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An Economic Study of the Illinois Shakespeare Festival

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Since 1978, the Illinois Shakespeare Festival, or ISF, has been an important cultural attraction for the Bloomington-Normal community. What once started as small scale performances of classic theatre on the tennis courts of Ewing Manor has grown into a full sized venue with a full sized audience. The festival hosts over 10,000 guests and a large number of seasonal staff over the summer months: 125 were listed in their most recently available annual report (Season Report 2012). The festival also has an extensive summer camp program, community outreach, and a touring company. The Illinois Shakespeare Festival's cultural impact has been documented in media all over the world, from Chicago to England (Illinois Shakespeare Festival).

However, despite their long standing reputation and significant employment, the Illinois Shakespeare Festival only covers around 25% of its million dollar budget through ticket sales (Seasonal Report 2012). The rest of the income largely comes from donations, fundraising, and university support (Seasonal Report 2012). This study contains two parts. The first, an economic impact study, will largely focus on the festival's overall impact on the surrounding community, which will be useful information to attract the donations and support which make up 75% of the budget. The second part will be a study of patronage, used to help better understand the audience and how the ISF makes that other 25% of their budget.

As a company that relies on external sources for their income, the ISF must make their case for donors to continue contributions to help keep the festival running, often by offering special perks (Illinois Shakespeare Festival). The incentives to donate are largely the personal or social benefits of supporting the arts. However, by analyzing the festival's economic impact on the surrounding community, it is possible that there is actually a positive economic effect in addition to a social one. This information could be of significant interest to fundraisers at ISF and donors alike. There were 198 donors listed on the 2012 season report who could be interested in knowing how their donations have affected their local economy beyond just the festival (Seasonal Report 2012). It could also encourage those who are on the fence about donating and allow them to make a more educated decision.

Economic multipliers are an indication of how money spent on one economic enterprise, in this instance the ISF, ripples into additional economic effects. For example, a dollar used to pay an ISF employee will likely be later spent locally by that employee, resulting in additional economic activity. The impact study will help quantify a number of factors, including direct effects like employee compensation, and indirect effects like hotel costs paid by those who have traveled to see the festival.

The multiplier number quantifies the magnitude of additional economic activity created and is put into an input-output model to determine the total effect on economic activity. If a sector of activity were to have a multiplier of 1.66, for each dollar of input you would expect to yield $1.66 in final economic output (Coughlin and Mandelbaum, 1991). According to a national study done by Americans for the Arts, average audience members spend $24.60 per event excluding the cost of admission (Arts and Economic Prosperity IV). This means that events like the ISF have the potential to bring in extra revenue for their surrounding community almost equal to the cost of their actual ticket. Findings from a study about the multiplier for the ISF might be particularly interesting as the final total output calculated by this impact study might indicate the festival is actually economically advantageous despite failing to break-even without their donor support.

While budgets and donations are obviously important interests of the ISF, their major concern, being a nonprofit performing arts organization, is attendance. Simply put, a theater company cannot exist without an audience. In recent years (2006-2015), both attendance and revenue per show at the ISF have been on the decline, damaging the ISF's ability to both make their ends meet and spread their artistic work. By analyzing attendance numbers as a function of a series of variables like type of play, weather, and day of week, this study will look for factors that influence the number of audience members for a given show.

This study will not examine the effects of tourism or the demographics of patronage, and while there are many other cultural institutions in the Bloomington-Normal area, I will limit research to the Illinois Shakespeare Festival. It would be interesting to create an argument for public spending in support of the ISF, measuring the increase in tax revenue, but that is a topic for another study. This study will be focused specifically on creating an economic impact study and a patronage analysis that has the potential to be used by their marketing or grant writing team as evidence of the festivals economic value to the community.

Data and Methods I: Economic Impact Study

The data used in this portion of the project have been received from the Cultural Data Project. The CDP collects data from over 14,000 individual arts organizations across the United States, including the ISF (About the CDP). The measurements utilized in this study will be ticket sales, total salaries, and total expenses. All of these measurements were yearly, beginning in 2008 and ending in 2013, giving six observations; a graph of the ISF’s data appears in Figure 1 of the appendix. Some

important points of note include the salary ($626,977) and expense ($1,077,844) maximums in the year 2012, which is also the minimum value for ticket sales ($184,339).

In order to better understand the relationship between these variable and more easily identify trends over the years, they were then graphed into percentages of the total expenses (Figure 2). The year 2012 had, as expected, the minimum value for ticket sales as a percentage of expenses (17.1%) and the maximum value for salaries (58.17%). The year 2008 had the reverse, with the minimum for salaries (36.46%) and maximum for ticket sales (28.82%). Looking at the graph as a whole, there is clearly a general upward trend in salaries as a percent of expenses and a slight downward trend in ticket sales as a percentage. This information is important to note as it indicates a higher cost of paying employees while ticket sales continue to dwindle, forcing the ISF to rely on other sources of income.

The methodology used in this study will be based off the RIMS II regional economic multipliers. The multipliers are created by the Bureau of Economic Analysis (BEA) and use information from the 2010 McLean county census and the 2002 benchmark input-output table for the nation. The benchmark is the national input-output table created for each industry, that is then adjusted based on the regions specific economic structure. Input-output tables, according to BEA writers Bess and Ambargis (2011), “provide multipliers that can be used to estimate the economy-wide effects that an initial change in economic activity has on a regional economy”.

In the RIMS II table, the Illinois Shakespeare Festival falls under the industry category of performing arts companies. There are six multipliers associated with each industry, but this study will focus on two particular multipliers: output and employment. Output “represents the total dollar change in output that occurs in all industries for each additional dollar of output delivered to [corresponding] industry” and employment “represents the total change in number of jobs that occurs in all industries for each additional 1 million dollars of output delivered to [corresponding] industry” (RIMS II Tables). These multipliers were selected because they have an easily understood direct effect on the local economy.

To put the multipliers used for the ISF in perspective, they were compared to other attendance based organizations: spectator sports, museums/historical sites/zoos/ parks, and amusement parks. The multipliers were graphed and can be found in the appendix as figures 3 and 4. When comparing the output multipliers across these industries, performing arts and museums/historical sites/zoos/ parks have a similar multiplier at just above 1.22. The museum multiplier is slightly higher than the performing arts'. Spectator sports and amusement parks have a multiplier of just above 1.17. The difference in the graph appears large, but the performing arts multiplier is only around 4% larger than

that of the spectator sports or amusement parks. However, when dealing with a million dollar budget like the ISF, that 4% represents $40,000 annually.

Across the four ticketed industries, the employment multiplier is much more varied. According to the RIMS II tables, the performing arts industry creates an estimated 39 jobs per million dollars of input compared to sports which creates 12, museums which creates 17, and amusement parks which creates 14. This large difference between the performing arts and the other three industries could be for a few reasons. It is possible that jobs in the arts pay less than jobs in the other industries, allowing for more jobs to be created per dollar of input, but it is also possible arts organization's multiplier is higher because the industry is very labor intensive, as illustrated by the ISF's high salaries as a percentage of budget.

There are some limitations to the data and methods used in this study. While having several years of data is a strength, more years would be give an even clearer picture. An unfortunate weakness of the methodology is that the benchmark year (2002) is over ten years old. A more recent benchmark would likely create a more accurate multiplier.

Data and Methods II: Study of Patronage

The data collected for this section of the study were provided by the ISF, which uses Ticketmaster to track ticket sales for individual performances. The data came in Excel files for the years 2006-2015 and included 336 observations after removing special events. Special events included backstage tours, one night only shows, and shows not on the main stage and were removed so focus could be placed on determining variance in attendance for three main stage shows that were part of the regularly scheduled season. The data for this study were provided by Ticketmaster. Ticketmaster is a ticket sales and distribution company often hired by performing arts organizations to help facilitate ticket sales. The variables used in this study will be title of show, date (in days after 0AD), seats sold (tickets that were paid for), complimentary seats (tickets that were given away), seats held that were not used, total seats (paid seats plus complimentary), and ticket revenue (in USD). Additional variables were created by manipulating the data provided by Ticketmaster. These included day of week, type of show (comedy, drama, non-Shakespeare work), and average ticket price (revenue divided by seats sold).

Weather was another important concern of this study as the ISF's main stage is an open air theater. Therefore an additional set of data were obtained from the Weather Underground website, which keeps historical records for individual cities. Data were found for Bloomington on the dates of each of the performances for all 336 observations. The variables used were the high, low, and average

of: temperature (in degrees Fahrenheit), humidity (percent of the maximum amount of water vapor in the air), dew point (the temperature at which dew forms), atmospheric pressure (force exerted by weight of air), and wind speed (in miles per hour). The total rain in inches and the presence of any "weather event" (rain, fog, or thunder) was also recorded for each day. The weather event variable was transformed into a dummy variable, with a 0 meaning no event and a 1 meaning any event.

To better understand the relationships between some of the variables, graphs were created between data with noticeable relationships and a best fit line was added. The first relationship observed was total seats over time which showed a general decline from 2006 until 2015 in per show attendance (Figure 5). Note that the X axis of time is in units of days starting with January 1st, 0 AD, so the dates will have values over 700,000. Attendance over time was then separated into paid and complimentary and graphed again. Paid attendance is also on the decline, but complimentary attendance is on a largely upward trend (Figure 6). Two other trends of note are the revenue over time and average ticket price over time. While revenue per show has been decreasing, average ticket price has been increasing (Figure 7).

One of the strengths of this data is that there are enough observations for each type of play that regressions can be run with different dependent variables. This will allow the study to estimate relative price elasticities for dramas, comedies, and non-Shakespeare works: an area of interest for the ISF. Unfortunately there is not enough data for each individual production to isolate the specific play. For example, Romeo and Juliet does not have enough observations for statistical significance in its independent variables; it has to be grouped into "Dramas".

The methodology used in the patronage study was linear regression. The data was uploaded into a data management program called Eviews where an equation was created to estimate attendance as a function of the independent variables. The original estimated equation looked as follows:

Attendance= C + β1(type of play) +β2(average ticket price) +β3(weather variables) +β4(date)+β5(day of week) +β6(ticket type)

All variables will be tested against total attendance, paid attendance, and complimentary attendance, with statistically insignificant ones removed to create the final equations.

Literature Review: Economic Impact Study

The core theory behind this work is the use of an input output model. The seminal theorist was Wassily Leontief (1941), who originally proposed the idea of finding multipliers that could be used to

connect how an increase of input in one industry might affect economic output in others. Leontief conducted his original work on the entire American Economy in the 1920s (1941). While his model, and variations of it, are still widely used, it was met with some criticism due to some of the assumptions it relies on. In 1968, Carl Christ of the National Bureau of Economic Research offered several criticisms of the model's assumptions, the foremost being the model indicates constant returns to scale (Christ, 1968). However, Christ's work was not designed to completely undermine the use of input-output models, but more as a caution to those who used them that their findings might be overly optimistic.

There have been many empirical studies of cultural economics that relate to this particular research problem or use a similar input-output model. In 1997, Gazel and Schwer conducted a survey-based study of the effects of a three day Grateful Dead concert in Las Vegas. Attendees were asked to fill out a survey and report their spending habits while they were visiting Las Vegas, and the results indicated that somewhere between 17 and 28 million dollars were added to the local economy during that three day period. A few years earlier DiNoto and Merk (1993) collected data from arts organizations across Idaho to calculate the total economic impact for the state using RIMS II multipliers. Their conclusion was that although the magnitude of expenditure was small, there is a net financial gain from supporting the arts.

In a study more to scale with this one, Mitchell (1993) conducted a study on theatre festivals in small Ontario communities, each with a budget of less than $2 million, like the ISF. Data was collected on budget and average income of those in attendance. Conclusions were based on comparisons across the nine communities studied, where it was found that the communities who could support tourism were best equipped to reap economic benefits. The final study of note was a more recent statewide impact study: the Arts Alliance Illinois and the Americans for the Arts collected data for Illinois in 2012 where they estimated that the $1.59 billion spent on Illinois nonprofit arts organizations generates $1.19 billion in addition economic activity.

My contribution to this work will very much build off the previous work done in the field of cultural economics. Several studies have used RIMS II multipliers on large scale regions and several studies have looked at festival style and theatrical events, though with a different research question in mind. My plan is to combine the small scale festivals with RIMS II methodology when studying the ISF. The previous work I have read on small scale festivals did not employ an input-output model, which leaves an opportunity for my research to fill contribute to the current literature. The small scale with RIMS II multipliers specific to McLean County will provide a more direct look at a very

specific organization and provide answers to a specific group of interested parties on their economic impact.

Literature Review: Study of Patronage

At its core, the study of patronage is a study of demand. As such, the research providing the background for this piece will focus on demand and pricing for the performing arts. One of the commonplace practices to maximize demand in ticketed industries is price discrimination (Rushton 2011). Price discrimination is "a way to lower prices to 'marginal customers' – those highly sensitive to price" (Rushton 2011). The ISF does this is three different ways. The first is a change in ticket price based on the location of the seat. Center seats closer to the front are considered to be of a better quality than seats on the side of the theater and therefore consumers place a higher value on them. Seats on the side might be of a lower quality, so the ISF sells them at a discount. The second is a change in price based on day of the week. Since weekend tickets are usually in higher demand, their price is increased regardless of what section they are for. The final type of price discrimination used is the offering of discounts to certain subgroups. Because students and seniors are more sensitive to prices, they are often a key target for price discrimination. The ISF offers discounts to these groups, usually $4 off the price of the ticket (Illinois Shakespeare Festival). Price discrimination will be an important distinction later in this paper when the difference between paid and complimentary attendance is discussed.

Other previous research offers possible explanations for the decline in demand shown in the attendance. One such explanation is that ticket prices for the performing arts have been unable to remain competitive with other entertainment industries, which in turn decreases demand. In Baumol and Bowen (1966), the researches hypothesized that the performing arts will be less able to capitalize on the economy-wide technological advances than other business sectors, a phenomenon that is now known as "Baumol's disease". The cause for this phenomenon in the performing arts might be that their inputs have remained largely unchanged over the years. For example, a theater is going to rely mostly on labor from actors to put on a show, an input that is largely constant. Meanwhile the cinema has been able to capitalize on the use of new technology like CGI to increase the quality of their product, indicating that the cinema does not suffer from "Baumol's disease" in the same way the theater does.

Ringstad and Løyland (2011) discussed the possibility Baumol's disease as a contributing factor in the Norwegian cinema and performing arts' demand elasticities. Demand elasticity refers to the change in demand in relation to the change in price of a good. An inelastic good, like staple foods or gasoline, will have a small shift in demand when the price changes. An elastic good, like most luxury

items, will have a large shift in demand with a price change. Their study concluded that the demand for the performing arts is largely elastic, while the cinema's demand is inelastic.

Another possible explanation for a decrease in demand is based on the work of Linder (1970). Linder's work argues that increases in consumer wages, which normally cause an increase in demand for luxury goods, might not have a smaller effect for time intensive luxury goods like the performing arts. The idea is that when wages increase, the "time needed to consume these goods also becomes more expensive in terms of lost income" (Ringstad and Løyland 2011). Another import ant distinction that separates the performing arts from other luxury goods is that the value is not known until the good is consumed (Andersson and Andersson 2006). Pairing this idea with Linder's, it is possible that some consumers might not feel the performing arts are "worth their time".

Understanding price discrimination is critical when looking at a company that actively uses it to promote attendance. That is why this study will analyze both paid and complimentary attendance. This study will also be calculating the effects of increases in average ticket cost. Isolating average ticket cost will give a more clear understanding of their price elasticity. This information could be particularly useful in helping ISF decision makers determine the best way to discriminate by price.

Results: Economic Impact Study

Prior to any calculations with the multipliers, the data needed to be adjusted for inflation. This was done using the Bureau of Labor Statistics' online inflation calculator, which utilizes the Consumer Price Index to calculate inflation. The data were transformed into 2012 values, as that is the last year reported in the Cultural Data Project's database for the ISF.

Once adjusted for inflation, the expenses were averaged over the six year period which yielded an average of $977,785.37 per year of direct economic impact. Using this number and the RIMS II output and employment multiplier, I calculated the average yearly total economic impact. For output, which now included the indirect impact, the result was $1,193,387.04 in total economic activity. When totaled over the six years studied, the overall output is calculated at $7,160,322.26. For employment, the result was nearly 38 additional jobs created as a result of the economic activity.

The findings I have reported are consistent with the previous literature on the subject. In their study on Idaho's performing arts economy, DiNoto and Merk (1993) noted that although the magnitude of expenditure was relatively small compared to other industries, there is still a significant and positive overall impact. This holds true for the ISF. While its expenditures are small compared to other McLean County institutions like State Farm which had a total revenue of over 70 billion dollars across the company last year (State Farm), the nearly $1.2 million dollars of total impact the ISF adds to the

economy is still significant, especially as a not for profit organization. Furthermore, while insurance agencies like State Farm may have a larger output multiplier of 1.31, the performing arts' employment multiplier is nearly five times the size of that of insurance agencies which have an employment multiplier of only 8.2. This finding is also consistent with the previous literature, as Mitchell (1993) discussed how festivals are particularly beneficial for employment.

Results: Study of Patronage

This study began by collecting a variety of variables for ten years' worth of data, from ticket prices to weather reports. Once the data were transformed into a usable format, which included making several variables dummies, they were uploaded into Eviews and regressions were run to find significant factors in paid and complimentary attendance, and to calculate the magnitude of price on specific show type's attendance. Before the regressions were run, the categorical variables were transformed into dummy variables. Categorical variables for this study included: weather event, type of play, and day of the week: definitions of these variables can be found in the data and methodology section. Four regressions were selected for this study based on statistical significance, each aimed at a specific subgroup. The first two included all 336 observations and were designed to find statistically significant variables for paid and complimentary attendance. The final equation for paid attendance was as follows:

Paid Attendance= 80.32(comedy) +63.53(Friday) +83.59(Saturday) -20.41(rain) -5.41(average ticket price) -1.56(seats held) -.46(seats free) +.0005(date)

Details of this regression can be found in the table in figure 8 in the appendix. All variables were statistically significant at the 99% confidence interval, except Rain which was marginally significant. The magnitude of the variables are represented by their corresponding coefficients in the above equation. The coefficients represent the change in number of attendees that results from each additional unit of the variable. For example, a $1 increase in average ticket price will has an estimated 5.41 *decrease* in total paid attendees. This regression has an adjusted R-Square of .549, which means that roughly 54.9% of the variance in attendance can be explained by these variables. The largest coefficients were comedy, Friday show, and Saturday show: all were positive. This means that comedies draw larger crowds and Friday and Saturday shows have larger than average crowds. The other days of the week were also tested, but were found to have no statistical significance. This means there is no statistically significant difference between the attendance on these days and the overall average attendance. Rain as predicted had a negative impact, but because it was around 20 guests *per inch*, the impact was not as strong as anticipated. Held and free seats also negatively affected paid attendance, likely because there were fewer seats available for sale. Residual diagnostics were run on

this regression to check for autocorrelation, normality, and heteroscedasticity using the Breusch-Godfrey, Jarque-Bera, and White test respectively. All three tests were passed at the 99% confidence interval.

The next regression was for complimentary attendance. The equation was as follows:

Complimentary Attendance= -0.15(seats sold) -0.26(seats held) +.0002(date) -0.66(high temperature)

Details on this regression can be found in figure 9 in the appendix. Seats Sold and Date were significant at the 99% confidence interval and Seats Held and High Temperature were significant at the 95% confidence interval. The adjusted R-Square was .097, meaning that only 9.7% of the variance in complimentary attendance can be accounted for by these factors. Seats Sold and Seats Held had a negative relationship with complimentary attendance because the higher those values were, the fewer seats that could possibly be available for complimentary attendees. Interestingly, high temperatures had a larger effect on complimentary attendance than paid attendance, implying that complimentary seats are less likely to be used on hot days. This is possibly due to people not wishing to attend the show on a hot day, but those who have already purchased their tickets are less likely to let the weather affect their attendance. Residual diagnostics on this regression also passed all three tests at the 99% confidence interval.

The last two regressions were run to calculate audience preference for play type. The observations were broken into sub samples by play type and regressions were run to find coefficients for average ticket price. This isolation will be the best way to compare the demand for each of the play types. Two of the three play types were shown to have statistical significance in the average ticket price variable. Comedy has a coefficient of -7.14 at the 99% confidence interval with an adjusted R-Square of 0.084. This means that for a comedy show every dollar increase in average ticket price, there will be around 7 fewer people in attendance. This model, which only includes price and a constant, can account for 8.4% of variance in attendance. Non-Shakespeare plays have a coefficient of -4.55 at the 95% confidence interval and an adjusted R-Square of 0.045. This means that a dollar increase for a non-Shakespeare play there will be around 4 or 5 fewer people in attendance. This regression model can only explain 4.5% of the variance in attendance for non-Shakespeare plays. Variance in attendance to drama performances could not be confidently explained by ticket price, but a constant was found to be statistically significant at the 99% confidence interval (Figures 10-12).

Regressions that focused solely on average ticket price did not pass all three residual diagnostic tests. The residuals of the comedy regression failed White's test for heteroscedasticity, indicating the residuals are heteroscedastic. Residuals in this context refers to the "white noise" of a regression: the variance that cannot be accounted for. This means the residuals has a different variance depending on

the value of the average ticket price. This is not surprising, as the difference in consumer demand will be much more sensitive at some prices than others. The residuals of the non-Shakespeare regression failed the test for autocorrelation and for normal distribution. This indicates that there are variables missing from the regression that could help explain variance.

Conclusions

With an estimated $1.2 million in economic output and the estimated creation of 38 additional local jobs, there are several policy implications that can be derived from the economic impact study, but the people most affected by these findings will be the fundraisers at the Illinois Shakespeare Festival and their donors. Fundraisers would be able to utilize this information to advocate for more money from donors or from their corporate and state sponsors. The donors would be able to use this information to make an informed decision on whether or not this is a good use of their own money. Because the ISF is a nonprofit, donors will not benefit much from looking at financial statements that show very little profit, or sometimes none at all. Instead, for more economically minded donors an impact study will be a more effective way to justify their donations for economic purposes in addition to social ones. Furthermore knowing that the employment multiplier was so high compared to other ticketed industries, many of which are also nonprofits, could be the deciding factor for some donors who might have to choose between the ISF and a local museum or park. In a time where a lot of focus is directed towards job growth, both in the public and private sectors, the ISF fundraisers could use the employment multiplier findings to their great advantage.

In the study of patronage, the findings for first pair of regressions were that eight of the tested variables affect paid attendance and four variables affect complimentary attendance. Paying patrons preferred comedies on Friday and Saturday nights. As expected, they also preferred less expensive tickets, more available seating, and no rain. On the other hand, complimentary tickets were more likely to be used on cooler days with more available seating.

In terms of the subgroups of comedy and non-Shakespeare plays elasticities, it appears that attendees of comedy are more elastic, meaning they are more sensitive to price changes. However, they also start with a higher constant, so if given the choice, patrons would typically choose a comedy over a non-Shakespeare. It is also worth noting that although average price was not significant, the constant for dramas was between comedies and non-Shakespeare, indicating it is the second most popular choice.

While most of these findings confirmed the expectations laid out in the beginning of this study, the weather had a less than expected effect on attendance overall. Only two weather variables were

found significant, and they were at a surprisingly small magnitude. The other major finding include the preference of comedy over drama and drama over non-Shakespeare, based on average attendance.

While the impact study findings were consistent with previous studies that used with RIMS II multipliers, it is important to note that the research area in this study is significantly smaller. To further expand the research in the future, I would like to compare my findings for McLean County against findings from a variety of other counties. I would like to incorporate factors into my comparisons such as population size, density, and median income to better understand what factors affect a region's performing arts RIMS II multiplier. Furthermore, it would also be helpful to research the effects of tourism and expenditures from out of town guests who have come to visit the festival. In Mitchell's (1993) work on the effects of theatre festivals on small Ontario communities, it was noted that the communities best equipped to handle tourism would reap the most benefits. Therefore I find it important to measure the effect that the ISF has on tourism and its related industries to create a better picture of how it is affecting McLean County.

Further research on the study of patronage would dig into the weather more, as the ISF had stated in annual reports that hot summers negatively affect attendance and they are considering purchasing a roof to prevent potential rain outs. More research into the weather's effects might be beneficial before making adjustments in policy there. Other avenues for further research could be done by looking into the demographics of audience members to see which types of people are seeing which types of show. This could be used in marketing and in price discrimination for future shows.

Appendix

Figure 1

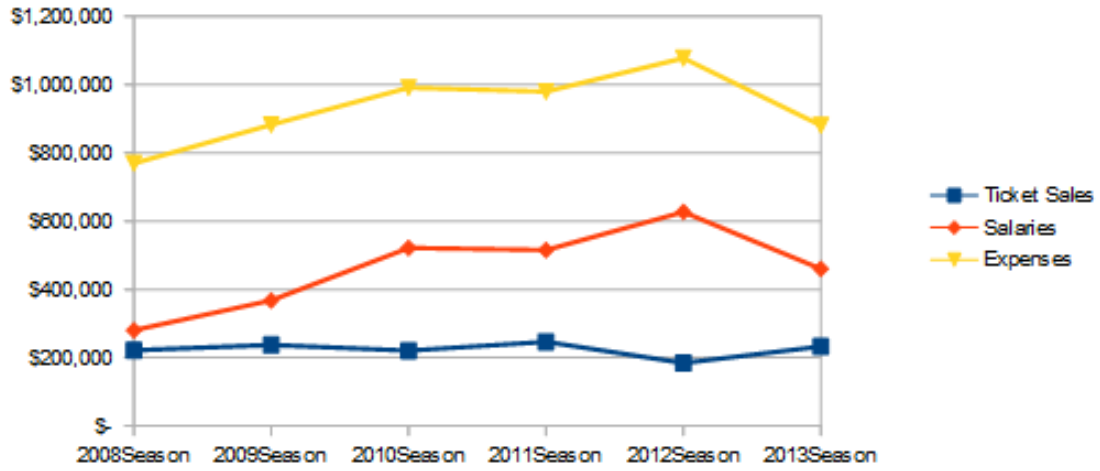

Figure 2

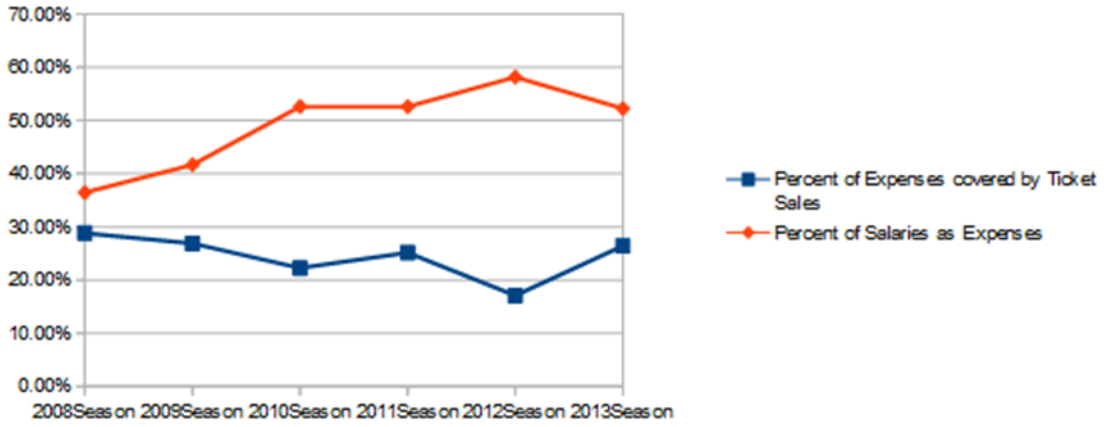

Figure 3

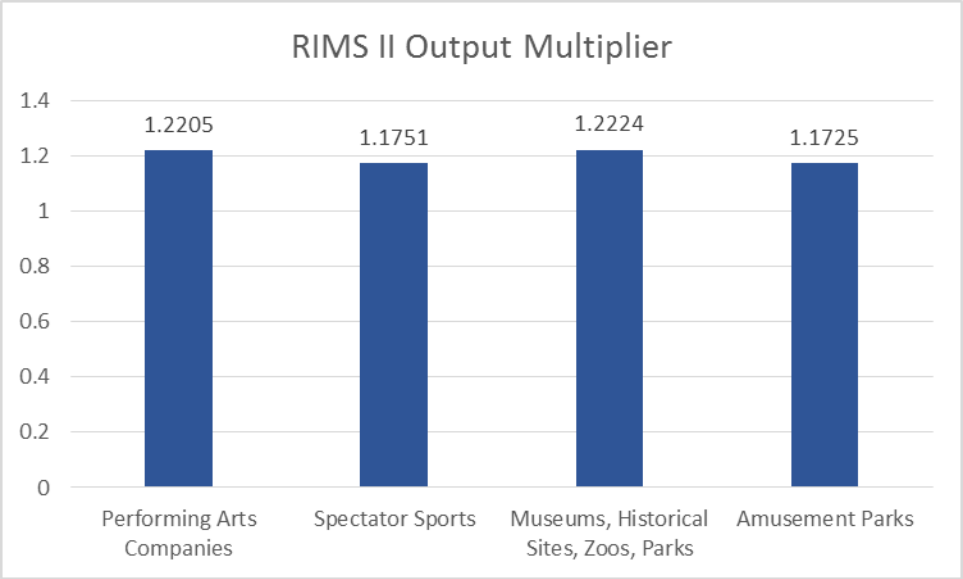

Figure 4

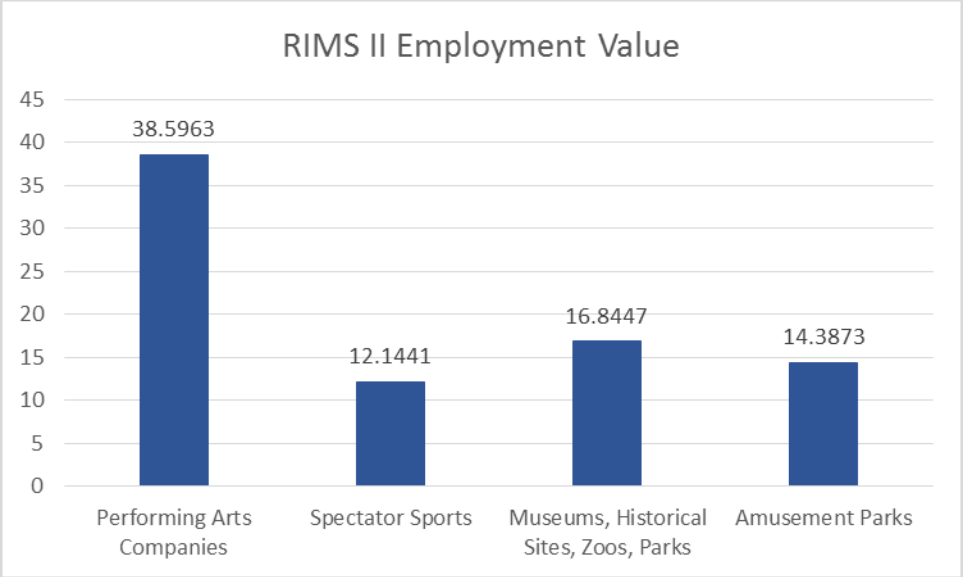

Figure 5

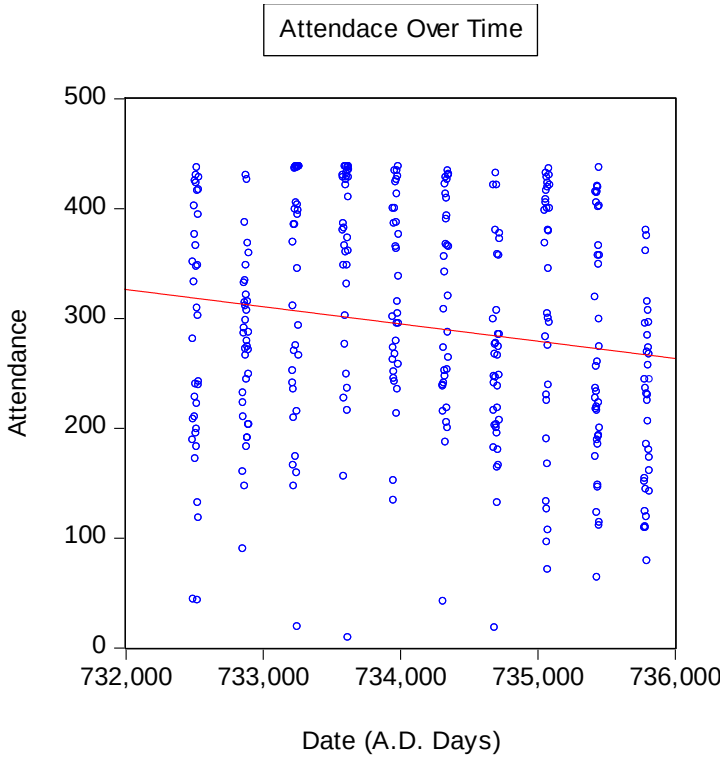

Figure 6

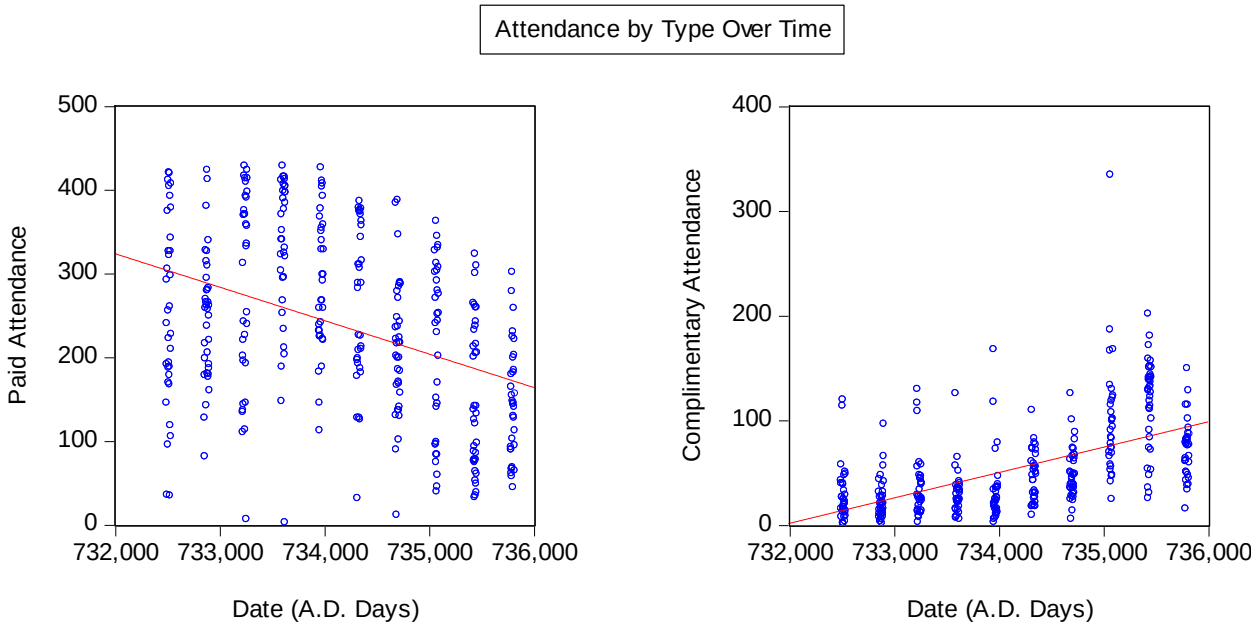

Figure 7

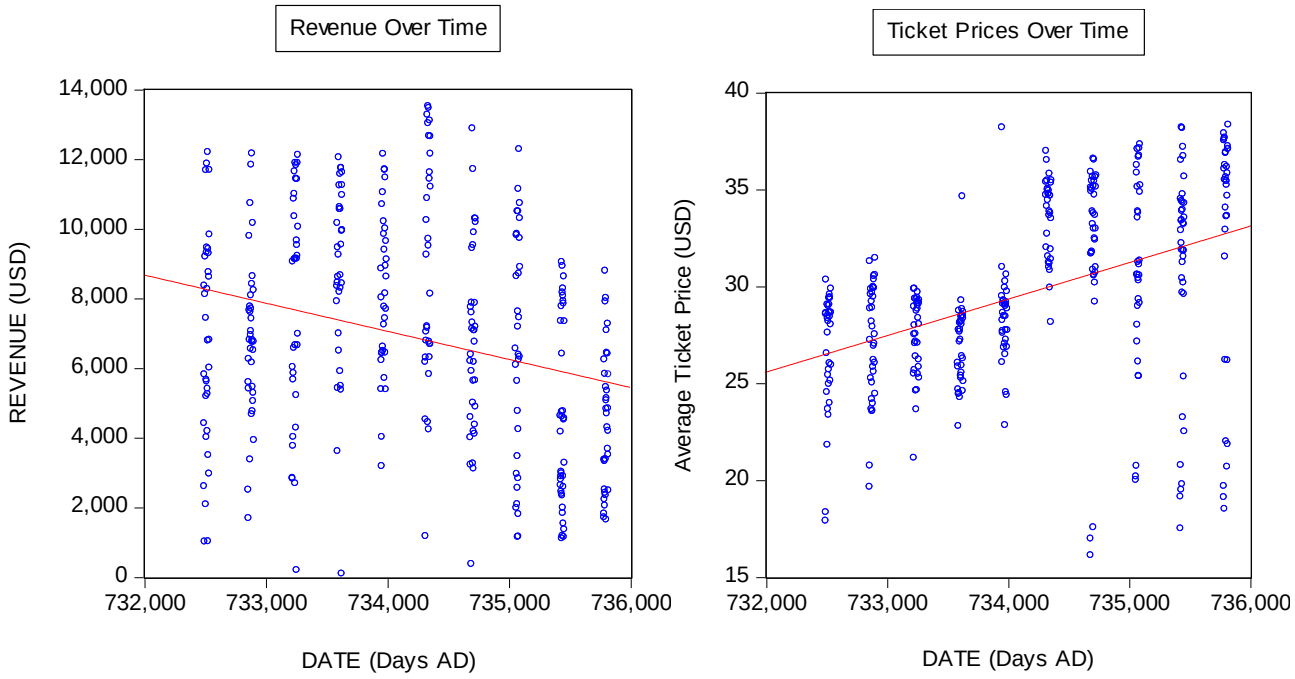

Figure 8

Dependent Variable: Paid Attendance	N= 336
Comedy	80.32***
	(10.08)
Day Friday	63.53***
	(5.888)
Day Saturday	83.89***
	(7.816)
Rain in Inches	-20.41**
	(-1.634)
Average Ticket Price	-5.41
	(-5.667)
Seats Held	-1.560***
	(-11.01)
Seats Free	-0.459**
	(-4.916)
Date	0.0005***
	(14.87)
Adj. R-Squared	0.549
s.e equation	72.36

Residual Diagnostics Tests	
Autocorrelation (Breusch-Godfrey)	18.90***
Normality (Jarque Bera)	81.46***
Heteroscedasticity (White's test)	13.20***

Note: The numbers in parentheses are the coefficients corresponding t-stat values

Note: * Denotes the degree of significance of the t-statistic: *** = 99%, ** = 95%, * = 90%

Note: All figures are presented with four digits – adjusting the number of decimal values as needed

Figure 9

Dependent Variable: Complimentary Attendance	N= 336
Temperature High	-0.662**
	(-1.981)
Seats Held	-0.263**
	(-2.776)
Seats Sold	-0.146**
	(-5.899)
Date	0.0002***
	(5.168)
Adj. R-Squared	0.097
s.e equation	42.81

Residual Diagnostics Tests	
Autocorrelation (Breusch-Godfrey)	51.50***
Normality (Jarque Bera)	284.3***
Heteroscedasticity (White's test)	3.653***

Note: The numbers in parentheses are the coefficients corresponding t-stat values

Note: * Denotes the degree of significance of the t-statistic: *** = 99%, ** = 95%, * = 90%

Note: All figures are presented with four digits – adjusting the number of decimal values as needed

Figure 10

Dependent Variable: Comedy Attendance	N= 160
Constant	492.3***
	(9.225)
Average Ticket Price	-7.138**
	(-3.944)
Adj. R-Squared	0.0839
F-Statistic	15.55***
s.e equation	97.64
Residual Diagnostics Tests	
Autocorrelation (Breusch-Godfrey)	4.571**
Normality (Jarque Bera)	8.814**
Heteroscedasticity (White's test)	.8000

Note: The numbers in parentheses are the coefficients corresponding t-stat values

Note: * Denotes the degree of significance of the t-statistic: *** = 99%, ** = 95%, * = 90%

Note: All figures are presented with four digits – adjusting the number of decimal values as needed

Figure 11

Dependent Variable: Drama Attendance	N= 104
Constant	245.2***
	(9.225)
Average Ticket Price	-1.205
	(-0.661)
Adj. R-Squared	-0.005
F-Statistic	0.437
s.e equation	90.08
Residual Diagnostics Tests	
Autocorrelation (Breusch-Godfrey)	0
Normality (Jarque Bera)	0.440
Heteroscedasticity (White's test)	0.757

Note: The numbers in parentheses are the coefficients corresponding t-stat values

Note: * Denotes the degree of significance of the t-statistic: *** = 99%, ** = 95%, * = 90%

Note: All figures are presented with four digits – adjusting the number of decimal values as needed

Figure 12

Dependent Variable: Non-Shakespeare Attendance	N= 72
Constant	314.4***
	(4.691)
Average Ticket Price	-4.550**
	(-2.080)
Adj. R-Squared	0.044
F-Statistic	4.326**
s.e equation	97.86
Residual Diagnostics Tests	
Autocorrelation (Breusch-Godfrey)	1.760
Normality (Jarque Bera)	3.676
Heteroscedasticity (White's test)	2.474*

Note: The numbers in parentheses are the coefficients corresponding t-stat values

Note: * Denotes the degree of significance of the t-statistic: *** = 99%, ** = 95%, * = 90%

Note: All figures are presented with four digits – adjusting the number of decimal values as needed

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