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TOURISM CENTER

Profiling Participants of Minnesota bicycling events: Summary Report

Authored by Xinyi Qian, Ph.D.

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Authored by Xinyi Qian, Ph.D., University of Minnesota Tourism Center

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EXECUTIVE SUMMARY

From April to October 2015, the University of Minnesota Tourism Center surveyed participants of 26 bicycling events, as a part of a larger study that examines the economic impact and health effects of bicycling in Minnesota, funded by the Minnesota Department of Transportation. The purpose of the survey is to profile bicycling event participants, including their demographic and personal characteristics, trip purpose, activities, spending, and planning, as well as travel behavior related to attending the events. This task deliverable describes survey methodology and presents survey findings by bicycling event type.

METHODS

An online 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. To survey bicycle event participants, the author contacted the organizer of each event. Each organizer reviewed and approved the online questionnaire. For each event, the author created a link, which the event organizer distributed to the participants immediately after the event ended. Altogether, 1172 eligible participants from the 26 events completed the online questionnaire. Data from the online survey was downloaded from Qualtrics, then cleaned, checked, and analyzed in SPSS (version 23.0), a social science statistical analysis software. For each event that had at least 40 responses, a summary report specific to that event was developed and shared with the event organizer.

RESULTS

Respondents

Different types of bicycling events tend to attract different types of attendees, although similarities also exist. All six types of events mainly attract white, non-Hispanic participants. Bike tours tend to attract older, well-educated people with high income. Fundraising events tend to attract participants from different age and income ranges as well as different educational levels. High-school race participants are likely from families with higher income and well-educated parents. Mountain biking events tend to attract younger, high-income, and well-educated males. Non-race rides tend to attract well-educated males from high income levels in different age ranges. Lastly, races tend to attract young, higher-income, and very highly educated males.

In terms of gender, there were more male than female participants across all event types, but particularly so with mountain biking events, non-race rides, and races. The average age of event participants ranged from 42 to 61, with that of bike tour participants the oldest and that of mountain biking events and races the youngest. The household income of bicycling event participants skewed towards the higher end, as no more than 25 percent of participants in any type of events had a household income lower than $50,000 (median household income in the U.S. is close to $53,000). Across all event types, at least two-thirds of respondents had a Bachelor's or more advanced degree. The education level of participants in the fundraising event was the most diverse, while that of those participating in races was the least diverse.

Most biking event participants came from Minnesota, with a small percentage from Wisconsin. The Minneapolis-St. Paul-Bloomington Core Based Statistical Area was the most frequently identified place of origin, although the percentages varied widely among different event types.

At least half of respondents had previously attended the surveyed bike event, with about 75 percent of respondents from the fundraising event (74.4 percent) and high school races (76.6 percent) having attended the event previously. The average number of years that respondents had attended bike tours (5.55), the fundraising event (6.56), and non-race rides (5.26) was significantly more than that of respondents from high school races (2.21). The maximum number of years that a high school student is eligible to attend high school races is three or four (i.e., the number of years a student attends high school). Therefore, it is not surprising the number of years one had attended a bike event was the shortest among high school race participants.

Trip information

The event area was the primary destination for at least 87 percent of survey respondents across all event types. Most respondents spent one or two nights on the entire trip. As far as the event area is concerned, high school race participants were much more likely to spent one night in the event area. Respondents from mountain biking events, non-race rides, and races were similarly likely to spend one or two nights in the event area.

Hotel/motel was the most frequently chosen lodging facility by respondents from all event types except for bike tours (which was tent). At least 80 percent of respondents from all event types arrived at the event area or starting point by a car, van, or truck.

The average travel group size of survey respondents ranged from fewer than three people to more than five people. Specifically, the average travel group size of bike tour participants (5.3) was significantly bigger than that of non-race ride participants (2.6). The average number of people from one's travel group who participated in the event was significantly higher among bike tour participants (5.45) than those in high school races (2.12), mountain biking events (2.46), and non-race rides (2.85).

In terms of travel group type, participants in bike tours and races were most likely to travel alone or with friends. Participants in high school races and mountain biking events were most likely to travel with family. Participants in the fundraising event and non-race rides traveled either alone, with family, or with friends.

Bike tour participants were most likely to travel with people under 18 years old and older than 70. High school race participants were most likely to travel with people 36-50 years old. Participants in the fundraising event and non-race rides were most likely to travel with people 51-69 years old. Participants in the mountain biking events and races were most likely to travel with people 36-50 years old.

Total personal spending by bike tour participants ($497.07) was significantly higher than that by participants in all other types of biking events. The total personal spending by the fundraising event participants ($325.55) was significantly higher than that by participants in high school races ($89.85), mountain biking events ($93.43), and non-race rides ($102.73). Moreover, race participants had higher total personal spending ($232.57) than those participating in high school races, mountain biking events, and non-race rides.

Survey respondents participated in a variety of activities. The most frequently participated-in activity was dining out (except for the fundraising event participants). Driving on designated byways was one of the four most frequently participated-in activities among participants of all event types. Bike tour participants were also likely to attend sporting events and visit museums. Participants in the fundraising event were likely to participate in sightseeing and visit friends/relatives. High school race participants tended to go shopping and biking (outside of attending the event). Mountain biking

event participants tended to go sightseeing and biking (outside of attending the event). Non-race participants tended to go shopping and visit friends/relatives. Lastly, race participants were likely to go sightseeing and participate in nightlife/evening entertainment.

Satisfaction with bicycling events

Across all even types, respondents were more than satisfied with the events, with mean satisfaction level ranging between 4.38 and 4.72 (1=very dissatisfied and 5=very satisfied). There is no significant difference in mean satisfaction level across event types.

There are multiple enjoyable attributes to the bike events. Bike tour participants most enjoyed social interaction and the ride. Participants in the fundraising event most enjoyed social interaction and the challenge of the event. Participants in high school races and mountain biking events most enjoyed the ride and the challenge of the event. The most enjoyable attributes for non-race participants were the scenic route and the ride. For race participants, they were the scenic route and the challenge of the ride.

Trip purposes, activities, and planning

To ride my bike was the most frequently identified reason to attend a biking event (except for fundraising event participants). The second most frequently identified reason was social interaction for bike tour participants, the route for non-race participants, and challenge oneself for participants in high school races, mountain biking events and races. For fundraising event participants, the two most frequently identified reasons were charity and social interaction.

The planning timeframe of participants in different types of biking events differed significantly. Participants in bike tours, the fundraising event, and races were the most likely to plan their trip more than 13 weeks in advance. Non-race riders were the most likely to plan their trips 5-8 weeks in advance. The planning timeframe of high school race participants spread out quite evenly across less than two weeks, 2-4 weeks, and 5-8 weeks in advance. Mountain biking event participants tended to cluster on the two ends of the spectrum (less than two weeks and more than 13 weeks in advance).

Bike event website, word of mouth, and Facebook were the most frequently used information sources across all event types. The only exception was high school race participants: instead of Facebook, the third most frequently used information source was area/destination visitor guide.

Participants of Minnesota Bicycling Events

INTRODUCTION

From April to October 2015, the University of Minnesota Tourism Center surveyed participants of 26 bicycling events, as a part of a larger study that examines the economic impact and health effects of bicycling in Minnesota, funded by the Minnesota Department of Transportation. This task deliverable describes survey methodology and presents survey findings by bicycling event type.

METHODOLOGY

QUESTIONNAIRE

An online 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. Questionnaire sections included trip motivation, spending, activities, accommodations, transportation, group composition, planning and information sources, and basic demographics. Qualtrics is the online survey platform used for questionnaire creation, distribution and collection. A copy of the questionnaire template can be found in Appendix A.

SAMPLING PLAN

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 (Table 1). 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.

SURVEY PROCESS

To survey bicycle event participants, the author contacted the organizer of each event. Each organizer reviewed and approved the online questionnaire. For each event, the author created a link, which the event organizer distributed to the participants immediately after the event ended. The online survey remained open for no longer than 15 days to gather responses. It was closed after 15 or fewer days to ensure appropriate recall accuracy level.

Altogether, 1172 eligible participants from the 26 events completed the online questionnaire. The number of responses these events provided ranged widely, from one to 154 (Table 1).

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[1] Spring includes March, April, and May; summer includes June, July, and August; fall includes September, October, and November.

Table 1: Characteristics of the 26 surveyed events.

Bike Event Name	Event Dates	Event type	Location	MnDOT district	#surveys received	#non-tourists screened out
Tour of Minnesota	6/12-19/2015	bike tour	Southern MN	--	65	--
Bicycling Around MN	8/13-16/2015	bike tour	Northern MN	--	154	--
Headwaters to Hills	8/26-9/2/2015	bike tour	Entire State	--	13	--
Red Ribbon Ride	7/16-19/2015	fundraiser	Twin Cities and Southeastern MN	--	43	--
High School race in Austin	9/20/2015	high school race	Austin	6	2	0
High School race in Cuyuna Lakes	10/11/2015	high school race	Cuyuna Lakes Trail	3	57	5
High School race in Mankato	10/25/2015	high school race	Mt. Kato	7	33	4
High School race in Rochester	10/4/2015	high school race	Game Haven	6	1	0
High School race in St. Cloud	9/13/2015	high school race	Jail Trail	3	1	0
Cuyuna Klunker Ride	8/8/2015	mountain bike non race	Cuyuna Lakes Crosby	3	10	11
Cuyuna Crusher	6/27-28/2015	mountain bike race	Cuyuna Lakes Crosby	3	74	40
The Great Hawk Chase	8/16/2015	mountain bike race	Duluth	1	80	31
Salsa Oremageddon	10/10/2015	mountain bike race	Cuyuna Lakes Crosby	3	61	12
Tour de Pepin	6/6/2015	non race	Lake City	6	46	30
MN Ironman	4/26/2015	non race	Southeastern MN	M	47	189
Bike Bemidji: Loop the Lake	6/20/2015	non race	Bemidji	2	41	101
Great River Energy Mesabi Trail Tour	8/1/2015	non race	Mesabi Trail	1	122	47
Gitchi Gami North Shore Ride	8/15/2015	non race	North Shore	1	23	13
Mankato River Ramble	10/11/2015	non race	Mankato	7	87	43
Minneapolis Bike Tour	9/20/2015	non race	Minneapolis	M	1	15
North Star Grand Prix	6/17-21/2015	non race	Twin Cities and Southeastern MN	M	21	--
St. Paul Classic	9/13/2015	non race	St. Paul	M	28	164
Tour of Saints	7/12/2015	non race	St. Joseph	3	123	28
Heck of the North	10/3/2015	race	Two Harbors	1	66	44
RAAM	7/18/2015	race	Twin Cities	M	2	2

APPROACHING AND SCREENING RESPONDENTS

Three screening questions assured each survey respondent is an adult tourist (Figure 1). For the purpose of this study, a tourist was anyone who traveled at least 50 miles from his or her primary residence to the event starting point or spent at least one night away from his or her primary residence. Table 1 documents the percentage of respondents who were screened out as non-tourists.

I.   Are you 18 years old or older? ❑ Yes (Continue to question II)   ❑ No (survey ends)
II. Do you live 50 miles or more to the [area name]?   ❑ Yes (continue directly to Q1) ❑ No (continue to question III)
III. Did you spend at least one night in the [area name]? ❑ Yes (continue to Q1)   ❑ No (survey ends)

Fig. 1: Screening questions for potential respondents to the online questionnaire.

Participants of bike tours and the fundraiser were not asked the three screening questions, because these two types of events lasted for multiple days and traveled to multiple areas, making their participants tourists in nature.

ANALYSIS

Data from the online survey was downloaded from Qualtrics, then cleaned and checked in SPSS (version 23.0), a social science statistical analysis software. For each event that had at least 40 responses, a summary report specific to that event was developed and shared with the event organizer. Data from the 26 events was merged into one file for further analysis.

Analysis provided frequencies, means, medians, and standard deviations to describe the sample and provide information on variables of interest. Analysis provided frequencies to describe the sample of event attendees and to provide information on variables of interests. Means, medians, and standard deviations were provided where applicable. Comparison between attendees of different types of bicycling events was conducted using chi-square tests to compare categorical variables and ANOVA (Analysis of Variance) to compare means.

RESULTS

RESPONDENTS

Demographics

Different types of bicycling events tend to attract different types of attendees, although similarities also exist. All six types of events mainly attract white, non-Hispanic participants. Bike tours tend to attract older, well-educated people from high income levels. Fundraising events tend to attract participants from different age and income ranges as well as different educational levels. High-school race participants are likely from families with higher income and well-educated parents. Mountain biking events tend to attract younger, high-income, well-educated males. Non-race rides tend to attract well-educated males from high income levels but different age ranges. Lastly, races tend to attract young, higher-income, and very highly educated males.

In terms of gender, there were more male than female participants across all event types (Table 2). There was also significant difference in gender composition across event types: while there were approximately 40 percent female participants in bike tours and the fundraising event, there were no more than 20 percent female riders in mountain biking events, non-race rides, and races (χ^2=51.25, p<0.0005).

Table 2: Gender of survey respondents, by bicycling event type (n=1075).

	Percentage		Statistics	
	Male	**Female**	χ^2	**Sig.**
Bike tour (n=213)	59.6%	40.4%		
Fundraiser (n=33)	60.6%	39.4%		
Mountain biking event (n=204)	79.4%	20.6%	51.25	<0.0005
Non-race/Ride (n=479)	54.7%	15.3%		
Race (n=60)	85.0%	15.0%		
It is possible a family has more than one high school students participating in the race, so high school race participants were not included in this analysis.				

The average age of event participants ranged from 42 to 61 and differed significantly across event types (F=86.80, p<0.0005; Table 3). The average age of bike tour participants was the oldest, and that of mountain biking events and races was the youngest. Participants of the fundraising event and non-race rides were significantly younger than bike tour participants but significantly older than mountain biking event participants. Non-race ride participants were also significantly older than race participants.

In terms of age range, the two biggest age ranges for bike tours and non-race rides were 51-60 and 61-70 years old (Table 4). For the fundraising event, the two biggest age ranges were 41-50 and 51-60 years old. The highest percentages of participants in mountain biking events and races were in the 31-40 and 41-50 age ranges.

Table 3: Descriptive statistics of survey respondents' age, by bicycling event type (n=1087).

	Descriptive statistics			ANOVA	
	Mean	**Median**	**Standard deviation**	***F***	**Sig.**
Bike tour (n=212)	60.89_{abcd}	62	9.31		
Fundraiser (n=43)	49.35_{ae}	52	13.66		
Mountain biking event (n=206)	41.96_{bef}	43	9.99	86.80	<0.0005
Non-race/Ride (n=481)	53.40_{cfg}	56	12.15		
Race (n=59)	43.51_{dg}	44	10.12		
All high school race participants were high school students younger than 18 years old.					

Note: Means with pairing subscripts within rows are significantly different at the *p*<0.05 based on Bonferroni post hoc paired comparisons.

Table 4: Percentage of survey respondents in various age brackets, by bicycling event type (n=1087).

	Percentage					
	18-30	**31-40**	**41-50**	**51-60**	**61-70**	**70+**
Bike tour (n=212)	0%	2.8%	10.4%	30.7%	43.4%	12.7%
Fundraiser (n=43)	16.3%	9.3%	23.3%	30.2%	16.3%	4.7%
Mountain biking event (n=206)	15.5%	28.2%	39.3%	12.6%	4.4%	0%
Non-race/Ride (n=481)	7.3%	9.1%	15.6%	38.9%	24.9%	4.2%
Race (n=59)	6.8%	28.8%	40.7%	22.0%	0%	1.7%
All high school race participants were high school students younger than 18 years old.						

The household income of bicycling event participants skewed towards the higher end. The median household income in the U.S. is close to $53,000. According to survey results, no more than 25 percent of participants in any type of events had a household income lower than $50,000 (Table 5). Participants' household income also differed significantly by event type (χ^2=50.00, *p*<0.0005). The highest percentages of high school race participants came from households in the $150,000 or more and $100,000-$149,999 ranges. The highest percentages of participants in mountain biking events, non-race rides, and races were in the $150,000 or more and $50,000-$99,999 ranges. In terms of bike tours and the fundraising events, the two biggest income ranges were $50,000-$99,999 and $100,000-$149,999. Those with a household income lower than $50,000 were more likely to participate in bike tours, the fundraising event, and non-race rides.

Table 5: Percentage of survey respondents in pre-tax income groups, by bicycling event type (n=1025).

	Percentage					Statistics	
	Less than $25,000	**$25,000-$49,999**	**$50,000-$99,999**	**$100,000-$149,999**	**$150,000 or more**	**χ^2**	**Sig.**
Bike tour (n=195)	1.0%	14.9%	36.9%	25.6%	21.5%		
Fundraiser (n=42)	7.1%	16.7%	35.7%	23.8%	16.7%		
High school race (n=83)	0.0%	2.4%	18.1%	30.1%	49.4%		
Mountain biking event (n=196)	4.1%	9.2%	31.1%	25.5%	30.1%	50.00	<0.0005
Non-race/Ride (n=450)	3.8%	12.7%	30.7%	25.1%	27.8%		
Race (n=59)	1.7%	5.1%	28.8%	25.4%	39.0%		

Across all event types, at least two-thirds of respondents had a Bachelor's or more advanced degree (Table 6). The education level of participants in the fundraising event was the most diverse (with 32.7 percent not having a Bachelor's degree), while that of those participating in races was the least diverse (with only 11.7 percent not having a Bachelor's degree) (χ^2=67.97, p<0.0005).

Table 6: Educational level of survey respondents, by bicycling event type (n=1102).

| | Percentage | | | | | | Statistics | |
	Less than high school	High school	Some college	Associate degree	BA/BS	Graduate school	χ^2	Sig.
Bike tour (n=213)	0.0%	3.3%	8.0%	8.0%	33.8%	46.9%		
Fundraiser (n=43)	0.0%	4.7%	14.0%	14.0%	34.9%	32.6%		
High school race (n=87)	4.6%	2.3%	4.6%	8.0%	39.1%	41.4%		
Mountain biking event (n=207)	0.0%	1.0%	11.6%	12.6%	48.8%	26.1%	67.97	<0.0005
Non-race/Ride (n=492)	0.4%	3.7%	9.6%	7.5%	39.0%	39.8%		
Race (n=60)	0.0%	0.0%	6.7%	5.0%	48.3%	40.0%		

Ethnically, almost all of the respondents were of non-Hispanic and non-Latino background (Table 7). At least 87 percent of respondents are white for each event type. While small sample sizes for non-white respondents prohibited statistical comparison, some nominal differences are noted. At least 1.7 percent of respondents from the fundraising event and races self-identified as Asians or African Americans. About 0.5 percent of respondents from bike tours and non-race rides self-identified as American Indian or Alaska Native. No event attracted any Native Hawaiian/Other Pacific Islander.

Table 7: Ethnic composition of survey respondents, by bicycling event type (n=1052).

| | Percentage | | Statistics[1] | |
	Hispanic/Latino	Non-Hispanic/ Non-Latino	χ^2	Sig.
Bike tour (n=201)	0.5%	99.5%		
Fundraiser (n=40)	2.5%	97.5%		
Mountain biking event (n=198)	0.5%	99.5%	--	--
Non-race/Ride (n=473)	1.1%	98.9%		
Race (n=58)	3.4%	96.9%		
It is possible a family has more than one high school students participating in the race, so high school race participants were not included in this analysis.				

[1]No statistical comparison was performed as some cell sizes are too small.

Table 8: Racial composition of survey respondents, by bicycling event type (n=1068).

	Native Hawaiian/Other Pacific islander	American Indian or Alaska Native	Asian	Black/African-American	White	Other	Statistics[1]	
							χ^2	Sig.
Bike tour (n=209)	0.0%	0.5%	0.0%	0.5%	98.6%	0.5%		
Fundraiser (n=40)	0.0%	0.0%	2.5%	2.5%	87.5%	7.5%		
Mountain biking event (n=201)	0.0%	0.0%	0.0%	0.5%	95.5%	4.0%	--	--
Non-race/Ride (n=475)	0.0%	0.6%	0.2%	0.2%	97.1%	1.9%		
Race (n=59)	0.0%	0.0%	3.4%	1.7%	94.9%	0.0%		
It is possible a family has more than one high school students participating in the race, so high school race participants were not included in this analysis.								

[1]No statistical comparison was performed as some cell sizes are too small.

Primary residence

Most biking event participants are Minnesotans (Table 9). Over 95 percent of participants in races (95.7 percent), the fundraising event (97.6 percent), and high school races (100 percent) came from Minnesota. About 86 percent of participants in non-race rides (86.8 percent) and mountain biking events (86.3 percent) as well as 71.5 percent of bike tour participants came from Minnesota. Wisconsin was the second most frequently identified state of origin (except for high school races), particularly among participants in bike tours (15.1 percent) and mountain biking events (8.1 percent). Bike tours, mountain biking events and non-race rides also attracted small percentages of participants from Iowa and North Dakota each. Bike tours also attracted a small percentage of participants from Illinois.

The Minneapolis-St. Paul-Bloomington (MSPB) Core Based Statistical Area (CBSA) was the most frequently identified place of origin (Table 9), although the percentages varied widely among different event types. All high school race participants, 97.6 percent of the fundraising event participants, and 80.9 percent of race participants came from MSPB. Meanwhile, 56.1 percent of non-race participants, 60.9 percent of bike tour participants and 67.5 percent of mountain biking event participants came from MSPB. Duluth was the second most frequently identified place of origin among participants of non-race rides (8.1 percent), races (6.4 percent), and mountain biking events (3.6 percent). The rest of participants came from a variety of CRSAs. Figures 2 through 7 showed the trade area for each of the six types of events.

Table 9: Primary place of residence of survey respondents, by bicycling event type (n=1058)

	Top states		Top Core Based Statistical Areas (CBSA)	
	State	**Percent (%)**	**CBSA**	**Percent (%)**
Bike tour (n=209)	Minnesota	71.5	Minneapolis-St. Paul-Bloomington, MN-WI (MSPB)	60.9
	Wisconsin	15.1	Chicago-Naperville-Elgin, IL-IN-WI	3.9
	Illinois	5.0	Bemidji, MN	2.8
	Iowa	4.5	Fargo, ND-MN	2.2
	North Dakota	1.7	La Crosse-Onalaska, WI-MN	2.2
Fundraiser (n=43)	Minnesota	97.6	MSPB	97.6
	Wisconsin	2.4	Green Bay, WI	2.4
High school race (n=65)	Minnesota	100	MSPB	100
Mountain biking events (n=198)	Minnesota	86.3	MSPB	67.5
	Wisconsin	8.1	Duluth, MN-WI	3.6
	Iowa	3.6	Des Moines-West Des Moines, IA	3.1
	North Dakota	1.5	Brainerd, MN	2.5
			Faribault-Northfield, MN	2.5
			Fargo, ND-MN	2.5
			Mankato-North Mankato, MN	2.0
Non-race (n=484)	Minnesota	86.8	MSPB	56.1
	Wisconsin	3.9	Duluth, MN-WI	8.1
	Iowa	2.9	Rochester, MN	2.9
	North Dakota	2.7	Grand Forks, ND-MN	1.7
			St. Cloud, MN	1.5
Race (n=59)	Minnesota	95.7	MSPB	80.9
	Wisconsin	2.1	Duluth, MN-WI	6.4
	North Dakota	2.1	Faribault-Northfield, MN	4.3
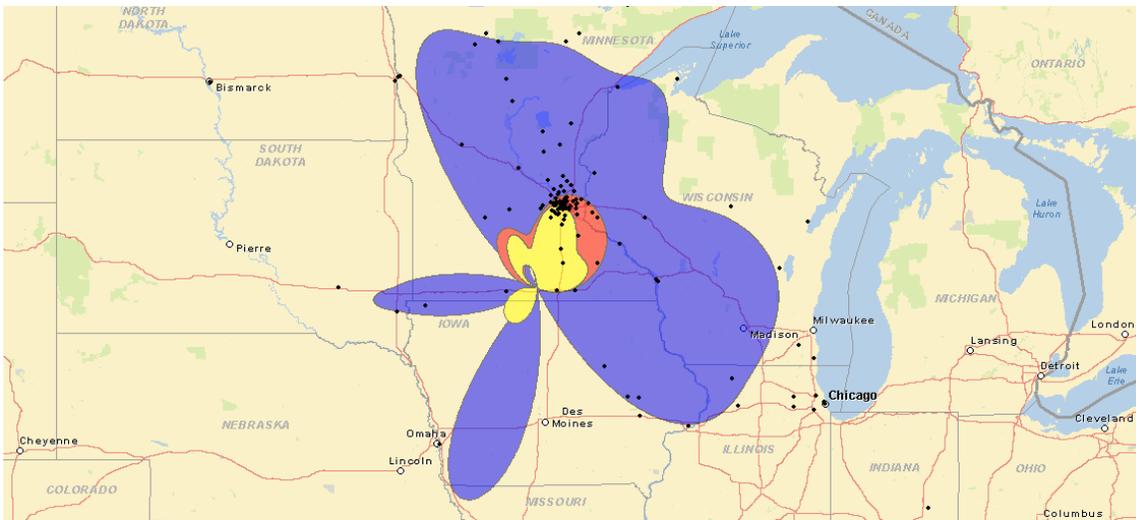
**Fig. 2:** Trade area of surveyed bike tours (n=209).
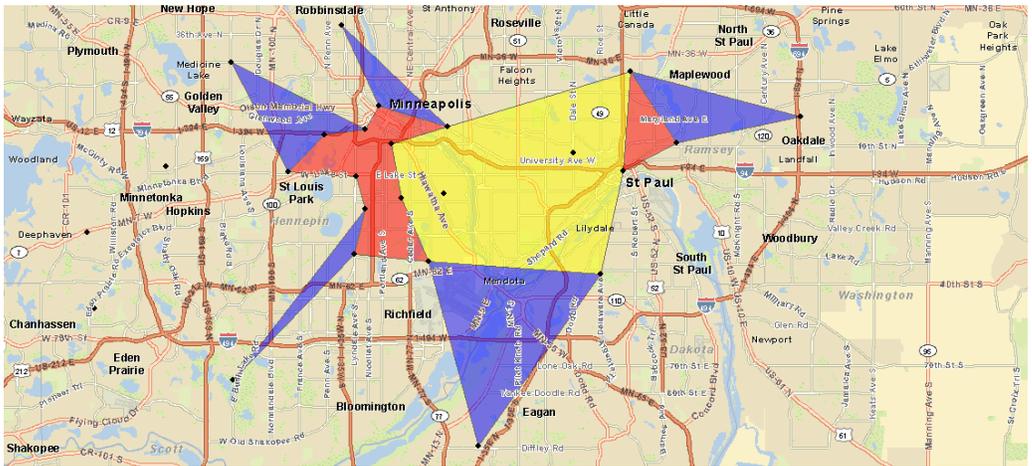
Fig. 3: Trade area of the surveyed fundraising event (n=43).
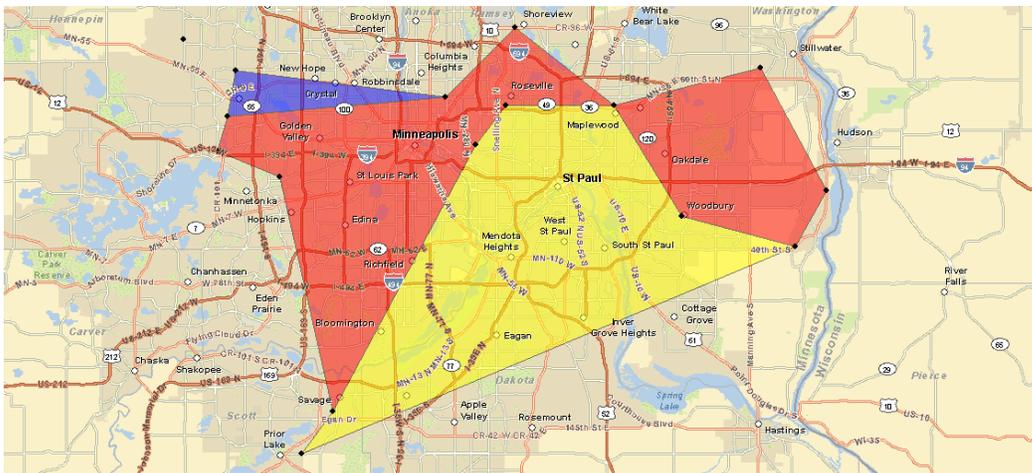
Fig. 4: Trade area of surveyed high school races (n=65).
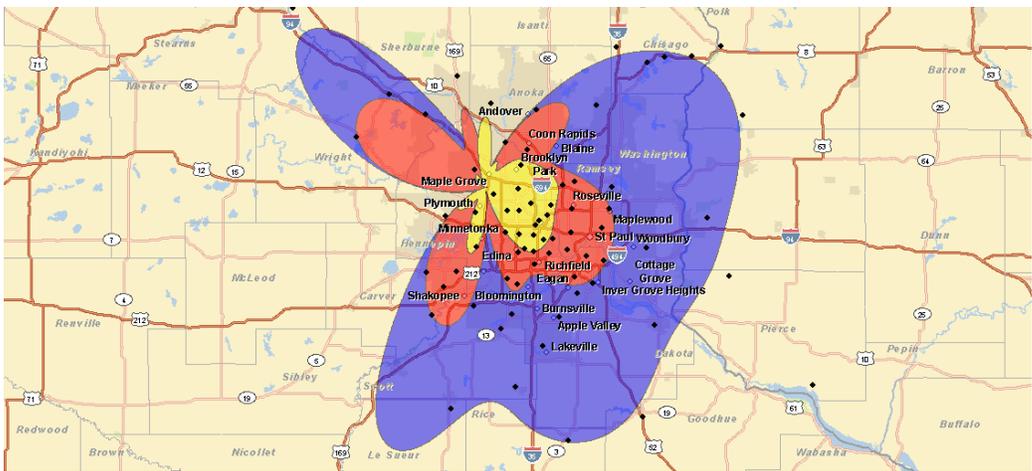
Fig. 5: Trade area of surveyed mountain biking events (n=198).

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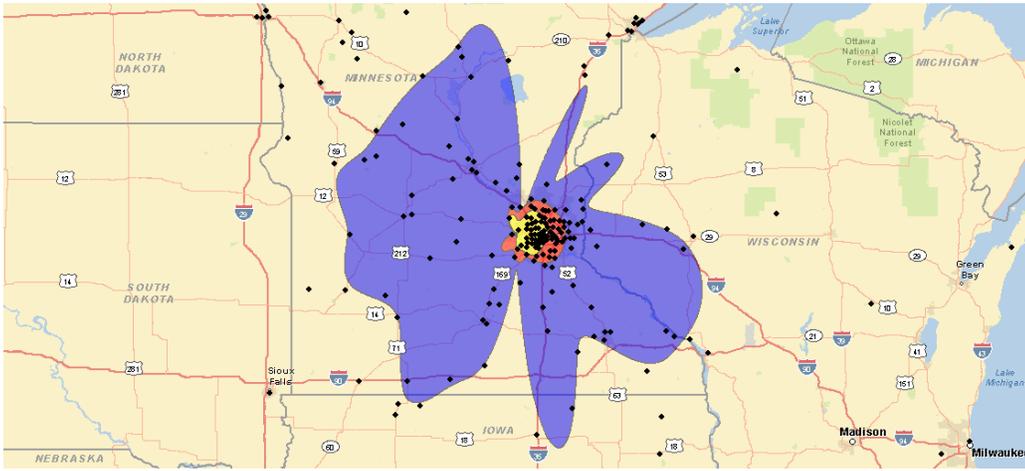
Fig. 6: Trade area of surveyed non-race rides (n=484).
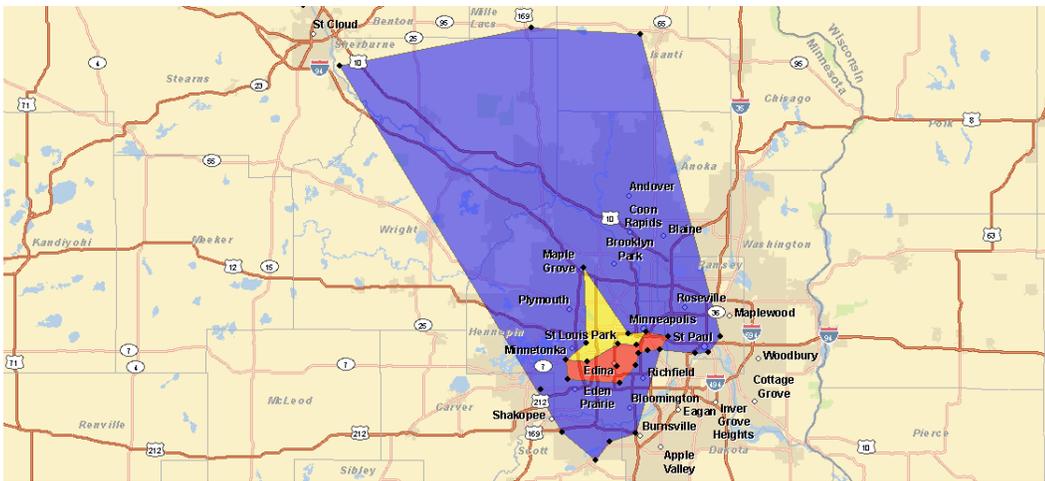
Fig. 7: Trade area of surveyed races (n=59).

Past attendance

At least half of respondents had previously attended the surveyed bike event, although difference exists across event types (χ^2=26.82, p<0.0005; Table 10). About 75 percent of respondents from the fundraising event (74.4 percent) and high school races (76.6 percent) had attended the event previously. On the other hand, 53.2 percent of respondents from non-race rides and 59.7 percent from races had attended the event before.

Table 10: Percentage of respondents who had previously attended the surveyed event, by bicycling event type (n=1160).

	Percentage		Statistics	
	No	**Yes**	χ^2	**Sig.**
Bike tour (n=220)	36.8%	63.2%		
Fundraiser (n=43)	25.6%	74.4%		
High school race (n=94)	23.4%	76.6%	26.82	<0.0005
Mountain biking event (n=219)	37.0%	63.0%		
Non-race/Ride (n=519)	46.8%	53.2%		
Race (n=65)	40.3%	59.7%		

There are significant differences in the number of years respondents had attended an event (F=6.23, p<0.0005; Table 11). The average number of years that respondents had attended bike tours (5.55), the fundraising event (6.56), and non-race rides (5.26) was significantly more than that of respondents from high school races (2.21).

Table 11: Number of years respondents had attended the surveyed event, by bicycling event type (n=1087)

	Descriptive statistics			ANOVA	
	Mean	**Median**	**Standard deviation**	F	**Sig.**
Bike tour (n=212)	5.55_a	3	7.12		
Fundraiser (n=43)	6.56_b	5	4.02		
High school race (n=86)	2.21_{abc}	2	1.19	6.23	<0.0005
Mountain biking event (n=206)	4.21	3	3.35		
Non-race/Ride (n=481)	5.26_c	3	5.92		
Race (n=59)	3.06	3	1.29		

Note: Means with pairing subscripts within rows are significantly different at the p<0.05 based on Bonferroni post hoc paired comparisons.

TRIP INFORMATION

Primary destination

The event area was the primary destination for most survey respondents (Table 12). While small sample sizes for those the event area was not the primary destination prohibited statistical comparison, some nominal differences are noted. The event area was the primary destination for all high school race participants, while it was so for 87 percent of respondents from non-race rides and 89.4 percent respondents from races. Respondents from bike tours and the fundraising event was not asked whether the event area was the primary destination, as routes of these events included multiple towns/cities.

Table 12: Whether the event area was the primary destination for survey respondents, by bicycling event type (n=872).

	Percentage		Statistics[1]	
	Yes	**No**	**χ^2**	**Sig.**
Bike tour	Not applicable—route of bike tours and the fundraising event included multiple towns/cities.			
Fundraiser				
High school race (n=94)	100%	0%		
Mountain biking event (n=219)	95.4%	4.6%	--	--
Non-race/Ride (n=493)	87.0%	13.0%		
Race (n=66)	89.4%	10.6%		

[1]No statistical comparison was performed as some cell sizes are too small.

Trip duration

The three bike tours and the fundraising event all lasted for multiple days (Table 13). Specifically, two bike tours lasted for eight days. The other bike tour and the fundraising event lasted for four days.

Table 13: Number of days the surveyed bike tours and the fundraising event lasted.

Bike event type	Bike event name	Number of days
Bike tours	Tour of Minnesota	8
	Bicycling Around Minnesota (BAM)	4
	Headwaters to Hills	8
Fundraiser	Red ribbon Ride	4

Most respondents spent one or two nights on the entire trip, although significant difference exists across event types (χ^2=24.25, p<0.0005; Table 14). Sixty-two percent of high school race participants spent one night on the entire trip, while 61.7 percent of race participants spent two nights on the trip. Respondents from mountain biking events and non-race rides spread more evenly across spending one, two, three or more nights on the trip.

Table 14: Total number of nights spent on the trip by survey respondents, by bicycling event type (n=568).

	Percentage			Statistics	
	1 night	2 nights	3 or more nights	χ^2	Sig.
High school race (n=71)	62.0%	33.8%	4.2%		
Mountain biking event (n=148)	39.0%	43.2%	17.8%	24.25	<0.0005
Non-race/Ride (n=291)	46.0%	39.5%	14.4%		
Race (n=60)	31.7%	61.7%	6.7%		

As far as the event area is concerned, high school race participants were much more likely to spent one night in the event area (χ^2=14.78, p<0.05; Table 15). Respondents from mountain biking events, non-race rides, and races spread more evenly across were similarly likely to spend one or two nights in the event area.

Table 15: Number of nights spent in the event area by survey respondents, by bicycling event type (n=395).

	Percentage			Statistics	
	1 night	2 nights	3 or more nights	χ^2	Sig.
High school race (n=51)	72.5%	21.6%	5.9%		
Mountain biking event (n=92)	41.3%	47.8%	10.9%	14.78	0.022
Non-race/Ride (n=212)	49.1%	38.7%	12.3%		
Race (n=40)	47.5%	45.0%	7.5%		

Lodging

Hotel/motel was the most frequently chosen lodging facility by respondents from all event types except for bike tours (Table 16). For respondents from bike tours, tent was the most frequently used lodging type, while hotel/motel was the second most frequently used one. Tent was also the second mostly frequently used lodging type by respondents from the fundraising event, mountain biking events, and races. For those participating in non-race rides, home of a friend/relative was the second most frequently chosen lodging type.

Table 16: Types of lodging facilities used by survey respondents, by bicycling event type (n=1172).

	Bike tour (n=229)	Fundraiser (n=43)	High school race (n=94)	Mountain biking events (n=219)	Non-race (n=520)	Race (n=67)
Hotel/motel	32.8%	58.1%	33.0%	10.5%	13.8%	19.4%
Resort/commercial cabin	1.3%	0.0%	1.1%	1.8%	0.8%	1.5%
Vacation rental by owner (VRBO)	0.4%	0.0%	1.1%	0.5%	1.0%	1.5%
Your own vacation home	2.6%	2.3%	1.1%	1.4%	1.2%	1.5%
RV	0.4%	2.3%	0.0%	4.1%	1.0%	6.0%
Vacation home of friend/relative	1.7%	0.0%	2.1%	0.9%	1.2%	3.0%
Bed & Breakfast	0.9%	0.0%	0.0%	0.0%	0.6%	0.0%
Home of friend/relative	10.5%	7.0%	2.1%	3.2%	5.0%	1.5%
Tent	73.8%	25.6%	1.1%	6.4%	1.5%	10.4%

Transportation

At least 80 percent of respondents from all event types arrived at the event area or starting point by a car, van, or truck (Table 17). While small sample sizes for those not using car/van/truck as the primary mode of transportation prohibited statistical comparison, some nominal differences are noted. Transportation mode for bike tour participants was more diverse, as 4.2 percent arrived in an RV or a camper, 6.3% arriving by bus, and 5.3 percent arriving by an airplane. Seven percent of the fundraising event participants arrived by bike, while another seven percent arrived by other means of transportation. On the other hand, all high school race participants arrived by a car, van, or truck.

Table 17: Primary mode of transportation among survey respondents, by bicycling event type (n=997).

	Percentage						Statistics[1]	
	Car/van /truck	RV/ camper	Bus	Airplane	Bike	Others (motorcycle, train, "other")	χ^2	Sig.
Bike tour (n=95)	82.1%	4.2%	6.3%	5.3%	0.0%	2.1%		
Fundraiser (n=43)	86.0%	0.0%	0.0%	0.0%	7.0%	7.0%		
High school race (n=91)	100%	0.0%	0.0%	0.0%	0.0%	0.0%		
Mountain biking event (n=210)	98.1%	1.9%	0.0%	0.0%	0.0%	0.0%	--	--
Non-race/Ride (n=498)	91.8%	1.0%	5.4%	0.4%	1.2%	0.2%		
Race (n=60)	92.8%	1.5%	0.0%	3.3%	0.0%	0.0%		

[1]No statistical comparison was performed as some cell sizes are too small.

Group composition and size

The average travel group size of survey respondents ranged from few than three people to more than five people (Table 18). Specifically, the average travel group size of participants of bike tours was significantly bigger than those of participants of non-race rides ($F=2.36$, $p<0.05$).

Participants of bike tours and the fundraising event were most likely to travel in either small groups (no more than two people) or large groups (six or more people) (Table 19). High school race participants were most likely to travel in groups of four or five people, while non-race ride participants were most likely to travel groups of two ($\chi^2=108.27$, $p<0.0005$). The travel group size of participants in mountain biking events and races spread out more evenly.

Table 18: Group size in which survey respondents traveled, by bicycling event type (n=1143).

	Descriptive statistics			ANOVA	
	Mean	**Median**	**Standard deviation**	**F**	**Sig.**
Bike tour (n=221)	5.30$_a$	2	17.00		
Fundraiser (n=43)	4.09	2	4.56		
High school race (n=93)	3.81	4	2.11	2.36	0.038
Mountain biking event (n=214)	3.35	2	3.79		
Non-race/Ride (n=509)	3.28$_a$	2	3.28		
Race (n=63)	2.60	2	1.58		

Note: Means with pairing subscripts within rows are significantly different at the $p<0.05$ based on Bonferroni post hoc paired comparisons.

Table 19: Percentage of survey respondents traveling in different group sizes, by bicycling event type (n=1143).

	Statistics					Statistics	
	1 person	**2 persons**	**3 persons**	**4-5 persons**	**6 or more persons**	**χ^2**	**Sig.**
Bike tour (n=221)	26.6%	38.4%	5.2%	11.4%	18.3%		
Fundraiser (n=43)	25.6%	30.2%	14.0%	9.3%	20.9%		
High school race (n=93)	4.3%	21.3%	21.3%	42.6%	10.6%	108.27	<0.0005
Mountain biking event (n=214)	20.5%	30.1%	19.2%	19.6%	10.5%		
Non-race/Ride (n=509)	19.0%	40.0%	10.1%	16.6%	14.3%		
Race (n=63)	25.4%	28.4%	20.9%	14.9%	10.4%		

Note: Means with pairing subscripts within rows are significantly different at the $p<0.05$ based on Bonferroni post hoc paired comparisons.

The average number of people from one's travel group who participated in the event was significantly high among bike tour participants than those in high school races, mountain biking events, and non-race rides (F=4.21, p<0.005; Table 20). Participants in high school races, mountain biking events, and races were most likely to have one person in the travel group to participate in the event (χ^2=92.41, p<0.0005; Table 21). For those riding in bike tours, the fundraising event, and non-race rides, the number of people from one's travel group who participated in the event spread out more evenly.

Table 20: Descriptive statistics of the number of people in the travel party who participated in the surveyed event, by bicycling event type (n=1167).

	Descriptive statistics			ANOVA	
	Mean	**Median**	**Standard deviation**	**F**	**Sig.**
Bike tour (n=218)	5.45$_{abc}$	2	18.48		
Fundraiser (n=41)	5.21	2	8.59		
High school race (n=93)	2.12$_a$	1	5.06	4.26	0.001
Mountain biking event (n=211)	2.46$_b$	2	3.54		
Non-race/Ride (n=504)	2.85$_c$	2	2.80		
Race (n=63)	2.10	2	1.46		

Note: Means with pairing subscripts within rows are significantly different at the p<0.05 based on Bonferroni post hoc paired comparisons.

Table 21: Number of people in the travel party who participated in the surveyed event, by bicycling event type (n=1167).

	Percentage				Statistics	
	1 person	**2 persons**	**3 persons**	**4 or more persons**	**χ^2**	**Sig.**
Bike tour (n=229)	27.9%	38.4%	5.2%	28.4%		
Fundraiser (n=43)	30.2%	25.6%	11.6%	32.6%		
High school race (n=94)	64.9%	19.1%	5.3%	10.6%	92.41	<0.0005
Mountain biking event (n=219)	42.9%	28.3%	11.9%	16.9%		
Non-race/Ride (n=515)	25.8%	35.9%	11.3%	27.0%		
Race (n=67)	41.8%	20.9%	19.4%	17.9%		

In terms of travel group type, although small cell sizes prohibited statistical comparison, some nominal differences are noted. Participants in bike tours and races were most likely to travel alone or with friends (Table 22). Participants in high school races and mountain biking events were most likely to travel with family. Participants in the fundraising event and non-race rides travel either alone, with family, or with friends.

	Percentage						Statistics	
	Alone	**Couple/ partner**	**Family**	**Friends**	**Family & friends**	**Other**	χ^2	**Sig.**
Bike tour (n=94)	48.9%	11.7%	9.6%	27.7%	2.1%	0.0%		
Fundraiser (n=43)	30.2%	4.7%	25.6%	23.3%	2.3%	14.0%		
High school race (n=87)	4.4%	0.0%	82.4%	0.0%	12.1%	1.1%		
Mountain biking event (n=91)	20.1%	12.0%	41.1%	17.7%	9.1%	0.0%	--	--
Non-race/Ride (n=209)	18.9%	21.9%	25.4%	18.3%	13.7%	1.8%		
Race (n=60)	28.3%	11.7%	16.7%	31.7%	10.0%	1.7%		

Survey respondents had travel companions in different age groups, and there is significant difference in travel companions' age (Table 23). The fundraising event participants were most likely to have travel companions in the 18-25 age range, while bike tour participants were the least likely ($\chi 2=29.21$, $p<0.0005$). Participants in the fundraising event, mountain biking events, and races were the most likely to travel with people in the 26-35 age range, but none of the high school race participants did so ($\chi 2=94.33$, $p<0.0005$). The percentage of respondents traveling with people in the 36-50 age range was the highest among high school race participants and the lowest among bike tour participants did so ($\chi 2=202.78$, $p<0.0005$). The percentage of respondents traveling with people in the 51-69 age range was the highest among non-race ride participants and the lowest among mountain biking event participants ($\chi 2=159.28$, $p<0.0005$).

Small cell sizes prohibited statistical comparison for the under 18 and 70 or older age groups, but nominal differences are noted. While 86.2 percent of high school race participants traveled with children under 18 years old, none of the fundraising event participants did so. Close to 57 percent of bike tour participants (56.8 percent) traveled with people at least 70 years only, but only 0.9 percent of mountain biking event participants did so.

	Percentage						Statistics	
	Bike tour (n=229)	**Fundraiser (n=43)**	**High school race (n=94)**	**Mountain biking event (n=218)**	**Non-race/Ride (n=518)**	**Race (n=67)**	χ^2	**Sig.**
Under 18	63.8%	0.0%	86.2%	30.3%	10.2%	10.4%	--	--
18-25 years old	0.9%	16.3%	2.1%	9.6%	5.8%	3.0%	29.21	<0.0005
26-35 years old	1.3%	27.9%	0.0%	29.4%	17.6%	26.9%	94.33	<0.0005
36-50 years old	10.5%	39.5%	75.5%	58.4%	26.8%	50.7%	202.78	<0.0005
51-69 years old	37.3%	51.2%	24.5%	21.1%	63.8%	23.9%	159.28	<0.0005
70 or older	56.8%	7.0%	7.4%	0.9%	6.8%	1.5%	--	--

Visitor spending

Bicycling event participants had spending in a variety of categories. Participants in the fundraising event spent significantly more on biking equipment than those participating in bike tours, high school races, mountain biking events, and non-race rides (F=218.05, p<0.05). In terms of biking event-related expense, non-race ride participants spent significantly less than bike tour and fundraising event participants, and high school race participants spent significantly less than the fundraising event participants (F=211.49, p<0.05).

Bike tour participants spent significantly more on registration than participants of all the other types of biking events (F=223.99, p<0.0005). Additionally, fundraising event participants spent more on registration than high school race participants.

When it comes to spending on lodging, bike tour participants spent more than participants in mountain biking events and non-race rides (F=207.78, p<0.0005). Participants in the fundraising event spent more than participants in high school races, mountain biking events, and non-race rides.

Bike tour participants spent significantly more on transportation (F=215.63, p<0.0005) and non-biking recreation/attractions (F=314.71, p<0.0005) than participants of all the other types of biking events. Bike tour participants spent significantly more on groceries than participants in the fundraising event, high school races, and non-race rides (F=283.80, p<0.0005).

Bike tour participants also spent significantly more on restaurants/bars than participants in the fundraising event, high school races, mountain biking events, and non-race rides (F=214.71, p<0.0005). Furthermore, race participants spent more on restaurants/bars than the fundraising event participants.

Lastly, total spending by bike tour participants was significantly higher than that by participants in all other types of biking events (F=209.59, p<0.0005). The total spending by the fundraising event participants was significantly higher than that by participants in high school races, mountain biking events, and non-race rides. Moreover, race participants had higher total spending than those participating in high school races, mountain biking events, and non-race rides.

There is no significant difference in miscellaneous spending. Given that race participants did not spend money on other-biking related expense and shopping, it is not possible to perform statistical comparison for these two spending categories.

Table 24: Survey respondents' personal spending in various categories, by bicycling event type (n=1107).

	Mean ($)						ANOVA[1]	
	Bike tour (n=194)	**Fundraiser (n=42)**	**High school race (n=93)**	**Mountain biking (n=214)**	**Non-race (n=501)**	**Race (n=63)**	*Welch F*	Sig.
Biking equipment	32.08_a	125.89_{abcd}	2.45_b	6.35_c	4.29_d	65.32	218.05	0.028
Biking event-related expense	11.11_a	17.76_{bc}	3.12_b	6.01	3.12_{ac}	9.37	211.49	0.010
Other-biking related expense*	2.66	13.93	0.50	0.46	0.47	0.00	--	--
Event registration	260.15_{abcde}	53.46_{af}	8.60_{bf}	17.73_c	23.30_d	36.15_e	223.99	<0.0005
Lodging	57.95_{ab}	80.00_{cde}	32.06_c	19.90_{ad}	22.00_{be}	45.78	207.78	<0.0005
Transportation (incl. gas)	30.22_{abcde}	21.26_a	10.50_b	12.39_c	11.29_d	13.72_e	215.63	<0.0005
Groceries	12.88_{abc}	1.61_a	4.98_b	8.19	6.69_c	11.05	283.80	<0.0005
Restaurants/bars	49.05_{abcd}	4.90_{ae}	17.04_b	18.14_c	23.72_d	41.97_e	267.43	<0.0005
Recreation/attractions (non-biking)	7.67_{abcde}	0.06_a	0.18_b	1.22_c	0.94_d	1.88_e	314.71	<0.0005
Shopping*	13.55	0.00	5.20	1.76	5.94	4.83	--	--
Miscellaneous	19.74	6.68	5.23	1.26	0.96	2.51	201.75	0.290
Total	497.07_{abcde}	325.55_{afgh}	89.85_{bfi}	93.43_{cgj}	102.73_{dhk}	232.57_{eijk}	209.59	<0.0005

[1]Welch test results, rather than regular ANOVA, are reported here, due to non-homogeneity of variance.
*ANOVA cannot be performed, as at least one bicycling event type has zero variance.

Participants of Minnesota Bicycling Events

TRIP ACTIVITIES

Respondents participated in a variety of activities besides participating in the biking event (Table 25). More than 90 percent of bike tour participants (93.4 percent) dined out, while only 27.9 percent of the fundraising event participants did so (χ^2=116.56, p<0.0005). Sixty percent of bike tour participants drove on designated byways, but 17.7 percent of non-race ride participants did so (χ^2=147.67, p<0.0005). While 31 percent of participants in bike tours and races participated in sightseeing, 11.6 percent of the fundraising event participants did so (χ^2=26.60, p<0.0005). Close to 32 percent of non-race ride participants (31.7 percent) visited friends/relatives, but only 11 percent of participants in bike tours, the fundraising event, and high school races did so (χ^2=54.03, p<0.0005).

For the other activities, small cell sizes prohibited statistical comparison, but nominal differences are noted. Bike tour participants were mostly likely to participate in sporting events (62.9 percent) and fishing (15.7 percent) as well as to visit historic sites (32.3 percent) and museums (51.1 percent). Few participants from the other event types participated in any of these activities. Bike tour participants were also most likely to participate in nightlife/evening entertainment (42.4 percent) and camping (24.9 percent), to go shopping (43.7 percent), to visit state parks (49.3 percent) and other attractions (25.8 percent), and to go biking (besides riding the event, 37.6 percent). Participants in the fundraising event were least likely to participate in nightlife/evening entertainment (2.3 percent), to go shopping (4.7 percent) to visit state parks (2.3 percent), and to go biking (besides riding the event, 4.7 percent) or hiking (0.0 percent). High school race participants were the least likely to visit other attractions (4.3 percent) or to go camping (4.3 percent). Few participants in any event type attended shows/music concerts or a wedding/family reunion.

Table 25: Activities in which survey respondents participated, by bicycling event type (n=1172).

	Percentage						Statistics	
	Bike tour (n=229)	Fundraiser (n=43)	High school race (n=94)	Mountain biking (n=219)	Non-race (n=5020)	Race (n=67)	χ^2	Sig.
Dining out	93.4%	27.9%	76.6%	73.5%	63.7%	82.1%	116.56	<0.0005
Driving on designated byways	59.8%	32.6%	23.4%	25.1%	17.7%	46.3%	147.67	<0.0005
Sightseeing	31.0%	11.6%	18.1%	24.7%	16.9%	31.3%	26.60	<0.0005
Nightlife/evening entertainment*	42.4%	2.3%	9.6%	16.0%	9.4%	28.4%	--	--
Shopping*	43.7%	4.7%	23.4%	13.7%	18.5%	16.4%	--	--
Sporting event*	62.9%	0.0%	4.3%	5.9%	1.0%	0.0%	--	--
Shows/music concerts*	0.9%	0.0%	0.0%	5.5%	1.5%	0.0%	--	--
Wedding/family reunion*	3.1%	0.0%	0.0%	0.9%	1.0%	0.0%	--	--
Visiting friends/relatives	11.4%	11.6%	10.6%	21.0%	31.7%	16.4%	54.03	<0.0005
Visiting historic sites*	32.3%	0.0%	2.1%	5.5%	6.5%	13.4%	--	--
Visiting museums*	51.1%	2.3%	0.0%	2.7%	2.7%	1.5%	--	--
Visiting state parks*	49.3%	2.3%	17.0%	18.7%	16.5%	16.4%	--	--
Visiting other attractions*	25.8%	7.0%	4.3%	8.7%	8.7%	14.9%	--	--
Fishing*	15.7%	0.0%	1.1%	5.0%	4.4%	1.5%	--	--
Hiking*	3.9%	0.0%	9.6%	11.4%	8.5%	22.4%	--	--
Camping*	24.9%	9.3%	4.3%	11.4%	7.5%	16.4%	--	--
Biking (outside of attending the event)*	37.6%	4.7%	34.0%	38.4%	16.5%	13.4%	--	--

SATISFACTION WITH BIKE EVENTS

As part of the survey, respondents were also asked to rate their level of satisfaction with the event, with 1=very dissatisfied and 5=very satisfied. Across all even types, respondents were more than satisfied with the events, with mean satisfaction level ranging between 4.38 and 4.72 (Table 26). There is no significant difference in mean satisfaction level across event types (F=2.13, p>0.05).

Table 26: Respondents' level of satisfaction with bicycling events, by event type (n=1131).

| | Descriptive statistics[1] | | | ANOVA | |
	Mean	**Median**	**Standard deviation**	F	**Sig.**
Bike tour (n=225)	4.49	5	0.88		
Fundraiser (n=43)	4.53	5	0.73		
High school race (n=91)	4.43	5	0.96	2.13	0.059
Mountain biking event (n=209)	4.38	5	0.96		
Non-race/Ride (n=503)	4.56	5	0.83		
Race (n=60)	4.72	5	0.90		

[1]All items rated on a scale where 1=Very dissatisfied, 2=Dissatisfied, 3=Unsure, 4=Satisfied, 5=Very satisfied.

There are multiple enjoyable attributes to the bike events, and participants in different types of biking events tended to enjoy different attributes of an event. The percentage of non-race ride participants who enjoyed the ride itself the most was the highest, while that of fundraising event participants was the lowest (χ^2=29.00, p<0.0005). While over 70 percent of non-race riders and race participants enjoyed the scenic route of the event, 31 percent of high school race participants and 32 percent of mountain biking event participants identified the scenic route as the most enjoyable attribute of the event (χ^2=172.65, p<0.0005). Participants in the fundraising event were most likely to enjoy social interaction, but only 25 percent of mountain biking event participants did so (χ^2=127.87, p<0.0005). The percentage of race participants who enjoyed the ride's challenge most was the highest, while that of bike tour participants was the lowest (χ^2=82.81, p<0.0005). About 45 percent of fundraising event participants (44.2 percent) and non-race riders (45.2 percent) enjoyed physical activity the most, but only 18.1 percent of high school race participants did so (χ^2=38.37, p<0.0005).

Table 27: The most enjoyable attributes of the event, by bicycling event type (n=1172).

| | Percentage | | | | | | Statistics | |
	Bike tour (n=229)	**Fundraiser (n=43)**	**High school race (n=94)**	**Mountain biking (n=219)**	**Non-race (n=502)**	**Race (n=67)**	χ^2	**Sig.**
The ride	52.8%	44.2%	62.8%	67.6%	69.6%	58.2%	29.00	<0.0005
Competition*	3.1%	4.7%	40.4%	40.6%	2.5%	16.4%	--	--
The scenic route	48.0%	34.9%	30.9%	32.0%	75.2%	70.1%	172.65	<0.0005
Social interaction	59.8%	81.4%	42.6%	25.1%	26.3%	38.8%	127.87	<0.0005
Food & beverages**	40.2%	18.6%	2.1%	3.2%	17.1%	6.0%	--	--
The challenge	24.5%	55.8%	57.4%	43.4%	27.9%	64.2%	82.81	<0.0005
Physical activity	39.7%	44.2%	18.1%	31.1%	45.2%	23.9%	38.37	<0.0005
Other**	3.1%	23.3%	3.2%	2.3%	5.8%	0.0%	--	--

*Statistical comparison is not applicable as five events are races and the other 21 are non-races.
**No statistical comparison was performed as some cell sizes are too small.

Statistical comparison cannot be performed for three other enjoyable attributes due to small cell sizes, but nominal differences are noted. Forty percent of high school race and mountain biking event participants identified competition as the most enjoyable attributes. This is not surprising, as all high school events are races, and three of the four mountain biking events are races. Interestingly, only 16.4 percent of race participants identified competition as the most enjoyable attribute. In terms of food and beverage, 40.2 percent of bike tour participants identified it as the most enjoyable attribute, but only 2.1 percent of high school race participants did so. Lastly, the most enjoyable attribute for 23.3 percent of fundraising event participants was "other", while no race participant had "other" most enjoyable attribute.

TRIP PURPOSE AND PLANNING

Primary reasons for attending a bicycling event

When asked why they chose to participate in the event, participants in different types of biking event identified a variety of reasons, and some differed significantly (Table 28). Mountain biking event participants, compared with the others, were the most likely to identify "to ride my bike" as a primary reason, while fundraising event participants were least likely to do (χ^2=19.70, p<0.005). The percentage of bike tour participants who identified social interaction as a primary reason was significantly higher than that of non-race ride participants (χ^2=103.64, p<0.0005). High school race participants were most likely to identify physical activity (χ^2=16.31, p<0.01) and "challenge myself" (χ^2=89.53, p<0.0005) as primary reasons, while in comparison, race participants were least likely to identify physical activity as a reason and bike tour participants were least likely to identify "challenge myself" as a reason. The percentage of race participants who identify "type of event" as a primary reason was significantly higher than that of bike tour participants (χ^2=25.50, p<0.0005). Meanwhile, there was no significant difference in the percentage of participants who identified "recommended by family/friend" as a primary reason across event types (χ^2=11.05, p>0.05).

Table 28: Primary reasons for survey respondents to attend the event, by bicycling event type (n=1172).

	Percentage						Statistics	
	Bike tour (n=229)	Fundraiser (n=43)	High school race (n=94)	Mountain biking (n=219)	Non-race (n=5020)	Race (n=67)	χ^2	Sig.
To ride my bike	68.6%	39.5%	66.0%	70.3%	67.1%	55.2%	19.70	0.001
Recommended by family/friend	14.0%	14.0%	6.4%	6.4%	12.5%	14.9%	11.05	0.060
Social interaction	55.9%	48.8%	28.7%	19.2%	23.5%	23.9%	103.64	<0.0005
The route*	27.5%	0.0%	6.4%	28.3%	41.2%	49.3%	--	--
Physical activity	31.0%	20.9%	36.2%	27.4%	35.8%	16.4%	16.31	0.006
Challenge myself	17.5%	37.2%	64.9%	43.8%	29.8%	50.7%	89.53	<0.0005
Prestige of event*	5.7%	4.7%	7.4%	3.2%	3.8%	10.4%	--	--
Location*	31.4%	2.3%	16.0%	42.9%	33.1%	26.9%	--	--
Type of event	10.9%	18.6%	25.5%	21.0%	16.5%	34.3%	25.50	<0.0005
Awards*	0.0%	0.0%	2.1%	0.9%	0.2%	0.0%	--	--
Prizes/give-aways*	0.4%	0.0%	0.0%	3.2%	0.6%	0.0%	--	--
Charity*	10.0%	74.4%	0.0%	2.3%	4.8%	0.0%	--	--
Other*	5.7%	11.6%	5.3%	2.3%	5.6%	0.0%	--	--

*No statistical comparison was performed as some cell sizes are too small.

Small cell sizes prohibited statistical comparison for the other reasons, but nominal differences are noted. Close to 50 percent of race participants (49.3 percent) identified the event route as a primary reason to participate in the event, but none of the fundraising event participants did so. While 10.4 percent of race participants identified prestige of event as a primary reason, only 3.2 percent of mountain biking event participants did. Forty three percent of mountain biking event participants identified location as a primary reason, compared with 2.3 percent of the fundraising event participants. In terms of charity as a primary reason to attend a biking event, 74.4 percent of the fundraising event participants identified the reasons, which is not surprising given the nature of the event. No more than 4 percent of participants from any type of events identified either awards or prizes/give-aways as a primary reason to attend the event.

Trip planning timeframe and information sources

The planning timeframe of participants in different types of biking events differed significantly (χ^2=313.45, p<0.0005; Table 29). Participants in bike tours, the fundraising event, and races were the most likely to plan their trip more than 13 weeks in advance. Non-race riders were the most likely to plan their trips 5-8 weeks in advance. Between 25 and 30 percent of high school race participants planned their trips less than two weeks (25.3 percent), 2-4 weeks (29.9 percent), and 5-8 weeks (27.6 percent) in advance. Mountain biking event participants tended to cluster on the two ends of the spectrum: 31.1 percent of them planned their trips less than two weeks in advance, while 27.8 percent did so more than 13 weeks in advance.

Table 29: Trip planning timeframe among survey respondents, by bicycling event type (n=1113).

	Percentage					Statistics	
	Less than 2 weeks	2-4 weeks	5-8 weeks	9-13 weeks	13+weeks	χ^2	Sig.
Bike tour (n=219)	2.7%	5.9%	6.4%	16.4%	68.5%		
Fundraiser (n=43)	9.3%	4.7%	2.3%	18.6%	65.1%		
High school race (n=87)	25.3%	29.9%	27.6%	3.4%	13.8%	313.46	<0.0005
Mountain biking event (n=209)	31.1%	16.7%	12.4%	12.0%	27.8%		
Non-race/Ride (n=496)	14.5%	22.0%	30.6%	14.3%	18.5%		
Race (n=59)	13.6%	11.9%	13.6%	13.6%	47.5%		

Survey respondents used a variety of information sources. More than 80 percent of participants in all bike event types used bike event website to plan the trip (Table 30), although fundraising event participants were significantly more likely than high school race participants to do so (χ^2=14.99, p<0.05). The percentage of fundraising event and race participants who used word of mouth as information source were significantly higher than that of non-race and mountain biking event participants (χ^2=34.15, p<0.0005). Participants of the fundraising event were significantly more likely than high school race participants to use Facebook as an information source (χ^2=122.30, p<0.0005). Race participants, compared with bike tour and non-race ride participants, were significantly more likely to use other websites as information sources.

For the other information sources, small cell sizes prohibited statistical comparison, but nominal differences were noted. Thirty percent of fundraising event participants identified event committee as an information source, while 1.1 percent of high school race participants did so. Close to 20 percent of high school race participants (19.1 percent) used area/destination visitor guide as an information source, but only 2.3 percent of the fundraising event participants did so. In terms of Trip Advisor, 10.4 percent of

race participants used it as an information source, but only 1.7 percent of non-race participants did so. Sixteen percent of race participants used "other" websites as information sources, while 6.1 percent of bike tour participants did so. No more than ten percent of participants in any type of bike events used the following information sources: Twitter, Google+, magazine ad, PedalMN website, EMT website, Travelocity, Expedia, area/destination e-newsletter, newspaper, radio, information card, and "other" information source.

Table 30: Information sources used by survey respondents, by bicycling event type (n=1172).

	Percentage						Statistics	
	Bike tour (n=229)	Fundraiser (n=43)	High school race (n=94)	Mountain biking (n=219)	Non-race (n=5020)	Race (n=67)	χ^2	Sig.
Bike event website	92.6%	97.7%	83.0%	93.6%	89.8%	85.1%	14.99	0.01
Word of mouth	31.9%	44.2%	36.2%	23.3%	20.8%	43.3%	34.15	<0.0005
Event committee*	14.0%	30.2%	1.1%	7.3%	4.4%	3.0%	--	--
Facebook	24.5%	58.1%	10.6%	46.6%	17.1%	50.7%	122.30	<0.0005
Twitter*	1.3%	0.0%	0.0%	8.2%	1.3%	3.0%	--	--
Google+*	4.4%	4.7%	9.6%	2.3%	4.0%	6.0%	--	--
Area/destination visitor guide*	11.8%	2.3%	19.1%	11.0%	8.5%	14.9%	--	--
Magazine ad*	0.0%	0.0%	0.0%	0.9%	1.5%	3.0%	--	--
PedalMN website*	1.7%	2.3%	4.3%	2.3%	6.0%	3.0%	--	--
EMT website*	7.0%	0.0%	6.4%	2.7%	6.3%	10.4%	--	--
Tavelocity*	0.4%	2.3%	3.2%	0.9%	0.8%	3.0%	--	--
Expedia*	2.6%	0.0%	5.3%	1.8%	0.4%	3.0%	--	--
Trip Advisor*	3.9%	2.3%	6.4%	2.7%	1.7%	10.4%	--	--
Other website	6.1%	7.0%	14.9%	7.8%	6.3%	16.4%	15.87	0.007
Area/destination e-newsletter*	0.9%	0.0%	1.1%	1.8%	2.1%	0.0%	--	--
Newspaper*	0.4%	0.0%	0.0%	0.5%	1.9%	0.0%	--	--
Radio*	0.0%	0.0%	0.0%	0.5%	1.5%	0.0%	--	--
Information card*	1.7%	4.7%	3.2%	0.5%	3.3%	0.0%	--	--
Other information source*	3.9%	7.0%	6.4%	4.1%	5.6%	3.0%	--	--

*No statistical comparison was performed as some cell sizes are too small.

DISCUSSION

An online questionnaire of participants in 26 bicycling events of six different types revealed similarities and differences in participants' profile, as discussed below.

The gender composition of bike tours and the fundraising event are not as lopsided as high school races, mountain biking events, non-race rides, and races. Bike tours are a fast growing part of bike tourism, while the main stated goal of fundraising events is for charitable reasons. As such, bike riding is more of a means to an end (to participate in tourism and to contribute to philanthropic causes) and may be similarly attractive to males and females. For the other four types of events, it is important for event organizers to reach out to female riders. It is possible that most of these events are in fact female-friendly, however, female riders may not be aware. If so, better communications and showcasing the female-friendly atmosphere/features of the event will be critical. Additionally, the high school races are mountain biking events. By attracting more female students to participate in the races, the high school races can become the pipeline that increases female participation in adult mountain biking events down the road.

Equally, if not more, important is for all events to increase participation by minority groups (Hispanic/Latino and non-white) as well as individuals from less wealthy households. It may be worthwhile for event organizers to reach out to biking clubs composed mainly of individuals from minority groups (e.g., Major Taylor Biking Club, an African-American biking club in Minnesota). Doing so will allow event organizers to start communicating the message that minority groups are truly welcome to participate in their events. In terms of attracting individuals from less wealthy households, is it possible, for example, that high school races offer a small number of scholarships so that interested students from less wealthy households also have a chance to participate? Event organizers could also work with organizations and programs that provide bikes and bike repairs to people with lower income (e.g., Rochester Community Bicycling Mentoring Program) to attract participants from more diverse income levels.

In terms of place of origin, bike tours, mountain biking events, and non-race rides tended to attract participants from a wider range of places, in terms of both state and core bases statistical area (CBSA). On the other hand, participants in the fundraising event and high school races are homogenous in their place of origin, as (almost) all of them came from the Minneapolis-St. Paul-Bloomington CBSA.

The average number of years that respondents had attended bike tours, the fundraising event, and non-race rides was significantly more than that of respondents from high school races. The maximum number of years that a high school student is eligible to attend high school races is three or four (i.e., the number of years a student attends high school). Therefore, it is not surprising the number of years one had attended a bike event was the shortest among high school race participants. Another possible explanation is that high school races are comparatively new, while most bike tours, the fundraising event, and non-race rides had a longer history. Clearly, many biking events attract repeat attendees who may have developed attachment to the event. Meanwhile, attracting new riders is just as important as maintaining repeat attendees to an event's long-term success, especially for the fundraising event, given 75% of its riders are repeat attendees.

In terms of spending, one reason for the higher total spending by bike tour and fundraising event participants is that these events lasted for multiple days, while 20 of the other 22 surveyed events lasted for one day. Registration fees for bike tours included lodging (tent) and most meal expenses, so it is not surprising registration fees for bike tours are significantly higher than the other types of events.

Over 60 percent of respondents from high school races, mountain biking events, non-race rides, and races stayed overnight away from home to attend the events, while 20 out of the 22 surveyed events lasted for one day. The finding provides implication for the economic impact that bicycling events could have, particularly related to lodging. Additionally, hotel/motel was the most frequently used lodging facility among participants across event types (except for bike tour participants, who used tent most frequently, followed by hotel/motel). It may be worthwhile for hotels/motels to market to bike event attendees and to further accommodate event-related needs (e.g., bike parking area).

Respondents participated in a variety of activities besides attending biking events. Event organizers can provide information on opportunities for dining out, sightseeing, and shopping, as moderate to high percentages of respondents from most surveyed events dined out, went sightseeing and shopping while attending the events. Event organizers can also list the state parks, scenic byways, and bike trails close to the event route, as moderate to high percentages of respondents from many surveyed events visited state parks, drove on scenic byways, and went biking (outside of attending the event). For bike tours, it may also be worthwhile to provide information on historic sites and museums along the tour route. For races, participants may also appreciate information on hiking opportunities close to the race route.

Participants of different types of biking events attended the events for different reasons and identified different enjoyable attributes of the events. The primary reasons and enjoyable attributes correspond with each other on some occasions but differ on others, which has implications for event marketing and operations. For bike tours, more respondents identified riding one's bike as a reason than the ride itself as an enjoyable attribute. Similar percentages of respondents identified social interaction as a reason and an enjoyable attributes. Meanwhile, more respondents identified the route and physical activities as enjoyable attributes than as primary reasons, and 40 percent of respondents identified food and beverage as an enjoyable attribute. The findings indicate that bike tour organizers can highlight the opportunity of riding one's bike and social interaction when promoting their tours. At the same time, providing delicious food and designing a scenic route that also provides adequate physical activity will contribute to participants' enjoyment.

For the fundraising event, the most frequently identified reason to attend was charity. Higher percentages of respondents identified social interaction, riding one's bike, and challenging oneself as enjoyable attributes than as reasons to attend. Therefore, the event organizer can highlight the opportunity to contribute to a charitable cause when promoting the event. At the same time, the event needs to be designed in a way that facilitates social interaction and allows participants to challenge themselves.

For high school races, event organizers need to clearly communicate to parents the opportunity of mountain bike riding, physical activity and challenging oneself when promoting the races. To ensure participants' enjoyment, the organizers need to promote social interaction.

For the mountain biking events, similar percentages of participants identified bike riding, the event route, physical activity, and the opportunity to challenge oneself as reasons to attend and enjoyable attributes. As such, event organizers need to communicate the ability of their events to provide these opportunities when promoting the events and make sure the events fulfill these goals. Additionally, there were also 41 percent of participants who identified competition as an enjoyable attribute, indicating the importance to organize the events in a way that enables participants to relish the competition.

For non-race rides, similar percentages of participants identified bike riding, challenging oneself and social interaction as reasons to attend and as enjoyable attributes. On the other hand, higher

percentages of participants identified the route and physical activity as enjoyable attributes than as reasons to attend. Hence, non-race ride organizers can feature the opportunities of riding one's bike, social interaction, and challenging oneself when promoting the rides. Meanwhile, having a scenic route will contribute to enjoyment of the rides.

For races, similar percentages of participants identified bike riding as a reason to attend and as an enjoyable attributes. Higher percentages of participants identified the route and challenging oneself as enjoyable attributes than as reasons to attend. Race organizers can highlight the challenging and scenic routes competitors will follow.

Besides content, event organizers also need to pay attention to marketing medium, outreach and timeframe. Bike event website, word of mouth, and Facebook were the three most frequently used information sources among event attendees. Both event website and Facebook page are digital content over which event organizers have control. While maintaining a website incurs financial cost, it is highly worthwhile, given 83% to 98% of participants in different types of biking events identified event website as an information source. Maintaining a Facebook page incurs little financial cost but takes time. However, given its comparatively frequent use, especially among participants in the fundraising event, mountain biking events, and races, a Facebook page can be a cost-effective marketing method with potentially wide reach. The popularity of word of mouth indicates the importance of having repeat attendees as "ambassadors" that spread the word about an event. The encouraging finding is that satisfaction level across all event types was very high, making it more likely for repeat attendees to act as the word-of-mouth medium.

Respondent planned their event trips in different timeframes. Participants of bike tours, the fundraising event, and races tended to plan their trips 13 weeks or more in advance. As such, it is important for event organizers to provide essential information about the events well in advance, especially on the event's website and Facebook page. On the other hand, non-race ride participants and parents of high school race participants spread out quite evenly in planning timeframes, while mountain biking event participants planned their trips either less than 2 weeks or more than 13 weeks in advance. These planning patterns could be challenging for event organizers, who need to both start providing information early on and respond quickly to last-minute registration and questions from participants.

Overall, bicycling events in Minnesota enjoyed a high level of satisfaction among their participants, confirmed by the significant share who return year after year. The results of this survey identify opportunities to increase racial and economic diversity among attendees, as well as specific event marketing and operations initiatives to align with the interests of bike event tourists.

University of Minnesota Tourism Center
[bike event name] Questionnaire

Screening questions:
I.   Are you 18 years old or older? ❑ Yes (Continue to question II)   ❑ No (survey ends)
II.   Do you live 50 miles or more to the [area name]?   ❑ Yes (continue directly to Q1) ❑ No (continue to question III)
III. Did you spend at least one night in the [area name]? ❑ Yes (continue to Q1)   ❑ No (survey ends)

---

1. Was [area name] your primary destination for this trip?   ☐ Yes
                                                                   ☐ No, primary destination is _____

2. What was the **primary** reason that you made the trip to [area name]? (**Check only 1**)

☐ Attend [bike event name]   ☐ Entertainment   ☐ Convention/conference
☐ Outdoor recreation   ☐ Casino gaming   ☐ Business/work
☐ Visit family/friends   ☐ Sporting events   ☐ Passing through
☐ Attractions/family fun   ☐ Museums/historic sites
☐ Other (Explain: _____)   ☐ Event other than [bike event name] (which one: _____)

3. Have you attended [bike event name] before? (**Check only 1**)   ___Yes   ___No
    If yes, how many years have you attended [bike event name]?   ___ # of years
    What was the <u>last</u> year you attended [bike event name]?   _____

4. What did you enjoy the <u>most</u> about [bike event name]? (**Check <u>no more than THREE</u>**)
    ___ The ride   ___ Competition   ___The scenic route   ___Social interaction   ___Food & beverages
    ___ The challenge   ___ Physical activity ___ Other (Explain: _____)

5. Please choose your <u>main</u> reason for attending **[bike event name]** (**Check <u>no more than THREE</u>**):
    ___ To ride my bike   ___ Recommended by Family/Friend   ___ Social interaction   ___ The route   ___ Physical activity
    ___ Challenge myself   ___ Prestige of event   ___ Location   ___ Type of event
    ___ Awards   ___ Prizes/Give-aways   ___ Charity   ___ Other (specify):_____

6. How many people (<u>including you</u>) were in your travel party on this trip? _____

7. How many people (<u>including you</u>) in your travel party participated in [bike event name]? _____

8. How many <u>total nights</u> did you spend away from home on this trip?   ____ nights

9. How many of these nights were in [area name]?   _____ nights (if 0, go to question 11)

10. If you stayed in [area name], how many nights did you stay in <u>each</u> of the following types of accommodations?

____ Hotel/motel   ____ Resort/commercial cabin   ____ Vacation rental by owner   ____ Your own vacation home

____ RV   ____ Vacation home of friend/relative   ____ Bed & Breakfast   ____ Home of friend/relative   ____ Tent

11. Please estimate your travel group's spending <u>in [area name]</u> for your entire stay:

Biking equipment $ _____   Biking-event related expense $ _____   Other biking-related expense $ _____

Event registration $ _____   Lodging $ _____   Transportation (includes gas) $_____

Groceries $_____   Restaurants/Bars $ _____   Recreation/attractions (non-biking) $ _____

Shopping $ _____   Misc. $ _____

12. How many people are included in your spending estimate? _____

13. Overall, how satisfied are you with the [bike event name]? (**Check only 1**)
    ____Very Satisfied   ____Satisfied   ____Unsure   ____Dissatisfied   ____Very dissatisfied

14. How many of your travel party are:

____ Under 18 years old   _____ 18 – 25 years old   _____ 26 – 35 years old
____ 36 – 50 years old   _____ 51 - 69 years old   _____ 70 or older

15. What was the <u>primary</u> mode of transportation you used to get to [area name]? (**Check only 1**)

☐ Car/van/truck   ☐ RV/Camper   ☐ Motorcycle   ☐ Bus
☐ Train (North Star or Amtrak)   ☐ Plane   ☐ Bike   ☐ Other

16. While on this trip, which of the following activities did members of your travel party participate in? (**Check all that apply**)

General:	*Attending:*	*Visiting:*	*Participating in:*
☐ Dining out	☐ [bike event name]	☐ Friends/relatives	☐ Fishing
☐ Driving on designated byways	☐ Sporting events	☐ Historic sites	☐ Hiking
☐ Guided tour	☐ Shows/music concerts	☐ Museums	☐ Camping
☐ Sightseeing	☐ Wedding/family reunion	☐ State parks	☐ Biking (other than [bike event])
☐ Nightlife/evening entertainment		☐ Other attractions	
☐ Shopping			

17. Which one of the following best categorizes your travel party? (**Check only 1**)

☐ Alone   ☐ Couple/partner   ☐ Family   ☐ Friends   ☐ Family & friends   ☐ Other (Explain: _____)

18. What information sources did you use to **plan** this trip? (**Check all that apply**)

☐ [bike event name] website	☐ Area/destination visitor guide	☐ Area/destination e-newsletter
☐ Word of mouth	☐ Magazine ad	☐ Newspaper
☐ Social media	☐ Website	☐ Radio
Which ones?	Which ones?	☐ Other (Explain: _____)
☐ Facebook	☐ www.PedalMN.com	
☐ Twitter	☐ www.exploreminnesota.com	
☐ Google+	☐ Travelocity	
	☐ Expedia	
	☐ Trip Advisor	
	☐ Other _____	

19. How far in advance did you plan this trip? (**Check only 1**)

☐ Less than 2 weeks   ☐ 2 to 4 weeks (1 month)   ☐ 5 to 8 weeks (1 to 2 months)
☐ 9 to 13 weeks (2 to 3 months)   ☐ 13+ weeks

Finally, a few questions about you.

22. In what year were you born? 19_____

23. What is the highest grade or year of school that you have completed?

☐ Less than High School   ☐ Some college   ☐ BA or BS degree
☐ High school graduate (or GED)   ☐ Associate college degree   ☐ Post graduate or professional school

24. You are: ☐ Male   ☐ Female   ☐ Prefer not to answer

25. What is the ZIPCODE of your primary residence? _____

26. Please give us an estimate of your annual household income (before taxes):
___Less than $25,000   ___$25,000-49,999   ___$50,000-99,999   ___$100,000-149,999   ___$150,000 or more

27. What is your ethnic origin? (**Check only 1**)   ___Hispanic/Latino   ___Non-Hispanic/Non-Latino

28. What is your race? (**Check all that apply**)
___American Indian or Alaska Native   ___Asian   ___Black or African-American   ___White
___Native Hawaiian or Other Pacific Islander   ___Other (specify: _____)