True Economic Impact of a Regional NCAA Division-I University’s Fall Sport Teams

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In this study, the researchers estimated the actual economic impact brought to the community by the fall sport teams of a regional state institution in Kentucky. The surveyed 172 visiting participants were randomly selected from five football (n = 72), 11 soccer (n = 56), and 14 volleyball (n = 44) games during the fall season of 2009. The results included average attendance of visitors and local fans, the participants’ total expense for attending the athletic events and projected economic impact based on that expenditure. The economic impact generated by the institution’s fall sport teams was relatively small as compared to the past research data. This study further discusses how the result of an economic impact study could be easily manipulated and inflated.

Keywords: economic impact, college sports, intercollegiate athletics

Introduction

The true economic impact of sports refers to the net change in regional output, earnings and employment generated by the teams’ or events’ new dollars brought from the outside regions (Humphreys & Plummer, 1995). Economic impact is often considered as a standard measure for evaluating the benefits and potential development that sport events or franchises may bring to a community. It is also a useful tool for the policy makers and councilmen to justify the city’s bidding proposal for national or international games, such as Olympic Games or National Collegiate Athletic Association (NCAA) championships, or professional sport clubs. Since the magnitude and popularity of college sports is so great, it is logical to assume that college sports can create a significant economic impact to the region. The purpose of this study is to estimate the actual economic impact brought to the community by fall sport teams of a regional state institution in Kentucky. The researchers adopted...
the short-term economic impact approach to measure the direct impact of the institution’s fall sport teams.

**Review of the Literature**

**Results of Various Economic Impacts on Sport Events and Organizations**

Past economic impact research studies on various sport events suggest that hosting “mega” sport competitions (e.g., Super Bowl and Olympics) bring significant revenues and make a financial impact to a community/region. According to the report of Indiana Conventions and Visitors Association (2001), the NCAA final four basketball games could bring approximately 50,000 visitors and $29.5M of economic impact to the host community. The popularity and economic success of the NCAA tournament has attracted numerous cities throughout the United States to bid for the event (Matheson & Baade, 2003). Mega sport events such as Super Bowl and NBA All-Stars Games all claimed to generate more than $200M for the host cities (McCarthy, 2007). For gigantic sport festivals, such as winter and summer Olympic Games, just the broadcasting rights fee alone would bring in more than $800M (Eitzen & Sage, 2009). Several recent Olympics Games all claimed to generate an impact greater than $5 billion USDs (Anderson, 1999; Locate in Kent, 2009; Pace, 2006). For example, the 2008 Beijing Olympic Games, the Chinese government alone invested $40 billion USDs on Beijing’s infrastructure in hoping to boost its economic development (Lo, 2008). Interestingly, that huge amount of money only accounted for 0.3% of China’s Gross Domestic Production.

While professional spectator sports are often viewed as generating significant revenues, college sports are another revenue generating operation that can boost the local economy. Research indicates that collegiate sports drew at least 50 million fans and produced a total spending of $2.5 billion USDs (Federal Highway Administration, 2008). This figure was based on that a spectator would spend $41 USD per game. The amount of annual spending in collegiate sports was estimated to produce an economic impact of $6.7 billion USDs annually (Federal Highway Administration, 2008). Because popular football and basketball program may have an average attendance of over 50,000 and 12,000 respectively (SEC Sports Fans, 2006; Templon, 2010), it could easily convince the public to believe that collegiate sports can generate a large revenue on ticket sales, thus creating a significant economic impact to the community.

Washington State University, a modestly funded major collegiate athletic program, reported athletic revenue of $16.8 million for 1997-1998 and the NCAA reported 2001-2002 revenues of approximately $346 million from Division I sports (Fizel & Fort, 2004). For the same reason, it is not difficult to assume that renown programs such as University of Nebraska and University of Tennessee would generate $114.3M and $104M respectively to their communities (Bureau of Business Research Report, 2005; Center of Business and Economic Research, 2004). However, not all of the studies support that college sports had a large economic impact on local economy. According to the twenty-year period economic analysis (1980-2007) of Baade, Baumann and Matheson (2007), football and men’s basketball of Florida State University and University of Florida did not bring significant impact to their local economy and taxable sales. Although football yielded a modest gain of $2 to $3 million per home game, these positive gains are still small in comparison to the figures provided by some of the aforementioned studies. Baade, Baumann and Matheson (2008) conducted an empirical study of the economic impact of college football on local economies based on 63 programs from 1970-2004. The results indicated no statistically significant evidence that collegiate football games made a positive contribution to the local economy. Although successful collegiate football teams may bring fame to their perspective colleges/universities, the economic gain appears to be overstated.
Estimations of Economic Impact of Sport Events

Most economists agree that economic impact of major sport events are often calculated based on three areas: They are direct financial impacts, indirect financial impacts and intangible benefits (Eschenfelder & Li, 2007; Lee, 2001). The economic impact analyses usually were interpreted by amount of the revenues or earning generated or the number of people employed in the sport venues or project. Financial gains were not the only impact that sport events can bring to a community. Although most of the host cities may not prosper from the financial gains, cities such as Lillehammer, Norway, and Nagano, Japan have enjoyed worldwide attention by hosting the winter Olympics. Mayors of the Olympic Games hosting cities clearly understand how the events will promote national pride and justify local development (Ewe, 2003). Burton and O’Reilly (2009) were the supporters of not focusing solely on cost and profits as the criteria for evaluating the impact of the events. They wanted the public to consider the intangible benefits of the 1996 Atlanta Olympics Games. Burton and O’Reilly (2009) concluded that although the Atlanta Games broke even, the media coverage thrust Atlanta into the limelight thus enhancing the city’s image as a global community.

The Common Flaws and Controversial Issue of Economic Studies

Many scholars (Echenfelder & Li, 2007; Howard & Crompton, 2003) concluded that universities/communities often justify the spending of internal revenues in construction projects and infrastructure. The rationale for the construction projects is that sport venues will attract a lot of spectators and visitors, thus boost the local economy. Estimations of the economic impact are believed to be an important means to show the financial benefits of investing in construction projects. Although economic impact studies are popularly accepted and utilized to justify the spending in construction for community development, these studies have some fundamental problems. They are not exactly error-proofed and do not adequately explain the economic benefits.

First, the calculations of a true economic impact are difficult to conduct. The accuracy of the calculation relies on an accurate estimation on the number of total visitors. If the impact study deals with an international event, it is recommended that researchers or policy makers utilize the number of total foreign visitors provided by the Bureau of Tourism and Custom Office. Gathering international data requires coordinating with a variety of government agencies, thus it requires a lot of time and effort. In addition, the accuracy of the data is also difficult to be ensured.

Moreover, according to Howard and Crompton (2003), most economic impact studies commit two common mistakes in calculation. Researchers and policy makers often include local spending and utilized an inappropriate (often larger than it should be) coefficient multiplier. In reality, the number of total visitors can be significantly outnumbered by the local attendees. Technically, local attendees’ spending for the events should not be counted toward the economic impact, because their spending is not considered as “injected dollars” (Echenfelder & Li, 2007). When an input-output model is selected for the calculation of the economic impact, the researchers tend to choose a large multiplier to dramatize the effect. In the case of the International Olympic Games studies, it is not surprised that the estimated impact will triple than the total generated revenues (Locate in Kent, 2009; Pace, 2006). Realistically, a more moderate level of earning coefficient should be applied to those studies, meaning that the figure of actual impact should be about twice as much as the revenues. Therefore, committing either one of the aforementioned mistakes can easily inflate the results of actual economic impact, which means overestimating the financial benefits of the events. This study has based on the Howard and Crompton’s notion and examines two issues: (1) How large is the actual economic impact that a
regional university sport program may generate? And, (2) though the results may be inflated, to what extent can an accurate interpretation be made?

Methodology

Subjects
To measure, the spectators’ spending on the athletic events for calculating the economic impact, the researchers surveyed 172 spectators (males = 86, 50%; females = 86, 50%) who traveled to support the surveyed institutions’ opponents. All of them were fans who were supports of the “opponent teams” and resided in a town or city with a ZIP code different from the one of the surveyed institution. They were selected from 21 home sport events of the 2009 fall season.

Instrumentation
The participants reported their demographic information and their total spending for attending the event by completing the NCAA Economic Impact Analysis Worksheet (Mullins, Hardin, & Sutton, 2002). The 13-items survey questionnaire contains two parts: (1) traveling related information (i.e., total spending, travel arrangement and transportation, etc.); (2) demographic information (i.e., gender, race, affiliation and personal income, etc.).

Procedures
All of the participants were randomly chosen from five football, 12 soccer, and 14 volley home games of the 2009 season (from late August to early November). The numbers of selected participants from each of the football, volleyball, and soccer games were 72, 44 and 56 respectively. The average attendance of a football, volleyball, and soccer game was 4,752, 358 and 276. The total attendance of actual visiting spectators for each of those three sports was 390, 192 and 238 (which indicated 78, 16 and 17 per game respectively). The number of visiting spectators were surveyed by the researchers at the beginning of every competition and confirmed at the half time of the games. Those spectators most likely would gather themselves together in the visitor’s section, so the researchers normally would not have difficulty identifying them. In general, head counts between two observed occasions did not differ, more than two people. The higher number of the two counts was recorded as the actual number of visiting spectators.

Table 1
Different Methods for Projecting the Economic Impact

<table>
<thead>
<tr>
<th>Premise</th>
<th>Spending</th>
<th>Economic impact method 1</th>
<th>Economic impact method 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only actual visiting participants were counted</td>
<td>(Individual spending per game) × (average attendance) × (number of games)</td>
<td>(Total spending) × (Three rounds of effect with an earning multiplier)</td>
<td>(Total spending) × (demand output multiplier)</td>
</tr>
<tr>
<td></td>
<td>($172.5 × 78 × 5) + ($303.4 × 17 × 11) + ($164 × 16 × 14) = $160,747</td>
<td>$160,747 × (1 + 0.4 + 0.16 + 0.06) = $266,840</td>
<td>$160,747 × (2.3) = $369,718</td>
</tr>
<tr>
<td>All game attendees were counted with national average spending per person ($41)</td>
<td>(Individual spending per game) × (average attendance) × (number of games)</td>
<td>$1.3M (1 + 0.4 + 0.16 + 0.06) = $2.2M</td>
<td>$1.3M × (2.3) = $2.99M</td>
</tr>
<tr>
<td></td>
<td>($41 × 4752 × 5) + ($41 × 276 × 11) + ($41 × 276 × 14) = $1.3M</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The keys to conduct a successful economic impact analysis are to: (1) project the attendance and spending
of each attendee accurately, (2) select the proper multiplier. The calculation of the generated incomes from the visiting participants in each sport was based on the following formula. Revenue = (average total spending of visiting individual per game) × (average attendance of visitors) × (total number of home games). The economic impact of the fall sport teams was equaled to the total incomes from all three sports multiple by the selected multiplier. Two different methods for the selection of multiplier were presented in this study. The economic impact could be calculated by using an earning multiplier or direct demand output multiplier. For method 1, the value of the earning multiplier was set at 0.4. This value was similar to the standard value (0.360) adopted by the study of UPC Wind Management LLC (2006). For method 2, the final-demand output multiplier (about 2.3) suggested for the service business (Bureau of Economic Analysis, 1997). For the purpose of comparison, the researchers also presented the differences between two impact analyses by including and excluding the expenditure of the local fans. When local fans were all included, the total expenditure of all attendees was calculated by the formula: (average spending of each local attendee) × (number of total attendees per game). The average value of each local attendee’s expenditure was set at $41 per game per individual based on the data provided by the Federal Highway Administration (2008). The calculation of the total expenditure of the participants and the estimated economic impact were further illustrated in Table 1.

**Results**

Typical surveyed participants seemed to exhibit the following demographic characteristics. They were more likely to be: Caucasians (86.0%), married (55.8%), with a college degree (84.9%), and an income level above $45,000 annually (65.1%). They mostly like were relatives or friends of the athletes (65.1%), and traveled with 2-3 other members (54.7%) or alone (37.2%). The participants most likely made their own travel plan (90.7%) and drove a car to the event (91.9%). They also spent an average of 1.55 days on their visiting trip.

Table 2 listed each participant’s individual spending of each visit among different sports. Table 3 showed the estimated incomes injected to the community from the visiting spectators of three different fall sports. Apparently, a lot more visiting spectators (out-of-town fans) attended the football games than soccer and volleyball matches. Due to a greater popularity and bigger facility, it was not surprising that football program brought in more revenues to the community than either volleyball or soccer. However, football fans normally spent less than soccer fans ($172.5 vs. $303.4) for their trip (see Table 2). The soccer fans spent more in lodging, indicating they were more likely to stay an extra night to attend one more game (the weekend double header).

<table>
<thead>
<tr>
<th>Category</th>
<th>Football (n = 72)</th>
<th>Volleyball (n = 44)</th>
<th>Soccer (n = 56)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food and beverage ($)</td>
<td>42.03</td>
<td>42.55</td>
<td>54.32</td>
</tr>
<tr>
<td>Lodging ($)</td>
<td>37.19</td>
<td>53.09</td>
<td>95.89</td>
</tr>
<tr>
<td>Transportation ($)</td>
<td>45.06</td>
<td>49.59</td>
<td>130.18</td>
</tr>
<tr>
<td>Entertainment ($)</td>
<td>7.72</td>
<td>5.00</td>
<td>6.82</td>
</tr>
<tr>
<td>Event related cost ($)</td>
<td>17.28</td>
<td>7.32</td>
<td>9.11</td>
</tr>
<tr>
<td>Retail shopping ($)</td>
<td>5.58</td>
<td>3.41</td>
<td>4.46</td>
</tr>
<tr>
<td>Miscellaneous ($)</td>
<td>17.61</td>
<td>3.05</td>
<td>2.57</td>
</tr>
<tr>
<td>Total ($)</td>
<td>172.47</td>
<td>164.01</td>
<td>303.35</td>
</tr>
</tbody>
</table>
Table 3

<table>
<thead>
<tr>
<th>Sport</th>
<th>Avg. spending per individual per game ($)</th>
<th>Avg. visitors per game</th>
<th>Number of home games</th>
<th>Total ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Football</td>
<td>172.5</td>
<td>78</td>
<td>5</td>
<td>67,275</td>
</tr>
<tr>
<td>Soccer</td>
<td>303.4</td>
<td>17</td>
<td>11</td>
<td>56,736</td>
</tr>
<tr>
<td>Volleyball</td>
<td>164.0</td>
<td>16</td>
<td>14</td>
<td>36,736</td>
</tr>
<tr>
<td>Total</td>
<td>212.9</td>
<td>111</td>
<td>21</td>
<td>160,747</td>
</tr>
</tbody>
</table>

The average expenditure for each individual participant was $212.9. Based on this value of individual expenditure, it was estimated that the visiting spectators had spent a total of $160,747 (see Table 3). Assuming this amount of total expenditure was completely injected into the community of Morehead, KY, it would create a true economic impact of $266,840, with an earning multiplier set at 0.4. If the impact was calculated based on the final-demand output multiplier (about 2.3), the impact would be as large as $369,718.

Conclusions and Discussion

The economic impact generated by the institution’s fall sport teams ($266,840-$369,718) was relatively small as compared to the data of past research (Bureau of Business Research Report, 2005; Center of Business and Economic Research, 2004). Although the institution’s sport teams seem to be the “main show” in town, in reality, they did not make a big economic impact contribution to the community. If the calculation of economic impact of the institution’s fall sports was limited to the expenditure of actual visiting spectators, then the impact value was relatively small (less than a half million dollars). This finding strongly supported the results of past studies (Baade, Baumann, & Matheson, 2007) that college sports bore nearly no economic benefit to the local community. If this study included the spending of the local fans in the impact analysis (a traditional method used by many past studies), the projected impact could be as large as 2.2M-2.99M. Even though, this number was still quite small compared to the hundreds of million dollars reported by major Division-I institution. Perhaps large economic impact may only be created by a selected few popular mega events or popular sports of certain powerful flagship institutions (i.e., the Ohio State, Georgia, Penn State and Michigan).

This study concluded that different methods for calculating the economic impact of fall sports yield a huge discrepancy in results. In addition, this study also illustrated a variation in the estimated economic impact of fall sports by adopting different type of multipliers in the calculation. For example in Table 1: When the expenditure of all of the local attendees were included, using a designated demand output multiplier (set at 2.3) would yield almost $0.8M more than using a set earning multiplier (0.4). The aforementioned discrepancies between the inclusion and absence of local fans’ expenditure and the use of different multipliers clearly proves Howard and Crompton’s two arguments (2003): (1) Local spending if included can easily inflate the result of economic impact, and (2) Researchers may tend to select a large multiplier to exaggerate the economic benefits of sport events.

The findings of this study may imply that the estimation of an economic impact study can be easily manipulated and inflated, if the perimeters for the calculating methods are not clearly defined. In conclusion, the researchers would like to encourage future researchers to reexamine the accuracy of the economic impact calculating methodology and the traditional view on economic impact of college sports. For practical implications, it should be more logical for a regional university to boast the intangible aspects of its athletic program’s economic impact instead of the financial data. Hosting sport camps and tournaments on campus
should be a reasonable option for a regional university to boost local economy, because these events can really bring in outsiders. However, these events may not always be profitable, when the operation costs are high and the attendance level is not as expected.

References


