into two segments. Segment I represents visitors who did spend money for lodging, and segment II represents those who did not.

The results given in Table 5 exhibit no difference in the "length of stay," "frequency of attendance," and "group size" between these two segments. It was found that the variables "place of origin" and "purpose of travel" were significantly associated with "lodging spending." More than half of the in-state visitor groups (56%) spent $0 for lodging, while only 33% of out-of-state visitor groups and 37% of the international visitor groups did not spend anything for lodging. Referring to the purpose of travel, the majority of the primarily festival visitors (65%), vacationers (70%), and business visitors (87%) stayed in some kind of accommodation; however, less than half (47%) of the VFR visitors spent anything for lodging.

Segment I visitor groups spent a total of $1094 during their 4.8 day trip in Albuquerque, while segment II spent a significantly lower amount ($517). The difference in off-site expenditure between these two segments resulted mainly from the different spending for lodging. Visitor groups in segment I spent an average of $416 for lodging, which constituted 38% of their total expenditure in Albuquerque. Segment I also spent significantly more for food and beverages

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($260) than segment II did ($167). In addition, segment I spent significantly more money than segment II on the festival grounds, mainly for purchasing food and gift items.

Segmented by Attendance Behavior

Around 74% of nonlocal visitors attended the festival grounds more than once during their trips (repeat visitors). Less than 30% of them visited the festival grounds only once. It is unknown whether the one-time visitors were different from the repeat visitors in their spending pattern and travel behavior. Hence, the market was segmented into two groups based on the frequency of attendance, segment I representing repeat visitors and segment II standing for one-time visitors.

Segment I, on average, visited the festival ground 3.3 times during their trips. Due to repeated visiting, the average on-site expenditure was much higher for segment I ($121) than segment II ($74). The difference between these two segments in their on-site expenditures was mostly caused by the difference in the purchase of food, beverages and gifts. In fact, segment I spent significantly more than segment II for food, beverages and gifts. Generally, the total off-site expenditures did not differ significantly between these two segments. However, segment I visitor groups spent significantly more than segment II visitor groups on some individual items (i.e., gasoline, retail shopping, and entertainment). The significance level of every expenditure item is shown in Table 6. The results indicate that a significant relationship exists between "attendance behavior" and "purpose of travel." Business visitors were less likely to repeat attendance than the primary festival visitors, VFR visitors,

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and vacation makers. There is also a relationship between "attendance behavior" and "place of origin." The in-state visitors were less likely to repeat their visits than out-of-state and international visitors.

Table 5   Market Segments & Expenditure Patterns of Nonlocal Visitors
(Segmented by Spending for Lodging)

Spending for Lodging	Yes (64%)	No (36%)	Significance Level
On-site (per visitor group)			
Food & Beverages	$40.25 (33%)	$33.14 (36%)	
Entertainment	$13.04 (11%)	$4.83 (5%)	
Film	$6.68 (5%)	$2.93 (3%)	**
Gift	$62.35 (51%)	$50.64 (55%)	
	---------	---------	
Total	$122.28 (100%)	$91.54 (100%)	*
Off-site			
Lodging	$416.40 (38%)	$0.00 (0%)	
Food & Beverages	$260.30 (24%)	$167.15 (32%)	**
Gasoline	$64.34 (6%)	$53.88 (11%)	
Retail Shopping	$196.19 (18%)	$149.15 (29%)	
Ground Transportation	$86.44 (8%)	$71.53 (14%)	
Entertainment	$55.44 (5%)	$58.47 (11%)	
Film	$14.85 (1%)	$16.48 (3%)	
	-----------	---------	
Total	$1093.96 (100%)	$516.66 (100%)	***
Length of Stay (Days)			
In Albuquerque	4.80	4.56	
In New Mexico	3.71	4.30	
Frequency of Attendance	2.79	2.72	
Purpose of Travel			*
Fiesta	65%	35% (100%)	
Friends/relatives	47%	53% (100%)	
Vacation	70%	30% (100%)	
Business	87%	13% (100%)	
Place of Origin			
In-State	44%	56% (100%)	
Out-of-State	67%	33% (100%)	
International	63%	37% (100%)	

*p<.05.   **p<.01.   ***p<.001.

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**Table 6 Market Segments & Expenditure Patterns of Nonlocal Visitors
(Segmented by Attendance Behavior)**

Attendance	Repeat (71%)	Nonrepeat (29%)	Significance Level
On-site(Per Visitor Group)			
Food & Beverages	$ 40.25 (33%)	$27.37 (37%)	**
Entertainment	$ 10.00 (8%)	$10.89 (15%)	
Film	$ 5.66 (5%)	$ 4.00 (5%)	
Gift	$ 65.25 (54%)	$31.67 (43%)	***
total	$121.18 (100%)	$73.93 (100%)	
Off-site			
Lodging	$248.96 (28%)	$300.60 (37%)	
Food & Beverages	$236.07 (26%)	$229.21 (28%)	
Gasoline	$ 69.75 (8%)	$ 35.64 (4%)	**
Retail Shopping	$191.27 (21%)	$138.43 (17%)	*
Ground Transportation	$ 79.70 (9%)	$ 75.49 (9%)	
Entertainment	$ 58.81 (6%)	$ 34.05 (4%)	*
Film	$ 16.41 (2%)	$ 10.92 (1%)	
Total	$900.97 (100%)	$824.34 (100%)	
Length of Stay (Days)			
In Albuquerque	5.11	3.70	***
In New Mexico	4.10	3.29	
Frequency of Attendance	3.30	1.00	
Purpose of Travel			
Fiesta	73%	27% (100%)	
Friends/Relatives	69%	31% (100%)	
Vacation	75%	25% (100%)	
Business	62%	38% (100%)	
Place of Origin			*
In-state	50%	50% (100%)	
Out-of-state	72%	28% (100%)	
International	85%	15% (100%)	

*p<.05. **p<.01. ***p<.001.

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Segmented By The Primary, Coincidental, And Unplanned Visit

Primary visitors were those nonlocal visitors who came to Albuquerque primarily for the balloon festival. Nonprimary visitors include those who indicated the balloon festival as one given reason along with others (coincidental visitors) and those who happened to be in the area and attended the balloon festival while there (unplanned visitors). Hence, in this study, three segments-- primary, coincidental, and unplanned visitors--were identified and analyzed.

Seventy-five percent of nonprimary visitors (coincidental and unplanned visitors) timed their trips to coincide with the Balloon Fiesta, while only 25% of them were unplanned visitors. Even though the difference in the mean off-site expenditure are not statistically significant among these three segments, the visitor groups who planned their trips to coincide with the balloon festival were likely to spend more in Albuquerque ($1000) than the other two segments ($870 and $944, respectively). There is no significant difference in the on-site expenditure among these three segments. Coincidental visitor tended to stay longer in Albuquerque, as well as in other areas of New Mexico, than the primary and unplanned visitors. The statistics show that the average visiting frequency differs significantly among these three segments. The unplanned visitors visited the event site less frequently (1.7 times) than the other two segments (2.9 times and 2.6 times, respectively). The primary visitors and coincidental visitors tended to visit the festival grounds more frequently than unplanned visitors (see Table 7). A significant relationship was found between "length of stay" and "primary purpose for visit."

Table 7 Market Segments & Expenditure Patterns of Nonlocal Visitors
(Segmented by Primary Reason for Visit)

Primary Reason for Visit	Primary (75%)	Coincided (19%)	Unplanned (6%)	Significance Level
On-site(Per Visitor Group)				
Food & Beverages	$ 39.05 (34%)	$ 36.43 (33%)	$24.31 (37%)	
Entertainment	$ 10.89 (10%)	$ 6.97 (6%)	$ 5.38 (8%)	
Film	$ 4.93 (4%)	$ 8.12 (7%)	$ 1.15 (2%)	*
Gift	$ 59.63 (52%)	$ 60.10 (54%)	$34.81 (53%)	
Total	$114.50 (100%)	$111.62(1005)	$65.65(100%)	
Off-site (Per Visitor Group)				
Lodging	$245.24 (28%)	$337.84 (34%)	$311.35 (33%)	
Food & Beverages	$237.24 (27%)	$245.55 (25%)	$212.52 (23%)	
Gasoline	$ 54.82 (6%)	$ 71.87 (7%)	$ 89.81 (10%)	
Retail Shopping	$194.18 (22%)	$139.04 (14%)	$165.96 (18%)	
Ground Transportation	$ 74.37 (9%)	$115.64 (12%)	$ 52.12 (5%)	
Entertainment	$ 49.30 (6%)	$ 71.47 (7%)	$ 98.65 (10%)	
Film	$ 14.84 (2%)	$ 18.14 (2%)	$ 13.85 (1%)	
Total	$869.99 (100%)	$999.55 (100%)	$944.26 (100%)	
Length of Stay (Days)				
In Albuquerque	4.62	5.28	4.41	
In New Mexico	3.62	5.00	4.11	
Frequency of Attendance	2.89	2.60	1.68	*

*p<.05. **p<.01. ***p<.001.

Visitor Expenditures

The festival visitors' expenditure information was collected based on the travel party instead of on the individual visitor. To obtain the visitor expenditure, the number of visitor groups was calculated. The total number of visitor groups was calculated by dividing the total festival attendance by the average visitor group size and frequency of attendance. The number of visitor groups can be derived by the equation $VG = T/G/F$, where VG = number of visitor groups, T = total attendance, G = group size, and F = frequency of attendance. Hence, the total number of local visitor groups = 1,282,239 (total attendance) / 3.5 (average group size) / 2.7 (frequency of attendance) x 46% (percentage of local visitors) = 62,416 (groups).

On-Site Expenditures

According to the respondents, local visitor groups (62,416 groups) spent a total of $6,635,445 at the festival grounds, and nonlocal visitor groups (69,310 groups) spent $7,627,566 at the festival grounds, excluding admission fees (see Tables 8-1 & 8-2). Based on a ticket cost of $3 for each visitor, the local visitor groups and nonlocal visitor groups respectively, contributed additional $1,766,373 and $2,183,958 in ticket expenditures to the event site. Including the admission fee, the local visitor groups spent a total of $8,401,818 and nonlocal visitor groups spent $9,811,524 at the festival grounds. Gifts, food and, drinking were the two largest on-site expenditures for both local visitors and nonlocal visitors. The main gift items sold at the festival grounds consisted of T-shirts, calendars, post cards, badges, etc.. Among the nonlocal visitor

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groups, 45,030 were the primary visitor groups. Including money spent on tickets, the primary visitor groups spent a total of $6,623,913 on the festival grounds (see Table 8-3).

Table 8-1   On-site Expenditures of Local Visitor Groups

Expenditure Item	Expenditure Per Group (# of groups)	Total Amount
Food	$36.72 (62,416)	$2,291,915.50
Entertainment	$11.71 (62,426)	$ 731,008.46
Film	$ 8.10 (62,416)	$ 505,569.60
Gifts	$49.78 (62,416)	$3,107,068.90
Subtotal	$106.31	$6,635,444.70
*Ticket	$ 28.30 (62,416)	$1,766,372.80
Total	$134.61 (62,416)	$8,401,817.70

*Note: The local visitor group's ticket expenditure was derived by multiplying per ticket cost ($3.00) by the average group size (3.51 persons), and by the average attendance (2.69 times).

Table 8-2   On-site Expenditures of Nonlocal Visitor Groups

Expenditure Item	Expenditure Per Group (# of groups)	Total Amount
Food	$37.34 (69,310)	$2,588,035.40
Entertainment	$10.58 (69,310)	$ 733,299.80
Film	$ 5.27 (69,310)	$ 365,263.70
Gifts	$56.86 (69,310)	$3,940,966.60
Subtotal	$110.05 (69,310)	$7,627,565.50
*Ticket	$ 31.51 (69,310)	$2,183,958.10
Total	$141.56 (69,310)	$9,811,523.60

*Note: The nonlocal visitor group's ticket expenditure was determined by multiplying per ticket cost ($3.00) by the average group size (3.89 persons), and by the average attendance (2.70 times).

Table 8-3   On-site Expenditures of Primary Visitor Groups

Expenditure Item	Expenditure Per Group (# of groups)	Total Amount
Food	$ 39.05 (45,030)	$1,758,421.50
Entertainment	$ 10.89 (45,030)	$ 490,376.70
Film	$ 4.93 (45,030)	$ 221,997.90
Gifts	$ 59.63 (45,030)	$2,685,138.90
Subtotal	$114.50 (45,030)	$5,155,935.00
*Ticket	$ 32.60 (45,030)	$1,467,978.00
Total	$147.10 (4,5030)	$6,623,913.00

*Note: The primary visitor group's ticket expenditure was derived by multiplying per ticket cost ($3.00) by the average group size (3.76 person) and by the frequency of attendance (2.89 times).

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Off-Site Expenditures

Nonlocal visitor groups spent a total of $62,003,339 in the city of Albuquerque for lodging, food, transportation, entertainment, shopping, gasoline, and film (see Table 8-4). The primary visitors produced $39,175,649 of expenditures in Albuquerque (see Table 8-5). Lodging expenditures were the payments for accommodations. Food expenditures included the expenses for groceries and for dining at restaurants. Retail shopping consisted mainly of spending for clothing and gifts. Transportation expenditures included all modes of ground transportation spending (bus, train, taxi), and car rental and repair expenses. Entertainment included expenditures paid for admission to theaters, parks, playgrounds, and other recreation or tourism facilities.

The spending for lodging was the largest nonlocal visitor group's expenditure item ($18,424,677), followed by grocery and dining ($16,341,911) and retail shopping ($12,445,996). Primary visitor groups spent $11.04 million for lodging, $10.68 million for food and beverages, and $8.74 million for retail shopping in the local area. The three largest areas of visitor's off-site expenditures (lodging, food & beverages, and retail shopping) made up 76% of the nonlocal visitor groups' total expenditures in Albuquerque, and 78% of those of the primary visitor groups.

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Table 8-4   Off-site Expenditures of Nonlocal Visitor Groups

Expenditure item	Expenditure per group # of groups	Total Amount
Lodging	$265.83 (69,310)	$ 18,424,677.00
Food	$235.78 (69,310)	$ 16,341,911.00
Gasoline	$ 60.54 (69,310)	$ 4,196,027.40
Shopping	$179.57 (69,310)	$ 12,445,996.00
Transportation	$ 80.59 (69,310)	$ 5,585,692.90
Entertainment	$ 56.77 (69,310)	$ 3,934,728.70
Film	$ 15.50 (69,310)	$ 1,074,305.00
Total	$894.58 (69,310)	$62,003,339.00

Table 8-5   Off-site Expenditures of Primary Visitor Groups

Expenditure item	Expenditure per group # of groups	Total Amount
Lodging	$245.22 (45,030)	$11,043,157.00
Food	$237.24 (45,030)	$10,682,917.00
Gasoline	$ 54.82 (45,030)	$ 2,468,544.60
Shopping	$194.18 (45,030)	$ 8,743,925.40
Transportation	$ 74.37 (45,030)	$ 3,34,881.10
Entertainment	$ 49.30 (45,030)	$ 2,219,979.00
Film	$ 14.84 (45,030)	$ 668,245.20
Total	$869.99 (45,030)	$39,175,649.00

Economic Impact

The IMPLAN input-output model was employed to assess the economic impact resulting from the expenditures of festival visitors who attended the 1995

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KAIBF. This economic impact analysis is intended to accomplish the following research objectives:

1. To assess the total economic impact resulting from the balloon festival visitors' expenditures. The subquestions include:

    1a. To measure the spatial distribution of economic impacts resulting from the festival visitors' expenditures at the festival grounds and in the city of Albuquerque. The direct, indirect, and induced effects based on the variables of output, income, and employment will be measured.

    1b. To identify the local industries that are most affected by the expenditures of the balloon festival visitors.

    1c. To estimate the impact of each individual spending item.

    1d. To analyze the interindustry relationship within the local economy as well as the linkage of the balloon festival to other local industries.

2. To examine the economic characteristics of the balloon festival, and to identify the extent to which these characteristics reflect labor intensity, low pay, and low backward linkages.

    To capture the spatial distribution of the total economic impact generated by the festival visitors' expenditures, the off-site expenditures of the primary visitor groups (Table 8-5) as well as the on-site expenditures of the adjusted visitor groups (Table 13-1, 13-2, and 13-3) were used as the initial changes in final demand for executing the Bernalillo County IMPLAN model. Because the IMPLAN does not have an exact matching sector for any of the expenditure items used in this study, appropriate IMPLAN industry codes were selected to match the expenditure items. For the majority of the expenditure items, only one IMPLAN industry code was chosen to match, while two industry codes were assigned for food expenditures and transportation expenditures. Because

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visitors' "food" expenditures usually include purchasing food and drinks from grocery stores and also dining in restaurants, the industry code 450 (food stores) and code 454 (eating and drinking) were both assigned to the food expenditure item in this study. Two industry codes, 440 (transportation services) and code 477 (automobile rental and leasing) were chosen for transportation expenditures because visitors' ground transportation expenditures usually involve all kinds of transportation services (i.e., bus, train, and other kinds of local transportation services) and car rental & leasing. Additionally, as the gift items (i.e., calendars, post cards, T-shirts, badges, etc.) sold in the festival grounds were mainly associated with printing, the IMPLAN industry code 179 (commercial printing) was selected. Code 479, automobile repair and services, was assigned to the gasoline item. The corresponding IMPLAN industry codes are shown in Tables 9-1 & 9-2.

Table 9-1   1990 IMPLAN Database Industry Codes Assigned to
(Off-Site Expenditure Items)

Expenditure Item	IMPLAN Industry Code
Lodging	463 Hotel and Lodging Places
Food	450 Food stores
	454 Eating and Drinking
Gasoline	479 Petroleum and Coal Products
Shopping	124 Apparel Made From Purchased Materials
Transportation	440 Transportation Services
	477 Automobile Rental and Leasing
Entertainment	488 Amusement and Recreation
Film	413 Photographic Equipment and Supplies

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Table 9-2   1990 IMPLAN Database Industry Codes Assigned to
On-Site Expenditure Items

Expenditure Item	IMPLAN Industry Code
Food	450 Food stores
	454 Eating and Drinking
Entertainment	488 Amusement and Recreation
Film	413 Photographic Equipment and Supplies
Gift	179 Commercial Printing

Economic Impact Resulting From Visitors' Off-Site Expenditures

To obtain the total impact of the festival visitors' off-site expenditures on the city of Albuquerque, the primary visitors' spending attributed to the 1995 KAIBF that remained in Albuquerque was analyzed using the IMPLAN model. The information listed in Table 8-5 reveals the means of primary visitors' off-site expenditure items and the total number of the primary visitor groups (45,030 groups). The above information was then used to develop an IMPLAN economic activity scenario for the impact analysis. The IMPLAN model includes 528 sectors in the national model, but only 291 of these sectors are active in the Bernalillo County model. Since the aggregation of a model for impact analysis can result in changes in the impact when sectors are not aggregated, the unaggregated model should be used in measuring the economic impact. In this study, the unaggregated model of 291 sectors was executed on the Micro IMPLAN and, for the results to be manageable, this regional model was

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reduced to 15 sectors afterward by combining the less affected sectors into one sector. All sectors that received more than 2% of the total output were left unaggregated. A total of 15 sectors remained unaggregated and were ranked according to each industry's total amount of output, total income, and employment (see Tables 10-1, 10-2, & 10-3).

The results show that the primary visitors' off-site expenditures generated a total output impact (direct, indirect, and induced impacts)of 54.7 million dollars in the city of Albuquerque. Approximately $26.6 million was generated from direct effect, $23 million from the induced effect, and only $5.2 million from the indirect effect (see Table 10-1). Among the total income of 31.3 million dollars that resulted from the primary visitors' expenditures, 15.7 million dollars were generated directly and $15.7 million were produced by indirect and induced effects (see Table 10-2). Additionally, 750 jobs were added directly, 84 jobs were added indirectly, and 402 jobs were induced by consumer spending to the local area (see Table 10-3).

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Table 10-1   Changes in Output ($MM) (Off-Site Expenditures) Due to KAIBF, Bernalillo County, New Mexico, 1995

	Direct	Indirect	Induced	Total
463 Hotels And Lodging Places	$ 6.86	$ 0.04	$ 0.23	$ 7.13
454 Eating & Drinking	$ 4.21	$ 0.02	$ 1.33	$ 5.56
450 Food Stores	$ 4.60	$ 0.04	$ 0.60	$ 5.24
479 Automobile Repair and Services	$ 1.99	$ 0.10	$ 0.56	$ 2.65
461 Owner-occupied Dwellings	$ 0.00	$ 0.00	$ 2.24	$ 2.24
449 General Merchandise stores	$ 1.71	$ 0.03	$ 0.49	$ 2.22
462 Real Estate	$ 0.00	$ 0.62	$ 1.42	$ 2.03
447 Wholesale Trade	$ 0.40	$ 0.32	$ 1.00	$ 1.72
124 Apparel Made From Purchased Materials	$ 1.45	$ 0.06	$ 0.20	$ 1.71
452 Apparel & Accessory Stores	$ 1.40	$ 0.02	$ 0.27	$ 1.69
488 Amusement And Recreation Services	$ 1.46	$ 0.00	$ 0.20	$ 1.66
490 Doctors And Dentists	$ 0.00	$ 0.00	$ 1.50	$ 1.50
477 Automobile Rental And Leasing	$ 1.32	$ 0.05	$ 0.09	$ 1.46
492 Hospitals	$ 0.00	$ 0.00	$ 1.39	$ 1.39
455 Miscellaneous Retail	$ 0.31	$ 0.04	$ 0.83	$ 1.17
Other Sectors	$ 0.88	$ 3.84	$10.62	$15.34
Total	$26.58	$ 5.16	$22.96	$54.70

KAIBF: Kodak Albuquerque International Balloon Fiesta
Direct: Direct change in total industry output as a result of the visitor's impact.
Indirect: Indirect change in total industry output as a result of the visitor's impact.
Induced: Induced change in total industry output as a result of the visitor's impact.
Total: Sum of direct, indirect, and induced changes in total output as a result of the visitor's impact.

Table 10-2   Changes in Total Income ($MM) (Off-Site Expenditures) Due to KAIBF, Bernalillo County, New Mexico, 1995

	Direct	Indirect	Induced	Total
463 Hotels And Lodging Places	$ 5.10	$ 0.03	$ 0.17	$ 5.30
450 Food Stores	$ 3.36	$ 0.03	$ 0.44	$ 3.83
454 Eating & Drinking	$ 2.16	$ 0.01	$ 0.68	$ 2.85
449 General Merchandise Stores	$ 1.11	$ 0.02	$ 0.32	$ 1.44
461 Owner-occupied Dwellings	$ 0.00	$ 0.00	$ 1.38	$ 1.38
490 Doctors And Dentists	$ 0.00	$ 0.00	$ 1.23	$ 1.23
492 Hospitals	$ 0.00	$ 0.00	$ 1.00	$ 1.00
462 Real Estate	$ 0.00	$ 0.28	$ 0.64	$ 0.92
452 Apparel & Accessory Stores	$ 0.74	$ 0.01	$ 0.15	$ 0.89
488 Amusement And Recreation Services	$ 0.77	$ 0.00	$ 0.11	$ 0.88
447 Wholesale Trade	$ 0.19	$ 0.15	$ 0.48	$ 0.83
479 Automobile Repair and Services	$ 0.60	$ 0.03	$ 0.17	$ 0.80
124 Apparel Made From Purchased Materials	$ 0.63	$ 0.03	$ 0.09	$ 0.74
455 Miscellaneous Retail	$ 0.16	$ 0.02	$ 0.42	$ 0.60
477 Automobile Rental And Leasing	$ 0.44	$ 0.02	$ 0.03 ·	$ 0.48
Other Sectors	$ 0.41	$ 2.10	$ 5.65	$ 8.16
Total	$ 15.65	$ 2.71	$ 12.95	$ 31.32

KAIBF: Kodak Albuquerque International Balloon Fiesta
Direct: Direct change to total income as a result of the visitor's impact.
Indirect: Indirect change to total income as a result of the visitor's impact.
Induced: Induced change to total income as a result of the visitor's impact.
Total: Sum of direct, indirect, and induced changes to total income as a result of the visitor's impact.

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Table 10-3 Changes in Employment (off-site expenditures) Due
to KAIBF, Bernalillo County, New Mexico, 1995

	Direct	Indirect	Induced	Total
463 Hotels And Lodging Places	217.98	1.31	7.16	226.44
454 Eating & Drinking	155.73	0.78	49.02	205.53
450 Food Stores	142.12	1.16	18.68	161.96
449 General Merchandise Stores	58.73	0.86	16.74	76.33
488 Amusement And Recreation Services	46.21	0.00	6.39	52.59
452 Apparel & Accessory Stores	42.18	0.50	8.22	50.90
455 Miscellaneous Retail	10.21	1.29	27.59	39.09
492 Hospitals	0.00	0.00	27.25	27.26
124 Apparel Made From Purchased Materials	22.76	0.97	3.15	26.88
447 Wholesale Trade	5.71	4.52	14.27	24.49
479 Automobile Repair and Services	17.91	0.87	5.07	23.84
462 Real Estate	0.00	6.17	14.21	20.38
490 Doctors And Dentists	0.00	0.00	20.22	20.22
477 Automobile Rental And Leasing	16.46	0.57	1.07	18.10
461 Owner-occupied Dwellings	0.00	0.00	0.00	0.00
Other Sectors	14.47	65.16	182.83	262.73
Total	750.47	84.16	401.87	1236.74

KAIBF: Kodak Albuquerque International Balloon Fiesta
Direct: Direct change to employment as a result of the visitor's impact.
Indirect: Indirect change to employment as a result of the visitor's impact.
Induced: Induced change to employment as a result of the visitor's impact.
Total: Sum of direct, indirect, and induced changes to employment as a result of the visitor's impact.

The IMPLAN impact analysis reports can show the distribution of the overall impacts. It can indicate which sectors in the region were affected, and to what magnitude. Ranked in order, the most affected sectors (those receiving more than 2.0% of the total amount of output) were hotel & lodging places, eating & drinking, food stores, automobile repair and services, owner-occupied dwellings, general merchandise stores, real estate, wholesale trade, apparel

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made from purchased materials, apparel & accessory stores, amusement & recreation, doctors & dentists, automobile rental and leasing, hospitals, and miscellaneous retail.

The hotel and lodging places sector received the largest impact. It received $7.13 million of output, $5.3 million dollars of total income, and 226 job opportunities. Eating & drinking gained $5.56 million of output, $2.85 million of total income, and 206 jobs, while food stores received $5.24 million of output, $3.83 million of total income, and 162 jobs. Although receiving less output and employment impacts than eating & drinking, food stores obtained more total income than eating & drinking did. Automobile repair and services received $2.65 million of output, but only $0.80 million of total income. One of the ground transportation-related industry, the automobile rental and leasing, gained $1.46 million of output and $0.48 million of total income. Another ground transportation-related industry, the transportation services sector, gained only $0.35 million of output, $0.19 million of total income, and 6 jobs. Since the impact on the transportation services sector was not significant enough, it was aggregated with other industries.

Unexpectedly, owner-occupied dwelling and real estate were significantly affected by festival visitors' expenditures. The owner-occupied dwellings received $2.24 million of total output and $1.38 million of total income, but no job were created. The real estate sector obtained $2.03 million of output and $0.92 million of total income. Combining the listed shopping-related industries (apparel made from purchased materials, wholesale trade, general merchandise stores, apparel & accessory stores, and miscellaneous retail), they received $8.51 million dollars of output, $4.5 million dollars of total income, and 218 employment opportunities. Amusement and recreation

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services obtained $1.66 million of output, $0.88 million of total income, and 53 employment opportunities. The photographic equipment and supplies sector did not account for more than 2% of the total output; therefore, it was aggregated with the other less-affected sectors. The photographic equipment and supplies received only $0.04 million of output.

To know how the local industries were affected by each individual expenditure item, and how much of the total output, total income, and number of jobs were accounted for by each individual expenditure item, seven different scenarios, based on each kind of expenditure item, were constructed to measure the economic impact produced by each individual spending item. The impact estimates for each one of the off-site expenditures are listed in Tables 11-1, 11-2, 11-3, 11-4, 11-5, 11-6, and 11-7. The primary visitors' largest expenditure item, spending for lodging, contributed $14.33 million of output, $9.29 million of total income and 350 employment opportunities to the city of Albuquerque. The second largest expenditure item, food, generated $18.77 million of output, $11.06 million of income, and 469 jobs in the local area. Retail shopping expenditures produced 10.81 million output, 5.85 million dollars of total income and 230 jobs. Visitors' gasoline expenditures generated $3.5 million of output, $1.43 million of income, and 45 employment opportunities. Transportation expenditures generated a total output of $3.01 million and a total income of $1.33 million that was relatively small comparing to its initial change (3.35 million). The primary visitor groups' entertainment expenditures added a total output of $3.44 million, a total income of $1.89 million, and 80 employment opportunities to the local community. Visitors' film expenditures also generated $0.77 million of output, $0.43 million of total income, and 17 employment opportunities.

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Most of the balloon festival-related industries had small indirect effects; however, they contained considerably high induced effects. The increase in household spending caused by the increase of visitors' lodging expenditures increased outputs in other local industries, such as owner-occupied dwelling, real estate, doctors & dentists, hospitals, and eating & drinking. The changes caused by visitors' food expenditures also generated outputs in owner-occupied dwellings, real estate, doctors & dentists, hospitals, and wholesale trade. The injection of shopping expenditures increased the direct needs of general merchandise stores, apparel & accessory stores, and wholesale trade. The increases of outputs in owner-occupied dwellings and real estate were caused by the increase of households' spending (the induced effect). The gasoline expenditures indirectly increased the output sale of real estate and owner-occupied dwellings. The total effect caused by the changes in transportation services expenditures was relatively small compared to the above four expenditure items. Except for sector #440 (transportation services) and sector #477 (automobile rental and leasing), none of the other local sectors were significantly affected by the transportation expenditures. Local industries that were indirectly affected by the initial changes in entertainment expenditures were real estate and owner-occupied dwellings.

Table 11-1   Total Impact From Lodging Expenditures (Off-Site Expenditures)

	Direct	Indirect	Induced	Total
Total Output ($MM)	6.86	0.97	6.50	14.33
Total Income ($MM)	5.10	0.53	3.67	9.29
Employment (# of Jobs)	218	18	114	350

Table 11-2 Total Impact From Food Expenditures (Off-Site Expenditures)

	Direct	Indirect	Induced	Total
Total Output ($MM)	8.85	1.23	8.70	18.77
Total Income ($MM)	5.52	0.63	4.90	11.06
Employment (# of Jobs)	299	18	152	469

Table 11-3 Total Impact From Gasoline Expenditures (Off-Site Expenditures)

	Direct	Indirect	Induced	Total
Total Output ($MM)	1.99	0.68	0.82	3.50
Total Income ($MM)	0.61	0.35	0.46	1.43
Employment (# of Jobs)	18	12	14	45

Table 11-4 Total Impact From Shopping Expenditures (Off-Site Expenditures)

	Direct	Indirect	Induced	Total
Total Output ($MM)	5.35	1.19	4.27	10.81
Total Income ($MM)	2.81	0.63	2.41	5.85
Employment (# of Jobs)	137	18	75	230

Table 11-5 Total Impact From Transportation Expenditures (Off-Site Expenditures)

	Direct	Indirect	Induced	Total
Total Output ($MM)	1.65	0.53	0.83	3.01
Total Income ($MM)	0.61	0.25	0.47	1.33
Employment (# of Jobs)	22	8	14	45

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Table 11-6 Total Impact From Entertainment Expenditures (Off-Site Expenditures)

	Direct	Indirect	Induced	Total
Total Output ($MM)	1.49	0.46	1.49	3.44
Total Income ($MM)	0.79	0.26	0.84	1.89
Employment (# of Jobs)	46	8	26	80

Table 11-7 Total Impact From Film Expenditures (Off-Site Expenditures)

	Direct	Indirect	Induced	Total
Total Output ($MM)	0.37	0.10	0.30	0.77
Total Income ($MM)	0.21	0.05	0.17	0.43
Employment (# of Jobs)	10	2	5	17

Economic Impact Resulting From Visitors' On-Site Expenditures

To capture the spatial distribution of the total economic impact generated by the festival visitors' expenditures, visitors' on-site spending as well as off-site spending were assessed by employing the IMPLAN impact analysis. In estimating visitors' on-site expenditures in the local area, two other visitor groups' expenditures, in addition to the primary visitors' expenditures (group I), were added to the impact analysis to reflect visitors' expenditures more accurately. The first adjustment was to include the on-site spending of the nonlocal visitor groups that planned their trips to coincide with the Fiesta (group II) in the economic impact analysis. Another adjustment was to include the expenditures of local residents who stated that they would have traveled outside of the community if the balloon festival had not occurred (group III).

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The total groups of nonprimary visitors who timed their trips to coincide with the balloon festival was calculated as 15,031 groups, and the total number of local visitor groups who would have left town on a pleasure trip if the event had not occurred is 5,788 groups. Total on-site expenditures ($5,155,935) generated by the primary visitors have already been shown in Table 8-3. The on-site spending generated by groups I, groups II, and group III were $5,155,935, $1,677,649 and $927,353, respectively. This detailed information was given in Tables 12-1, 12-2, and 12-3. Combining the on-site expenditures made by group I, group II, and group III, balloon festival visitors generated $7,760,937 of total on-site expenditures. This included $2.53 million of food expenditures, $0.91 million of entertainment spending, $0.38 million of film purchasing, and $3.94 million of gift expenditures.

Table 12-1   On-site Expenditures of Group I Visitors

Expenditure Item	Expenditure Per Group (# of groups)	Total Amount
Food	$ 39.05 (45,030)	$ 1,758,421.50
Entertainment	$ 10.89 (45,030)	$ 490,376.70
Film	$ 4.93 (45,030)	$ 221,997.90
Gifts	$ 59.63 (45,030)	$ 2,685,138.90
Total	$114.50 (45,030)	$ 5,155,935.00

* Group I comprised the festival visitors whose primary visit was for the balloon festival.

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Table 12-2   On-site Expenditures of Group II Visitors

Expenditure item	Expenditure per Group	Amount
Food	$ 36.43 (15,031)	$ 547,579.33
Entertainment	$ 6.97 (15,031)	$ 104,766.07
Film	$ 8.12 (15,031)	$ 122,051.72
Gift s	$ 60.10 (15,031)	$ 903,363.00
Total	$111.62 (15,030)	$1,677,648.60

* Group II represents the nonlocal visitors who timed their trips to coincide with the balloon festival.

Table 12-3   On-site Expenditures of Group III Visitors

Expenditure item	Expenditure per Group	Amount
Food	$ 38.19 (5,788)	$ 221,043.72
Entertainment	$ 53.92 (5,788)	$ 312,088.96
Film	$ 6.60 (5,788)	$ 38,201.00
Gifts	$ 61.51 (5,788)	$ 356,019.88
Total	$160.22 (5,788)	$ 927,353.36

* Group III represents the local festival visitors who would have left town had the balloon festival not occurred in Albuquerque.

The on-site expenditures of groups I, II, and III were used to measure the total economic impact on the festival grounds. The means of every kind of expenditure made by each group were used to develop IMPLAN scenarios for the economic impact analysis. The findings show that the primary visitor groups

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(group I) accounted for $6.49 million of total output, which included $3.1 million of direct effect, $0.59 million of indirect effect, and $2.8 million of induced effect. Primary visitor groups generated $3.72 million of total income and 151 jobs in the local area (Table 13-1). Group II produced $2.06 million of total industry output, $1.18 million of total income, and 48 employment opportunities (Table 13-2). Group III created a total output of $1.23 million, $0.69 million of total income, and 29 jobs (Table 13-3). Combining the impacts generated by the above three visitor groups, the on-site expenditures of balloon festival visitors contributed $9.77 million of output, $5.59 million of total income, and 228 jobs (Table 13-4).

Table 13-1   Total Impact Made by The On-Site Expenditures of Group I

	Direct	Indirect	Induced	Total Impact
Total Output ($MM)	3.10	0.59	2.80	6.49
Total Income ($MM)	1.82	0.32	1.58	3.72
Employment (# of Jobs)	93	9	49	151

* Group I : primary visitor group

Table 13-2   Total Impact Made by The On-Site Expenditures of Group II

	Direct	Indirect	Induced	Total Impact
Total Output ($MM)	0.99	0.19	0.88	2.06
Total Income ($MM)	0.58	0.10	0.50	1.18
Employment (# of Jobs)	30	3	15	48

*Group II: nonlocal visitors who planned their trips to coincide with the festival

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Table 13-3   Total Impact Made by The On-Site Expenditures of Group III

	Direct	Indirect	Induced	Total
Total Output ($MM)	0.57	0.13	0.53	1.23
Total Income ($MM)	0.32	0.07	0.30	0.69
Employment (# of Jobs)	17	2	9	29

* Group III: the local festival visitors who would have left town if the
   balloon festival had not occurred in Albuquerque.

Table 13-4 Total Impact of On-Site Expenditures After Adjustment

	Direct	Indirect	Induced	Total
Total Output ($MM)	4.66	0.91	4.21	9.77
Total Income ($MM)	2.72	0.49	2.37	5.59
Employment (# of Jobs)	140	14	73	228

*Adjusted visitors is composed of groups I, II, and III.

Regional Multipliers and Interindustry Relationships

Multiplier effect denotes the interdependency of a given industry on a regional economy. The output multipliers provided by IMPLAN Inverse Report #602 (see Table 14-1) indicates that the increased sales in shopping-related industries (miscellaneous retail, apparel & accessory stores, and general merchandise stores) have high impact per dollar of output on the local economy. The increased sales from traditional tourism industries such as amusement & recreation services, eating & drinking, and hotels & lodging places also have high impact, per unit of output, on the local area. On the

contrary, transportation services, automobile rental & leasing, and photographic equipment & supplies are likely to have less impact, per unit of output, on the local economy. The income multipliers given in Table 14-2 suggest that per dollar of income generated by miscellaneous retail, amusement & recreation services, eating & drinking, apparel & accessory stores, automobile repair and services, automobile rental and leasing, and general merchandise stores have higher income impact on the local economy than the majority of local industries. For every one dollar of income generated in the local area by the amusement & recreation services sector, another $1.39 of income will be created by secondary effects (indirect effect and induced effect). For every one dollar of income produced by the eating & drinking industry, an additional $1.39 will be generated. However, hotels & lodging places and food stores have a relatively small income multiplier effect on local economy. The income multiplier rate of automobile rental & leasing is higher than the average rate of the local industries.

Compared to the other industries, the owner-occupied dwelling industry has the highest impact per job created (see Table 14-3). This is mainly caused by its very low direct effect (nearly equal to 0.00). Photographic equipment & supplies, automobile repair & services, real estate, and automobile rental & leasing have high employment multiplier rates. For every job created by lodging, eating & drinking, food stores, or amusement & recreation services, approximately only 0.5 jobs will be created. Their employment multiplier rates are relatively smaller than most of the local industries. Table 14-3 shows that some of the tourism industries (amusement & recreation, hotels & lodging, eating & drinking) tend to have a high direct employment multiplier effect.

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The injection of the expenditures of balloon festival visitors stimulated the production changes of other local industries to meet the additional output changes. It also increased the income and the consumption of the households in Albuquerque. The indirect and the induced effects indirectly increased the outputs of other local industries, such as wholesale trade, general merchandise stores, apparel & accessory stores, miscellaneous retail, owner-occupied dwellings, real estate, doctors & dentists, and hospitals.

The indirect effect indicates the dependency of a given industry on local input suppliers. In other words, a large indirect effect implies high backward linkages to local industries. The output multiplier report shows that the major traditional tourism industries (food stores, eating & drinking, lodging) had lower indirect effects than the average of local industries, while other tourist-related industries such as amusement & recreation services, transportation services, and automobile rental & leasing had stronger backward linkages to the local economy than most of the local industries. Some of the shopping-related industries such as miscellaneous retail, apparel & accessory stores, and general merchandise stores had high backward linkages to local industries.

The induced effect indicates the levels of value added and total income created by per unit of output. The higher the income the households earned from this festival, the more money will be spent to generate more output, thus producing a higher induced effect. The report shows that the shopping-related industries, such as miscellaneous retail, general merchandise stores, and apparel & accessory stores, were likely to have higher induced effects than other local industries. Some of the traditional tourism industries (eating & drinking, food stores, amusement & recreation services, and hotels & lodging places) had relatively high induced effects compared to other local industries.

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However, other tourism industries such as transportation services and automobile rental & leasing had lower than average induced effects.

Table 14-1   Regional Multiplier -- Output Multiplier ($MM 1992)

	Direct	Indirect	Induced	Type III
455 Miscellaneous Retail	1.000	.323	1.010	2.334
488 Amusement And Recreation Services	1.000	.308	.968	2.276
454 Eating & Drinking	1.000	.173	1.052	2.225
452 Apparel & Accessory Stores	1.000	.305	.918	2.223
449 General Merchandise Stores	1.000	.187	.988	2.175
463 Hotels And Lodging Places	1.000	.139	.901	2.040
450 Food Stores	1.000	.105	.862	1.967
440 Transportation Services	1.000	.259	.550	1.809
447 Wholesale Trade	1.000	.305	.503	1.807
477 Automobile Rental And Leasing	1.000	.317	.458	1.775
479 Automobile Repair and Services	1.000	.343	.402	1.744
492 Hospitals	1.000	.154	.585	1.739
462 Real Estate	1.000	.314	.378	1.693
124 Apparel Made From Purchased Materials	1.000	.163	.478	1.641
413 Photographic Equipment & Supplies	1.000	.298	.291	1.589
179 Commercial Printing	1.000	.197	.391	1.588
490 Doctors And Dentists	1.000	.120	.405	1.523
461 Owner-Occupied Dwellings	1.000	.113	.029	1.142
Other Sectors	1.000	.210	.613	1.823

Direct: Direct change in total output (millions of dollars) per million-dollar change in final demand.
Indirect: Indirect effect of output (millions of dollars) per million-dollar change in final demand.
Induced: Household expenditure effect (millions of dollars) per million-dollar change in final demand.
Total: Sum of direct, indirect, and induced effects per million-dollar change in final demand.
Type III: Direct, indirect, and induced changes in output per direct dollar in output demanded.
*Source: IMPLAN Inverse Report #602 (1995).

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Table 14-2 Regional Multiplier -- Total Income Multiplier

$MM 1992

	Direct	Indirect	Induced	Type III
455 Miscellaneous Retail	.510	.181	.589	2.509
488 Amusement And Recreation Services	.528	.169	.565	2.389
454 Eating & Drinking	.512	.095	.613	2.385
452 Apparel & Accessory Stores	.528	.171	.536	2.339
479 Automobile Repair and Services	.304	.178	.227	2.334
477 Automobile Rental And Leasing	.329	.166	.267	2.318
449 General Merchandise Stores	.649	.105	.576	2.049
179 Commercial Printing	.350	.108	.228	1.960
447 Wholesale Trade	.485	.170	.293	1.955
440 Transportation Services	.531	.139	.322	1.869
462 Real Estate	.451	.163	.221	1.851
124 Apparel Made From Purchased Materials	.433	.086	.279	1.840
463 Hotels And Lodging Places	.743	.078	.526	1.812
450 Food Stores	.730	.059	.503	1.769
413 Photographic Equipment & Supplies	.474	.172	.170	1.723
492 Hospitals	.724	.083	.321	1.586
490 Doctors And Dentists	.819	.068	.235	1.371
461 Owner-Occupied Dwellings	.615	.057	.017	1.120
Other Sectors	.606	.119	.357	1.786

Direct: Direct change in employment, proprietor and other property-type income (millions of dollars) per million-dollar change in final demand.

Indirect: Indirect change in employment, proprietor and other property-type income (millions of dollars) per million-dollar change in final demand.

Induced: Household expenditure effect (millions of dollars) on employment, proprietor, and other property-type income per million-dollar change in final demand.

Type III: Direct, indirect, and induced change in employment, proprietor, and other property-type income per direct dollar change in employment, proprietor, and other property-type income.

*Source: IMPLAN Inverse Report #604 (1995).

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Table 14-3   Regional Multiplier -- Employment Multiplier

$MM 1992

	Direct	Indirect	Induced	Type III
461 Owner Occupied Dwellings	.00	1.57	.50	2.90
413 Photographic Equipment & Supplies	5.88	5.33	4.95	2.75
479 Automobile Repair and Services	9.01	6.12	7.04	2.46
462 Real Estate	10.02	4.52	6.47	2.10
477 Automobile Rental And Leasing	12.43	5.16	7.83	2.05
447 Wholesale Trade	14.27	5.05	8.60	1.96
179 Commercial Printing	11.97	3.06	6.69	1.81
440 Transportation Services	16.79	3.96	9.35	1.79
124 Apparel Made From Purchased Materials	15.75	2.61	8.17	1.68
488 Amusement And Recreation Services	31.60	4.80	16.56	1.68
452 Apparel & Accessory Stores	30.13	4.39	15.70	1.67
490 Doctors And Dentists	13.45	2.06	6.90	1.67
455 Miscellaneous Retail	33.33	4.61	17.28	1.66
492 Hospitals	19.64	2.34	10.00	1.63
449 General Merchandise Stores	34.43	2.69	16.89	1.57
454 Eating & Drinking	36.97	2.57	17.99	1.56
463 Hotels And Lodging Places	31.77	2.11	15.41	1.55
450 Food Stores	30.90	1.51	14.74	1.53
Other Sectors	19.64	3.57	10.48	1.72

Direct: Direct change in jobs per million-dollar change in final demand.

Indirect: Indirect effect of jobs (millions of dollars) per million-dollar change in final demand.

Induced: Household expenditure effect (millions of dollars) on jobs per million-dollar change in final demand.

Type III: Direct, indirect, and induced change sin jobs per direct job change.

*Source: IMPLAN Inverse Report #606 (1995).

The LPCs and The Impact Estimates

The LPC (Local Purchase Coefficient) specifies what proportion of the economic activity takes place in the local area. Two options are provided by

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IMPLAN when performing the impact analysis. If LPC=N (LPC=1) is selected, the model assumes 100% of the economic activity occurs locally. It is assumed that all of the expenditures are spent in the local area, and no leakage occurs in the first round of the production process. In reality, however, the LPC is usually less than 1. It is common for local industries to purchase products or services from elsewhere to support local production, even in the first round. However, it should be noticed that most of the service-related industries tend to have a higher LPC than the manufacturing industries. In fact, their LPCs could be very close to 1.00. In this study, to avoid overestimating the economic impact, the LPCs were determined to be equal to the RPCs (Regional Purchasing Coefficients) for all of the industries. Yet, the results assessed from that LPC=1 are also provided for comparison (see Table 15-1). The difference in the impact estimates resulting from LPC=1 and LPC=RPC are listed individually in Tables 15-2 and 15-3. The differences in the impact estimates for each of the five largest visitor expenditure items are also listed in Table 15-4.

The assignment of the LPC rate can determine the impact estimates. The figures in Table 15-1 show that the total output generated by off-site expenditures is $70.40 million when the LPC is equal to 1, while only $54.7 million (Table 10-1) of output is created if the LPC rate is equal to the RPC rate. When the LPC is assigned as 1, an additional $15.7 million dollars of output sales and $8.6 million of total income would have been generated for the local area by the off-site expenditures of festival visitors. When the LPC was assigned as 1, an additional $4.65 million of output, $2.22 million of total income, and 77 jobs would have been added to the total impact resulting from on-site visitors' expenditures. The differences in total output and total income generated by the lodging expenditures were $3.57 million and $2.31 million,

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respectively, when different LPC values are assigned. The differences in the resulting impacts attributed to the shopping expenditures is large when different LPC values are assigned. The differences were $5.62 million in output sales and $2.71 million dollars in total income. With the total amount of output sales of $3.01 million and $1.33 million of total income, the impacts produced by the transportation expenditure are considerably larger when LPC is equal to 1 than that LPC = PRC. They are $2.44 million of difference in output sales and $1.28 million of difference in total income when different LPC values were assigned.

Table 15-1   Economic Impact Attributed to the Visitors' Off-Site Expenditures When Local Purchasing Coefficient (LPC) Equals to 1

	Direct	Indirect	Induced	Total
Total Output ($MM)	34.87	6.77	28.77	70.40
Total Income ($MM)	20.13	3.54	16.22	39.89
Employment (# of Jobs)	936	110	503	1549

Table 15-2   The Difference in Total Impact Estimate Attributed to Visitors' Off-Site Expenditures When a Different LPC Rate Is Assigned

	Direct	Indirect	Induced	Total
Total Output ($MM)	8.29	1.61	5.80	15.70
Total Income ($MM)	4.48	0.83	3.27	8.57
Employment (# of Jobs)	186	26	101	312

Note: the figures were derived from (LPC=1) minus (LPC=RPC)

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Table 15-3   The Difference in Total Impact Estimate Attributed to Visitors' On-Site Expenditures When a Different LPC Rate Is Assigned

	Group I	Group II	Group III	Total
Total Output ($MM)	3.11	1.04	0.49	4.65
Total Income ($MM)	1.48	0.50	0.24	2.22
Employment (# of Jobs)	51	17	9	77

Note: the figures were derived from (LPC=1) minus (LPC=RPC)

Table 15-4   The Difference in Impact Estimate, When LPC=1 and LPC=RPC, Attributed to The Visitors' Off-Site Expenditure Items

	Total Output ($MM)	Total Income ($MM)	Employment (# of Jobs)
Lodging	3.57	2.31	87
Food	2.34	1.40	58
Shopping	5.62	2.71	96
Transportation	2.44	1.28	40
Entertainment	0.72	0.39	17
Gasoline	0.39	0.16	5
Film	0.52	0.27	6

Note: the figures were derived from (LPC=1) minus (LPC=RPC)

Import Tendency

The import tendency of an industry provides some information about leakage. To know the import tendency of industries in the Albuquerque

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regional economy, the RPCs (Regional Purchase Coefficients) of the local industries were derived in this study. RPC is defined as the proportion of gross regional commodity demand fulfilled by commodities supplied by producers within the region (Siverts et al., 1990). The import rate is determined by 1 - RPC; thus, the higher the RPC rate of an industry, the lower its import propensity. The higher the import propensity of an industry, the higher its leakage. The RPCs of the top fifteen affected industries are presented in Table 16. The findings show that most of the tourism related industries (i.e., eating and drinking, automobile rental and leasing, automobile repair and services, food stores, amusement and recreation services, and the retail shopping-related industries) had a import propensity lower than 0.2.

Table 16   Import Propensity

Commodity Sector	RPC	1-RPC
490 Doctors And Dentists	.95	.05
454 Eating & Drinking	.90	.10
477 Automobile Rental And Leasing	.90	.10
479 Automobile Repair and Services	.90	.10
450 Food Stores	.88	.12
452 Apparel & Accessory Stores	.88	.12
455 Miscellaneous Retail	.88	.12
492 Hospitals	.87	.13
488 Amusement And Recreation Services	.83	.17
463 Hotels And Lodging Places	.80	.20
449 General Merchandise Stores	.72	.28
461 Owner-Occupied Dwellings	.70	.30
462 Real Estate	.70	.30
447 Wholesale Trade	.65	.35
124 Apparel Made From Purchased Materials	.40	.60

*Source: IMPLAN 1992 Bernalillo County commodity balance sheet.

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Average Payment

The average of employees' annual salary/wage is derived by dividing the employee's compensation by the employment (number of jobs) shown in the IMPLAN report #404, the Regional Final Payment report. The annual salary, wages or benefits received by the employees who worked in the food, lodging, entertainment, ground transportation, and shopping-related industries were lower than the average annual salary/wages of all other local industries ($25,000).

Table 17   Annual Employee's Salary/Wage

	Annual average salary/wage
490 Doctors And Dentists	$ 44,000
447 Wholesale Trade	$ 31,500
492 Hospitals	$ 29,000
124 Apparel Made From Purchased Materials	$ 19,000
450 Food Stores	$ 18,600
449 General Merchandise Stores	$ 16,000
479 Automobile Repair and Services	$ 15,100
463 Hotels And Lodging Places	$ 15,000
477 Automobile Rental And Leasing	$ 13,000
452 Apparel & Accessory Stores	$ 12,000
455 Miscellaneous Retail	$ 10,870
454 Eating & Drinking	$ 10,700
488 Amusement And Recreation Services	$ 8,000
462 Real Estate	$ 6,450
461 Owner-Occupied Dwellings	$ 0
Other Sectors	$ 25,000

Source: IMPLAN aggregated Regional Final Payment report, Bernalillo County, New Mexico, 1992.

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Table 17 indicates that none of the average annual salary/wages of workers in the traditional tourism industries, such as amusement & recreation services, eating & drinking, hotels & lodging places, and automobile rental & leasing, were higher than $20,000. Among them, the employees in the amusement and recreation services industry received the lowest annual payment ($8,000), followed by eating and drinking ($10,700), automobile rental & leasing ($13,000), and lodging industry ($15,000). The annual employee's payment for the shopping-related industries varied from $10,870 (miscellaneous retail) to $31,500 (wholesale trade).

Labor Intensity

The total number of employees required by each unit of industry output for these fifteen industries is presented in Table 18. The employment multipliers derived from Micro IMPLAN are not able to reflect the employment intensity; therefore, to know the labor intensity of the industries, the required number of employees for the production of each million dollars of total industry output was calculated. The figures shown in Table 18 reveal that the majority of the balloon festival-related industries were labor intensive; they require a higher number of employees for each million dollars of total output than the majority of local industries. The traditional tourism industries, such as lodging, eating and drinking, and entertainment, with the exception of ground transportation services, required more employees per unit total output (1 million) than the rest of the local industries (18 employees/per $MM of TIO). The eating and drinking industry demanded 37 employees per million of TIO (Total Industry Output), the hotel and lodging places industry needed 32 employees per million of TIO, the

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amusement and recreation services required 32 employees per million of TIO, while car rental services needed only 12 employees per million of TIO. Some of the retail shopping-related sectors, such as the apparel made from purchased materials (16 employees/per $MM of TIO) and the wholesale trade (14 employees/per $MM of TIO) were less labor-intensive; yet, some other sectors such as the general merchandise stores (34 employees), the apparel and accessory stores (30 employees) and the miscellaneous retail (33 employees) were more labor-intensive.

Table 18   Labor Intensity

	Labor Intensity (employees/per $MM of TIO)
454 Eating & Drinking	36.97
449 General Merchandise Stores	34.43
455 Miscellaneous Retail	33.33
463 Hotels And Lodging Places	31.77
488 Amusement And Recreation Services	31.60
450 Food Stores	30.90
452 Apparel & Accessory Stores	30.13
492 Hospitals	19.64
124 Apparel Made From Purchased Materials	15.75
447 Wholesale Trade	14.27
490 Doctors And Dentists	13.45
477 Automobile Rental And Leasing	12.43
462 Real Estate	10.02
479 Automobile Repair and Services	9.00
461 Owner-Occupied Dwellings	0.00
Other Sectors	17.70

*Source: IMPLAN aggregated Regional Consumption Demand report and Aggregated Regional Investment and Trade Demand report, Bernalillo County, New Mexico, 1992.

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CHAPTER V

SUMMARY, FINDINGS, AND RECOMMENDATIONS

Summary

Background and Study Purposes

Though studies on the economic impact measurement of special events have been conducted previously, those studies provided only the total amount of output, income, and jobs. They did not examine some other useful information, including the spatial distribution of visitors' expenditures, the impact distribution among local industries, the impact accounted for by each individual spending item, and the inter-industry relationships of festival related industries to the other local industries, which were all examined in this study.

The large-scale festival, the KAIBF, attracted visitors from the entire nation and from overseas. The 1995 Kodak Albuquerque International Balloon Fiesta attracted almost 1,300,000 visits during opening period of nine days; its economic impact on Albuquerque is significant. As the nonlocal festival visitors traveled from distant origins and tended to stay overnight in the festival host community, they usually made other purchases (i.e., lodging, entertainment, car rental, gasoline, etc.) in the local area in addition to those made on the festival grounds. Their expenditures made in the local area usually outweighed their money spent at the festival grounds; hence, it constitutes a major portion of the total economic impact in the local area.

One purpose of this study is to examine the spatial distribution of visitors' expenditures and measure the total economic impact of visitors' expenditures resulting from a large-scale event, the 1995 Kodak Albuquerque International

Balloon Fiesta (KAIBF). Personal interviews were conducted at the festival grounds to collect visitor profiles, travel behavior, and expenditure information during 5 sampling days between October 7 and October 15, 1995. Sampling was stratified by location within the festival site, day of the week, and time of day. Visitor group's expenditure information was collected from 767 randomly-selected respondents. Of 767 interviews, 751 were considered as usable responses; the usable data were then analyzed to identify visitors' expenditure patterns based on several meaningful ways of market segmentation. The IMPLAN (IMpact analysis for PLANning) model system was utilized to estimate the economic impact of festival visitors' expenditures on the local area (Albuquerque). Output, income, and job creation were estimated using 291-sector IMPLAN input-output database of Bernalillo County, New Mexico.

In this study, the city of Albuquerque is defined as the local community. Visitors' expenditures made at the festival grounds, as well as those made in the city of Albuquerque, were used to assess the total economic impact on the local community. To know how much each individual industry in the city of Albuquerque is affected directly or indirectly by this festival, and which benefited as a result, the economic impact distribution among the local industries are examined in this study. This study also measures the total economic impact accounted for by each visitor's off-site spending item (i.e., food, lodging, transportation, shopping, gasoline, entertainment, and film).

The second purpose is to analyze the economic characteristics of the balloon festival-related industries. By presenting an analysis of local economic structures, such as multiplier effects, linkages, leakages, labor intensity, employee compensation, and import tendency of the festival-related industries, this study provides a clear picture of how the economic impact is distributed

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among local sectors. This information can help to identify the advantages and disadvantages of hosting a special event.

Because festival visitors may have different patterns of expenditure behavior and may produce a different impact on the local economy, the last purpose of this study is to examine the spending patterns of the nonlocal visitors. In this study, visitors' expenditure patterns were examined based on their demographic characteristics, purpose of visiting, length of stay, lodging spending, attendance behavior, and primary reason for visit.

Methodology

Data Collection Method

To reduce the recall problem and increase the response rate, the on-site personal interview was used to collected festival visitors' information during their visit to the festival grounds. The sampling time and sampling places were carefully selected to increase the reliability of this study. A systemic sampling was used to reduce external and internal biases.

Economic Impact Assessment Model and the Conceptual Framework

In choosing a model for assessing the economic impact of a tourist activity or special event, it is important that the assessment method be financially feasible, easily applied, and replicable, so that comparisons can be made both over time and with other special events. Though none of the currently-used economic impact assessment models is problem-free in application, the IMPLAN model was used in this study due to its suitability and

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flexibility over other computerized I/O models, such as REMI and RIMS II. Basing on the input-output theory, the IMPLAN model is conceptually simple, theoretically solid, and flexible in model construction. Containing 528 intermediate sectors, the computerized IMPLAN I/O model is also more flexible than other computerized I/O models, e.g. REMI and RIMS II, in its level of sectoral disaggregation. This allows for a more precise analysis of industry linkages. In addition, Micro IMPLAN is cost-efficient and user-friendly, so it can be applied in any community where the budget is a major concern.

The I/O multiplier, capable of showing the linkages and leakages of the industries in an economy, provides us with a clear picture of any particular kind of economic activity in a regional economy. The important value of the I/O multiplier is that it shows the direct, indirect, and induced effects of any economic activity occurring in an economy. It shows how local industries will be affected by an economic activity, and vice versa. Due to this unique feature, input-output model has been the leading method for assessing regional economic impact.

If secondary effects are not considered, an economic impact assessment is incomplete. According to the input-output theory, the magnitude of economic impact made by the visitors is not only governed by the initial volume of visitors' expenditures, it also includes the secondary effects they created. The secondary effect of an industry is determined by the linkage of that industry to other industries in an economy, and the leakage to other areas during the transaction process. The analysis of multipliers and industry linkages in this study provides useful information about the local economic structure. Yet, it should be noticed that although the multiplier provides a convenient way for assessing the potential economic impact of recreational spending, it is not an

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indicator of the significance of the industry in an economy. The initial volume of visitors' expenditures is still the most important factor in determining the total economic impact. A high multiplier does not lead to a large economic impact. The industry which contains a high multiplier but receives a small amount of initial change can contribute only a small impact to the region.

Findings

This study has answered the following research questions:

1. What were the travel behavior and expenditure patterns of the balloon festival visitors?

2. What was the total economic impact produced by the balloon festival visitors' expenditures? The subquestions include:

    2a. What was the spatial distribution of the economic impacts resulting from the visitors' expenditures on the festival grounds and in the city of Albuquerque?

    2b. How were economic impacts distributed among the local industries?

    2c. How much of the economic impact did each expenditure item account for?

    2d. How did the balloon festival-related industries link to the local economy?

3. What was the economic characteristics of the balloon festival? Was it labor-intensive? Was it likely low pay? Did it have a low backward linkage to the local economy? What was its import tendency?

Demographic Profile, Travel Behavior, Visitors' Expenditure Patterns, and Market Segmentation

The previous literature suggested that expenditure pattern is likely to vary widely between visitor types. The reason for studying the segmentation of visitor expenditures is to learn about the visitors' backgrounds and their travel behavior in order to identify their needs, and to provide market information for tourism suppliers. The concept of market segmentation is not new in recreation and tourism literature. Many ways of segmentation based on demographic characteristics, means of travel, purpose of travel, media selection, usage level, and other variables have been reported and examined. Reviewing the literature, segments based on expenditures or usage level combined with demographic information have been proven useful. However, none of the previous studies has examined the characteristics of special event visitors based on the variables of "primary reason for visit" or "spending for lodging." From the local business's standpoint, segmentation based on the variables of "primary reason for visit," "attendance behavior," or "lodging spending" provides more meaningful information for market management for local businesses. In the regional economic impact study of special events, only the visitors' expenditures that is attributable to the local economy can be considered as beneficial to it. In other words, only the primary visitors' expenditures should be considered as new money for the local economy. Hence, a new way of segmentation based on the variable "primary reason for visit" is examined in this study.

In this study, two other new ways of segmentation, including spending for lodging and attendance behavior, are also examined. The lodging

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expenditures usually constitute the largest portion of visitors' expenditures during their trips, but there are visitors who do not spend any money for lodging. This then reduces significant revenues for the local lodging industry. Therefore, it is useful to examine the festival visitors' characteristics based on the variable "spending for lodging." In addition, it is unknown whether visitors who repeatedly attend the special event tend to spend more money and stay longer in the local community; therefore, this study also examines the difference between "repeat visitors" and "one-time visitors" in their spending behaviors and travel patterns.

To develop better knowledge about the balloon festival market, the demographic profile and the mean spending of the nonlocal festival visitors were derived. Several hypotheses, based on some meaningful market segments (i.e., purpose of travel, place of origin, lodging spending, attendance behavior, and primary reason for visit) were developed and tested.

The results indicate that hypothesis #1, " There is no significant difference in the average expenditures made by the balloon festival visitors who traveled for different purposes" should be rejected. The means of the off-site total expenditures are significantly different at $p=0.0001$ among visitors who traveled for different reasons (balloon festival, visit friends/relatives, vacation, and business). In particular, their average spending for lodging, food, entertainment, and film differ significantly. However, hypothesis #2 is not rejected at $p=0.05$; no significant difference is found in the mean length of stay among the visitors who traveled for different reasons. In addition, it is interesting to notice that the average on-site spending did not differ among the four segments of travel reasons.

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The study reveals that visitors who traveled from different origins (in-state, out-of-state, and international) spent significantly different amounts of money at the event site, as well as in Albuquerque. The average length of stay in Albuquerque also differs significantly among them. Therefore, hypotheses #3 and #4 are both rejected. The result rejects hypothesis #5 as well, but supports hypothesis #6. The average food & beverages spending off-site, as well as the film expenditures at the event site significantly differ between the visitors who spent money for lodging and those who did not. Though the mean total expenditures are not significantly different between the repeat visitors and one-time visitors, spending for individual expenditure items, such as gasoline, retail shopping, entertainment, and on-site food & beverages, are significantly different between these two groups of visitors. Hypotheses #8 is rejected by this study at $p=0.0001$ which denotes that repeat visitors stayed longer in Albuquerque than one-time visitors. Furthermore, except for the film purchasing, no significant relation was found between the visitor's expenditure level and the "primary reason for visit" (e.g., primary, coincidental, and unplanned visitors); thus, hypothesis #9 is not rejected at $p=0.05$. Although the expenditure patterns were not significantly different among the primary, coincidental, and unplanned visitor groups, this analysis is important from a marketing perspective. Additionally, there is no significant difference in the average length of stay among these three groups; therefore, hypothesis #10 is not rejected at $p=0.05$.

The outcome rejects the null hypothesis that no significant relationship existed between the expenditures and the purpose of travel. Though it composed only a small percentage of total visitors, the business market is worth promoting because business visitors were the biggest spenders among the

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festival visitors. A significantly large amount of vacationers' transportation expenditures benefited local car rental services and other local transportation services providers. Hence, the vacationer group is another potential market that the special event sponsors should explore. The high percentage rate of visitors who planned their trips to coincide with the balloon festival profited both the event organizers and the local tourist businesses. On one hand, visitors who traveled for reasons other than the festival (i.e., business, vacation, and VFR visitor groups) generated revenues for the event sponsors; on the other hand, the balloon festival also helped to attract vacationers, businessmen, and other types of visitors to Albuquerque.

The null hypothesis of no significant relationship existing between the average expenditure and place of origin (i.e., in-state, out-of-state, and overseas) is rejected. The result also rejects the hypothesis of no association between place of origin and average length of stay. The international visitors who traveled the longest distance among the three visitor groups also spent more money in Albuquerque, at the festival grounds, and stayed more nights in the local area. They also stayed more nights in other places in New Mexico. Comparatively, the in-state visitors who traveled the shortest distance among the three groups spent the least amount of money in Albuquerque, stayed fewer days in Albuquerque and New Mexico, and attended the festival fewer times than the other two segments. The majority of in-state visitors were primary visitors and only a few of them primarily visited friends or relatives. This study reveals that the festival visitors who traveled longer distances also spent more money for the trip.

It was found that slightly more than half the in-state visitors (excluding Albuquerque residents) were either day trippers or stayed with their local

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friends or relatives, and thus did not spend money for lodging. It is interesting to note that more than 30% of out-of-state visitors (33%) and international visitors (38%) also did not spend any money for lodging in Albuquerque. They possibly stayed with friends or relatives, owned a second home in Albuquerque, or stayed in their RV. The outcome also indicates that high-income visitors tended to stay in an accommodation and spent more for dining. Since 37% of nonlocal visitors did not spend for lodging, it is important in future studies to identify the causes of the zero spending for lodging.

Though it may not be appropriate to interpret a causal relationship between visitors' attendance behavior and their levels of spending, it is likely that the repeat visitors tended to have greater interest in attending the festival, and were more likely to spend more money at the festival grounds than one-time visitors. Repeat visitors stayed longer in the local area than one-time visitors but they spent less money for lodging. One possible explanation is that more repeat visitors than one-time visitors stayed with their friends or relatives during their visit to Albuquerque; yet, the findings does not support this explanation. Other possible explanations are: 1) the repeat visitors were experienced visitors who were familiar with the local area, and therefore able to find economical accommodation there, 2) they may have owned a second home in Albuquerque, and 3) they may have stayed in their own recreational vehicle (RV). To know the causes of this result, future studies need to collect information about visitors' previous experiences and the type of vehicle used. Due to their stronger interest in visiting the Balloon Fiesta, the primary visitors and those visitors who timed their trips to coincide with the festival tended to visit the festival grounds more times than the unplanned visitors during their trips.

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The study shows that the unplanned visitors tended to spend less at the festival grounds than the planned visitors (including both primary visitors and the visitors who planned their trips to coincide with the balloon festival). This result is possibly because visiting the balloon festival was not included in the unplanned visitors' original travel plans, and thus caused conservative consuming behavior on the festival grounds. The visitors who timed their trips to coincide with the balloon festival stayed longer in Albuquerque and other areas of New Mexico, and spent more money for lodging and entertainment in Albuquerque, than primary and unplanned visitors. The above information indicates that the balloon festival does not necessarily compete with other local tourist businesses for visitors' expenditures. Through advertising and promotion, the visitors can combine their trips with the balloon festival, thus increasing their spending in the local community. Therefore, hosting a special event can be an effective strategy for enhancing local tourism businesses.

Spatial Distribution of Visitors' Expenditures and the Economic Impact

To assess the geographic distribution of the festival visitors' expenditures in the city of Albuquerque accurately, visitors' expenditures were adjusted to reflect only those that occurred in the study area and were attributed to the balloon festival. Referring to the economic impact resulting from visitors' off-site expenditures, only primary visitors' expenditures were included in the impact analysis. The remainder of the expenditures, which represented economic impacts on other regions is not included in this study. Regarding the impact caused by visitors' on-site expenditures, two other visitor groups' expenditures, besides the primary visitor groups (group I), were added to the impact analysis

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to calculate the impact properly. The first group is the nonlocal visitors who planned their trips to coincide with the balloon festival (group II). The second group was composed of local residents who stated that they would have traveled outside of the community if the event had not occurred (group III).

The principal findings of this study are that the balloon festival visitors can produce an enormous effect on the Albuquerque area. The visitors' off-site expenditures resulted in $53.71 million of total industry output, $31.29 million of total income, and 1237 jobs in the local community. The visitors' on-site expenditures also generated $9.77 million of total output, $5.59 million of total income, and 228 jobs on the local community. It should be noted that, due to the difficulty in obtaining the business records, the leakages caused by the nonlocal vendors' business receipts were not considered in this study. This may have caused an overestimate of the impact resulting from visitors' on-site expenditures. However, the overall impact of the visitors' expenditures are likely to be underestimated because conservative LPC rates were used in this economic impact analysis. This then led to a conservative economic impact estimate of visitors' on-site and off-site expenditures.

Previous studies considered residents' expenditures for the special event as switched spending (i.e., local visitors will switch their spending to other local purchase if the festival activity does not occur in the local area), and this portion of expenditures is usually not included in the local economic impact calculation. However, the author suggests that completely excluding the expenditures made by group II or group III will lead to an underestimation of the total economic impact on the local area. In this study, 19% of the nonlocal visitors planned their trips to coincide with the balloon festival; they spent $1,677,649 at the festival grounds, which created a total output of $2.06 million and total income

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of $1.18 million in Albuquerque. In addition, twelve percent of local visitors stated that they stayed in Albuquerque to attend the balloon festival rather than traveling outside. This group of visitors (group III) added $927,353 of expenditures to the local economy, which generated $1.23 million of output and $0.69 million of income.

The IMPLAN type III multiplier, defined as the ratio of total effects (sum of direct, indirect, and induced effects) to direct effects, is used in this study. The analysis of multipliers and industry linkages in this study provides useful information on the local economic structure; it shows how festival-related industries were associated with the other local industries. However, several issues need to be addressed when interpreting the multiplier effect. It should be recognized that the entire process of the multiplier effect may take seven or eight rounds; that is equal to 15 to 20 years (Fleming & Toepper, 1990). In other words, the total economic impact of the balloon festival did not stop right after the festival period. Additionally, although the multiplier provides a convenient way to assess the potential economic impact of an economic activity, it is not an indicator of the significance of the industry in an economy. That is, an industry with a high multiplier effect, but one which receives small final changes can contribute only a small impact to that region.

Regarding employment multiplier and number of jobs created, careful interpretation is required. Although the impact reports show an increase of 1,237 jobs due to festival visitors' expenditures, it should be noticed that the employment indicator in the IMPLAN model is a mix of full-time and part-time employment. Because the majority of the festival staff are usually volunteers, the employment multiplier may not be properly applied to a short-term event such as the KAIBF. Despite the fact that some employment opportunities may

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have been created due to the balloon festival, these positions were more likely to be part-time or temporary positions.

Distribution of Economic Impact Among Local Industries

Much has been written about the economic impacts of recreation and tourism activities. However, very little has been written to distinguish impact by economic sector (Johnson & Sullivan, 1993). Thus, previous studies have failed to identify the distributional consequence of the economic impact resulting from the balloon festival visitors' expenditures. Identifying the local industries that were affected by festival visitors' expenditures, and by what magnitude, can help the festival organizers to develop sponsorship. It can also assist local decision-makers to identify the possibilities for increasing the positive economic impact in the local area as well as the limits. In addition, this information can help local businesses identify their market change and modify their future marketing planning.

This study furthers our understanding of the distribution of the tourism economic impact on local industries. The study results show that seventy-two percent of the total output was distributed to fifteen sectors, which include hotel & lodging places, eating & drinking, food stores, automobile repair and services, owner-occupied dwellings, general merchandise stores, real estate, wholesale trade, apparel made from purchased materials, apparel & accessory stores, amusement & recreation, doctors & dentists, automobile rental and leasing, hospitals, and miscellaneous retail. The direct and secondary economic impacts resulting from the balloon festival visitors tended to be concentrated in the service sectors.

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The impact reports show that the hotels & lodging places, eating & drinking, food stores, automobile repair and services, and owner-occupied dwellings sectors were the five largest output and income receivers. The significant impact on owner-occupied dwellings, real estate, doctors & dentists, and hospitals was mostly caused by the induced effect (the effect from respending of the households' income). The shopping-related industries (miscellaneous retail, apparel & accessory stores, and general merchandise stores) also received a large impact. In this study, the shopping expenditures directly produced impacts on the general merchandise stores, apparel & accessory stores, wholesale trade, and miscellaneous retail sectors. Although the festival visitors initially injected $3.35 million into public transportation, it only generated $3.01 million of total output and $1.33 million of total income to the study area. The automobile rental and leasing sector, directly affected by the public transportation expenditures, received a total output of only $1.46 million and $0.48 million of income, and the other directly-affected sector, the transportation services sector, received even smaller ($0.35 million of output and $0.19 million of total income). This outcome was mainly due to the high leakages occurred in the first round of production in the automobile rental & leasing and transportation service sectors.

The Economic Impact Accounted For By Each Individual Spending Item

The economic impact created by each individual off-site expenditure were also assessed in this study. This information helps to identify the linkage and interdependency of this particular industry to other local industries. Food & beverages, the second largest visitors' expenditure item, brought the largest

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impact (output, income, and employment impact) to the local economy. Although lodging spending was visitors' largest expenditure item, the lower multiplier effect and higher import propensity in the lodging sector than in the food sectors cause higher leakages in this sector. The eating and drinking industry had a high type III output multiplier rate of 2.23, which shows its strong linkage to the local economy. Furthermore, the low employment multiplier rates of the traditional tourism industries (amusement & recreation services, hotels & lodging places, and eating & drinking) and the shopping-related industries (miscellaneous retail, apparel & accessory stores, and general merchandise stores) are partly caused by their high direct effects.

With an initial expenditure of $8.75 million, the shopping expenditures created $10.81 million of output and $5.85 million of income. The low RPC rates of most of the retail shopping sectors indicated that they depended highly on imports. The high leakages in the retail shopping sectors were mostly caused by the large import tendency of the apparel made from purchased materials industry. The injection of initial $3.35 million of transportation expenditures on the local economy only resulted in $3.01 million of output and $1.33 million of total income. This denotes large leakage in the transportation-related industries. On the contrary, relatively small leakage occurred in the entertainment sector. The entertainment expenditure, with its $2.22 million of initial expenditure, generated $3.44 million of total output and $1.89 million of total income in the local economy. The relatively low income impact generated by the traditional tourism industries and shopping-related industries were likely due to the low RPCs and low employee compensations (salary/wages). It is possible that the conservative LPC rate used in this IMPLAN impact analysis also contributed to the low income impact estimates.

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Overall, the impact resulting from the festival visitors' expenditures tended to concentrate on hotel & lodging places, eating & drinking, food stores, amusement & recreation services, retail shopping-related industries, transportation service, and automobile rental & leasing. This is consistent with the study result of a previous economic impact study of Civil War battlefield preservation conducted by Johnson and Sullivan (1993).

Economic Characteristics of The Balloon Festival

The final research objective is to identify the economic characteristics of the balloon festival (i.e., linkages, leakage, labor intensity, import tendency, and employee compensation). The result provides in-depth understanding of the economic characteristics of each highly-affected industry. The high linkage of one sector to the other sectors indicates a strong interdependency of that sector to the other sectors in an economy, and this usually leads to a high secondary effect. High leakage usually associates with a high propensity of imports, which usually causes a low secondary effect. Labor intensiveness and low pay have been addressed as two of the characteristics of traditional tourist industries. The result of the IMPLAN economic impact analysis presents a detailed understanding of these characteristics.

The finding suggests that the majority of the top fifteen festival-affected industries (i.e., eating & drinking, general merchandise stores, miscellaneous retail, hotel & lodging places, amusement & recreation, food stores, apparel & accessory stores) were very labor-intensive (Table 18). Except for the transportation industry, the traditional tourist industries tend to be labor-

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intensive; a greater number of employees are required for each million dollars of output.

Another characteristic of tourism industries, low employee compensation, is also proven in this festival activity. The finding indicates that the balloon festival-related industries were likely to be low-compensated. All of the annual salaries of the employees who worked for the highly-affected industries (i.e., amusement and recreation services, eating & drinking, automobile repair & services, automobile rental & leasing, hotel & lodging places, food stores, and retail shopping-related sectors) were below the average salary/wages of the whole local industries. This result is consistent with the findings of Ruiz in studying Puerto Rico's economy (1993) which shows that the tourism industry in Puerto Rico is labor-intensive and low-compensated.

Except for the result shows that some of the tourism industries (amusement & recreation services, transportation services, and car rental & leasing sectors) had stronger backward linkages to the local economy, while others (eating & drinking, food stores, and lodging sectors) did not. The limited indirect effects in the two highly-affected industries, lodging, and food and eating places, indicate weak backward linkages. That is, most of the initial visitors' lodging and food expenditures did not produce additional rounds of effects; they were less likely to trigger more business activity in the local economy. This finding is consistent with those of Dawson et al. in studying the economic impacts of Great Basin National Park (1993). It is also similar to the service industry production in Minnesota which has a low import propensity (Maki, 1989)

Except for the transportation-related industries, other tourist-related industries (retail shopping, amusement and recreation, food stores, eating and

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drinking, and lodging industries) generated more household income (high induced effects) than other local industries. This is typical in the service-oriented industries, because they tend to create more employment opportunities than non-service industries; the increase in employment and household incomes will create more consumption and produce a greater induced effect.

The import tendency provides information about how and where leakages occur. The finding shows that except for some shopping-related sectors (apparel made from purchased materials, wholesale trade, and general merchandise stores), the majority of the tourist-related industries, including eating and drinking, automobile rental and leasing, automobile repair and services, food stores, apparel and accessory stores, miscellaneous retail, amusement and recreation services, and hotels and lodging places, had an import propensity lower than 0.2. This is due to the service orientation of tourism industries; the received income from services do not give products in return for their services. Therefore, the import tendency of service-oriented industry is usually low.

Summary of Findings

The total impact of festival activity in a local economy is much larger than the spending associated with attending a festival. A larger portion of the impact is generated by visitors' expenditures made in the local area for lodging, food and beverages, retail shopping, public transportation, car rental, entertainment, gasoline, and other items. Each dollar of visitors' spending initiates a broad set of economic interactions that generates additional spending in other sectors of the local economy. Therefore, the cumulative effects of visitors' expenditures in

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a regional economy is mainly determined by its economic condition. For instance, part of the visitors' expenditures may leak immediately out of the local economy for importing festival-related goods or services, and this portion of revenue does not pass through the local economy even at the first round of transaction. In this study, a large portion of visitors' transportation expenditures leaked out immediately at the first round of transaction, and therefore reduced the total amount of economic impact. The leakage problem is particularly obvious in the rural community where the current levels of service-oriented infrastructure and industry are not adequate to capture visitor spending. A large-scale special event such as the KAIBF, usually requiring various kinds of tourist supporting goods and services, is better held in a highly self-sufficient economy in order to maximize the economic benefit to the local community. Hosting a large-scale special event in a small rural community may not benefit the local economy, because the high degree of import propensity in a rural area usually causes high leakages and benefits other regions. Therefore, a local government viewing special events as an income generator should first examine the local economic resources before conducting any kind of special event.

The study's results indicate that the KAIBF benefited local tourism businesses by bringing the festival visitors to participate in other tourism or recreation activities in the local community (Albuquerque). The primary visitors, who primarily visited Albuquerque for the balloon festival, not only made purchase at the festival grounds, but also spent a large amount of their money in the Albuquerque area. This indicates that hosting a special event can help to bring revenues to the local tourism businesses. The result also shows that, if well promoted, a special event can be a powerful strategy for boosting local

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tourism industries. Hence, cooperation among festival organizers and local tourism-related industries should be encouraged.

Limitations

Overemphasis on presentation of the total economic impact, rather than on interpretation of the resulting estimates and description of the application limitations, has often resulted in misunderstanding and exaggeration of the study results. For instance, some researchers have used the resulting estimates to justify or promote the tourist activity or special event. The inadequate models and unreliable data collection methods have also caused the inaccuracy of study results. As a result, many previous economic impact studies provided little information for improving the future planning, management, and development of tourism, recreation, and special events. To avoid misunderstanding, the study limitations and several important research issues are addressed as follows:

1. This study only measures the economic impact of the festival visitors' expenditures; other expenditures made by organizers, sponsors, vendors, event operators, and other agencies are not included.

2. Social, environmental, and other intangible impacts that may be caused by the balloon festival are not covered in this study.

3. This study was subjected to a static input-output analysis. In this case, the induced effects are very likely to be overstated because the linear production function of input-output assumes that the increases in household income will also increase their further consumption in the same pattern.

4. As the I/O model does not include an economic sector called "tourism," visitor's expenditure data is not usually in the appropriate form to be used in the IMPLAN economic impact analysis. In this study, the selection of suitable IMPLAN industry codes was made after consultation with several IMPLAN experts.

5. It should be noticed that the regional I/O model estimates the effects of an economic activity from only that region with the assumption being that there is no inter-regional trade. The effects that spring from the interactions between one region and the adjoining regions are not included. By disregarding these interactions, the model underestimates the impact on the study area.

6. It should be noticed that the employment indicator in the IMPLAN model is a mix of full-time and part-time employment. Because the majority of the festival staff are usually volunteers, the employment multiplier may not be properly applied to a short-term event such as the KAIBF.

7. The overall impact of the visitors' expenditures are likely to be underestimated because conservative local purchasing coefficients (LPC) rates were used in this economic impact analysis. This then led to a conservative economic impact estimate of visitors' on-site and off-site expenditures.

8. It should be noted that the impact resulting from visitors' on-site expenditures is a rougher estimate than that resulting from off-site expenditures, because the leakage from nonlocal vendors was not considered in this study.

Recommendations

Followings are the recommendations for the future studies:

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1. Because county (but not city) economic data is used in Micro IMPLAN, the selection of a county or counties for impact analysis is an important issue. Normally, the county boundary is different from the city boundary; the selection of an appropriate county or counties may therefore be a problem. Indeed, the impact estimates will be different when a different county is chosen for analysis. The selection of one or more than one county will also affect the impact results. Therefore, in the impact assessment, the researcher's knowledge about the local economy (as well as sound judgment) are essential in determining the study county/counties.

2. Another problem associated with the IMPLAN model is the selection of industry codes for each reported expenditure item. Giving the limitation of the expenditure data, the reported expenditure item may not have an industry code to match with; therefore, the selection of industry/sector codes requires thorough consideration. Failing to assign a sector properly may lead to serious errors in the economic impact assessment. In the future study, the selection of the IMPLAN industry codes for this study need to be carefully chosen.

3. For future studies on the economic impact of tourism, recreation, and special events, the emphasis should not only be placed on model selection and the reliability of visitor expenditures collection methods, but also on the determination of the portion of visitors' expenditures that should be included in the impact calculation. Traditionally, only the primary visitors' expenditures have been included in the economic impact calculations; however, in this study, the author suggests that reported expenditures can be adjusted to reflect more accurately regional economic impacts of a specific tourist activity. The study finding shows that the estimates of total economic impact of visitors' on-site expenditures will very likely be underestimated if all local visitors' expenditures

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are disregarded. The study results show that 12% of the local visitors would have taken a trip outside of the area if the balloon festival were not available in town. Therefore, ignoring this portion of expenditures would lead to an underestimate of total impacts. In addition, as attending the balloon festival is a planned activity for those who timed their trips to coincide with the balloon festival, excluding the on-site expenditures of these visitors from the impact analysis would also lead to an underestimation of the economic impact on the local area.

4. People usually travel for more than one reason and it is usually difficult to weigh the importance of each purpose. Particularly, for those people who plan their trips to coincide with the event, choosing a primary visiting purpose to report may be merely an arbitrary decision. Simply ignoring the off-site expenditures made by this group of visitors may lead to an underestimation of the economic impact of visitors' expenditures. Therefore, in future studies, another important issue is to know what portion of the coincidental visitors' expenditures made in the local area is due to the festival. A supplemental question is necessary, asking whether they would still have taken a trip to the local area if the festival had not been available in that area. The spending made in the local area by those visitors who would not have visited the local area without the festival should be included in the economic impact calculation. As shown, the accuracy of including only primary visitors' expenditures in the regional economic impact analysis is questionable.

5. It was found that the primary festival visitors spent an average of 4.6 nights in Albuquerque and 3.6 nights in other areas of New Mexico (see Table 3). Though the visitors' expenditures made in the adjacent areas to Albuquerque were not inquired in this study, their considerably long stay in other area of New

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Mexico implies that the economic impact on the areas adjoining Albuquerque may be significant. Therefore, future studies of the spatial distribution of visitor expenditures for a special event, particularly a large-scale event, should consider covering a broader region. To determine how the economic impact of a special event spreads out geographically, future studies should examine the spatial distribution of expenditure effects based on different geographic regions (i.e., event site, county, city, state, nation, etc.).

6. Increasing the number of visitors is one of the possible ways to increase the economic benefits of festival visitor expenditure in the local economy; however, it may also bring other negative social impacts such as overcrowding, noise, and pollution to the local area. Some of the local people may leave town to avoid the crowd. Therefore, for future study, it is suggested that the researchers study the carrying capacity of the local community in hosting a special event.

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APPENDIX A
(QUESTIONNAIRE)

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1995 KODAK ALBUQUERQUE INTERNATIONAL BALLOON FIESTA VISITOR SURVEY

Part I. SPECTATOR PROFILE

Q1. What is the **zip code** of your primary residence?_____
   If from outside U.S., in what **country** do you live?_____

Q2. What is your age?_____

Q3. Are you   1. Female   2. Male (please circle response)

Q4. What is your race/ethnicity? (please circle response)
   1. Caucasian   3. African American   5. Asian American
   2. Hispanic   4. Native American   6. Other (specify)_____

Q5. What will be your 1995 total family income? (please circle response)
   1. Less than $20,000   3. $40,000 to $69,999   5. $100,000 or more
   2. $20,000 to $39,999   4. $70,000 to $99,999

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Part II. VISITOR ECONOMIC IMPACT SURVEY

Date_____Survey #_____
Interviewer ID___Time:Am PM

Q1. How many people, including yourself, are in your immediate group?_____
(If resident, skip to Q6)
      a. How many of these group members are non-residents?_____

Q2. What is your **primary reason** for visiting Albuquerque? (circle one response)

    1. Attend the Balloon Fiesta (Skip to Q4)   5. Conference/Convention
    2. Visit friends/relatives   6. Shopping
    3. Vacation   7. Other_____
    4. Business

Q3. If your primary reason for visiting Albuquerque was **other than** to attend the Balloon Fiesta, did you purposely schedule your visit to coincide with the Balloon Fiesta dates?
    1. Yes   2. No

Q4. During this trip, how many nights away from home will you (and your group) spend in Albuquerque?_____ In New Mexico_____ (If none, skip to Q5, Item 2)

Q5. How much money will you (and your group) spend **off** the Fiesta grounds **in Albuquerque** for:

    _____Lodging   _____Ground Transportation
    _____Food and Beverages   _____Entertainment
    _____Gasoline and Oil   _____Film/Camera Equipment
    _____Retail Shopping   _____Other (specify)_____

Q6. How much will you (and your group) spend on the Fiesta grounds for:

_____Food and Beverages   _____Souvenirs/Gifts

_____Entertainment   _____Other (specify)_____

_____Film

Q7. How many times will you have attended Balloon Fiesta events (i.e., Mass Ascension, Balloon Glow, etc.) this year?_____

Q8. **(Skip to Q9 if resident)** Is this the last night of your trip? 1. Yes   2. No

a. If not, how many more days will you spend in Albuquerque?_____

Q9. **(Residents only)** Had the Balloon Fiesta not been held this week, would you have left town on a pleasure trip?

1. Yes   2. No   3. Not sure

a. If yes, how long would your trip have been?_____nights

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