ECONOMIC CONTRIBUTION OF BICYCLE EVENT VISITORS IN MINNESOTA

Minnesota communities host over 100 bicycle events in a year. Events include charity rides, community rides, road races, trail rides, and mountain bike races. As visitors attend events, they create economic activity in the host community. This task (Task 8) measures the total economic contribution of bicycle event visitors in Minnesota.

Methods

Input-output modeling is the primary method in this analysis. The analysis relies on the input-output model IMPLAN.

Visitors are the focus of this analysis. A visitor is a person who travels more than 50 miles or stays overnight in the area to attend. The focus on visitors follows input-output theory. In their seminal paper, Crompton, Lee, and Shuster (2001) state, "Only spending by visitors who reside outside the town and whose primary motivation for visiting is to attend the event, or who stay longer in the town, and spend more because of it, should be included." In essence, the argument for concentrating on visitors is because visitors bring new money into the community.

Economic activity can be measured in direct, indirect, and induced effects. Bicycle event visitors' spending creates a change in the economy (direct effect). As new spending by visitors moves around the economy, it creates indirect and induced effects. Direct effects can be quantified through surveys. Input-output models calculate indirect and induced effects.

This analysis does not include the bicycle industry in Minnesota. The industry was studied in Task 4.

Direct Effect

Four pieces of information are required to measure the direct effect of bicycle event visitors in Minnesota:

- average expenditure per person per day
- number of event attendees
- ratio of event attendees that are visitors
- number of days per event.

With this information, the total amount of spending by bicycle event visitors can be calculated. This section of the report explains how each piece of data was collected.

Average Expenditure per Person per Day

To quantify the daily average expenditure per person, University of Minnesota conducted a survey of bicycle event attendees. In Task 6, the University compiled a list of bicycle events in Minnesota. From this list, a sample of events was selected for direct surveying of attendees. Task 7 developed an online questionnaire and a plan to survey visitors from selected events. The questionnaire was developed

based on bicycling event characteristics, input from bicycling event organizers, feedback from the project's Technical Assistance Panel, and Tourism Center's earlier survey work with other events.

Altogether, 26 bicycling events were surveyed, including ten non-races, five high school races (parents completed the online questionnaire), four mountain bike events (three races and one non-race), three races, three bike tours, and one fundraiser. Among the 26 events, three were free, and the rest had registration fees. One event took place in spring, 14 in summer, and 11 in fall.[1] Four events took place in the MnDOT district 1, one in district 2, seven in district 3, three in district 6, two in district 7, and five in the metro district.

To survey bicycle event participants, the Principal Investigator (PI) contacted each event's organizer. Each organizer reviewed and approved the online questionnaire. For each event, the PI created a link, which the event organizer distributed to the participants immediately after the event ended. The link remained open for 14 days to collect responses. The link was closed after 14 days, as completing the survey more than 14 days after the event may reduce recall accuracy.

For each surveyed event, the responses were downloaded and saved into an Excel file. Of the 1,257 survey participants, 922 responded to the questions regarding event spending. These 922 responses were included in the analysis.[2] Participants provided estimates of their travel party's spending in the area for the entire stay. Responses were adjusted to account for the number of people in the party and length of stay to arrive at the daily per person expenditure amounts. The responses were then averaged.

Number of Event Attendees

The number of bicycle event attendees in the state was quantified via an online search and survey of events. Bicycle races (timed events) post their results online. An online search of all the bike events yielded the total number of participants for 30 events. A handful of events had blog postings or media accounts providing the number of participants. An additional 48 events were contacted either by phone or email to request the number of participants.

In total, Extension collected the number of participants for 66 events, which represents 65 percent of all events. The total number of event attendees was calculated by multiplying the average number of attendees per event by the total number of events.

The event list in Task 6 was the basis for determining the number of events held in 2015. The comprehensive list from Task 6 was modified to include only events for which there was evidence the event was held in 2015. The list was also modified to only include events that reflect the events surveyed. For example, all of the events surveyed were organized rides or races. The list contained a few bicycle-related events that did not feature a ride or race.

Ratio of Event Attendees That Are Visitors

[1] Spring includes March, April, and May; summer includes June, July, and August; fall includes September, October, and November.
[2] The 922 responses correspond to a 95 percent confidence level with plus or minus 3.2 percent sampling error.

All participants in the bicycling events selected for surveying received an invitation to participate. The survey began with a series of screening questions. Respondents were asked if they traveled more than 50 miles to attend the event or if they stayed overnight in the area due to the event. Participants responding "yes" to either question were directed to complete the survey. Participants responding "no" to either question were directed to the survey's end. Comparing the number of participants completing the entire survey (visitors) to the number being directed to the end of the survey (locals) provides a ratio of visitors to locals.

Number of Days per Event

The number of days per event was collected when the list of bicycle events was compiled in Task 6.

Indirect and Induced Effects

Indirect effects are related to secondary changes in economic activity. These are changes occurring in the local economy because bicycle event visitors purchase goods (groceries, for example) and related services (e.g., bicycle repair services). These purchases then spur additional purchases by the business. For example, visitors pay for hotel and other overnight stays. The operators of these lodging facilities then purchase goods and services across their supply chain. Total indirect effects are the sum of these changes across an economy.

Induced effects are those associated with a change in economic activity due to spending by the employees (labor) of businesses and by households. In this analysis, these are economic changes related to spending by employees of businesses visited by bicycle event visitors, such as restaurants and hotels.

Input-output models capture the flow of goods and services throughout an economy. Once the pattern of the flow is established, the models can calculate the indirect and induced impacts of a change in the economy. This analysis used the input-output model IMPLAN.[3]

Results

In 2015, bicycle event visitors in Minnesota supported $14.3 million of economic activity. This includes $4.6 million in labor income and 150 jobs. The following section explains how these figures were calculated.

[3] The analysis was conducted with the IMPLAN model version 3.0 and data from 2013. The type SAM multipliers were used. There are several types of multipliers – type I, type II, and type SAM. SAM multipliers are often preferred because they use the social accounting matrix (SAM) to calculate the indirect and induced effects. The social accounting matrix provides detailed data on household income expenditures, allowing for a more accurate measurement of induced effects. Type I multipliers do not include any household impacts. Type II multipliers assume all labor income payments are to local residents. The SAM multiplier allows for social insurance and in-commuters, thus more accurately reflecting complex economies.
The retail sales data were margined when entered into the IMPLAN model. Margining is performed on retail sales data since all output in the IMPLAN model is in producer prices and retail sales are in purchaser prices. Margining breaks down a retail sale into the components of the sale. It measures the value of the sale minus the cost of goods sold, commonly known as the retail mark-up. The retail mark-up is the direct local impact used by the model to calculate the economic contribution.

Direct Effect

In 2015, the average bike event visitor spent $121.20 per day. Major expenses include the event registration fee ($29.60), lodging ($25.50), and dining out ($22.70). Direct effects include event visitors' reported spending during the event. Lodging and dining out per person may appear to be lower than expected. For certain participants, lodging and food are included in the event registration. Therefore, event registration also reflects lodging and food.

Table 1: Average Daily Expenditures per Bicycle Event Visitor

Event registration	$29.60
Lodging	$25.50
Restaurants/bars	$22.70
Transportation (includes gas)	$11.90
Biking equipment	$11.20
Groceries	$6.90
Shopping	$4.90
Bike-event related	$4.50
Miscellaneous	$2.20
Recreation & entertainment (non-biking)	$1.10
Other biking-related	$0.70
Total	$121.20

Estimates based on surveys collected by University of Minnesota

University of Minnesota identified 101 bicycling events in Minnesota. On average, each event attracts 610 participants. Thus, there were an estimated 61,610 bicycle event participants in 2015. Of those, 50 percent identified as meeting the definition of visitor. In 2015, Minnesota bicycling events hosted an estimated 30,805 visitor participants (Table 2).

Table 2: Total Estimated Number of Bicycle Event Visitor Participants

Total Number of Participants	Percent of Visitors	Total Number of Visitor Participants
61,610	50%	30,805

Estimates based on information collected by University of Minnesota

People active in an event often have a travel friend. Survey results agree. Each visiting event participant brings an additional 0.6 person along. This additional person is not in active in the event. There are an estimated 19,407 visitors traveling, but not participating in the event. In total, an estimated 50,212 visitors traveled as a result of bicycling events in the state (Table 3).

Table 3: Total Estimated Number of Visitors Associated with Bicycle Events

Total Number of Visitor Participants	Additional People Per Participant	Total Number of Visitor Non-Participants	Total Number of Visitors
30,805	0.6	19,407	50,212

Estimates based on information collected by University of Minnesota

In 2015, bicycle event visitors spent an estimated $8.5 million in the course of attending the events (Table 4). On average, bicycle events lasted 1.4 days.

Table 4: Total Direct Effect of Bicycle Event Visitors in Minnesota, 2015

Daily Expenditure per Person	Average Number of Days	Total Number of Visitors	Total Visitor Spending
$121.20	1.4	50,212	$8,519,970

Estimates by University of Minnesota

Total Economic Contribution

In 2015, visitors supported an estimated $14.3 million of economic activity (Table 5). This includes $4.6 million in labor income. Bike event visitors also generated 150 jobs.

Table 5: Total Economic Contribution of Bicycle Event Visitors in Minnesota, 2015

	Output	Employment	Labor Income
Direct	$8,519,970	110	$2,641,430
Indirect	$2,601,660	17	$922,660
Induced	$3,131,510	23	$1,057,360
Total	$14,253,140	150	$4,621,450

Estimates by University of Minnesota

Areas of Future Research

There are several items worth discussion here. First, this analysis focuses on bicycle event visitors. It is not a full measure of bicycle tourism. Second, this analysis does not account for the spending by event organizations. The visitors' spending on event registration fees does account for some spending by event organizers. However, it does not account for registration fees paid by event participants who live locally nor does it account for sponsorship money. On a related note, some bicycle events also fundraise for causes. The analysis here does not explore the economic and social value of fundraising.

Residents and quality of life are other areas of future research. The analysis here focuses on visitors. Bike events also affect residents. Further, tourism and bike events can also increase the quality of life in an area. This study does not investigate quality of life.

Task 9 (pending task) will provide a list of the events surveyed for this task. The task will also include key characteristics of the events. Under Task 9, events that collected more than 40 responses will also receive a summary report with information from the event.

References

Crompton, J.L., Lee, S., & Shuster, T.J. (2001). A guide for undertaking economic impact studies: the Springfest example. *Journal of Travel Research*, *40* (1), 79-87.