

Economic Analysis of the Arts and Cultural Industry in the City of Roanoke



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Introduction

In 2010, the Roanoke Valley-Alleghany Regional Commission completed an “Economic Impact of the Arts and Cultural Industry in the Blue Ridge Region of Virginia” and an “Economic Impact of the Arts and Cultural Industry in the City of Roanoke”.

In 2013, and again in 2017, the City of Roanoke requested that the staff of the Roanoke Valley – Alleghany Regional Commission provide updated estimates of the economic contribution of arts and cultural organizations in the Region.

There is a great deal of the discourse regarding the intangible impacts of arts and culture that is often generated when translating and measuring economic value. This study only measures the economic impact in terms of dollars spent by the organizations and through visitor spending.

Methodology

The study area for this analysis includes arts and cultural organizations funded through the City of Roanoke’s Art Commission and measures the economic impact on the Roanoke Metropolitan Statistical Area (MSA) as a whole. It is generally the opinion of most analysts and tourism professionals that visitors disregard jurisdictional boundaries and cultural attractions have a regional impact.

Organizations
Science Museum of Western Virginia
Taubman Museum of Art
Local Colors of Western VA
Mill Mountain Zoo
Eleanor D. Wilson Museum at Hollins University
Center in the Square
Roanoke Ballet Theatre
Historical Society of Western Virginia
Southwest Virginia Ballet
The Jefferson Center
Virginia Museum of Transportation
Roanoke Children's Theatre
Opera Roanoke
Roanoke Symphony Orchestra
Mill Mountain Theatre
Harrison Museum

Staff of the Roanoke Valley – Alleghany Regional Commission (RVARC) utilized results from a survey administered in the Fall of 2017 to collect data on budgets and visitation for arts and cultural organizations located primarily within the City of Roanoke. Sixteen organizations responded to the survey. Data for one organization was estimated based on their IRS tax filings. Some missing payroll data from three organizations was also retrieved from IRS filings.

Most organizations were able to provide detailed information in expenditures and revenues as well as visitation figures.

Staff then used specialized software called IMPLAN which was developed by IMPLAN Group LLC.

How does IMPLAN Work?

At the heart of the IMPLAN model is a national input-output dollar flow table called the Social Accounting Matrix (SAM). Unlike other static input-output models, which just measure the purchasing relationships between industry and household sectors, SAM also measures the economic relationships between government, industry, and household sectors.

The model uses actual economic and employment data to model 440 industries to determine how industry dollars are spent to produce commodities. National level and county level production data sets are then combined to produce a series of multipliers.

Multipliers measure the amount of total economic activity that results from an industry or household spending money in the local economy. IMPLAN uses the national and county-level data multipliers to estimate economic impacts of various activities. Once all input data has been entered into the model, IMPLAN then generates a series of summary output tables to show the direct, indirect, and induced economic impacts.

- **Direct impacts** are those that result from the direct infusion of money in the economy as a result of an economic event. These impacts consist of permanent jobs, wages, and output of economic events.
- **Indirect impacts** are the jobs, wages, and output created by businesses, which provide goods and services essential to an economic activity (construction, tourism, etc.). Indirect impacts represent a cumulative total of several cycles of spending that work their way through the local economic supply chain until all remaining money from the initial stimulus leaks from the study area economy. For example, a series of restaurants making purchases of goods from local suppliers as a result of participant spending on meals would be an example of a portion of indirect impacts as defined in this analysis
- **Induced impacts** are those impacts that result from household spending by those impacted by the direct and indirect phases of economic activities. The spending of wages earned by employees working for industries impacted by economic events represents the largest portion of induced impacts. This spending creates induced employment, especially in the service sectors.

The summary output tables also show the direct, indirect, and induced effects of labor income, value added, and output.

- **Labor income** equals employee compensation plus proprietor income. Employee compensation in the IMPLAN model is the total payroll cost of the employees paid by the employer. This includes wage and salary, all benefits, and employers paid payroll taxes (social security, unemployment, etc.) Proprietor Income consists of payments received by self-employed individuals and unincorporated business owners.

- **Value added** is defined as the difference between an industry's total output and the cost of any intermediate inputs. Value added includes employee compensation, taxes, and operating surplus. Value added is best understood as the contribution made to gross domestic product or, more simply, as new wealth in the region.
- **Output** can generally be understood as regional sales activity. Output is more precisely defined as the value of industry production.
- **Employment** is reported by the model as all jobs, including part-time and seasonal workers. Employment numbers can be changed to full-time equivalency (FTE), but the ratio varies by industry sector.

What Can IMPLAN Analyses Reveal

An IMPLAN analysis seeks to quantify the economic benefit that expenditures for a project (construction) or an activity (tourism or events.) have on a local or regional economy. For example, expenditures spent on the construction of a building or the purchase of items on a trip such as lodging and gasoline create additional purchases in various sectors of the economy. Money spent on landscaping for a newly constructed building or the purchase of hotel furniture both create numerous opportunities for those receiving the money to make additional consumer and business purchases. This process creates jobs and expands the economy.

Economic Scope of Arts Organizations

The purpose of this section of the report is to identify economic activity in the arts and cultural industry and to quantify the degree of impact made to the region's economy. It should be noted that the activity represented here is not a complete picture of the total impact of the arts and cultural organizations in the Region. As previously mentioned, this study only measures the economic impact in terms of organization and visitor spending. One analysis measures the relative size of the arts and cultural institutions as a sector of the economy. The second analysis measures the impact of visitors and tourists to the region. No attempt has been made to measure intangible benefits the organizations and their impact on visitors and the residents they serve.

Employment

Employment is one of the most direct methods of quantifying economic contribution. The following table shows that arts and cultural organizations responding to the survey and funded by the City of Roanoke Arts Commission employ 108 full-time employees and 86 part-time employees. Additionally, 231 seasonal workers and 293 contract workers were employed. The length of employment for the seasonal workers and contract workers was not determined.

Reported Employees and Volunteers	
Type	Number
Paid Full Time Staff	108
Part Time Staff	86
Seasonal Workers	231
Contract Staff	293
Total Payroll	\$ 6,933,030
Volunteers	2,228
Volunteer Hours	67,003

Volunteers are shown to make an important and valuable contribution to arts and cultural organizations. The organizations reported that 2,228 volunteers assisted their organizations in 2016, volunteering 30 hours each on average. Eleven of the sixteen organizations were willing to provide information on payroll. Payroll was estimated for several organizations using their 990 IRS Tax filings which are public records. The total payroll figure is compatible with the reported full-time and part-time staff figures according to the IMPLAN model for the region.

Funding

Organizations were asked to report revenues for the 2016 tax year and respondents were asked to itemize their revenues using a set of categories. RVARC staff used this information to try to identify the proportion of arts and culture organization funding coming from outside the region.

It is important to note that money attracted from residents and businesses within the local region is merely a recirculation of wealth already existing within the region. More positive economic impacts are made when funds are attracted from outside the immediate region.

See the following table for a breakdown of all revenues by category and a breakdown of revenues attracted from all sources.

2016 Revenues-All Organizations				
Source	Local	Non-Local	*Mixed	Total
Local Government	\$ 780,524	\$ -	\$ 301,170	\$ 1,081,694
Admission Sales	\$ 90,496	\$ -	\$ 759,549	\$ 850,045
Ticket Sales	\$ 1,620,525	\$ 119,142	\$ 1,920,699	\$ 3,660,366
Ticket Commission Sales	\$ 24,350	\$ 6,472	\$ -	\$ 30,822
Facility Fee Revenue	\$ 417,663	\$ 99,208	\$ 109,320	\$ 626,191
Membership Sales	\$ 21,510	\$ -	\$ 338,454	\$ 359,964
Program Sales	\$ 352,198	\$ -	\$ 313,098	\$ 665,296
Rental Revenue	\$ 642,850	\$ 1,500	\$ 22,839	\$ 667,189
Other Event Income	\$ 75,513	\$ 3,000	\$ 199,590	\$ 278,103
Foundations	\$ 881,465	\$ 170,881	\$ 582,720	\$ 1,635,066
Business	\$ 592,389	\$ 32,816	\$ 429,898	\$ 1,055,103
Bequests	\$ -	\$ 25,889	\$ -	\$ 25,889
Endowment	\$ 135,330	\$ 75,600	\$ 4,275,934	\$ 4,486,864
Individual Donations	\$ 1,594,004	\$ 32,052	\$ 1,915,401	\$ 3,541,457
Other	\$ 285,217	\$ 6,566	\$ 2,314,347	\$ 2,606,130
Federal Government	\$ -	\$ -	\$ 1,400	\$ 1,400
State Government	\$ -	\$ 167,245	\$ 94,101	\$ 261,346
Total	\$ 7,514,034	\$ 740,371	\$ 13,578,520	\$ 21,832,925

**both local/non local revenue-could not distinguish*

The above table includes all revenue from visitors and local residents. One should also note that only \$261,346 was reported as revenue from State and Federal sources. The total revenue was \$21,832,925 while total expenditures reported by the organizations was \$17,684,927. Of the ten organizations that could report local vs. non-local income the ratio of local income to non-local income was about 10:1.

Ideally, revenue should be separated by local vs. non-local sources. Eleven of the sixteen organizations were able to detail their revenue streams in this manner. Because a majority of the revenues could not be divided by local and non-local sources (mixed column above), no attempt was made to measure economic impact by revenue source.

Tourism and Visitation

The project team knew it was of vital importance to quantify to the degree possible the amount of tourist visitation generated as a result of the arts and culture offerings in the City of Roanoke. The following table details the visitation estimates of participating organizations.

Attendance	
Type	Number
Local Residents	271,389
Tourist	114,122
Local Students	70,990
Non-Local Students	35,612

Not all organizations could report visitation

Because not all organizations are able to distinguish local residents from tourists, the reported visitation numbers are considered incomplete. However, one could also assume that each tourist visits more than one museum or venue, thus the count in the table likely represents a higher number than actual visitors. Without another measure to use for tourist visitation, and the fact that the number of 114,122 is similar to past visitation estimates, this number was used to estimate the visitor impact using an IMPLAN model. In the spending model, it was assumed that half of these visitors spent two days in the region, while the other half spent one day. Students were not included in the visitor model because their spending patterns would be much less than the average tourist.

Finally, a tourist profile was compiled of the arts and cultural tourist to the Region. Data was obtained from the Virginia Tourism Corporation that represents tourist spending to the region in 2016. The following table shows average spending by party and per-person spending based on their survey. The average travel party size reported was 2.9 people.

2016 Virginia Mountains Region Travel Profile

Average Travel Party Size	2.8		
Spending	Percent	Per Party	Per Person
Total	100%	\$ 545.00	\$ 187.93
Transportation	19%	\$ 103.55	\$ 35.71
Parking	1%	\$ 5.45	\$ 1.88
Lodging	25%	\$ 136.25	\$ 46.98
Food/Dining	20%	\$ 109.00	\$ 37.59
Groceries	6%	\$ 32.70	\$ 11.28
Entertainment	9%	\$ 49.05	\$ 16.91
Gaming	1%	\$ 5.45	\$ 1.88
Shopping/Gifts	8%	\$ 43.60	\$ 15.03
Amenities	1%	\$ 5.45	\$ 1.88
Other	1%	\$ 5.45	\$ 1.88
Gasoline	10%	\$ 54.50	\$ 18.79

Source: Virginia Tourism Corporation, 2018

Estimates of expenditures by tourists were applied to estimated attendance and visitation data to arrive at a direct expenditure estimate which was used in the model and parsed among gasoline retail, lodging, food and beverage, entertainment, and retail industry sectors. The data was obtained from the Virginia Tourism Corporation and represents spending in the Virginia Mountains Region, which includes Roanoke. It should be noted that only 22% of visitors are day visitors to the Mountain Region. Of those that spend the night, 30% spend the night in a private home with friends or family according to the Virginia Tourism Corporation survey for 2016. Thus, we estimate that 62,310 people were overnight guests. Furthermore, we assumed that half of those visitors spent two nights.

Economic Impact of Visitor Spending

The true measure of the economic impact can be estimated if the contribution of outside spending is known. Attributing this entirely to Arts and Cultural attractions is difficult, because people often travel to the region for multiple reasons. Fifty-one percent of visitors come to see friends or family, thirty-six percent visit for outdoor recreation, and thirty five percent visit for sightseeing and entertainment according to the Virginia Tourism Commission travel profile. Thus, Arts and Culture destinations are often part of a multi-purpose trip, contributing to the draw of the region to visitors. While the region has many more visitors, only numbers estimated for Arts and Cultural visitation were used. The following table shows the estimated regional impact of the 114,122 visitors to attractions in the region:

Visitor Impact Summary				
Impact Type	Employment	Labor Income	Value Added	Total Output
Direct Effect	278	\$ 7,278,062	\$ 11,917,881	\$ 21,038,674
Indirect Effect	57	\$ 2,197,592	\$ 4,004,975	\$ 7,673,339
Induced Effect	58	\$ 2,187,109	\$ 3,971,207	\$ 7,178,013
Total Effect	393	\$ 11,662,764	\$ 19,894,063	\$ 35,890,025

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It is estimated that these visitors help employ 393 people (full or part-part time) and contribute over \$35.8 million to the regional economy. These visitors support hotel, restaurant, gas station, grocery, and other service sector employment. These are new dollars that are brought to the region which are partially supported by the attraction of the arts and cultural sector in the City of Roanoke. Indirect job creation occurs when industries that support these service sector industries employ people as a result of the increased business. Induced job creation occurs as a result of spending by employees supported in the indirect and induced phases of impact. Indirect and induced impacts are responsible for the creation or retention of an estimated 116 additional jobs for a total job impact of 393 jobs. The Arts and Cultural Organizations are an integral part of the appeal that draws these visitors to the region.

Relative Size of Local Arts and Cultural Sector

The arts and culture industry is part of the existing economy within the region. Total expenditures were used to create an IMPLAN model to measure the relative size of the existing sector for 2016.¹

The following is a summary table of the model output:

Arts and Culture Sector Employment				
Impact Type	Employment	Labor Impact	Value Added	Total Output
Direct Effect	205	12,301,325.4	12,533,998.9	21,406,042.3
Indirect Effect	62	\$ 2,080,297	\$ 4,466,165	\$ 8,447,713
Induced Effect	88	\$ 3,310,648	\$ 6,011,299	\$ 10,868,775
Total Effect	356	\$ 17,692,271	\$ 23,011,463	\$ 40,722,530

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The model estimated that 205 jobs (full or part-time) are directly supported per year. This number corresponds to the full and part time workers as reported by the organizations surveyed. The direct effect is the related to spending by the arts and cultural organizations. The remaining indirect and induced effects are related to the spending of support services, suppliers, and vendors, as well as spending by all their employees. While some portion of this is supported by visitors, a bulk of the sector measurement is supported by local residents and businesses and governments.

This type of analysis measures the relative size of the arts and cultural sector in the region. Since a large portion of dollars used in this analysis come from local sources, they are considered a part of the existing economy. For example, local governments and residents could find other ways to spend their dollars, known as economic substitution, that would have a similar impact on the economy should the arts and cultural organizations cease to exist. However, one could easily argue that non-tangible impact would be higher and could not be replaced.

¹ Model software and data provided by the Minnesota IMPLAN Group, <http://www.implan.com>.

Summary

The Arts and Cultural Industry of the City of Roanoke impacts the economy in important ways. The central core of this industry is the group of nonprofit organizations that serves as a support and stimulus to the entire industry. By holding culturally relevant and exciting events, these nonprofits contribute to the economy by attracting financial stimulus to the region introduced by tourists who spend money for traveler services (food, gas, and lodging). By attracting dollars from visitors and other outside sources, arts and cultural organizations in the City of Roanoke have a large impact on the region.

There are undoubtedly other ways that the arts and cultural industry of the City of Roanoke contributes to economic well-being. These other contributions are much more difficult if not impossible to track. For instance, arts and culture are a large part of the area's overall package of quality of life amenities and other positives that make the region unique. For-profit companies who have located to this region have been undoubtedly influenced by this overall package of amenities which include the arts and cultural attractions among other amenities. The degree to which these amenities have played a role in relation to other traditional factors, including cost of doing business, differs depending upon the individual company and indeed the individual decision-maker. Quantifying this type of impact is nearly impossible.

The following are the main points of this report, which seeks to quantify aspects of the economic contribution of the Arts and Cultural Industry to the regional economy.

- The Arts and Cultural Industry of the City of Roanoke helps generate \$35.8 million in new sales activity in the Region as a result of new dollars attracted through visitation/tourism. While typically not the sole destination, arts and cultural organizations play an important role to tourism in the region.
- The size and impact of the local industry sector, based on the expenditures of arts and cultural organizations in the City, is \$40.7 million. These are not considered new funds to the region, but a measure of the relative size of the industry within the region's existing economy.