

University of Montana

## ScholarWorks at University of Montana

---

Institute for Tourism and Recreation Research  
Publications

Institute for Tourism and Recreation Research

---

1-2023

### Assessing the Impact of the Yellowstone TV Series on Montana's Tourism Economy

Patrick Barkey

Melissa Weddell

Follow this and additional works at: [https://scholarworks.umt.edu/itrr\\_pubs](https://scholarworks.umt.edu/itrr_pubs)



Part of the Agricultural and Resource Economics Commons, Leisure Studies Commons, Nature and Society Relations Commons, Other Social and Behavioral Sciences Commons, and the Regional Economics Commons

Let us know how access to this document benefits you.

---

# ASSESSING THE IMPACT OF THE *YELLOWSTONE* TV SERIES ON MONTANA'S TOURISM ECONOMY

JANUARY 2023



PREPARED FOR:

PARAMOUNT STUDIOS  
5555 MELROSE STUDIOS  
HOLLYWOOD, CA 90038

PREPARED BY:

BUREAU OF BUSINESS  
AND ECONOMIC RESEARCH  
UNIVERSITY OF MONTANA  
MISSOULA, MT 59812

INSTITUTE FOR TOURISM  
AND RECREATION RESEARCH  
UNIVERSITY OF MONTANA  
MISSOULA, MT 59812

## Acknowledgements

This report was authored by Patrick Barkey (BBER) and Melissa Weddell (ITRR) from the University of Montana. The authors would like to thank John Baldrige (BBER) and Kara Grau (ITRR) for their expertise and assistance on the survey development and implementation. All conclusions, errors, and omissions are the responsibility of the authors alone.

## Table of Contents

Executive Summary .....	2
1. Introduction and Overview .....	4
2. Survey Responses of Montana Visitors .....	6
3. <i>Yellowstone</i> -induced Visitor Spending in Montana .....	8
4. Policy Analysis with the REMI Model .....	9
5. The Economic Impact of <i>Yellowstone</i> in Montana .....	12
6. Summary and Conclusion .....	18
7. References .....	19
Appendix 1: Survey Methodology .....	20
Appendix 2: Detailed Survey Results .....	21

# Assessing the Impact of the *Yellowstone* Television Series on Montana’s Tourism Economy

## Executive Summary

The hugely successful and popular dramatic television show *Yellowstone*, which portrays the fictional Dutton family ranch in Montana, has sparked the interest of a worldwide audience in our state. In addition to its critical and commercial success, the show has emerged as a significant factor in the marketing of Montana, with its more than 10 million viewers treated to storylines, characters and scenery of the mountain west. How has the show’s success affected the arrival and subsequent spending of visitors to the state?

A new study jointly produced by the Bureau of Business and Economic Research (BBER) and the Institute for Tourism and Recreation Research (ITRR) at the University of Montana addresses that question. In 2022, a BBER analysis (Barkey, 2022) showed that the filming and production activities by Paramount, the studio producing *Yellowstone*, contributed significantly to the state economy. The 2022 study concluded that the production activities of Season 4 of the show ultimately supported 527 additional jobs in the state, \$25.3 million in annual personal income, and \$10.4 million in state tax and non-tax revenues. However, that study did not attempt to quantify or incorporate the show's impact on visitor spending.

When the results of the 2022 study are extended to include the impact of visitor spending, these impacts change dramatically. Using the results of a custom designed survey of recent visitors to Montana as well as spending profiles for visitors maintained by ITRR, we estimate that the 2.1 million visitors to Montana in 2021 whose decision to visit was the result of the show spent \$730.1 million in the state last year. This spending, in addition to the spending of the Season 4 production activities analyzed in the 2021 BBER study, combine to produce a significant impact on the state economy.

Assessing the Impact of *Yellowstone* on Montana’s Tourism Economy: Summary

Category	Units	Impact
Total Employment.....	Jobs	10,240
Personal Income.....	\$ Millions	376.1
Disposable Personal Income.....	\$ Millions	324.7
Selected State Revenues.....	\$ Millions	44.5
Output.....	\$ Millions	1,059.4
Population .....	People	3,305
Tax Credits Received.....	\$ Millions	16.5*

\* Issued over two fiscal years

We find that the combination of visitor spending and film production spending associated with the production and streaming of *Yellowstone* in Montana ultimately produce an economy that is larger by:

- more than 10,200 jobs across a wide spectrum of industries, including both tourism-related and other industries;

- an additional \$376 million in income received by Montana households;
- almost \$1.1 billion in output, or gross receipts, of Montana business and non-business organizations;
- an increase in state tax revenues directed in whole or in part to the general fund of \$44.5 million, due to increases in the size of the revenue base;
- 3,305 more people, attracted and retained to the state by the increased economic opportunity.

These impacts reflect changes in the state economy that come about from the filming and streaming of *Yellowstone*, which include both the spending associated with those activities as well as the additional spending induced in the economy as the original spending is received as income or revenue. The results were estimated with the use of the BBER's policy analysis model that has been specifically calibrated for this purpose. As noted in the summary table above, these overall economic impacts compare to a film tax credit of \$16.5 million received by Paramount (over two Montana fiscal years) in support of the production.

#### About This Study

This study was produced by the Bureau of Business and Economic Research (BBER) and the Institute for Tourism and Recreation Research (ITRR) at the University of Montana in the fall of 2022. The results are based in part on a survey of recent Montana visitors that was conducted in September and October 2022. The study was commissioned by Paramount.

The Bureau of Business and Economic Research is the preeminent business research center in the state. Established in the University of Montana's College of Business in 1948, the BBER is involved in survey research, economic analysis, industry studies and its long-running Economic Outlook Seminar programs, now in their 48<sup>th</sup> year. The Institute for Tourism and Recreation Research was created in 1987 to conduct research on travel, outdoor recreation and tourism. Its overall mission is to provide research and information to assist the tourism and recreation industry in making informed decisions about planning, marketing, policy, and management.

## 1. Introduction and Overview

Since 2020, the *Yellowstone* television series, produced by Paramount Studios, has been filmed in its entirety in and around the Bitterroot Valley of western Montana. As part of its application for a tax credit based on its film production expenditures, as spelled out in the Montana Economic Development Industry Advancement (MEDIA) Act that became law in July 2019, the studio made available detailed information on its production-related expenditures in the state. The Bureau of Business and Economic Research (BBER) at the University of Montana made use of this and other information to compile an analysis of how those expenditures interacted with the state economy to support jobs, incomes, spending and investment across the economy.

The BBER's research report, released in April 2022, found that the approximately \$72 million in spending that qualified for tax credits under the MEDIA act, along with the 116 Montana residents employed in production activities, had a significant impact on the overall economy. Specifically, the BBER's April 2022 report found that the production activities over the five month period between October 2020 and February 2021 related to Season 4 of the show ultimately supported:

- 527 jobs, which included jobs in the motion picture, construction, accommodation and food services, retail trade, and other industries;
- \$25.3 million in annual income received by Montana households, of which \$24.6 million was after-tax income available for spending in the state economy;
- \$85.3 million in annual output, or gross receipts, to Montana business and non-business organizations;
- \$10.6 million in state tax and non-tax revenues.

These findings occurred both directly through spending of the studio itself, and spending subsequently induced in the economy as spending received by vendors, employees, and governments was partially re-spent in the local economy to add to the total impact.

The conclusion of the April 2022 BBER report was that the significant spending associated with the production of the show, and the composition of that spending towards local goods and services, resulted in the production activities supporting many more jobs and much more income than the studio's direct spending accounted for.

### Broadening Our Understanding of Impacts

The spending and income-based approach of the BBER's April 2022 study of production activities for *Yellowstone* Season 4 in Montana yielded significant insights on the nature and magnitude of those activities as they relate to the state economy. The analysis also benefitted greatly from the detailed expenditure records made available. The study serves as an important example of what is involved with a specific production, and how production activities connect with the rest of the state economy.

But as a complete analysis of what the production activity does to affect the economy, the BBER's April 2022 study fell short, as it acknowledged:

... the advertising value of films that use Montana as a backdrop doubtless would add to the ultimate impact of film production on the state economy, but impacts from those sources are not included in this report (Barkey, 2022).

Film tourism, the niche of tourism where visitors explore locations and destinations made famous from movies and television, seems especially applicable to *Yellowstone*. The title of the show itself is associated with the famously beautiful national park, and the story lines, characters, and backdrop of the show embraces the mountain west in general, and the landscape of western Montana in particular. The

Montana Office of Tourism spends millions in advertising campaigns to make potential visitors aware of our state's attractions. Yet the popularity of *Yellowstone* – the highest rated non-sports television show of 2021-22 – has arguably eclipsed those efforts and raised the image of Montana to a wider audience of potential visitors.

The spending of those who visit the state for any reason is an important driver of the Montana economy. For 35 years, the Institute for Tourism and Recreation Research (ITRR) has conducted extensive research on Montana's tourism and recreation economy including research economic impact of nonresident travel, visitor characteristics and expenditures, social and environmental impacts of tourism, regional and community tourism planning and development, niche market studies, outdoor recreation travel, and recreation yearly outlook. ITRR provides citizens, leaders and policy makers with objective tourism and recreation research essential to making informed decisions for advancing Montana's economy while sustaining its natural resources.

This study employed a survey-based approach to assessing the magnitude of spending of those who visited Montana because of the show *Yellowstone*. In partnership with the nationally-recognized survey research vendor Qualtrics, we assembled a national panel of respondents who (i) were not residents of Montana, and (ii) had visited the state within the last three years. Using a survey designed and developed by BBER and ITRR, respondents were asked a number of questions about the purpose, frequency, and duration of their visit(s) to the state. They were also asked questions to measure the degree to which *Yellowstone* was an influence on their decision to visit.

This information was combined with spending profiles developed and maintained by ITRR on all visitor to Montana to estimate visitor spending that was induced by the show for the calendar year 2021. This was the basic information used to study how that spending propagated across the economy as a whole, using the REMI model to trace the linkages between visitor spending and the state economy.

The findings presented here represent the sum of two different mechanisms through which the production and streaming of *Yellowstone* has acted to grow the state economy. The first is the spending and other changes that take place as part of the filming and production process. Since this fully described in the BBER's April 2022 study of *Yellowstone*, we do not repeat our description of it here. The second mechanism is the spending of visitors to the state that were influenced by the show to come here.



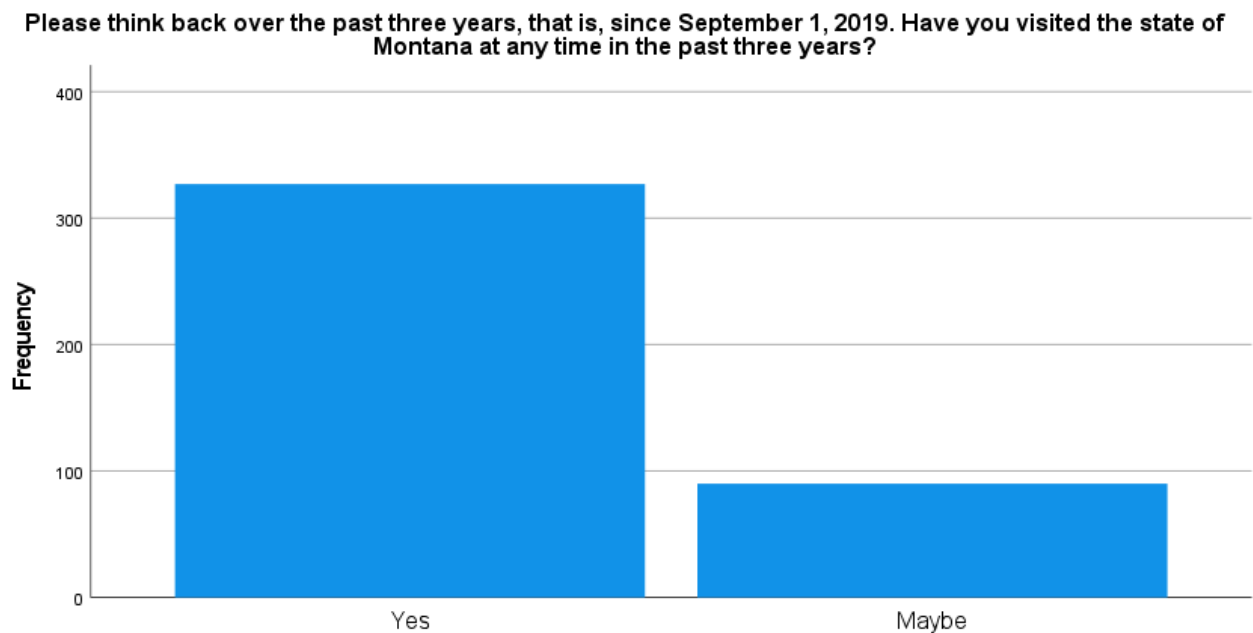
## 2. Survey Responses of Montana Visitors

In the fall of 2022, the BBER/ITRR conducted a survey of recent visitors to Montana to assess how, if at all, their exposure to *Yellowstone* influenced their decision to visit. The survey was administered by survey vendor Qualtrics to a national panel maintained by the company. The results that we describe in this section formed the basis for our estimate of the visitor spending that occurred in Montana that was due to the show.

The survey instrument was developed through a multistep process which included collecting previous studies about film tourism, discussion with film and tourism experts, and internet searches. The survey included questions about demographics, trips to Montana, purpose of trips, viewership of the *Yellowstone* TV show, and level of influence to visit Montana. It was administered by Qualtrics and open from September 29, 2022 – October 10, 2022 with 417 completed surveys.

In order to be part of the survey sample, respondents had to (i) be non-Montana residents, and (ii) have visited Montana at least once during the last three years. 21.6 percent of the 417 respondents to the survey answered “maybe” to the visitation question, as shown in Figure 2.1 below. It was decided to eliminate these uncertain visitors from the analysis, leaving 327 respondents who answered “yes.” The remainder of the survey results described in this section refer to the subset of respondents who were visitors to Montana by this definition.

Figure 3.1 Survey Response: Visitation



The critical portion of the survey, from the point of view of this study, came from questions that asked specifically about exposure to *Yellowstone*. For convenience, we combine the two questions into a single, cross-tabulation in Table 3.1. The first observation we make from these answers is the rather remarkable fact that of the 327 visitors in the sample, 71.2% (233 survey subjects) said that they had watched the show. Another 12.5 percent were unsure, leaving only 16.2 percent who answered no to the question. With viewership of 10 to 12 million for individual episodes for a national audience, this is clearly a sub-population of the country that is much more likely to tune into the show.

A subsequent question asked how the show influenced their decision to visit Montana, with five choices ranging from “not at all” to “a great deal.” Reading along the bottom row of the table, we see that a total of 63 responded that *Yellowstone* influenced their visitation decision “a lot” or “a great deal.” This is 19.3% of all of the visitors, another remarkable result.

However, a closer reading of the table reveals that 6 respondents who said “maybe, I can’t recall” when asked whether or not they had viewed the show also said that the show influenced their visitation decision “a lot.” We consider these responses to be unreliable, and made the decision to recode them as “not at all” responses. Thus we conclude that 57 out of 327 in the survey of Montana visitors were either influence “a great deal” or “a lot” by *Yellowstone* to visit our state. We consider this percentage, 17.4%, to be our estimate of the fraction of visitors to Montana to have been induced to visit by the show.

Table 2.1 Response Counts for Viewership and Influence of *Yellowstone*

How much, if at all, did the television show "Yellowstone" influence your decision(s) to visit the state of Montana?		None at all	A little	A moderate amount	A lot	A great deal	Total
Q6 Changing subjects, some people have watched or streamed the television show "Yellowstone," while other people haven't watched the show. Have you watched or streamed the television show "Yellowstone" or not?	Yes, I have watched the show	44	68	64	41	16	233
	Maybe, I can't recall	8	20	7	6	0	41
	No, I haven't watched the show	47	3	3	0	0	53
Total		99	91	74	47	16	327

The survey asked additional questions on number of visits, length of stay, purpose of trips as well as information on age and gender. The detailed answers can be found in Appendix 1.

### 3. *Yellowstone*-induced Visitor Spending in Montana

In order to formulate an estimate of visitor spending that can be attributed to the production and streaming of *Yellowstone*, we need to apply the survey findings to aggregate information on visitor spending in the state overall. For more than two decades, the Institute for Tourism and Recreation Research (ITRR) has conducted extensive research on the tourism economy. Our estimates of *Yellowstone*-induced visitor spending begin with the ITRR comprehensive report for the year 2021 (Grau, 2022).

In 2021, ITRR estimated that there were 12.5 million visitors to the state. Given our estimate that 17.3% of visits were *Yellowstone*-induced, this translated into 2,128,740 visits to Montana that were due to the production and airing of the show.

On average, in 2021, visitors spent \$177.46 per day, per group. To calculate spending estimates we divide daily group spending by average group size of 2.33 people to arrive at the total per day, per person spending, which equals \$76.22. Then we multiply 2,128,740 visitors by \$76.22, which equals \$162,252,562 and multiply by their average length of stay, 4.5 nights for a total of \$730,136,532 estimated visitor spending by those who came to the state because of *Yellowstone*.

#### 4. Policy Analysis with the REMI Model

Economic impacts occur because of events or activities that create new expenditures. Spending which is new – which is over and above existing expenditures and does not simply displace spending elsewhere in the region – not only adds to economic activity in its own right, but it also induces further spending as the recipients of wages, sales, and tax revenues spend a portion of their income in the local economy. Changes in the path of investment, migration, and prices and wages are possible as well.

The basic tool used in this study to assess the economic impacts of the filming and streaming of *Yellowstone* is an economic model, calibrated to represent the interactions in the Montana economy, leased from Regional Economic Models, Inc. The REMI model is one of the best known and most respected analytical tools in the policy analysis arena and has been used in more than 100 previous studies as well as dozens of peer-reviewed articles in scholarly journals. It is a state-of-the-art econometric forecasting model that incorporates dynamic feedbacks between economic and demographic variables. The REMI model forecasts employment, income, expenditures, and populations for counties and regions based on a model containing over 100 stochastic and dynamic relationships as well as a number of identities. A full explanation of the design and operation of the model can be found in Treyz (Treyz, 1993).

The model used in this study disaggregated the state economy into five regions: Northwest, Southwest, North Central, South Central, and Eastern. It explicitly recognizes trade flows that exist between these regions, as well as between the regions and the rest of the world. Statewide impacts reported here represent the totals for the five regions. The definition of the regions is shown in Figure 4.1 below.

Figure 4.1 REMI Economic Regions

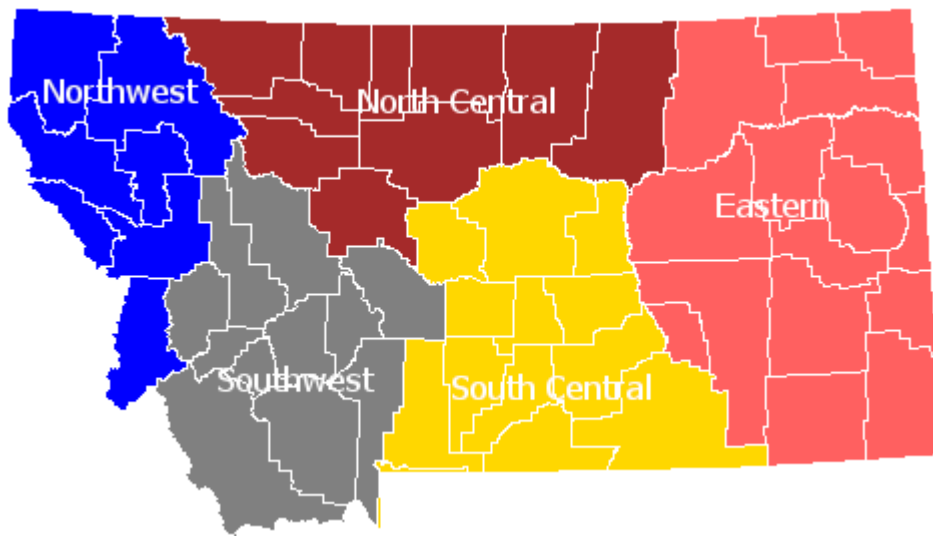
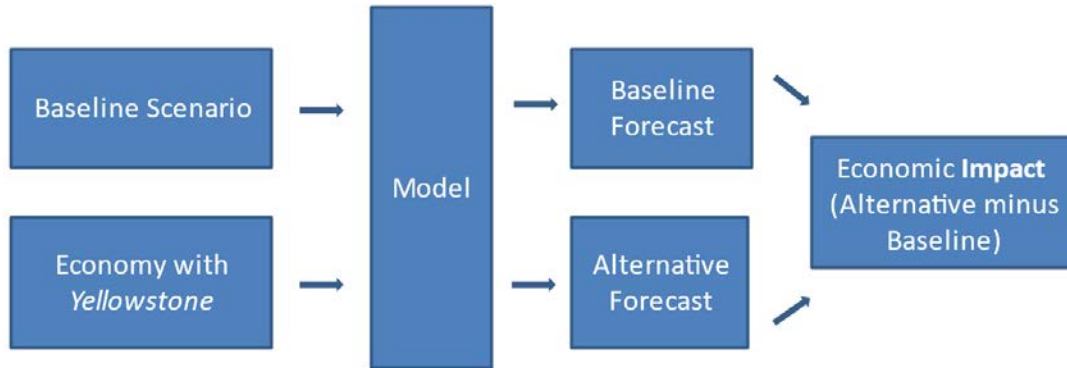


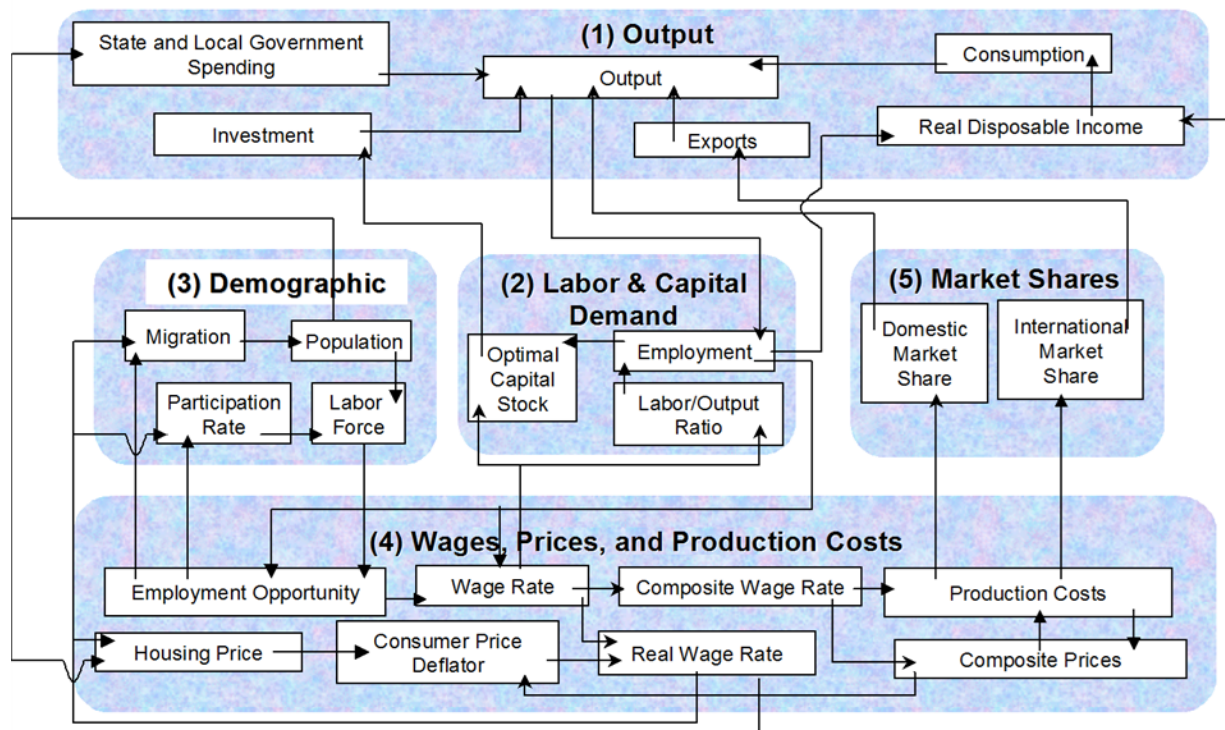
Figure 4.2 Policy Analysis with the REMI Model



The use of the model to derive the results of this study is illustrated graphically in Figure 4.2. First, a baseline projection for the economy is made using status quo assumptions that do not include *Yellowstone*. The model is then used a second time, with identical inputs – except that in this alternative scenario, the spending associated with the filming of *Yellowstone* and the visitor spending from film tourism take place. These changes in the economy ultimately bring the economy to a new level of activity, reflecting not only the direct impacts of the *Yellowstone*-related spending, but how the rest of the economy reacts to those changes. The difference between the baseline and alternative scenarios of the economy represents the economic impact of the production and streaming of *Yellowstone* in Montana.

The model utilizes historical data on production, prices, trade flows, migration, and technological change to calibrate the relationship between five basic blocks of the regional economy as depicted in the figure on the following page: output, labor and capital demand, population and labor force, wages and prices, and market shares. The changes in production, labor demand and intermediate demand caused by production and visitor spending due to *Yellowstone* cause these blocks of the economy to react and adjust to a new equilibrium. As described above, the difference between the baseline and the alternate scenario is the ultimate impact of the production and streaming of *Yellowstone*.

Figure 4.3 REMI Model Linkages



The essential philosophy of the model is that regions throughout the country compete for investment, jobs, and people. When events occur in a region they set off a chain reaction of actions causing dollar flows toward better investment and production opportunities, followed over time by a flow of workers and households toward employment opportunities and higher wages. The model embodies an 82-sector input-output matrix that describes the technological interdependence of production sectors of the economy, as well as extensive trade and capital flow data to determine the share of each sector’s demand that can be met by local production.

As powerful and flexible as this tool is, the answers it provides are only as good as the questions posed to it. The majority of work in this study is carefully crafting the inputs used to construct a scenario of the economy that faithfully represents all of the events, income flows, and other direct and indirect impacts that result from the television show *Yellowstone*. The production-related events that are due to the show have been detailed in the 2021 BBER report. The visitor spending that occurs in Montana because of the show is detailed in the previous section.

## 5. The Economic Impact of *Yellowstone* in Montana

The analysis of how the filming of *Yellowstone* ultimately affects the Montana economy is accomplished by comparing a hypothetical, “no *Yellowstone*” scenario for the economy where the film production and the show-induced visitor spending do not occur, to the actual economy. A “no *Yellowstone*” economy is smaller by more than the production spending and the visitor spending themselves, since that spending ultimately supports more jobs, investment and spending as those who receive the original spending as income, in turn, spend in the state economy.

All of the results of this section represent the difference between these two outcomes – one with, and one without, the filming of *Yellowstone*. They pertain to the calendar year 2021. They include the production impacts of the BBER’s April 2022 study, as well as the visitor spending impacts described in this report. We refer to this as the impact of filming *Yellowstone*.

### Impacts Summary

The inclusion of *Yellowstone*-induced visitor spending into the analysis of the show’s economic impacts raises our estimates considerably. This is not surprising, given that the \$730.1 million in visitor spending in Montana that is due to viewership of the show is more than ten times higher than the production-related spending that qualified for the Film Tax Credit that was the main driver in the 2021 analysis.

Table 5.1 Impacts Summary

Category	Units	Impact
Total Employment.....	Jobs	10,240
Personal Income.....	\$ Millions	376.1
Disposable Personal Income.....	\$ Millions	324.7
Selected State Revenues.....	\$ Millions	44.5
Output.....	\$ Millions	1,059.4
Population .....	People	3,305
Tax Credits Received.....	\$ Millions	16.5*

When the impact of the popular show’s influence on visits and spending by those from outside of Montana is taken into account, the number of jobs that the show’s filming and streaming ultimately supports surpasses 10,200, as shown in Table 5.1. This represents just under 1.5 percent of total employment in the state economy, which is a remarkable outcome. The size of the employment impact reflects the size and importance of visitor spending as an economic driver in Montana, as well as the labor-intensive nature of many of the industries that serve visitors.

The other dimensions of economy activity that are impacted by the filming of *Yellowstone*, as summarized in Table 5.1, are substantial as well. Personal income is the income received each year by Montana households, both from employment (earnings) and other sources. Its increase of nearly \$390 million because of *Yellowstone* filming is a significant boost to consumer spending potential. Likewise the nearly \$1.1 billion increase in business and non-business organizations gross receipts (output) that is due to *Yellowstone* represents a sizable boost in demand for state businesses.

It is useful to go into more detail on the economic impacts to gain a better appreciation of how the filming and streaming of *Yellowstone* has affected the state economy.

## Employment Impacts

The substantial job impacts in Montana that have come about because of the filming and streaming of the television show are the consequence of new streams of spending from elsewhere that the show directs here. This spending, on everything from construction, to hotels and food services, and even to health care and government, increases investment and fuels expansion in those businesses. Employment changes are a natural measure of that effect.

Table 5.2 Employment Impacts

Industry	Impact
Construction.....	1,040
Manufacturing.....	107
Motion picture and sound recording industries.....	125
Retail Trade.....	1,006
Transportation and Warehousing.....	241
Professional and Technical Services.....	247
Administrative and Waste Services.....	240
Health Care and Social Assistance.....	334
Arts, Entertainment, and Recreation.....	1,359
Accommodation and Food Services.....	4,302
Other Services, except Public Administration.....	274
Other.....	965
<b>TOTAL.....</b>	<b>10,240</b>

The importance of *Yellowstone*-induced visitor spending as a driver of these impact results is clearly visible from the employment impacts by industry shown in Table 5.2. In terms of jobs, the industries most affected by the spending induced by the show have important links to visitor spending, namely, accommodation and food services, and the arts, entertainment and recreation industries. Those two industry categories alone account for 5,661 jobs, which is 55 percent of the total.

The detail in the table also makes clear how the impacts spread to industries with less direct connections to film production or visitor spending. There are significant job gains in industries such as health care, retail trade and government. These gains reflect the overall growth in the size of the economy that includes *Yellowstone*, and the corresponding increase in demand for goods and services of all kinds.

## Personal Income and Earnings Impacts

The spending by out-of-state visitors, in addition to the spending on the production activities of the television show in Montana, is received as income by households, businesses and government. For households the gains in personal income are substantial. Because of the filming and streaming of *Yellowstone*, Montana households realize a gain in aggregate income of about \$376 million, of which \$325 million is after-tax income available for spending in the local economy.



Table 5.3 Personal Income Impacts, millions of dollars

Category	Impact
Total Earnings by Place of Work	410.3
Total Wage and Salary Disbursements	282.4
Supplements to Wages and Salaries	61.1
Employer contributions for employee pension and insurance funds	38.1
Employer contributions for government social	23.1
Proprietors' income with inventory valuation and capital consumption adjustments	66.8
Less: Contributions for government social insurance	52.0
Employee and self-employed contributions for government social insurance	28.9
Employer contributions for government social	23.1
Plus: Adjustment for residence	(1.1)
Gross In	5.1
Gross Out	6.3
Equals: Net earnings by place of residence	357.2
Plus: Property Income	20.6
Dividends	7.9
Interest	8.3
Rent	4.4
Plus: Personal Current Transfer Receipts	(1.8)
Equals: Personal Income	376.1
Less: Personal Current Taxes	51.4
Equals: Disposable Personal Income	324.7

Most, but not all, of the gains in household income because of *Yellowstone* come about because of increases in income that are due to employment, as shown in Table 5.2. The sizable fraction of earnings that comes from increases in business owner income -- \$66.8 million, or 16.2 percent of earnings by place of work -- reflects the nature of many businesses in the tourism and recreation industries. There is a smaller, but important gain in property income as a result of *Yellowstone* as well, reflecting the increased size of the economy overall.

The earnings impact due to *Yellowstone* comes from three components, as broken out in Table 5.4. Wages and salaries consist of the increase in aggregate paychecks of all payroll workers, which amounted to \$282.4 million. When the cash value of benefits are added to this figure, we get a total compensation impact of \$343.5 million. Finally, adding proprietor income to compensation yields an earnings impact of \$410.3 million.

This total earnings impact, when considered in comparison to the 10,240 net new jobs added to the economy because of *Yellowstone*, represents average earnings of \$40,068 for each newly created job. By

comparison, the finding of the BBER’s April 2022 study which did not include the tourism impact described here estimated average earnings of \$51,571 for each of the 527 net new jobs that were supported by film production activities alone.

Table 5.4 Earnings Impacts

Category	Units	Impact
Wages and Salaries.....	\$ Millions	282.4
Compensation.....	\$ Millions	343.5
Earnings.....	\$ Millions	410.3
Earnings per Job, New Jobs.....	\$ Dollars	\$40,068

Output Impacts

The higher spending levels that occur in the state economy due to the filming and streaming of *Yellowstone* have significant impacts on business revenue as well. These occur not only because of the sale of goods and services to consumers, but also because of increased demand all along the supply chain. While some of this demand is served by producers outside of Montana, much of it is not.

In terms of gross receipts, we estimate that the television show has ultimately produced a gain of more than \$1 billion for Montana business and non-business organizations, as shown in Table 5.5. The output impacts shown in the table represent gross receipts by major industry classification with two exceptions – retail and wholesale trade, where markup is shown instead. The output impacts reveal the significant impact of the television show-induced spending on accommodations and food services industries, but also the contribution of the entire spectrum of industries in supporting the overall impact.

Table 5.5 Output Impacts, millions of dollars

Industry	Impact
Construction.....	138.8
Manufacturing.....	28.3
Motion picture and sound recording industries.....	39.4
Retail Trade.....	95.2
Transportation and Warehousing.....	27.7
Professional and Technical Services.....	31.9
Administrative and Waste Services.....	21.0
Health Care and Social Assistance.....	42.7
Arts, Entertainment, and Recreation.....	85.3
Accommodation and Food Services.....	317.0
Other Services, except Public Administration.....	17.3
Other Private.....	169.1
Government.....	45.8
TOTAL	1,059.4

## Revenue Impacts

A larger economy due to *Yellowstone* means a larger tax base for governments. This produces higher revenues of all kinds, including state government revenues. Many forms of state revenue are impacted by the filming and streaming of *Yellowstone*, including revenues earmarked for specific uses, such as roads or public pensions. Since the film tax credits that were received by Paramount to support the production of the television show in Montana have implications for Montana general fund revenue, we focus on the impact of the filming and watching of the show on revenue sources that contribute, in whole or in part, to the state’s general fund.

The detailed list of revenue impacts that have implications for the general fund, shown in Table 5.6, shows that the boost in revenue because of the filming and streaming of *Yellowstone* is substantial. That is particularly so when compared to the \$16.5 million in tax credits awarded (over two fiscal years) for the filming of Season 4 of the television show in 2020 and 2021. The individual income tax impact of \$17.3 million, which is wholly allocated to the general fund, alone exceeds that amount. The total tax impacts for sources wholly or partially directed to the general fund exceeds \$44 million.

Table 5.6 Selected State Revenue Impacts, millions of dollars

Category	Impact
<b>Taxes Contributing to the General Fund</b>	
Selective Sales Tax.....	15.9
License Taxes.....	3.9
Individual Income Tax.....	17.3
Corporate Income Tax.....	2.8
Other Taxes.....	4.2
Utility Revenue.....	0.5
<b>SUBTOTAL.....</b>	<b>44.5</b>
<b>Other State Tax and Non-Tax Revenue</b>	
Intergovernmental Revenue.....	12.6
Current Charges.....	5.7
Miscellaneous General Revenue.....	4.6
Liquor Store Revenue.....	1.1
Insurance Trust Revenue.....	42.0
<b>SUBTOTAL.....</b>	<b>66.1</b>
<b>TOTAL REVENUE IMPACTS</b>	<b>110.6</b>

The larger economy that comes about because of the production and viewing of *Yellowstone* also causes revenue from other sources to grow significantly, as shown in the lower portion of the Table. These include fees collected for permits and services, payments from the Federal government, and contributions to retirement programs. Many of these are dedicated to specific uses, yet they are substantially larger because of *Yellowstone*.

The gains in revenue from the selected list of state revenue sources shown in the table are consistent with the income and population gains that come about in Montana because of the filming and streaming of *Yellowstone*.

### Population Impacts

The increase in state population that comes about with the increased economic activity due to *Yellowstone* is almost entirely due to working-age people and their children, as shown in Table 5.7. This comes about because of the increased employment and earnings opportunities that stem from the job and earnings increases across the economy.

Table 5.7 Population Impacts

Age Cohort	Impact
Ages 0-14.....	802
Ages 15-24.....	736
Ages 25-64.....	1,767
Ages 65+.....	0
Total.....	3,305

### Summary

The television show *Yellowstone*, filmed in and around Montana’s Bitterroot Valley in the western part of the state, has had a significant effect on the desire of people to visit our state. Based on the survey responses of visitors to the state in the past three years, and the spending profiles of Montana visitors maintained by the Institute for Tourism and Recreation Research at the University of Montana, we conservatively estimate that \$730.1 million of spending by Montana visitors last year was due to the viewing of the show.

When that large amount of spending is added to the production-related spending that was analyzed in the BBER’s April 2022 report on *Yellowstone* economic impacts, the effects on the economy are an order of magnitude larger. We find that because of *Yellowstone*’s filming and streaming to an international audience of potential visitors that the state economy has added 10,240 jobs, \$376.1 million in personal income, \$1.1 billion in economic output and \$44.5 million in state tax revenue sources directed in whole or in part to the general fund in Montana.

## 6. Summary and Conclusion

This study represents an important extension of the BBER's earlier analysis of the economic impact of the television show *Yellowstone* on the state economy. The 2021 report speculated, but did not comprehensively address, the "film tourism" aspects of the popular show, as the more than 10 million viewers were motivated by the show's storylines, characters, and scenery to visit our state. That study reported impacts based on the actual spending of the studio on producing the show in Montana.

By explicitly addressing the film tourism impact of the show, this new study jointly conducted by the Bureau of Business and Economic Research and the Institute for Tourism and Recreation Research opens up a new dimension of how *Yellowstone's* filming and streaming to an international audience ultimately impacts Montana households, businesses and governments. When adding the more than \$730 million of *Yellowstone*-induced visitor spending in the Montana economy to the production-related spending documented in the 2021 BBER study, the impacts on the economy become larger by several orders of magnitude.

This report presents these findings and documents the methods used to derive them. It is clear that the huge popularity of the show, and its depiction of Montana through its characters, storylines and scenery have exposed a worldwide audience to a depiction of Montana that has proven to be appealing. The large proportion of survey respondents who indicated that they had watched the show, and who said that the show was an important part of their decisions to visit our state are clear evidence of that.

The question of how to apply these findings to other film and media productions in the state remains open, however. Not all productions that happen here will enjoy the same popularity as *Yellowstone* (although some may be even more popular). But while the magnitude of the impacts may differ, the findings in this report underscore the potential of this kind of exposure to add to the economic impacts that any future media production might produce.

## 7. References

- Barkey, P. (2022, April). *The Economic Contributions of the Film Industry in Montana: The Production of Yellowstone*. Retrieved from Bureau of Business and Economic Research Publications: <http://www.bber.umt.edu/pubs/econ/FilmIndustryImpact2022.pdf>
- Grau, K. (2022, May 3). *2021 Nonresident Visitation, Expenditures, & Economic Impact Estimates*. Retrieved from Institute for Tourism and Recreation Research Publications: [https://scholarworks.umt.edu/itr\\_pubs/430/](https://scholarworks.umt.edu/itr_pubs/430/)
- Qualtrics. (2022). *Qualtrics Panels*. Retrieved from Panels Project: <https://www.qualtrics.com/panels-project/>
- Treyz, G. I. (1993). *Regional Economic Modeling: A Systematic Approach to Economic Forecasting and Policy Analysis*. Kluwer Academic Publishers.

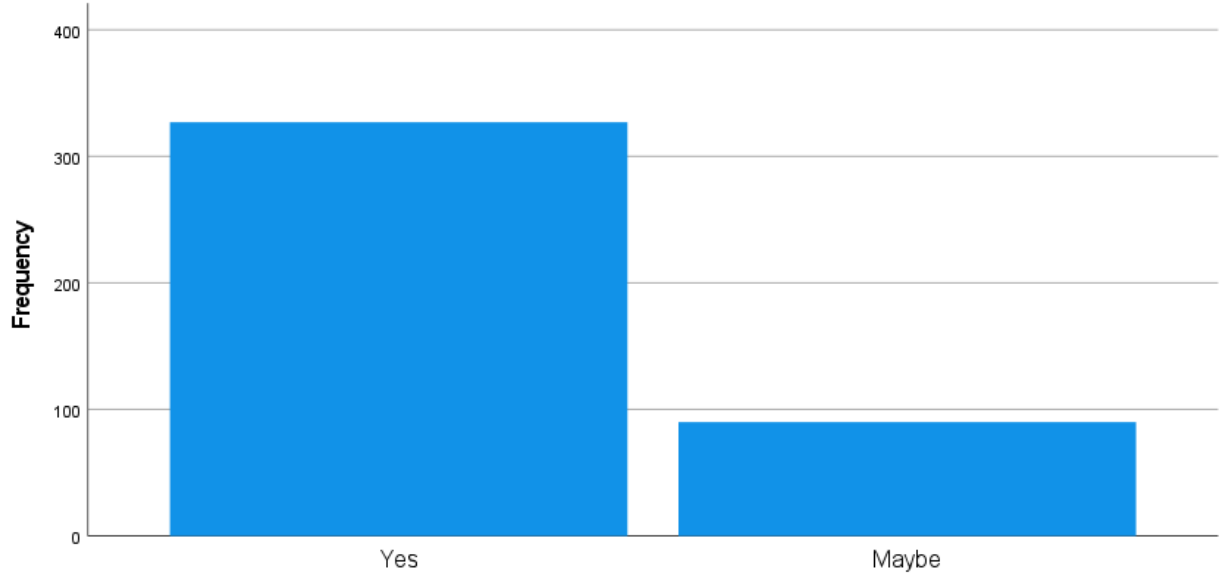
## Appendix 1: Survey Methodology

The survey utilized in this study was designed and written by the BBER and ITRR. It was administered by the nationally recognized polling firm Qualtrics, Inc. during the period September 29, 2022 through October 7, 2022.

- Qualtrics surveyed a panel of potential adult (ages 18+) respondents which is maintained by Qualtrics.
- Some potential respondents received email invitations to participate from Qualtrics while other respondents used a dashboard-type system to select the survey from a list of studies for which they may qualify.
- The number of invitations provided by Qualtrics to potential respondents was sufficient to yield 417 completions.
- Per the Qualtrics website, “By default, we do not sample with nationally representative invites or any other specific breaks, including quotas. Online panels are not probability samples and are not made with national representation.” See (Qualtrics, 2022).
- The questionnaire was written by University of Montana’s Institute of Tourism and Recreation Research in cooperation with the UM Bureau of Business and Economic Research.

## Appendix 2: Detailed Survey Results

Please think back over the past three years, that is, since September 1, 2019. Have you visited the state of Montana at any time in the past three years?



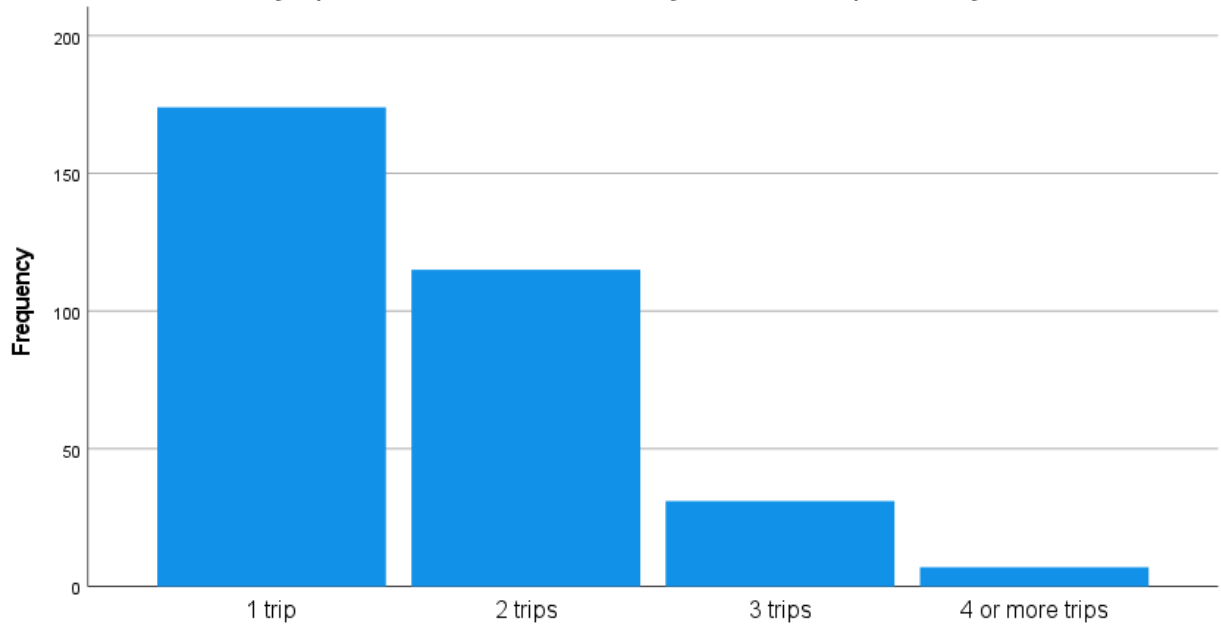
Please think back over the past three years, that is, since September 1, 2019. Have you visited the state of Montana at any time in the past three years?

**Q2**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	327	78.4	78.4	78.4
	Maybe	90	21.6	21.6	100.0
	Total	417	100.0	100.0	



How many trips to the state of Montana have you made in the past three years?

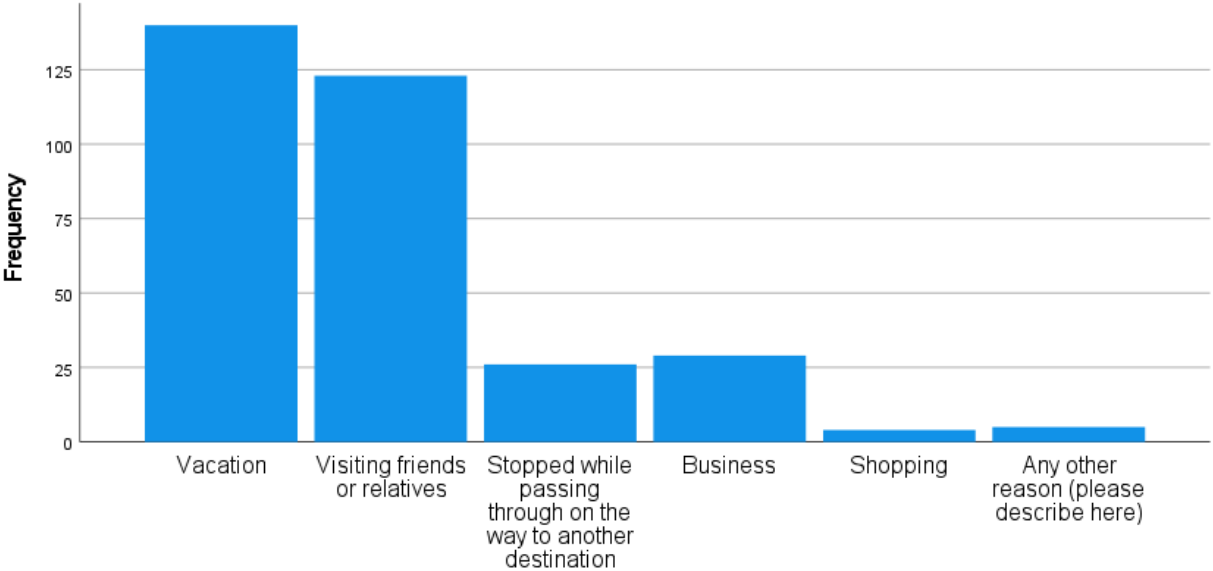


How many trips to the state of Montana have you made in the past three years?

**Q3**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 trip	174	53.2	53.2	53.2
	2 trips	115	35.2	35.2	88.4
	3 trips	31	9.5	9.5	97.9
	4 or more trips	7	2.1	2.1	100.0
	Total	327	100.0	100.0	

Please think now about your latest trip to the state of Montana. What was the main reason for your latest trip to the state of Montana? - Selected Choice

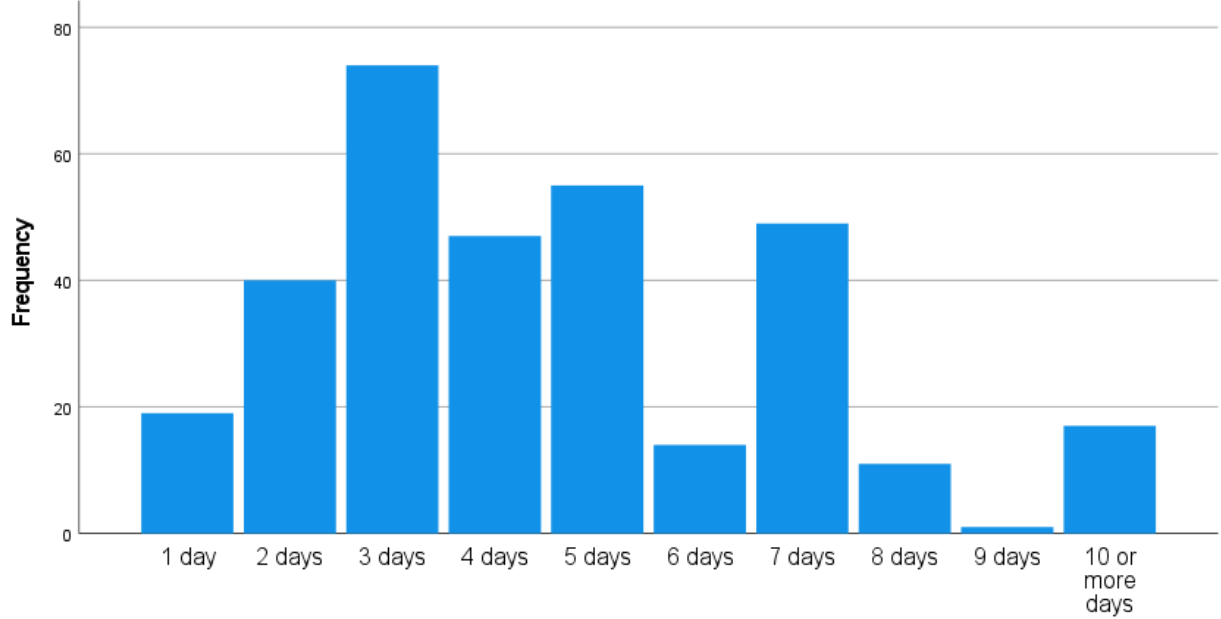


Please think now about your latest trip to the state of Montana. What was the main reason for your latest trip to the state of Montana? - Selected Choice

**Q4**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Vacation	140	42.8	42.8	42.8
	Visiting friends or relatives	123	37.6	37.6	80.4
	Stopped while passing through on the way to another destination	26	8.0	8.0	88.4
	Business	29	8.9	8.9	97.2
	Shopping	4	1.2	1.2	98.5
	Any other reason (please describe here)	5	1.5	1.5	100.0
	Total	327	100.0	100.0	

And on your latest trip to the state of Montana, how many days did you spend in Montana?



And on your latest trip to the state of Montana, how many days did you spend in Montana?

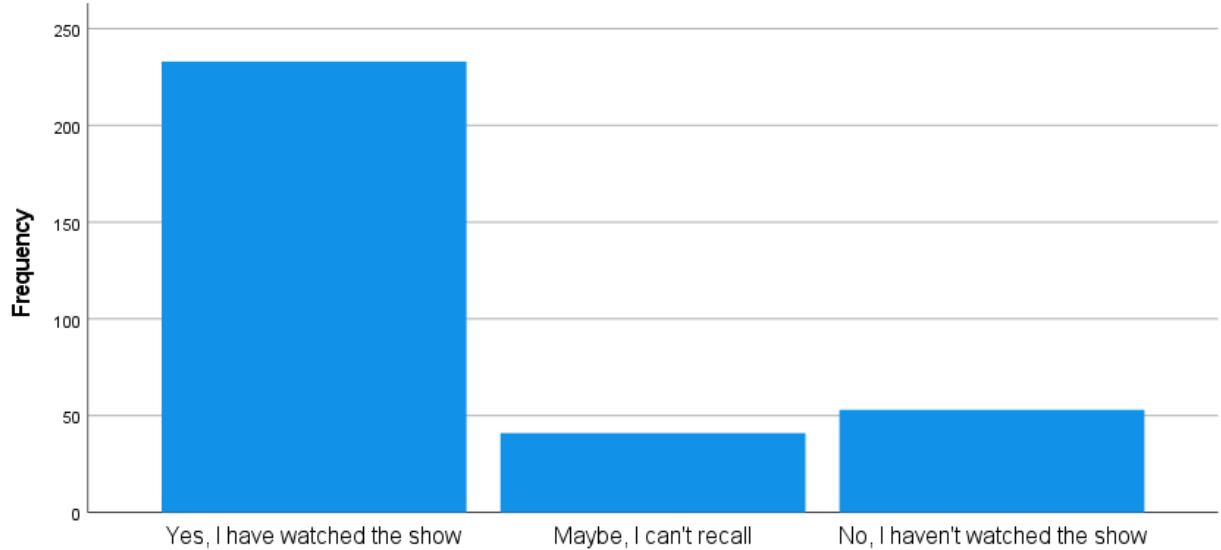
**Q5**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 day	19	5.8	5.8	5.8
	2 days	40	12.2	12.2	18.0
	3 days	74	22.6	22.6	40.7
	4 days	47	14.4	14.4	55.0
	5 days	55	16.8	16.8	71.9
	6 days	14	4.3	4.3	76.1
	7 days	49	15.0	15.0	91.1
	8 days	11	3.4	3.4	94.5
	9 days	1	.3	.3	94.8
	10 or more days	17	5.2	5.2	100.0
Total	327	100.0	100.0		

## Descriptives

		Statistic	Std. Error	
Q5	Mean	4.52	.126	
	95% Confidence Interval for Mean	Lower Bound	4.27	
		Upper Bound	4.77	
	5% Trimmed Mean	4.41		
	Median	4.00		
	Variance	5.158		
	Std. Deviation	2.271		
	Minimum	1		
	Maximum	10		
	Range	9		
	Interquartile Range	3		
	Skewness	.636	.135	
	Kurtosis	-.186	.269	

Changing subjects, some people have watched or streamed the television show "Yellowstone," while other people haven't watched the show. Have you watched or streamed the television show "Yellowstone" or not?

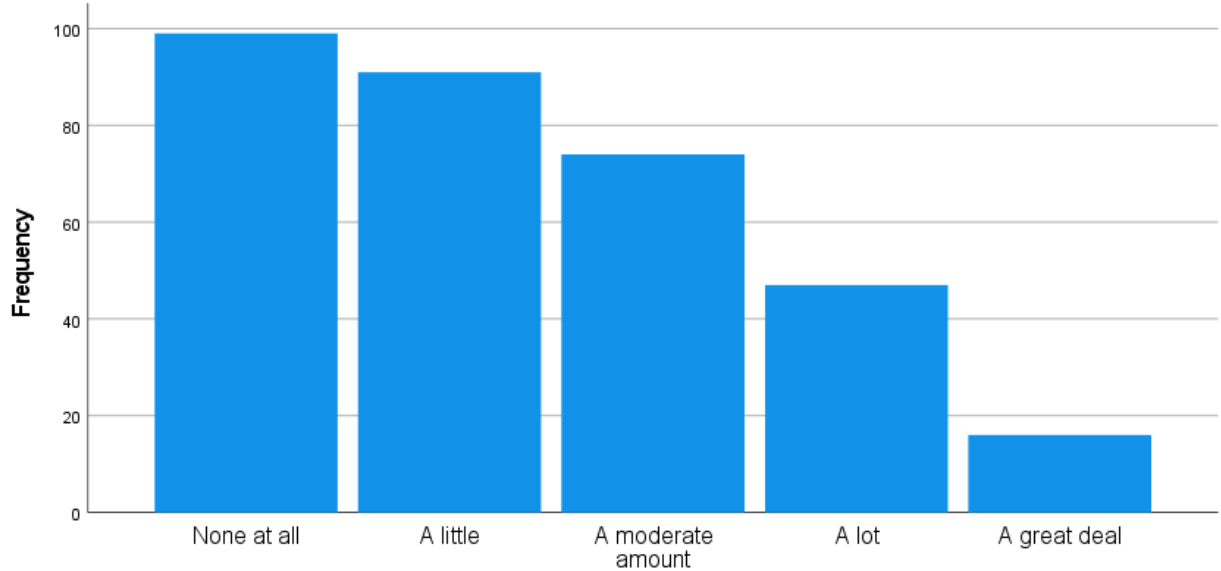


Changing subjects, some people have watched or streamed the television show "Yellowstone," while other people haven't watched the show. Have you watched or streamed the television show "Yellowstone" or not?

**Q6**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes, I have watched the show	233	71.3	71.3	71.3
	Maybe, I can't recall	41	12.5	12.5	83.8
	No, I haven't watched the show	53	16.2	16.2	100.0
	Total	327	100.0	100.0	

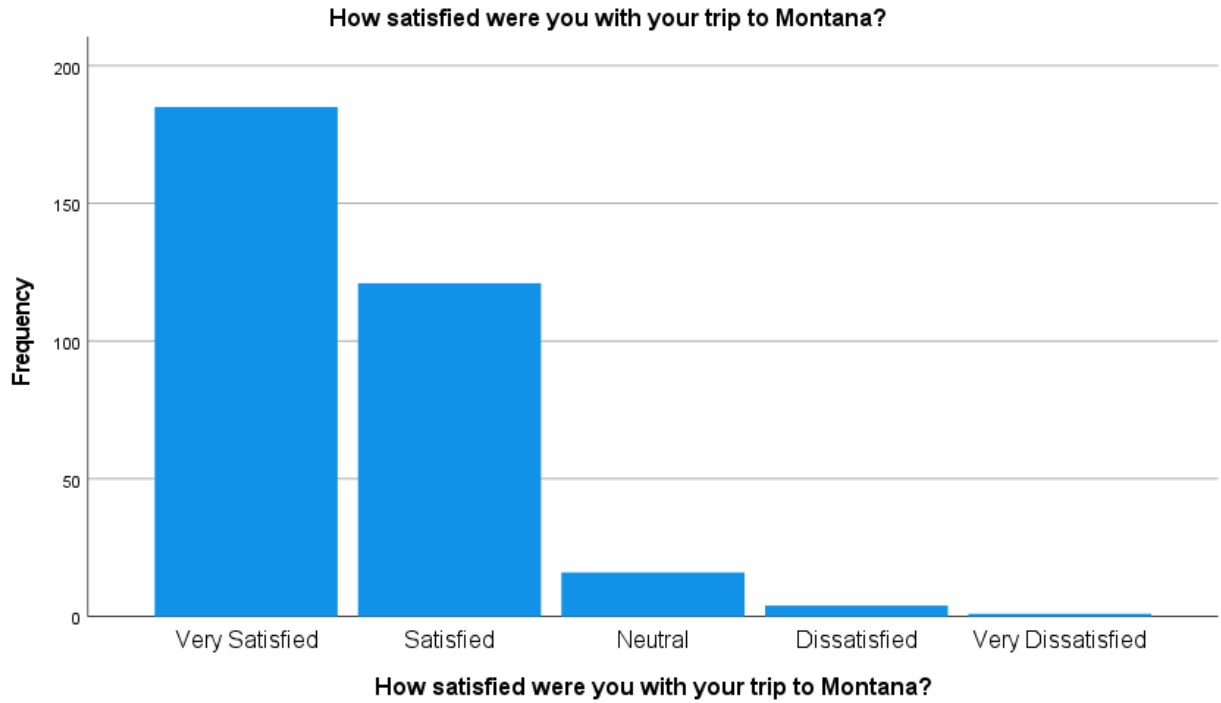
How much, if at all, did the television show "Yellowstone" influence your decision(s) to visit the state of Montana?



How much, if at all, did the television show "Yellowstone" influence your decision(s) to visit the state of Montana?

**Q7**

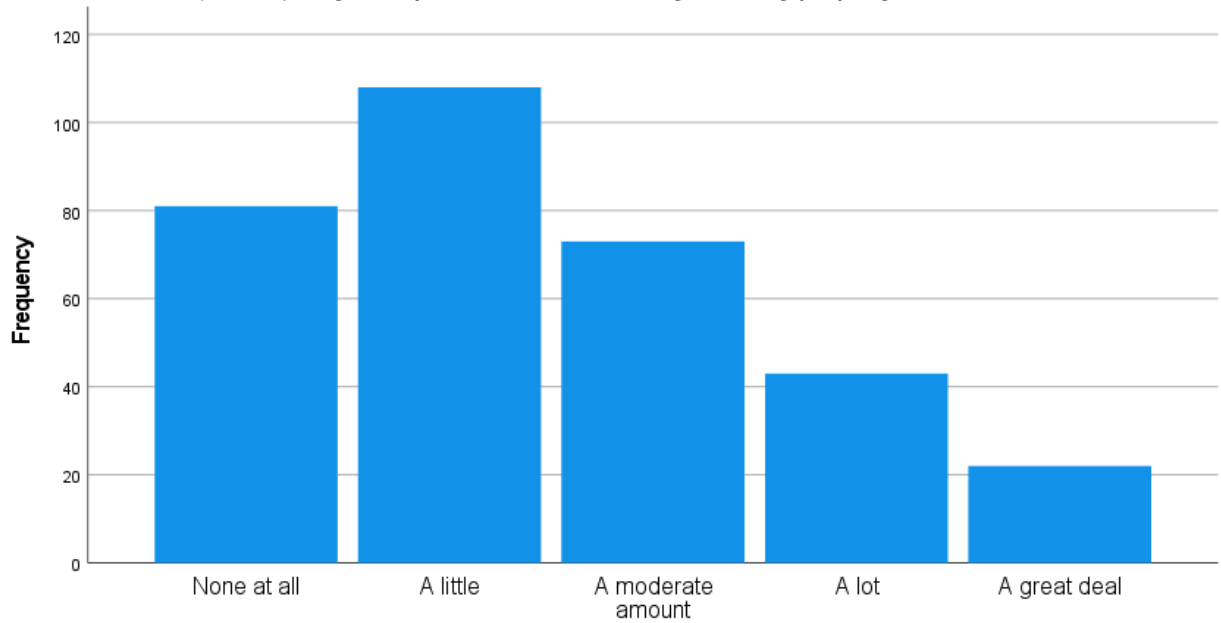
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None at all	99	30.3	30.3	30.3
	A little	91	27.8	27.8	58.1
	A moderate amount	74	22.6	22.6	80.7
	A lot	47	14.4	14.4	95.1
	A great deal	16	4.9	4.9	100.0
	Total	327	100.0	100.0	



**Q8**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Satisfied	185	56.6	56.6	56.6
	Satisfied	121	37.0	37.0	93.6
	Neutral	16	4.9	4.9	98.5
	Dissatisfied	4	1.2	1.2	99.7
	Very Dissatisfied	1	.3	.3	100.0
	Total	327	100.0	100.0	

How much, if at all, did your trip to Montana influence you to buy property or move to Montana?

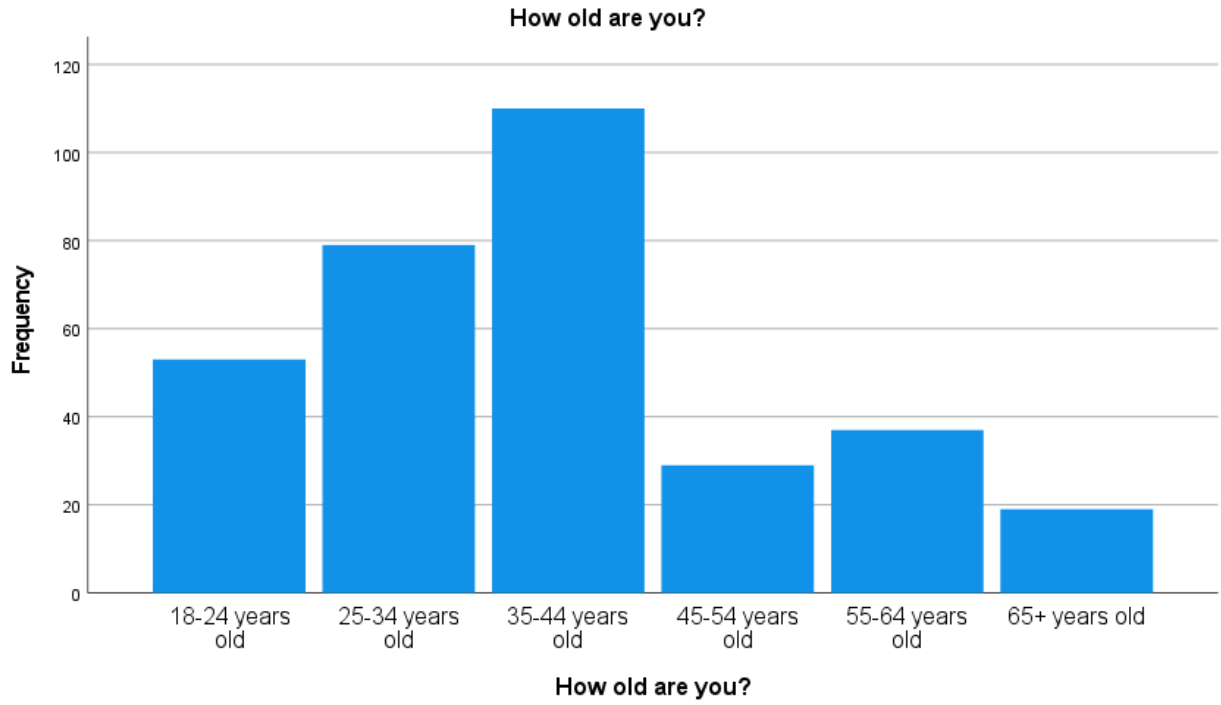


How much, if at all, did your trip to Montana influence you to buy property or move to Montana?

**Q10**

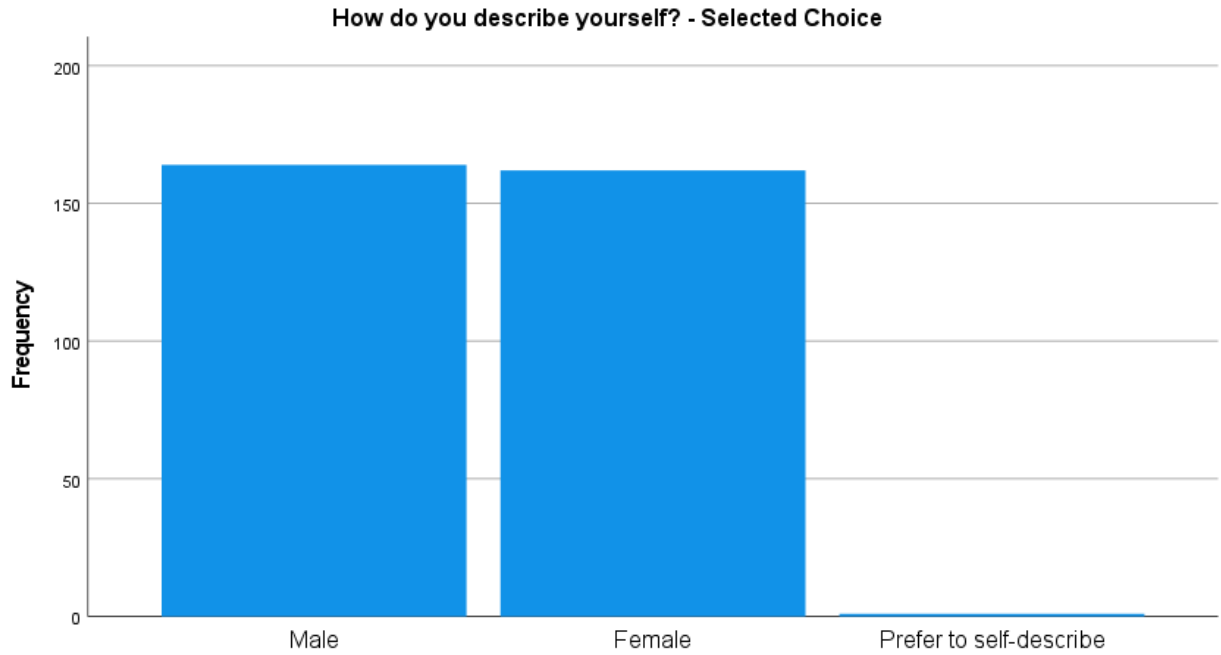
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None at all	81	24.8	24.8	24.8
	A little	108	33.0	33.0	57.8
	A moderate amount	73	22.3	22.3	80.1
	A lot	43	13.1	13.1	93.3
	A great deal	22	6.7	6.7	100.0
	Total	327	100.0	100.0	





**Q11**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-24 years old	53	16.2	16.2	16.2
	25-34 years old	79	24.2	24.2	40.4
	35-44 years old	110	33.6	33.6	74.0
	45-54 years old	29	8.9	8.9	82.9
	55-64 years old	37	11.3	11.3	94.2
	65+ years old	19	5.8	5.8	100.0
	Total	327	100.0	100.0	



**How do you describe yourself? - Selected Choice**

**Q12**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	164	50.2	50.2	50.2
	Female	162	49.5	49.5	99.7
	Prefer to self-describe	1	.3	.3	100.0
	Total	327	100.0	100.0	