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An Analysis of Tennessee Agri-Tourism Visitors' Preferences and Expenditures

Christopher M. Lindborg

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To the Graduate Council:

I am submitting herewith a thesis written by Christopher M. Lindborg entitled "An Analysis of Tennessee Agri-Tourism Visitors' Preferences and Expenditures." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Agricultural Economics.

Kimberly L. Jensen, Major Professor

We have read this thesis and recommend its acceptance:

Burton C. English, Steven T. Yen

Accepted for the Council:
<u>Carolyn R. Hodges</u>

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

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An Analysis of Tennessee Agri-Tourism Visitors' Preferences and Expenditures

A Thesis
Presented for the
Master of Science
Degree
The University of Tennessee, Knoxville

Christopher M. Lindborg
May 2007

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Thank you all for your help.

ABSTRACT

Agri-tourism is a relatively new concept in the United States and Tennessee, but it is gaining popularity with agri-business owners as a source of additional income. Because agri-tourism is new, much is left to be understood about what motivates visitors to agri-tourism attractions. This thesis analyzes the results of a visitor survey of 6 agri-tourism attractions in Tennessee, with a focus on understanding the factors that are motivating people to visit agri-tourism attractions. It was found that the reasons for visitors to attend agri-tourism attractions encompass a complex web of both economic and social motives. Visitors who attend agri-tourism attractions also have an economic effect directly and indirectly on the Tennessee economy.

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Chapter 1:

Introduction and Objectives

Small agri-business owners in Tennessee and elsewhere have seen a downward

trend in farm income as agricultural prices have gradually decreased, while agri-

business's expenses have risen. According to the 2002 Census of Agriculture, Tennessee

farm production expenses rose from almost $1.8 billion in 1997 to nearly $2 billion in

2002, showing nearly a 12 percent increase (USDA/NASS, 2002). The market value of

Tennessee agricultural products sold in 1997 was nearly $2.26 billion while decreasing to

$2.2 billion in 2002.

Also, small agri-businesses are being threatened by globalization and

industrialization forcing mergers to form larger farms, or they may go out of business.

According to the 2002 census of agriculture, the number of Tennessee farms declined

from 91,518 in 1997 to 87,587 in 2002, showing a 4.3 percent decrease.   To deal with

this situation, agri-business owners are searching for supplemental income for their

farming operations. As the farming community continues to be hit by decreasing profits

and number of farms, agri-tourism may provide the potential for supplemental farm

income through on-farm sales of value-added products and services.

 Agri-tourism can be seen as a merger of the agriculture and tourism industries.

Several state government agencies have defined agri-tourism in order to identify their

operations. In Alabama, agri-tourism is defined as a commercial enterprise at any

agricultural location, including horticultural and agribusiness operations, conducted for

the enjoyment of visitors that generates supplemental tourism income for the owner

(Alabama Agri-tourism Trail, 2006). North Carolina State University defines agri-tourism business as a farm enterprise operated for the enjoyment and education of the public that may also generate additional farm income (Fogarty and Renkow, 1998). A consensus among the definitions from state governments for agri-tourism has shown that agri-tourism is for visitor's enjoyment and provides additional income to agriculture business owners. The Tennessee Agri-tourism Initiative Steering Committee defined agri-tourism as "an activity, enterprise or business which combines primary elements and characteristics of agriculture and tourism, and provides an experience for visitors which stimulates economic activity and impacts both farm and community income" (Bruch and Holland, 2004)   The committee stated the attractions that often meet this definition include agriculture-related and on-farm events including places such as museums, festivals and fairs, century farms, corn-maze enterprises, farmers markets, tours, retail markets, vacations, festivals and fairs, petting zoos, fee-fishing, horseback riding, bed and breakfast, pick your own farms, and wineries.

According to Woods (2000), there are tourism options as part of a broader definition of rural tourism which is closely related to agri-tourism and are interrelated. The first related tourism attraction is recreation and natural attractions. This includes lakes, forestry, parks, beaches, and other outdoor activities. The second related tourism attraction is cultural/heritage tourism and this has been described as "the marketing of cultural heritage." This includes historic reenactments, ethnic communities, Native American experiences, "Old West" towns and others. The third attraction is eco-tourism and is purposeful travel to natural areas to understand the cultural and natural history of the environment, taking care not to alter the integrity of the ecosystem, while producing

economic opportunities that make the conservation of natural resources financially beneficial to local citizens. Examples of this include caving, hiking, Native American sites, rocks, nature, and river trails.

These alternative attractions are interrelated because they have visitors with similar characteristics. The four tourism attractions; recreation and natural attractions, cultural/heritage, eco-tourism, and agri-tourism, are nature-based and promoted as an environmentally safe way for rural communities to generate income from natural resources.

In the state of Tennessee, there was approximately 11.68 million acres of total farmland at the time of the 2002 census.   The majority of farms in Tennessee are operated by small landowners and the average farm size in 2002 was 133 acres, compared to an average of 441 acres in the United States (USDA/NASS, 2002). Almost 66 percent of the farms in Tennessee are 1 to 99 acres, 29.4 percent are 100 to 499 acres and only about 3 percent are 500 to 999 acres. Almost 78 percent of these farms had sales of less than $9,999, while 15.6 percent had sales between $10,000 and $49,999. The characteristics of principal farm operators shows that nearly 50 percent have farming as their primary occupation. These small farms can diversity their operations with agri-tourism businesses which can be added to their farms.

According to the U.S. Census of Agriculture, at the time of this study there had not been any official statistics on the agri-tourism visitor's preferences and expenditures in the state of Tennessee (USDA/NASS, 2002). With a newly characterized industry such as the agri-tourism industry in the state, identification of visitors' preferences for amenities and services and how they spend their tourism dollars can be helpful for agri-

tourism business' development in the future. Surveys of visitors can help agri-tourism operators better meet visitors' preferences, identify target markets, and show estimates of visitors' expenditures

Demographic and visiting patterns can be helpful to the industry in identifying their target market. Information regarding preferences for amenities and services by visitors can also be helpful for businesses providing the types of services that are most desirable to their visitors. Information regarding how demographic and visitor patterns may influence these preferences can also be helpful to businesses in targeting their services to certain types of visitors to whom these services are most important. Finally, estimates of visitor expenditures and their resulting economic impacts are important for identifying how agri-tourism expenditures may affect the state's economy.

The results can help agri-businesses develop a business plan for their agri-tourism enterprise and become more aware of effective marketing techniques. Agri-businesses can be successful in marketing their agri-tourism enterprise by developing and/or using at least one new method of marketing they had not used before the visitor surveys. Results from the survey will also help define target groups for Tennessee's agri-tourism. The target groups of people have a great effect on the demand and supply of agri-tourism. Because the relationship between the supply of agri-tourism products and the visitor's demand is important, the agri-tourism operators should give special attention in evaluating this to improve their operation. Potential Tennessee visitors can be identified through target groups and marketing material can be distributed. The agri-tourism operators might find that there is more demand for certain types of agri-tourism attractions and they can create an agri-tourism attraction on their land to meet this

demand. The results of the visitor surveys will give operators a better marketing plan which they will be able to better service visitors. Better service will draw more visitors and provide additional income to the agri-tourism owners.

1.2 Importance of Agri-tourism

Agriculture has been an important part of Tennessee's history and it continues to be today. In 2000, the agro-forestry industrial complex contributed $60.6 billion to the Tennessee economy. This accounted for 18.3 percent activity conducted within the state and employed 292,000 individuals, or 17.1 percent of the total number of workers (English *et al*, 2003).

Tourism is also an important part of Tennessee's economy and is a very big business in the United States and abroad. Tourism comprise the activities of persons traveling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited (World Tourism Organization, 2002).

According to the Tennessee Department of Tourist Development (2004) the total domestic and international travel-related spending in Tennessee, including direct and indirect spending, reached $16.9 billion in 2003. Total employment in travel-related industries in Tennessee, both direct and indirect, reached 375.7 thousand jobs in 2003. The top ten attractions are: 1) Dollywood in Pigeon Forge, 2) Ripley's Aquarium of the Smokies in Gatlinburg, 3) Bristol Motor Speedway in Bristol, 4) Ober Gatlinburg, 5) Tennessee Aquarium in Chattanooga, 6) Memphis Zoo in Memphis, 7) Casey Jones Village in Jackson, 8) Golf & Games Family Park in Memphis, 9) Graceland in Memphis, and 10) Grand Ole Opry House & Opry Museum in Nashville.

As the tourism industry continues to grow, it can have a significant impact on agri-tourism businesses. Through the tourism industry, opportunities are favorable for agri-businesses to offer tourist activities on their farms.

Fogarty and Renkow (1998) state that agri-tourism can be thought to have begun in the early 1900s when families visited relatives in an effort to escape the heat of the city summer. Similar rationale brings people to the country today, as an escape for the family to a slower, less stressful environment. But with the decline in family farms it is unusual for anyone in the city to have rural relatives with whom they can stay. This has led to an increase in the demand for agri-tourism attractions. This demand can be seen in the estimated 62 million Americans who visited farms one or more times in 2000, which corresponds to almost half the population (Barry and Hellerstein, 2004).

According to Eckert (2006), agri-tourism is one of the fastest growing segments of the travel industry. Eckert says "People want a new experience and escape from the stress of traffic jams, office cubicles, and carpooling in cities and suburbs, where the majority of the population resides. Children, as well as adults, can learn the process of growing food while enjoying a vacation together at an agri-tourism attraction."

Kuehn *et al*. (2000) note the different foods, crafts, and entertainment reflects interesting cultural and historical differences between communities. Kuehn says "Tourists want to immerse themselves in something they can't find at home. Such a strategy is essential to increasing community self-identity and local pride, and drawing dollars from outside the community."

1.3 Objectives of the Research

Because agri-tourism is growing in Tennessee as part of a diversification strategy used by farmers to increase revenues, it is important for farmers to clearly understand agri-tourism. Several specific objectives will be addressed in this research:

1) Ascertain the characteristics, preferences for amenities and services, and spending patterns by visitors to Tennessee agr-tourism attractions,

2) Measure how demographics and visiting patterns may influence preferences for amenities and services, and

3) Provide projections of statewide economics impacts from visitor expenditures to similar agri-tourism attractions across the state.

Data collected from the visitor's survey will be additional information to the business owner's survey by Jensen *et al.* and give a broader view of Tennessee agri-tourism and its importance to the agriculture and tourism industries in Tennessee.

Chapter 2:

Literature Review

This chapter will provide an overview of the research on agri-tourism to date. It is organized around agri-tourism surveys and economic impacts analysis that have been conducted recently on agri-tourism.

Hilchey and Kuehn (2001) conducted a study for a two-part study of agri-tourism business owners and their customers in order to provide farmers across the state with up-to-date information about agri-tourism. The customer survey was conducted in 1999 with the assistance of six agri-tourism business owners in New York State. A total of 299 customer surveys were completed and analyzed. In 2000, a survey of agri-tourism business owners was conducted. A mailing list of 2,416 farm-based businesses open to the public was generated with assistance from agriculture and tourism agencies and organization across New York State. A systematic random sample of 2,000 farm businesses was generated from this initial mailing list and 645 surveys were completed and used in this study. In both the customer and business owner surveys, more than half of the customers were reported to have come from either the home county of the business or counties adjacent to the home county. Only 18% of customers came from other states according to the visitor survey and only 9% came from other states according to the business owner's survey. Questions on both the customer and business owner surveys sought to identify visitor characteristics and found that most customers visit agri-tourism businesses with friends and/or family. The average group size was 6.5 individuals, but most groups contained 2 to 4 people. Both surveys show that a large percentage of

children and adults between the ages of 20 and 59 visit agri-tourism businesses, while teenagers comprise only a small percentage of all visitors. Approximately 79% of the responding customers indicated that they were visiting the area just for the day, 7% stayed for two days and 5% stayed for three. Females comprised 57% of all visitors. 48% of respondents reported that they were repeat customers according to the customer survey while 72% were repeat customers according to the business owner survey. Both surveys showed that word-of-mouth is the most effective method of attracting visitors. 95% of respondents to the customer survey reported that they enjoyed their visit "very much," while 4% indicated that they "somewhat enjoyed it" and 1% said they "did not enjoy it."

A study by Coomber and Lim (2004) analyzed whether there are significant differences between the expectations and perceptions of participants of a guided tour in an organic farm. Kiwi Down Under, a small farm tourism enterprise, is located sixteen kilometers from the city of Coff's Harbour in New South Wales. The owner conducted traditional style walking tours for visitors. 36 tertiary students from the education segment of the market responded to a pre-tour and post-tour survey that examined attitudes to twelve elements of the farm servicescape. Twelve close-ended questions on a five-point Likert-type scale are used to measure respondent attitude to a range of elements in the servicescape. The survey found participants expected more walking in the farm than they actually engaged in. While they found it easy to move around on the uneven and sloping terrain, it was not what they had expected. Also, the participants expected to stand at any one site longer than they actually had. The participants found farm noise and smell to be more pleasant than expected. Overall, the participants found

the farm experience to be enjoyable and felt comfortable with the farm environment. Also, the guide provided the tourists a good understanding of farm activities through effective interpretative tours.

Bernardo, Valentin and Leatherman (2004) looked at the potential of agri-tourism of a sub-region to Kansas. Data that were available from tourists visiting Kansas and its sub region were examined. The sub region comprised of states with similar characteristics including Oklahoma, Nebraska, South Dakota, North Dakota, Missouri, and Iowa. This sub region provided sufficient responses to determine whether those participating in agri-tourism in the heartland may differ from tourists in other parts of the country, particularly the west coast and northeast. Based upon the National Survey on Recreation and the Environment, data on number of agri-tourism visits, distance traveled and overnight stays and on-farm spending, estimates of total direct spending by agri-tourists were developed. These expenditures were then fed into a Social Accounting Matrix framework to estimate total economic impacts. Data for the State of Kansas were used to construct the economic accounts. The model was calibrated to the year 2001 and then after being fed into SAM, they were inflated to 2004 dollars. The combined direct and indirect economic impact associated with agri-tourism in 2000 was estimated to be between $25 and $78 million in 2004 dollars. The employment associated with this level of economic activity ranged between about 500 and 1,400 jobs. The total overall level of economic activity associated with agri-tourism spending ranged from about $26 million to $135 million, while labor income generated ranged from about $18 million to over $57 million. Households, accommodation and food, and transportation are the sectors of the economy most affected.

A University of Tennessee study (Jensen *et al*., 2005) looked at the assistance

needs and characteristics of agri-tourism businesses in Tennessee. The study was able to

target the assistance services needed by agri-tourism businesses and was used to develop

profiles of businesses that might have the greatest need for a given type of assistance.

The five basic areas of needs that are examined in this study are signage, financing,

market research, preparing a business plan, promotion, and liability/insurance. The data

for this study were collected through both phone and mail surveys which resulted in a

183 responses. The 183 responses came from a study (Bruch and Holland, 2004) which

included the listing of 381 agricultural enterprises thought to be agri-tourism related that

either were not included in or did not respond to a 2003 inventory survey. The results

show that the most needed types of assistance were: internet site development, liability

and insurance issues, assistance identifying and making tour bus and travel group

contacts, market research, and visitor safety analysis.   Other results of the survey

identified agri-tourism business' characteristics. The majority of the operators offered

three attractions or less. The average numbers of full-time and part-time employees was

1.9 and 3.9, respectively. The median expenditure per visitor to these attractions was

$15.00. The majority of the spending was on purchasing the venue's product and

admission or user fees. The most common types of advertisement used at the operations

were word of mouth, business signs, website, and newspaper advertising. Another key

finding of this study shows that those attending agri-tourism workshops experienced a 14

percent positive effect on sales at their venue.

In 2003, a study by Bruch and Holland (2004) was conducted of agri-tourism

businesses in Tennessee. The information this study contains comes from a 2003

inventory of 210 agri-tourism businesses in Tennessee. The purpose of this study was to identify characteristics of the agri-tourism industry in Tennessee and to identify issues and obstacles faced by agri-tourism businesses that may be addressed through research, teaching and outreach. Findings of this survey show about 80 percent of enterprises offer visitors more than one attraction, and 60 percent of enterprises are open only seasonally. The operators identified advertising, marketing, and promotions as the most important factors of success for their enterprises. Information was learned about the typical agri-tourism business customers and found that 85 percent of total visitors to their operations were reported as being one-time visitors. Ten percent of total visitors in 2002 were part of organized group visits. Half of the visitors in groups were part of school groups, and another 15 percent of visitors in groups were part of travel or tour groups. This study focuses on the impact agri-tourism has on Tennessee's economy and found it to be significant. It found respondents accounted for 3.5 million in 2002, with the majority visiting from in-state. Customers spent up to $400 per visit at agri-tourism operations in 2002, with 30 percent of enterprises earning between $1 and $10 per visitor. Survey results show that almost 63 percent of respondents had plans to expand their operation from 2003 to 2006. The study also provided information about the issues and obstacles faced by the operators of these enterprises. Some of the difficult issues mentioned were promotion, signage, finding and hiring qualified employees, identifying target markets, insurance, financing, and preparing business plans. Areas indicated as service being needed by agri-tourism entrepreneurs were advertising, marketing, promotion, and funding. Also, the report indicates that there is a need for more education and outreach.

A study by Rumbletree Incorporated for New Hampshire Department of Agriculture (2002) was conducted for in-person interviews with 400 resident visitors (those traveling more than 25 miles from home) and 400 out-of-state visitors. The interviews were conducted during the summer and fall of 2002 at New Hampshire Visitor's Centers and Rest Areas and the Lakes Region Outlet Stores. This study showed that local visitors were about twice as likely as out-of-state visitors to have participated in agriculturally related activity. Open space was considered very important to the enjoyment of a New Hampshire visit. Over 60% of out-of-state visitors not planning a purchase cited lack of awareness as the reason for not making a purchase. They either did not know where to find local products or they were not aware of the origin of products they saw. A second survey within the same research report was implemented in the fall of 2002 and completed February, 2003. This research team conducted telephone interviews with 435 residents. This survey found over 90% of those surveyed felt that keeping farms viable was important and virtually all respondents agreed that buying local produce a way to keep farms viable. 39% of those surveyed said they "definitely" would purchase a New Hampshire-grown product if identified as such and 56% said they "probably" would. The most popular agri-tourism activities among those surveyed were apple and berry picking. 94% of those surveyed felt people should have more locally grown foods available to them. 62% of respondents said they would be willing to pay more for food products labeled as New Hampshire-grown.

According to Curtis *et al*. (2002) a survey was sent by mail to Georgia's Chambers of Commerce in September 2001. Each Chamber was sent a memorandum describing the survey, its reasoning, a definition of agri/eco-tourism operations, and

return contact information. A follow-up memorandum was sent in November 2001 to all Chambers that had not replied to the initial survey. This study separated agri-tourism and eco-tourism into two categories and defined nature-based, or eco-tourism as travel and visitation to an operation not directly dependent upon agricultural and for the purpose of enjoyment, study, and the appreciation of nature and any accompanying cultural features. A total of 70 agri-tourism operations were identified by the Chambers of Commerce. The majority of the tourism attractions identified by the Chambers of Commerce offered agricultural tours. The peak season for the agri-tourism business identified was fall. The low season was identified as winter. The total number of visitors per year to the agri-tourism enterprises was 243,139. The estimated mean number of visitors per year to each enterprise was 10,131, while the median was 500.

A study conducted by Lobo *et al*. (1999) looked at the agri-tourism benefits to farmers in the agricultural-urban area of San Diego. According to the study, tourism and agriculture are big business in San Diego County, ranking second and forth respectively as the county's largest industries. The survey was administered to visitors of The Flower Fields in Carlsbad, a popular agri-tourism attraction in San Diego County. The purpose of the study was to improve the understanding of potential consumers for this type of activity and to assess the awareness of visitors about issues that affect local agriculture. The survey used the questionnaire programming language developed by the U.S. General Accounting Office to create a computer generated questionnaire, which was administered to visitors through personal interviews. Between April 15 and April 30, 1998, they collected a total of 543 samples. According to The Flower Fields records, an estimated 200,000 people visited the site during the spring of 1998, with approximately 150,000

paid admissions. These visitors often traveled in groups with an average size of 3.77 people per group. Visitors traveled an average of 132 miles each way to get to The Flower Fields and spent an average of 8 hours in Carlsbad during their trip. This study used IMPLAN to estimate total economic impacts from expenditures at The Flower Fields in Carlsbad. The visitor expenditure data and information collected from the sample survey was projected to represent the 200,000 visitors. Visitors spent an estimated $2,329,137 at The Flower Fields. This study shows that expenditures through output multipliers made by visitors to The Flower Fields resulted in a total impact of $3,778,653 on the economy of Carlsbad. When taking into account the income multiplier, the study showed that it generated an estimated impact of $2,055,472 for Carlsbad. The value added multiplier showed an estimated economic impact of $2,357,741. Taking into effect the employment multiplier resulted in 69 jobs being created in Carlsbad as a result of expenditures made by visitors.

Jolly and Reynolds (2005) looked at consumer demand for agricultural and on-farm nature tourism. The purpose of the survey was to assess the level of participation in agricultural and nature tourism, identify consumer preferences for agri-tourism experiences, assess on-farm spending, and uncover consumer values and habits regarding food and the agricultural system. They used a purchased mailing list and surveyed a random sample of residents from Sacramento and Yolo Counties in California. Questionnaires with cover letters were delivered to 1,919 residents in November 2004. A reminder postcard was mailed in December, and a second questionnaire was mailed in January 2005. Of 294 respondents, 27 percent were 44 years of age or younger and 48

15

percent of respondents were female. Sixty-five percent of the respondents indicated that

they were "very interested" or "interested" in nature tourism, while 57.3 percent indicated

interest in agri-tourism. 61 percent of respondents indicated that they had spent an

average of between $5 and $40 on the farm during their visits with 16 percent having

spent more than $40. About 67 percent of the respondents who had purchased products

at farm-related tourism sites indicated a willingness to pay a price equal to or more than

what they would pay for the same or similar products in conventional outlets. Agri-

tourism operators can realize revenue through entrance fees and this study found 68

percent of the respondents indicated that they were willing to pay between $1 and $15

while 5 percent were willing to pay more than $15.

A study by Call, Leones, Dunn, and Worden (1994) looked at agri-tourism in

Cochise County, Arizona and provides a detailed assessment of the economic

significance of agricultural tourism and of direct farm marketing at 18 outlets to both

local and non-local consumers. The report describes the demographic characteristics,

travel behaviors and purchasing patterns of agricultural tourists and other visitors to the

fresh farm outlets. The report is based on interviews with fresh farm produce outlet

operators, road traffic count data, registries of visitors, and interviews with 904 visitors to

fresh farm produce outlets. Survey interviews were conducted during July, August,

September and October 1993, asking open-ended questions and entering responses into

laptop computers. In this study, an IMPLAN input-output model of Cochise County was

used to estimate the multiplier effects of agricultural tourism on the county. The results

from this model indicate that the approximately $1.1 million in direct agricultural tourist

expenditures resulted in about $1.9 million in gross revenue impacts and approximately

$950,000 in net revenue or value added impacts. Gross revenue impacts represent the

effect on total industry output, but can include some double counting. Net revenue or

value added impacts sum up only the value that has been added by each business by

subtracting out all purchased inputs except labor. The 18 fresh farm outlets described in

Section II of this report have a total of 41.12 full-time equivalent employees that are

exclusively involved in direct farm marketing.   In addition to the jobs created directly at

the farm outlets, jobs are created elsewhere in Cochise County through the multiple

effects. Direct farm marketing is responsible for creating a total of 67.85 FTE jobs in

Cochise County during 1993.

According to Barham (2003) a survey was conducted in 2002-03 that provided a

more accurate economic picture of the effects of the wine industry on Missouri. This

survey included a section that gathered financial data. The Community Policy Analysis

Center at the University of Missouri-Columbia analyzed this financial data using

IMPLAN. Multipliers were used to explain effects of the wine industry on the state. A

major winery, accounting for approximately 30% of gallons produced in 2001, declined

to participate in the survey, and so the final numbers appear lower than they are in reality.

This study then found direct, indirect and induced effects from the Missouri wineries.

The study considered all of these effects together and found Missouri wineries create a

total of 259 jobs in the state, generate an economic output of $24.6 million, and

contribute $6.5 million in income to Missouri workers. For every person directly

employed in the wine industry, an additional .66 jobs are created elsewhere in the

Missouri economy. For every dollar of their economic activity (output), an additional .82 cents of economic activity occurs in the state. And for every dollar of income earned by employees in the wine industry, there is an additional .79 cents in income earned by employees of other economic sectors connected to it.

A study by Chang *et al*. (2002) looked at the economic and marketing relationships between tourism and Michigan's wine industry. Three methods were used to gather data from wineries and winery tourists. These include a web-based industry survey which was designed and used to collect information from the wineries including: facilities, services, products and events and the number of winery visitors and their spending at the wineries. The second method involved a survey and more than one thousand traveler surveys that were conducted at six different Michigan Welcome Centers from June 2000 to October 2000. The third method involved winery tourism and wine consumption questions that were added to Michigan State University's Travel, Tourism, and Recreation Resource Center's household travel monitoring survey and 4,400 persons were surveyed. An IMPLAN model was used to estimate the economic impacts of wineries and found $75.4 million in total economic impact on Michigan's economy. The total economic impacts included direct and secondary (indirect and induced) economic impacts of wineries and showed that $58.8 million associated with winery production and $16.6 million related to winery tourism. The IMPLAN model also showed wineries support 987 jobs directly and indirectly in Michigan. 175 jobs are in wineries and tasting rooms, and 812 in businesses that are supported by purchases by wineries.

Chapter 3:

Data and Methodology

In order to collect information about visitors to agri-tourism businesses, visitor surveys were conducted at six venues. The owners of these six venues were located through the 2003/2004 surveys of agri-tourism owners conducted by researchers at UT and through UT extension service contacts. They were contacted in 2005 about having visitor surveys conducted at their businesses. These businesses agreed to participate and summary reports of their visitors' responses were provided to each of them. These agri-businesses included attractions of on-farm retail markets, pumpkin patches, corn mazes, pick your own farms, on-farm tours, and a winery. The names of the businesses and certain information are omitted to protect the identity of the businesses.

The data for this study was collected through both survey drop boxes and mail-in surveys during a two week time period at each business. The two week period was selected for each business based upon recommendations by them as peak visitor periods. One of the businesses had an internet site and email listserve and the visitors were offered the opportunity to complete the survey online.

The survey instruments contained questions about the type of visitors' experiences, preferences for amenities and services, prior visits, group size and type, length of stay, expenditures, and demographics including income, age, gender, and education level.

Three types of analyses will be completed as part of this study. First, the data from the visitor surveys will be summarized and presented. For continuous variables,

such as age of visitor, the means will be used to describe the data. For categorical

variables, such as yes/no, percents will be used to describe the data. Second,

demographic and visiting patterns influencing importance that visitors place on services

and amenities will be evaluated using probit models. Third, on-site expenditure data

from the visitor surveys will be used, along with statistics from a previous operators

survey, to calculate projected amounts that might be spent on various goods and services

provided by similar agri-tourism venues across the state. These statewide expenditures

will then be used along with IMPLAN, an input/output model, to project the economic

impacts from on-site visitor expenditures at similar agri-tourism venues across the state.

3.1 Probit Models of Preferences for Amenities/Services

A set of questions asked the visitors to rate the importance of amenities and

services offered at the venue. These amenities and services included freshness of farm's

or business' products, easy transportation access, on-site restrooms, food and drink for

purchase, seating, picnic areas and others. A copy of the survey can be found in

Appendix A.

The responding visitors were asked to rate each of these potential amenities as 1

for extremely important, 2 for highly important, 3 for moderately important, 4 for of little

importance, and 5 for not important at all. They could also respond that the

service/amenity listed did not apply to their visit. There were only 197 observations used

because only observations for which they answered all the questions were included as

variables in the models and observations with missing values were not used in the

regressions. Due to low response numbers for some services/amenities in the 4 and 5

categories, for the purposes of modeling, binomial variables were created for each

service/amenity. If the service/amenity received an importance rating of extremely or highly important, it was assigned a '1', if it received a rating of moderate or less importance, it was assigned a '0'. In order to model the influence of demographics and visiting patterns on the importance of these amenities, the hypothetical model used is:

Importance of Amenity/Service I to the jth Visitor = f(Prior visits, visiting with school group, local county, visit planned same day, male, college graduate, inclt30, inc3050, inc70100, incgt100, age, learned about by word of mouth, learned about by brochure, learned about by newspaper advertising).

Because dependent variables of importance are 0,1 variables, ordinary least squares regressions are not used. Instead, a limited dependent variable model, the probit model, is used to estimate each of the models. Probit obtains estimates of the linear probit model, where the dependent variable takes on only two values (Amemiya, 1981).

The probability that a respondent will rate an amenity/service extremely/highly important as a function of the demographics and visitor patterns explanatory variables matrix, X is:

Pr (High to Extremely High Importance of Amenity/Service to jth visitor)
= Φ (α + β'X), where X=matrix of explanatory variables, Φ is the standard
normal cumulative distribution function, and β' is the parameter to be
estimated with error α.

A probit model is an econometric model in which the dependent variable y_i can be only one or zero, and the continuous independent variable x_i are estimated in: $Pr(y_i=1)= \Phi(x_i' \beta')$ x_i is a matrix of variables, β' is a vector of parameters to be estimated, and Φ is the normal cumulative distribution function.

A listing of the variables and their definitions are provided in Table 1. The dependent variables are freshness of farm's or business' products, easy transportation access, on-site restrooms, food and drink for purchase, seating, picnic areas, crafts or souvenirs, opportunity to pet or care for farm animals, farm scenery, pricing of products, admission or user fees, product samples, adequate parking, and learning about how products are grown or made. The explanatory variables (X) are prior visits, visiting with school group, local county, visit planned same day, male, college graduate, inc3050, inc5070, inc70100, incgt100, age, learned about by word of mouth, learned about by brochure, and learned about by newspaper advertising. The means are for the 197 observations usable in the analysis.

The effect of demographics and visiting patterns on preferences for amenities and services are estimated using probit models. The dependent variable for each is represented by a dummy variable with a value of 1 if the amenity or service was considered highly or extremely important and with a value of 0 if the respondent rated it as only moderately or of less importance. The probability of each amenity receiving a rating of highly or extremely important is hypothesized to be influenced by demographics and visiting patterns. The hypothetical model can be expressed as Pr (Amenity$_i$=1) = f (Prior Visits, visiting with school group, local county, visit planned same day, male, college graduate, inc3050, inc5070, inc70100, incgt100, age, learned about by word, learned about by brochure, learned about by newspaper advertising), i=1,...n amenities or services (Freshness of products, easy transportation access, on-site restrooms, food and drink for purchase, seating, picnic areas, crafts or souvenirs, opportunity to pet or care for farm animals, farm scenery, pricing of products, admission or user fees, product samples,

**Table 1. Names and Definitions of Variables Used in Probit Models of Visitors'
Preferences for Amenities/Services to Tennessee Agri-tourism Attractions.**

Variable Name	Definition	Mean	Std. Dev.	N	Means (N=197)
Dependent Variables					
Freshness of farm's or business' products	1 if extremely or highly important to visit, 0 otherwise	1.65	0.89	319	.88
Easy transportation access	1 if extremely or highly important to visit, 0 otherwise	1.91	0.91	346	.72
On-site restrooms	1 if extremely or highly important to visit, 0 otherwise	1.74	0.96	345	.70
Food and drink for purchase	1 if extremely or highly important to visit, 0 otherwise	2.92	1.31	336	.30
Seating	1 if extremely or highly important to visit, 0 otherwise	2.60	1.25	326	.37
Picnic areas	1 if extremely or highly important to visit, 0 otherwise	2.66	1.29	323	.36
Crafts or souvenirs	1 if extremely or highly important to visit, 0 otherwise	3.36	1.20	321	.19
Opportunity to pet or care for farm animals	1 if extremely or highly important to visit, 0 otherwise	2.71	1.30	299	
Farm scenery	1 if extremely or highly important to visit, 0 otherwise	2.09	1.06	326	.66
Pricing of products	1 if extremely or highly important to visit, 0 otherwise	2.09	1.07	328	.74
Admission or user fees	1 if extremely or highly important to visit, 0 otherwise	2.18	1.09	307	.60
Product samples	1 if extremely or highly important to visit, 0 otherwise	2.34	1.09	314	.56
Adequate parking	1 if extremely or highly important to visit, 0 otherwise	1.88	0.85	341	.71
Learning about how products are grown or made	1 if extremely or highly important to visit, 0 otherwise	1.93	0.99	317	.71

Table 1, Continued.

Variable Name	Definition	Mean	Std. Dev.	N	Means (N=197)
Explanatory Variables					
Prior Visit	1 if have visited attraction before, 0 otherwise	0.34	0.47	354	0.53
Visiting With School Group	1 if came with a school group, 0 otherwise	0.63	0.48	349	0.24
Local County	1 if from local county, 0 otherwise				0.48
Visit Planned Same Day	1 if visit planned visit same day, 0 otherwise	3.35	1.56	332	0.44
Male	1 if male, 0 otherwise	0.13	0.34	336	0.17
College Graduate	1 if attained college degree or higher education, 0 otherwise	3.89	1.00	334	0.76
INCLT30 (omitted dummy variable)	1 if household income before taxes in 2004 was less than $30,000, 0 otherwise				
INC3050	1 if household income before taxes in 2004 was $30,000 to $50,000, 0 otherwise				0.23
INC5070	1 if household income before taxes in 2004 was $50,000 to $70,000, 0 otherwise				0.30
INC70100	1 if household income before taxes in 2004 was $70,000 to $100,000, 0 otherwise				0.21
INCGT100	1 if household income before taxes in 2004 was greater than $100,000, 0 otherwise				0.19
Age	visitor's age	41.16	12.37	309	41.27
Learned About by Word of Mouth	1 if learned about attraction through word of mouth, 0 otherwise	7.24	4.31	54	0.31
Learned About by Brochure	1 if learned about attraction through brochure, 0 otherwise	8.41	4.00	17	0.12
Learned About by Newspaper Advertising	1 if learned about attraction by newspaper advertising, 0 otherwise	8.00	1.73	3	0.21

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adequate parking, learning about how products are grown or made).

Visitors who have been to the attraction before have past experiences with the attraction. Therefore, they spend less time on activities at the attraction because they have experienced them before. They are hypothesized to be less concerned about learning how products are grown or made. These visitors are more likely to return for the products at the attraction because they are offered several times a year. They are more concerned about freshness of the farms' or business' products, product samples, and pricing of products.

Visitors who come with a school group have goals and needs at the attraction that differ from other groups of people. They are hypothesized to be more concerned with easy transportation access, on-site restrooms, picnic areas, admission or user fees, adequate parking, seating, and learning about how products are grown or made. School children usually bring their own food and drinks when attending a field trip. School administrators also may order the food and drinks before the scheduled trip. Therefore, the school group is hypothesized to be less concerned by food and drink for purchase.

Visitors from the local county of the agri-tourism attraction are familiar with the landscape and history of the local area. Therefore, they are hypothesized to be less concerned by farm scenery and crafts or souvenirs. Visitors from the local county have similar characteristics to those who have heard about the attraction through word of mouth, newspaper advertising, and brochures because this is main stream of communication in local counties. As visitors from the local county drive to the attraction the entire trip will be shorter than visitors traveling outside of the county. They are hypothesized to be less concerned by on-site restrooms, and food and drink for purchase.

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The agri-tourism attractions offer products that visitors from the local county find unique and this is what drives visitors to come to the attraction. They are hypothesized to be more concerned about freshness of the farms' or business' products and product samples.

Visitors who are either a college graduate or hold a post graduate degree usually are earn higher salaries and have more disposable income. Visitors with higher education and more income will have more money to spend at the attraction. Those with higher average incomes and higher education are hypothesized to be less concerned with admission or user fees and pricing of products. The higher average income visitors usually are employed in professional careers other than farming. They come to the attraction for the agriculture activities and products in which they don't find elsewhere. These types of visitors are hypothesized to be more concerned about freshness of the farms' or business's products, product samples, crafts or souvenirs, farm scenery, and learning about how products are grown or made.

Older visitors are in need of more assistance than other visitors at agri-tourism attractions. The older visitors are hypothesized to be more concerned about easy transportation access, on-site restrooms, adequate parking, seating, and picnic areas.

3.2 Economic Impacts Analysis

To identify the economic impacts of on-site expenditures by visitors to agri-tourism venues similar to the six participating in the study, IMPLAN (Impact Analysis for Planning) software and data for the state of Tennessee are used. IMPLAN modeling software is based on input-output methods frequently used by planners and economists to assess impacts on economic development. IMPLAN software is distributed by the Minnesota IMPLAN Group (http://www.implan.com). They gather national and regional

data from many state, federal agencies, and industry sources that allow the software to calculate both direct and secondary economic effects of different industries. In the IMPLAN model, input-output analysis has been extended beyond market-based transaction accounting to include non-market financial flows by using a social accounting matrix (SAM framework) (MIG, Inc. 1999). The model describes the transfer of money between industries and institutions, but also contains both market-based and non-market financial flows, such as inter-institutional transfers.

Output from the model includes descriptive measures of the economy including total industry output, employment, and value-added for over 500 industries within Tennessee's economy. Total industry output is defined as the value of production by industry per year (AIM-AG, 2006). Employment represents total wage and salary employees, as well as self-employed jobs in a region, for both full-time and part-time workers. Total value added is defined as all income to workers paid by employers; self-employed income; interests, rents, royalties, dividends, and profit payments; and excise and sales taxes paid by individuals to businesses.

The IMPLAN software package allows the estimation of the multiplier effects of changes in final demand for one industry on all other industries within a local economic area. Multipliers may be estimated for a single county, for groups of contiguous counties, or for an entire state; they measure total changes in output, income, employment, or value added. Output multipliers relate the changes in sales to final demand by one industry to total changes in output (gross sales) by all industries within the local area. Employment multipliers relate the change in direct income to changes in total income within the local economy. Value added multipliers are interpreted the same

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as income and employment multipliers. They relate changes in value added in the industry experiencing the direct effect to total changes in value added for the local economy.

Results from the IMPLAN model will be used to assess the economic impacts of the agri-tourism industry on Tennessee. An industry such as agri-tourism, impacts the regional economy in three primary ways, direct, indirect and induced effects. Direct effects measure the response for a given industry given a change in final demand for that same industry (AIM-AG, 2006). As direct effects, agri-tourism operators generate output and value added, and provide employment and wages to employees. Indirect effects represent the response by all local industries from a change in final demand for a specific industry (AIM-AG, 2006). As indirect effects, the industry supports other regional enterprises through inter-industry purchases of inputs to the production and services process. For example, providers of agri-tourism such as eating/drinking establishments, have to purchase food from food manufacturing wholesalers who, in turn, must acquire inputs to process the food. Induced effects represent the response by all local industries caused by increased (decreased) expenditures of new household income and inter-institutional industry transfers generated (lost) from the direct and indirect effects of the change in final demand for a specific industry (AIM-AG, 2006). As induced effects, personal consumption expenditures by the agri-tourism operators and their employees in both the agri-tourism industry and complementary businesses further stimulate the local economy. For example, an agri-tourism operator receives income from operating the venue, but then uses that income to acquire groceries and housing which, in turn, generates income for individuals employed in grocery stores and construction. The total

economic impacts from the agri-tourism industry in Tennessee are the sum of the direct, indirect and induced effects.

From the direct, indirect, and induced effects, Type SAM multipliers are built for total industry output, employment, income, and value added (AIM-AG, 2006). The Type SAM multipliers compare direct, indirect and induced effects to the direct effects generated by a change in final demand. Type SAM also account for commuting, social security and income taxes, and savings by households. A Type SAM retail sales multiplier of 1.5 indicates that if one dollar is generated by tourist activity, then an additional 50 cents will be generated due to business (indirect) and household (induced) spending. The multiplier effect indicates the relationship between some observed change in the economy and the amount of economic activity that this change creates throughout the economy. Type SAM multipliers are calculated as follows: Type SAM = (Direct Effects + Indirect Effects + Induced Effects)/ Direct Effects.

The visitor's expenditure information can be used in IMPLAN to project the economic impacts of visitor expenditures. The effects on total industry output, employment, and value added from these visitor expenditures will be measured.

In calculating the projected Tennessee Visitor Expenditures statewide at similar agri-tourism attraction firms in 2005, data was taken from the 2005 visitor survey for non-winery and winery firms. Average expenditures per visitor included admission or user fees, purchasing venue's product, other food and drink, non-food souvenir items, and other. From the 2003-2004 Agri-tourism Operator Surveys, data was collected for median number of visitors and number of firms for non-winery and winery. The projected expenditure per firm was calculated by expenditure per visitor multiplied by

number of visitors per firm. Then, the projected total expenditures across all venues were

calculated by using expenditure per firm multiplied by number of projected firms for both

winery and non-winery. In projecting the economic impacts of these on-site

expenditures, the total expenditures and expenditures by category were used in IMPLAN.

Visitor expenditures were assigned to different sectors in IMPLAN for winery and non-

winery firms to find the projected direct, indirect, and induced impacts of total industry

output, total value added, and employment.

Chapter 4

Results

4.1 Survey Data Descriptive Measures

A total of 1400 surveys were distributed to visitors at six businesses. In addition, an email survey was distributed to participants in one of the businesses' customer listserves. We did not have access to information about the total number of participants in the listserves. A total of 464 responded to either the written drop box/mail survey or the email survey. Among these, 361 responded to the written drop box /mail surveys, for a response rate on the non-email surveys of 25.79 percent (361/1400). Throughout this document, "N" represents the number of responses to a particular question.

4.1.1 Enjoy ability of Visit

Visitors were asked about how enjoyable their visit to the agri-tourism attraction had been. A total of 439 responded to the question. As shown in Figure 1, 55 percent of the visitors to the agri-tourism attractions said their experience was extremely enjoyable, 30 percent said their visit was highly enjoyable, 13 percent said their visit to be enjoyable and 2 percent said their visit to be somewhat enjoyable. None of the respondents said their visit was not enjoyable at all.

4.1.2 Preferences of Services/Amenities

Visitors were also asked about the importance of several amenities and services to their visit to the agri-tourism attraction and the summary statistics for these ratings are displayed in Table 2. The ratings categories were the following: 1 being extremely important, 2 being highly important, 3 being moderately important, 4 being of little

31

13% 2%

30%

55%

- ☐ Extremely
- ■ Highly
- ■ Enjoyable
- ☐ Somewhat
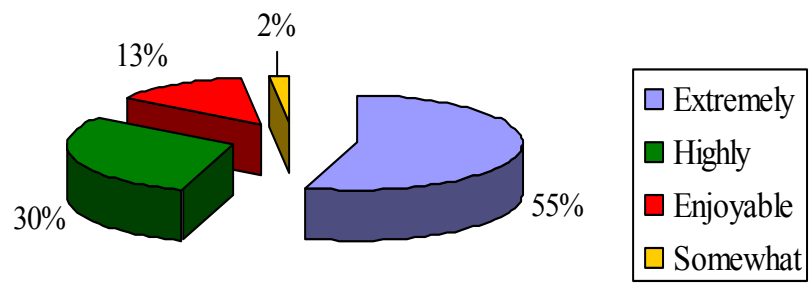
(N=439)

**Figure 1. Visitors' Rating of Enjoyability of Visit to the Tennessee Agri-tourism
Attraction, 2005.**

Table 2. Visitors' Importance Ratings of Amenities/Services by the Tennessee Agritourism Attraction, 2005.

Amenity/Service	Percent Responding As:					
	1=Extremely Important	2= Highly Important	3=Moderately Important	4=Little Impor-tance	5=Not Important at All	Mean Rating
Freshness of farm's or business' products (N=409)	61.37	24.69	10.02	3.42	0.49	1.57
On-site restrooms (N=432)	46.99	25.46	18.06	8.33	1.16	1.91
Adequate parking (N=430)	36.74	34.42	25.12	3.49	0.23	1.96
Learning about how products are grown or made (N=407)	41.03	31.94	18.67	6.88	1.47	1.96
Easy transportation access (N=434)	36.87	34.79	22.81	4.61	0.92	1.98
Pricing of products (N=417)	36.45	33.57	20.14	7.19	2.64	2.06
Farm scenery (N=416)	32.21	31.97	23.8	6.73	5.29	2.21
Admission or user fees (N=389)	29.56	30.85	24.68	9.25	5.66	2.31
Product samples (N=402)	22.89	33.08	27.86	11.94	4.23	2.42
Seating (N=414)	21.74	21.74	27.05	19.81	9.66	2.74
Picnic areas (N=412)	20.39	19.66	27.67	18.45	13.83	2.86
Opportunity to pet or care for animals (N=385)	16.88	24.42	22.86	17.66	18.18	2.96
Food and Drink for purchase (N=422)	18.96	13.03	26.54	27.25	14.22	3.05
Crafts or souvenirs (N=408)	8.33	11.76	29.17	28.68	22.06	3.44

importance and 5 being not important at all. The percents of responses for each rating are displayed in Table 2 along with the mean rating of importance for each amenity/service.

Freshness of the farms' or business' products was rated as extremely important by over 61 percent of the respondents. Over 40 percent rated both on-site restrooms and learning about how products are grown or made as extremely important. For adequate parking, easy transportation access, and pricing of products over 36 percent rated these amenities or services as extremely important. Using the mean ratings, amenities and services receiving an average rating of highly to extremely important included freshness of farm's or business' products, on-site restrooms, adequate parking, learning about how products are grown or made, and easy transportation access. Services or amenities receiving average ratings of moderately to highly important included pricing of products, farm scenery, admission or user fees, product samples, seating, picnic areas, and opportunity to pet or care for animals. Services or amenities receiving average ratings of little to moderate importance were food and drink for purchase and crafts or souvenirs.

4.1.3 Prior Visits

Respondents were asked whether they had visited the agri-tourism attraction before. A total of 456 visitors responded to this question. As shown in Figure 2, almost 53 percent of the visitors had visited the attraction at a previous time. From the 2003 survey of agri-tourism operators (Bruch and Holland, 2004), the business owner's estimate of one-time versus repeat visitors was about 50 percent one-time and 50 percent repeat visitors.
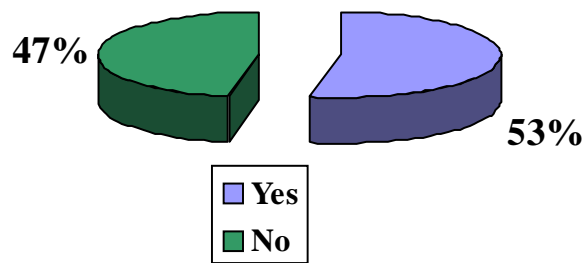
(N=456)

Figure 2. Prior Visits to the Tennessee Agri-tourism Attraction, 2005.

4.1.4 Group Size and Type

Visitors were surveyed about the size of group with which they were visiting the agri-tourism attraction. A total of 440 responded to the question regarding the size of their group. As shown in Figure 3, nearly 29 percent came to the attraction alone or with a small group of family/friends, while almost 71 percent came with a larger group. Those visiting in a larger group were asked what type of group with which they were visiting. A total of 217 responded to this question. As shown in Figure 4, of those visiting with a larger group, nearly 52 percent came to the attraction with a school group, almost six percent came with a church group, less than one percent came with a tour, and nearly 42 percent came a group other than the three previous groups. These groups included other types of groups such as Scouts, gardening groups or clubs, or other clubs.
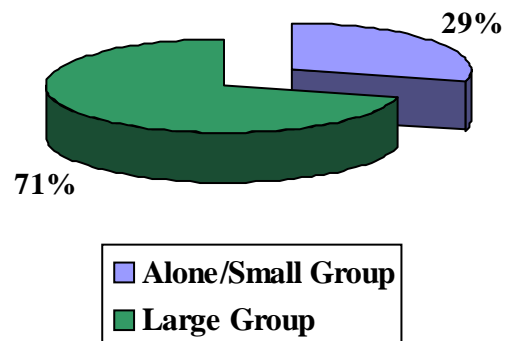
(N=440)

Figure 3. Visitors' Group Size When Visiting the Tennessee Agri-tourism Attractions, 2005.
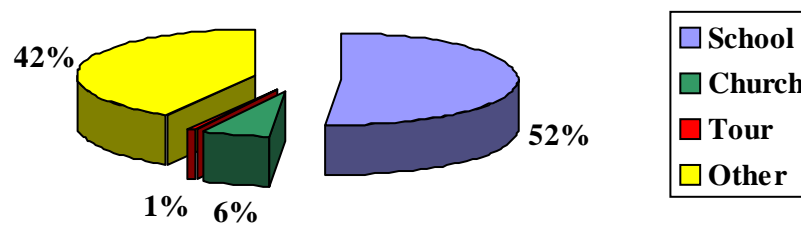
(N=217)

Figure 4. Type of Visitor Group to the Tennessee Agri-tourism Attraction, 2005.

4.1.5 Length of Stay and Visit Planning Horizon

Visitors were surveyed about the length of their visit to the agri-tourism attraction, with 422 responding to this question. Displayed in Figure 5, almost 91 percent of the visitors planned to visit for one day only, less than one percent planned to visit for two days and nearly 9 percent planned to visit for more than 2 days. As shown in Figure 6, the majority (over 58 percent) of those visiting planned their visit at least one week in advance (N=420).

4.1.6 Methods of Learning About Agri-tourism Attractions

As shown in Table 3, 422 responded to a question regarding how they learned about the agri-tourism attraction. The largest percent of visitors, nearly 32 percent, learned about the attraction from word mouth, over 13 percent learned from brochures, over 12 percent learned from newspaper advertising, and almost 9 percent learned from a business sign. About 13 percent learned from other sources. In some cases this was through clubs or organizations and in some cases it was a combination of the sources listed. From the 2003/2004 surveys of agri-tourism operators (Bruch and Holland, 2004; Jensen, et al. 2005), the most commonly used forms of advertising the attractions were word of mouth, business signs, Tennessee Department of Agriculture website, and newspaper ads.

4.1.7 Visitor Demographics

The visitors were asked several questions regarding demographics to help identify who visits agri-tourism attractions. These included gender, education level, residence

9%   1%

- 1 day
- 2 days
- More than 2 days

90%
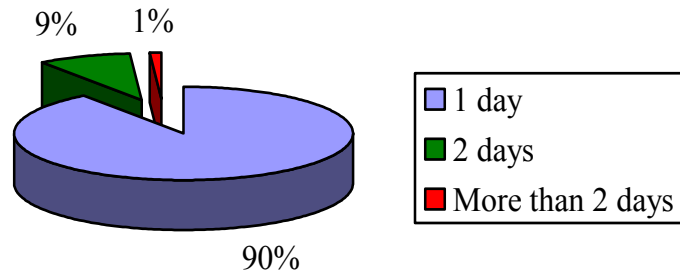
(N=422)

Figure 5. Length of Visit to the Tennessee Agri-tourism Attraction, 2005.

16.7%

5.0%

21.0%

25.2%

19.3%

12.9%

- Same day
- Less than 1 week
- 1 to 2 weeks
- 2 weeks to 1 month
- 1 to 3 months
- At least 3 months ago
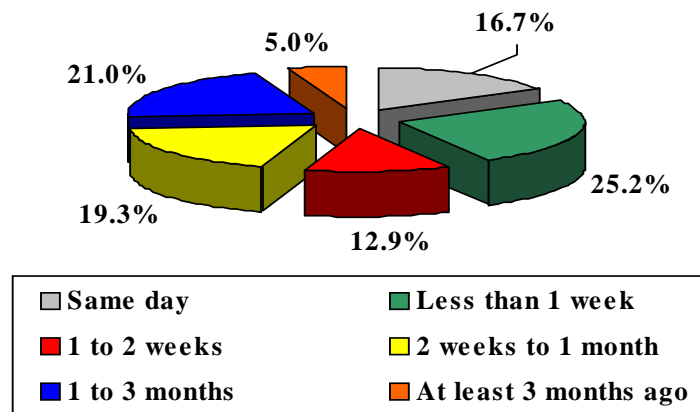
(N=420)

Figure 6. Time in Advance that Planned Visit to the Tennessee Agri-tourism Attraction, 2005.

Table 3. Visitors' Methods of Learning About the Tennessee Agri-Tourism Attraction, 2005.

Source of Information About Attraction	Percent Using Source (N=422)
Word of mouth	31.52
Other	13.27
Brochures	13.03
Newspaper advertising	12.32
Business sign	8.77
News releases	6.40
Business Internet site	3.55
Direct mail	3.55
Radio advertising	3.32
County or local tourism	1.42
Point of sale samples	0.95
Television advertising	0.71
Tennessee Agri tourism Attractions	0.71
Chamber of Commerce	0.24
Coupons	0.24
Tennessee Vacation Guide	0.00

location, income, and age. As shown in Figure 7, nearly 84 percent of the visitors were

female, while 16 percent were male (N=437). Displayed in Figure 8, nearly 41 percent of

the visitors were a college graduate, 31 percent had a post graduate degree, 18 percent

had some college or technical school, 8.7 percent were a high school graduate and only

about 1 percent of the visitors were less than a high school graduate (N=437).

As shown in Figure 9, nearly 17 percent of the visitors had a 2004 household

income before taxes of $100,000 or more. About 5 percent had incomes between

$90,000 and $99,999, another 7 percent had incomes between $80,000 and $89,999, and

10 percent had incomes of $70,000 to $79,999. About 10 percent had incomes between

$60,000 and $69,999, 16 percent had incomes between $50,000 and $59,999, 12 percent

had incomes between $40,000 and $49,999, and 11 percent between $30,000 and

$39,999. About 11 percent of the visitors' incomes fell below the $30,000 per year level.

A total of 361 responded to the income question. The average age of the responding

visitors was 42.42 years (N=406). However, it is important to note that only adults were

asked to complete the survey. Therefore, the overall age of visitors, especially with

school groups, could be considerably lower.

The location of the visitors' residences was also asked as part of the survey. As

shown in Table 4, visitors primarily came from Tennessee (86.8 percent). However, out-

of-state visitors also came from other states as far away as California. The second

highest percent of visitors came from Georgia (5.38 percent). About 48.14 percent of the

visitors who were visiting the attraction resided in the same county as the attraction

(N=403).

16%

Female
Male

84%
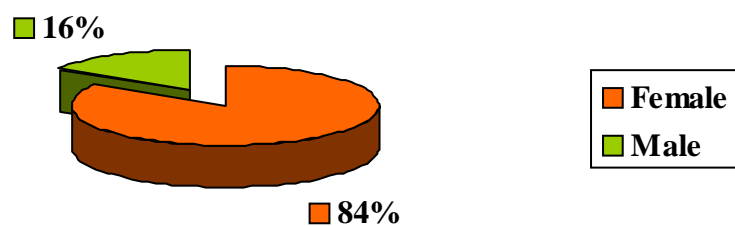
(N=437)

Figure 7. Gender of Visitors to the Tennessee Agri-tourism Attraction, 2005.

1% **9%**

31% **18%**

41%

- Less than high school graduate
- High School graduate
- Some college or technical school
- College graduate
- Post graduate degree
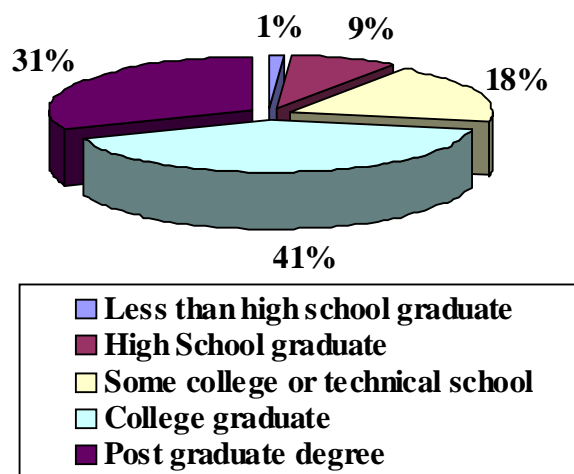
(N=437)

Figure 8. Highest Education Level of Visitors to the Tennessee Agri-tourism Attraction, 2005.
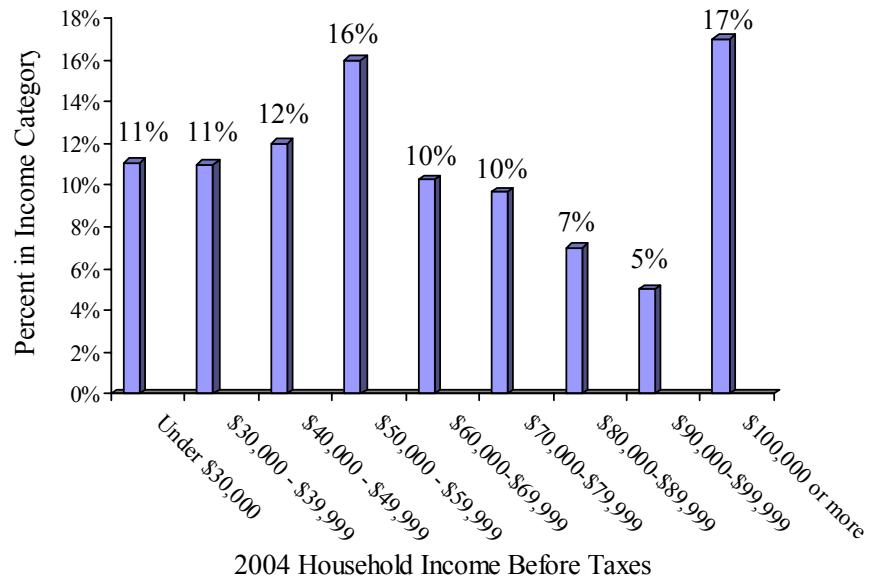
Figure 9. 2004 Household Income (Before Taxes) of Visitors to the Tennessee Agritourism Attractions, 2005.

Table 4. State of Residence of Visitors to the Agri-tourism Attractions, 2005.

State of Residence	Percent of Visitors from State (N=409)
Tennessee	86.80
Georgia	5.38
Florida	0.98
Kentucky	0.98
Alabama	0.73
Indiana	0.73
Missouri	0.73
North Carolina	0.73
Massachusetts	0.49
Mississippi	0.49
Virginia	0.49
California	0.24
Illinois	0.24
Minnesota	0.24
Ohio	0.24
South Carolina	0.24
Texas	0.24

4.1.8 Average Visitor Expenditures

Shown in Table 5 are the average visitor expenditures at the Tennessee agri-tourism attractions. Averages for winery and non-winery firms are shown in two of the columns, while the averages of both winery and non-winery firms are shown under the column "Overall." There are two sets of averages in Table 5 the top half shows average visitor expenditures assuming that non-responses represented zero expenditure. The lower half of Table 5 represents average visitor expenditures for positive on-site expenditures. Purchasing the venue's product had the highest average expenditure for both winery and non-winery firms. Admission or user fees had the next highest average expenditure for non-winery, but there were zero expenditure at the winery firms. The "Other" category had the third highest average expenditure in non-winery firms, and was second highest in winery firms. Third highest for winery firms were non-food souvenir items, while this category was last for non-winery firms. The fourth highest expenditure by visitors to non-winery and winery firms was other food and drink.

4.2 Economic Impacts Analysis

4.2.1. Total Visitor Expenditure Calculations

The average visitor expenditures reported in Table 5, information from the 2003-2004 surveys, and IMPLAN are used to project economic impacts from visitor expenditures at similar agri-tourism venues across the state. As stated earlier in this document, based on information contained in the company websites and/or visits to the company where the visitor surveys were administered, two main categories of agri-

Table 5. Average Visitor Expenditures on Goods and Services at the Tennessee Agri-tourism Attractions, 2005.

	Mean Per Visitor Expenditure Assuming Missing Values for Total Expenditures as Zero Expenditures		
	Overall (N=464)	Non-Winery (N1=431)	Winery (N2=33)
Admission or user fees	$2.15	$2.31	$0.00
Purchasing venue's product	$7.42	$6.14	$24.17
Other food and drink	$0.22	$0.22	$0.15
Non-food souvenir items	$0.11	$0.09	$0.34
Other	$0.57	$0.56	$0.76
Total	$10.47	$9.32	$25.42
	Mean Per Visitor Expenditure Using Only Observations with a Positive Total Expenditures		
	Overall (N=307)	Non-Winery (N1=280)	Winery (N2=27)
Admission or user fees	3.24	$3.55	$0.00
Purchasing venue's product	11.22	$9.46	$25.54
Other food and drink	0.33	$0.34	$0.19
Non-food souvenir items	0.16	$0.14	$0.42
Other	0.86	$0.86	$0.93
Total	$15.81	$14.35	$27.08

tourism firms participating in the visitor surveys were developed, non-winery and winery. The non-winery firms classified themselves as having on-farm markets, festivals or fairs, pumpkin patches, corn mazes, pick-your-own, petting zoos, and on-farm restaurants or eating establishments, for example snack bars. The other type of firm was a winery.

For the two types of firms, if the number of firms of that type is multiplied by their median number of visitors and the median expenditure per person, then a projected value of visitor expenditures can be calculated. As can be seen in Table 6, the calculations for expenditures per visitor are taken from the lower half of Table 5 and include only expenditures using the observations with positive total expenditures. The visitors to Agr-tourism attractions are taken from the median values of visitors as estimated by the agri-tourism attraction operators responding to the 2003/2004 surveys (Bruch and Holland, 2004; Jensen et al., 2005). From the same surveys, the number of responding agri-tourism business owners that classified themselves as "non-winery" firms were 270 firms. Among the 270 firms, 210 responded to a number of visitors. The median number of visitors among these operations was 2,000. Of the responding firms in that study, 20 had wineries as an attraction and 17 responded to a number of visitors. The median number of visitors was 10,800. If the expenditure per visitor is multiplied by the median number of visitors, the projected visitor expenditures per venue are $14.35*2,000=$28,700 for non-winery firms and $27.08*10,800=$292,464 for winery firms.

It should be noted that these expenditures do not include projections for non-responding firms to the 2003/2004 surveys. While the overall number of non-respondents was known, the types of attractions offered by these non-respondents were

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Table 6. Calculations for Projecting Statewide Visitor Expenditures at Similar Agri-tourism Firms, 2005.

From 2005 Visitors Surveys	Non-Winery	Winery
Mean Expenditures Per Visitor On:	(N1=280)	(N2=27)
Admission or user fees	$3.55	$0.00
Purchasing venue's product	$9.46	$25.54
Other food and drink	$0.34	$0.19
Non-food souvenir items	$0.14	$0.42
Other	$0.86	$0.93
Total	$14.35	$27.08
From 2003-2004 Agri-tourism Operator Surveys		
Median Number of Visitors	2,000	10,800
Number of firms	270	20
Projected Expenditure per Visitor*Number of Visitors per Firm Firm=Expenditure per		
Admission or user fees	$7,100	$0
Purchasing venue's product	$18,920	$275,832
Other food and drink	$680	$2,052
Non-food souvenir items	$280	$4,536
Other	$1,720	$10,044
Total	$28,700	$292,464
Projected Numbers of Similar Agri-tourism Firms	379	21
Projected Total Expenditures Across All Venues=Expenditure per Firm*Number of Firms		
Admission or user fees	$2,690,900	$0
Purchasing venue's product	$7,170,680	$5,792,472
Other food and drink	$257,720	$43,092
Non-food souvenir items	$106,120	$95,256
Other	$651,880	$210,924
Total	$10,877,300	$6,141,744

not known. Therefore, expenditure estimates across responding agri-tourism firms are likely conservative ones. From the 2003/2004 surveys (Bruch and Holland, 2004; Jensen et al., 2005), a total of 335 out of a possible 591 contacts responded that they operated agri-tourism businesses. The 335 respondents are made up of 210 agri-tourism businesses from the 2003 survey and 125 agri-tourism businesses from the 2004 survey. Additional phone surveys were conducted or mailed, but these were either out of business, were not agri-tourism businesses, or were bad phone numbers or addresses. In the 2003 survey, a total of 291 could not be reached by telephone. Those who could not be reached in the 2003 survey and an additional 90 other potential agri-tourism businesses identified were contacted in the 2004 survey for a total of 381 contacted in the 2004 survey. The 381 contacted in the 2004 survey in addition to the 210 respondents from the 2003 survey show the total contacted is 591. However, in response to the 2004 survey, 58 responding out of the 381 contacted indicated they were not currently operating an agri-tourism business, while 125 responded that they were agri-tourism businesses. Therefore, out of the 591 total contacted minus the 58 respondents that were not currently operating an agri-tourism business gives a total of 533 respondents. Since only about 68.31 percent (125/183) of those responding to the 2004 survey were agri-tourism businesses, this percent can be used to adjust the 198 potential agri-tourism businesses to 135 likely to be agri-tourism businesses. From the 2003-2004 surveys, 270 classified themselves as having attractions like the non-winery firms that participated in the visitor surveys. Multiplying 135 by the percent that were "non-winery" (270/335) gives 109 likely to be "non-winery" agri-tourism firms. Adding this number of non-respondents who might be likely to be non-winery agri-tourism (109) to the responding

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who were non-winery agri-tourism (270) gives a projected total of 379 firms which are known to be or likely to be non-winery agri-tourism firms. Even though there were 20 wineries that responded, a projected number of 21 wineries are taken from Tennessee Farm Winegrowers Association website. The calculations to arrive at the projected total number of similar firms statewide are shown in Table 7.

If the projected number of 379 non-winery firms is multiplied by the projection of expenditures per venue of $28,700, the projected total expenditures statewide across similar venues is $10,877,300. If the number of wineries (21) is multiplied by the projection of expenditures per venue of $292,464, the projected total expenditures statewide across similar venues are $6,141,744.

4.2.2. Expenditure Impacts in IMPLAN

In order to project the economic impacts of these on-site expenditures, the total expenditures and expenditures by category were used with IMPLAN. For the visitors to non-winery firms, admission or user fees expenditures were classified as sector 478, other amusement and recreation. Purchasing the venue's product was classified equally across three sectors, sector 2, grain farming to represent corn production for mazes and on-farm markets, sector 3, vegetable and melon farming to represent pumpkin production for pumpkin patches and on-farm markets, and sector 5, fruit farming to represent pick-your-own and on-farm markets. Other food and drink was classified as sector 481, food service and drinking places, and non-food souvenir items as sector 410, general merchandise stores. Because many of the respondents indicated that their other expenditures were for games and activities inside the venue, other was classified as 478, other amusement and recreation. For visitors to the winery firms, the classifications were sector 87, wineries,

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Table 7. Calculations for Projecting Number of Similar Agri-tourism Firms Statewide.

Agri-tourism Firms Responding to 2003 Survey	210
Agri-tourism Firms Responding to 2004 survey	<u>125</u>
Total	335
Firms not Responding to 2004 Survey	198
Percent of All Firms Responding to 2004 Survey Which were Agri-Tourism	68.31%
Non-responding Firms Likely to Be Agri-tourism	135
Non-responding Firms Likely to Be Non-Winery Agri-tourism	109
Responding Non-Winery + Non-Responding Likely to be Non-Winery	379
Wineries	**21**

for purchasing the venue's product, other food and drink as sector 481, food service and drinking places, and non-food souvenir items as sector 410, general merchandise stores. Many of those responding under the other category purchased supplies, glassware, or utensils to complement their wine purchases, so other was categorized as 410, general merchandise stores. The sectors and their impact amounts in 2005 dollars are presented in Table 8. The deflators used to convert each sector's impacts from 2005 dollars to 2003 dollars are also shown in Table 8. Note the totals vary slightly from those in Table 6 due to rounding in IMPLAN.

4.2.3. IMPLAN Results for Non-Winery Firms

The detailed total industry output (TIO) results are displayed in the tables in Appendix B. Shown in Table 9, for the participating agri-tourism firms that were not wineries, the projected direct TIO from on-site visitor expenditures was $10,877,297, while indirect TIO was $2,771,035, and induced TIO was $6,383,700. The total impacts for TIO including direct, indirect, and induced were $20,032,032. Therefore, the

Table 8. Projected Tennessee Agri-Tourism Visitor Expenditure Direct Impacts Summary, 2005.

Description	Sector	Direct Impact Amount in 2005 Dollars	Deflator to 2003 dollars
Non-winery Agri-tourism			
Grain farming (corn mazes)	2	$2,390,226	1.024
Vegetable and melon farming (pick-your-own and on-farm markets)	3	$2,390,226	1.024
Fruit farming (pick-your-own and on-farm markets)	5	$2,390,226	1.024
General merchandise stores (non-food souvenirs)	410	$106,120	1.060
Other amusement recreation (admission or user fees)	478	$2,690,900	1.031
Other amusement recreation (other)	478	$651,879	1.031
Food service and drinking places (restaurant or snack bar)	481	$257,720	1.046
Winery			
Winery (wine purchases)	87	$5,792,472	1.040
General merchandise stores (non-food souvenirs)	410	$95,256	1.060
General merchandise stores (other)	410	$210,924	1.060
Food service and drinking places (restaurant or snack bar)	481	$43,092	1.031

Table 9. Projected Total Industry Output Impacts from Visitor Expenditures at Tennessee Non-Winery Agri-tourism Attractions, 2005.

Total Industry Output Impacts	Dollars	Percent of Total Impacts
Direct Impacts	$10,877,297	54.30%
Indirect Impacts	$2,771,035	13.83%
Induced Impacts	$6,383,700	31.87%
Total Impacts	$20,032,032	

economic activity generated directly as a result of visitor expenditures at these types of businesses exceeded $10.8 million (54.30 percent of all TIO impacts), while purchases by these businesses as a result of their economic activity was over $2.7 million (13.83percent of all TIO impacts). The economic activity induced by the increased spending from incomes associated with the economic activity from these visitor expenditures was over $6.3 million (31.87 percent of all TIO impacts)**.**

In Tables 10, 11, and 12, the TIO impacts are broken out by industry across direct, indirect, and induced impacts. The impacts are ordered largest dollar amount to smallest dollar amount across the industries. Displayed in Table 10, the direct TIO The detailed total value added (TVA) results for non-wineries agri-tourism businesses are displayed in the tables in Appendix B. Shown in Table 13, for the agri-tourism firms that were not wineries, the projected direct TVA was $6,772,909, while indirect TVA was $1,529,146, and induced TVA was $3,679,052. The TVA impacts including direct, indirect, and induced was $11,981,108. Therefore, the economic activity generated directly as a result of visitor expenditures at these types of businesses exceeded $6.7 million (56.53 percent of all value-added impacts), while purchases by these businesses as a result of their economic activity was over $1.5 million (12.76 percent of all value-

Table 10. Projected Direct Total Industry Output Impacts by Industry Impacted, from Visitor Expenditures at Tennessee Non-Winery Agri-tourism Attractions, 2005.

Industry		Dollars	Percent of Direct TIO
478	Other amusement- gambling- and recreation industries	$3,342,779	30.73%
2	Grain farming	$2,390,226	21.97%
3	Vegetable and melon farming	$2,390,226	21.97%
5	Fruit farming	$2,390,226	21.97%
481	Food services and drinking places	$257,720	2.37%
410	General merchandise stores	$106,120	0.98%

Table 11. Projected Indirect Total Industry Output Impacts, by Industry Impacted, from Visitor Expenditures at Tennessee Non-Winery Agri-tourism Attractions, 2005.

Industry		Indirect TIO (Dollars)	% of Indirect TIO
431	Real estate	433,334	15.64%
390	Wholesale trade	241,226	8.71%
18	Agriculture and forestry support activities	184,284	6.65%
159	Pesticide and other agricultural chemical manufacturing	116,951	4.22%
43	Maintenance and repair of nonresidential buildings	82,476	2.98%
394	Truck transportation	69,217	2.50%
499	Other State and local government enterprises	68,980	2.49%
495	Federal electric utilities	62,311	2.25%
430	Monetary authorities and depository credit intermediaries	61,474	2.22%
142	Petroleum refineries	59,884	2.16%
425	Nondepository credit intermediation and related	56,744	2.05%
427	Insurance carriers	54,225	1.96%
120	Wood container and pallet manufacturing	46,457	1.68%
451	Management of companies and enterprises	43,107	1.56%
498	State and local government electric utilities	37,016	1.34%
422	Telecommunications	36,124	1.30%
439	Architectural and engineering services	33,299	1.20%
485	Commercial machinery repair and maintenance	30,956	1.12%
400	Warehousing and storage	29,954	1.08%
438	Accounting and bookkeeping services	28,247	1.02%
447	Advertising and related services	28,210	1.02%
	Other	966,560	34.88%

Table 12. Projected Induced Total Industry Output Impacts, by Industry Impacted, from Visitor Expenditures at Tennessee Non-Winery Agri-tourism Attractions, 2005.

Sector		Dollars	Percent of Induced
509	Owner-occupied dwellings	392,749	6.15%
390	Wholesale trade	290,250	4.55%
33	New residential 1-unit structures- nonfarm	267,943	4.20%
431	Real estate	266,529	4.18%
503	State & Local Education	255,693	4.01%
481	Food services and drinking places	219,897	3.44%
504	State & Local Non-Education	213,000	3.34%
465	Offices of physicians- dentists- and other health	212,288	3.33%
467	Hospitals	210,814	3.30%
38	Commercial and institutional buildings	206,232	3.23%
344	Automobile and light truck manufacturing	173,902	2.72%
430	Monetary authorities and depository credit intermediaries	115,085	1.80%
401	Motor vehicle and parts dealers	105,688	1.66%
427	Insurance carriers	102,781	1.61%
350	Motor vehicle parts manufacturing	93,817	1.47%
422	Telecommunications	92,174	1.44%
405	Food and beverage stores	83,555	1.31%
394	Truck transportation	81,334	1.27%
35	New residential additions and alterations- nonfarm	73,737	1.16%
483	Automotive repair and maintenance- except car wash	71,086	1.11%
410	General merchandise stores	71,069	1.11%
499	Other State and local government enterprises	67,033	1.05%
495	Federal electric utilities	64,792	1.01%
	Other	2,652,252	41.55%

Table 13. Projected Direct, Indirect, and Induced Total Value Added Impacts from Visitor Expenditures at Tennessee Non-Winery Agri-tourism Attractions, 2005.

Total Value Added Impacts	Dollars	Percent of Total
Direct	6,772,909	56.53%
Indirect	1,529,146	12.76%
Induced	3,679,052	30.71%
Total	11,981,108	

added impacts). The economic activity induced by the increased spending from incomes associated with the economic activity from these visitor expenditures was over $3.6 million (30.71 percent of all value-added impacts)**.**

In Tables 14, 15, and 16, the TVA impacts are broken out by industry impacted across direct, indirect, and induced impacts. The impacts are ordered largest dollar value to smallest across the impacted industries. Displayed in Table 14, among the industries impacted, the largest direct TVA impacts were from the other amusement-gambling-and recreation industry (30.73 percent of direct TVA impacts), vegetable and melon farming (26.71 percent of direct TVA impacts), and fruit farming (21.18 percent of direct TVA impacts). This was followed in value by grain farming (18.26 percent of direct TVA impacts), food services and drinking places (1.80 percent of direct TVA impacts), and general merchandise stores (1.33 percent of direct TVA impacts). As displayed in Table 15, the indirect TVA show the largest impacts are on real estate expenditures (19.49 percent of indirect TVA impacts), wholesale trade (12 percent of indirect TVA impacts), and agriculture and forestry support activities (9.61 percent of indirect TVA impacts). The induced total-value added impacts are presented in Table 16 which shows the largest are from owner-occupied dwellings (8.53 percent of induced TVA impacts), state & local education (6.95 percent of induced TVA impacts), wholesale trade (6.00 percent of

Table 14. Projected Direct Total Value Added Impacts, by Industry Impacted, from Visitor Expenditures at Tennessee Non-Winery Agri-tourism Attractions, 2005.

Industry		Dollars	Percent of Direct
478	Other amusement- gambling- and recreation industries	2,081,142	30.73%
3	Vegetable and melon farming	1,808,709	26.71%
5	Fruit farming	1,434,391	21.18%
2	Grain farming	1,236,730	18.26%
481	Food services and drinking places	121,994	1.80%
410	General merchandise stores	89,944	1.33%
	Total Direct	6,772,909	

Table 15. Projected Indirect Total Value Added Impacts, by Industry Impacted, from Visitor Expenditures at Tennessee Non-Winery Agri-tourism Attractions, 2005.

Sector		Dollars	Percent of Indirect
431	Real estate	298,020	19.49%
390	Wholesale trade	183,474	12.00%
18	Agriculture and forestry support activities	147,008	9.61%
425	Non depository credit intermediation and related	46,069	3.01%
430	Monetary authorities and depository credit intermediaries	43,265	2.83%
43	Maintenance and repair of nonresidential buildings	38,054	2.49%
159	Pesticide and other agricultural chemical manufacturing	37,449	2.45%
394	Truck transportation	34,738	2.27%
451	Management of companies and enterprises	23,900	1.56%
454	Employment services	22,665	1.48%
400	Warehousing and storage	22,433	1.47%
499	Other State and local government enterprises	20,487	1.34%
439	Architectural and engineering services	20,235	1.32%
427	Insurance carriers	19,146	1.25%
422	Telecommunications	18,962	1.24%
120	Wood container and pallet manufacturing	17,230	1.13%
438	Accounting and bookkeeping services	16,992	1.11%
437	Legal services	16,775	1.10%
495	Federal electric utilities	15,721	1.03%
485	Commercial machinery repair and maintenance	15,341	1.00%
	Other	471,182	30.81%

Table 16. Projected Induced Total Value Added Impacts, by Industry Impacted, from Visitor Expenditures at Tennessee Non-Winery Agri-tourism Attractions, 2005.

Industry		Dollars	Percent of Induced
509	Owner-occupied dwellings	313,971	8.53%
503	State & Local Education	255,693	6.95%
390	Wholesale trade	220,761	6.00%
504	State & Local Non-Education	213,000	5.79%
431	Real estate	183,302	4.98%
465	Offices of physicians- dentists- and other health	164,274	4.47%
467	Hospitals	109,620	2.98%
481	Food services and drinking places	104,090	2.83%
38	Commercial and institutional buildings	101,377	2.76%
33	New residential 1-unit structures- nonfarm	100,110	2.72%
401	Motor vehicle and parts dealers	82,882	2.25%
430	Monetary authorities and depository credit interme	80,996	2.20%
410	General merchandise stores	60,235	1.64%
405	Food and beverage stores	56,779	1.54%
422	Telecommunications	48,383	1.32%
468	Nursing and residential care facilities	44,100	1.20%
394	Truck transportation	40,820	1.11%
425	Nondepository credit intermediation and related a	40,320	1.10%
426	Securities- commodity contracts- investments	37,677	1.02%
404	Building material and garden supply stores	37,325	1.01%
	Other	1,383,338	37.60%

induced TVA impacts), state & local non education (5.79 percent of induced TVA

impacts), and real estate (4.98 percent of induced TVA impacts).

The detailed projected employment impacts from visitor expenditures at non-

winery agri-tourism businesses are displayed in the tables in Appendix B. A summary of

the employment impacts from expenditures at non-winery agri-tourism attractions is

shown in Table 17.   The projected direct employment was 385.39 jobs, while indirect

employment was 30.70 jobs, and induced employment was 63.82. The total employment

including direct, indirect, and induced was 479.91 jobs.   Therefore, the economic activity

generated directly as a result of visitor expenditures at these types of businesses exceeded

385 jobs (80.30 percent of all employment impacts), while jobs generated as a result of

purchases by the agri-tourism businesses was over 30 jobs (6.40 percent of all

employment impacts). The economic activity induced by the increased spending from

incomes associated with the economic activity from these visitor expenditures at the non-

winery agri-tourism businesses was over 63 jobs (13.30 percent of all employment

impacts)**.**

Table 17. Projected Employment Impacts from Visitor Expenditures at Tennessee Non-Winery Agri-tourism Attractions, 2005.

Total Employment Impacts	Jobs	Percent of Total
Direct Impacts	385.39	80.30%
Indirect Impacts	30.70	6.40%
Induced Impacts	63.82	13.30%
Total Impacts	479.91	

In Tables 18, 19, and 20, the employment impacts from visitor expenditures at non-winery agri-tourism businesses are broken out by industry across direct, indirect, and induced impacts. The employment impacts are ordered largest amount of jobs to smallest across the industries. As shown in Table 18, the largest projected direct employment impacts were from grain farming (43.15 percent of direct employment impacts), fruit farming (26.63 percent of direct employment impacts), vegetable and melon farming (14.84 percent of direct employment impacts), and other amusement-gambling-and recreation industry (13.46 percent of direct employment impacts). Jobs in the food services and drinking places and general merchandise stores industries accounted for less than 2 percent of the projected direct employment impacts. Shown in Table 19 are the

Table 18. Projected Direct Employment Impacts, by Industry Impacted, from Visitor Expenditures at Tennessee Non-Winery Agri-tourism Attractions, 2005.

Sector		Jobs	Percent of Direct
2	Grain farming	166.28	43.15%
5	Fruit farming	102.62	26.63%
3	Vegetable and melon farming	57.15	14.83%
478	Other amusement- gambling- and recreation industri	51.80	13.44%
481	Food services and drinking places	5.37	1.39%
410	General merchandise stores	2.17	0.56%

Table 19. Projected Indirect Employment Impacts, by Industry Impacted, from Visitor Expenditures at Tennessee Non-Winery Agri-tourism Attractions, 2005.

Industry		Jobs	Percent of Indirect
18	Agriculture and forestry support activities	8.89	28.96%
431	Real estate	2.75	8.94%
390	Wholesale trade	1.80	5.87%
2	Grain farming	1.41	4.59%
454	Employment services	1.05	3.42%
43	Maintenance and repair of nonresidential buildings	0.88	2.87%
394	Truck transportation	0.63	2.05%
471	Performing arts companies	0.53	1.73%
120	Wood container and pallet manufacturing	0.47	1.52%
481	Food services and drinking places	0.42	1.37%
400	Warehousing and storage	0.40	1.30%
13	Animal production- except cattle and poultry and e	0.39	1.28%
425	Nondepository credit intermediation and related a	0.37	1.21%
473	Independent artists- writers- and performers	0.36	1.17%
499	Other State and local government enterprises	0.36	1.16%
458	Services to buildings and dwellings	0.35	1.12%
439	Architectural and engineering services	0.33	1.07%
11	Cattle ranching and farming	0.32	1.05%
	Other	9.00	29.32%

Table 20. Projected Induced Employment Impacts, by Industry Impacted, from Visitor Expenditures at Tennessee Non-Winery Agri-tourism Attractions, 2005.

Industry		Jobs	Percent of Induced
503	State & Local Education	5.94	9.31%
481	Food services and drinking places	4.58	7.18%
504	State & Local Non-Education	4.25	6.65%
38	Commercial and institutional buildings	2.56	4.01%
390	Wholesale trade	2.17	3.40%
467	Hospitals	1.92	3.01%
33	New residential 1-unit structures- nonfarm	1.71	2.68%
431	Real estate	1.69	2.65%
465	Offices of physicians- dentists- and other health	1.69	2.64%
410	General merchandise stores	1.45	2.27%
405	Food and beverage stores	1.42	2.23%
468	Nursing and residential care facilities	1.13	1.77%
494	Private households	1.07	1.68%
401	Motor vehicle and parts dealers	1.02	1.60%
454	Employment services	1.02	1.59%
483	Automotive repair and maintenance- except car wash	1.00	1.56%
411	Miscellaneous store retailers	0.84	1.31%
408	Clothing and clothing accessories stores	0.83	1.30%
412	Nonstore retailers	0.79	1.24%
35	New residential additions and alterations- nonfarm	0.75	1.17%
394	Truck transportation	0.74	1.16%
470	Social assistance- except child day care services	0.72	1.12%
404	Building material and garden supply stores	0.65	1.02%
469	Child day care services	0.65	1.02%

projected indirect employment impacts and the largest are from agriculture and forestry

support activities (28.96 percent of indirect employment impacts), real estate (8.94

percent of indirect employment impacts), and whole sale trade (5.87 percent of indirect

employment impacts). The projected induced employment impacts are shown in Table

20 and show the largest are from state & local education (9.31 percent of induced

employment impacts), food services and drinking places (7.18 percent of induced

employment impacts), state and local non-education (6.65 percent of induced

employment impacts), commercial and institutional buildings (4.01 percent of induced

employment impacts), and wholesale trade (3.40 percent of induced employment

impacts).

4.2.4. IMPLAN Results for Winery Firms

The detailed total industry output (TIO) results for wineries are displayed in the

tables in Appendix B. Shown in Table 21, for the agri-tourism firms that were wineries,

the projected direct TIO was $6,141,742, while indirect TIO was $2,295,270, and

induced TIO was $3,017,470. The TIO including direct, indirect, and induced was

$11,454,483.   Therefore, the economic activity generated directly as a result of visitor

expenditures at these types of businesses exceeded $6.1 million (53.62 percent of all

impacts), while purchases by these businesses as a result of their economic activity was

over $2.2 million (20.04 percent of all impacts). The economic activity induced by the

increased spending from incomes associated with the economic activity from these visitor

expenditures was over $3 million (26.34 percent of all impacts)**.**

In Tables 22, 23, and 24, the TIO impacts are broken out by industry impacted

across direct, indirect, and induced impacts. The impacts are ordered largest dollar value

Table 21. Projected Total Industry Output Impacts from Visitor Expenditures at Tennessee Winery Agri-tourism Attractions, 2005.

Total Industry Output Impacts	Dollars	Percent of Total
Direct Impacts	6,141,742	53.62%
Indirect Impacts	2,295,270	20.04%
Induced Impacts	3,017,470	26.34%
Total Impacts	11,454,483	

Table 22. Projected Direct Total Industry Output Impacts, by Industry Impacted, from Visitor Expenditures at Tennessee Winery Agri-tourism Attractions, 2005.

Industry		Dollars	Percent of Direct
87	Wineries	5,792,471	94.31%
410	General merchandise stores	306,180	4.99%
481	Food services and drinking places	43,092	0.70%

Table 23. Projected Indirect Total Industry Output Impacts, by Industry Impacted, from Visitor Expenditures at Tennessee Winery Agri-tourism Attractions, 2005.

Industry		Dollars	Percent of Indirect
390	Wholesale trade	700,756	30.53%
394	Truck transportation	168,617	7.35%
436	Lessors of nonfinancial intangible assets	105,394	4.59%
451	Management of companies and enterprises	104,531	4.55%
139	Commercial printing	77,096	3.36%
431	Real estate	72,478	3.16%
430	Monetary authorities and depository credit interme	56,145	2.45%
5	Fruit farming	52,279	2.28%
297	Packaging machinery manufacturing	40,913	1.78%
425	Nondepository credit intermediation and related a	39,378	1.72%
422	Telecommunications	33,075	1.44%
447	Advertising and related services	33,049	1.44%
420	Radio and television broadcasting	27,346	1.19%
450	All other miscellaneous professional and technical	26,576	1.16%
495	Federal electric utilities	26,447	1.15%
43	Maintenance and repair of nonresidential buildings	24,946	1.09%
481	Food services and drinking places	23,814	1.04%
444	Management consulting services	23,790	1.04%
	Other	658,640	28.70%

Table 24. Projected Induced Total Industry Output Impacts, by Industry Impacted, from Visitor Expenditures at Tennessee Winery Agri-tourism Attractions, 2005.

Industry		Dollars	Percent of Induced
509	Owner-occupied dwellings	209,651	6.95%
503	State & Local Education	160,807	5.33%
390	Wholesale trade	139,809	4.63%
504	State & Local Non-Education	133,958	4.44%
431	Real estate	126,858	4.20%
481	Food services and drinking places	116,836	3.87%
465	Offices of physicians- dentists- and other health	111,460	3.69%
467	Hospitals	108,228	3.59%
33	New residential 1-unit structures- nonfarm	66,906	2.22%
38	Commercial and institutional buildings	65,994	2.19%
430	Monetary authorities and depository credit interme	59,065	1.96%
344	Automobile and light truck manufacturing	55,099	1.83%
427	Insurance carriers	53,636	1.78%
401	Motor vehicle and parts dealers	51,695	1.71%
422	Telecommunications	46,587	1.54%
405	Food and beverage stores	41,402	1.37%
483	Automotive repair and maintenance- except car wash	35,565	1.18%
410	General merchandise stores	34,792	1.15%
394	Truck transportation	34,539	1.14%
499	Other State and local government enterprises	34,520	1.14%
350	Motor vehicle parts manufacturing	34,018	1.13%
495	Federal electric utilities	33,622	1.11%
466	Other ambulatory health care services	31,715	1.05%
468	Nursing and residential care facilities	31,556	1.05%
426	Securities- commodity contracts- investments	31,423	1.04%
	Other	1,167,727	38.70%

to smallest across the industries. Displayed in Table 22 are the direct TIO impacts which show the largest are from the wineries (95.08% of direct TIO impacts) and general merchandise stores (4.33 percent of direct TIO impacts). The indirect TIO impacts across industries impacted are shown in Table 23. For the indirect TIO impacts, the largest impacts are from wholesale trade (30.53 percent of indirect TIO impacts), truck transportation (7.35 percent of indirect TIO impacts). The dollar values and percents of induced total industry output impacts across industries impacted are displayed in Table 24. Among the induced impacts, the largest are from owner-occupied dwellings (6.95 percent of induced TIO impacts), state and local education (5.33 percent of induced TIO impacts), wholesale trade (4.63 percent of induced TIO impacts), state and local non-education (4.43 percent of induced TIO impacts), and real estate (4.20 percent of induced TIO impacts).

The detailed total value added (TVA) results for agri-tourism wineries are displayed in the tables in Appendix B. Shown in Table 25, for the agri-tourism firms that were wineries, the projected direct TVA was $1,474,093, while indirect TVA was $1,383,281, and induced TVA was $1,819,830. The TVA including direct, indirect, and induced was $4,667,204.   Therefore, the economic activity generated directly as a result of visitor expenditures at these types of businesses resulted about 31 percent of all direct value-added impacts, while purchases by these businesses as a result of their economic activity were over $1.3 million (29.64 percent of all impacts TVA). The economic activity induced by the increased spending from incomes associated with the economic activity from these visitor expenditures was over $1.81 million (nearly 39 percent of all TVA impacts).

Table 25. Projected Total Value Added Direct, Indirect, and Induced Impacts from Visitor Expenditures at Tennessee Winery Agri-tourism Attractions, 2005.

	Dollars	Percent of Total
Direct	1,464,093	31.37%
Indirect	1,383,281	29.64%
Induced	1,819,830	38.99%
Total	4,667,204	

In Tables 26, 27, and 28, the TVA impacts are broken out by industry impacted across direct, indirect, and induced impacts. The impacts are ordered largest dollar value to smallest across the industries. Displayed in Table 26 are the direct TVA impacts and the largest are from the wineries (80.88% of direct TVA impacts) and general merchandise (17.72 percent of direct TVA impacts). Displayed in Table 27 are the indirect TVA impacts and the largest impacts are from wholesale trade (38.53 percent of indirect TVA impacts), truck transportation (6.12 percent of indirect TVA impacts), and management of companies and enterprises (4.19 percent of indirect TVA impacts). The induced total value added impacts from visitor expenditures at wineries by industry impacted are shown in Table 28. Among the induced impacts, the largest are from owner-occupied dwellings (9.21 percent of induced TVA impacts), state & Local Education (8.84 percent of induced TVA impacts), state & local non education (7.36 percent of induced TVA impacts), wholesale trade (5.84 percent of induced TVA impacts) and real estate (4.79 percent of induced TVA impacts).

The detailed employment results for agri-tourism wineries are displayed in the tables in Appendix B. A summary of the results is presented in Table 29, while impacts detailed by industry impacted for direct, indirect, and induced employment impacts are presented in Tables 30—32. Shown in Table 29, for the agri-tourism firms that were

Table 26. Projected Direct Total Value Added Impacts, by Industry, from Visitor Expenditures at Tennessee Winery Agri-tourism Attractions, 2005.

Industry		Dollars	Percent of Direct
87	Wineries	1,184,187	80.88%
410	General merchandise stores	259,508	17.72%
481	Food services and drinking places	20,398	1.39%
	Total	1,464,093	

Table 27. Projected Indirect Total Value Added Impacts, by Industry Impacted, from Visitor Expenditures at Tennessee Winery Agri-tourism Attractions, 2005.

Industry		Dollars	Percent of Indirect
390	Wholesale trade	532,987	38.53%
394	Truck transportation	84,625	6.12%
451	Management of companies and enterprises	57,957	4.19%
139	Commercial printing	55,685	4.03%
436	Lessors of nonfinancial intangible assets	55,036	3.98%
431	Real estate	49,845	3.60%
430	Monetary authorities and depository credit interme	39,514	2.86%
425	Nondepository credit intermediation and related a	31,970	2.31%
5	Fruit farming	31,373	2.27%
422	Telecommunications	17,362	1.26%
447	Advertising and related services	16,155	1.17%
297	Packaging machinery manufacturing	14,506	1.05%
	Other	396,266	28.65%

Table 28. Projected Induced Total Value Added Impacts, by Industry Impacted, from Visitor Expenditures at Tennessee Winery Agri-tourism Attractions, 2005.

Industry		Dollars	Percent of Induced
509	Owner-occupied dwellings	167,599	9.21%
503	State & Local Education	160,807	8.84%
504	State & Local Non-Education	133,958	7.36%
390	Wholesale trade	106,337	5.84%
431	Real estate	87,245	4.79%
465	Offices of physicians- dentists- and other health	86,251	4.74%
467	Hospitals	56,277	3.09%
481	Food services and drinking places	55,305	3.04%
430	Monetary authorities and depository credit interme	41,570	2.28%
401	Motor vehicle and parts dealers	40,540	2.23%
38	Commercial and institutional buildings	32,440	1.78%
410	General merchandise stores	29,488	1.62%
405	Food and beverage stores	28,134	1.55%
33	New residential 1-unit structures- nonfarm	24,998	1.37%
422	Telecommunications	24,454	1.34%
468	Nursing and residential care facilities	23,074	1.27%
425	Nondepository credit intermediation and related a	20,306	1.12%
426	Securities- commodity contracts- investments	20,027	1.10%
427	Insurance carriers	18,938	1.04%
404	Building material and garden supply stores	18,319	1.01%
	Other	643,763	35.37%

Table 29. Projected Direct, Indirect, and Induced Employment Impacts from Visitor Expenditures at Tennessee Winery Agri-tourism Attractions, 2005.

Employment Impacts	Jobs	Percent of Total
Direct	27.49	34.93%
Indirect	19.43	24.69%
Induced	31.78	40.38%
Total	78.70	

Table 30. Projected Direct Employment Impacts, by Industry Impacted, from Visitor Expenditures at Tennessee Winery Agri-tourism Attractions, 2005.

Industry		Jobs	Percent of Direct
87	Wineries	20.34	73.99%
410	General merchandise stores	6.25	22.74%
481	Food services and drinking places	0.90	3.27%
	Total	27.49	

Table 31. Projected Indirect Employment Impacts, by Industry Impacted, from Visitor Expenditures at Tennessee Winery Agri-tourism Attractions, 2005.

Sector		Jobs	Percent of Indirect
390	Wholesale trade	5.23	26.94%
5	Fruit farming	2.24	11.55%
394	Truck transportation	1.53	7.88%
139	Commercial printing	0.94	4.85%
451	Management of companies and enterprises	0.70	3.61%
454	Employment services	0.52	2.69%
481	Food services and drinking places	0.50	2.55%
431	Real estate	0.46	2.36%
447	Advertising and related services	0.31	1.57%
43	Maintenance and repair of nonresidential buildings	0.27	1.37%
297	Packaging machinery manufacturing	0.26	1.36%
425	Nondepository credit intermediation and related a	0.26	1.32%
430	Monetary authorities and depository credit interme	0.26	1.32%
413	Newpaper publishers	0.21	1.09%
483	Automotive repair and maintenance- except car wash	0.21	1.08%
400	Warehousing and storage	0.21	1.06%
444	Management consulting services	0.20	1.05%
	Other	5.12	26.34

Table 32. Projected Induced Employment Impacts, by Industry Impacted, from Visitor Expenditures at Tennessee Winery Agri-tourism Attractions, 2005.

Industry		Jobs	Percent of Induced
503	State & Local Education	3.7	11.76%
504	State & Local Non-Education	2.7	8.41%
481	Food services and drinking places	2.4	7.66%
390	Wholesale trade	1.0	3.29%
467	Hospitals	1.0	3.10%
465	Offices of physicians- dentists- and other health	0.9	2.78%
38	Commercial and institutional buildings	0.8	2.57%
431	Real estate	0.8	2.53%
410	General merchandise stores	0.7	2.23%
405	Food and beverage stores	0.7	2.22%
468	Nursing and residential care facilities	0.6	1.86%
494	Private households	0.6	1.79%
401	Motor vehicle and parts dealers	0.5	1.57%
483	Automotive repair and maintenance- except car wash	0.5	1.57%
454	Employment services	0.5	1.56%
33	New residential 1-unit structures- nonfarm	0.4	1.34%
411	Miscellaneous store retailers	0.4	1.29%
408	Clothing and clothing accessories stores	0.4	1.28%
412	Nonstore retailers	0.4	1.23%
470	Social assistance- except child day care services	0.4	1.22%
469	Child day care services	0.4	1.11%
404	Building material and garden supply stores	0.3	1.01%
	Other	11.63	36.60

wineries, the projected direct employment was 27.49 jobs, while indirect employment was 19.42 jobs, and induced employment was 31.78 jobs. The total employment including direct, indirect, and induced was 78.70 jobs.   Therefore, the economic activity generated directly as a result of visitor expenditures at these types of businesses exceeded 27 (34.93 percent of all employment impacts), while purchases by these businesses as a result of their economic activity was over 19 jobs (24.69 percent of all employment impacts). The economic activity induced by the increased spending from incomes associated with the economic activity from these visitor expenditures was over 31 jobs (40.38 percent of all employment impacts)**.**

In Table 30, 31, and 32, the employment impacts are broken out by industry across direct, indirect, and induced impacts. The impacts are ordered largest amount of jobs to smallest across the industries. For the direct employment impacts displayed in Table 30, the largest are from the wineries (73.99 percent of direct) and general merchandise stores (22.74 percent of direct). For the indirect employment impacts displayed in Table 31, the largest impacts are from agriculture and wholesale trade (26.94 percent of indirect). This impact is followed in size by fruit farming (11.55 percent of indirect) and truck transportation (7.88 percent of indirect). As shown in Table 32, among the induced impacts, the largest are from state & local education (11.75 percent of induced) and state and local non-education, (8.41 percent of induced). These impacts are followed in magnitude by food services and drinking places (7.66 percent of induced), wholesale trade (3.29 percent of induced), and hospitals (3.10 percent of induced).

4.3 Estimated Probit Models of Importance of Amenities and Services

The following section presents the estimated probit models of importance of the amenities and services to the visitors. For each estimated model, the estimated coefficients, the log-likelihood ratio statistic, and percent of responses correctly classified as extremely or highly important are displayed in its respective table. The log-likelihood ratio statistic is a test that is aimed at testing a simple null hypothesis against a simple alternative hypothesis and is based on the likelihood ratio r as the test statistic. It is a test for overall significance and is similar to the F-test in linear regression models. The estimated models are presented in the following order, freshness of farms' or business' products, easy transportation access, on-site restrooms, food and drink for purchase, seating, picnic areas, crafts or souvenirs, farm scenery, pricing of products, admission or user fees, product samples, adequate parking, and learning about how products are grown or made. To investigate any potential multi collenarity problems, a correlation matrix was calculated. The correlations of variables included in the models are shown in Appendix C and this correlation matrix shows there were no correlations between the variables that were greater than 0.5.

4.3.1 Freshness Of Farms' Or Business' Products

The estimated probit model of extreme/high importance of freshness of farm's or business' products is shown in Table 33. The overall model is significant at the 0.0016 level with a log-likelihood ratio statistic of 34.72. Just over 88 percent of actual 1s and 0s are correctly predicted. As shown in Table 33, the variables that significantly influenced the probability that a visitor responded freshness of farm's or business' products is extremely or highly important were prior visits, visiting with school group,

visit planned same day, college graduate, inc3050, incgt100 and learned about by word of mouth. The estimated coefficients on prior visits, visiting with school group, and visit planned same day were positive. Therefore, compared with those who had not visited before, not visiting with a school group, and visit not planned the same day; prior visit, visiting with school group, and visit planned same day had positive influences on probability of importance of freshness of farm's or business' products. The estimated coefficients on college graduate, inc3050, incgt100 and learned about by word of mouth were negative. Therefore, compared with those who did not graduate college, did not have income between $30,000 and $50,000, did not have income greater than $100,000, and did not learn about the attraction by word of mouth; college graduate, inc3050, incgt100, and learn about by word of mouth had negative influences on probability of importance of freshness of farm's or business' products. Local county, inc5070, inc70100, age, learned about by brochure, and learned about by newspaper advertising did not significantly influence the probability that freshness of farm's or business' products was extremely or highly important.

The results indicate that freshness of products may be of greater importance to repeat visitors than same day visitors. The results also suggest that visitors may spontaneously plan visits based on freshness of products since same day planning had a positive effect. The positive effect of school groups suggests that those visiting with school groups place a higher value on freshness of products. This could be of importance since children would likely be consuming or handling products. Interestingly, being a college graduate had a negative influence as did learning about by word of mouth or brochures. One possible explanation is that college graduates may place more value on

Table 33. Estimated Probit Model of Importance of Freshness of Farm's or Business' Products

Variable	Estimated Coefficient	Standard Error	t-ratio	P-value [a]	
Constant	1.914	0.910	1.758	0.078	*
Prior Visits	0.649	0.333	2.342	0.019	**
Visiting With School Group	0.177	0.422	1.526	0.126	*
Local County	0.044	0.344	0.128	0.898	
Visit Planned Same Day	0.530	0.359	1.476	0.139	*
Male	0.350	0.430	0.815	0.415	
College Graduate	-0.809	0.447	-1.807	0.070	*
INC3050	-1.072	0.628	-1.706	0.088	*
INC5070	0.197	0.680	0.290	0.771	
INC70100	-0.364	0.652	-0.559	0.576	
INCGT100	-1.109	0.666	-1.664	0.096	*
Age	0.872	0.140	0.620	0.535	
Learned About by Word of Mouth	-0.825	0.381	-2.164	0.030	**
Learned About by Brochure	-0.578	0.464	-1.245	0.213	
Learned About by Newspaper Advertising	0.022	0.456	0.050	0.959	
Log-Likelihood Ratio Statistics (14df)	34.72	***			
Percent Correctly Classified	88.33%				

[a]*** indicates significance at α=.01, ** indicates significance at α=.05, * indicates significance at α=.20.

aspects of the visit experience. Also, those learning about the business by word of mouth or brochures may be interested in the rural or farm experience or educational aspects also, while learning about the venue from newspaper advertising might reflect those who are price or fresh product shopping.

4.3.2 Easy Transportation Access

The estimated probit model of extreme/high importance of easy transportation access is shown in Table 34. The model is significant at the 0.1693 level with a log-likelihood ratio statistic of 27.43. Close to 72 percent of actual 1s and 0s are correctly predicted. In Table 34, the variables that significantly influenced the probability that a visitor responded easy transportation access is extremely or highly important are visiting with school group, age, inc70100, and learned about by newspaper advertising. The estimated coefficients on visiting with school group, inc70100, age, and learned about by newspaper advertising were positive. Therefore, compared with those who were not visiting with a school group, did not have income $70,000 to $100,000, young visitors, and did not learn about the attraction by newspaper advertising; visiting with school group, inc70100, age, and learned about by newspaper advertising had positive influences on probability of importance of easy transportation access. Prior visits, local county, visiting same day, male, college graduate, inc3050, inc5070, incgt100, learned about by word of mouth, and learned about by brochure did not significantly influence the probability that easy transportation access is extremely or highly important. The positive influence of visiting with school group suggests that those visitors place a higher value on easy transportation access. One reason is this could be of importance to those visiting in school groups, such as school children and those accompanying them

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Table 34. Estimated Probit Model of Importance of Easy Transportation Access.

Variable	Estimated Coefficient	Standard Error	t-ratio	P-value [a]	
Constant	-0.186	0.534	-0.350	0.726	
Prior Visits	-0.685	0.228	-0.300	0.764	
Visiting With School Group	1.089	0.374	2.907	0.004	***
Local County	-0.064	0.231	-0.277	0.781	
Visit Planned Same Day	-0.020	0.233	-0.090	0.928	
Male	0.166	0.281	0.592	0.554	
College Graduate	0.006	0.246	0.027	0.978	
INC3050	-0.172	0.393	-0.439	0.660	
INC5070	-0.106	0.380	-0.280	0.779	
INC70100	0.566	0.429	1.319	0.187	*
INCGT100	-0.341	0.418	-0.816	0.414	
Age	0.014	0.009	1.614	0.106	*
Learned About by Word of Mouth	-0.100	0.270	-0.372	0.709	
Learned About by Brochure	-0.445	0.399	-1.114	0.265	
Learned About by Newspaper Advertising	0.471	0.294	1.601	0.109	*
Log-Likelihood Ratio Statistics (14df)	27.43	***			
Percent Correctly Classified	71.57%				

[a]*** indicates significance at α=.01, ** indicates significance at α=.05, * indicates significance at α=.20.

for the reason of safety pre-cautions with large children groups. Interestingly, older visitors placed less importance on easy transportation access and this is counter to expectations. This may be important to older visitors as they would prefer the most convenient access to the attraction. Also, those learning about the business by newspaper advertising place importance on easy transportation access. This may be important because these visitors read about the attraction in a newspaper while product shopping and may come to the attraction to buy products that need to be carried to their vehicles.

4.3.3. On-Site Restrooms

The estimated probit model of extreme/high importance of on-site restrooms is shown in Table 35. The model is significant at 0.00 level with a log-likelihood ratio statistic of 59.37. Just over 77 percent of actual 1s and 0s are correctly predicted. In Table 35, the variables that significantly influenced the probability that a visitor responded on-site restrooms is extremely or highly important were prior visits, visiting with school group, local county, inc3050, inc5070, inc70100, incgt100, age, and learned about by brochure. The estimated coefficients on visiting with school group, inc3050, inc5070, inc70100 and incgt100 were positive. Therefore, compared with those not visiting with a school group, did not have income $30,000 to $50,000, did not have income $50,000 to $70,000, did not have income $70,000 to $100,000, and did not have income greater than $100,000; visiting with school group, inc3050, inc5070, inc70100, and incgt100 had a positive influence on probability of importance of on-site restrooms. The estimated coefficients on prior visits, local county, age learned about by brochure were negative. These coefficients will have a negative impact on-site restrooms and will be explained. Therefore, compared with those who had visited the attraction before,

Table 35. Estimated Probit Model of Importance of On-site restrooms.

Variable	Estimated Coefficient	Standard Error	t-ratio	P-value [a]	
Constant	-0.347	0.575	-0.604	0.545	
Prior Visits	-0.378	0.242	-1.560	0.118	*
Visiting With School Group	2.220	0.736	3.013	0.002	***
Local County	-0.705	0.736	3.013	0.002	***
Visit Planned Same Day	-0.228	0.242	-0.943	0.345	
Male	-0.353	0.281	-1.255	0.209	
College Graduate	0.145	0.253	0.575	0.565	
INC3050	0.994	0.415	2.394	0.016	**
INC5070	0.580	0.385	0.150	0.131	*
INC70100	0.663	0.410	1.618	0.105	*
INCGT100	0.386	0.410	1.618	0.105	*
Age	-0.017	0.009	1.712	0.086	*
Learned About by Word of Mouth	0.390	0.302	1.066	0.286	
Learned About by Brochure	-1.193	0.599	-1.989	0.046	**
Learned About by Newspaper Advertising	0.147	0.286	0.514	0.607	
Log-Likelihood Ratio Statistics (14df)	59.37	***			
Percent Correctly Classified	77.45%				

[a] *** indicates significance at α=.01, ** indicates significance at α=.05, * indicates significance at α=.20.

were not from the local county, younger visitors and did not learn about the attraction by brochure; prior visits, local county, age, and learned about by brochure had a negative influence on probability of importance of on-site restrooms. Visit planned same day, male, college graduate, learned about by word of mouth, and learned about by newspaper advertising did not significantly influence the probability that easy transportation access is extremely or highly important.

The results indicate on-site restrooms may be of greater importance to those visiting with a school group. This may be important to visitors with a school group as children would place high importance on rest-rooms being a necessity at the attraction. The results also suggest that visitors from the local county and learned about by brochure placed little importance for on-site restrooms. One possible explanation is visitors from the local county and visitors learning about the attraction through a brochure may not spend enough time at the attraction to consider restrooms important. The positive influence of income greater than $30,000 for on-site restrooms may suggest visitors with normal to high income place importance for on-site restrooms.

4.3.4. Food and Drink for Purchase

The estimated probit model of extreme/high importance of food and drink for purchase is shown in Table 36. The model is significant at the 0.00036 level with a log-likelihood ratio statistic of 39.03. Nearly 75 percent of actual 1s and 0s are correctly predicted. In Table 36, the variables that significantly influenced the probability that a visitor responded food and drink for purchase is extremely or highly important were prior visits, visiting with school group, local county, visit planned same day, college graduate, inc3050, inc5070, and inc70100, incgt100, and age. The estimated coefficients on

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Table 36. Estimated Probit Model of Importance of Food and Drink for Purchase.

Variable	Estimated Coefficient	Std.Err.	t-ratio	P-value [a]	
Constant	0.553	0.604	0.915	0.360	*
Prior Visits	-0.478	0.234	-2.043	0.0410	**
Visiting With School Group	-0.904	0.353	-2.559	0.010	***
Local County	-0.680	0.241	-2.822	0.004	***
Visit Planned Same Day	-0.345	0.244	-1.411	0.158	*
Male	-0.234	0.282	-0.083	0.933	
College Graduate	-0.469	0.248	-1.891	0.058	**
INC3050	1.166	0.457	2.552	0.010	**
INC5070	1.083	0.450	2.402	0.016	**
INC70100	0.762	0.462	1.648	0.099	*
INCGT100	0.781	0.489	1.595	0.110	
Age	-0.021	0.009	-2.168	0.030	**
Learned About by Word of Mouth	0.145	0.272	0.534	0.593	
Learned About by Brochure	0.156	0.380	0.410	0.681	
Learned About by Newspaper Advertising	0.312	0.296	1.053	0.292	
Log-Likelihood Ratio Statistics (14df)	39.03	***			
Percent Correctly Classified	74.62%				

[a]*** indicates significance at α=.01, ** indicates significance at α=.05, * indicates significance at α=.20.

inc3050, inc5070, inc70100, incgt100 were positive. Therefore, compared with those who did not have income of $30,000 to $50,000, did not have income $50,000 to $70,000, and did not have income $70,000 to $100,000 and did not have income greater than $100,000; having inc3050, inc5070, inc70100, and income greater than $100,000 had a positive influence on probability of importance of food and drink for purchase. The estimated coefficients on prior visits, visiting with school group, local county, visit planned same day, college graduate, and age were negative. Therefore, compared with those who had not visited before, were not visiting with a school group, not from the local county, visit was not planned the same day, were not a college graduate, and younger visitors; prior visit, visiting with school group, local county, visit planned visit same day, college graduate, and age had a negative influence on probability of importance of food and drink for purchase. Male, learned about by word of mouth, learned about by brochure, and learned about by newspaper advertising did not significantly influence the probability that food and drink for purchase is extremely or highly important.

The results also suggest income greater than $30,000 of these visitors may place importance on food and drink for purchase as this had a positive effect. One possible explanation for this is having income provides people with money to be spent on agri-tourism specialty food and drink products that may be priced above market value. The negative effect of prior visits suggests those visiting before hand placed little value on food and drink for purchase. This could be of little importance since those visiting before hand may place less importance on food and drink for purchase and more importance on experiences of the attraction. Interestingly, visiting in a school group had a negative

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influence on food and drink for purchase. This may not be important since most school planners order food and drinks for school children at a prior date. Also, being a college graduate had a negative influence on food and drink for purchase and may suggest college graduates are interested in other aspects of the attraction such as experiences or events.

4.3.5. Seating

The estimated probit model of extreme/high importance of seating is shown in Table 37. The model is significant at the .00025 level with a log-likelihood ratio statistic of 40.28. Close to 71 percent of actual 1s and 0s are correctly predicted. Table 37 shows the variables that significantly influenced the probability that a visitor responded seating is extremely or highly important and they are visiting with school group, local county, visit planned same day, incgt100, college graduate, age, and learned about by brochure. The estimated coefficients on visiting with school group were positive. Therefore, compared with those who were not visiting with a school group; visiting with a school group had a positive influence on probability of importance of seating. The estimated coefficients on local county, visit planned same day, college graduate, incgt100, learned about by brochure, and age were negative. Therefore, compared with those who were not from the local county, visit not planned the same day, not a college graduate, did not have income greater than $100,000, did not learn about the attraction by a brochure, and younger visitors; local county, visit planned same day, college graduate, incgt100, learned about by brochure, and age had a negative influence on probability of importance of seating. Prior visits, male, inc3050, inc5070, inc70100, learned about by word of

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Table 37. Estimated Probit Model of Importance of Seating.

Variable	Estimated Coefficient	Standard Error	t-ratio	P-value [a]	
Constant	0.524	0.553	0.948	0.343	
Prior Visits	0.204	0.225	0.911	0.362	
Visiting With School Group	0.889	0.333	2.666	0.008	***
Local County	-0.307	0.228	-1.346	0.178	*
Visit Planned Same Day	-0.411	0.237	-1.736	0.082	*
Male	-0.279	0.297	-0.938	0.348	
College Graduate	-0.449	0.244	-1.842	0.065	**
INC3050	0.149	0.383	0.390	0.696	
INC5070	0.118	0.377	0.314	0.753	
INC70100	0.237	0.387	0.612	0.540	
INCGT100	-0.375	0.424	-0.886	0.375	*
Age	-0.012	0.009	-1.380	0.167	*
Learned About by Word of Mouth	-0.125	0.269	-0.464	0.642	
Learned About by Brochure	-0.684	0.375	-1.825	0.068	*
Learned About by Newspaper Advertising	0.315	0.282	1.118	0.263	
Log-Likelihood Ratio Statistics (14df)	40.03	***			
Percent Correctly Classified	70.56%				

[a]*** indicates significance at $\alpha=.01$, ** indicates significance at $\alpha=.05$, * indicates significance at $\alpha=.20$.

mouth, and learned about by newspaper advertising did not significantly influence the probability that seating was extremely or highly important. The results show seating may be of greater importance to those visiting with a school group. This is may be important to children in a school group since they need adequate seating for learning purposes throughout the visit. The results also suggest that visitors who are college graduates had a negative influence on seating. One possible explanation is college graduate visitors may be more interested in shopping with their higher disposable incomes than visitors with less income. The negative effect of income greater than $100,000 may suggest these visitors have the same motivation as the college graduates and may prefer shopping and leaving the attraction without sitting down. Interestingly, older visitors had a negative influence on seating and may suggest older visitors may not place importance on the attraction's events that require seating.

4.3.6. Picnic Areas

The estimated probit model of extreme/high importance of picnic areas is shown in Table 38. The model is significant at 0.0000016 level with a log-likelihood ratio statistic of 53.38. Nearly 78 percent of actual 1s and 0s are correctly predicted. As shown in Table 38, the variables that significantly influenced the probability that a visitor responded picnic areas is extremely or highly important were visiting with school group, visit planned same-day, age, and learned about by newspaper advertising. The estimated coefficients on visiting with school group and learned about by newspaper advertising were positive. Therefore, compared with those who did not visit with a school group and did not learn about the attraction by newspaper advertising; visiting with school group and learned about by newspaper advertising had a positive influence on probability of

Table 38. Estimated Probit Model of Importance of Picnic areas.

Variable	Estimated Coefficient	Standard Error	t-ratio	P-value [a]	
Constant	-0.006	0.574	-0.011	0.990	
Prior Visits	0.006	0.238	0.030	0.976	
Visiting With School Group	1.209	0.337	3.587	0.000	***
Local County	-0.212	0.236	-0.900	0.367	
Visit Planned Same Day	-0.359	0.244	-1.469	0.141	*
Male	-0.146	0.305	-0.481	0.630	
College Graduate	-0.187	0.253	-0.737	0.461	
INC3050	0.218	0.404	0.540	0.589	
INC5070	0.349	0.392	0.890	0.373	
INC70100	0.463	0.404	1.145	0.252	
INCGT100	0.064	0.437	0.148	0.882	
Age	-0.017	0.009	-1.735	0.082	*
Learned About by Word of Mouth	0.131	0.280	0.469	0.638	
Learned About by Brochure	-0.279	0.377	-0.739	0.459	
Learned About by Newspaper Advertising	0.665	0.289	2.448	0.014	**
Log-Likelihood Ratio Statistics (14df)	53.38	***			
Percent Correctly Classified	77.66%				

[a]*** indicates significance at α=.01, ** indicates significance at α=.05, * indicates significance at α=.20.

importance of picnic areas. The estimated coefficients on visit planned same-day and age were negative. Therefore, compared with those who planned a visit other than the same-day and younger visitors; visit planned same-day and age had a negative influence on probability of importance of picnic areas. Prior visits, local county, visit planned same day, male, college graduate, inc3050, inc5070, inc70100, incgt100, learned about by word of mouth, and learned about by brochure did not significantly influence the probability that picnic areas was extremely or highly important.

The results suggest those planning a visit the same day had a negative influence on picnic areas suggesting spontaneous visitors do not value events that use picnic areas. The positive effect of school groups suggests that those visiting with school groups place a higher value on picnic areas. This may be important as children would be using picnic areas for lunch or other social activities. Visitors from the local county had a negative influence on picnic areas. One possible explanation is these visitors may not spend prefer to spend time at the attraction that requires the use of a picnic area.

4.3.7. Crafts or Souvenirs

The estimated probit model of extreme/high importance of crafts or souvenirs is shown in Table 39. The model is significant at the 0.1294 level with a log-likelihood ratio statistic of 20.04. Nearly 81 percent of actual 1s and 0s are correctly predicted. As shown in Table 39, the variables that significantly influenced the probability that a visitor responded crafts or souvenirs is extremely or highly important were local county, inc3050, inc70100, incgt100 and learned about by word of mouth. The estimated coefficients on inc3050, inc5070, inc70100 and incgt100 were positive. Therefore, compared with those who did not have income $30,000 to $50,000, did not have income

Table 39. Estimated Probit Model of Importance of Crafts or Souvenirs.

Variable	Estimated Coefficient	Standard Error	t-ratio	P-value[a]	
Constant	-0.936	0.713	-0.131	0.189	*
Prior Visits	0.132	0.254	0.522	0.601	
Visiting With School Group	-0.199	0.373	-0.535	0.592	
Local County	-0.494	0.254	-1.943	0.052	*
Visit Planned Same Day	0.013	0.330	-1.260	0.207	
Male	-0.416	0.330	-1.260	0.207	
College Graduate	-0.205	0.268	-0.766	0.443	
INC3050	0.986	0.568	1.736	0.082	*
INC5070	0.764	0.566	1.349	0.177	*
INC70100	0.875	0.571	1.533	0.125	*
INCGT100	0.987	0.581	1.699	0.089	*
Age	-0.006	0.010	-0.633	0.526	
Learned About by Word of Mouth	-0.509	0.305	-1.670	0.094	*
Learned About by Brochure	-0.568	0.464	-1.224	0.220	
Learned About by Newspaper Advertising	0.318	0.287	1.108	0.267	
Log-Likelihood Ratio Statistics (14df)	20.04	*			
Percent Correctly Classified	80.71%				

[a]*** indicates significance at α=.01, ** indicates significance at α=.05, * indicates significance at α=.20.

$30,000 to $50,000, did not have income $70,000 to $100,000, did not have income greater than $100,000, and did not learn about; inc3050, inc70100 and incgt100 had a positive influence on probability of importance of crafts or souvenirs. The estimated coefficients on local county and learned about by word of mouth were negative. Therefore, compared with those who were not from the local county and did not learn about the attraction by word of mouth; local county, and learned about by word of mouth had a negative influence on probability of importance of crafts or souvenirs. Prior visits, visiting with school group, visit planned same day, male, college graduate, inc5070, age, learned about by brochure, and learned about by newspaper advertising did not significantly influence the probability that crafts or souvenirs was extremely or highly important.

Prior visitors positively influenced crafts or souvenirs suggesting crafts of souvenirs may be an important influence on bringing visitors back to the attraction. Also, Local County negatively influenced crafts or souvenirs. One possible explanation is local visitors may place more importance on other products offered at the attraction such as food and drink for purchase. Interestingly, visitors with income greater than $30,000 placed importance on crafts or souvenirs for purchase. This may be of importance for visitors with average to high incomes may have income available to spend on crafts or souvenirs. Interestingly, being a college graduate had a negative influence on crafts or souvenirs. One possible explanation is that college graduates may place more value on aspects of the visit experience. Visitors who learned about the business by word of mouth or brochures had a positive influence on crafts or souvenirs. One reason may be the attraction offered crafts or souvenirs that visitors may have heard about through

friends or seen in a brochure that enticed them to visit the attraction.

4.3.8 Farm Scenery

The estimated probit model of extreme/high importance of farm scenery is shown

in Table 40. The model is significant at the 0.004125 level with a log-likelihood ratio

statistic of 31.91. Just over 67 percent of actual 1s and 0s are correctly predicted.

As shown in Table 40, the variables that significantly influenced the probability that a

visitor responded farm scenery is extremely or highly important were visiting with school

group, local county, college graduate, inc3050 and inc70100. The estimated coefficient

on visiting with school group was positive. Therefore, compared with those not visiting

with a school group; visiting with school group had a positive influence on probability of

importance of farm scenery. The estimated coefficients o college graduate, inc3050 and

inc70100 were negative. Therefore, compared with those who were not a college

graduate, did not have income $30,000 to $50,000 and did not have income $70,000 to

$100,000; college graduate, inc3050 and inc70100 had a negative influence on

probability of importance of farm scenery. Prior visits, local county, visit planned same

day, male, college graduate, inc5070, incgt100, age, learned about by word of mouth,

learned about by brochure, and learned about by newspaper advertising did not

significantly influence the probability that farm scenery is extremely or highly important.

The positive effect of school groups suggests that those visiting with school

groups positively influenced farm scenery. Visitors with a school group may place

importance on farm scenery and be an important part of the visitor's experience.

Interestingly, being male had a negative influence suggesting males may place

less importance on the attraction's experience and more on the products and services of

Table 40. Estimated Probit Model of Importance of Farm Scenery.

Variable	Esimated Coefficient	Standard Error	t-ratio	P-value[a]	
Constant	1.523	0.569	2.674	0.007	***
Prior Visits	0.027	0.220	0.124	0.901	
Visiting With School Group	1.355	0.382	3.540	0.000	***
Local County	-0.215	0.223	-0.964	0.334	
Visit Planned Same Day	-0.141	0.224	-0.630	0.528	
Male	-0.152	0.259	-0.588	0.556	
College Graduate	-0.393	0.241	-1.630	0.103	*
INC3050	-0.785	0.406	-1.933	0.053	*
INC5070	-0.476	0.397	-1.198	0.230	
INC70100	-0.759	0.409	-1.856	0.063	*
INCGT100	-0.368	0.418	-0.881	0.378	
Age	-0.510	0.008	-0.584	0.559	
Learned About by Word of Mouth	-0.234	0.260	-0.900	0.368	
Learned About by Brochure	-0.281	0.404	-0.697	0.485	
Learned About by Newspaper Advertising	0.004	0.273	0.017	0.986	
Log-Likelihood Ratio Statistics (14df)	31.91	***			
Percent Correctly Classified	67.01%				

[a]*** indicates significance at α=.01, ** indicates significance at α=.05, * indicates significance at α=.20.

the attraction. Also, those learning about the business by word of mouth, brochures, and newspaper advertising negatively influenced farm scenery, as did those from the local county. One possible explanation for these visitors is they have similar characteristics in most likely being from the area the attraction is held and are already accustomed to the farm scenery.

4.3.9 Pricing of Products

The estimated probit model of extreme/high importance of pricing of products is shown in table 41. The model is significant at the 0.001313 level with a log-likelihood ratio statistic of 35.33. Almost 77 percent of actual 1s and 0s are correctly predicted. Table 41 shows the variables that significantly influenced the probability that a visitor responded pricing of products is extremely or highly important and they were prior visits, male, incgt100, older visitors, learned about by word of mouth, and learned about by brochure. The estimated coefficient on prior visits was positive. Therefore, compared with those who had not visited before; prior visit had a positive influence on probability of importance of pricing of products. The estimated coefficients on male, incgt100, age, learned about by word of mouth, and learned about by brochure were negative. Therefore, compared with those who were female, did not have income greater than $100,000, younger visitors, did not learn about the attraction by word of mouth, and did not learn about the attraction by brochure; male, incgt100, older visitors, learned about by word of mouth, and learned about by brochure had a negative influence on probability of importance of pricing of products. Visitors with school group, local county, visit planned same day, college graduate, inc3050, inc5070, inc70100, and newspaper advertising did not significantly influence the probability that pricing of products is extremely or highly

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Table 41. Estimated Probit Model of Importance of Pricing of products.

Variable	Estimated Coefficient	Standard Error	t-ratio	P-value [a]	
Constant	2.188	0.617	3.547	0.000	***
Prior Visits	0.393	0.248	1.588	0.112	*
Visiting With School Group	-0.222	0.342	-0.651	0.515	
Local County	-0.309	0.257	-1.204	0.228	
Visit Planned Same Day	0.260	0.259	1.004	0.315	
Male	-0.498	0.282	-1.764	0.077	*
College Graduate	-0.203	0.278	-0.732	0.464	
INC3050	-0.290	0.434	-0.670	0.503	
INC5070	0.116	0.433	0.268	0.788	
INC70100	-0.331	0.432	-0.765	0.444	
INCGT100	-0.729	0.444	-1.640	0.100	*
Age	-0.020	0.009	-2.104	0.035	**
Learned About by Word of Mouth	-0.566	0.276	-2.053	0.040	**
Learned About by Brochure	-0.902	0.365	-2.474	0.013	**
Learned About by Newspaper Advertising	0.300	0.334	0.897	0.369	
Log-Likelihood Ratio Statistics (14df)	35.33	***			
Percent Correctly Classified	76.65%				

[a]*** indicates significance at $\alpha=.01$, ** indicates significance at $\alpha=.05$, * indicates significance at $\alpha=.20$.

important.

The results indicate that pricing of products may be of greater importance to repeat visitors than same day visitors.   The negative influence of school groups suggests that those visiting with school groups place lesser importance on pricing of products. This may not be important to children as they most likely do not spend money on the attraction's products and instead are at the attraction for educational purposes. Interestingly, being from the local county had a negative influence as did learning about the attraction by word of mouth or brochures. One possible explanation is local visitors may come to the attraction regardless of prices for they are interested in the experience and uniqueness of the products offered. Visitors who learned about the attraction through newspaper advertising positively influenced pricing of products and they may be interested in the advertising of products and may place value on coupons found in the newspaper advertising.

4.3.10 Admission or user fees

The estimated probit model of extreme/high importance of admission or user fees is shown in Table 42. The model is significant at the 0.00304 level with a log-likelihood ratio statistic of 32.84. About 65 percent of actual 1s and 0s are correctly predicted. As shown in Table 42, the variables that significantly influenced the probability that a visitor responded admission or user fees were extremely or highly important were visiting with school group and newspaper advertising. The estimated coefficients on visiting withschool group and learned about by newspaper advertising were positive. Therefore, compared with those who were not in a school group and did not learn about the attraction by newspaper advertising; visiting with school group and learned about by

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Table 42. Estimated Probit Model of Importance of Admission or user fees.

Variable	Estimated Coefficient	Standard Error	t-ratio	P-value [a]	
Constant	0.082	0.526	0.157	0.875	
Prior Visits	-0.277	0.217	-1.274	0.202	
Visiting With School Group	1.199	0.345	3.468	0.000	***
Local County	-0.087	0.223	-0.391	0.695	
Visit Planned Same Day	0.359	0.223	1.271	0.203	
Male	-0.113	0.259	-0.436	0.663	
College Graduate	-0.076	0.234	-0.327	0.743	
INC3050	0.400	0.380	1.054	0.291	
INC5070	0.216	0.361	0.600	0.548	
INC70100	-0.089	0.371	-0.241	0.809	
INCGT100	0.161	0.390	0.415	0.678	
Age	-0.0694	0.008	-0.802	0.422	
Learned About by Word of Mouth	0.171	0.251	0.684	0.494	
Learned About by Brochure	0.186	0.387	0.481	0.630	
Learned About by Newspaper Advertising	0.491	0.272	1.805	0.071	**
Log-Likelihood Ratio Statistics (14df)	32.84	***			
Percent Correctly Classified	65.48%				

[a]*** indicates significance at α=.01, ** indicates significance at α=.05, * indicates significance at α=.20.

newspaper advertising had a positive influence on probability of importance of admission or user fees. Prior visits, local county, visit planned same day, male, college graduate, inc3050, inc5070, inc70100, incgt100, age, learned about by word of mouth, and learned about by brochure did not significantly influence the probability that pricing of products was extremely or highly important.

The results indicate that admission or user fees may be of greater importance to those visiting in school groups. One possible explanation is school group planners place importance on budgeting field trips for the children. Interestingly, visitors with income between $30,000 and $70,000 may positively influence admission or user fees, while visitors with income between $70,000 and $100,000 negatively influence admission or user fees. One possible explanation is that those with lower income may place more importance on their spending than those with larger incomes. Also, those learning about the business by word of mouth, brochures and newspaper advertising may place importance on admission or user fees. This may indicate visitors place importance on the admission or user fees upon learning about the attraction along with the attraction's other amenities/services.

4.3.11 Product Samples

The estimated probit model of extreme/high importance of product samples is shown in Table 43. The model is significant at the 0.41504 level with a log-likelihood ratio statistic of 14.47. About 61.42 percent of actual 1s and 0s are correctly predicted. Table 43 shows the variables that significantly influenced the probability that a visitor responded product sample was extremely or highly important is visit planned same day, inc3050, inc5070, inc70100, and incgt100. The estimated coefficients on visit planned

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Table 43. Estimated Probit Model of Importance of Product samples.

Variable	Estimated Coefficient	Standard Error	t-ratio	P-value [a]	
Constant	-1.015	0.533	-1.906	0.056	**
Prior Visits	-0.083	0.210	-0.395	0.692	
Visiting With School Group	0.369	0.308	1.199	0.230	
Local County	0.217	0.217	1.000	0.317	
Visit Planned Same Day	0.477	0.223	2.139	0.032	**
Male	-0.060	0.258	-0.235	0.814	
College Graduate	0.814	0.229	0.035	0.971	
INC3050	0.841	0.377	2.232	0.025	**
INC5070	0.613	0.365	1.681	0.092	*
INC70100	1.012	0.382	2.651	0.008	***
INCGT100	0.652	0.393	1.658	0.097	*
Age	0.004	0.008	0.491	0.623	
Learned About by Word of Mouth	-0.235	0.242	-0.970	0.332	
Learned About by Brochure	-0.078	0.344	-0.228	0.819	
Learned About by Newspaper Advertising	0.125	0.268	0.467	0.640	
Log-Likelihood Ratio Statistics (14df)	14.47	*			
Percent Correctly Classified	61.42%				

[a]*** indicates significance at $\alpha=.01$, ** indicates significance at $\alpha=.05$, * indicates significance at $\alpha=.20$.

same day, inc3050, inc5070, inc70100, and incgt100 were positive. Therefore, compared

with those who did not plan the visit the same day, did not have income $30,000 to

$50,000, did not have income $50,000 to $70,000, did not have income $70,000 to

$100,000, and did not have income greater than $100,000; visit planned same day,

inc3050, inc5070, inc70100, and incgt100 had a positive influence on probability of

importance of product samples. Prior visits, visiting with school group, male, college

graduate, age, learned about by word of mouth, learned about by brochure, and learned

about by newspaper advertising did not significantly influence the probability that

product samples was extremely or highly important. The positive effect of income

greater than $30,000 suggests that these visitors place a higher value on product samples.

This could be of importance since visitors with average to greater than average income

would likely be testing product samples to decide upon a purchase of the product

sampled. Interestingly, learned about the attraction by word of mouth had a negative

influence as did learned about the attraction by brochure. One possible explanation for

those learning about the business by word of mouth or brochures may be interested in the

rural or farm experience or educational aspects also, while learning about the venue from

newspaper might reflect those who are price or fresh product shopping.

4.3.12 Adequate Parking

Shown in Table 44, the estimated probit model of extreme/high importance of

adequate parking is presented. The model is significant at the 0.03766 level with a log-

likelihood ratio statistic of 24.70. Nearly 75 percent of actual 1s and 0s are correctly

predicted. As shown in Table 44, the variables that significantly influenced the

probability that a visitor.

Table 44. Estimated Probit Model of Importance of Adequate parking.

Variable	Estimated Ceofficient	Standard Error	t-ratio	P-value [a]	
Constant	-0.317	0.535	-0.593	0.553	
Prior Visits	0.095	0.228	0.417	0.676	
Visiting With School Group	0.571	0.344	1.659	0.097	*
Local County	-0.230	0.236	-0.976	0.329	
Visit Planned Same Day	0.319	0.239	1.330	0.183	
Male	-0.261	0.279	-0.937	0.348	
College Graduate	-0.186	0.253	-0.735	0.462	
INC3050	0.778	0.382	2.033	0.042	**
INC5070	0.346	0.353	0.981	0.326	
INC70100	0.773	0.386	2.000	0.045	**
INCGT100	-0.046	0.383	-0.120	0.904	
Age	0.017	0.009	1.907	0.056	**
Learned About by Word of Mouth	-0.455	0.271	-1.677	0.093	*
Learned About by Brochure	-0.779	0.370	-2.105	0.035	**
Learned About by Newspaper Advertising	-0.613	0.289	-0.212	0.832	
Log-Likelihood Ratio Statistics (14df)	24.70	**			
Percent Correctly Classified	74.62%				

[a]*** indicates significance at α=.01, ** indicates significance at α=.05, * indicates significance at α=.20.

The results suggest that visit planned same day had a positive effect. This may be important since spontaneous visits occur the same day and adequate parking is important for saving time as the visitor may have other events scheduled.   The positive effect of school groups suggests that those visiting with school groups place a higher value on adequate parking. This could be of importance since children would likely be in need of adequate parking due to safety precautions. Interestingly, visitors from the local county had a negative influence. One possible explanation is these visitors may place less importance on adequate parking and more on the other experiences or products the attraction has to offer. Also, those learning about the business by word of mouth, brochures, and newspaper advertising negatively influenced adequate parking suggesting these visitors may place more importance on other aspects of the attraction such as the experience and products offered.

4.3.13 Learning about how Products are Grown or Made

The estimated probit model of extreme/high importance of learning about how products are grown or made is shown in Table 45. The model is significant at the 0.04059 level with a log-likelihood ratio statistic of 24.43. About 70 percent of actual 1s and 0s are correctly predicted. As shown in Table 45, the variables that significantly influenced the probability that a visitor responded learning about how products are grown or made is extremely or highly important were prior visits, visiting with school group, local county, visit planned same day, learned about by word of mouth, and learned about by brochure. The estimated coefficients on visiting with school group and local county were positive. Therefore, compared with those not with a school group and not from the local county; visiting with school group and local county had a positive influence on

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Table 45. Estimated Probit Model of Importance of Learning about how products are grown or made.

Variable	Estimated Coefficient	Standard Error	t-ratio	P-value[a]	
Constant	1.023	0.561	1.823	0.068	*
Prior Visits	-0.504	0.237	-2.131	0.033	**
Visiting With School Group	0.622	0.361	1.719	0.085	**
Local County	0.456	0.234	1.948	0.051	**
Visit Planned Same Day	-0.403	0.238	-1.693	0.090	*
Male	0.233	0.272	0.857	0.391	
College Graduate	-0.132	0.251	-0.526	0.598	
INC3050	-0.266	0.383	-0.696	0.486	
INC5070	0.093	0.374	0.250	0.802	
INC70100	0.169	0.388	0.435	0.663	
INCGT100	-0.390	0.390	-1.000	0.317	
Age	0.170	0.008	0.193	0.846	
Learned About by Word of Mouth	-0.429	0.267	-1.603	0.108	*
Learned About by Brochure	-0.595	0.399	-1.490	0.136	*
Learned About by Newspaper Advertising	-0.209	0.278	-0.753	0.451	
Log-Likelihood Ratio Statistics (14df)	24.43	**			
Percent Correctly Classified	70.56%				

[a]*** indicates significance at α=.01, ** indicates significance at α=.05, * indicates significance at α=.20.

probability of importance of learning about how products are grown or made. The estimated coefficients on prior visits, visit planned same day, learned about by word of mouth and learned about by brochure were negative. Therefore, compared with those who had not visited before, did not plan the visit the same day, did not learn about the attraction by word of mouth, and did not learn about the attraction by brochure; prior visits, visit planned same day, learned about by word of mouth and learned about by brochure had a negative influence on probability of importance of learning about how products are grown or made. Male, college graduate, inc3050, inc5070, inc70100, incgt100, age, and newspaper advertising did not significantly influence the probability that learning about how products are grown or made was extremely or highly important. The results indicate that learning about how products are grown or made may be of greater importance to same day visitors than repeat visitors. This may be less important to repeat visitors since they may find other aspects of the attractions more important such as products for purchase. The positive effect of school groups suggests that those visiting with school groups place a higher value on learning about how products are grown or made. This could be of importance since children in a school group would likely be visiting the attraction for an educational experience as part of a school field trip. Interestingly, being a college graduate had a negative influence. One possible explanation is that college graduates may have learned about how products are grown or made through school and may not be interested in learning again.

Chapter 5:

Conclusion

Specific objectives addressed through this research included 1) Ascertain the characteristics, preferences for amenities and services, and spending patterns by visitors to Tennessee agr-tourism attractions, 2) Measure how demographics and visiting patterns may influence preferences for amenities and services, and 3) Provide projections of statewide economics impacts from visitor expenditures to similar agri-tourism attractions across the state.

The demographic and socioeconomic characteristics were summarized from the survey results. In general, most of the respondents were women who were a college graduate. Nearly 87 percent were Tennessee residents and 77 percent had a household income (before taxes) of $40,000 or more. The average age of the respondents was almost 42 years. About half of the respondents had a previous experience in visiting the agri-tourism attraction. More than 90 percent of the visitors spent only one day at the attraction. Also, most of the respondents spent less than one week planning to visit the attraction. The majority of the respondents visited in a large group that was part of school or other type of group such as Scouts, gardening groups or clubs, or other clubs. Visitors learned about the attraction the most by word-of-mouth, brochures, newspaper advertising, and business signs.

The results from this study suggest that repeat visitors are important to the businesses along with first time visitors. Also, of importance to visitor base to the agri-tourism businesses are groups, such as schools or other organizations. One of the most important ways for visitors to learn about the businesses is through word-of-mouth. This

underscores the need for a good experience by visitors that helps build reputation of the venue. Many visitors had planned the visit within a week of their visit. This suggests newspaper advertisements and distribution of brochures might occur 1 to 2 weeks prior to a major event.

Based on the results of this study, several recommendations can be made to increase visitors' satisfaction with Tennessee agri-tourism attractions. Because this study revealed that there were differences in the overall preferences for amenities and services by agri-tourism attractions in terms of gender, prior visits, decision time to travel, etc., it is hoped that the results of the study will provide some insights that may help agri-tourism business owners develop specific promotional strategies. For example, according to this study, agri-tourism visits are typically made by women. Therefore, tourism marketers may keep this in mind as they develop products and services for their market. The study also revealed that about 71% of respondents came with a large group and that 52% of these large groups were with a school group. Thus, this finding can be useful to tourism planners to improve and create key attributes for school children. The majority of visits are day visits according to the survey. Tourism planners may develop special services and products that make their attraction more user friendly for school groups. For example, marketers can send promotional packages to schools in order to induce and maintain their interest in the attraction and attract potential school groups to their attraction.

This study also compared demographic and visiting patterns influencing the visitors' rating of enjoyability of amenities and services at the attraction. The results from this study suggest some of the most important services or amenities to visitors are

freshness of farm's or business' products, on-site restrooms, adequate parking, learning about how products are grown or made, and easy transportation access. Services or amenities of lesser importance included food and drink for purchase and crafts or souvenirs.

While the above results provided insights regarding the overall relative importance of services or amenities, it is also helpful to know if certain types of services or amenities are of particular importance to certain types of visitors. For example, for repeat visitors freshness of products and pricing were more important to them relative to first time visitors. However, certain amenities such as restrooms or food and drink for purchase were less important. Those visiting with school groups placed a higher priority on most services or amenities, except food and drink for purchase and crafts or souvenirs for purchase. Local county visitors placed lower importance on on-site restrooms and food and drink for purchase than out of county visitors likely because they are aware of services nearby. On the other hand, local county visitors placed a higher importance on product samples and on learning how products are grown or made.

The primary motivation for a business such as agri-tourism businesses and a region such as Tennessee when serving tourists is generally for economic enhancement. An agri-tourism business is interested primarily in its own revenues and costs, while a community or region is concerned with agri-tourism's overall contribution to the economy. A good understanding of agri-tourism's economic impact is therefore important for the agriculture, government officials, and Tennessee citizens as a whole.

This study quantified the contribution of agri-tourism to employment, output, and value added to the Tennessee regional economy. The estimated impacts and the

associated multipliers in terms of employment, output, and value added indicate that agri-tourism businesses contribute a great deal to the economy of Tennessee. The visitor expenditures at winery agri-tourism attractions generate a total economic impact of $11,454,483 in output, $1,464,093 in value added, and 78.7 jobs in the state of Tennessee. The visitor expenditures at non-winery agri-tourism attractions generates a total economic impact of $20,032,032 in output, $11,981,108 in total value added, and 479.91 jobs in the state of Tennessee.

After reviewing the results of the input-output modeling in this study, it is clear that agriculture business owners and the Tennesse economy benefit from agri-tourism attractions. Visitor expenditures at agri-tourism attractions cycle through the local community, spurring economic growth in a variety of sectors. Agri-tourism employ individuals in the community and at the same time providing additional revenue for the owners, providing labor income that also is fed through the local economy. And agri-tourism attracts non-local visitors who spend money on food, lodging and other needs that are necessary to their visit. Agri-tourism attractions are integral to agriculture economic development and the results of this economic impact from agri-tourism shows agri-tourism is expected to play an increasingly important economic role in the Tennessee rural economy in the future.

The majority of visitors to agri-tourism attractions planned to stay for one day only. The local government and agri-tourism attractions may be interested in methods to increase visitor's length of stay so they may spend more on the local economy. Agricultural tourism should go beyond attracting new visitors, it should attract visitors who want to stay longer and return more often. Visitors who stay longer or return will

spend more money on the local economy. Methods that local economy officials or agri-tourism attraction owners may employ to generate longer visits should include better logistical information. Transportation, food, lodging, fees, weather and special conditions should be available to visitors before arrival or at the agri-tourism attraction. In conclusion, to create effective marketing strategies for products and services in the agr-tourim market, a better understanding of visitors to the agri-tourism attraction is necessary. Future research might focus on the types of agri-tourism attractions and services necessary to attract overnight visitors.

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Appendix A – Survey Instrument

Agri Tourism Visitors Survey

This survey is designed to help this agri tourism business, the Tennessee Department of Agriculture, and the Tennessee Department of Tourist Development improve the goods and services provided to visitors like you. Your views and opinions will help this business offer a better package of products and services to make your visit as enjoyable as possible. Your individual information will be held confidential. Only project researchers will have access to the data itself. Please take 5-10 minutes to complete the survey. When you have completed the survey, you may either drop your survey in the box on site or mail it using the postage paid envelope at your convenience. Thanks! If you have questions about this survey, please contact Dr. Kim Jensen, Professor, University of Tennessee, 865-974-3716.

Your visit here

1. Has your experience at this attraction been: (Place an 'X' by the answer)

[   ] Extremely enjoyable?   [   ] Highly enjoyable? [   ] Enjoyable?   [   ] Somewhat enjoyable?   [   ] Not enjoyable at all?

2. a. What was most enjoyable about your visit?

_____

_____

_____

b. What would make your visit more enjoyable?_____

_

_____

_____

3.   Please rate the importance of each in your visit: (Circle the answer)

4. Have you visited this attraction before?
          [   ] *Yes* (If "Yes", how many times, including this time _____)   **[   ]**
     No

5. Are you visiting?
[   ]   Alone or with small group of family/friends?   **[   ]** With a larger group? Size of group _____ people

Type of Group: [ ]School?   [ ]Church?   [ ]Tour?   [ ]Other **?**(Describe_____)

6. Did you travel by
   [ ] Car?   [ ] School bus?   [ ] Tour bus?   [ ] Other? (Please describe:_____)

7. How many days do you plan to visit this attraction?
   [ ] Today only   [ ] Today and tomorrow   [ ]   More than 2 days (_____ number of days)

8. How did you learn about this attraction? (Place an 'X' by the answer)

[   ] Newspaper advertising
[   ] Business sign
[   ] Business Internet site
[   ] Brochures
[   ] Television advertising
[   ] Radio advertising
[   ] Word of mouth

[   ] Tennessee Agri tourism Attractions Directory ("Get Close to Your Country" at www.picktnproducts.org)
[   ] Tennessee Vacation Guide (TNVacation.com)
[   ] Direct mail
[   ] Point of sale samples

[   ] County or local tourism guidebooks or Websites
[   ] Chamber of Commerce
[   ] Coupons
[   ] News releases

[   ] Other (Please describe:

_____

9. How far in advance did you begin planning to visit this attraction?
[ ] The same day   **[ ] 2 weeks to 1 month**
[ ] Less than 1 week   **[ ] 1 to 3 months**
[ ] 1 to 2 weeks   **[ ] At least 3 months ago**

Spending on this visit

10. How much are you spending today <u>at this location</u> on the following:
   $_____ Admission or user fees
   $_____ Purchasing the farm/venue's product (for example, fruit from pick-your-own, wine from winery, plants from garden)
   $_____ Other food and drink (for example, meals, snacks, soft drinks)
   $_____ Non-food souvenir items
   $_____ Other (Please describe:

_____)
=$ _____ **Total** I will spend here today

11.   How much are you spending today at <u>locations nearby</u> this attraction on the
      following:
   $_____ Restaurant food and drink
   $_____ Overnight lodging
   $_____ Gasoline and auto related
   $_____ Groceries and food stands
   $ _____Non-food souvenir items
   $_____Other (Please describe:

_____
=$ _____ **Total** I will spend nearby today

12. Including yourself, how many people are you purchasing for _____ ?

About You

13. What is your gender?   **[ ] Male**   **[ ]   Female**

14. What is the highest education level you attained? (Place an 'X' by the answer)
[ ] Less than High School Graduate   [ ] Some College or Technical School
       [ ] Post Graduate Degree
[ ] High School Graduate   [ ] College Graduate

15. Where do you live?   City _____ County _____ State
_____Zip _____

16.   What was your household's income (before taxes) in 2004? (Place an 'X' by the
answer)
[ ] Under $10,000   [ ] $40,000 - $49,999   [ ] $80,000 - $89,999
[ ] $10,000 - $19,999   [ ] $50,000 - $59,999   [ ] $90,000 - $99,999
[ ] $20,000 - $29,999   [ ] $60,000 - $69,999   [ ] $100,000 or more
[ ] $30,000 - $39,999   [ ] $70,000 - $79,999
17. What is your age in years?   _____

**End of Survey. Thanks for your participation! Return by mail in postage paid
envelope or placing in drop box provided.**

Appendix B – Detailed IMPLAN Results

Table B.1. Economic Impacts from Visitor Expenditures at Tennessee Non-Winery Agritourism Attractions, 2005.

Industry	Total Industry Output (Dollars)				Value Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
1 Oilseed farming	0	5,808	190	5,997	0	3,075	100	3,176	0.00	0.27	0.01	0.27	1.02
2 Grain farming	2,390,226	20,253	756	2,411,235	1,236,730	10,479	391	1,247,600	166.28	1.41	0.05	167.74	1.02
3 Vegetable and melon farming	2,390,226	8,747	2,206	2,401,179	1,808,709	6,619	1,669	1,816,997	57.15	0.21	0.05	57.42	1.02
4 Tree nut farming	0	2	2	4	0	1	1	2	0.00	0.00	0.00	0.00	1.02
5 Fruit farming	2,390,226	1,643	301	2,392,170	1,434,391	986	181	1,435,557	102.62	0.07	0.01	102.70	1.02
6 Greenhouse and nursery production	0	6,643	6,176	12,818	0	6,293	5,850	12,143	0.00	0.24	0.23	0.47	1.02
7 Tobacco farming	0	1,415	89	1,503	0	1,017	64	1,081	0.00	0.10	0.01	0.11	1.02
8 Cotton farming	0	5,406	280	5,686	0	3,298	171	3,469	0.00	0.13	0.01	0.13	1.02
9 Sugarcane and sugar beet farming	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.02
10 All other crop farming	0	3,649	2,802	6,451	0	2,402	1,845	4,247	0.00	0.08	0.06	0.14	1.02
11 Cattle ranching and farming	0	9,801	11,091	20,892	0	1,057	1,197	2,254	0.00	0.32	0.37	0.69	1.02
12 Poultry and egg production	0	2,088	6,858	8,946	0	1,076	3,536	4,612	0.00	0.02	0.06	0.08	1.02
13 Animal production- except cattle and poultry and eggs	0	4,234	2,465	6,699	0	710	414	1,124	0.00	0.39	0.23	0.62	1.02
14 Logging	0	6,892	4,477	11,369	0	3,038	1,973	5,011	0.00	0.03	0.02	0.05	1.09
15 Forest nurseries- forest products- and timber tracts	0	8	5	13	0	3	2	6	0.00	0.00	0.00	0.00	1.05
16 Fishing	0	17	29	46	0	10	16	26	0.00	0.00	0.00	0.00	1.05
17 Hunting and trapping	0	0	722	722	0	0	57	57	0.00	0.00	0.01	0.01	1.05
18 Agriculture and forestry support activities	0	184,284	1,006	185,290	0	147,008	803	147,811	0.00	8.89	0.05	8.94	1.05
19 Oil and gas extraction	0	8,475	5,944	14,418	0	1,949	1,367	3,317	0.00	0.03	0.02	0.05	1.09
20 Coal mining	0	597	647	1,244	0	246	266	512	0.00	0.00	0.00	0.01	1.04
21 Iron ore mining	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.09
22 Copper- nickel- lead- and zinc mining	0	77	56	133	0	53	39	91	0.00	0.00	0.00	0.00	1.09
23 Gold- silver- and other metal ore mining	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.09
24 Stone mining and quarrying	0	804	503	1,306	0	525	328	853	0.00	0.01	0.00	0.01	1.05
25 Sand- gravel- clay- and refractory mining	0	16	110	126	0	12	80	92	0.00	0.00	0.00	0.00	1.05
26 Other nonmetallic mineral mining	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.05
27 Drilling oil and gas wells	0	1	94	94	0	0	59	59	0.00	0.00	0.00	0.00	1.01
28 Support activities for oil and gas operations	0	37	142	179	0	31	122	153	0.00	0.00	0.00	0.00	1.01
29 Support activities for other mining	0	1	45	46	0	0	28	29	0.00	0.00	0.00	0.00	1.01
30 Power generation and supply	0	12,249	13,377	25,625	0	8,804	9,615	18,419	0.00	0.03	0.03	0.06	1.05
31 Natural gas distribution	0	4,446	9,275	13,720	0	1,327	2,768	4,095	0.00	0.01	0.01	0.02	1.04
32 Water- sewage and other systems	0	3,484	2,124	5,608	0	2,783	1,697	4,480	0.00	0.02	0.01	0.03	1.07

Table B.1 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
33 New residential 1-unit structures- nonfarm	0	0	267,943	267,943	0	0	100,110	100,110	0.00	0.00	1.71	1.71	1.03
34 New multifamily housing structures- nonfarm	0	0	32,683	32,683	0	0	13,625	13,625	0.00	0.00	0.32	0.32	1.03
35 New residential additions and alterations- nonfarm	0	0	73,737	73,737	0	0	32,987	32,987	0.00	0.00	0.75	0.75	1.03
36 New farm housing units and additions and alterations	0	0	8,658	8,658	0	0	2,760	2,760	0.00	0.00	0.04	0.04	1.03
37 Manufacturing and industrial buildings	0	0	44,935	44,935	0	0	20,496	20,496	0.00	0.00	0.47	0.47	1.03
38 Commercial and institutional buildings	0	0	206,232	206,232	0	0	101,377	101,377	0.00	0.00	2.56	2.56	1.03
39 Highway- street- bridge- and tunnel construction	0	0	33,952	33,952	0	0	15,507	15,507	0.00	0.00	0.36	0.36	1.03
40 Water- sewer- and pipeline construction	0	0	10,079	10,079	0	0	5,638	5,638	0.00	0.00	0.13	0.13	1.03
41 Other new construction	0	0	62,690	62,690	0	0	25,858	25,858	0.00	0.00	0.58	0.58	1.03
42 Maintenance and repair of farm and nonfarm residential structures	0	1,932	20,162	22,094	0	746	7,781	8,526	0.00	0.01	0.12	0.13	1.03
43 Maintenance and repair of nonresidential buildings	0	82,476	28,844	111,320	0	38,054	13,309	51,363	0.00	0.88	0.31	1.19	1.03
44 Maintenance and repair of highways- streets- bridges, and tunnels	0	0	8,857	8,857	0	0	3,511	3,511	0.00	0.00	0.08	0.08	1.03
45 Other maintenance and repair construction	0	3,424	3,854	7,278	0	2,220	2,499	4,720	0.00	0.05	0.06	0.11	1.03
46 Dog and cat food manufacturing	0	3	566	570	0	1	94	94	0.00	0.00	0.00	0.00	1.07
47 Other animal food manufacturing	0	141	216	357	0	21	33	54	0.00	0.00	0.00	0.00	1.07
48 Flour milling	0	85	331	416	0	11	44	55	0.00	0.00	0.00	0.00	1.08
49 Rice milling	0	19	149	167	0	5	38	43	0.00	0.00	0.00	0.00	1.08
50 Malt manufacturing	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.08
51 Wet corn milling	0	839	377	1,216	0	187	84	271	0.00	0.00	0.00	0.00	1.08
52 Soybean processing	0	30	82	113	0	2	5	7	0.00	0.00	0.00	0.00	1.08
53 Other oilseed processing	0	17	52	69	0	1	3	5	0.00	0.00	0.00	0.00	1.08
54 Fats and oils refining and blending	0	93	289	382	0	11	34	44	0.00	0.00	0.00	0.00	1.08
55 Breakfast cereal manufacturing	0	102	1,133	1,235	0	15	172	187	0.00	0.00	0.00	0.00	1.08
56 Sugar manufacturing	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.05
57 Confectionery manufacturing from cacao beans	0	1	4	4	0	0	1	1	0.00	0.00	0.00	0.00	1.05
58 Confectionery manufacturing from purchased chocolate	0	159	2,638	2,798	0	61	1,011	1,073	0.00	0.00	0.01	0.01	1.05

Table B.1 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
59 Nonchocolate confectionery manufacturing	0	248	1,185	1,432	0	97	464	561	0.00	0.00	0.00	0.01	1.05
60 Frozen food manufacturing	0	257	900	1,157	0	90	315	404	0.00	0.00	0.00	0.00	1.05
61 Fruit and vegetable canning and drying	0	287	980	1,267	0	89	304	393	0.00	0.00	0.00	0.00	1.05
62 Fluid milk manufacturing	0	2,455	13,517	15,972	0	303	1,668	1,971	0.00	0.00	0.02	0.03	1.03
63 Creamery butter manufacturing	0	84	532	616	0	7	47	54	0.00	0.00	0.00	0.00	1.03
64 Cheese manufacturing	0	1,406	3,232	4,638	0	141	323	463	0.00	0.00	0.00	0.01	1.03
65 Dry- condensed- and evaporated dairy products	0	1,558	6,025	7,583	0	385	1,488	1,873	0.00	0.00	0.01	0.01	1.03
66 Ice cream and frozen dessert manufacturing	0	681	1,197	1,878	0	157	277	434	0.00	0.00	0.00	0.00	1.03
67 Animal- except poultry- slaughtering	0	6,895	21,316	28,211	0	855	2,642	3,497	0.00	0.02	0.06	0.08	1.03
68 Meat processed from carcasses	0	2,865	8,940	11,805	0	398	1,242	1,640	0.00	0.01	0.03	0.03	1.03
69 Rendering and meat byproduct processing	0	234	353	588	0	57	86	143	0.00	0.00	0.00	0.00	1.03
70 Poultry processing	0	7,819	23,552	31,372	0	2,261	6,811	9,072	0.00	0.04	0.12	0.17	1.03
71 Seafood product preparation and packaging	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.03
72 Frozen cakes and other pastries manufacturing	0	73	841	914	0	31	362	393	0.00	0.00	0.01	0.01	1.05
73 Bread and bakery product- except frozen- manufacturing	0	6,284	15,316	21,600	0	3,132	7,634	10,767	0.00	0.05	0.11	0.16	1.05
74 Cookie and cracker manufacturing	0	1,227	6,193	7,420	0	405	2,046	2,451	0.00	0.00	0.02	0.02	1.05
75 Mixes and dough made from purchased flour	0	527	4,310	4,836	0	154	1,259	1,413	0.00	0.00	0.01	0.01	1.05
76 Dry pasta manufacturing	0	3	41	44	0	1	10	11	0.00	0.00	0.00	0.00	1.05
77 Tortilla manufacturing	0	1	18	19	0	0	6	6	0.00	0.00	0.00	0.00	1.05
78 Roasted nuts and peanut butter manufacturing	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.04
79 Other snack food manufacturing	0	1,195	8,514	9,708	0	404	2,882	3,287	0.00	0.00	0.02	0.02	1.04
80 Coffee and tea manufacturing	0	338	1,050	1,388	0	30	92	122	0.00	0.00	0.00	0.00	1.04
81 Flavoring syrup and concentrate manufacturing	0	1,028	1,174	2,202	0	167	191	358	0.00	0.00	0.00	0.00	1.04
82 Mayonnaise- dressing- and sauce manufacturing	0	897	2,033	2,930	0	217	493	710	0.00	0.00	0.01	0.01	1.04
83 Spice and extract manufacturing	0	89	398	487	0	27	120	147	0.00	0.00	0.00	0.00	1.04
84 All other food manufacturing	0	511	4,304	4,815	0	128	1,081	1,210	0.00	0.00	0.02	0.02	1.04
85 Soft drink and ice manufacturing	0	1,489	4,497	5,985	0	325	981	1,306	0.00	0.00	0.01	0.01	1.04
86 Breweries	0	279	1,280	1,559	0	129	593	722	0.00	0.00	0.00	0.00	1.04

Table B.1 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
87 Wineries	0	45	155	201	0	9	32	41	0.00	0.00	0.00	0.00	1.04
88 Distilleries	0	301	548	849	0	192	349	541	0.00	0.00	0.00	0.00	1.04
89 Tobacco stemming and redrying	0	0	117	117	0	0	24	24	0.00	0.00	0.00	0.00	0.98
90 Cigarette manufacturing	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.98
91 Other tobacco product manufacturing	0	0	5,041	5,041	0	0	2,413	2,413	0.00	0.00	0.00	0.00	0.98
92 Fiber- yarn- and thread mills	0	479	341	821	0	102	73	175	0.00	0.00	0.00	0.00	1.05
93 Broadwoven fabric mills	0	31	372	402	0	8	102	111	0.00	0.00	0.00	0.00	1.04
94 Narrow fabric mills and schiffli embroidery	0	111	41	153	0	43	16	59	0.00	0.00	0.00	0.00	1.04
95 Nonwoven fabric mills	0	97	292	389	0	30	90	120	0.00	0.00	0.00	0.00	1.04
96 Knit fabric mills	0	6	155	160	0	1	40	41	0.00	0.00	0.00	0.00	1.04
97 Textile and fabric finishing mills	0	158	781	939	0	26	128	154	0.00	0.00	0.00	0.00	1.03
98 Fabric coating mills	0	54	183	236	0	16	54	70	0.00	0.00	0.00	0.00	1.03
99 Carpet and rug mills	0	7	100	107	0	2	23	25	0.00	0.00	0.00	0.00	1.03
100 Curtain and linen mills	0	3	157	161	0	1	48	49	0.00	0.00	0.00	0.00	1.03
101 Textile bag and canvas mills	0	405	73	478	0	175	31	206	0.00	0.00	0.00	0.00	1.03
102 Tire cord and tire fabric mills	0	1	21	23	0	0	5	6	0.00	0.00	0.00	0.00	1.03
103 Other miscellaneous textile product mills	0	70	57	127	0	19	15	34	0.00	0.00	0.00	0.00	1.03
104 Sheer hosiery mills	0	0	730	731	0	0	296	296	0.00	0.00	0.00	0.00	1.05
105 Other hosiery and sock mills	0	0	1,156	1,156	0	0	436	436	0.00	0.00	0.01	0.01	1.05
106 Other apparel knitting mills	0	1	62	62	0	0	12	13	0.00	0.00	0.00	0.00	1.05
107 Cut and sew apparel manufacturing	0	130	18,066	18,196	0	60	8,300	8,360	0.00	0.00	0.12	0.12	1.04
108 Accessories and other apparel manufacturing	0	10	574	585	0	5	281	286	0.00	0.00	0.01	0.01	1.04
109 Leather and hide tanning and finishing	0	36	191	227	0	8	44	52	0.00	0.00	0.00	0.00	1.06
110 Footwear manufacturing	0	0	1,468	1,468	0	0	445	445	0.00	0.00	0.01	0.01	1.05
111 Other leather product manufacturing	0	167	862	1,029	0	130	669	799	0.00	0.00	0.01	0.01	1.04
112 Sawmills	0	15,305	10,822	26,127	0	3,498	2,473	5,971	0.00	0.07	0.05	0.11	1.05
113 Wood preservation	0	220	1,018	1,238	0	36	169	205	0.00	0.00	0.00	0.01	1.05
114 Reconstituted wood product manufacturing	0	146	1,561	1,708	0	43	459	502	0.00	0.00	0.01	0.01	1.04
115 Veneer and plywood manufacturing	0	498	1,366	1,864	0	133	365	497	0.00	0.00	0.01	0.01	1.04
116 Engineered wood member and truss manufacturing	0	922	3,559	4,481	0	389	1,501	1,889	0.00	0.01	0.02	0.03	1.04

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
117 Wood windows and door manufacturing	0	2,143	6,178	8,320	0	737	2,125	2,862	0.00	0.01	0.04	0.05	1.04
118 Cut stock- resawing lumber- and planing	0	2,064	1,853	3,917	0	598	537	1,136	0.00	0.01	0.01	0.03	1.04
119 Other millwork- including flooring	0	2,109	6,310	8,419	0	587	1,755	2,342	0.00	0.01	0.04	0.05	1.04
120 Wood container and pallet manufacturing	0	46,457	1,524	47,981	0	17,230	565	17,796	0.00	0.47	0.02	0.48	1.04
121 Manufactured home- mobile home- manufacturing	0	0	23	23	0	0	10	10	0.00	0.00	0.00	0.00	1.04
122 Prefabricated wood building manufacturing	0	21	81	102	0	7	26	33	0.00	0.00	0.00	0.00	1.04
123 Miscellaneous wood product manufacturing	0	998	1,313	2,311	0	376	495	872	0.00	0.01	0.01	0.02	1.04
124 Pulp mills	0	81	50	131	0	17	10	27	0.00	0.00	0.00	0.00	1.06
125 Paper and paperboard mills	0	11	18	28	0	4	6	10	0.00	0.00	0.00	0.00	1.06
126 Paperboard container manufacturing	0	6,727	4,246	10,973	0	1,563	987	2,549	0.00	0.02	0.02	0.04	1.05
127 Flexible packaging foil manufacturing	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.05
128 Surface-coated paperboard manufacturing	0	0	1	2	0	0	0	0	0.00	0.00	0.00	0.00	1.05
129 Coated and laminated paper and packaging materials	0	1,012	1,018	2,030	0	302	304	606	0.00	0.00	0.00	0.01	1.05
130 Coated and uncoated paper bag manufacturing	0	74	73	147	0	18	17	35	0.00	0.00	0.00	0.00	1.05
131 Die-cut paper office supplies manufacturing	0	9	23	32	0	3	6	9	0.00	0.00	0.00	0.00	1.05
132 Envelope manufacturing	0	21	32	53	0	5	9	14	0.00	0.00	0.00	0.00	1.05
133 Stationery and related product manufacturing	0	1	3	4	0	0	1	1	0.00	0.00	0.00	0.00	1.05
134 Sanitary paper product manufacturing	0	19	221	240	0	7	84	91	0.00	0.00	0.00	0.00	1.05
135 All other converted paper product manufacturing	0	17	62	78	0	5	20	25	0.00	0.00	0.00	0.00	1.05
136 Manifold business forms printing	0	406	949	1,356	0	340	795	1,135	0.00	0.00	0.01	0.01	1.05
137 Books printing	0	317	291	608	0	177	163	339	0.00	0.00	0.00	0.00	1.05
138 Blankbook and looseleaf binder manufacturing	0	10	30	40	0	5	15	20	0.00	0.00	0.00	0.00	1.05
139 Commercial printing	0	16,673	9,495	26,168	0	12,043	6,858	18,901	0.00	0.20	0.12	0.32	1.05
140 Tradebinding and related work	0	23	90	113	0	17	67	83	0.00	0.00	0.00	0.00	1.05
141 Prepress services	0	157	205	362	0	118	154	272	0.00	0.00	0.00	0.00	1.05
142 Petroleum refineries	0	59,884	36,481	96,365	0	5,306	3,233	8,539	0.00	0.02	0.01	0.03	1.03
143 Asphalt paving mixture and block manufacturing	0	596	5,279	5,875	0	172	1,519	1,690	0.00	0.00	0.01	0.01	1.03

Table B.1 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
144 Asphalt shingle and coating materials manufacturing	0	975	1,676	2,651	0	395	679	1,075	0.00	0.00	0.00	0.00	1.03
145 Petroleum lubricating oil and grease manufacturing	0	1,606	1,236	2,842	0	530	408	938	0.00	0.00	0.00	0.00	1.03
146 All other petroleum and coal products manufacturing	0	57	63	120	0	24	26	50	0.00	0.00	0.00	0.00	1.03
147 Petrochemical manufacturing	0	9,187	6,506	15,693	0	752	533	1,285	0.00	0.00	0.00	0.01	1.07
148 Industrial gas manufacturing	0	1,377	2,737	4,114	0	409	812	1,220	0.00	0.00	0.00	0.01	1.07
149 Synthetic dye and pigment manufacturing	0	1,043	1,463	2,506	0	252	353	605	0.00	0.00	0.00	0.00	1.07
150 Other basic inorganic chemical manufacturing	0	15,731	5,611	21,342	0	5,371	1,916	7,287	0.00	0.04	0.01	0.05	1.07
151 Other basic organic chemical manufacturing	0	425	171	595	0	52	21	73	0.00	0.00	0.00	0.00	1.07
152 Plastics material and resin manufacturing	0	2,359	1,541	3,900	0	386	252	638	0.00	0.00	0.00	0.00	1.05
153 Synthetic rubber manufacturing	0	131	73	204	0	23	13	35	0.00	0.00	0.00	0.00	1.05
154 Cellulosic organic fiber manufacturing	0	0	0	1	0	0	0	0	0.00	0.00	0.00	0.00	1.05
155 Noncellulosic organic fiber manufacturing	0	1,802	1,140	2,942	0	499	316	814	0.00	0.00	0.00	0.01	1.05
156 Nitrogenous fertilizer manufacturing	0	8,805	195	9,000	0	1,633	36	1,669	0.00	0.01	0.00	0.01	1.06
157 Phosphatic fertilizer manufacturing	0	4,889	80	4,969	0	647	11	657	0.00	0.01	0.00	0.01	1.06
158 Fertilizer- mixing only- manufacturing	0	4,640	74	4,714	0	834	13	848	0.00	0.01	0.00	0.01	1.06
159 Pesticide and other agricultural chemical manufacturing	0	116,951	712	117,663	0	37,449	228	37,677	0.00	0.10	0.00	0.10	1.06
160 Pharmaceutical and medicine manufacturing	0	48	35,494	35,543	0	15	11,302	11,318	0.00	0.00	0.06	0.06	1.05
161 Paint and coating manufacturing	0	82	131	213	0	18	29	47	0.00	0.00	0.00	0.00	1.04
162 Adhesive manufacturing	0	366	1,341	1,707	0	94	344	438	0.00	0.00	0.00	0.00	1.04
163 Soap and other detergent manufacturing	0	887	5,546	6,433	0	191	1,191	1,382	0.00	0.00	0.01	0.01	1.05
164 Polish and other sanitation good manufacturing	0	2,146	2,574	4,720	0	1,305	1,565	2,870	0.00	0.01	0.01	0.02	1.05
165 Surface active agent manufacturing	0	157	184	341	0	15	17	32	0.00	0.00	0.00	0.00	1.05
166 Toilet preparation manufacturing	0	111	10,647	10,758	0	37	3,525	3,562	0.00	0.00	0.03	0.03	1.05
167 Printing ink manufacturing	0	598	489	1,087	0	168	137	305	0.00	0.00	0.00	0.00	1.05
168 Explosives manufacturing	0	60	78	139	0	26	33	59	0.00	0.00	0.00	0.00	1.05
169 Custom compounding of purchased resins	0	711	1,616	2,327	0	154	351	505	0.00	0.00	0.00	0.01	1.05
170 Photographic film and chemical manufacturing	0	321	622	944	0	100	193	293	0.00	0.00	0.00	0.00	1.05

Table B.1 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
171 Other miscellaneous chemical product manufacturing	0	12,499	3,399	15,897	0	3,124	850	3,974	0.00	0.03	0.01	0.04	1.05
172 Plastics packaging materials- film and sheet	0	2,849	6,137	8,986	0	1,036	2,231	3,267	0.00	0.01	0.02	0.03	1.05
173 Plastics pipe- fittings- and profile shapes	0	2,185	5,449	7,634	0	688	1,717	2,405	0.00	0.01	0.02	0.03	1.05
174 Laminated plastics plate- sheet- and shapes	0	425	1,145	1,570	0	163	441	604	0.00	0.00	0.01	0.01	1.05
175 Plastics bottle manufacturing	0	653	872	1,524	0	299	400	699	0.00	0.00	0.00	0.00	1.05
176 Resilient floor covering manufacturing	0	8	19	27	0	6	13	19	0.00	0.00	0.00	0.00	1.05
177 Plastics plumbing fixtures and all other plastics	0	6,946	22,949	29,895	0	2,788	9,210	11,998	0.00	0.04	0.14	0.18	1.05
178 Foam product manufacturing	0	2,979	6,152	9,131	0	1,007	2,079	3,086	0.00	0.01	0.03	0.04	1.05
179 Tire manufacturing	0	16	15	30	0	6	6	12	0.00	0.00	0.00	0.00	1.05
180 Rubber and plastics hose and belting manufacturing	0	58	165	223	0	24	69	94	0.00	0.00	0.00	0.00	1.05
181 Other rubber product manufacturing	0	140	434	574	0	56	173	229	0.00	0.00	0.00	0.00	1.05
182 Vitreous china plumbing fixture manufacturing	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.05
183 Vitreous china and earthenware articles manufacturing	0	2	6	8	0	1	3	4	0.00	0.00	0.00	0.00	1.05
184 Porcelain electrical supply manufacturing	0	4	23	27	0	2	10	11	0.00	0.00	0.00	0.00	1.05
185 Brick and structural clay tile manufacturing	0	8	30	38	0	4	14	18	0.00	0.00	0.00	0.00	1.05
186 Ceramic wall and floor tile manufacturing	0	10	42	52	0	4	16	19	0.00	0.00	0.00	0.00	1.05
187 Nonclay refractory manufacturing	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.05
188 Clay refractory and other structural clay products	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.05
189 Glass container manufacturing	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.06
190 Glass and glass products- except glass containers	0	2,307	7,561	9,867	0	1,020	3,344	4,365	0.00	0.01	0.03	0.04	1.06
191 Cement manufacturing	0	1	4	5	0	0	2	2	0.00	0.00	0.00	0.00	1.03
192 Ready-mix concrete manufacturing	0	289	2,181	2,470	0	86	652	738	0.00	0.00	0.01	0.01	1.03
193 Concrete block and brick manufacturing	0	4	22	26	0	1	8	9	0.00	0.00	0.00	0.00	1.03
194 Concrete pipe manufacturing	0	11	10	21	0	4	3	7	0.00	0.00	0.00	0.00	1.03
195 Other concrete product manufacturing	0	105	268	372	0	45	115	160	0.00	0.00	0.00	0.00	1.03
196 Lime manufacturing	0	6	4	10	0	2	1	3	0.00	0.00	0.00	0.00	1.04
197 Gypsum product manufacturing	0	6	2	8	0	2	1	2	0.00	0.00	0.00	0.00	1.04
198 Abrasive product manufacturing	0	11	30	41	0	5	12	17	0.00	0.00	0.00	0.00	1.04

Table B.1 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
199 Cut stone and stone product manufacturing	0	2	9	11	0	1	4	5	0.00	0.00	0.00	0.00	1.04
200 Ground or treated minerals and earths manufacturing	0	0	1	1	0	0	0	0	0.00	0.00	0.00	0.00	1.04
201 Mineral wool manufacturing	0	5	10	15	0	2	3	5	0.00	0.00	0.00	0.00	1.04
202 Miscellaneous nonmetallic mineral products	0	5	23	27	0	2	12	14	0.00	0.00	0.00	0.00	1.04
203 Iron and steel mills	0	403	1,164	1,567	0	73	212	285	0.00	0.00	0.00	0.00	1.07
204 Ferroalloy and related product manufacturing	0	1	2	3	0	0	0	1	0.00	0.00	0.00	0.00	1.07
205 Iron- steel pipe and tube from purchased steel	0	169	589	759	0	49	172	221	0.00	0.00	0.00	0.00	1.05
206 Rolled steel shape manufacturing	0	363	1,107	1,470	0	75	229	304	0.00	0.00	0.00	0.00	1.05
207 Steel wire drawing	0	1,648	612	2,260	0	620	230	850	0.00	0.01	0.00	0.01	1.05
208 Alumina refining	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.05
209 Primary aluminum production	0	9	19	27	0	2	5	7	0.00	0.00	0.00	0.00	1.05
210 Secondary smelting and alloying of aluminum	0	9	37	46	0	1	5	7	0.00	0.00	0.00	0.00	1.05
211 Aluminum sheet- plate- and foil manufacturing	0	655	308	963	0	122	57	179	0.00	0.00	0.00	0.00	1.05
212 Aluminum extruded product manufacturing	0	13	44	57	0	4	14	18	0.00	0.00	0.00	0.00	1.05
213 Other aluminum rolling and drawing	0	2	6	8	0	0	1	2	0.00	0.00	0.00	0.00	1.05
214 Primary smelting and refining of copper	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.07
215 Primary nonferrous metal- except copper and aluminum	0	23	27	50	0	5	5	10	0.00	0.00	0.00	0.00	1.07
216 Copper rolling- drawing- and extruding	0	31	93	123	0	6	17	23	0.00	0.00	0.00	0.00	1.07
217 Copper wire- except mechanical- drawing	0	2	8	10	0	0	1	1	0.00	0.00	0.00	0.00	1.07
218 Secondary processing of copper	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.07
219 Nonferrous metal- except copper and aluminum- shaping	0	142	50	192	0	32	11	43	0.00	0.00	0.00	0.00	1.07
220 Secondary processing of other nonferrous	0	7	16	23	0	1	4	5	0.00	0.00	0.00	0.00	1.07
221 Ferrous metal foundries	0	8	29	37	0	3	11	15	0.00	0.00	0.00	0.00	1.05
222 Aluminum foundries	0	121	394	516	0	42	136	178	0.00	0.00	0.00	0.00	1.05
223 Nonferrous foundries- except aluminum	0	16	55	71	0	7	23	31	0.00	0.00	0.00	0.00	1.05
224 Iron and steel forging	0	26	193	219	0	11	80	91	0.00	0.00	0.00	0.00	1.05
225 Nonferrous forging	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.05
226 Custom roll forming	0	5	9	14	0	1	3	4	0.00	0.00	0.00	0.00	1.05

Table B.1 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
227 All other forging and stamping	0	34	251	285	0	13	96	109	0.00	0.00	0.00	0.00	1.05
228 Cutlery and flatware- except precious- manufacturing	0	55	148	203	0	33	89	122	0.00	0.00	0.00	0.00	1.06
229 Hand and edge tool manufacturing	0	2,137	923	3,060	0	921	398	1,318	0.00	0.01	0.00	0.02	1.06
230 Saw blade and handsaw manufacturing	0	67	110	178	0	27	45	72	0.00	0.00	0.00	0.00	1.06
231 Kitchen utensil- pot- and pan manufacturing	0	4	16	20	0	1	5	6	0.00	0.00	0.00	0.00	1.06
232 Prefabricated metal buildings and components	0	94	141	235	0	29	43	72	0.00	0.00	0.00	0.00	1.04
233 Fabricated structural metal manufacturing	0	167	745	912	0	75	334	410	0.00	0.00	0.00	0.00	1.04
234 Plate work manufacturing	0	139	183	322	0	63	82	145	0.00	0.00	0.00	0.00	1.04
235 Metal window and door manufacturing	0	178	663	841	0	84	314	398	0.00	0.00	0.00	0.01	1.04
236 Sheet metal work manufacturing	0	232	950	1,181	0	102	419	521	0.00	0.00	0.01	0.01	1.04
237 Ornamental and architectural metal work manufacturing	0	160	134	294	0	64	54	118	0.00	0.00	0.00	0.00	1.04
238 Power boiler and heat exchanger manufacturing	0	16	45	61	0	7	20	27	0.00	0.00	0.00	0.00	1.05
239 Metal tank- heavy gauge- manufacturing	0	4	19	24	0	2	8	10	0.00	0.00	0.00	0.00	1.05
240 Metal can- box- and other container manufacturing	0	510	606	1,116	0	88	105	193	0.00	0.00	0.00	0.00	1.05
241 Hardware manufacturing	0	830	2,065	2,895	0	343	854	1,197	0.00	0.00	0.01	0.01	1.04
242 Spring and wire product manufacturing	0	3,165	2,020	5,185	0	1,326	846	2,172	0.00	0.02	0.01	0.03	1.05
243 Machine shops	0	3,092	3,821	6,914	0	1,497	1,850	3,347	0.00	0.03	0.03	0.06	1.04
244 Turned product and screw- nut- and bolt manufacturing	0	526	1,757	2,283	0	250	837	1,088	0.00	0.00	0.01	0.02	1.04
245 Metal heat treating	0	82	183	266	0	39	87	126	0.00	0.00	0.00	0.00	1.04
246 Metal coating and nonprecious engraving	0	156	376	532	0	77	185	262	0.00	0.00	0.00	0.00	1.04
247 Electroplating- anodizing- and coloring metal	0	368	853	1,221	0	150	347	497	0.00	0.00	0.01	0.01	1.04
248 Metal valve manufacturing	0	775	3,042	3,817	0	367	1,440	1,807	0.00	0.00	0.01	0.02	1.05
249 Ball and roller bearing manufacturing	0	220	622	842	0	74	210	284	0.00	0.00	0.00	0.00	1.05
250 Small arms manufacturing	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.05
251 Other ordnance and accessories manufacturing	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.05
252 Fabricated pipe and pipe fitting manufacturing	0	142	620	762	0	64	278	342	0.00	0.00	0.00	0.00	1.05
253 Industrial pattern manufacturing	0	0	4	5	0	0	1	1	0.00	0.00	0.00	0.00	1.05

Table B.1 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
254 Enameled iron and metal sanitary ware manufacturing	0	56	217	273	0	35	134	168	0.00	0.00	0.00	0.00	1.05
255 Miscellaneous fabricated metal product manufacturing	0	4	16	20	0	2	6	8	0.00	0.00	0.00	0.00	1.05
256 Ammunition manufacturing	0	8	26	33	0	3	11	14	0.00	0.00	0.00	0.00	1.05
257 Farm machinery and equipment manufacturing	0	10,587	2,753	13,340	0	2,435	633	3,068	0.00	0.04	0.01	0.05	1.05
258 Lawn and garden equipment manufacturing	0	4,480	27,891	32,371	0	938	5,840	6,778	0.00	0.01	0.07	0.08	1.05
259 Construction machinery manufacturing	0	600	5,954	6,554	0	108	1,069	1,177	0.00	0.00	0.01	0.01	1.05
260 Mining machinery and equipment manufacturing	0	2	10	12	0	1	3	3	0.00	0.00	0.00	0.00	1.05
261 Oil and gas field machinery and equipment	0	19	12	31	0	4	3	7	0.00	0.00	0.00	0.00	1.05
262 Sawmill and woodworking machinery	0	33	1,611	1,644	0	12	604	616	0.00	0.00	0.01	0.01	1.06
263 Plastics and rubber industry machinery	0	106	721	827	0	48	327	375	0.00	0.00	0.00	0.00	1.06
264 Paper industry machinery manufacturing	0	10	458	468	0	3	131	134	0.00	0.00	0.00	0.00	1.06
265 Textile machinery manufacturing	0	18	865	883	0	9	402	410	0.00	0.00	0.00	0.00	1.06
266 Printing machinery and equipment manufacturing	0	28	1,434	1,463	0	10	483	492	0.00	0.00	0.01	0.01	1.06
267 Food product machinery manufacturing	0	34	48	82	0	9	13	23	0.00	0.00	0.00	0.00	1.06
268 Semiconductor machinery manufacturing	0	1	46	47	0	0	14	14	0.00	0.00	0.00	0.00	1.06
269 All other industrial machinery manufacturing	0	92	2,281	2,373	0	32	789	821	0.00	0.00	0.01	0.01	1.06
270 Office machinery manufacturing	0	79	2,850	2,929	0	17	604	621	0.00	0.00	0.01	0.01	1.04
271 Optical instrument and lens manufacturing	0	3	11	14	0	1	3	4	0.00	0.00	0.00	0.00	1.04
272 Photographic and photocopying equipment manufacturing	0	30	187	216	0	7	42	49	0.00	0.00	0.00	0.00	1.04
273 Other commercial and service industry machinery ma	0	490	6,701	7,191	0	133	1,813	1,946	0.00	0.00	0.03	0.03	1.04
274 Automatic vending- commercial laundry and drycleaning	0	112	239	351	0	27	58	85	0.00	0.00	0.00	0.00	1.04
275 Air purification equipment manufacturing	0	1	4	5	0	0	1	2	0.00	0.00	0.00	0.00	1.04
276 Industrial and commercial fan and blower manufacturing	0	0	1	1	0	0	0	0	0.00	0.00	0.00	0.00	1.04
277 Heating equipment- except warm air furnaces	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.04
278 AC- refrigeration- and forced air heating	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.04
279 Industrial mold manufacturing	0	12	93	105	0	6	45	51	0.00	0.00	0.00	0.00	1.05

Table B.1 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
280 Metal cutting machine tool manufacturing	0	14	1,144	1,158	0	5	419	424	0.00	0.00	0.01	0.01	1.05
281 Metal forming machine tool manufacturing	0	12	219	232	0	7	116	122	0.00	0.00	0.00	0.00	1.05
282 Special tool- die- jig- and fixture manufacturing	0	174	11,313	11,487	0	80	5,232	5,313	0.00	0.00	0.10	0.10	1.05
283 Cutting tool and machine tool accessory manufacturing	0	975	764	1,738	0	444	348	792	0.00	0.01	0.01	0.01	1.05
284 Rolling mill and other metalworking machinery	0	32	3,342	3,374	0	14	1,470	1,484	0.00	0.00	0.02	0.02	1.05
285 Turbine and turbine generator set units manufacturing	0	94	111	205	0	16	19	36	0.00	0.00	0.00	0.00	1.06
286 Other engine equipment manufacturing	0	1,376	8,441	9,818	0	215	1,320	1,535	0.00	0.00	0.02	0.02	1.06
287 Speed changers and mechanical power transmission equipment	0	279	650	929	0	103	241	345	0.00	0.00	0.00	0.01	1.06
288 Pump and pumping equipment manufacturing	0	7	16	23	0	2	4	6	0.00	0.00	0.00	0.00	1.05
289 Air and gas compressor manufacturing	0	392	302	694	0	129	99	228	0.00	0.00	0.00	0.00	1.05
290 Measuring and dispensing pump manufacturing	0	2	7	9	0	0	2	2	0.00	0.00	0.00	0.00	1.05
291 Elevator and moving stairway manufacturing	0	12	1,071	1,083	0	3	257	259	0.00	0.00	0.00	0.01	1.05
292 Conveyor and conveying equipment manufacturing	0	193	2,146	2,338	0	68	756	824	0.00	0.00	0.01	0.01	1.05
293 Overhead cranes- hoists- and monorail systems	0	20	53	74	0	6	16	21	0.00	0.00	0.00	0.00	1.05
294 Industrial truck- trailer- and stacker manufacturing	0	4,076	1,547	5,623	0	1,366	518	1,884	0.00	0.02	0.01	0.03	1.05
295 Power-driven handtool manufacturing	0	2,049	13,065	15,115	0	614	3,911	4,525	0.00	0.01	0.04	0.04	1.05
296 Welding and soldering equipment manufacturing	0	5	7	12	0	2	3	5	0.00	0.00	0.00	0.00	1.05
297 Packaging machinery manufacturing	0	62	145	207	0	22	51	73	0.00	0.00	0.00	0.00	1.05
298 Industrial process furnace and oven manufacturing	0	1	10	12	0	1	5	6	0.00	0.00	0.00	0.00	1.05
299 Fluid power cylinder and actuator manufacturing	0	6	37	43	0	2	13	15	0.00	0.00	0.00	0.00	1.05
300 Fluid power pump and motor manufacturing	0	10	58	68	0	4	22	25	0.00	0.00	0.00	0.00	1.05
301 Scales- balances- and miscellaneous general purpose machinery	0	20	97	118	0	8	37	45	0.00	0.00	0.00	0.00	1.05
302 Electronic computer manufacturing	0	650	26,014	26,664	0	66	2,637	2,703	0.00	0.00	0.04	0.04	0.95
303 Computer storage device manufacturing	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.95

Table B.1 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
304 Computer terminal manufacturing	0	15	83	98	0	3	19	22	0.00	0.00	0.00	0.00	0.95
305 Other computer peripheral equipment manufacturing	0	24	221	245	0	7	65	73	0.00	0.00	0.00	0.00	0.95
306 Telephone apparatus manufacturing	0	188	11,343	11,531	0	47	2,810	2,857	0.00	0.00	0.02	0.02	0.97
307 Broadcast and wireless communications equipment	0	32	983	1,015	0	8	236	244	0.00	0.00	0.00	0.00	0.97
308 Other communications equipment manufacturing	0	189	681	869	0	70	254	324	0.00	0.00	0.00	0.00	0.97
309 Audio and video equipment manufacturing	0	627	10,362	10,989	0	82	1,349	1,430	0.00	0.00	0.02	0.03	0.97
310 Electron tube manufacturing	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.93
311 Semiconductors and related device manufacturing	0	29	87	116	0	3	9	11	0.00	0.00	0.00	0.00	0.93
312 All other electronic component manufacturing	0	309	1,064	1,373	0	79	271	349	0.00	0.00	0.01	0.01	0.93
313 Electromedical apparatus manufacturing	0	13	1,399	1,413	0	4	413	416	0.00	0.00	0.00	0.00	1.05
314 Search- detection- and navigation instruments	0	2	11	13	0	1	3	4	0.00	0.00	0.00	0.00	1.05
315 Automatic environmental control manufacturing	0	1,016	2,572	3,588	0	268	678	946	0.00	0.00	0.01	0.02	1.05
316 Industrial process variable instruments	0	395	4,230	4,625	0	133	1,424	1,557	0.00	0.00	0.02	0.02	1.05
317 Totalizing fluid meters and counting devices	0	99	952	1,051	0	17	161	177	0.00	0.00	0.00	0.00	1.05
318 Electricity and signal testing instruments	0	3	38	40	0	1	13	14	0.00	0.00	0.00	0.00	1.05
319 Analytical laboratory instrument manufacturing	0	60	347	408	0	15	83	98	0.00	0.00	0.00	0.00	1.05
320 Irradiation apparatus manufacturing	0	12	830	842	0	3	234	238	0.00	0.00	0.00	0.00	1.05
321 Watch- clock- and other measuring and controlling	0	110	2,115	2,225	0	41	792	833	0.00	0.00	0.01	0.01	1.05
322 Software reproducing	0	505	668	1,174	0	178	235	413	0.00	0.00	0.00	0.00	1.01
323 Audio and video media reproduction	0	590	994	1,584	0	246	415	661	0.00	0.00	0.00	0.01	1.01
324 Magnetic and optical recording media manufacturing	0	4	5	9	0	0	1	1	0.00	0.00	0.00	0.00	1.01
325 Electric lamp bulb and part manufacturing	0	0	2	2	0	0	1	1	0.00	0.00	0.00	0.00	1.06
326 Lighting fixture manufacturing	0	7	11	18	0	3	5	8	0.00	0.00	0.00	0.00	1.06
327 Electric housewares and household fan manufacturing	0	13	196	209	0	5	69	74	0.00	0.00	0.00	0.00	1.04
328 Household vacuum cleaner manufacturing	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.04
329 Household cooking appliance manufacturing	0	94	16,393	16,486	0	27	4,703	4,730	0.00	0.00	0.05	0.05	1.04

Table B.1 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
330 Household refrigerator and home freezer manufacturing	0	0	3	3	0	0	1	1	0.00	0.00	0.00	0.00	1.04
331 Household laundry equipment manufacturing	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.04
332 Other major household appliance manufacturing	0	139	1,894	2,033	0	40	546	586	0.00	0.00	0.01	0.01	1.04
333 Electric power and specialty transformer manufacturing	0	297	3,321	3,619	0	109	1,218	1,327	0.00	0.00	0.01	0.02	1.05
334 Motor and generator manufacturing	0	847	4,558	5,405	0	331	1,780	2,111	0.00	0.00	0.02	0.03	1.05
335 Switchgear and switchboard apparatus manufacturing	0	193	2,291	2,484	0	107	1,277	1,384	0.00	0.00	0.01	0.01	1.05
336 Relay and industrial control manufacturing	0	111	281	392	0	26	65	91	0.00	0.00	0.00	0.00	1.05
337 Storage battery manufacturing	0	3,590	2,457	6,046	0	1,381	945	2,325	0.00	0.01	0.01	0.02	1.05
338 Primary battery manufacturing	0	199	1,692	1,891	0	108	919	1,028	0.00	0.00	0.00	0.01	1.05
339 Fiber optic cable manufacturing	0	4	8	12	0	1	2	3	0.00	0.00	0.00	0.00	1.05
340 Other communication and energy wire manufacturing	0	152	558	710	0	49	180	229	0.00	0.00	0.00	0.00	1.05
341 Wiring device manufacturing	0	20	63	82	0	9	29	38	0.00	0.00	0.00	0.00	1.05
342 Carbon and graphite product manufacturing	0	53	130	183	0	34	83	117	0.00	0.00	0.00	0.00	1.05
343 Miscellaneous electrical equipment manufacturing	0	34	399	433	0	12	146	158	0.00	0.00	0.00	0.00	1.05
344 Automobile and light truck manufacturing	0	359	173,902	174,260	0	55	26,689	26,744	0.00	0.00	0.17	0.17	1.07
345 Heavy duty truck manufacturing	0	0	6,199	6,199	0	0	895	895	0.00	0.00	0.01	0.01	1.07
346 Motor vehicle body manufacturing	0	144	4,484	4,628	0	40	1,237	1,277	0.00	0.00	0.02	0.02	1.04
347 Truck trailer manufacturing	0	0	799	799	0	0	190	190	0.00	0.00	0.00	0.00	1.04
348 Motor home manufacturing	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.04
349 Travel trailer and camper manufacturing	0	0	544	545	0	0	154	154	0.00	0.00	0.00	0.00	1.04
350 Motor vehicle parts manufacturing	0	22,304	93,817	116,121	0	4,754	19,995	24,748	0.00	0.08	0.33	0.40	1.06
351 Aircraft manufacturing	0	4	27	31	0	1	5	5	0.00	0.00	0.00	0.00	1.05
352 Aircraft engine and engine parts manufacturing	0	191	470	661	0	61	149	210	0.00	0.00	0.00	0.00	1.05
353 Other aircraft parts and equipment	0	29	106	134	0	13	47	60	0.00	0.00	0.00	0.00	1.05
354 Guided missile and space vehicle manufacturing	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.05
355 Propulsion units and parts for space vehicles and guided missiles	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.05
356 Railroad rolling stock manufacturing	0	18	154	171	0	4	38	42	0.00	0.00	0.00	0.00	1.06

Table B.1 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
357 Ship building and repairing	0	12	10	22	0	5	4	8	0.00	0.00	0.00	0.00	1.05
358 Boat building	0	6	1,053	1,059	0	3	455	458	0.00	0.00	0.01	0.01	1.05
359 Motorcycle- bicycle- and parts manufacturing	0	21	171	192	0	3	25	28	0.00	0.00	0.00	0.00	1.04
360 Military armored vehicles and tank parts manufacturing	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.04
361 All other transportation equipment manufacturing	0	23	20	44	0	6	5	11	0.00	0.00	0.00	0.00	1.04
362 Wood kitchen cabinet and countertop manufacturing	0	1,882	8,817	10,699	0	663	3,107	3,770	0.00	0.02	0.08	0.09	1.04
363 Upholstered household furniture manufacturing	0	0	7,486	7,486	0	0	2,110	2,110	0.00	0.00	0.06	0.06	1.04
364 Nonupholstered wood household furniture manufacturing	0	8	3,983	3,991	0	3	1,303	1,306	0.00	0.00	0.03	0.03	1.04
365 Metal household furniture manufacturing	0	0	504	504	0	0	252	252	0.00	0.00	0.00	0.00	1.04
366 Institutional furniture manufacturing	0	60	14,185	14,245	0	21	5,073	5,094	0.00	0.00	0.09	0.09	1.04
367 Other household and institutional furniture	0	31	501	532	0	11	177	188	0.00	0.00	0.00	0.00	1.04
368 Wood office furniture manufacturing	0	0	822	822	0	0	184	184	0.00	0.00	0.00	0.00	1.05
369 Custom architectural woodwork and millwork	0	13	1,034	1,047	0	6	497	503	0.00	0.00	0.01	0.01	1.05
370 Office furniture- except wood- manufacturing	0	5	3,326	3,331	0	2	1,032	1,033	0.00	0.00	0.01	0.01	1.05
371 Showcases- partitions- shelving- and lockers	0	194	10,979	11,174	0	74	4,194	4,269	0.00	0.00	0.09	0.09	1.05
372 Mattress manufacturing	0	0	3,175	3,175	0	0	731	731	0.00	0.00	0.01	0.01	1.04
373 Blind and shade manufacturing	0	0	708	708	0	0	232	232	0.00	0.00	0.01	0.01	1.04
374 Laboratory apparatus and furniture manufacturing	0	1	88	89	0	0	28	28	0.00	0.00	0.00	0.00	1.05
375 Surgical and medical instrument manufacturing	0	11	818	829	0	5	386	391	0.00	0.00	0.00	0.00	1.05
376 Surgical appliance and supplies manufacturing	0	1,763	13,637	15,400	0	889	6,881	7,770	0.00	0.01	0.05	0.06	1.05
377 Dental equipment and supplies manufacturing	0	2	676	678	0	1	255	256	0.00	0.00	0.00	0.00	1.05
378 Ophthalmic goods manufacturing	0	825	2,915	3,739	0	326	1,153	1,480	0.00	0.00	0.02	0.02	1.05
379 Dental laboratories	0	2	909	911	0	2	700	702	0.00	0.00	0.01	0.01	1.05
380 Jewelry and silverware manufacturing	0	2	72	74	0	0	22	22	0.00	0.00	0.00	0.00	1.05
381 Sporting and athletic goods manufacturing	0	8	22	30	0	3	7	10	0.00	0.00	0.00	0.00	1.05
382 Doll- toy- and game manufacturing	0	0	1	1	0	0	0	0	0.00	0.00	0.00	0.00	1.05

Table B.1 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
383 Office supplies- except paper- manufacturing	0	65	139	204	0	36	77	113	0.00	0.00	0.00	0.00	1.05
384 Sign manufacturing	0	1,716	1,073	2,789	0	941	589	1,530	0.00	0.02	0.01	0.03	1.05
385 Gasket- packing- and sealing device manufacturing	0	7	24	31	0	3	11	14	0.00	0.00	0.00	0.00	1.05
386 Musical instrument manufacturing	0	0	5	5	0	0	2	3	0.00	0.00	0.00	0.00	1.05
387 Broom- brush- and mop manufacturing	0	83	137	220	0	40	66	106	0.00	0.00	0.00	0.00	1.05
388 Burial casket manufacturing	0	0	3	3	0	0	2	2	0.00	0.00	0.00	0.00	1.05
389 Buttons- pins- and all other miscellaneous manufacturing	0	57	81	138	0	25	35	60	0.00	0.00	0.00	0.00	1.05
390 Wholesale trade	0	241,226	290,250	531,477	0	183,474	220,761	404,235	0.00	1.80	2.17	3.97	1.05
391 Air transportation	0	3,380	10,253	13,633	0	1,581	4,797	6,379	0.00	0.02	0.05	0.07	1.05
392 Rail transportation	0	17,649	11,249	28,898	0	10,904	6,950	17,854	0.00	0.07	0.05	0.12	1.06
393 Water transportation	0	3,833	9,289	13,122	0	875	2,120	2,995	0.00	0.01	0.02	0.03	1.04
394 Truck transportation	0	69,217	81,334	150,551	0	34,738	40,820	75,558	0.00	0.63	0.74	1.37	1.03
395 Transit and ground passenger transportation	0	2,273	9,354	11,627	0	1,427	5,873	7,300	0.00	0.05	0.19	0.23	1.05
396 Pipeline transportation	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.06
397 Scenic and sightseeing transportation and support	0	7,438	7,818	15,256	0	6,300	6,623	12,923	0.00	0.09	0.09	0.18	1.05
398 Postal service	0	18,954	20,892	39,846	0	13,531	14,915	28,445	0.00	0.21	0.23	0.44	1.06
399 Couriers and messengers	0	17,355	13,191	30,546	0	12,732	9,677	22,409	0.00	0.14	0.11	0.25	1.03
400 Warehousing and storage	0	29,954	9,098	39,052	0	22,433	6,814	29,247	0.00	0.40	0.12	0.52	1.02
401 Motor vehicle and parts dealers	0	4,760	105,688	110,448	0	3,733	82,882	86,615	0.00	0.05	1.02	1.07	1.06
402 Furniture and home furnishings stores	0	1,386	23,783	25,169	0	1,041	17,860	18,901	0.00	0.02	0.34	0.36	1.06
403 Electronics and appliance stores	0	873	16,529	17,402	0	710	13,430	14,140	0.00	0.01	0.24	0.25	1.06
404 Building material and garden supply stores	0	2,183	47,986	50,170	0	1,698	37,325	39,023	0.00	0.03	0.65	0.68	1.06
405 Food and beverage stores	0	3,963	83,555	87,518	0	2,693	56,779	59,472	0.00	0.07	1.42	1.49	1.06
406 Health and personal care stores	0	1,897	39,367	41,264	0	1,360	28,219	29,579	0.00	0.03	0.54	0.57	1.06
407 Gasoline stations	0	1,381	26,606	27,987	0	1,044	20,106	21,150	0.00	0.03	0.55	0.57	1.06
408 Clothing and clothing accessories stores	0	1,976	42,299	44,275	0	1,372	29,382	30,754	0.00	0.04	0.83	0.87	1.06
409 Sporting goods- hobby- book and music stores	0	689	15,094	15,784	0	608	13,315	13,923	0.00	0.02	0.41	0.43	1.06
410 General merchandise stores	106,120	3,213	71,069	180,402	89,944	2,724	60,235	152,903	2.17	0.07	1.45	3.68	1.06
411 Miscellaneous store retailers	0	1,503	31,701	33,203	0	1,051	22,169	23,220	0.00	0.04	0.84	0.88	1.06

Table B.1 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
412 Nonstore retailers	0	1,983	43,482	45,465	0	1,235	27,080	28,315	0.00	0.04	0.79	0.83	1.06
413 Newpaper publishers	0	16,366	7,942	24,308	0	7,549	3,664	11,212	0.00	0.17	0.08	0.26	1.06
414 Periodical publishers	0	4,937	3,524	8,461	0	1,802	1,286	3,087	0.00	0.03	0.02	0.04	1.06
415 Book publishers	0	157	1,663	1,820	0	51	538	589	0.00	0.00	0.01	0.01	1.06
416 Database- directory- and other publishers	0	6,619	3,477	10,097	0	2,542	1,335	3,877	0.00	0.02	0.01	0.04	1.04
417 Software publishers	0	15	1,191	1,206	0	9	726	735	0.00	0.00	0.01	0.01	0.99
418 Motion picture and video industries	0	11,073	17,919	28,992	0	4,055	6,562	10,617	0.00	0.07	0.11	0.17	1.09
419 Sound recording industries	0	1,335	5,131	6,466	0	900	3,456	4,356	0.00	0.00	0.02	0.02	1.09
420 Radio and television broadcasting	0	23,154	11,534	34,688	0	7,742	3,857	11,599	0.00	0.14	0.07	0.20	1.06
421 Cable networks and program distribution	0	7,819	22,154	29,973	0	2,260	6,402	8,662	0.00	0.01	0.02	0.03	1.03
422 Telecommunications	0	36,124	92,174	128,298	0	18,962	48,383	67,345	0.00	0.13	0.33	0.46	1.04
423 Information services	0	1,508	1,783	3,290	0	614	726	1,341	0.00	0.01	0.01	0.01	1.04
424 Data processing services	0	5,442	4,805	10,247	0	2,356	2,081	4,437	0.00	0.03	0.03	0.06	1.04
425 Nondepository credit intermediation and related activities	0	56,744	49,663	106,407	0	46,069	40,320	86,389	0.00	0.37	0.32	0.69	1.04
426 Securities- commodity contracts- investments	0	16,980	59,118	76,099	0	10,822	37,677	48,499	0.00	0.14	0.49	0.63	1.07
427 Insurance carriers	0	54,225	102,781	157,005	0	19,146	36,290	55,435	0.00	0.29	0.54	0.83	1.07
428 Insurance agencies- brokerages- and related	0	14,781	28,288	43,070	0	13,905	26,610	40,515	0.00	0.13	0.25	0.38	1.04
429 Funds- trusts- and other financial vehicles	0	333	24,921	25,254	0	101	7,595	7,697	0.00	0.00	0.06	0.06	1.04
430 Monetary authorities and depository credit intermediation	0	61,474	115,085	176,558	0	43,265	80,996	124,261	0.00	0.28	0.53	0.81	1.04
431 Real estate	0	433,334	266,529	699,863	0	298,020	183,302	481,322	0.00	2.75	1.69	4.44	1.05
432 Automotive equipment rental and leasing	0	15,431	20,949	36,380	0	7,701	10,455	18,156	0.00	0.09	0.12	0.21	1.07
433 Video tape and disc rental	0	34	6,113	6,146	0	17	3,166	3,183	0.00	0.00	0.10	0.10	1.04
434 Machinery and equipment rental and leasing	0	4,010	3,863	7,873	0	2,724	2,624	5,348	0.00	0.04	0.04	0.08	1.04
435 General and consumer goods rental except video tap	0	6,169	9,982	16,151	0	4,466	7,227	11,693	0.00	0.06	0.09	0.15	1.04
436 Lessors of nonfinancial intangible assets	0	8,591	8,811	17,402	0	4,486	4,601	9,087	0.00	0.01	0.01	0.01	1.04
437 Legal services	0	24,734	51,213	75,947	0	16,775	34,734	51,510	0.00	0.25	0.51	0.76	1.06
438 Accounting and bookkeeping services	0	28,247	24,945	53,192	0	16,992	15,005	31,996	0.00	0.30	0.26	0.56	1.07
439 Architectural and engineering services	0	33,299	50,305	83,604	0	20,235	30,570	50,805	0.00	0.33	0.50	0.83	1.05
440 Specialized design services	0	3,520	4,428	7,948	0	1,751	2,202	3,953	0.00	0.03	0.04	0.07	1.04

Table B.1 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
441 Custom computer programming services	0	1,775	34,859	36,634	0	1,398	27,453	28,851	0.00	0.02	0.45	0.48	1.04
442 Computer systems design services	0	2,640	6,066	8,706	0	2,005	4,608	6,613	0.00	0.03	0.08	0.11	1.04
443 Other computer related services- including facility	0	3,527	5,184	8,710	0	1,748	2,570	4,318	0.00	0.02	0.03	0.06	1.04
444 Management consulting services	0	24,153	24,294	48,447	0	13,664	13,744	27,408	0.00	0.21	0.21	0.41	1.04
445 Environmental and other technical consulting services	0	6,504	5,172	11,676	0	3,674	2,922	6,596	0.00	0.04	0.03	0.07	1.04
446 Scientific research and development services	0	8,308	13,212	21,520	0	5,058	8,044	13,102	0.00	0.08	0.12	0.20	1.04
447 Advertising and related services	0	28,210	12,062	40,272	0	13,790	5,896	19,686	0.00	0.26	0.11	0.37	1.05
448 Photographic services	0	1,402	2,936	4,338	0	852	1,785	2,637	0.00	0.02	0.03	0.05	1.04
449 Veterinary services	0	219	8,450	8,669	0	99	3,828	3,927	0.00	0.00	0.14	0.14	1.04
450 All other miscellaneous professional and technical	0	7,151	7,288	14,440	0	3,203	3,264	6,467	0.00	0.02	0.02	0.04	1.04
451 Management of companies and enterprises	0	43,107	39,876	82,983	0	23,900	22,109	46,010	0.00	0.29	0.27	0.56	1.08
452 Office administrative services	0	14,673	13,780	28,452	0	6,886	6,467	13,354	0.00	0.08	0.07	0.15	1.04
453 Facilities support services	0	474	1,921	2,395	0	262	1,061	1,322	0.00	0.00	0.02	0.02	1.04
454 Employment services	0	24,053	23,308	47,361	0	22,665	21,963	44,627	0.00	1.05	1.02	2.07	1.06
455 Business support services	0	13,263	12,778	26,041	0	8,565	8,252	16,818	0.00	0.18	0.17	0.35	1.04
456 Travel arrangement and reservation services	0	3,899	5,796	9,695	0	1,473	2,190	3,663	0.00	0.03	0.05	0.08	1.06
457 Investigation and security services	0	8,397	7,773	16,169	0	6,079	5,628	11,707	0.00	0.20	0.19	0.39	1.04
458 Services to buildings and dwellings	0	18,552	27,146	45,698	0	9,534	13,951	23,485	0.00	0.35	0.51	0.85	1.04
459 Other support services	0	15,025	10,092	25,118	0	8,892	5,973	14,866	0.00	0.09	0.06	0.14	1.04
460 Waste management and remediation services	0	16,766	12,181	28,946	0	8,299	6,029	14,328	0.00	0.11	0.08	0.18	1.03
461 Elementary and secondary schools	0	0	10,796	10,796	0	0	7,984	7,984	0.00	0.00	0.32	0.32	1.05
462 Colleges- universities- and junior colleges	0	969	36,312	37,280	0	586	21,976	22,562	0.00	0.02	0.57	0.58	1.05
463 Other educational services	0	239	12,496	12,735	0	102	5,320	5,422	0.00	0.00	0.22	0.23	1.05
464 Home health care services	0	0	19,682	19,682	0	0	14,519	14,519	0.00	0.00	0.31	0.31	1.06
465 Offices of physicians- dentists- and other health	0	0	212,288	212,288	0	0	164,274	164,274	0.00	0.00	1.69	1.69	1.08
466 Other ambulatory health care services	0	191	61,694	61,885	0	85	27,571	27,656	0.00	0.00	0.43	0.43	1.06
467 Hospitals	0	0	210,814	210,814	0	0	109,620	109,620	0.00	0.00	1.92	1.92	1.08
468 Nursing and residential care facilities	0	0	60,311	60,311	0	0	44,100	44,100	0.00	0.00	1.13	1.13	1.04

Table B.1 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
469 Child day care services	0	0	21,462	21,462	0	0	11,897	11,897	0.00	0.00	0.65	0.65	1.04
470 Social assistance- except child day care services	0	3	25,104	25,107	0	2	15,298	15,300	0.00	0.00	0.72	0.72	1.10
471 Performing arts companies	0	16,148	4,306	20,455	0	10,366	2,764	13,130	0.00	0.53	0.14	0.67	1.03
472 Spectator sports	0	4,085	7,299	11,384	0	3,378	6,036	9,414	0.00	0.05	0.09	0.13	1.04
473 Independent artists- writers- and performers	0	23,822	2,869	26,691	0	8,619	1,038	9,657	0.00	0.36	0.04	0.40	1.03
474 Promoters of performing arts and sports and agents	0	6,728	4,505	11,233	0	3,997	2,677	6,674	0.00	0.12	0.08	0.21	1.03
475 Museums- historical sites- zoos- and parks	0	0	2,720	2,720	0	0	853	853	0.00	0.00	0.04	0.04	1.04
476 Fitness and recreational sports centers	0	735	7,226	7,961	0	469	4,612	5,081	0.00	0.02	0.19	0.20	1.03
477 Bowling centers	0	0	1,173	1,173	0	0	705	705	0.00	0.00	0.02	0.02	1.03
478 Other amusement- gambling- and recreation industries	3,342,779	906	23,277	3,366,962	2,081,142	564	14,492	2,096,198	51.80	0.01	0.36	52.18	1.03
479 Hotels and motels- including casino hotels	0	7,991	31,560	39,551	0	5,667	22,382	28,049	0.00	0.12	0.46	0.58	1.06
480 Other accommodations	0	744	7,180	7,925	0	399	3,845	4,243	0.00	0.01	0.06	0.07	1.04
481 Food services and drinking places	257,720	20,149	219,897	497,766	121,994	9,537	104,090	235,622	5.37	0.42	4.58	10.37	1.05
482 Car washes	0	407	4,317	4,723	0	243	2,580	2,823	0.00	0.01	0.12	0.13	1.04
483 Automotive repair and maintenance- except car wash	0	18,251	71,086	89,336	0	9,153	35,650	44,803	0.00	0.26	1.00	1.25	1.04
484 Electronic equipment repair and maintenance	0	12,377	13,869	26,246	0	5,179	5,804	10,983	0.00	0.11	0.12	0.22	1.04
485 Commercial machinery repair and maintenance	0	30,956	9,848	40,804	0	15,341	4,880	20,221	0.00	0.26	0.08	0.34	1.11
486 Household goods repair and maintenance	0	5,356	11,775	17,131	0	1,906	4,191	6,098	0.00	0.04	0.08	0.11	1.03
487 Personal care services	0	0	19,928	19,928	0	0	11,275	11,275	0.00	0.00	0.42	0.42	1.04
488 Death care services	0	0	7,346	7,346	0	0	4,796	4,796	0.00	0.00	0.12	0.12	1.06
489 Drycleaning and laundry services	0	7,633	11,357	18,990	0	4,981	7,411	12,392	0.00	0.18	0.26	0.44	1.06
490 Other personal services	0	12,792	21,367	34,159	0	5,255	8,778	14,034	0.00	0.10	0.17	0.27	1.05
491 Religious organizations	0	0	14,453	14,453	0	0	12,032	12,032	0.00	0.00	0.42	0.42	1.04
492 Grantmaking and giving and social advocacy organizations	0	0	9,007	9,007	0	0	3,251	3,251	0.00	0.00	0.11	0.11	1.04
493 Civic- social- professional and similar organizations	0	6,149	19,260	25,409	0	2,651	8,304	10,956	0.00	0.10	0.30	0.40	1.03
494 Private households	0	0	9,183	9,183	0	0	10,672	10,672	0.00	0.00	1.07	1.07	1.03
495 Federal electric utilities	0	62,311	64,792	127,102	0	15,721	16,347	32,067	0.00	0.10	0.11	0.21	1.08

Table B.1 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
496 Other Federal Government enterprises	0	962	2,192	3,155	0	645	1,470	2,115	0.00	0.01	0.02	0.02	1.09
497 State and local government passenger transit	0	449	1,849	2,299	0	56	231	287	0.00	0.01	0.04	0.05	1.08
498 State and local government electric utilities	0	37,016	38,490	75,506	0	13,467	14,003	27,470	0.00	0.08	0.08	0.16	1.11
499 Other State and local government enterprises	0	68,980	67,033	136,013	0	20,487	19,909	40,396	0.00	0.36	0.35	0.70	1.06
500 Noncomparable imports	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.03
501 Scrap	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.03
502 Used and secondhand goods	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.03
503 State & Local Education	0	0	255,693	255,693	0	0	255,693	255,693	0.00	0.00	5.94	5.94	1.05
504 State & Local Non-Education	0	0	213,000	213,000	0	0	213,000	213,000	0.00	0.00	4.25	4.25	1.05
505 Federal Military	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.04
506 Federal Non-Military	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.04
507 Rest of the world adjustment to final uses	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.03
508 Inventory valuation adjustment	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	1.00
509 Owner-occupied dwellings	0	0	392,749	392,749	0	0	313,971	313,971	0.00	0.00	0.00	0.00	0.96
Total	10,877,297	2,771,035	6,383,700	20,032,032	6,772,909	1,529,146	3,679,052	11,981,108	385.39	30.70	63.82	479.91	

Table B.2. Economic Impacts from Visitor Expenditures at Tennessee Winery Agritourism Attractions, 2005.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
1 Oilseed farming	0	65	79	145	0	35	42	77	0.0	0.0	0.0	0.0	1.02
2 Grain farming	0	162	394	556	0	84	204	288	0.0	0.0	0.0	0.0	1.02
3 Vegetable and melon farming	0	97	1,156	1,254	0	74	875	949	0.0	0.0	0.0	0.0	1.02
4 Tree nut farming	0	0	1	1	0	0	1	1	0.0	0.0	0.0	0.0	1.02
5 Fruit farming	0	52,279	158	52,437	0	31,373	95	31,468	0.0	2.2	0.0	2.3	1.02
6 Greenhouse and nursery production	0	408	3,292	3,701	0	387	3,119	3,506	0.0	0.0	0.1	0.1	1.02
7 Tobacco farming	0	14	33	47	0	10	24	34	0.0	0.0	0.0	0.0	1.02
8 Cotton farming	0	62	123	185	0	38	75	113	0.0	0.0	0.0	0.0	1.02
9 Sugarcane and sugar beet farming	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.02
10 All other crop farming	0	187	1,298	1,485	0	123	855	978	0.0	0.0	0.0	0.0	1.02
11 Cattle ranching and farming	0	671	5,891	6,563	0	72	636	708	0.0	0.0	0.2	0.2	1.02
12 Poultry and egg production	0	368	3,614	3,982	0	190	1,863	2,053	0.0	0.0	0.0	0.0	1.02
13 Animal production- except cattle and poultry and eggs	0	165	1,307	1,473	0	28	219	247	0.0	0.0	0.1	0.1	1.02
14 Logging	0	805	1,521	2,326	0	355	670	1,025	0.0	0.0	0.0	0.0	1.09
15 Forest nurseries- forest products- and timber tracts	0	1	2	3	0	0	1	1	0.0	0.0	0.0	0.0	1.05
16 Fishing	0	4	15	19	0	2	9	11	0.0	0.0	0.0	0.0	1.05
17 Hunting and trapping	0	0	385	385	0	0	30	30	0.0	0.0	0.0	0.0	1.05
18 Agriculture and forestry support activities	0	1,880	502	2,383	0	1,500	401	1,901	0.0	0.1	0.0	0.1	1.05
19 Oil and gas extraction	0	1,600	3,067	4,667	0	368	706	1,074	0.0	0.0	0.0	0.0	1.09
20 Coal mining	0	356	334	690	0	147	138	284	0.0	0.0	0.0	0.0	1.04
21 Iron ore mining	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.09
22 Copper- nickel- lead- and zinc mining	0	16	25	41	0	11	17	28	0.0	0.0	0.0	0.0	1.09
23 Gold- silver- and other metal ore mining	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.09
24 Stone mining and quarrying	0	21	201	222	0	14	131	145	0.0	0.0	0.0	0.0	1.05
25 Sand- gravel- clay- and refractory mining	0	3	39	42	0	2	28	31	0.0	0.0	0.0	0.0	1.05
26 Other nonmetallic mineral mining	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.05
27 Drilling oil and gas wells	0	0	23	24	0	0	15	15	0.0	0.0	0.0	0.0	1.01
28 Support activities for oil and gas operations	0	7	42	49	0	6	36	42	0.0	0.0	0.0	0.0	1.01
29 Support activities for other mining	0	0	11	12	0	0	7	7	0.0	0.0	0.0	0.0	1.01
30 Power generation and supply	0	5,232	6,945	12,177	0	3,761	4,992	8,752	0.0	0.0	0.0	0.0	1.05
31 Natural gas distribution	0	2,864	4,820	7,684	0	855	1,439	2,293	0.0	0.0	0.0	0.0	1.04
32 Water- sewage and other systems	0	212	1,118	1,330	0	170	893	1,063	0.0	0.0	0.0	0.0	1.07

Table B.2 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
33 New residential 1-unit structures- nonfarm	0	0	66,906	66,906	0	0	24,998	24,998	0.0	0.0	0.4	0.4	1.03
34 New multifamily housing structures- nonfarm	0	0	8,613	8,613	0	0	3,590	3,590	0.0	0.0	0.1	0.1	1.03
35 New residential additions and alterations- nonfarm	0	0	19,375	19,375	0	0	8,668	8,668	0.0	0.0	0.2	0.2	1.03
36 New farm housing units and additions and alterations	0	0	2,161	2,161	0	0	689	689	0.0	0.0	0.0	0.0	1.03
37 Manufacturing and industrial buildings	0	0	11,719	11,719	0	0	5,345	5,345	0.0	0.0	0.1	0.1	1.03
38 Commercial and institutional buildings	0	0	65,994	65,994	0	0	32,440	32,440	0.0	0.0	0.8	0.8	1.03
39 Highway- street- bridge- and tunnel construction	0	0	20,818	20,818	0	0	9,508	9,508	0.0	0.0	0.2	0.2	1.03
40 Water- sewer- and pipeline construction	0	0	5,868	5,868	0	0	3,283	3,283	0.0	0.0	0.1	0.1	1.03
41 Other new construction	0	0	23,079	23,079	0	0	9,519	9,519	0.0	0.0	0.2	0.2	1.03
42 Maintenance and repair of farm and nonfarm residential structures	0	329	6,798	7,126	0	127	2,623	2,750	0.0	0.0	0.0	0.0	1.03
43 Maintenance and repair of nonresidential buildings	0	24,946	14,863	39,809	0	11,510	6,858	18,368	0.0	0.3	0.2	0.4	1.03
44 Maintenance and repair of highways- streets- bridges, and tunnels	0	0	5,570	5,570	0	0	2,208	2,208	0.0	0.0	0.1	0.1	1.03
45 Other maintenance and repair construction	0	1,312	1,969	3,281	0	851	1,277	2,128	0.0	0.0	0.0	0.0	1.03
46 Dog and cat food manufacturing	0	0	294	294	0	0	49	49	0.0	0.0	0.0	0.0	1.07
47 Other animal food manufacturing	0	17	114	130	0	3	17	20	0.0	0.0	0.0	0.0	1.07
48 Flour milling	0	18	172	190	0	2	23	25	0.0	0.0	0.0	0.0	1.08
49 Rice milling	0	4	77	81	0	1	20	21	0.0	0.0	0.0	0.0	1.08
50 Malt manufacturing	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.08
51 Wet corn milling	0	1,064	196	1,260	0	237	44	281	0.0	0.0	0.0	0.0	1.08
52 Soybean processing	0	8	43	52	0	0	3	3	0.0	0.0	0.0	0.0	1.08
53 Other oilseed processing	0	8	27	34	0	1	2	2	0.0	0.0	0.0	0.0	1.08
54 Fats and oils refining and blending	0	44	152	196	0	5	18	23	0.0	0.0	0.0	0.0	1.08
55 Breakfast cereal manufacturing	0	20	589	609	0	3	89	92	0.0	0.0	0.0	0.0	1.08
56 Sugar manufacturing	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.05
57 Confectionery manufacturing from cacao beans	0	0	2	2	0	0	1	1	0.0	0.0	0.0	0.0	1.05
58 Confectionery manufacturing from purchased chocolate	0	36	1,371	1,407	0	14	525	539	0.0	0.0	0.0	0.0	1.05
59 Nonchocolate confectionery manufacturing	0	47	622	669	0	18	244	262	0.0	0.0	0.0	0.0	1.05

Table B.2 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
60 Frozen food manufacturing	0	47	475	523	0	17	166	183	0.0	0.0	0.0	0.0	1.05
61 Fruit and vegetable canning and drying	0	54	517	571	0	17	160	177	0.0	0.0	0.0	0.0	1.05
62 Fluid milk manufacturing	0	576	7,177	7,753	0	71	886	957	0.0	0.0	0.0	0.0	1.03
63 Creamery butter manufacturing	0	20	288	309	0	2	25	27	0.0	0.0	0.0	0.0	1.03
64 Cheese manufacturing	0	323	1,698	2,021	0	32	170	202	0.0	0.0	0.0	0.0	1.03
65 Dry- condensed- and evaporated dairy products	0	397	3,167	3,563	0	98	782	880	0.0	0.0	0.0	0.0	1.03
66 Ice cream and frozen dessert manufacturing	0	158	642	800	0	37	148	185	0.0	0.0	0.0	0.0	1.03
67 Animal- except poultry- slaughtering	0	1,193	11,367	12,560	0	148	1,409	1,557	0.0	0.0	0.0	0.0	1.03
68 Meat processed from carcasses	0	477	4,694	5,171	0	66	652	718	0.0	0.0	0.0	0.0	1.03
69 Rendering and meat byproduct processing	0	125	183	308	0	31	45	75	0.0	0.0	0.0	0.0	1.03
70 Poultry processing	0	1,307	12,388	13,695	0	378	3,582	3,960	0.0	0.0	0.1	0.1	1.03
71 Seafood product preparation and packaging	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.03
72 Frozen cakes and other pastries manufacturing	0	16	438	454	0	7	188	195	0.0	0.0	0.0	0.0	1.05
73 Bread and bakery product- except frozen- manufacturing	0	1,310	8,106	9,417	0	653	4,041	4,694	0.0	0.0	0.1	0.1	1.05
74 Cookie and cracker manufacturing	0	203	3,226	3,429	0	67	1,066	1,133	0.0	0.0	0.0	0.0	1.05
75 Mixes and dough made from purchased flour	0	105	2,215	2,321	0	31	647	678	0.0	0.0	0.0	0.0	1.05
76 Dry pasta manufacturing	0	1	21	22	0	0	5	5	0.0	0.0	0.0	0.0	1.05
77 Tortilla manufacturing	0	0	10	10	0	0	3	3	0.0	0.0	0.0	0.0	1.05
78 Roasted nuts and peanut butter manufacturing	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.04
79 Other snack food manufacturing	0	221	4,426	4,647	0	75	1,498	1,573	0.0	0.0	0.0	0.0	1.04
80 Coffee and tea manufacturing	0	71	561	632	0	6	49	55	0.0	0.0	0.0	0.0	1.04
81 Flavoring syrup and concentrate manufacturing	0	183	621	805	0	30	101	131	0.0	0.0	0.0	0.0	1.04
82 Mayonnaise- dressing- and sauce manufacturing	0	173	1,070	1,243	0	42	259	301	0.0	0.0	0.0	0.0	1.04
83 Spice and extract manufacturing	0	10	210	220	0	3	63	66	0.0	0.0	0.0	0.0	1.04
84 All other food manufacturing	0	97	2,241	2,337	0	24	563	587	0.0	0.0	0.0	0.0	1.04
85 Soft drink and ice manufacturing	0	207	2,340	2,547	0	45	511	556	0.0	0.0	0.0	0.0	1.04
86 Breweries	0	43	665	709	0	20	308	328	0.0	0.0	0.0	0.0	1.04
87 Wineries	5,792,471	15,984	82	5,808,537	1,184,187	3,268	17	1,187,472	20.3	0.1	0.0	20.4	1.04
88 Distilleries	0	5,604	285	5,889	0	3,572	182	3,754	0.0	0.0	0.0	0.0	1.04

Table B.2 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
89 Tobacco stemming and redrying	0	0	59	59	0	0	12	12	0.0	0.0	0.0	0.0	0.98
90 Cigarette manufacturing	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.98
91 Other tobacco product manufacturing	0	0	2,570	2,570	0	0	1,230	1,230	0.0	0.0	0.0	0.0	0.98
92 Fiber- yarn- and thread mills	0	25	174	199	0	5	37	42	0.0	0.0	0.0	0.0	1.05
93 Broadwoven fabric mills	0	19	188	208	0	5	52	57	0.0	0.0	0.0	0.0	1.04
94 Narrow fabric mills and schiffli embroidery	0	2	21	23	0	1	8	9	0.0	0.0	0.0	0.0	1.04
95 Nonwoven fabric mills	0	62	123	185	0	19	38	57	0.0	0.0	0.0	0.0	1.04
96 Knit fabric mills	0	5	82	87	0	1	21	22	0.0	0.0	0.0	0.0	1.04
97 Textile and fabric finishing mills	0	83	374	456	0	14	62	75	0.0	0.0	0.0	0.0	1.03
98 Fabric coating mills	0	29	79	108	0	9	24	32	0.0	0.0	0.0	0.0	1.03
99 Carpet and rug mills	0	1	44	45	0	0	10	10	0.0	0.0	0.0	0.0	1.03
100 Curtain and linen mills	0	2	83	85	0	1	25	26	0.0	0.0	0.0	0.0	1.03
101 Textile bag and canvas mills	0	12	36	47	0	5	15	21	0.0	0.0	0.0	0.0	1.03
102 Tire cord and tire fabric mills	0	1	11	12	0	0	3	3	0.0	0.0	0.0	0.0	1.03
103 Other miscellaneous textile product mills	0	174	29	204	0	47	8	54	0.0	0.0	0.0	0.0	1.03
104 Sheer hosiery mills	0	1	390	390	0	0	158	158	0.0	0.0	0.0	0.0	1.05
105 Other hosiery and sock mills	0	0	616	617	0	0	233	233	0.0	0.0	0.0	0.0	1.05
106 Other apparel knitting mills	0	1	33	34	0	0	7	7	0.0	0.0	0.0	0.0	1.05
107 Cut and sew apparel manufacturing	0	210	9,712	9,922	0	96	4,462	4,558	0.0	0.0	0.1	0.1	1.04
108 Accessories and other apparel manufacturing	0	43	307	351	0	21	150	172	0.0	0.0	0.0	0.0	1.04
109 Leather and hide tanning and finishing	0	21	81	101	0	5	18	23	0.0	0.0	0.0	0.0	1.06
110 Footwear manufacturing	0	0	778	778	0	0	236	236	0.0	0.0	0.0	0.0	1.05
111 Other leather product manufacturing	0	113	458	571	0	87	356	443	0.0	0.0	0.0	0.0	1.04
112 Sawmills	0	1,971	3,695	5,666	0	450	845	1,295	0.0	0.0	0.0	0.0	1.05
113 Wood preservation	0	108	331	439	0	18	55	73	0.0	0.0	0.0	0.0	1.05
114 Reconstituted wood product manufacturing	0	51	474	525	0	15	139	155	0.0	0.0	0.0	0.0	1.04
115 Veneer and plywood manufacturing	0	135	449	583	0	36	120	156	0.0	0.0	0.0	0.0	1.04
116 Engineered wood member and truss manufacturing	0	361	1,103	1,463	0	152	465	617	0.0	0.0	0.0	0.0	1.04
117 Wood windows and door manufacturing	0	875	2,114	2,988	0	301	727	1,028	0.0	0.0	0.0	0.0	1.04
118 Cut stock- resawing lumber- and planing	0	267	648	915	0	77	188	265	0.0	0.0	0.0	0.0	1.04
119 Other millwork- including flooring	0	608	2,089	2,697	0	169	581	750	0.0	0.0	0.0	0.0	1.04

Table B.2 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
120 Wood container and pallet manufacturing	0	2,316	714	3,030	0	859	265	1,124	0.0	0.0	0.0	0.0	1.04
121 Manufactured home- mobile home- manufacturing	0	0	6	6	0	0	3	3	0.0	0.0	0.0	0.0	1.04
122 Prefabricated wood building manufacturing	0	8	25	33	0	3	8	11	0.0	0.0	0.0	0.0	1.04
123 Miscellaneous wood product manufacturing	0	125	542	667	0	47	205	252	0.0	0.0	0.0	0.0	1.04
124 Pulp mills	0	11	19	30	0	2	4	6	0.0	0.0	0.0	0.0	1.06
125 Paper and paperboard mills	0	22	9	31	0	7	3	10	0.0	0.0	0.0	0.0	1.06
126 Paperboard container manufacturing	0	20,237	1,962	22,199	0	4,701	456	5,157	0.0	0.1	0.0	0.1	1.05
127 Flexible packaging foil manufacturing	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.05
128 Surface-coated paperboard manufacturing	0	0	1	1	0	0	0	0	0.0	0.0	0.0	0.0	1.05
129 Coated and laminated paper and packaging materials	0	410	531	941	0	122	158	281	0.0	0.0	0.0	0.0	1.05
130 Coated and uncoated paper bag manufacturing	0	131	35	166	0	31	8	39	0.0	0.0	0.0	0.0	1.05
131 Die-cut paper office supplies manufacturing	0	3	13	16	0	1	4	4	0.0	0.0	0.0	0.0	1.05
132 Envelope manufacturing	0	8	16	25	0	2	4	7	0.0	0.0	0.0	0.0	1.05
133 Stationery and related product manufacturing	0	0	2	2	0	0	1	1	0.0	0.0	0.0	0.0	1.05
134 Sanitary paper product manufacturing	0	5	116	121	0	2	44	46	0.0	0.0	0.0	0.0	1.05
135 All other converted paper product manufacturing	0	16	29	45	0	5	9	15	0.0	0.0	0.0	0.0	1.05
136 Manifold business forms printing	0	1,440	548	1,988	0	1,206	459	1,665	0.0	0.0	0.0	0.0	1.05
137 Books printing	0	1,365	158	1,523	0	762	88	850	0.0	0.0	0.0	0.0	1.05
138 Blankbook and looseleaf binder manufacturing	0	3	17	20	0	1	9	10	0.0	0.0	0.0	0.0	1.05
139 Commercial printing	0	77,096	4,880	81,976	0	55,685	3,524	59,209	0.0	0.9	0.1	1.0	1.05
140 Tradebinding and related work	0	64	53	117	0	47	39	86	0.0	0.0	0.0	0.0	1.05
141 Prepress services	0	340	110	450	0	256	83	339	0.0	0.0	0.0	0.0	1.05
142 Petroleum refineries	0	8,360	18,819	27,179	0	741	1,668	2,408	0.0	0.0	0.0	0.0	1.03
143 Asphalt paving mixture and block manufacturing	0	241	1,902	2,143	0	69	547	617	0.0	0.0	0.0	0.0	1.03
144 Asphalt shingle and coating materials manufacturing	0	411	817	1,228	0	167	331	498	0.0	0.0	0.0	0.0	1.03
145 Petroleum lubricating oil and grease manufacturing	0	1,035	602	1,637	0	342	199	541	0.0	0.0	0.0	0.0	1.03
146 All other petroleum and coal products manufacturing	0	21	29	50	0	9	12	21	0.0	0.0	0.0	0.0	1.03

Table B.2 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
147 Petrochemical manufacturing	0	1,384	3,326	4,710	0	113	272	386	0.0	0.0	0.0	0.0	1.07
148 Industrial gas manufacturing	0	315	1,428	1,743	0	93	424	517	0.0	0.0	0.0	0.0	1.07
149 Synthetic dye and pigment manufacturing	0	535	727	1,262	0	129	176	305	0.0	0.0	0.0	0.0	1.07
150 Other basic inorganic chemical manufacturing	0	691	2,258	2,949	0	236	771	1,007	0.0	0.0	0.0	0.0	1.07
151 Other basic organic chemical manufacturing	0	62	89	152	0	8	11	19	0.0	0.0	0.0	0.0	1.07
152 Plastics material and resin manufacturing	0	464	770	1,234	0	76	126	202	0.0	0.0	0.0	0.0	1.05
153 Synthetic rubber manufacturing	0	24	37	61	0	4	6	11	0.0	0.0	0.0	0.0	1.05
154 Cellulosic organic fiber manufacturing	0	0	0	1	0	0	0	0	0.0	0.0	0.0	0.0	1.05
155 Noncellulosic organic fiber manufacturing	0	439	581	1,020	0	121	161	282	0.0	0.0	0.0	0.0	1.05
156 Nitrogenous fertilizer manufacturing	0	44	94	138	0	8	17	26	0.0	0.0	0.0	0.0	1.06
157 Phosphatic fertilizer manufacturing	0	26	33	58	0	3	4	8	0.0	0.0	0.0	0.0	1.06
158 Fertilizer- mixing only- manufacturing	0	24	30	55	0	4	5	10	0.0	0.0	0.0	0.0	1.06
159 Pesticide and other agricultural chemical manufacturing	0	1,278	378	1,656	0	409	121	530	0.0	0.0	0.0	0.0	1.06
160 Pharmaceutical and medicine manufacturing	0	23	18,255	18,279	0	7	5,813	5,820	0.0	0.0	0.0	0.0	1.05
161 Paint and coating manufacturing	0	18	48	65	0	4	10	14	0.0	0.0	0.0	0.0	1.04
162 Adhesive manufacturing	0	275	543	818	0	71	139	210	0.0	0.0	0.0	0.0	1.04
163 Soap and other detergent manufacturing	0	309	2,932	3,240	0	66	630	696	0.0	0.0	0.0	0.0	1.05
164 Polish and other sanitation good manufacturing	0	258	1,350	1,608	0	157	821	978	0.0	0.0	0.0	0.0	1.05
165 Surface active agent manufacturing	0	32	99	131	0	3	9	12	0.0	0.0	0.0	0.0	1.05
166 Toilet preparation manufacturing	0	42	5,615	5,658	0	14	1,859	1,873	0.0	0.0	0.0	0.0	1.05
167 Printing ink manufacturing	0	1,583	242	1,825	0	444	68	511	0.0	0.0	0.0	0.0	1.05
168 Explosives manufacturing	0	45	40	85	0	19	17	36	0.0	0.0	0.0	0.0	1.05
169 Custom compounding of purchased resins	0	2,969	659	3,628	0	644	143	787	0.0	0.0	0.0	0.0	1.05
170 Photographic film and chemical manufacturing	0	102	356	458	0	32	111	142	0.0	0.0	0.0	0.0	1.05
171 Other miscellaneous chemical product manufacturing	0	7,031	1,706	8,737	0	1,758	427	2,184	0.0	0.0	0.0	0.0	1.05
172 Plastics packaging materials- film and sheet	0	2,656	2,906	5,563	0	966	1,057	2,023	0.0	0.0	0.0	0.0	1.05
173 Plastics pipe- fittings- and profile shapes	0	998	2,169	3,167	0	314	683	998	0.0	0.0	0.0	0.0	1.05
174 Laminated plastics plate- sheet- and shapes	0	330	436	767	0	127	168	295	0.0	0.0	0.0	0.0	1.05
175 Plastics bottle manufacturing	0	150	452	602	0	69	207	276	0.0	0.0	0.0	0.0	1.05

Table B.2 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
176 Resilient floor covering manufacturing	0	4	7	11	0	3	5	8	0.0	0.0	0.0	0.0	1.05
177 Plastics plumbing fixtures and all other plastics	0	9,437	9,442	18,879	0	3,787	3,790	7,577	0.0	0.1	0.1	0.1	1.05
178 Foam product manufacturing	0	1,878	2,852	4,731	0	635	964	1,599	0.0	0.0	0.0	0.0	1.05
179 Tire manufacturing	0	3	7	9	0	1	2	4	0.0	0.0	0.0	0.0	1.05
180 Rubber and plastics hose and belting manufacturing	0	96	65	161	0	40	27	68	0.0	0.0	0.0	0.0	1.05
181 Other rubber product manufacturing	0	146	188	334	0	58	75	133	0.0	0.0	0.0	0.0	1.05
182 Vitreous china plumbing fixture manufacturing	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.05
183 Vitreous china and earthenware articles manufacturing	0	0	3	3	0	0	2	2	0.0	0.0	0.0	0.0	1.05
184 Porcelain electrical supply manufacturing	0	2	8	10	0	1	3	4	0.0	0.0	0.0	0.0	1.05
185 Brick and structural clay tile manufacturing	0	2	10	12	0	1	4	5	0.0	0.0	0.0	0.0	1.05
186 Ceramic wall and floor tile manufacturing	0	4	14	17	0	1	5	6	0.0	0.0	0.0	0.0	1.05
187 Nonclay refractory manufacturing	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.05
188 Clay refractory and other structural clay products	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.05
189 Glass container manufacturing	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.06
190 Glass and glass products- except glass containers	0	1,045	3,307	4,352	0	462	1,463	1,925	0.0	0.0	0.0	0.0	1.06
191 Cement manufacturing	0	0	1	2	0	0	1	1	0.0	0.0	0.0	0.0	1.03
192 Ready-mix concrete manufacturing	0	90	700	790	0	27	209	236	0.0	0.0	0.0	0.0	1.03
193 Concrete block and brick manufacturing	0	1	7	9	0	0	3	3	0.0	0.0	0.0	0.0	1.03
194 Concrete pipe manufacturing	0	1	4	5	0	0	1	2	0.0	0.0	0.0	0.0	1.03
195 Other concrete product manufacturing	0	40	108	147	0	17	46	63	0.0	0.0	0.0	0.0	1.03
196 Lime manufacturing	0	0	2	2	0	0	0	1	0.0	0.0	0.0	0.0	1.04
197 Gypsum product manufacturing	0	0	1	1	0	0	0	0	0.0	0.0	0.0	0.0	1.04
198 Abrasive product manufacturing	0	7	13	21	0	3	5	8	0.0	0.0	0.0	0.0	1.04
199 Cut stone and stone product manufacturing	0	0	3	3	0	0	1	1	0.0	0.0	0.0	0.0	1.04
200 Ground or treated minerals and earths manufacturing	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.04
201 Mineral wool manufacturing	0	3	5	8	0	1	2	3	0.0	0.0	0.0	0.0	1.04
202 Miscellaneous nonmetallic mineral products	0	2	9	12	0	1	5	6	0.0	0.0	0.0	0.0	1.04
203 Iron and steel mills	0	223	380	604	0	41	69	110	0.0	0.0	0.0	0.0	1.07

Table B.2 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
204 Ferroalloy and related product manufacturing	0	0	1	1	0	0	0	0	0.0	0.0	0.0	0.0	1.07
205 Iron- steel pipe and tube from purchased steel	0	113	191	304	0	33	56	89	0.0	0.0	0.0	0.0	1.05
206 Rolled steel shape manufacturing	0	213	361	574	0	44	75	119	0.0	0.0	0.0	0.0	1.05
207 Steel wire drawing	0	54	231	285	0	20	87	107	0.0	0.0	0.0	0.0	1.05
208 Alumina refining	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.05
209 Primary aluminum production	0	6	7	12	0	1	2	3	0.0	0.0	0.0	0.0	1.05
210 Secondary smelting and alloying of aluminum	0	6	11	17	0	1	2	2	0.0	0.0	0.0	0.0	1.05
211 Aluminum sheet- plate- and foil manufacturing	0	225	115	341	0	42	21	63	0.0	0.0	0.0	0.0	1.05
212 Aluminum extruded product manufacturing	0	32	14	46	0	10	5	15	0.0	0.0	0.0	0.0	1.05
213 Other aluminum rolling and drawing	0	1	2	3	0	0	0	1	0.0	0.0	0.0	0.0	1.05
214 Primary smelting and refining of copper	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.07
215 Primary nonferrous metal- except copper and aluminum	0	9	12	21	0	2	2	4	0.0	0.0	0.0	0.0	1.07
216 Copper rolling- drawing- and extruding	0	23	32	54	0	4	6	10	0.0	0.0	0.0	0.0	1.07
217 Copper wire- except mechanical- drawing	0	1	3	4	0	0	0	1	0.0	0.0	0.0	0.0	1.07
218 Secondary processing of copper	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.07
219 Nonferrous metal- except copper and aluminum- shaping	0	13	18	31	0	3	4	7	0.0	0.0	0.0	0.0	1.07
220 Secondary processing of other nonferrous	0	5	6	11	0	1	1	2	0.0	0.0	0.0	0.0	1.07
221 Ferrous metal foundaries	0	6	9	15	0	2	4	6	0.0	0.0	0.0	0.0	1.05
222 Aluminum foundries	0	64	131	195	0	22	45	67	0.0	0.0	0.0	0.0	1.05
223 Nonferrous foundries- except aluminum	0	9	18	27	0	4	8	11	0.0	0.0	0.0	0.0	1.05
224 Iron and steel forging	0	12	55	67	0	5	23	28	0.0	0.0	0.0	0.0	1.05
225 Nonferrous forging	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.05
226 Custom roll forming	0	2	3	6	0	1	1	2	0.0	0.0	0.0	0.0	1.05
227 All other forging and stamping	0	23	78	101	0	9	30	39	0.0	0.0	0.0	0.0	1.05
228 Cutlery and flatware- except precious- manufacturing	0	10	79	88	0	6	47	53	0.0	0.0	0.0	0.0	1.06
229 Hand and edge tool manufacturing	0	245	442	686	0	105	190	296	0.0	0.0	0.0	0.0	1.06
230 Saw blade and handsaw manufacturing	0	26	42	68	0	10	17	28	0.0	0.0	0.0	0.0	1.06
231 Kitchen utensil- pot- and pan manufacturing	0	0	7	7	0	0	2	2	0.0	0.0	0.0	0.0	1.06
232 Prefabricated metal buildings and components	0	4	49	53	0	1	15	16	0.0	0.0	0.0	0.0	1.04

Table B.2 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
233 Fabricated structural metal manufacturing	0	50	265	315	0	22	119	141	0.0	0.0	0.0	0.0	1.04
234 Plate work manufacturing	0	245	70	316	0	110	32	142	0.0	0.0	0.0	0.0	1.04
235 Metal window and door manufacturing	0	160	235	395	0	76	111	187	0.0	0.0	0.0	0.0	1.04
236 Sheet metal work manufacturing	0	108	314	422	0	47	139	186	0.0	0.0	0.0	0.0	1.04
237 Ornamental and architectural metal work manufacturing	0	13	46	59	0	5	19	24	0.0	0.0	0.0	0.0	1.04
238 Power boiler and heat exchanger manufacturing	0	35	14	50	0	15	6	22	0.0	0.0	0.0	0.0	1.05
239 Metal tank- heavy gauge- manufacturing	0	9	6	15	0	4	3	6	0.0	0.0	0.0	0.0	1.05
240 Metal can- box- and other container manufacturing	0	120	275	395	0	21	48	68	0.0	0.0	0.0	0.0	1.05
241 Hardware manufacturing	0	172	709	881	0	71	293	364	0.0	0.0	0.0	0.0	1.04
242 Spring and wire product manufacturing	0	317	809	1,126	0	133	339	472	0.0	0.0	0.0	0.0	1.05
243 Machine shops	0	7,316	1,513	8,829	0	3,541	732	4,274	0.0	0.1	0.0	0.1	1.04
244 Turned product and screw- nut- and bolt manufacturing	0	1,220	620	1,840	0	581	296	877	0.0	0.0	0.0	0.0	1.04
245 Metal heat treating	0	569	71	640	0	269	34	303	0.0	0.0	0.0	0.0	1.04
246 Metal coating and nonprecious engraving	0	1,197	145	1,343	0	589	72	661	0.0	0.0	0.0	0.0	1.04
247 Electroplating- anodizing- and coloring metal	0	2,788	333	3,121	0	1,135	136	1,271	0.0	0.0	0.0	0.0	1.04
248 Metal valve manufacturing	0	1,455	980	2,435	0	689	464	1,153	0.0	0.0	0.0	0.0	1.05
249 Ball and roller bearing manufacturing	0	283	220	503	0	96	74	170	0.0	0.0	0.0	0.0	1.05
250 Small arms manufacturing	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.05
251 Other ordnance and accessories manufacturing	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.05
252 Fabricated pipe and pipe fitting manufacturing	0	68	187	255	0	30	84	115	0.0	0.0	0.0	0.0	1.05
253 Industrial pattern manufacturing	0	1	1	2	0	0	0	1	0.0	0.0	0.0	0.0	1.05
254 Enameled iron and metal sanitary ware manufacturing	0	99	74	172	0	61	45	106	0.0	0.0	0.0	0.0	1.05
255 Miscellaneous fabricated metal product manufacturing	0	2	6	8	0	1	2	3	0.0	0.0	0.0	0.0	1.05
256 Ammunition manufacturing	0	3	12	15	0	1	5	6	0.0	0.0	0.0	0.0	1.05
257 Farm machinery and equipment manufacturing	0	114	760	873	0	26	175	201	0.0	0.0	0.0	0.0	1.05
258 Lawn and garden equipment manufacturing	0	350	7,409	7,758	0	73	1,551	1,624	0.0	0.0	0.0	0.0	1.05
259 Construction machinery manufacturing	0	66	1,623	1,689	0	12	291	303	0.0	0.0	0.0	0.0	1.05

Table B.2 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
260 Mining machinery and equipment manufacturing	0	2	3	5	0	1	1	1	0.0	0.0	0.0	0.0	1.05
261 Oil and gas field machinery and equipment	0	6	4	11	0	1	1	2	0.0	0.0	0.0	0.0	1.05
262 Sawmill and woodworking machinery	0	17	445	462	0	6	167	173	0.0	0.0	0.0	0.0	1.06
263 Plastics and rubber industry machinery	0	68	197	266	0	31	89	120	0.0	0.0	0.0	0.0	1.06
264 Paper industry machinery manufacturing	0	7	116	123	0	2	33	35	0.0	0.0	0.0	0.0	1.06
265 Textile machinery manufacturing	0	38	220	258	0	17	102	120	0.0	0.0	0.0	0.0	1.06
266 Printing machinery and equipment manufacturing	0	106	369	475	0	36	124	160	0.0	0.0	0.0	0.0	1.06
267 Food product machinery manufacturing	0	446	21	466	0	122	6	128	0.0	0.0	0.0	0.0	1.06
268 Semiconductor machinery manufacturing	0	3	12	14	0	1	4	4	0.0	0.0	0.0	0.0	1.06
269 All other industrial machinery manufacturing	0	40	625	665	0	14	216	230	0.0	0.0	0.0	0.0	1.06
270 Office machinery manufacturing	0	99	822	922	0	21	174	195	0.0	0.0	0.0	0.0	1.04
271 Optical instrument and lens manufacturing	0	1	5	7	0	0	2	2	0.0	0.0	0.0	0.0	1.04
272 Photographic and photocopying equipment manufacturing	0	32	98	130	0	7	22	29	0.0	0.0	0.0	0.0	1.04
273 Other commercial and service industry machinery ma	0	258	2,025	2,282	0	70	548	617	0.0	0.0	0.0	0.0	1.04
274 Automatic vending- commercial laundry and drycleaning	0	45	89	134	0	11	21	32	0.0	0.0	0.0	0.0	1.04
275 Air purification equipment manufacturing	0	0	1	2	0	0	0	1	0.0	0.0	0.0	0.0	1.04
276 Industrial and commercial fan and blower manufacturing	0	0	0	1	0	0	0	0	0.0	0.0	0.0	0.0	1.04
277 Heating equipment- except warm air furnaces	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.04
278 AC- refrigeration- and forced air heating	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.04
279 Industrial mold manufacturing	0	25	27	51	0	12	13	25	0.0	0.0	0.0	0.0	1.05
280 Metal cutting machine tool manufacturing	0	17	335	352	0	6	123	129	0.0	0.0	0.0	0.0	1.05
281 Metal forming machine tool manufacturing	0	7	58	65	0	4	30	34	0.0	0.0	0.0	0.0	1.05
282 Special tool- die- jig- and fixture manufacturing	0	274	2,875	3,149	0	127	1,329	1,456	0.0	0.0	0.0	0.0	1.05
283 Cutting tool and machine tool accessory manufacturing	0	1,566	288	1,854	0	714	131	845	0.0	0.0	0.0	0.0	1.05
284 Rolling mill and other metalworking machinery	0	48	842	890	0	21	370	392	0.0	0.0	0.0	0.0	1.05
285 Turbine and turbine generator set units manufacturing	0	40	55	95	0	7	10	17	0.0	0.0	0.0	0.0	1.06
286 Other engine equipment manufacturing	0	489	2,609	3,098	0	76	408	485	0.0	0.0	0.0	0.0	1.06

Table B.2 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
287 Speed changers and mechanical power transmission equipment	0	291	195	485	0	108	72	180	0.0	0.0	0.0	0.0	1.06
288 Pump and pumping equipment manufacturing	0	8	5	13	0	2	1	3	0.0	0.0	0.0	0.0	1.05
289 Air and gas compressor manufacturing	0	46	108	154	0	15	36	50	0.0	0.0	0.0	0.0	1.05
290 Measuring and dispensing pump manufacturing	0	3	2	5	0	1	1	1	0.0	0.0	0.0	0.0	1.05
291 Elevator and moving stairway manufacturing	0	17	342	359	0	4	82	86	0.0	0.0	0.0	0.0	1.05
292 Conveyor and conveying equipment manufacturing	0	5,049	545	5,594	0	1,779	192	1,971	0.0	0.0	0.0	0.0	1.05
293 Overhead cranes- hoists- and monorail systems	0	0	15	16	0	0	4	5	0.0	0.0	0.0	0.0	1.05
294 Industrial truck- trailer- and stacker manufacturing	0	64	406	470	0	21	136	157	0.0	0.0	0.0	0.0	1.05
295 Power-driven handtool manufacturing	0	66	3,445	3,511	0	20	1,031	1,051	0.0	0.0	0.0	0.0	1.05
296 Welding and soldering equipment manufacturing	0	3	3	6	0	1	1	2	0.0	0.0	0.0	0.0	1.05
297 Packaging machinery manufacturing	0	40,913	49	40,962	0	14,506	17	14,523	0.0	0.3	0.0	0.3	1.05
298 Industrial process furnace and oven manufacturing	0	6	3	9	0	3	2	5	0.0	0.0	0.0	0.0	1.05
299 Fluid power cylinder and actuator manufacturing	0	11	11	22	0	4	4	8	0.0	0.0	0.0	0.0	1.05
300 Fluid power pump and motor manufacturing	0	17	18	35	0	7	7	13	0.0	0.0	0.0	0.0	1.05
301 Scales- balances- and miscellaneous general purpose machinery	0	40	30	70	0	15	12	27	0.0	0.0	0.0	0.0	1.05
302 Electronic computer manufacturing	0	1,270	10,086	11,356	0	129	1,022	1,151	0.0	0.0	0.0	0.0	0.95
303 Computer storage device manufacturing	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.95
304 Computer terminal manufacturing	0	23	35	58	0	5	8	13	0.0	0.0	0.0	0.0	0.95
305 Other computer peripheral equipment manufacturing	0	43	102	144	0	13	30	43	0.0	0.0	0.0	0.0	0.95
306 Telephone apparatus manufacturing	0	241	3,226	3,467	0	60	799	859	0.0	0.0	0.0	0.0	0.97
307 Broadcast and wireless communications equipment	0	51	324	375	0	12	78	90	0.0	0.0	0.0	0.0	0.97
308 Other communications equipment manufacturing	0	112	257	370	0	42	96	138	0.0	0.0	0.0	0.0	0.97
309 Audio and video equipment manufacturing	0	239	4,459	4,697	0	31	580	611	0.0	0.0	0.0	0.0	0.97
310 Electron tube manufacturing	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.93
311 Semiconductors and related device manufacturing	0	197	34	232	0	19	3	23	0.0	0.0	0.0	0.0	0.93
312 All other electronic component	0	2,249	418	2,667	0	572	106	678	0.0	0.0	0.0	0.0	0.93

Table B.2 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
manufacturing													
313 Electromedical apparatus manufacturing	0	3	544	546	0	1	160	161	0.0	0.0	0.0	0.0	1.05
314 Search- detection- and navigation instruments	0	1	5	6	0	0	1	2	0.0	0.0	0.0	0.0	1.05
315 Automatic environmental control manufacturing	0	503	882	1,386	0	133	233	365	0.0	0.0	0.0	0.0	1.05
316 Industrial process variable instruments	0	185	1,175	1,360	0	62	396	458	0.0	0.0	0.0	0.0	1.05
317 Totalizing fluid meters and counting devices	0	44	308	352	0	7	52	59	0.0	0.0	0.0	0.0	1.05
318 Electricity and signal testing instruments	0	5	12	17	0	2	4	6	0.0	0.0	0.0	0.0	1.05
319 Analytical laboratory instrument manufacturing	0	16	130	147	0	4	31	35	0.0	0.0	0.0	0.0	1.05
320 Irradiation apparatus manufacturing	0	4	242	246	0	1	68	70	0.0	0.0	0.0	0.0	1.05
321 Watch- clock- and other measuring and controlling	0	73	773	846	0	27	290	317	0.0	0.0	0.0	0.0	1.05
322 Software reproducing	0	569	308	877	0	200	109	309	0.0	0.0	0.0	0.0	1.01
323 Audio and video media reproduction	0	903	514	1,417	0	377	214	591	0.0	0.0	0.0	0.0	1.01
324 Magnetic and optical recording media manufacturing	0	2	3	4	0	0	0	1	0.0	0.0	0.0	0.0	1.01
325 Electric lamp bulb and part manufacturing	0	0	1	1	0	0	0	0	0.0	0.0	0.0	0.0	1.06
326 Lighting fixture manufacturing	0	0	4	4	0	0	2	2	0.0	0.0	0.0	0.0	1.06
327 Electric housewares and household fan manufacturing	0	2	87	89	0	1	31	31	0.0	0.0	0.0	0.0	1.04
328 Household vacuum cleaner manufacturing	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.04
329 Household cooking appliance manufacturing	0	83	4,587	4,670	0	24	1,316	1,340	0.0	0.0	0.0	0.0	1.04
330 Household refrigerator and home freezer manufacturing	0	0	2	2	0	0	0	0	0.0	0.0	0.0	0.0	1.04
331 Household laundry equipment manufacturing	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.04
332 Other major household appliance manufacturing	0	102	563	665	0	29	162	192	0.0	0.0	0.0	0.0	1.04
333 Electric power and specialty transformer manufacturing	0	1,214	919	2,132	0	445	337	782	0.0	0.0	0.0	0.0	1.05
334 Motor and generator manufacturing	0	1,282	1,343	2,625	0	500	525	1,025	0.0	0.0	0.0	0.0	1.05
335 Switchgear and switchboard apparatus manufacturing	0	762	642	1,404	0	424	358	782	0.0	0.0	0.0	0.0	1.05
336 Relay and industrial control manufacturing	0	910	103	1,013	0	212	24	236	0.0	0.0	0.0	0.0	1.05
337 Storage battery manufacturing	0	134	887	1,021	0	51	341	393	0.0	0.0	0.0	0.0	1.05
338 Primary battery manufacturing	0	901	867	1,768	0	490	471	961	0.0	0.0	0.0	0.0	1.05

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Table B.2 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
339 Fiber optic cable manufacturing	0	2	3	5	0	0	1	1	0.0	0.0	0.0	0.0	1.05
340 Other communication and energy wire manufacturing	0	106	195	302	0	34	63	97	0.0	0.0	0.0	0.0	1.05
341 Wiring device manufacturing	0	98	23	121	0	45	11	56	0.0	0.0	0.0	0.0	1.05
342 Carbon and graphite product manufacturing	0	39	53	92	0	25	34	59	0.0	0.0	0.0	0.0	1.05
343 Miscellaneous electrical equipment manufacturing	0	76	145	220	0	28	53	81	0.0	0.0	0.0	0.0	1.05
344 Automobile and light truck manufacturing	0	187	55,099	55,286	0	29	8,456	8,485	0.0	0.0	0.1	0.1	1.07
345 Heavy duty truck manufacturing	0	0	1,850	1,850	0	0	267	267	0.0	0.0	0.0	0.0	1.07
346 Motor vehicle body manufacturing	0	63	1,347	1,410	0	17	372	389	0.0	0.0	0.0	0.0	1.04
347 Truck trailer manufacturing	0	0	203	203	0	0	48	48	0.0	0.0	0.0	0.0	1.04
348 Motor home manufacturing	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.04
349 Travel trailer and camper manufacturing	0	0	281	281	0	0	80	80	0.0	0.0	0.0	0.0	1.04
350 Motor vehicle parts manufacturing	0	11,640	34,018	45,657	0	2,481	7,250	9,731	0.0	0.0	0.1	0.2	1.06
351 Aircraft manufacturing	0	5	13	18	0	1	2	3	0.0	0.0	0.0	0.0	1.05
352 Aircraft engine and engine parts manufacturing	0	169	182	351	0	54	58	112	0.0	0.0	0.0	0.0	1.05
353 Other aircraft parts and equipment	0	45	50	95	0	20	22	42	0.0	0.0	0.0	0.0	1.05
354 Guided missile and space vehicle manufacturing	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.05
355 Propulsion units and parts for space vehicles and guided missiles	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.05
356 Railroad rolling stock manufacturing	0	17	44	61	0	4	11	15	0.0	0.0	0.0	0.0	1.06
357 Ship building and repairing	0	2	4	6	0	1	2	2	0.0	0.0	0.0	0.0	1.05
358 Boat building	0	2	457	459	0	1	197	198	0.0	0.0	0.0	0.0	1.05
359 Motorcycle- bicycle- and parts manufacturing	0	8	65	74	0	1	9	11	0.0	0.0	0.0	0.0	1.04
360 Military armored vehicles and tank parts manufacturing	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.04
361 All other transportation equipment manufacturing	0	1	9	9	0	0	2	2	0.0	0.0	0.0	0.0	1.04
362 Wood kitchen cabinet and countertop manufacturing	0	606	2,759	3,365	0	213	972	1,186	0.0	0.0	0.0	0.0	1.04
363 Upholstered household furniture manufacturing	0	0	3,483	3,483	0	0	982	982	0.0	0.0	0.0	0.0	1.04
364 Nonupholstered wood household furniture manufacturing	0	3	2,053	2,056	0	1	672	673	0.0	0.0	0.0	0.0	1.04
365 Metal household furniture manufacturing	0	0	246	246	0	0	123	123	0.0	0.0	0.0	0.0	1.04

Table B.2 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
366 Institutional furniture manufacturing	0	11	3,758	3,769	0	4	1,344	1,348	0.0	0.0	0.0	0.0	1.04
367 Other household and institutional furniture	0	77	225	302	0	27	80	107	0.0	0.0	0.0	0.0	1.04
368 Wood office furniture manufacturing	0	0	304	304	0	0	68	68	0.0	0.0	0.0	0.0	1.05
369 Custom architectural woodwork and millwork	0	3	268	272	0	2	129	130	0.0	0.0	0.0	0.0	1.05
370 Office furniture- except wood- manufacturing	0	2	1,076	1,078	0	1	334	334	0.0	0.0	0.0	0.0	1.05
371 Showcases- partitions- shelving- and lockers	0	28	2,966	2,994	0	11	1,133	1,144	0.0	0.0	0.0	0.0	1.05
372 Mattress manufacturing	0	0	1,629	1,629	0	0	375	375	0.0	0.0	0.0	0.0	1.04
373 Blind and shade manufacturing	0	0	364	364	0	0	119	119	0.0	0.0	0.0	0.0	1.04
374 Laboratory apparatus and furniture manufacturing	0	0	34	34	0	0	11	11	0.0	0.0	0.0	0.0	1.05
375 Surgical and medical instrument manufacturing	0	1	438	439	0	0	207	207	0.0	0.0	0.0	0.0	1.05
376 Surgical appliance and supplies manufacturing	0	74	6,334	6,408	0	37	3,196	3,233	0.0	0.0	0.0	0.0	1.05
377 Dental equipment and supplies manufacturing	0	0	325	325	0	0	123	123	0.0	0.0	0.0	0.0	1.05
378 Ophthalmic goods manufacturing	0	41	1,499	1,540	0	16	593	609	0.0	0.0	0.0	0.0	1.05
379 Dental laboratories	0	0	475	476	0	0	366	366	0.0	0.0	0.0	0.0	1.05
380 Jewelry and silverware manufacturing	0	1	39	40	0	0	12	12	0.0	0.0	0.0	0.0	1.05
381 Sporting and athletic goods manufacturing	0	0	10	11	0	0	3	3	0.0	0.0	0.0	0.0	1.05
382 Doll- toy- and game manufacturing	0	0	1	1	0	0	0	0	0.0	0.0	0.0	0.0	1.05
383 Office supplies- except paper- manufacturing	0	23	75	98	0	13	41	54	0.0	0.0	0.0	0.0	1.05
384 Sign manufacturing	0	2,177	451	2,628	0	1,194	248	1,441	0.0	0.0	0.0	0.0	1.05
385 Gasket- packing- and sealing device manufacturing	0	10	9	19	0	5	4	9	0.0	0.0	0.0	0.0	1.05
386 Musical instrument manufacturing	0	0	2	2	0	0	1	1	0.0	0.0	0.0	0.0	1.05
387 Broom- brush- and mop manufacturing	0	26	61	87	0	13	29	42	0.0	0.0	0.0	0.0	1.05
388 Burial casket manufacturing	0	0	2	2	0	0	1	1	0.0	0.0	0.0	0.0	1.05
389 Buttons- pins- and all other miscellaneous manufacturing	0	7	35	42	0	3	15	18	0.0	0.0	0.0	0.0	1.05
390 Wholesale trade	0	700,756	139,809	840,565	0	532,987	106,337	639,323	0.0	5.2	1.0	6.3	1.05
391 Air transportation	0	8,291	5,135	13,427	0	3,879	2,403	6,282	0.0	0.0	0.0	0.1	1.05
392 Rail transportation	0	19,615	4,924	24,538	0	12,118	3,042	15,160	0.0	0.1	0.0	0.1	1.06
393 Water transportation	0	2,700	4,750	7,450	0	616	1,084	1,701	0.0	0.0	0.0	0.0	1.04

Table B.2 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
394 Truck transportation	0	168,617	34,539	203,157	0	84,625	17,335	101,960	0.0	1.5	0.3	1.8	1.03
395 Transit and ground passenger transportation	0	1,361	4,957	6,318	0	855	3,112	3,967	0.0	0.0	0.1	0.1	1.05
396 Pipeline transportation	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.06
397 Scenic and sightseeing transportation and support	0	10,470	3,670	14,140	0	8,869	3,109	11,978	0.0	0.1	0.0	0.2	1.05
398 Postal service	0	5,601	11,086	16,687	0	3,998	7,914	11,913	0.0	0.1	0.1	0.2	1.06
399 Couriers and messengers	0	16,344	6,414	22,757	0	11,990	4,705	16,695	0.0	0.1	0.1	0.2	1.03
400 Warehousing and storage	0	15,458	4,255	19,714	0	11,577	3,187	14,764	0.0	0.2	0.1	0.3	1.02
401 Motor vehicle and parts dealers	0	5,123	51,695	56,819	0	4,018	40,540	44,558	0.0	0.0	0.5	0.6	1.06
402 Furniture and home furnishings stores	0	1,492	11,614	13,106	0	1,121	8,721	9,842	0.0	0.0	0.2	0.2	1.06
403 Electronics and appliance stores	0	940	8,195	9,135	0	764	6,658	7,422	0.0	0.0	0.1	0.1	1.06
404 Building material and garden supply stores	0	2,350	23,552	25,902	0	1,828	18,319	20,147	0.0	0.0	0.3	0.4	1.06
405 Food and beverage stores	0	4,266	41,402	45,668	0	2,899	28,134	31,033	0.0	0.1	0.7	0.8	1.06
406 Health and personal care stores	0	2,042	19,407	21,449	0	1,464	13,911	15,375	0.0	0.0	0.3	0.3	1.06
407 Gasoline stations	0	1,486	12,861	14,347	0	1,123	9,719	10,842	0.0	0.0	0.3	0.3	1.06
408 Clothing and clothing accessories stores	0	2,126	20,764	22,890	0	1,477	14,423	15,900	0.0	0.0	0.4	0.4	1.06
409 Sporting goods- hobby- book and music stores	0	742	7,383	8,124	0	655	6,512	7,167	0.0	0.0	0.2	0.2	1.06
410 General merchandise stores	306,180	3,459	34,792	344,430	259,508	2,931	29,488	291,928	6.3	0.1	0.7	7.0	1.06
411 Miscellaneous store retailers	0	1,617	15,551	17,168	0	1,131	10,875	12,006	0.0	0.0	0.4	0.5	1.06
412 Nonstore retailers	0	2,134	21,389	23,523	0	1,329	13,321	14,650	0.0	0.0	0.4	0.4	1.06
413 Newpaper publishers	0	20,179	3,992	24,171	0	9,308	1,841	11,149	0.0	0.2	0.0	0.3	1.06
414 Periodical publishers	0	4,831	1,812	6,643	0	1,763	661	2,424	0.0	0.0	0.0	0.0	1.06
415 Book publishers	0	87	898	984	0	28	291	319	0.0	0.0	0.0	0.0	1.06
416 Database- directory- and other publishers	0	7,398	1,761	9,158	0	2,841	676	3,517	0.0	0.0	0.0	0.0	1.04
417 Software publishers	0	17	458	475	0	11	279	290	0.0	0.0	0.0	0.0	0.99
418 Motion picture and video industries	0	15,248	9,399	24,647	0	5,584	3,442	9,026	0.0	0.1	0.1	0.1	1.09
419 Sound recording industries	0	424	2,704	3,128	0	285	1,822	2,107	0.0	0.0	0.0	0.0	1.09
420 Radio and television broadcasting	0	27,346	5,806	33,152	0	9,144	1,941	11,086	0.0	0.2	0.0	0.2	1.06
421 Cable networks and program distribution	0	8,246	11,696	19,942	0	2,383	3,380	5,763	0.0	0.0	0.0	0.0	1.03
422 Telecommunications	0	33,075	46,587	79,663	0	17,362	24,454	41,816	0.0	0.1	0.2	0.3	1.04
423 Information services	0	1,340	859	2,198	0	546	350	896	0.0	0.0	0.0	0.0	1.04

Table B.2 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
424 Data processing services	0	5,890	2,408	8,298	0	2,550	1,043	3,593	0.0	0.0	0.0	0.0	1.04
425 Nondepository credit intermediation and related activities	0	39,378	25,011	64,389	0	31,970	20,306	52,275	0.0	0.3	0.2	0.4	1.04
426 Securities- commodity contracts- investments	0	17,538	31,423	48,962	0	11,177	20,027	31,204	0.0	0.1	0.3	0.4	1.07
427 Insurance carriers	0	18,064	53,636	71,701	0	6,378	18,938	25,316	0.0	0.1	0.3	0.4	1.07
428 Insurance agencies- brokerages- and related	0	4,924	14,770	19,694	0	4,632	13,893	18,526	0.0	0.0	0.1	0.2	1.04
429 Funds- trusts- and other financial vehicles	0	119	13,656	13,775	0	36	4,162	4,198	0.0	0.0	0.0	0.0	1.04
430 Monetary authorities and depository credit intermediation	0	56,145	59,065	115,210	0	39,514	41,570	81,084	0.0	0.3	0.3	0.5	1.04
431 Real estate	0	72,478	126,858	199,336	0	49,845	87,245	137,091	0.0	0.5	0.8	1.3	1.05
432 Automotive equipment rental and leasing	0	11,522	10,859	22,382	0	5,750	5,419	11,170	0.0	0.1	0.1	0.1	1.07
433 Video tape and disc rental	0	32	3,262	3,294	0	16	1,690	1,706	0.0	0.0	0.1	0.1	1.04
434 Machinery and equipment rental and leasing	0	2,332	1,944	4,275	0	1,584	1,320	2,904	0.0	0.0	0.0	0.0	1.04
435 General and consumer goods rental except video tap	0	5,494	5,157	10,651	0	3,977	3,734	7,711	0.0	0.0	0.0	0.1	1.04
436 Lessors of nonfinancial intangible assets	0	105,394	4,121	109,515	0	55,036	2,152	57,188	0.0	0.1	0.0	0.1	1.04
437 Legal services	0	18,032	26,358	44,390	0	12,230	17,877	30,107	0.0	0.2	0.3	0.4	1.06
438 Accounting and bookkeeping services	0	17,401	12,496	29,897	0	10,467	7,517	17,984	0.0	0.2	0.1	0.3	1.07
439 Architectural and engineering services	0	10,598	17,772	28,370	0	6,440	10,800	17,240	0.0	0.1	0.2	0.3	1.05
440 Specialized design services	0	3,279	1,968	5,248	0	1,631	979	2,610	0.0	0.0	0.0	0.0	1.04
441 Custom computer programming services	0	1,592	10,059	11,651	0	1,254	7,922	9,176	0.0	0.0	0.1	0.2	1.04
442 Computer systems design services	0	3,304	2,638	5,941	0	2,510	2,004	4,513	0.0	0.0	0.0	0.1	1.04
443 Other computer related services- including facility	0	4,455	2,406	6,861	0	2,208	1,193	3,401	0.0	0.0	0.0	0.0	1.04
444 Management consulting services	0	23,790	12,233	36,023	0	13,459	6,921	20,380	0.0	0.2	0.1	0.3	1.04
445 Environmental and other technical consulting services	0	1,541	2,542	4,083	0	871	1,436	2,307	0.0	0.0	0.0	0.0	1.04
446 Scientific research and development services	0	17,203	6,768	23,971	0	10,474	4,121	14,595	0.0	0.2	0.1	0.2	1.04
447 Advertising and related services	0	33,049	5,994	39,042	0	16,155	2,930	19,085	0.0	0.3	0.1	0.4	1.05
448 Photographic services	0	423	1,554	1,977	0	257	944	1,202	0.0	0.0	0.0	0.0	1.04
449 Veterinary services	0	39	4,513	4,552	0	18	2,044	2,062	0.0	0.0	0.1	0.1	1.04
450 All other miscellaneous professional and technical	0	26,576	3,256	29,832	0	11,903	1,458	13,361	0.0	0.1	0.0	0.1	1.04
451 Management of companies and enterprises	0	104,531	18,444	122,975	0	57,957	10,226	68,183	0.0	0.7	0.1	0.8	1.08
452 Office administrative services	0	6,041	6,703	12,744	0	2,835	3,146	5,981	0.0	0.0	0.0	0.1	1.04

Table B.2 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
453 Facilities support services	0	259	1,147	1,407	0	143	633	777	0.0	0.0	0.0	0.0	1.04
454 Employment services	0	11,985	11,396	23,382	0	11,294	10,739	22,032	0.0	0.5	0.5	1.0	1.06
455 Business support services	0	10,280	6,255	16,535	0	6,639	4,040	10,678	0.0	0.1	0.1	0.2	1.04
456 Travel arrangement and reservation services	0	1,690	3,054	4,743	0	638	1,154	1,792	0.0	0.0	0.0	0.0	1.06
457 Investigation and security services	0	4,365	4,027	8,392	0	3,160	2,916	6,076	0.0	0.1	0.1	0.2	1.04
458 Services to buildings and dwellings	0	9,937	13,890	23,827	0	5,106	7,138	12,245	0.0	0.2	0.3	0.4	1.04
459 Other support services	0	6,492	4,971	11,463	0	3,842	2,942	6,784	0.0	0.0	0.0	0.1	1.04
460 Waste management and remediation services	0	10,025	6,118	16,142	0	4,962	3,028	7,990	0.0	0.1	0.0	0.1	1.03
461 Elementary and secondary schools	0	0	5,902	5,902	0	0	4,365	4,365	0.0	0.0	0.2	0.2	1.05
462 Colleges- universities- and junior colleges	0	893	19,283	20,175	0	540	11,670	12,210	0.0	0.0	0.3	0.3	1.05
463 Other educational services	0	194	6,825	7,019	0	83	2,906	2,988	0.0	0.0	0.1	0.1	1.05
464 Home health care services	0	0	10,078	10,078	0	0	7,434	7,434	0.0	0.0	0.2	0.2	1.06
465 Offices of physicians- dentists- and other health	0	0	111,460	111,460	0	0	86,251	86,251	0.0	0.0	0.9	0.9	1.08
466 Other ambulatory health care services	0	102	31,715	31,817	0	46	14,173	14,219	0.0	0.0	0.2	0.2	1.06
467 Hospitals	0	0	108,228	108,228	0	0	56,277	56,277	0.0	0.0	1.0	1.0	1.08
468 Nursing and residential care facilities	0	0	31,556	31,556	0	0	23,074	23,074	0.0	0.0	0.6	0.6	1.04
469 Child day care services	0	0	11,614	11,614	0	0	6,438	6,438	0.0	0.0	0.4	0.4	1.04
470 Social assistance- except child day care services	0	3	13,588	13,591	0	2	8,280	8,282	0.0	0.0	0.4	0.4	1.10
471 Performing arts companies	0	625	2,281	2,906	0	401	1,464	1,865	0.0	0.0	0.1	0.1	1.03
472 Spectator sports	0	5,008	3,784	8,792	0	4,141	3,130	7,271	0.0	0.1	0.0	0.1	1.04
473 Independent artists- writers- and performers	0	2,507	1,467	3,973	0	907	531	1,438	0.0	0.0	0.0	0.1	1.03
474 Promoters of performing arts and sports and agents	0	2,248	2,357	4,605	0	1,335	1,400	2,736	0.0	0.0	0.0	0.1	1.03
475 Museums- historical sites- zoos- and parks	0	0	1,460	1,460	0	0	458	458	0.0	0.0	0.0	0.0	1.04
476 Fitness and recreational sports centers	0	1,327	3,736	5,064	0	847	2,384	3,232	0.0	0.0	0.1	0.1	1.03
477 Bowling centers	0	0	639	639	0	0	384	384	0.0	0.0	0.0	0.0	1.03
478 Other amusement- gambling- and recreation industries	0	764	12,338	13,102	0	476	7,681	8,157	0.0	0.0	0.2	0.2	1.03
479 Hotels and motels- including casino hotels	0	11,009	16,915	27,924	0	7,807	11,996	19,803	0.0	0.2	0.2	0.4	1.06
480 Other accommodations	0	261	3,833	4,094	0	140	2,053	2,192	0.0	0.0	0.0	0.0	1.04
481 Food services and drinking places	43,092	23,814	116,836	183,743	20,398	11,273	55,305	86,976	0.9	0.5	2.4	3.8	1.05

Table B.2 Continued.

Industry	Total Industry Output (Dollars)				Value—Added (Dollars)				Employment (Jobs)				Deflator
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
482 Car washes	0	297	2,270	2,567	0	177	1,357	1,534	0.0	0.0	0.1	0.1	1.04
483 Automotive repair and maintenance- except car wash	0	15,012	35,565	50,577	0	7,529	17,836	25,365	0.0	0.2	0.5	0.7	1.04
484 Electronic equipment repair and maintenance	0	13,122	7,272	20,394	0	5,491	3,043	8,534	0.0	0.1	0.1	0.2	1.04
485 Commercial machinery repair and maintenance	0	15,769	4,568	20,337	0	7,815	2,264	10,079	0.0	0.1	0.0	0.2	1.11
486 Household goods repair and maintenance	0	5,464	6,092	11,556	0	1,945	2,168	4,113	0.0	0.0	0.0	0.1	1.03
487 Personal care services	0	0	10,397	10,397	0	0	5,882	5,882	0.0	0.0	0.2	0.2	1.04
488 Death care services	0	0	3,554	3,554	0	0	2,321	2,321	0.0	0.0	0.1	0.1	1.06
489 Drycleaning and laundry services	0	587	6,070	6,658	0	383	3,961	4,344	0.0	0.0	0.1	0.2	1.06
490 Other personal services	0	820	11,390	12,211	0	337	4,679	5,016	0.0	0.0	0.1	0.1	1.05
491 Religious organizations	0	0	7,745	7,745	0	0	6,448	6,448	0.0	0.0	0.2	0.2	1.04
492 Grantmaking and giving and social advocacy organizations	0	0	4,886	4,886	0	0	1,763	1,763	0.0	0.0	0.1	0.1	1.04
493 Civic- social- professional and similar organizations	0	5,276	9,943	15,220	0	2,275	4,287	6,562	0.0	0.1	0.2	0.2	1.03
494 Private households	0	0	4,897	4,897	0	0	5,691	5,691	0.0	0.0	0.6	0.6	1.03
495 Federal electric utilities	0	26,447	33,622	60,069	0	6,672	8,483	15,155	0.0	0.0	0.1	0.1	1.08
496 Other Federal Government enterprises	0	499	1,119	1,618	0	335	750	1,085	0.0	0.0	0.0	0.0	1.09
497 State and local government passenger transit	0	269	980	1,249	0	34	122	156	0.0	0.0	0.0	0.0	1.08
498 State and local government electric utilities	0	15,711	19,973	35,684	0	5,716	7,267	12,982	0.0	0.0	0.0	0.1	1.11
499 Other State and local government enterprises	0	11,973	34,520	46,493	0	3,556	10,252	13,808	0.0	0.1	0.2	0.2	1.06
500 Noncomparable imports	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.03
501 Scrap	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.03
502 Used and secondhand goods	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.03
503 State & Local Education	0	0	160,807	160,807	0	0	160,807	160,807	0.0	0.0	3.7	3.7	1.05
504 State & Local Non-Education	0	0	133,958	133,958	0	0	133,958	133,958	0.0	0.0	2.7	2.7	1.05
505 Federal Military	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.04
506 Federal Non-Military	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.04
507 Rest of the world adjustment to final uses	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.03
508 Inventory valuation adjustment	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	1.00
509 Owner-occupied dwellings	0	0	209,651	209,651	0	0	167,599	167,599	0.0	0.0	0.0	0.0	0.96
Total	6,141,742	2,295,270	3,017,470	11,454,483	1,464,093	1,383,281	1,819,830	4,667,204	27.5	19.4	31.8	78.7	

Appendix C – Correlation Matrix for Explanatory Variables

CORRELATION MATRIX FOR EXPLANATORY VARIABLES

Correlation Matrix for Listed Variables

	Q4	SCHOOL	LOCCNTY1	SAMEDAY	MALE	COLLGRAD	INC3050	INC5070
Q4	1.00000	-.33542	.35359	.12642	.07749	-.02266	-.08460	-.05159
SCHOOL	-.33542	1.00000	-.32570	-.46870	-.22414	.22950	.11332	-.01731
LOCCNTY1	.35359	-.32570	1.00000	.09275	-.01064	.03968	.04364	.14756
SAMEDAY	.12642	-.46870	.09275	1.00000	.22094	-.15566	-.09874	-.02624
MALE	.07749	-.22414	-.01064	.22094	1.00000	.03504	.06544	-.06504
COLLGRAD	-.02266	.22950	.03968	-.15566	.03504	1.00000	-.05702	.01731
INC3050	-.08460	.11332	.04364	-.09874	.06544	-.05702	1.00000	-.33485
INC5070	-.05159	-.01731	.14756	-.02624	-.06504	.01731	-.33485	1.00000

	Q4	SCHOOL	LOCCNTY1	SAMEDAY	MALE	COLLGRAD	INC3050	INC5070
INC70100	-.00958	.11573	-.20472	-.00837	-.10655	-.02849	-.28731	-.31580
INCGT100	.13753	-.17770	-.02192	.07463	.12430	.08622	-.26542	-.29174
AGE	.21579	-.19539	.11604	.18125	.13667	-.06969	-.11440	-.03945
WORD	-.00100	.13356	-.15090	.15282	-.02026	-.13356	-.01233	-.01677
BROCHURE	-.18016	.41051	-.07993	-.29655	-.08797	.13567	-.02216	.05400
NEWSADVE	.17913	-.25763	.00572	.07819	.12984	-.03574	-.01695	-.11364

	INC70100	INCGT100	AGE	WORD	BROCHURE	NEWSADVE
INC70100	1.00000	-.25032	.00711	.04755	.07136	-.02263
INCGT100	-.25032	1.00000	.23258	-.04603	-.13938	.07362
AGE	.00711	.23258	1.00000	.01901	-.12549	.10701
WORD	.04755	-.04603	.01901	1.00000	-.25241	-.34742
BROCHURE	.07136	-.13938	-.12549	-.25241	1.00000	-.19095
NEWSADVE	-.02263	.07362	.10701	-.34742	-.19095	1.00000

Vita

Chris Martin Lindborg was born in LaPorte, IN, on September 25, 1980, the son of Edgar Kent Lindborg and Mona Christine Fredriksen. After completing his work at LaPorte High School, he went on to Purdue University where he studied Agricultural Economics and received his Bachelor of Science in August 2003. After receiving his Bachelor of Science, he studied Agricultural Economics at the University of Tennessee and is currently pursing a Master of Science. He moved to Chicago in June 2006 and currently has a career as a commodity analyst/broker with Downes-O'Neill LLC.