The Economic Impact of Yeager Airport

Final Report

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CBER
CENTER FOR BUSINESS AND ECONOMIC RESEARCH
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The Economic Impact of Yeager Airport

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Executive Summary

To assist partners including the Charleston Area Alliance and the Central West Virginia Regional Airport Authority, the Center for Business and Economic Research (CBER) conducted an updated economic and fiscal impact analysis of Yeager Airport, located in Charleston, West Virginia.

The study examined the potential impact within all 55 West Virginia counties as it was assumed that while the airport itself is located in Charleston, West Virginia, the impacts would be spread across the entire state.

Using a survey administered to travelers at the airport, spending patterns for non-local visitors were estimated. Non-local visitors were assumed to come from outside West Virginia and would spend money on accommodations, food, transportation and etc., while in the state. The analysis considered the regional economic impacts from one year of Yeager Airport operational spending, one year of operational spending for the airport's tenants and vendors, and the impacts of off-site, regional spending by new, non-local visitors. The tables below contain the results of the analysis.

The operations of the airport are estimated to generate an annual impact in the region of $7.7 million in economic output, as well as $4.2 million in labor income and 78 full-time equivalent jobs. The annual impact of vendor and tenant operations and support an estimated $116 million in economic activity, approximately $49 million in labor income and 1,237 full-time equivalent positions. One year of passenger spending is estimated to generate $50 million in output, $17 million in labor income and 561 full-time equivalent jobs. In total, Yeager Airport generates $174 million in output, 1,876 jobs and $70 million in labor income annually.

Table 1: Economic Impact Summary

Economic Impacts	Employment	Labor Income	Output
Yeager Operations	78.1	$ 4,234,026	$ 7,762,386
Airport Tenant Operations	1,237.1	$ 49,225,209	$ 116,597,243
Passenger Spending	561	$ 17,089,902	$ 50,302,680
Total	*1,876.2*	*$ 70,549,137*	*$ 174,662,309*

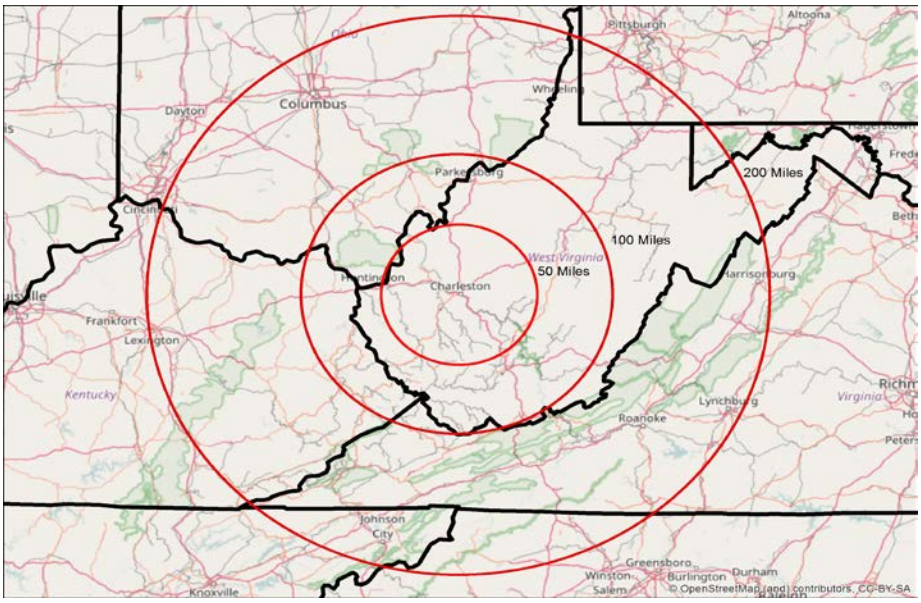
Further, operations and visitor spending will generate tax revenues for the state and localities. One-year operations and visitor spending impacts generate an estimated $10.9 million in tax revenues.

Table 2: Estimated Tax Revenues

	Total	
Initial Business Taxes	$	1,840
Business Taxes	$	1,531,968
Consumer Sales & Use Taxes	$	3,026,117
Personal Taxes	$	4,533,570
Motor Vehicle Excise Taxes	$	1,427,696
Aviation Fuel Excise Taxes	$	336,080
Miscellaneous Fees and Transfers	$	48,871
Property Taxes Retained by Counties	$	16,455
Total	$	10,922,599

Introduction

Yeager Airport is a key component of the state's transportation system and an important asset in the economic vitality and future development of the Kanawha County area. Air travel is essential and the economic benefits provided by the airport significantly contribute to the state as a whole.



The Central West Virginia Regional Airport Authority is responsible for the operation of Yeager Airport. The airport is located in Charleston, which is not only the state capitol but a commerce center for West Virginia and with a 2015 population of 222,335[1], it is one of the largest in the state. The airport at an elevation of 982 feet, is centrally located and easily accessible from Interstate 64 and Interstate 77.

Table 3: Air Service at Yeager Airport

Air Carrier	Daily Flights	Destinations
American Airlines	8	Charlotte, Washington Reagan, Philadelphia
Delta	5	Atlanta
Spirit	Wednesday, Saturday (April -August)	Myrtle Beach
United	5	Chicago, Houston, Washington DC

In addition to commercial airlines, Yeager also houses Executive Air for corporate travelers, air cargo and freight, rental car establishments and also serves as the location for the 130th Airlift Wing of the Air National Guard.

[1] Economic Modeling Specialists Inc., 2015

Data and Methods

Assessment of the economic and fiscal impacts related to the airport is dependent on financial data and employment figures of Yeager Airport and their tenants. Surveys were distributed to passengers to obtain estimates of spending in the Charleston area. Where possible, secondary data is used to provide guidance to operations.

Data

CBER used operational expenditure data provided by airport tenants and vendors to estimate the impacts related to operations of the airport. These estimates detail costs for employment, non-employment expenses and revenues for 2015

To approximate out of state visitor spending, CBER employed out-of-area[2] visitor spending estimates from a survey administered to travelers while at the airport. Spending categories considered include out-of-facility purchases at restaurants, area attractions, retail and souvenir shopping, transportation and fuel for vehicles.

Additionally, CBER analyzed data on population, income and industry characteristics for the study from Economic Modeling Specialists, Inc. (EMSI), as well as data from the US Census Bureau.

Economic Impact Model Inputs and Assumptions

CBER used the IMPLAN©[3] regional economic input-output (I-O) software to analyze the impact of Yeager Airport on the state. IMPLAN© analyzes the relationships between industries and socioeconomic characteristics of the local economy.[4] The resulting economic impact provides estimates of income, output and employment as they directly and indirectly affect the area economy. For the purpose of this analysis, monetary output values represent 2015 dollars.[5]

Three models were constructed for this analysis. The first considers only expenses related to the operation of the airport. The second considers expenses related to vendors and tenants operating within the airport's facilities. The third considers expenses incurred by out of area travelers and includes estimates of patron spending in the I-O model study area. These expenses are portioned within the software based on

[2] In-area visitors are those who live in the state. Out-of-area visitors are those who travel into the state, using Yeager Airport.
[3] IMPLAN© stands for IMpact analysis for PLANning. For more information please visit the IMPLAN Group, LLC website at http://implan.com/.
[4] This model uses a Type SAM (Social Accounting Matrix) multiplier. A Type SAM multiplier represents the direct, indirect and induced effects of spending and re-spending $1 in the regional economy (IMPLAN 2014). Further detail is provided in the "Measuring Direct, Indirect and Induced Effects" subsection.
[5] The IMPLAN© model is based on 2011 economic data.

the local purchase percentage (LPP).[6]

Measuring Direct, Indirect and Induced Effects

In general, the economic impacts consist of three components: direct, indirect and induced effects. Each component illustrates how money moves through the regional economy by re-spending, known as the multiplier effect.

- Direct effect. The additional economic activities stimulated by direct expenditures associated with aviation related entities at Yeager.
- Indirect effect. Expenditures that include the increased economic activities of other businesses that service those directly involved in aviation activity.
- Induced effect. Households receive income from employment as a result of direct and indirect spending. **Induced spending** represents this **income being spent in the local economy**. In the above example, employees will use wages to purchase household goods, such as groceries, fuel and entertainment.

Fiscal Impact Analysis

The state tax impacts are calculated using a tax model developed by CBER. Data are based on budgeting estimates for FY 2013 as provided by the West Virginia Department of Taxation[7], and represent a portion of total State taxes based on direct and total employment related to the presence of the airport. The model considers business, consumer sales and use, personal, excise and other taxes and fees with respect to total FTE employment sustained in the State and by the facility directly.

[6] The local purchase percentage (LPP) represents the portion of expenditures that will remain within the local economy (IMPLAN 2014).
[7] West Virginia Department of Taxation, 2015.

Economic and Fiscal Assessment of Yeager Airport

The economic impact of the operations of the airport is based on the direct, indirect and induced spending and is measured in three main categories:

- Output. Total output reflects **the dollar value of industry production and represents the total effect of direct, indirect and induced spending** on the regional economy.[8] Output is represented as an annual estimate of the impact of economic activity.

- Employment. IMPLAN measures employment in **full-time equivalent (FTE) positions** and reflects the number of FTEs directly and indirectly supported by the facility, as well as FTEs supported by induced spending. Thus, employment numbers provided in the following results section reflect both full-time and part-time positions and are not a count of individual jobs.

- Labor income. Labor income is inclusive of **all types of employment income**. This includes employee compensation, such as wages and benefits, as well as income received by those who are self-employed and unincorporated business owners.[9]

For this report, two separate impact estimates are provided. The first focuses solely on costs of operations and the second on estimates of visitor spending while in the state. The impacts will result annually from operations and visitors; although subsequent annual impacts may differ if operational spending changes.

Input Assumptions

Operations

To calculate the operational impact, Yeager airport vendors and tenants were contacted and asked to provide employment data (number of employees and compensation), revenues and non-employment related expenses for 2015. Some data received were incomplete, so conservative estimates and assumptions were made using available secondary data. Table 4 contains the total estimated operating costs in 2015 dollars.

[8] IMPLAN, 2014.
[9] IMPLAN, 2014.

Table 4: Estimated Annual Total Operating Costs (Yeager and Vendors/Tenants)

Spending Category	2015 Spending	
Salaries, Other Compensation, Employee Benefits	$	84,666,232
Non-Employment Expenses	$	22,067,214
Revenues	$	34,288,875

Total estimated operating expenses are approximately $96 million, much of which is employment at $84 million. Most of these expenses will occur within the impact area, however some will accrue to firms outside the region. Only locally retained spending will generate an impact in the state.

Visitor Spending

To develop estimates of visitor spending, 2015 Federal Aviation Administration enplanement data were used in with the spending estimates from the survey administered to Yeager Airport passengers. Of the survey respondents, 81 percent were from out of the area with approximately 52 percent traveling to West Virginia destinations. Using this percentage and applying it to the 2015 FAA enplanement data (225,170 passenger), we estimate approximately 95,000 out of area visitors. Table 5 contains the average, median and estimated spending per relevant categories.

Table 5: Out of Area Spending Estimates

Category	Average		Median		Visitor Spending Total	
Prepared food	$	142	$	100.00	$	9,587,176
Groceries	$	84	$	50.00	$	4,793,588
Entertainment	$	93	$	100.00	$	9,587,176
Accommodations	$	407	$	310.00	$	29,720,245
Retail	$	97	$	100.00	$	9,587,176
Visiting attractions	$	55	$	50.00	$	4,793,588
Transportation	$	147	$	100.00	$	9,587,176
Fuel	$	47	$	30.00	$	2,876,153
Total	$	134			$	80,532,276

To better approximate likely visitor spending CBER used data obtained from the 120 surveys distributed to out of area passengers (see Appendix B for survey results). Taking the responses into consideration, we used the number of responses out of the total surveys distributed and applied this percentage to the visitor spending total.

Table 6 contains percentage of responses for each category as well as the total expenditures. As shown, the total annual out of area visitor spending is estimated to be $37 million.

Table 6: Percentage Reported by Category

Category	*Responses*	*% Responding*	*Total Expenditures*
Prepared food	97	80%	$ 7,669,740.54
Groceries	26	22%	$ 1,054,589.32
Entertainment	28	23%	$ 2,205,050.41
Accommodations	69	58%	$ 17,237,741.86
Retail	28	23%	$ 2,205,050.41
Visiting Attractions	13	11%	$ 527,294.66
Transportation	59	50%	$ 4,793,587.84
Fuel	58	50%	$ 1,438,076.35
Total			$ 37,131,131.39

Similar to the operational spending, the out of area visitor spending that occurs within the state will be influenced by the presence of relevant establishments.

Economic Impact Analysis Results

Yeager Operations

Table 7 contains the economic impact results from the one-year operation of Yeager Airport, based on estimated operational expenditures. Total operating costs are estimated to be about $5 million; however, after assigning to IMPLAN sectors[10], about $5 million is expected to be spent locally and represents the direct spending impact. This direct spending is estimated to generate a little under $3 million in indirect and induced spending in the region, **for a total impact of $7.7 million in economic activity or output, or a multiplier of 1.54**.

Table 7: Estimated Yeager Operational Impacts

Economic Impacts	Employment	Labor Income	Output
Direct Effect	57	$ 3,442,865	$ 5,052,276
Indirect Effect	2.3	$ 86,711	$ 426,965
Induced Effect	18.8	$ 704,450	$ 2,283,145
Total	*78.1*	*$ 4,234,026*	*$ 7,762,386*

Additionally, the airport is estimated to support about 78 FTEs regionally, 57 of which are direct employment for operations. Similarly, Yeager operations are estimated to generate about $4.2 million in earnings, or labor income, in the region principally from wages paid.

[10] See the appendix for IMPLAN sectors used for impact.

Vendor and Tenant Operations

Table 8 contains the one-year operational impact of Yeager Airport's tenants and vendors, based on estimated operational expenditures. One-year operating expenses (employment and non-employment) were about $48 million. The locally retained costs of $68 million represent the direct effect operational spending. **One year of operational spending generates** an estimated additional $47 million in the impact area, for **a total annual impact of $116 million (1.70 multiplier)**.

Direct labor income is an estimated $34 million in the region, with an additional $13 million generated as a result of the activity. Annual operations are estimated to support 856 FTEs directly and an additional 381 FTEs.

Table 8: Estimated Tenant Operational Impacts

Economic Impacts	Employment	Labor Income	Output
Direct Effect	856	$ 34,825,186	$ 68,532,876
Indirect Effect	38	$ 1,549,079	$ 6,411,538
Induced Effect	343.1	$ 12,085,943	$ 41,652,830
Total	*1,237.1*	*$ 49,225,209*	*$ 116,597,243*

Visitor Spending

State-wide passenger spending impacts result from the expenditures made by non-local visitors that occur outside the airport facility. Approximately 39 percent of passengers are assumed to be non-local and off-site spending categories considered were restaurants, groceries, entertainment, lodging, retail shopping, other attractions, transportation and fuel. Table 9 contains the total estimated impacts to the state. impacts.

In total, approximately $33 million of the spending is estimated to occur within the state and constitutes the direct effect spending. This **off-site spending generates an additional estimated $16 million for a state-wide total impact of $50 million, or a multiplier of 1.5**. Visitor spending in the state supports approximately 561 FTEs, most of which are at the directly affected industries. Further, visitor spending is estimated to generate $17 million in labor income within the state.

Table 9: Estimated Total One-Year Visitor Spending Impacts

Economic Impacts	Employment	Labor Income	Output
Direct Effect	427.8	$ 11,694,647	$ 33,554,895
Indirect Effect	60.4	$ 2,669,012	$ 7,909,496
Induced Effect	72.8	$ 2,726,243	$ 8,838,289
Total	*561*	*$ 17,089,902*	*$ 50,302,680*

Total Estimated State-wide One-Year Impact

When combining operations and passenger spending, the **total estimated state-wide impact for one-year is approximately $174 million in economic output (a multiplier of 1.63)**, $70 million in labor income and nearly 1,877 FTEs. Table 10 contains the total estimated impacts from one-year of operations and spending.

Table 10: Total One-Year Impacts

Economic Impacts	Employment	Labor Income	Output
Direct Effect	1,340.8	$ 49,962,698	$ 107,140,047
Indirect Effect	100.7	$ 4,304,802	$ 14,747,999
Induced Effect	434.7	$ 16,281,636	$ 52,774,264
Total	*1,876.2*	*$ 70,549,137*	*$ 174,662,309*

The main components of the output and income impacts are the direct effects – out of area passenger spending and operations of airport tenants. Similarly, most of the employment impact is concentrated at the airport and the establishments that serve visitors. To the extent that the one-year operational and passenger spending estimates represent a typical year, similar impacts may be expected to occur in the state annually.

Fiscal Impact Estimates

Yeager Airport

The fiscal impact is based on direct and total sustained employment for one year of operations for the airport, the airport's tenants and out of area passenger spending.[11] The analysis indicates that **these events directly generate $7.9 million in state-wide tax revenue** (see Table 11). When considering indirect and induced effects, **total estimated tax revenues are approximately $10.9 million.**

Table 3: Estimated Tax Revenues

	Direct	*Total*
Initial Business Taxes	$ 1,315	$ 1,840
Business Taxes	$ 1,094,800	$ 1,531,968
Consumer Sales & Use Taxes	$ 2,162,572	$ 3,026,117
Personal Taxes	$ 3,239,852	$ 4,533,570
Motor Vehicle Excise Taxes	$ 1,020,283	$ 1,427,696
Aviation Fuel Excise Taxes	$ 336,080	$ 336,080
Miscellaneous Fees and Transfers	$ 34,925	$ 48,871
Property Taxes Retained by Counties	$ 11,759	$ 16,455
Total	$ 7,901,587	$ 10,922,599

[11] Fiscal impact estimates in this analysis do not consider property taxes collected or home equity wealth.

Conclusions

Yeager Airport is vital to the economy of Charleston, and the state-wide annual impacts also show the importance to the state.

Operations will generate an impact from facility and vendor/tenant spending. Local operational spending for one year is an estimated $5 million. This direct spending is estimated to generate a little under $3 million in indirect and induced spending in the region.

One-year operating expenses (employment and non-employment) for the airport's tenants and vendors were about $48 million. The locally retained costs of $68 million represent the direct effect operational spending. One year of operational spending generates an estimated additional $47 million in the impact area, for a total annual impact of $116 million.

Approximately $33 million of visitor spending is estimated to occur in the state and generates an additional $15 million for a state-wide total impact of $50 million.

Operations and visitor spending also yield tax revenues. These expenditures produce $10.9 million in state-wide tax revenue.

References

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IMPLAN. 2014. *Knowledge Base.* http://implan.us/index.php?option=com_content&view=article&id=809%3Aknowledge-base-wiki&catid=187%3Afaq&Itemid=166.

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Appendix A

Table A1 IMPLAN Sectors for Yeager Operations Impact Analysis

Sector	Description
332	Transport by air
426	Private household operations

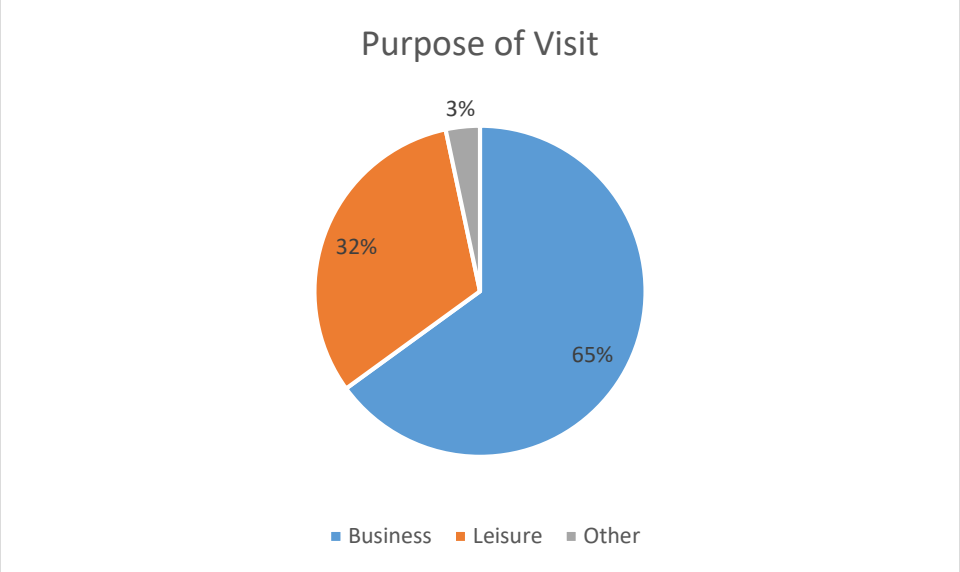
Table A2 IMPLAN Sectors for Vendor & Tenant Operations Impact Analysis

Sector	Description
29	Support activities for oil and gas operations
36	Construction of other new nonresidential structures
324	Retail Stores – Food and beverage
332	Transport by air
339	Couriers and messengers
369	Architectural, engineering, and related services
416	Electronic and precision equipment repair and maintenance
429	Other Federal Government enterprises
432	Other state and local enterprises
440	Employment and payroll only (federal govt. military)
5001	Employee Compensation

Table A3 IMPLAN Sectors for Passenger Spending Impact Analysis

Sector	Description
324	Retail stores—Food and Beverage
326	Retail Stores--Gasoline stations
329	Retail Stores--General merchandise
336	Transit and ground passenger transportation
410	Other amusement and recreation industries
411	Hotels and motels, including casino hotels
413	Food services and drinking places

Appendix B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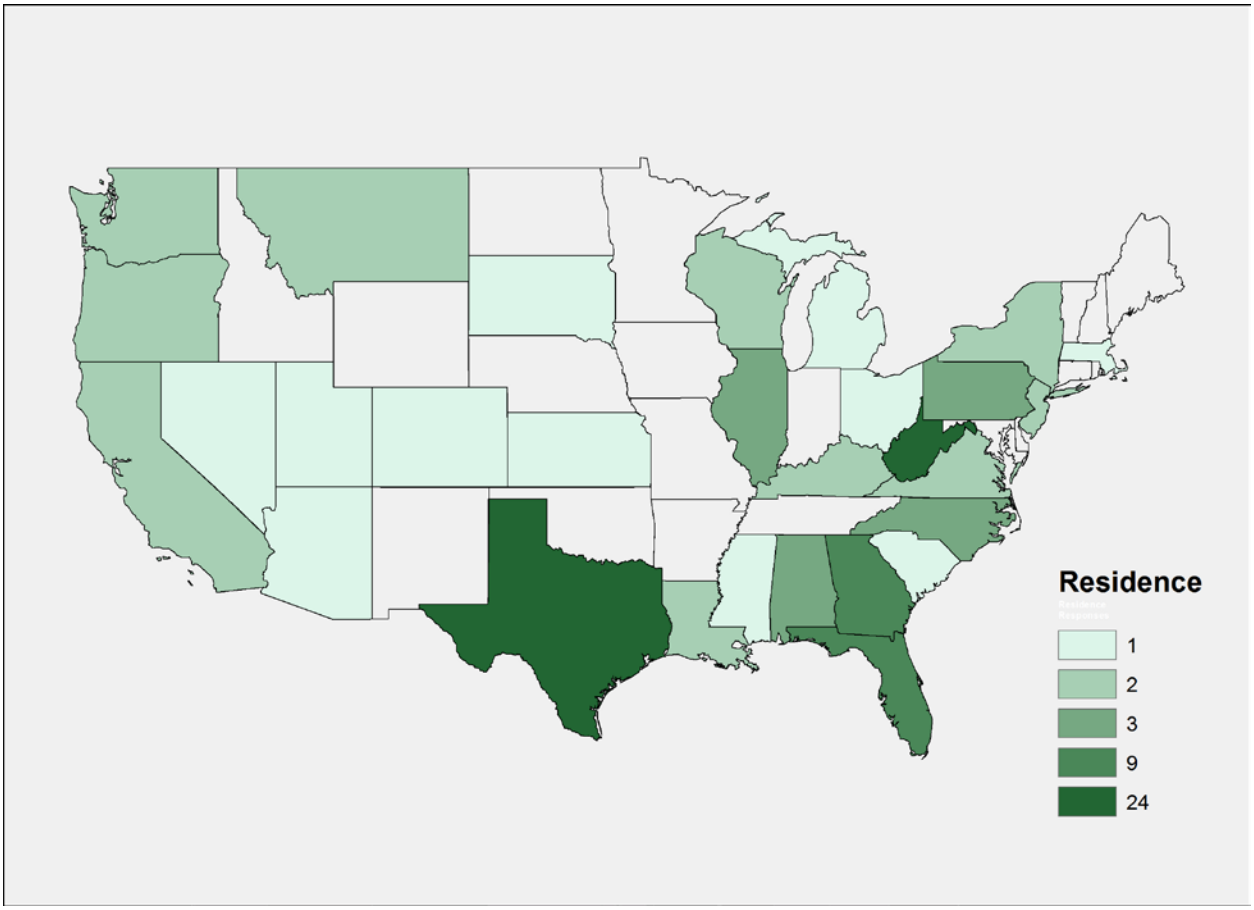
32%
65%
Business
Leisure
Other


Residence
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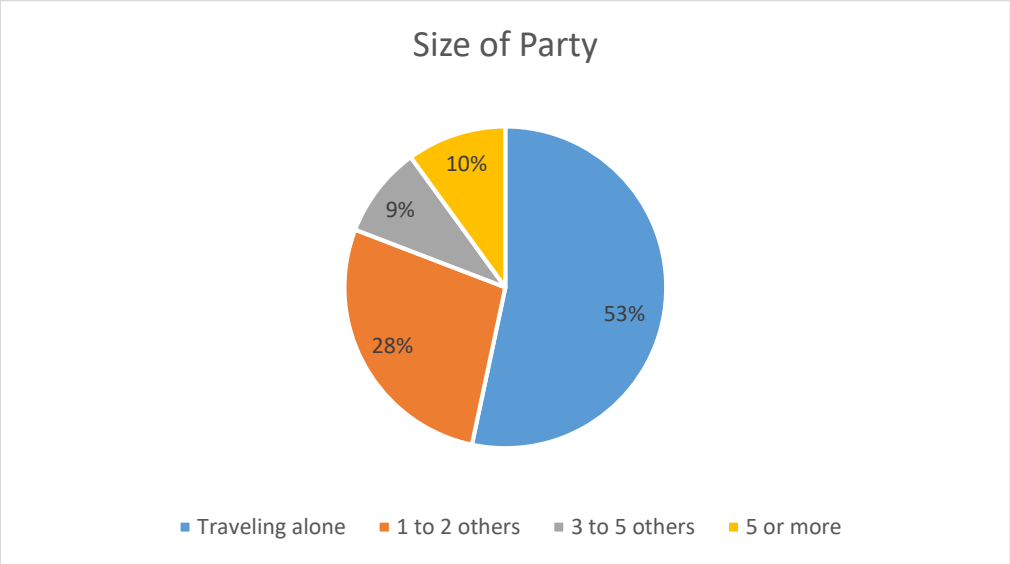
2
3
9
24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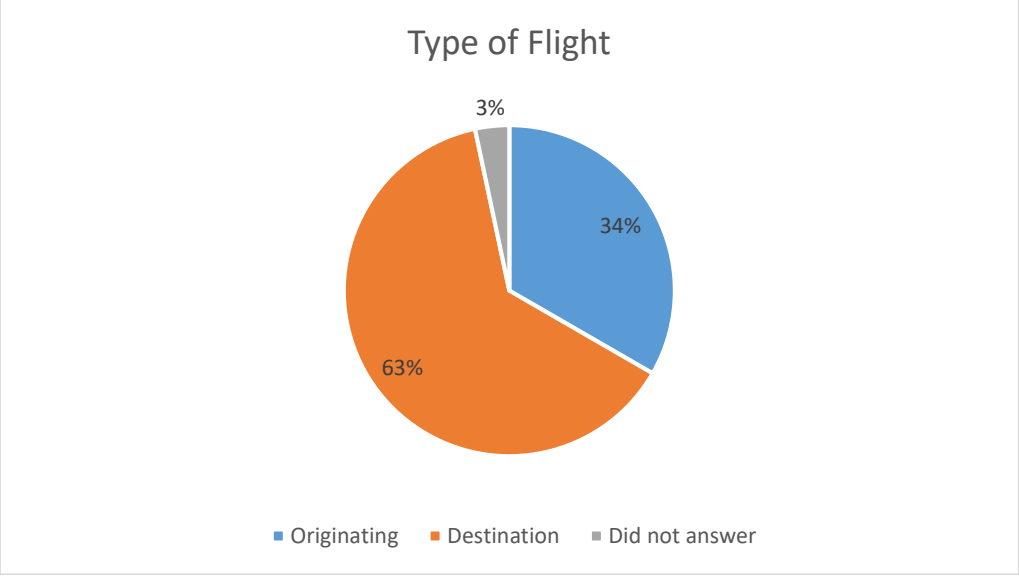
9%
53%
28%
Traveling alone
1 to 2 others
3 to 5 others
5 or more


Type of Flight
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Originating
Destination
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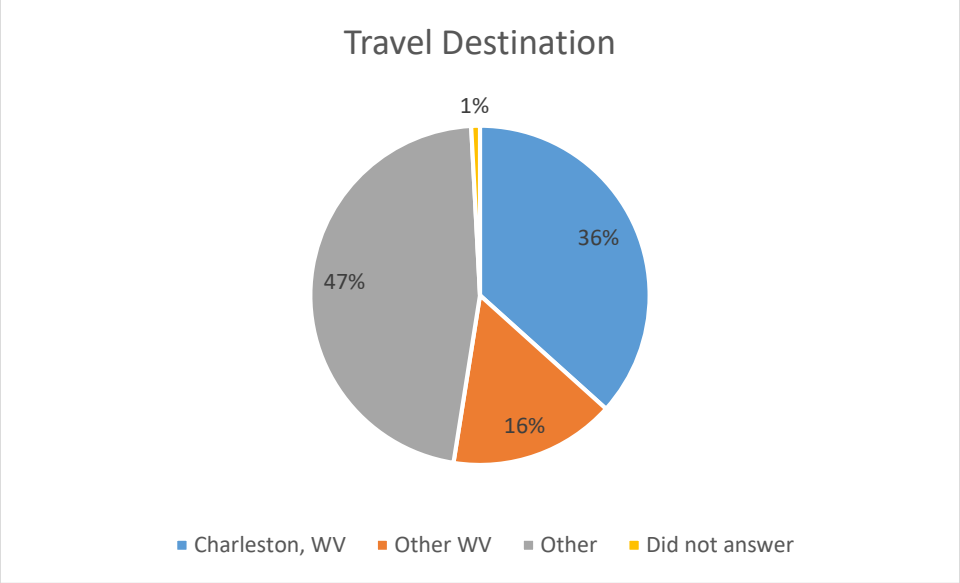
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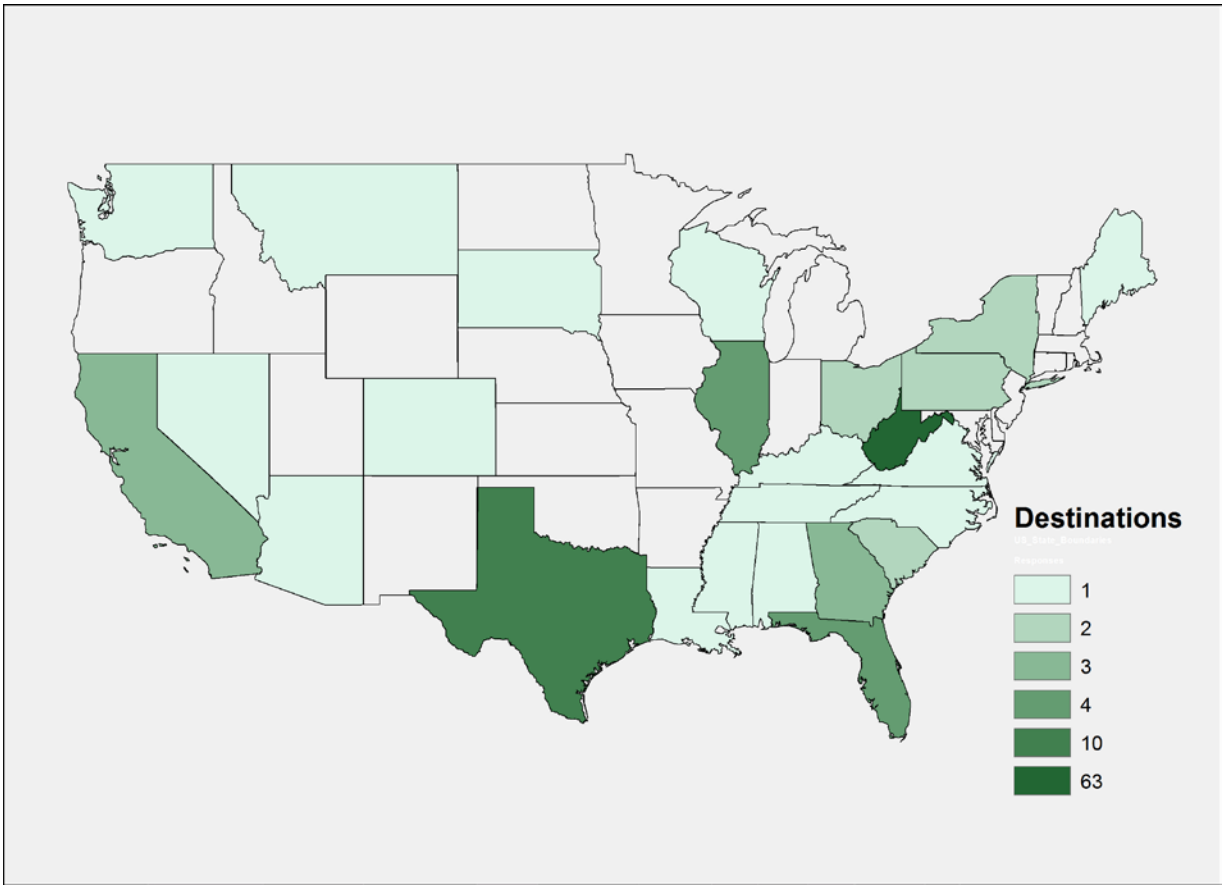
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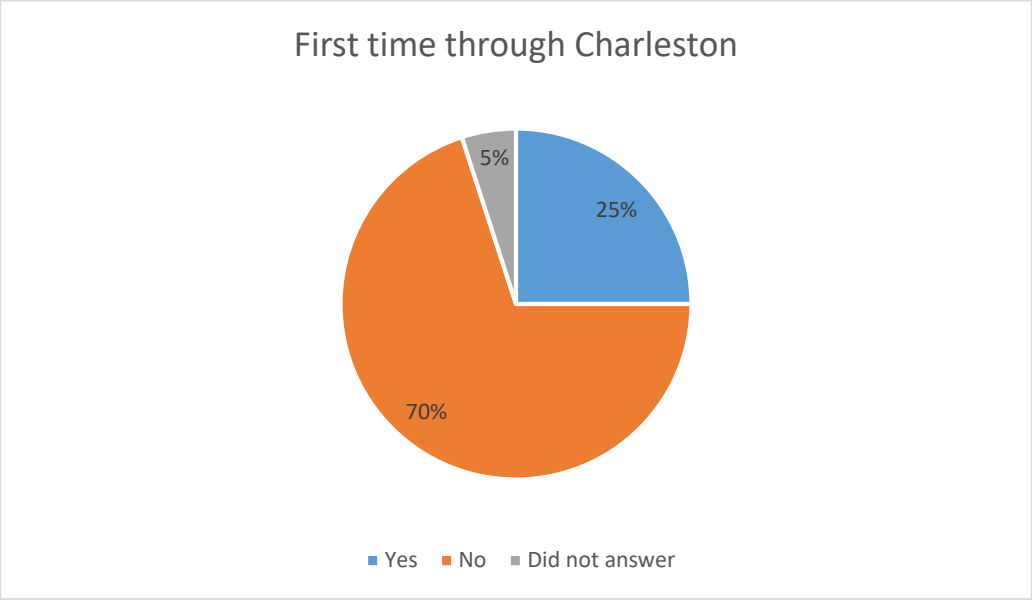
3
4
10
63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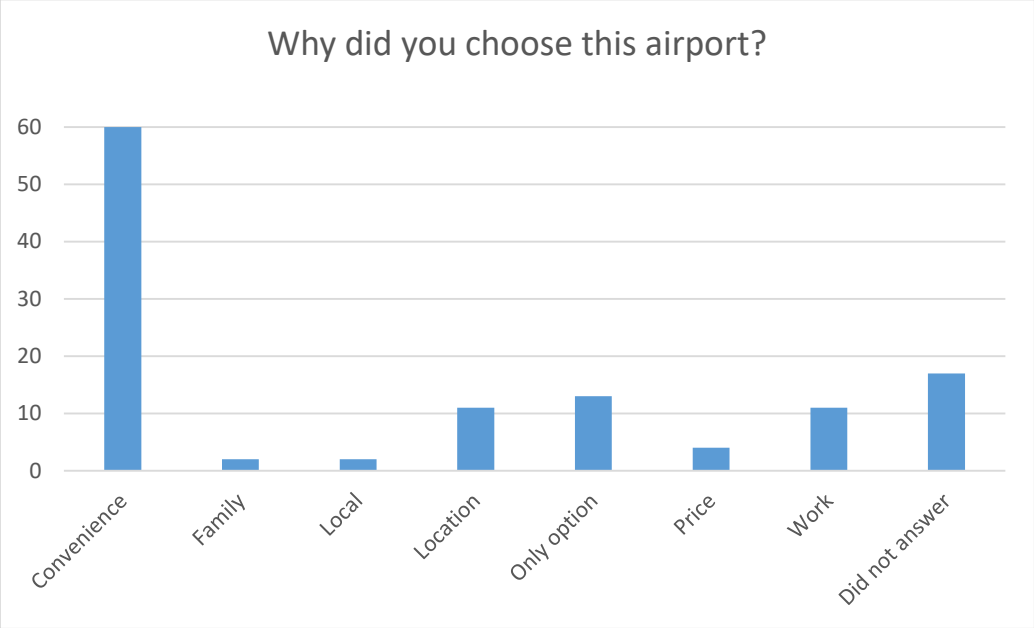
70%
Yes
No
Did not answer


Why did you choose this airport?
60
50
40
30
20
10
0
Convenience
Family
Local
Location
Only option
Price
Work
Did not answer