Understanding the *Arts & Economic Prosperity 5* Calculator

INTRODUCTION

Because of the variety of communities studied, and the rigor with which the Arts & Economic Prosperity 5 (AEP5) study was conducted, nonprofit arts and cultural organizations located in communities that did not participate in the study may estimate their local economic impact by using this tool. Estimates can be derived for both spending by a nonprofit arts and cultural organization (or group of organizations) as well as the event-related spending generated by cultural audiences.

THE CAVEATS

When using estimates derived by the AEP5 Calculator, always keep the following important caveats in mind:

1. The results of this analysis are based on the averages of similarly-populated U.S. communities.
2. Project economists customized an input-output economic model for each of the similarly-populated communities, providing very specific data on employment, household income, and government revenue. This highly-regarded type of economic analysis has been the basis for two Nobel Prizes in economics. The models are systems of mathematical equations that combine statistical methods and economic theory in an area of study called econometrics. The analysis traces how many times a dollar is respent within the local economy before it leaves the community, and it quantifies the economic impact of each of those rounds of spending. Project economists customized an input-output model for each of the 341 participating study regions based on the local dollar flow among 533 finely detailed industries within its economy. This was accomplished by using detailed data on employment, incomes, and government revenues provided by the US Department of Commerce (County Business Patterns, the Regional Economic Information System,

and the Survey of State and Local Finance), state and local tax data (e.g., sales taxes, lodging tax, property taxes, income tax, and miscellaneous local option taxes), and the survey data collected from the responding organizations and their audiences.

3. Specific economic characteristics such as business and employment patterns and rates of taxation can vary greatly from community to community (which is the reason that an input-output model was customized for each community).
4. **The results derived by the AEP5 Calculator, therefore, should be considered estimates only**. This method of estimating economic impact is not a substitute for conducting a customized economic impact study using an input-output model that has been designed specifically for your community's unique economy. The standard deviation and the 95 percent confidence interval may provide a sense of how well the averages represent the sets of numbers from which they were derived.

HOW THE CALCULATOR ESTIMATES THE IMPACT OF SPENDING BY ORGANIZATIONS

The project researchers developed this section of the calculator using the average economic impact findings per $100,000 in direct expenditures made by **nonprofit arts and cultural organizations** for each of six population categories (thus, the "similarly-populated communities"). The table below lists the average economic impact ratios for each category.

Table 1: Economic Impact Per $100,000 in Spending by Nonprofit Arts and Cultural Organizations

Population Category	Full-Time Equivalent Jobs	Resident Household Income	Local Government Revenue	State Government Revenue
Fewer than 50,000	3.36	$65,367	$2,840	$5,075
50,000 to 99,999	3.42	$71,736	$3,484	$5,082
100,000 to 249,999	3.91	$74,649	$3,871	$4,622
250,000 to 499,999	3.72	$80,932	$3,769	$5,512
500,000 to 999,999	3.75	$82,080	$4,465	$5,523
1,000,000 or More	3.30	$83,727	$4,068	$4,953
Average of all AEP5 Study Regions	3.59	$74,855	$3,636	$5,095
Standard Deviation	0.80	$12,858	$1,284	$1,765
95% Confidence Interval	0.10	$1,669	$167	$229

An Example of How to Use Table 1

An administrator from a nonprofit arts and cultural organization that has a total annual expenditure budget of $250,000 wants to determine the organization's total impact on full-time equivalent employment in the community (which has a population of 300,000 people). The administrator would:

1. Locate the appropriate population category in Table 1—in this example, the appropriate category for a community with a population of 300,000 people is "250,000 to 499,999";
2. Determine the amount spent by the nonprofit arts and cultural organization;
3. Divide the total expenditure by 100,000; and
4. Multiply the result by the ratio of "Full-Time Equivalent Jobs" found in the "250,000 to 499,999" population category (Table 1).

Thus, $250,000 divided by 100,000 equals 2.5; 2.5 times 3.72 (from Table 1) equals a total of 9.3 full-time equivalent jobs supported by the organization's annual expenditures. Using the same procedure, estimates may also be calculated for resident household income, local government revenue, and state government revenue.

HOW THE CALCULATOR ESTIMATES THE IMPACT OF SPENDING BY AUDIENCES

The project researchers developed this section of the calculator using the average economic impact findings per $100,000 in direct expenditures made by **cultural audiences** for each of six population categories (thus, the "similarly-populated communities").

The first step is to determine the total estimated event-related spending by attendees who are residents of the county in which the cultural event took place. To derive this figure, first multiply the total attendance by the average percentage of attendees that are residents. Then, multiply the result by the average per person event-related expenditure by resident attendees. The result is the total estimated event-related spending by resident attendees.

Next, do the same for non-residents. To derive this figure, first multiply the total attendance by the average percentage of attendees that are non-residents. Then, multiply the result by the

average per person event-related expenditure by non-resident attendees. The result is the total estimated event-related spending by non-resident attendees.

Then, add the results from the first two steps together to calculate the total estimated event-related audience spending (*excluding the cost of admission*).

Finally, the ratios of economic impact per $100,000 in direct spending can then be used to determine the total economic impact of the spending by cultural audiences.

The tables below list the averages required for these calculations for each of the six population categories.

Table 2: Residency and Per Person, Per Event Expenditure Averages for Cultural Audiences

Population Category	RESIDENT		NON-RESIDENT	
	Percentage of Total Attendees	Average Per Person Expenditure	Percentage of Total Attendees	Average Per Person Expenditure
Fewer than 50,000	65.5%	$20.38	34.5%	$47.79
50,000 to 99,999	67.2%	$22.44	32.8%	$43.79
100,000 to 249,999	66.8%	$22.19	33.2%	$39.55
250,000 to 499,999	66.8%	$22.55	33.2%	$41.46
500,000 to 999,999	68.5%	$23.12	31.5%	$43.55
1,000,000 or More	67.8%	$26.57	32.2%	$51.41
Average of all AEP5 Study Regions	66.8%	$22.39	33.2%	$44.02

Table 3: Economic Impact Per $100,000 in Spending by Cultural AUDIENCES

Population Category	Full-Time Equivalent Jobs	Resident Household Income	Local Government Revenue	State Government Revenue
Fewer than 50,000	2.13	$43,345	$4,134	$5,956
50,000 to 99,999	2.44	$50,052	$4,404	$5,830
100,000 to 249,999	2.54	$53,083	$4,565	$5,101
250,000 to 499,999	2.62	$55,829	$4,472	$6,359
500,000 to 999,999	2.59	$54,044	$4,643	$6,175
1,000,000 or More	2.53	$55,139	$5,076	$6,107
Average of all AEP5 Study Regions	2.45	$51,157	$4,478	$5,860
Standard Deviation	0.59	$13,502	$1,431	$1,496
95% Confidence Interval	0.08	$1,753	$186	$194

An Example of How to Use Tables 2 and 3

An administrator from an organization that has a total attendance of 25,000 wants to determine the total impact of event-related audience spending on full-time equivalent employment in the community (which has a population of 300,000 people). The administrator would:

1. Locate the appropriate population category in Tables 2 and 3—in this example, the appropriate category for a community with a population of 300,000 people is "250,000 to 499,999";
2. Multiply the total attendance by the percentage of resident attendees (Table 2);
3. Multiply the result of step 1 by the average per person event-related expenditure for residents (Table 2);
4. Multiply the total attendance by the percentage of non-resident attendees (Table 3);
5. Multiply the result of step 3 by the average per person event-related expenditure for non-residents (Table 3);
6. Sum the results of steps 3 and 5 to calculate the total estimated event-related audience spending (*excluding the cost of admission*);
7. Divide the resulting total estimated audience spending by 100,000; and
8. Multiply the result by the ratio of "Full-Time Equivalent Jobs" found in the "250,000 to 499,999" population category (Table 3).

Thus, 25,000 times 66.8% (from Table 2) equals 16,700; 16,700 times $22.55 (from Table 2) equals $376,585; 25,000 times 33.2% (from Table 2) equals 8,300; 8,300 times $41.46 equals $344,118; $376,585 plus $344,118 equals $720,703, $720,703 divided by 100,000 equals 7.21; 7.21 times 2.62 (from Table 3) equals a total of 18.9 full-time equivalent jobs supported by event-related spending by the organization's audiences. Using the same procedure, estimates may also be calculated for resident household income, local government revenue, and state government revenue.

The detailed methodology and itemized data tables used to complete the Arts & Economic Prosperity 5 study can be found in the National Statistical Report, a complimentary 520-page document that is available for download at www.AmericansForTheArts.org/EconomicImpact. Additional resources available online include an interactive map of the 341 participating study regions, videos, a sample press release, a sample PowerPoint presentation, and more.