Economic Impact of Biking in Utah's Manti-La Sal National Forest

JAMES N. MAPLES, PhD

MORA N. REHM

MICHAEL J. BRADLEY, PhD

Report submitted to Outdoor Alliance: February 2022
Study commissioned by Outdoor Alliance

Image Credit: Andrew Burr

EKU

OUTDOOR ALLIANCE

IMBA
INTERNATIONAL MOUNTAIN BICYCLING ASSOCIATION

Executive Summary of Study

This study examines the economic impact, use patterns, and demographics of biking visitation in Utah's Manti-La Sal National Forest (MLSNF).

National Forest Visitor Use Monitoring data estimates approximately 48,970 persons visit the MLSNF to engage in bicycle-related activities as the primary purpose of their visit.

The authors collected expenditure pattern data from an online survey (n=758) of MLSNF users. In all, 68% of respondents visited the MLSNF in 2020 or 2021, with 95% of respondents residing more than fifty miles from the MLSNF.

Based on the available data and using IMPLAN to model economic impacts, the authors estimate:

1. Biking visitors spend an estimated **$13.31 million** in expenditures for counties in and around the MLSNF each year.

2. Biking visitor expenditures support **$5.14 million** in worker wages and an estimated **165 jobs** in the accommodation, restaurant, and retail sectors.

REPORT CONTENTS

Meet Your Research Team

DR. JAMES N. MAPLES Is an Associate Professor of Sociology at Eastern Kentucky University. His research agenda examines rural economies in transition with a focus on utilizing outdoor recreation as a sustainable base of economic growth.

MORA N. REHM Is the Student Lead Researcher of the Division of Regional Economic Assessment and Modeling (DREAM) at Eastern Kentucky University. Mora is a senior Honors student and sociology major; her research is centered on social justice and community equity.

DR. MICHAEL J. BRADLEY Is an Associate Professor in the Department of Parks, Recreation, and Hospitality Administration at Arkansas Tech University. He is also the director of Red Dirt Consulting. His professional and academic interests include human dimensions of natural resource and wildlife; beer, wine, and spirits; and recreation and tourism as economic development tools.

Methodology

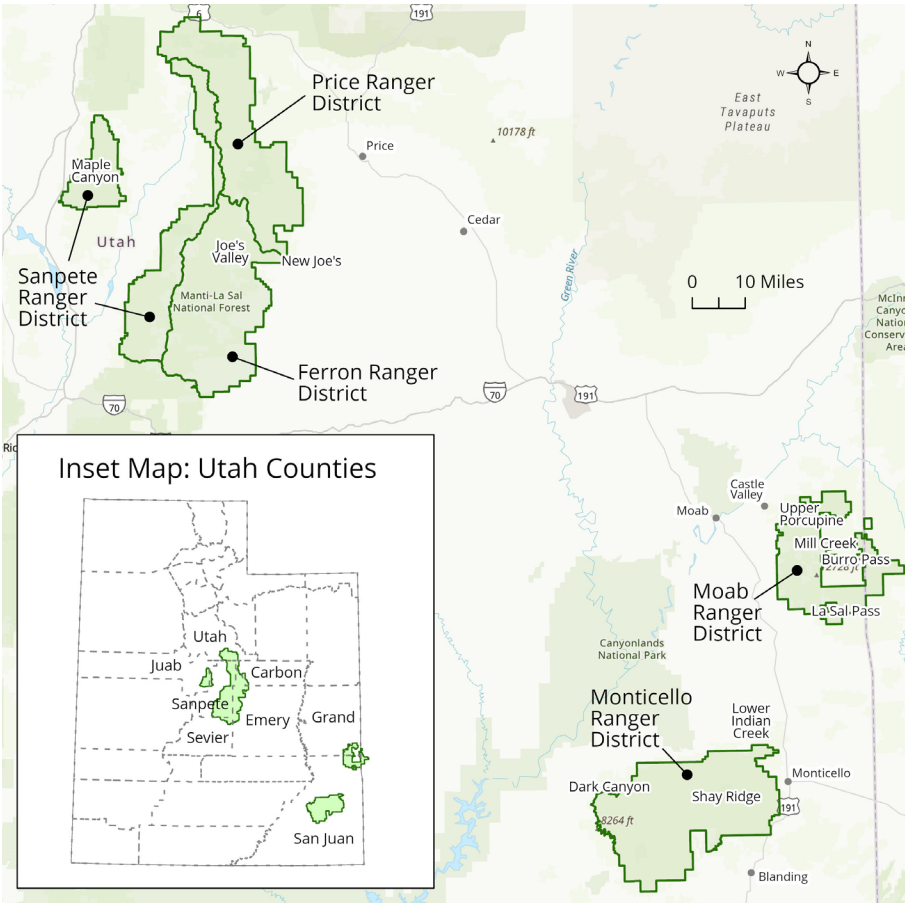
ACTIVITY STUDIED

This study examines the economic impact, use patterns, and demographics of bicycling on the Manti-La Sal National Forest (henceforth MLSNF) in Utah. The term *bicycling* and similar terms like *biking* and *biker* are used in this study as an umbrella term to describe any activity involving a human-propelled bicycle for recreation. This is explored in detail in the coming pages.

STUDY AREA

The MLSNF is divided into five ranger districts: Sanpete, Ferron, Price, Moab, and Monticello. **Map 1** shows where ranger districts and Utah counties are located in relationship to each other. Biking occurs in all five districts, but Moab in particular is a world-famous mountain biking destination. These districts form the basis for the study areas used in this report.

Study areas are designed to capture the scope of the activity being studied and the areas in which visitors are likely to spend funds as a result of that activity. These five districts and their surrounding counties are condensed into three study areas for analysis purposes. The Sanpete/Ferron/Price study area includes Utah, Carbon, Sanpete, Sevier, Juab, and Emery counties. The Moab study area includes Grand and San Juan counties. Finally, the Monticello study area includes only San Juan County. These study areas are discussed in further detail later in the report. The report includes individual impacts in each study area as well as the entire MLSNF. Throughout, the authors use multi-regional input-output analysis (MRIO) to examine how expenditures interact with the other study areas.



Map 1

Utah counties in relationship to Manti-La Sal National Forest Ranger Districts.

Methodology

DATA COLLECTION

Data for this study come from a 2021 online survey of bikers in and around the MLSNF area. The survey included questions expenditures, use patterns, and demographics of bikers visiting the MLSNF. The survey is available upon request. Variables are summarized and described throughout the report by topic. Data were collected from April 12, 2021 through November 1, 2021. The survey was released to the Outdoor Alliance and IMBA email and social media lists using a convenience sample approach. In all, 758 persons initiated the survey with 527 respondents completing the survey. In the event a respondent did not complete the survey, their responses are included up to the moment they discontinued the survey.

VISITATION ESTIMATES AND PATTERNS

Forest Service National Visitor Use Monitoring (NVUM) data estimates the MLSNF received 295,000 visits in 2016. Data from this survey indicate biking (broadly defined) included 48,970 visits. Note the Forest Service NVUM does not delineate different kinds of biking, so the authors have elected to stick with this classification in this study as well later in the report. The report includes individual impacts in each study area as well as the entire MLSNF. Throughout, the authors use multi-regional input-output analysis (MRIO) to examine how expenditures interact with the other study areas.

DELINEATING VISITORS AND RESIDENTS

Economic impact studies focus on new expenditures added into a study area as a result of the activity being studied. As such, any respondent living inside the areas studied are excluded from the analysis as they are already part of the region's economy. For this study, the researchers defined persons living within fifty miles of the MLSNF as residing inside the study area and therefore not qualified for inclusion in the economic impact analysis. The survey includes a question asking respondents if the respondent would self-identify as living within 50 miles of the MLSNF. In all, 5% of respondents in the survey indicated living within the study area based on this definition. Building from the NVUM visitation estimate of 48,970 visits, this means approximately 2,448 of those visits would come from study area residents; these are therefore not analyzed in the economic impact analysis. The remaining 46,521 visits are from persons living more than 50 miles from the MLSNF (visitors) and are included in the economic impact analysis.

This study offers analysis of those 46,521 visits at two levels. First, it breaks the visits down by study area. Second, it provides a view of the cases across all study areas at one time. The survey included a question asking which district the respondent most recently visited while biking. In all, 89.94% indicated visiting Moab, 3.85% visited Monticello, 1.93% visited Sanpete, 2.57% visited Price, and 1.71% visited Ferron. These percentages are used to create the annual visitation estimates of 2,889 visits to the Sanpete-Ferron-Price study area, 41,841 to the Moab study area, and 1,791 to the Monticello study area.

MEAN EXPENDITURES DATA CLEANING

Additional data cleaning is required for mean expenditure variables to ensure conservative, reliable estimates and exclude unusual cases which might inflate means. The researchers exclude cases of persons who did not engage in biking in 2020 or 2021 (208 cases), persons with abnormal stays (operationalized here as being over 30 nights – zero cases), groups with eight or more persons (zero cases), and persons living in the study area (23 cases). Note these responses are included in the remainder of the study. Additionally, instances of retail purchases over $500 are recoded as missing data to minimize

overinflating retail purchases. Likewise, the study excluded expenditures greater than three standard deviations from the mean (see Maples et al 2019, citation link here) to further limit risk of overestimation.

MODELING

Mean expenditures are modeled in IMPLAN Online using MRIO analysis. IMPLAN mean expenditure coding is discussed later in the report.

Visitation and Use Patterns

Table 1 (see next page) examines use patterns for bikers in the MLSNF. In the table, variables examining visit purposes, most recent visits, and ranger districts visited are dichotomously coded, which means a one equals the respondent reported participating in the activity being studied and a zero means they did not participate. For example, on ranger visitation, if the respondent reported visiting the Moab Ranger District, they would be marked here as a one, and if they did not, they would be marked as a zero. The great advantage to using dichotomous coding here is that the mean results can be interpreted as percentages of respondents engaging in that activity. The remaining visitation description variables are continuous variables with mean responses.

The survey included eight types of biking in and around the MLSNF. Respondents could check all that apply. The most popular categories were mountain biking (38%), trail riding (20%), and gravel riding (16%).

In the economic impact survey for this study, respondents are asked to focus on their most recent visit to the MLSNF to engage in any form of biking. Respondents are then asked to give information about this visit. In all, 68% reported visiting in 2020 or 2021, which qualifies them to be included in the economic impact results. Respondents indicated nearly always going on overnight trips to the MLSNF, with an average group size of 2.03. Visitors' length of stay ranged from zero to 30 days, with an average stay of 5.78 days.

Thinking about their most recent biking trip to MLSNF, respondents indicated frequently going to the Moab Ranger District (89.94%) followed by the Monticello Ranger District (3.85%). Visitors (persons living more than 50 miles from the MLSNF) reported visiting the Manti-La Sal an average of nine days per year while residents indicated visiting an average of 53 days per year.

Visitation and Use Patterns

Table 1

Use and Visitation Statistics					
Variable	N	Min	Max	Mean	SD
MLSNF visit purpose, any year (Check all that apply)				.	
Cross country	710	0	1	0.04	.20
Road	710	0	1	0.01	.09
Trail	710	0	1	0.20	.40
Mountain biking	710	0	1	0.38	.48
Freeriding	710	0	1	0.09	.28
Gravel	710	0	1	0.16	.36
Most recent visit					
Last visited in 2020 or 2021	642	0	1	0.68	0.46
Last visited in 2019	642	0	1	0.17	0.37
Last visited prior to 2019	642	0	1	0.16	0.36
Ranger district visited on most recent climbing trip (visitor only)					
Ferron RD	467	0	1	.01	0.12
Price RD	467	0	1	.02	0.15
Sanpete RD	467	0	1	.01	0.13
Moab RD	467	0	1	.89	0.30
Monticello RD	467	0	1	.03	0.19
Visitation descriptions					
Visits per year, residents	22	6	200	53.90	54.22
Visits per year, visitors	428	0	94	9.55	9.5
Group size	399	1	8	2.03	1.12
Nights stayed (0 nights=2 cases)	436	0	30	5.78	4.75
Nights stayed, residents only (0 nights=0 cases)	15	2	10	4.53	1.99

Economic Impact: Study Area Summary

Economic impact study areas are built around the location where the activity being studied occurs (here, biking) and the cities and towns where visitors are most apt to spend funds as part of their trip. For this analysis, recall biking and its related expenditures occur prevalently in three clusters: the Sanpete-Ferron-Price districts, the Moab District, and the Monticello District. These three areas will each serve as a study area in this study.

Table 2 lists descriptive economic indicators (GDP, total personal income, total employment, and total industries) for the study areas below. Comparisons between study areas should not be made, as they vary in size and (in the case of Moab and Monticello) partly overlap. The Sanpete-Ferron-Price study area has 420,351 jobs and consists of Utah, Carbon, Sanpete, Sevier, Juab, and Emery counties. The Monticello study area (which includes only San Juan County) includes 6,672 jobs. The Moab study area consists of two counties (San Juan and Grand) and includes 15,462 jobs.

Table 2

Economic Summary of Study Areas

Regional Indicator	*Study Area Estimates*
Sanpete-Ferron-Price Study Area	
Gross Domestic Product	$35,241,758,970
Total Personal Income	$30,705,347,536
Total Employment	420,351
Total Industries	402
Moab Study Area	
Gross Domestic Product	$1,054,554,383.91
Total Personal Income	$967,403,152.52
Total Employment	15,462
Total Industries	210
Monticello Study Area	
Gross Domestic Product	$441,738,804.59
Total Personal Income	$415,636,039.27
Total Employment	6,672
Total Industries	171

Economic Impact: Visitor Expenditures

Table 3 (see next page) summarizes visitor expenditure patterns analyzed in this study. Recall these expenditures are sourced from this study's online survey and represent only persons living outside the study area. This table has a column labeled "Zero Cases" which indicate the number of respondents who reported no expenditures in this category. Also recall all expenditure variables have gone through data cleaning steps to ensure conservative estimates. These include recoding all expenditures greater than three deviations from the initial mean as missing data in addition to capping retail expenditures at $500. This table includes individual person per-trip expenditures in lodging, travel, food, and retail. Results are summarized below.

Lodging

This study examined three lodging expenditure types: hotel/motels, camping, and rental cabin/homes. On average, respondents spend around $56 staying at hotels during their visits compared to $23 on camping and RV use and $29 at rental cabins. When excluding zero cases (and therefore persons not staying overnight), means increase to $282 for hotels, $73 for camping, and $324 for cabin rentals.

Travel

On average, respondents indicated spending around $37 on gas inside the study areas each visit.

Food

Respondents spend around $56 at dine-in restaurants, which include waitstaff. In comparison, they spend around $7 on fast food and $4 per trip on food from gas stations and convenience stores. Respondents also spend an average of $39 per trip on groceries at local grocery stores and farmers markets.

Retail

Respondents spend $3 on general retail purchases at stores like Walmart or Dollar General. Respondents spend around $16 per trip on recreational gear. Note as either form of retail purchases could hypothetically be used in the future outside the area, the economic impact analysis later in this study only utilizes 20% of the value of these expenditures in the modeling.

Services

Limited respondents indicated using services in the region and therefore are not included in modeling. These services included hiring guides for an average of $2 per visitor, as well as $8 on taxis and shuttling and $2 on rental gear.

Economic Impact: Visitor Expenditures

Table 3

Economic Expenditure Patterns Inside Study Area for Biking Visitors

Variable	N	Min	Max	Mean	SD	Zero cases	Mean, no zero cases
Hotel	306	0	1200	$56.36	158.31	245	$282.71
Camping	305	0	300	$23.25	50.99	208	$73.11
Cabin / Rental	302	0	950	$29.03	124.36	275	$324.67
Gas	302	0	250	$37.80	47.69	113	$60.40
Fast Food	300	0	100	$7.24	15.34	216	$25.86
Dine In	301	0	600	$56.32	92.48	137	$103.37
Convenience Food	306	0	50	$4.07	9.76	128	$16.36
Groceries	303	0	400	$39.54	64.47	128	$68.46
Retail*	300	0	75	$3.27	11.60	269	$31.62
Rec Retail*	298	0	166	$16.29	31.29	199	$128.35
Guiding Services	304	0	225	$2.69	17.60	293	$74.44
Transport / Taxi / Shuttle**	302	0	150	$8.28	20.62	230	$34.72
Rental Gear**	302	0	110	$2.00	12.50	293	$67.12
Spending Totals				$286.14			$1,291.19

*Only 20% of this expenditure is used in later modeling: $0.65 in general retail and $3.25 in recreational retail. **No expenditures modeled for economic impact in this study.

Image Credit: Mark White

Economic Impact: Terminology

In the coming pages, the research team employs IMPLAN, a leading economic impact estimator, to create economic impact estimates for what visitors contribute to the study area's economy in a typical year. IMPLAN (or Impacts for Planning) uses input-output modeling to establish economic impact by exploring what happens when visitors spend money in specific sectors (such as food, lodging, and retail). The analysis follows approaches used in prior peer-reviewed research and Forest Service studies.

Several steps have already been taken to ensure the resulting economic impact results are conservative. Recall cases with disproportionately long stays or large group sizes (greater than eight) have been excluded and instances of unusually high expenditures have been listed as missing data. This process continues in modeling the resulting expenditures in IMPLAN. As an important step in removing disproportionately high expenditures, all expenditure variables are examined for cases higher than three deviations from the mean expenditure and these cases are removed prior to crafting the means used in this study. Additionally, as retail expenditures can be used outside the area where they are purchased, only 1/5 of the average retail and recreation retail expenditures are included in the economic impact estimates.

In the report, the researchers use three terms to describe economic impact: *direct effect, indirect effect,* and *induced effect.*

Direct effect is the economic result created by the money spent as a result of visitors being present in the study area. This direct effect can generate further change in the local economy via indirect and induced effects.

Indirect effect is economic activity created when local businesses purchase goods and services from other local industries as a result of the direct effect. For example, indirect effect could include a local restaurant buying vegetables to create future meals for sale.

Induced effect is the estimated expenditures by local households and employees as a result of the initial direct impact. For example, a local restaurant employee may choose to spend his/her wages at another local business, creating additional rounds of local economic activity.

These three terms can also be further divided by their *employment impact* in the region, *value added* to the local economy, and *output*.

Labor income impact is measured by the estimated labor income (for employees and proprietors) created by the economic activity in the region.

Value added indicates the true economic wealth added to the local economy after subtracting the cost of inputs needed to conduct everyday business. Value added includes expenditures in profit, employment compensation, and taxes.

Output is value added plus total revenues and sales from economic activity. Of these three, labor income impact is a conservative estimate of economic impact and is the approach highlighted in this report.

Finally, jobs support from study area expenditures are reported in this study. Note IMPLAN envisions jobs as being portions of jobs. For example, a retail worker might have 10% of their time at work engaged with outdoor recreation users as clientele, so IMPLAN would identify this as 0.10 of a job. Jobs reported can also include part and full-time workers as well as proprietors.

Economic Impact: Annual Estimates

Table 4 examines mean expenditures created by biking visitors in the MLSNF in four analyses. The first examines expenditures related to the Sanpete, Ferron, and Price Districts. The second examines only the Moab District. The third analysis examines the Monticello District. Finally, the fourth analysis examines the cumulative impact of all three study areas on the MLSNF.

Based on mean expenditures used in this study and visitation estimates of 48,970 annual visits (with 2,448 excluded as being from persons living in the study area), **bikers spend an estimated $13,311,554.81 per year in the study areas.** This figure is created using the mean expenditures table (Table Three) and visitation estimates.

Table 4 examines these expenditures by study area and overall. Expenditures in the Sanpete/Ferron/Price study area support an estimated 11 jobs and over $396,471 in wages. In the Moab study area, expenditures support roughly 140 jobs and $4.34 million in wages. In the Monticello study area, expenditures support an estimated 12 jobs and over $324,000 in wages.

Examining all three study areas, findings indicate biking supports an estimated 165 jobs in the MLSNF along with $5.14 million in local wages.

Table 4

Economic Impact of Biking Visitation in the Manti-La Sal

Study Area	Level	Jobs	Wages	Value Added	Output
Sanpete / Ferron / Price	Direct	8.28	$233,239.80	$371,404.95	$606,408.86
	Indirect	1.79	$89,966.02	$167,282.86	$360,890.65
	Induced	1.71	$73,268.33	$144,014.42	$267,261.64
	Total	***11.77***	***$396,474.15***	***$682,702.24***	***$1,234,561.15***
Moab	Direct	115.23	$3,461,631.88	$5,370,715.48	$8,648,357.21
	Indirect	13.55	$445,572.92	$769,934.01	$1,874,772.56
	Induced	12.02	$439,742.08	$968,888.52	$1,771,316.66
	Total	***140.81***	***$4,346,946.88***	***$7,109,538.01***	***$12,294,446.43***
Monticello	Direct	5.83	$122,799.62	$205,595.46	$370,623.21
	Indirect	4.98	$149,676.03	$274,198.07	$687,870.80
	Induced	1.69	$51,724.06	$118,319.53	$255,402.13
	Total	***12.50***	***$324,199.70***	***$598,113.07***	***$1,313,896.13***
All Study Areas	Direct	129.34	$3,873,504.07	$6,033,593.94	$9,764,882.91
	Indirect	20.32	$694,838.34	$1,228,160.25	$2,963,848.83
	Induced	15.42	$571,910.69	$1,247,011.80	$2,323,409.31
	Total	***165.08***	***$5,140,253.11***	***$8,508,765.99***	***$15,052,141.06***

Economic Impact: Annual Estimates

Table 5 shows the top five job sectors supported by biking expenditures. The greatest impact of biker visitation is in the full-service (dine-in with waitstaff) restaurant sector, where approximately 37 jobs are supported by visitors' expenditures. Visitor expenditure patterns for other accommodations (likely camping and cabins), hotels and motels, transit (likely shuttle services), and fast food (limited-service restaurants) expenditures are similarly supported by biking visitors in the MLSNF.

Biking visitor expenditures also produce taxes at the local, state, and federal level as summarized in **Table 6**. In all, biking expenditures support an estimated $2.36 million in taxes at the county, state, and federal levels.

Table 5

Employment Breakdown by Top Five Sectors

Industry Display	Direct Impact Employment	Indirect Impact Employment	Induced Impact Employment	Total Impact Employment
509 - Full-service restaurants	37.45	0.49	0.85	38.79
508 - Other accommodations	33.8	0	0	33.8
507 - Hotels and motels, including casino hotels	27.18	0	0	27.18
418 - Transit and ground passenger transportation	11.22	0.1	0.13	11.45
406 - Retail - Food and beverage stores	8.55	0.08	0.57	9.2

Table 6

Annual Estimated Taxation Generated

Impact Level	Local / County	State	Federal	*Totals*
Direct	$585,333.26	$319,409.51	$874,415.40	***$1,779,158.17***
Indirect	$91,575.21	$56,976.45	$145,933.32	***$294,484.97***
Induced	$103,267.17	$57,619.35	$131,762.39	***$292,648.91***
Totals	***$780,175.62***	***$434,005.31***	***$1,152,111.11***	***$2,366,292.05***

Expenditure Patterns Beyond Study Area

Table 7 summarizes expenditure patterns more than fifty miles from the MLSNF, but still inside Utah. Note these are reported here, but not included in the economic impact analysis.

Lodging and Travel

Lodging expenditures outside the study area are minimal, implying lodging for the MLSNF is relatively plentiful and staying outside this area is not needed except perhaps for extended travel. However, the table provides ample evidence of traveling to and from the MLSNF, with visitors spending (on average) $39 gasoline outside the three study areas.

Food

Food expenditures are a common part of traveling to a destination. Here, travelers spent around $4 on fast food, $14 on dine-in meals, $2 on convenience store snacks and drinks, and $10 on groceries.

Retail

General retail purchases outside the study area are fairly uncommon. In traveling to and from MLSNF, biking visitors spent less than $1 on average on general retail. However, the table indicates visitors are occasionally stopping to buy gear before or after their visit; recreation retail averaged nearly $5 outside the study areas.

Services

Services represent a small sliver of economic expenditures, even as it expands beyond the study area. Expenditures in guide services, taxis, and rental gear are all effectively zero beyond the study area.

In sum, biking visitors contribute an additional $4.081 million to Utah's outdoor recreation economy as a result of traveling to and from the three MLSNF study areas.

Table 7

Economic Expenditure Patterns Outside the MLSNF Study Areas but Still Inside Utah

Variable	N	Min	Max	Mean	SD	Zero Cases
Hotel	304	0	250	$7.74	35.33	286
Camping	301	0	150	$3.02	16.03	283
Cabin / Rental	300	0	130	$0.83	10.20	298
Gas	305	0	300	$39.52	54.13	119
Fast Food	302	0	50	$4.13	9.78	236
Dine In	302	0	250	$14.00	40.63	243
Convenience Food	302	0	25	$2.37	5.67	239
Groceries	302	0	200	$10.08	29.38	242
Retail	302	0	50	$0.76	5.14	293
Rec Retail	298	0	100	$4.87	18.91	274
Guiding Services	306	0	0	$0.00	NA	306
Transport / Taxi / Shuttle	304	0	50	$0.39	4.20	301
Rental Gear	306	0	0	$0.00	NA	306

Resident Expenditures

Readers have likely noticed residents (persons living inside any of the three study areas established for this study) were not included in this study as a form of economic impact. Why is this the case?

Let's consider who is being studied in an economic impact study: *visitors to the area*. Visitors represent persons who are new contributors to the economy and do not live in the area being studied. Whenever they enter the area to spend funds, they create expenditures which were not previously there. Now consider residents, who are persons already living in the area being studied. Their expenditures, whether it is a mortgage payment, a trip to a retail store, or purchasing gasoline, are already considered to be part of the economy. This means they would not be new expenditures, and by definition would not be a form of economic impact.

Although they may not be considered a form of economic impact, residents are still important contributors to the region. **Table 8** summarizes some of their annual expenditures in the region, including mortgages, retail purchases, taxes, rents, and more totaling over $25,000 per person per year. As there is no estimate of how many unique persons are represented in our 2,448 local visits, we cannot estimate the amount of expenditures generated by residents. Nonetheless, this does make clear the importance of biking residents and their expenditures.

Table 8

Resident Expenditures					
Variable	**N**	**Min**	**Max**	**Mean**	**SD**
Annual restaurant expenditures (any kind)	18	0	10000	$1,350.33	2463.57
Annual retail expenditures	18	0	20000	$3,480.55	4992.38
Annual infrastructure services expenditures (such as phone, internet)	18	0	4000	$1,783.33	1228.70
Annual personal services expenditures (such as oil, landscaping)	18	0	10000	$1,250.00	2266.96
Annual property taxes	18	0	5000	$1,640.55	1733.90
Annual mortgage payments	18	0	50000	$7,713.88	12723.74
Annual rent payments	18	0	28500	$2,894.44	7301.93
Annual business taxes	18	0	50000	$4,166.66	12157.06
Annual memberships (such as gyms)	18	0	500	$87.22	190.34
Annual local donations (such as food or money)	18	0	10000	$1,572.22	3152.74

Demographics

Table 9 summarizes the specific demographic variables of respondents requested by Outdoor Alliance. In cases except for age, the variables are dichotomously coded, which means a one equals the presence of the trait being studied and a zero equals the absence of this trait. Therefore, those mean results can be interpreted as percentages. Age is summarized as a continuous variable. Please note also these statistics include cases excluded in cleaning the economic impact data.

In all, 20% of respondents identified as being female. The average respondent age was 48. Note persons under the age of 18 did not qualify to participate in this study, which certainly impacts this variable.

Further, 47% of respondents indicated having a four-year degree while another 38% indicated having a graduate degree such as master's or doctorate degree. Correspondingly, 45% of respondents noted having personal annual incomes greater than $50,000, while half reported six-figure incomes.

Table 9

Demographics

Variable	N	Min	Max	Mean	SD
Respondent Sex (1=Female, 0=Male)	527	0	1	0.20	0.40
Respondent age	521	22	83	48.24	11.47
Has Bachelor's college degree	522	0	1	0.47	0.49
Has Advanced degree	522	0	1	0.38	0.48
Personal income greater than $50K	474	0	1	0.45	0.49
Personal income greater than $99K	474	0	1	0.50	0.40

Image Credit: Mark White

Limitations

As with all economic impact research, there are instances where better data could provide a more nuanced study. The following sections share instances where limitations on available data could be addressed in future versions of this study.

1. Economic impact studies are snapshot estimates of a particular activity at a single moment in time. As such, the economic impact of any outdoor recreation activity will certainly vary from year to year based on weather, spending patterns, local business availability, and other variables. As such, the results in this study can be best understood as a scientific estimate of what expenditures would generally look like in a typical year barring major changes to the study area economy and its related activities.

2. Economic impact studies are limited in their ability to demonstrate directly observable activities in the study area. For example, if IMPLAN estimates expenditures create $1,000 in induced expenditures, observing or pinpointing that sum in the economy is not possible. Rather, these models operate on predictions of what would happen given the data available.

3. Economic impact studies are not cost-benefit analyses. Cost-benefit studies relate how expenditures required to trigger a specific activity relate to specific quantitative benefits of the activity occurring. The authors of this study make no claims about the cost-benefit analysis of the activity studied.

4. Economic impact studies do not account for opportunity costs. Opportunity costs consider how funds might be spent under different circumstances and the varying impacts of those different expenditures. This study is centrally focused on the activity being studied.

5. This study does not attempt to account for changes created by the current Covid-19 global pandemic. Anecdotally, some outdoor areas have seen visitation changes due to pandemic conditions, so visitation estimates could be lower or higher than stated. Additionally, some businesses open pre-pandemic may be now unavailable, limiting expenditures. Pandemic conditions may also limit one activity (such as hotel use) in favor of another (camping, for example). Although not addressed here, this would be an interesting point for future research.

OUTDOOR ALLIANCE

Image Credit: Andrew Burr