

# **The Value of Cultural Alliance Activities to the Central Iowa Economy**

## **A Report for the Cultural Alliance**

Prepared by

Dave Swenson\*  
Consulting Analyst

**October, 2002**

---

\* The researcher is a scientist in the Department of Economics at Iowa State University and a private consultant. This report was prepared privately and should not be construed as an Iowa State University study.

## Summary of Findings

This is a study of the economic activity of the fifteen organizations that make up the Cultural Alliance. This research is based on recent information gathered via a survey of the Cultural Alliance members. Pertinent to this study, that survey identified income, expenses, employment, and characteristics of attendance. That information was then entered into an input-output econometric model of the central Iowa economy to ascertain the extent to which Cultural Alliance events and programs, along with the visitors that are attracted, support economic activity in the region.

### **The Findings**

The Cultural Alliance organizations had \$34.5 million in total income, was responsible for 1,206 jobs, and produced an estimated \$33.72 million in economic output. Economic output is a measure of the value of all goods and services that were produced by the Cultural Alliance in the last year.

Using an input-output model of the regional economy we determined that

- The \$33.72 million in Cultural Alliance output required \$9.92 million in regionally supplied inputs, which in turn stimulated 203 additional jobs.
- When the workers in the Cultural Alliance organizations and the workers that are supported in the supplying industries spend their paychecks, they support an additional \$10.5 million in regional sales and 150 more jobs.
- In total, Cultural Alliance total economic effects produce \$54.1 million in output in the region, \$31.03 million in value added, of which \$23.97 million found its way into labor income supporting a total of 1,559 central Iowa jobs.

We next isolated the additional economic effects to the region that are due to visitorship to Cultural Alliance events and activities.

- According to the Cultural Alliance survey, 738,491 visitors came from outside of the Polk County area, roughly 32 percent of the total.
- These visitors spent \$3.77 million directly to purchase retail goods and services in the area. That direct spending supported \$1.59 million in labor income and 116 jobs.
- When this spending worked its way through the remainder of the regional economy, it accounted, in total, for \$5.57 million in total regional sales, \$3.64 million in value added, \$2.26 million in labor income, and 141 total jobs.

Combined we found that the Cultural Alliance and the visitors that it entices to the region account for \$59.66 million in industrial output (sales), \$34.7 million in value added, \$26.23 million in labor income, and 1,700 jobs.

# The Value of Cultural Alliance Institutions to the Central Iowa Economy

## Introduction

This is a report estimating the economic values that are attributable to the combined activities of the Cultural Alliance in the Des Moines/Polk County metropolitan region. Fifteen Cultural Alliance institutions or centers participated in this study. This research identifies the extent to which these entities link economically with the remainder of the regional economy. The participating Cultural Alliance organizations recently completed a survey of their resources, their spending, employment, volunteer effort, the number and characteristics of their visitors, along with information about the educational efforts of these centers.

Table 1 displays the participants. It also categorizes them as either primarily entertainment or educational. These groups were initially categorized into four standard industrial groupings.\* Those groupings next were aligned with the modeling system that we employed leaving us with the entertainment and the educational groupings.

**Table 1. Cultural Alliance Participants in This Study**

Organization	Classification or Organizational Type	
	Education	Entertainment
Blank Park Zoo		
Botanical Center		
Civic Center		
Civic Music Association		
Des Moines Metro Opera		
Des Moines Playhouse		
Des Moines Symphony		
Edmundson Art Foundation, Inc.		
Hoyt Sherman Place		
Iowa Youth Chorus		
Living History Farms		
Metro Arts Alliance		
Salisbury House		
Science Center of Iowa		
State Historical Society		

\* We used SIC groupings to align Cultural Alliance organizations with our current model. They were as follows: museums and art galleries, historical and heritage sites (8412); arboreta, botanical & zoological gardens (8422); theater, opera, ballet & dance producers and promoters (7922); and musical groups and orchestras (7929).

At the most basic of levels, all of these Cultural Alliance organizations produce a good or service that is consumed by the region's citizens and by visitors to the region. Our economic effects research will estimate the value of that consumption, it will identify the kinds and the amount of linkages that these institutions have the remainder of the economy, and it will estimate the visitor effects that can be attributed to their combined attractiveness for persons who are not residents of the region.

### **Basic Terminology and Modeling Procedures**

This research is conducted utilizing two very important sources of information and research capacity. Highly detailed financial, employment, and attendance data were gathered from the participants via a survey. Information about the overall industrial structure of the region of study was compiled using an input-output model. An input-output model (I-O) is an accounting of the sales and purchases of nearly 300 industries in the central Iowa economy. The data that were gathered from the survey were organized in a way that they could be input into our I-O model in order to calibrate it so that it was mathematically sensitive to the overall economic structure of our Cultural Alliance group.

I-O model data are compiled at the county and the state levels.\* We can aggregate the data to form cohesive economic regions. In this study, we built a model that contained the Polk, Warren, and Dallas County economies, as they comprise the primary central Iowa Metropolitan Statistical Area.

I-O models were originally constructed to assist policy makers and planners to understand the economic impact of plant closings or of major industrial restructurings. The models are now also used to isolate and estimate the value of inter-industrial relationships and the intricacies of regional industrial dependencies, along with traditional economic impact measures.

We are generally cautious about using the term *economic impact* in our research as the term has very specific meaning to regional scientists. An economic impact occurs when productivity in industry in a region results in a surplus of goods that are sold outside the region and that, as a consequence, bring money into a region. We call these sales *exports*. A positive economic impact occurs as

---

\* The I-O model used in this analysis is called IMPLAN (IMpact PLANning). It is the most widely used and systematically reliable I-O modeling system in use in the U.S.

production produces a surplus. A negative economic impact occurs when production scales back or ceases.

Many goods and services can fit into this definition. Durable goods manufacturing is primarily geared for export sales. Recreation and tourism industries usually cater primarily to out-of-region visitors. Higher value health and education services also fit into this category as they draw from a geographic territory that is much larger than the primary service area of a region. The same can be said of many of the cultural and educational institutions that are part of the Cultural Alliance. A portion of what they collectively produce is ultimately destined to be an export sale – out-of-region consumers purchase them. These entities also entice additional, ancillary visitor spending for goods and services as visitors are prone to spend money elsewhere locally during their stay. These effects are called *visitor impacts*.

There are two other traditional kinds of economic impacts. If an industry in a region begins to produce a good for local consumption that historically had been imported, then it is retaining sales locally that previously escaped out of the region. This loss of sales is called *leakage*. When we stem leakage by producing locally, we call this *import substitution*. A genuine import substitute constitutes an economic impact to a region as money that used to leak out is retained locally.

The last kind of traditional economic impact involves public spending choices. The concentration of state or federal spending in a particular area for, as examples, universities, state department headquarters, prisons, federal buildings and services, and military bases, all result in a localized concentration of public spending and employment. The value of that spending (both operational and spending for workers) also constitutes a positive economic impact (for a new prison, for example), or a negative economic impact if a state or federal installation were to close. We call these values the *institutional impacts*.

The I-O models that we use allow us to initially determine the value of economic inter-relationships within a region. We generally call these values the *economic effects*. If data are available, we will parse out the regional economic impact that might contained within them to isolate the potential impact value of the institutions that we are measuring to the regional economy.

There are several economic measures that we report. An important value is the *industrial output*. Output is the value of goods or services that are produced for

sale or inventory in the economy. Output is usually gross sales. For public or non-profit organizations, output is simply annual spending.

*Value-added* is the next economic variable that we report. Value added is the amount of wages and salaries paid to workers, normal profits paid to owners, payments made to investors and property owners, and indirect tax payments to governments. A subset of value added is *labor income*. Labor income is the value of wages and salaries to workers and normal profits paid to owners. We like to report labor income because it represents the amount of value added that is highly likely to be retained and re-spent in the local economy.

Our remaining standard economic measure is *jobs*. Jobs come in all forms and sizes. Some are full-time and others are part time. Some are year round and some are seasonal. In our model, a job is a job, and there is no differentiation between full time jobs or part time jobs. Accordingly, we need to scrutinize the value of the jobs that we are reporting, which will vary by the kind of industry that we are measuring. In traditional manufacturing firms, most jobs are full time and year round, for example; in many recreation industries jobs are seasonal and mostly part-time.

We also report different levels or iterations of economic activity. *Direct effects* are those that are directly attributable to the firm – its output, value added, labor income, and jobs. The direct industries/institutions that we are measuring (the Cultural Alliance) all require inputs to produce their services. Inputs take the form of wholesale goods, financial and legal assistance, utilities, rents and maintenance services, along with a host of other goods and services. The extent to which these goods and services can be purchased locally constitutes the *indirect effect*. Finally, in the last analytic iteration, all workers in the direct industry or those supported in the indirect industries by the direct industry's demand for inputs must make purchases of household goods and services. These are called the *induced effects* or *household effects*. The sum of the direct, indirect, and induced effects constitutes the *total economic effects*.

We will also report multipliers. Multipliers are obtained for output, value added, labor income, and jobs. They are simply the total effect divided by the direct effect. They reveal to us the linkage that the direct industry has with the remainder of the regional economy.

## The Direct Values

The Cultural Alliance conducted a detailed survey of its members to obtain financial, attendance, and programmatic information from its members. The respondents provided a high amount of information about their revenue sources and expenditures, which allowed us to adjust our model (or calibrate it) to be sensitive to the kind of spending that the participants made in the local economy. The model that was compiled was very sensitive, therefore, to the economic structure of the Cultural Alliance.

Table 2 contains a summary of some of the important direct data for the Cultural Alliance. Combined, the Cultural Alliance generated \$34.5 million in income and \$32.64 million in spending. Total full and part time jobs, along with all internships, numbered 1,206, and total payroll was \$15.9 million. As many of these organizations are dependent on donated labor from members, we compiled these totals to add to the value of services that are produced. When we add total spending plus the imputed value of donated labor, we get \$33.72 million in estimated direct output of the Cultural Alliance organizations.

**Table 2. Cultural Alliance Financial, Personnel, and Output  
Summary: The Direct Data**

	Total
Income	
Donations/Contributions	\$ 7,331,950
Government Grants/Appropriations	\$ 8,178,277
Earned	\$ 18,994,749
<b>Total</b>	<b>\$ 34,504,977</b>
Spending	
Personnel	\$ 15,869,586
All Other	\$ 16,773,901
<b>Total</b>	<b>\$ 32,643,487</b>
Personnel	
Full-Time	278
Part-Time/Contracted	845
Interns, Paid and Unpaid	83
<b>Total</b>	<b>1,206</b>
Imputed value of donated labor	\$ 1,075,320
<b>Estimated Output</b>	<b>\$ 33,718,807</b>
Total Attendance and Membership	2,290,436
Non-Polk County	738,491
Percent Non-Polk County	32%

Note: These data were obtained from the Cultural Alliance Economic Impact Survey, September, 2002

Attendance is another important variable. In estimating the potential economic impacts or effects of the Cultural Alliance institutions, knowing how many patrons that they serve and where those patrons come from is critical to estimating the visitor effects. Total attendance, including members, for Cultural Alliance activities and events was nearly 2.3 million in Fiscal 2002. Almost 740,000 of those visitors, 32 percent, are estimated to have come from outside of Polk county.

### Cultural Alliance Economic Effects

We calculate the economic effects of the Cultural Alliance by entering the direct data into our model. We are, in effect, mathematically “shocking” our model with the direct effects to see how the regional economy responds. We built two separate models initially, one for the education group and one for the entertainment group, to make sure that we were sensitive to each group’s operational characteristics; we report, however, just the totals for the Cultural Alliance in Table 3.

**Table 3. Cultural Alliance Primary Economic Effects by Classification**

Cultural Alliance Total	Direct	Indirect	Induced	Total	Total Multiplier
Industrial Output \$	33,718,807	9,918,186	10,449,799	54,086,792	1.60
Value Added \$	18,372,063	5,821,587	6,832,825	31,026,474	1.69
Labor Income \$	15,869,589	4,145,248	3,956,846	23,971,684	1.51
Jobs	1,206	203	150	1,559	1.29

Looking just at the Cultural Alliance Total values, we find that it was responsible for \$33.72 million in direct output and directly paid \$15.9 million in labor income to its 1,206 job holders. The Cultural Alliance required over \$9.92 million in regionally supplied inputs (the indirect effects), which in turn caused another \$4.15 million in labor income to be stimulated, along with 203 more jobs. When the workers in the direct industry (the Cultural Alliance) and the indirect industries (the suppliers) spent their paychecks, they induced an additional \$10.45 million in industrial output in the form of household purchases of goods and services in the regional economy. This in turn sparked another round of labor income in the amount of \$3.96 million to the 150 more workers required to supply these household goods and services. In all, the Cultural Alliance institutions alone are linked to \$54.1 million in total regional sales, \$31.03 million in value added, \$23.97 million in labor income (a subset of value added), and 1,559 jobs.

Total multipliers are also listed. For the Cultural Alliance as a group, their multipliers were similar to other service industries in the region. The 1.60 output multiplier means that for every dollar's worth of direct output by the Cultural Alliance, another \$.60 in sales are supported in the region. The value added multiplier is the most robust. At 1.69 the value added multiplier means that for every \$1 of value added attributable directly to the Cultural Alliance, \$.69 in value added will be sustained elsewhere locally. The multiplier of 1.51 for labor income means that for every dollar of wage and salary paid by Cultural Alliance members, another \$.51 in labor income is supported in the remainder of the economy. Finally, the multiplier of 1.29 for jobs means that for every direct job in Cultural Alliance organizations, another 29/100<sup>ths</sup> of a job is supported in the central Iowa economy. The jobs multiplier is very low because a large fraction of the jobs that are stimulated are part-time or seasonal. Were we to restate the jobs on a full-time equivalency basis, the jobs multiplier would be higher.

Table 4 restates the values in Table 3. It reports them as values per \$1,000,000 of direct output either in the separate subgroups or in total. This table standardizes the overall economic effects in a manner that allows administrators and planners to gauge growth or decline in industrial output for the group of institutions as a whole.

**Table 4. Cultural Alliance Primary Economic Effects by Classification Per Million Dollars of Direct Output**

Cultural Alliance Total	Direct	Indirect	Induced	Total	Total Multiplier
Industrial Output \$	1,000,000	294,144	309,910	1,604,054	1.60
Value Added \$	544,861	172,651	202,641	920,153	1.69
Labor Income \$	470,645	122,936	117,348	710,929	1.51
Jobs	36	6	4	46	1.29

We see from this table that per million dollars of direct output, \$1.6 million in total output is realized in the regional economy, \$.92 million in value added, \$.711 million in labor income, and 46 jobs per million dollars of combined industrial output.\* This table is useful for individual institutions of the Cultural Alliance for estimating their unique economic effects separate from the group.

---

\* This table is useful for individual institutions of the Cultural Alliance for estimating their unique economic effects separate from the group.

### **Cultural Alliance Visitor Effects**

When we measure economic activity that is attributable to an organization or a set of organizations, we also investigate the dimensions of the primary service area. In short, we want to know where the visitors come from. When an industry attracts visitors, it is enticing a measure of local spending that might not have otherwise occurred. If we can identify the magnitude of visitorship and the amount of spending, we can identify an increment to local economic activity. We call this increment the *visitor effects*. It assumes that visitors to the Des Moines area necessarily must make, for example, food and fuel purchases. Some others will purchase retail goods and services, and still others might purchase lodging and transportation services.

When we isolate visitor effects, we are relying on very broad generalizations about visitor behavior. We do not have a scientific sample of the visitors to Cultural Alliance activities, but we have compiled visitor spending estimates for the Polk County area based on several other studies in the region that help to inform these estimates.\* The most critical component of this analysis is the estimate by the responding institution of the number of visitors from outside of the Polk County area. In the previous study, respondents estimated that just 9 percent of the attendees to their combined events were from outside of the region. In the current survey, the respondents have significantly revised their estimates of visitorship: they now estimate that nearly 32 percent of their visitors actually come from outside of the Polk County region.

Our next issue is determining whether visitorship was primarily due to a Cultural Alliance event or if visitorship was incidental to some other activity in the region. Again, absent a careful survey over time, we cannot be sure whether visitorship was primarily due to versus indirectly due to a Cultural Alliance event. Rather than getting hung-up on causality, we have decided to estimate the total visitor effects to the region regardless of the primary cause for the visit. This means that we have estimated visitor impacts to which Cultural Alliance organizations and

---

\* In particular, estimates compiled in 1999 for the Polk County Events Center, along with subsequent separate assessments for the Iowa Cubs, the Science Center of Iowa, and major sporting events have allowed us to compile indexes of probable spending by kind of event being attended by kinds of attendees. Our previous effort at this relied on Visitor Bureau estimates and estimates passed on to us by the state agency responsible for tourism. Subsequent research indicates that those estimates highly inflated the amount of expected spending by visitors to the region for events and activities that would be offered by the Cultural Alliance institutions.

their programs have contributed to significantly but are, perhaps, not the sole cause of the visit.

Table 5 lists our findings. Based on information from the survey of the Cultural Alliance membership, we estimated that 738,491 visitors who lived outside of the primary service region of Polk County came to Cultural Alliance events. Whatever the reason for visiting, we estimated that they spent \$3.77 million in direct purchases on retail and service goods in the area, directly supporting \$2.52 million in value added, \$1.59 million in labor income, and 116 jobs. When this spending multiplied its way through the regional economy, we estimated that \$5.57 million in total sales (output) occurred, \$3.64 million in value added was sustained, along with \$2.26 million in labor incomes for 141 jobs.

**Table 5. Cultural Alliance Visitor Economic Effects**

Cultural Alliance Visitors	Direct	Indirect	Induced	Total	Total Multiplier
Industrial Output \$	3,765,050	815,155	990,430	5,570,635	1.48
Value Added \$	2,519,564	476,461	647,584	3,643,609	1.45
Labor Income \$	1,587,729	294,299	374,791	2,256,820	1.42
Jobs	116.0	10.2	14.2	140.5	1.21

The multipliers are also listed. As these are primarily service and retail sales, the multipliers are relatively low. Per dollar of direct visitor sales, \$.48 in additional sales are stimulated in the region. Per dollar of labor income paid because of the direct visitor sales, \$.42 in additional labor income is sustained. Per direct job supported by visitor spending produces just a fifth of a job,  $21/100^{\text{ths}}$ , in the rest of the economy. The jobs multiplier is low because visitor purchases primarily stimulate retail and service jobs, which in the main are part-time and comparatively low-paying jobs.

### **Combined Economic Effects**

The final table combines total Cultural Alliance economic effects with their visitor effects. This represents the sum of economic activity that we identified that was either directly or indirectly attributable to Cultural Alliance events and activities, and the associated visitorship that they stimulated or helped to stimulate. Total industrial output (sales, mostly) amounted to \$59.7 million. These sales supported \$34.7 million in regional value added, \$26.3 million in labor income, and 1,700 jobs.

**Table 6. Combined Cultural Alliance and Visitor Effects**

Cultural Alliance Total	Direct	Indirect	Induced	Total	Total Multiplier
Industrial Output \$	37,483,857	10,733,341	11,440,229	59,657,427	1.59
Value Added \$	20,891,627	6,298,048	7,480,409	34,670,083	1.66
Labor Income \$	17,457,318	4,439,547	4,331,637	26,228,504	1.50
Jobs	1,322	213	164	1,700	1.29

**Discussion and Comparison with the Previous Study**

The reader will notice that we have not used the term *economic impact*, opting instead to list the total economic effects. Economic impacts can be inferred, however. As somewhere in the neighborhood of 32 percent of the visitors to Cultural Alliance events and activities come from outside of the Polk County metropolitan area, we can conclude that roughly 32 percent of their combined output, associated value added production, labor income, and total jobs may be called an economic impact. The remainder of the Cultural Alliance’s output serves local residents and can be classified as a local educational or entertainment good that is in competition for spending with all other entertainment and education goods sold in the region.

We are much more comfortable with assigning economic impact status to the visitor effects for two reasons. First it is likely that a large fraction of Cultural Alliance activities are the primary reason for visiting the region by those out-of-town patrons. A trip to the zoo, a show at the Civic Center, a day at Living History Farms – these account for a large fraction of visitorship, a large fraction of out-of-region attendance, and are likely the primary reason for a visit to the region. Second, we feel that the visitor effects that we have calculated are reasonable, but conservative estimates.

A study was conducted previously for the Cultural Alliance in 1999. That study had one fewer institution, but the results of the two are otherwise generally comparable. There are a few other differences between the two studies, however, that must be noted:

- In this version of the research we added the imputed value of donated labor (volunteers) to the output values. We also used a more expansive definition of jobs this time around to include interns.
- In the previous study, we included Story County as part of the primary economic region. In this study we did not include Story County. As of

2000, Story County attained the status of an independent Metropolitan Statistical Area (MSA), leading us to conclude that its economy was substantially and meaningfully independent of the remainder of the central Iowa region.

- Finally, we made a major revision downward in our estimate of the amount of actual visitor spending to expect. Our previous study relied on tourism and visitors bureau compilations, which we now believe inflated local spending – especially for the kinds of events at Cultural Alliance institutions. This study uses estimates that were based on actual research in the region and appear to be much more reasonable.

These kinds of studies are designed to help organizations and institutions to understand the relationships that their activities have with the remainder of the regional economy. The educational, cultural, and entertainment institutions that comprise the Cultural Alliance exist in large part because of the size and scope of the regional economy. Stated another way, they represent a set of superior goods that can only survive within a vibrant and somewhat sophisticated economy.\* That makes them not just a subset of the regional economy, but a subset of what constitutes its quality of life.

---

\* By way of perspective and economic magnitude, the regional economy generated \$33 billion in industrial output, realized \$19.5 billion in value added, of which \$11.8 billion was paid in labor income to 365,000 jobs in the last year.

**Appendix: Selected Regional Economic Effects/Impact Summaries**

Activity/Institution	Year of Estimate	Total Economic Effects/Impacts	
		Industrial Output	Jobs
Iowa Barnstormers	1996	4,737,300	97
Iowa State University Events Center Concerts	1998	6,370,494	118
Veterans Auditorium/Convention Center*	2000	12,841,498	484
Cultural Alliance*	2002	54,086,792	1,559
All Movie Theaters (Polk, Warren, & Dallas County)	1999	281,565,884	3,682

\* Excludes visitor effects