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Sports Tourism in Rural Communities: Small Events, Big Impacts

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Cover Page Footnote

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Introduction

Tourism has become an important economic sector, and many local economies have identified expenditures by visitors as a potential source of economic growth (Nancy et al., 2006). In particular, sports tourism has been receiving increasing attention (Daniels et al., 2004, Wäsche and Woll, 2013; Cheung et al., 2016; Freeman and Brewer, 2017; Kim, 2021).

This choice of strategy is justified. The Travel Industry Association of America (2020) estimate that, in 2018, more than 150 million people attended professional sporting events across the five major sports leagues. Sports travel made up 8% of the total domestic travel market in the same year, resulting in 190 million domestic trips.

However, the effects of tourism can be even more relevant in rural economies (Kashian et al., 2021). Gartner (2005) argues that rural areas are more than ever dependent on tourism. The reason is that "whereas in the past, rural economies were supplemented by increasing levels of economic activity, today's rural economy is buffeted by economic changes that are diminishing the viability of many rural communities (p. 33)." The author provides compelling evidence by analyzing the relative growth of different industries. Traditional sectors in rural areas, such as agriculture and mining, have lost jobs as a percentage of the total employment. The manufacturing sector has gained employment, but that came at the expense of lower real wages: the industry is only remaining competitive with the rest of the world by reducing labor costs.

On the other hand, the service and retail sectors' data tell a different story. While there is no such thing as a 'tourism industry,' as it spans many sectors, the author argues that services and retail are the two proxy industries closest to resembling tourism. The ratio of services and retail jobs versus non-tourism dependent jobs has increased in rural America from 1 in 1961 to 6.1 in 2000 (Gartner, 2005).

Yet, small to medium-sized rural communities are only likely to afford relatively minor events, making it difficult to obtain accurate results. However, following recent literature (Matheson, 2006; Wilson, 2006; Agha and Taks, 2015; Agha and Rascher, 2016), it is hypothesized in this paper that they have a significant economic impact, making it worthwhile to study them.

As such, this paper presents estimates of the 2019 Annual Racer Roundup College Rodeo's economic impact. In addition to providing a case study, the aim is twofold: to offer solutions to typical challenges faced in the execution of economic

impact studies of small events, and to suggest a simple way to compute benchmark values for the magnitude of the results.

Among such challenges, note that this kind of study requires estimates of the expenditures made by the event's attendees. To collect data on this, surveys are typically distributed to the audience. The total expense in each category is obtained by taking the mean response and multiplying it by the estimated number of visitors (Nor, 2015; Kim and Dombrosky, 2016; Kim, 2021). However, information on the number of visitors is hard to obtain since it does not correspond to the number of tickets sold (visitors often attend more than one day (Mules and Dwyer, 2005). When the event is large enough, it can be obtained from outside official sources such as regional tourism bureaus (Kim, 2021). In this study, instead of using the number of tourists, frequency weights are created using two pieces of information: the amount of money spent on tickets by the respondents, obtained from a question embedded in the survey, and the total revenue the rodeo organizers obtained by selling tickets.

As expected, the results are much more limited than those obtained in economic analyses of major sports events. A relevant question is how meaningful they are. Thus, a further contribution of this paper is the proposal of a simple method to obtain benchmarks. As the value of output corresponds to total expenses, [1] the direct outputs of the agricultural, mining, and manufacturing sectors were increased by the same amount as the cost of setting up the rodeo. These three industries were chosen for these hypothetical exercises because they are common in rural areas but not typically associated with tourism (Gartner, 2005). In each case, the change in direct output triggered a rise in the region's total output, and these effects were used as benchmarks. The increment in the total output caused by the Rodeo was considerably larger. The reason was the tourists' expenses; as predicted by the export base theory, a local economy must increase the monetary inflows from outside the region to grow. The primary way to accomplish that is to increase "exports," which in the terminology of local economic development constitute non-resident spending (Blair and Carroll, 2009).

There are three main approaches to assessing the economic impact of an event: partial equilibrium models, general equilibrium models, and cost-benefit analyses. The first two rely on input-output tools available for purchase. The standard choices are RIMS-II, IMPLAN, and REMI. RIMS-II (Regional Input-Output Modeling System) is a partial equilibrium system and the least

[1] In IMPLAN, the output value equals the sum of the expenses in intermediate inputs, employee compensation, taxes on production and imports, and change in other property income.

sophisticated. While it shows the total economic impact, it does not give a breakdown of the effects by industry (Crompton et al., 2016, Kashian et al., 2021).

On the other hand, REMI (Regional Economic Modeling Inc.) adds computable general equilibrium (CGE) techniques to basic input-output models (Kashian et al., 2021). However, it is unlikely that minor tournaments, such as the rodeo, impact multiple markets in such a magnitude as to reverberate back to the original events. Crompton et al. (2016) argue that, while the superiority of CGE models for measuring the impact of major, statewide or national tourism flows, the advantages are much less pronounced at the local level (Mules, 1999). The simplicity of a partial equilibrium model is more appropriate. Therefore, among the available tools, IMPLAN (Impact Analysis for Planning)[2] was chosen for the analysis. It also has the advantage of being regularly updated, regionalized, detailed, and well documented and supported (Siegesmund et al., 2009). The starting point in this kind of model is the initial increment in expenditures caused by the economic event being studied. Those include, for instance, input costs, wages, construction costs, rent, and so on. They are called "direct effects." In the case of this paper, as typical in tourism, there are two main sources: the expenses incurred when setting up the rodeo and the expenses made by non-resident visitors attending the event, such as on hotels, restaurants, retail, etc.

But the extra input demands must be met by an increment in their production, which also incurs labor costs. Thus, the direct effects trigger business-to-business purchases in the supply chain ("indirect effects") and extra household spending stemming from the extra labor income generated in the process ("induced effects"). The direct, indirect, and induced effects are IMPLAN's output.

Cost-benefit studies have also assessed the importance of sports tourism events (Jiménez-Naranjo et al., 2016). It differs from the previous approaches in the following way. In a standard economic impact analysis, only the economic contributions of the factors of production used in the event are measured. In a cost-benefit study, the opportunity costs in terms of what these factors of production could have produced if allocated elsewhere are also estimated. For instance, if the land used in the sports event could have been used for some other investment, the return of this alternative, unrealized investment is considered part of the opportunity costs. In other words, standard economic impact analyses typically consider all factors of production as having zero opportunity costs (Mules and Dwyer, 2005).[3]

[2] https://www.implan.com/.

[3] Another difference between the analyses is that cost-benefit studies consider the concept of consumer surplus. This concept is not discussed in this paper.

However, in the context of relatively small events, one must consider the importance of the opportunity costs vis-à-vis the extra complexity involved in performing a complete cost-benefit study. In his instructive paper, Késenne (2005) uses a hypothetical example to illustrate the differences between an economic impact approach and a cost-benefit analysis of a sports event. Among the opportunity costs ignored in the economic impact study is the employment of workers that would otherwise be employed, thus affecting the sectors that lost workers. There are also the returns of alternative investments the government could have earned with the money it spent subsidizing the sports event and the cost of the same subsidies to the taxpayers. Finally, the money the consumers spent on tickets could have been spent on other goods, which means there was a reduction in the production and sales of different sectors.

Nevertheless, due to the size of the event, no full-time job was directly created. Members of the university organized the rodeo with the help of hired contractors. Thus, it is unlikely that other sectors lost jobs. In addition, the government did not help finance this event, so there is no opportunity cost for the taxpayer. Finally, given that the consumption caused by the rodeo is not a significant part of the visitors' income, it is unlikely that there was a trade-off between recreation activities (Kashian et al., 2021). Therefore, while acknowledging the existence of opportunity costs, the simplicity of IMPLAN's economic impact model is deemed more appropriate for this paper's case study.

One more point must be addressed in this introduction. Even though small events are the focus of this and some other papers, there is no unequivocal definition of small and medium-sized events (Agha and Taks, 2015). Most authors use these terms freely. The literature, however, does provide some insights. Agha and Taks' (2015) theoretical model abstracts from defining what a small event is by focusing on the interaction between the size of the city and the size of the event. The relevant question then becomes not the absolute size of the event but the comparison between the event's resource demands and the resources the city can supply.

Other authors concentrate on the events' importance rather than their size. For instance, in defining "major sports events," Wilson (2006) ponders if the word 'major' should signify the importance for the sport or for the hosting region's economy. The author uses the typology developed by Gratton et al. (2000), where events are classified (Type A to Type D) according to their economic importance vis-à-vis their importance for the sport. However, it is noticeable that this classification is only applicable to what the authors call "major events," either in terms of economics or sporting outcomes, without a clear definition of the word "major".

Therefore, there is no cutoff value in the number of attendees, for instance, such as if an event has fewer attendees than this cutoff, it is considered small or medium-sized. On the other hand, the event in this paper is not only smaller than the major events considered in the literature (Olympics, World Cup, Super Ball), but also than many of the so-called "small events". For example, Kim and Dombrosky (2016) consider a county fair that attracts thousands of visitors small-sized, and Amador et al. (2017) call the whole Spanish Football League a small event. Therefore, even not knowing where the line is, it is clear that the case study in this paper has not crossed it.

After a literature review, the subsequent section describes the methodology. The presentation of the results follows. Next, a discussion on these findings and how they fit the regional economic development literature is presented. Research limitations and a summary conclude the paper.

Literature Review

There is a relatively recent but very fast-growing literature on the economic effects of major sports events. Case studies range from the NFL Super Bowl (Dermody et al., 2003; Carlino and Coulson, 2004; Matheson and Baade, 2006) to NCAA basketball tournaments (Matheson and Baade, 2004), the World Cup (Baade and Matheson, 2004; Szymanski, 2010) and the Olympics (Porter and Fletcher, 2008; Scandizzo and Pierleoni, 2018; Wood and Meng, 2021). A literature review can be found in Maennig (2017), a meta-analysis can be found in Li and Jago (2013), and a bibliometric analysis can be found in Jiménez-García et al. (2020). Overall, while most studies have found that major sports events have a significant economic impact on the host destination (Achilleos et al., 2021), cost-benefit analyses and general equilibrium approaches have shown that the economic effects may not be positive (Papanikos, 2015).

While there is no unequivocal way to differentiate minor versus large sports tournaments (Agha and Taks, 2015), there is a gap in the literature regarding economic impact studies of smaller sports events (Getz, 2008; Kim and Dombrosky 2016). A literature review can be found in Agha and Taks (2015), but some interesting common trends are worth mentioning.

First, the primary cause of the economic benefits is the tourists' expenses; not that of residents, and not government expenditures on big infrastructure projects, such as stadiums, which are likely not required in minor events. For instance, Wilson (2006) examined the economic effects of small-scale swimming

competitions in the UK. His results show that the economic benefits were mainly due to tourists' expenditures on accommodations, food and drink, and shopping and souvenirs. More than £80,000 was generated over eight days of competition. Studying the case of Spanish Football, Amador et al. (2017) also argue that small-scale sporting events contribute to hosting economies mainly through tourists' expenditures. They spur the production of goods and services directly demanded and that of supplier activities.

Second, while it used to be just assumed that the impacts of smaller events are limited (Wilson, 2006), it is now suggested that their net benefits for the local community are significant and potentially more positive. Matheson (2006) suggests that, compared to mega-events, smaller events have less crowding out and fewer hosting and security costs. In addition, he argues that the proportion of income earned by a city's businesses and workers that leaves the city increases during mega-events, which means the multipliers are inflated.

Mega-events also face a more significant possibility of supply constraints, and the costs of providing resources that are not locally available reduce the economic impact (Seaman, 2006; Agha and Taks, 2015; Agha and Rascher, 2016). Agha and Taks (2015) propose an interesting theoretical framework where the optimality of a sports event depends on the interaction of the event's resource demand and the host city's resource supply. In the model, smaller events have a higher potential for optimal economic impact because of their lower resource demands. The authors conclude that hosting multiple smaller events may be a better strategy than hosting a big event.

The results found in this paper follow the same lines. First, most of the economic benefits were caused by the tourists' expenses. Second, the results were significant even though a series of steps were taken to avoid overestimating them and despite the event's size. More details are given in the methodology.

Methods

The example used in this paper is the 44th Annual Racer Roundup College Rodeo's economic impact. Hosted in Calloway County, KY, by the Murray State University Rodeo Team on Nov 21-23, 2019, the event was attended by contestants from 14 colleges and universities from the Ozark Region and by visitors from around Western Kentucky. During the three nights, 3125 tickets were sold, and the number of contestants was 265. Held at the Cherry Expo Center in the city of Murray, it has

the distinction of being the oldest rodeo anywhere in the commonwealth of Kentucky. It is also one of the flag carriers for events east of the Mississippi River.

Several modeling decisions were made, starting with selecting the study area. The small size of the event does not justify the choice of a larger region. One possibility would be choosing the city of Murray, where the event was located. However, using a classification that considers the region's degree of economic and social integration, the US Census groups the entire Calloway County in the same statistical area.[4] As economic impact assessments should be based on at least semi-sufficient economic units (Schmit and Jablonski, 2017), in this study Calloway County is defined as the local economy, and every non-resident of this county is considered a tourist.

Another task was to decide on an industry aggregation scheme. As of 2022, IMPLAN divides the economy into 546 industrial sectors. However, although more detailed surveys yield more accurate results, shorter surveys encourage the public's participation. To keep a balance, two main modifications were made. First, the sectors of full-service and limited-service restaurants were combined. Thus, the respondents were not asked to differentiate their expenses between them. In addition, while IMPLAN suggests 12 distinct retail sectors, only the sectors named Food and beverage stores and Gasoline stores were kept separate. All other retail sectors were aggregated and are referred to in the study as Retail.

In fact, since a significant part of the visitors' expenditures was on retail, a clarification must be made regarding the margins. The margins are the difference between the price a consumer pays when buying an item via a retailer and the producer price. This difference is attributed to the cost of transportation and retail services, that is, the cost of conveniently supplying the goods to the consumer. There is not enough information on the types of products purchased, and it is not known if they were produced locally. This study adopts the view that it is best to have a conservative estimate of the total regional economic impact than to risk exaggerating the effects (Neill, 2013; Kashian et al., 2021). Therefore, only the portion of the retail expenditures assigned to the margins was included in the analysis. Thus, the value of locally produced goods was lost, and the results are understated.

Another clarification regards the job numbers. Businesses are unlikely to hire additional full-time employees in response to demands created by a tournament (Crompton et al., 2016). Instead, it is much more likely that current employees are

[4] Calloway is also the only county in this statistical area. U.S. Census Bureau, Statistical Abstract of the United States: 2010. https://www.census.gov/prod/2009pubs/10statab/app2.pdf. Accessed on 3/24/2021.

requested to work overtime. Thus, this report follows IMPLAN's advice and focuses on employment compensation rather than job numbers.[5]

Expenditures incurred in setting up the event (the first type of direct effects) were obtained from the income and expense statement supplied by the rodeo organizers. It included a wide-ranging list of expenses such as basic supplies (for instance, hay), rent, ambulance services for possible emergencies, various forms of advertising, compensations paid to judges and clowns, etc. In addition, the statement contained information on the geographic location of each supplier, making it possible to identify and include only the expenditures local to the region. Each expenditure category was assigned to its corresponding sector, programmed into IMPLAN, and the direct, indirect, and induced effects were calculated.

The second part of the direct effects corresponds to the contestants' and visitors' spending. As in Wilson (2006), given the limited population size, a non-probability convenience method was used for sampling. The researcher approached as many potential respondents as possible (presumably all households were offered to complete the survey) and moved on if any were unwilling to participate (Cramer and Howitt, 2004, Wilson, 2006)[6].

The survey used, included in the appendix, is standard in economic impact studies. Basically, it included questions encompassing the typical expenses made in tournaments, such as on hotels, restaurants, and retail. What is different in this paper's survey, compared to most studies, is that it also included questions regarding the geographic location of the purchases and of the respondents. Therefore, only local expenses were included in the direct effects, and only the expenses made by non-local residents. The purpose was to make sure only expenditures representing flows from the outside to the region were included in the analysis.

Furthermore, when programming IMPLAN, the options were chosen such as the rates at which commodities are purchased locally were determined by regional data, and this information was passed to the multipliers. That indicated to the software to only consider local expenses also when calculating the indirect and induced effects as well.

Note that the survey was not tested on an outside sample because it would not make sense for respondents not attending or competing in the Rodeo. Another option would be to test the instrument on the first day of the Rodeo and then collect

[5] https://blog.implan.com/interpreting-employment-impacts.

[6] There was one narrow entrance to the event, where the tickets were being turned in, and the researcher was there during the whole three nights. The announcer also requested the spectators to fill out the survey.

surveys for research purposes on the second and third days. However, that would reduce the sample size of respondents even further, which would be problematic given the size of the event. Nevertheless, the survey was constructed based on guidelines found in the literature (see, for instance, Crompton et al., 2001, Schmit and Jablonski, 2017, and, for a more recent example, Tafel and Szolnoki, 2020) and, as mentioned, this approach is standard in this kind of economic impact study. After cleaning the data, 144 answered questionnaires were left, 80 filled out by attendees and 64 by contestants.

Before obtaining the economic impact of the visitors' expenses, a critical step is to calculate the frequency weights to estimate the total expenditure in each category. This is usually done by dividing the total number of attendees by the number of completed questionnaires. Multiplying each respondent's reported expense in each category by this weight and adding the results across respondents produces the estimated total expenditure. This is equivalent to multiplying the sample average of reported expenses by the total number of attendees, which is the typical procedure.

However, applying this method to a small event presents challenges. First, note that the sample's ratio of contestants to spectators is considerably high. Thus, it is important to include the expenditures of the contestants in the analysis. Furthermore, they are overrepresented in our sample and their spending profile is distinct from the attendees'. For instance, on average, they traveled longer distances and tended to make different accommodation arrangements. Therefore, assigning the same frequency weights to both groups would be incorrect.

Another challenge is that the method above requires the knowledge of the total number of visitors. The number of visitors per night is known by the organizers. However, because this information is based on the number of tickets sold, the fact that visitors often came more than one night makes inferring the overall number of visitors difficult.[7] In addition, creating weights based on the estimated number of visitors may considerably inflate the expenses. The reason is that the questionnaires were (presumably) answered by the paying members of the households, and guessing the average size of households is also a challenge.

Still adopting the view that it is best to have a conservative estimate of the total regional economic impact than to risk exaggerating the effects, the frequency weights assigned to each visitor were created by dividing the total revenue from tickets, collected by the rodeo organizers ($23,002.87), by the total amount spent on tickets by the respondents ($1,725). (Thus, the weighted sum of each respondent's amount spent on tickets equals the total amount collected.) Note that

[7] Each respondent was asked not to answer the questionnaire more than once.

information on the amount spent on tickets was collected even though this information was not used to calculate the economic impact. However, as long as the other expenses were not more overstated than the expenses on tickets, the estimated economic impact is not exaggerated. The frequency weights assigned to each contestant, on the other hand, were simply the total number of contestants (which is known) divided by the number of contestants that responded to the questionnaire (265/64).

The sum of the weights of the visitors is 1066.8. On the other hand, the number of visitors can be estimated by dividing the total number of tickets sold by the average number of nights each respondent visitor attended the rodeo, the result being 1783.4. Should the sum of the weights of the visitors be smaller than the estimated number of visitors? Yes, because the average amount spent on tickets by the respondents is 24.29577, which is larger than the price of the tickets ($14 general admission, $12 child age 6 to 12, $7 for Murray State Students, advanced ticket $10 all ages). Thus, our sample is skilled toward the paying members of the households, and the frequency weights must be smaller to compensate for that. This compensation is another advantage of the method proposed in this paper.

After the frequency weights were calculated, only respondents that reside outside Calloway County were kept in the sample. Thus, out of the 144 respondents, only 110 were left in the sample. This is a common practice in tourism research because, if the event being studied had not happened, the residents would likely have spent the same amount of money locally (Crompton et al., 2001; Bonn and Harrington, 2008; Kim, 2021). Of the respondents, 97 percent of the contestants and 60 percent of the spectators were from outside the county. The next step was to multiply each expense by the frequency weights and add the results across respondents to estimate the total expenditure in each category. These estimates, presented in the next section, were programmed into IMPLAN. The following demographic information was also collected in the survey. Of the 110 tourists, 64 were female, 44 male, while 2 preferred not to disclose their gender. In addition, 71 were less than 24 years old, 10 were 65 years or older, and the rest were in between. 31 of the kept respondents were from KY (outside of Calloway County), while the rest came from all other the country, from Alabama to Wisconsin.

Finally, benchmarks were created to assess the magnitude of the results. For that purpose, consider the following hypothetical exercises. The total cost of organizing the rodeo (local and non-local expenses) was $49,054.39. As output corresponds to total expenses, what if the same amount of $49,054.39 corresponded to direct output in the alternative sectors of agriculture, mining, and manufacturing? These three industries were chosen because, according to Gartner (2005), they are common in rural areas but not typically associated with tourism.

An alternative industrial scheme was constructed in IMPLAN where all sectors in the agricultural industry were aggregated, all sectors in the mining industry, and all sectors in the manufacturing industry. Note that such large aggregations most certainly suffer from aggregation bias, which stems from the loss of detail that occurs when sectors are aggregated before generating the multipliers (Schmit and Jablonski, 2017). The exercise performed here is hypothetical and for comparison purposes only. In each industry, the amount of $49,054.39 was programmed in IMPLAN as direct output, and the total output (direct, indirect, and induced) was calculated.

Results

All estimated values in this study are in 2019 dollars. Results regarding the expenditures incurred in setting up the event are presented in Table I. Note that labor income consists of employee compensation and proprietor income. Value-added includes labor income plus certain taxes and other property income. Finally, output corresponds to value-added plus the amount spent on intermediate inputs (business to business purchases, not shown) and corresponds to production value.

Table I: Expenses Incurred Setting Up the Rodeo - Summary of Results by Impact

Impact	Labor Income	Value Added	Output
1 - Direct	$4,496.72	$5,367.79	$14,343.39
2 - Indirect	$865.11	$1,380.72	$3,661.72
3 - Induced	$565.00	$1,209.80	$2,288.64
Total	$5,926.83	$7,958.30	$20,293.74

The results from the second type of direct effects, the tourist expenses, are considered next. Following the method presented in the previous section, the estimates of these expenses were obtained and are shown in Table II.

Table II: Total Estimated Expenditures

Type of Expense	Value
Gasoline	$46,227.60
Hotel	$38,395.11
Other accommodations	$3,830.41
Meals: restaurants	$53,456.48
Food: not from restaurants	$13,956.36
Drinks and entertainment	$17,963.87
Retail	$20,095.07

Note: Regarding expenditures on gasoline, food (not from restaurants), and retail, only the portion of the expenditures assigned to the margins were included in the analysis.

These values were used as input when programming IMPLAN. IMPLAN's output table is presented below.

Table III: Visitors and Contestants Expenditures - Summary of Results by Impact

Impact	Labor Income	Value Added	Output
1 - Direct	$43,147.33	$68,103.95	$136,506.95
2 - Indirect	$8,599.42	$13,879.31	$34,872.38
3 - Induced	$4,628.67	$9,902.98	$18,739.93
Total	$56,375.42	$91,886.24	$190,119.26

Finally, the results regarding the benchmark values are in Table IV. The first column contains the total outputs generated in each hypothetical exercise, so they should be compared to the entries in the last column, last row of tables I and III. To better visualize them, the second column presents the output multiplier implied in each exercise: the total output generated as a result of $1 of direct output in the impacted industry.

Table IV: Hypothetical Total Output Generated by Increasing Direct Output by $49,054.39

Sector	Total Output	Multiplier
Agriculture	$70,368.21	1.43
Mining	$67,273.28	1.37
Manufacturing	$59,894.40	1.22

Note: the multipliers are defined by the formula (total output)/(direct output).

Discussion

To emphasize the importance of small events, note that a series of steps were taken to avoid overestimating the results. Specifically, given the small size of the event, it was possible to investigate the expenses made to set it up, one by one, and include only those made locally. In addition, by simply adding geographical questions to the survey regarding both the respondents' residence and the location where each type of expense was made, it was possible to limit the sample to local expenses made by tourists only. Therefore, these expenses represent monetary inflows to the region from the outside.

By comparing Tables I and III, it is clear that the magnitude of the impact caused by the visitors' and contestants' expenses was much larger than that caused by the costs incurred to organize the event. The Total Labor Income, Value Added, and Output were at least nine times larger. This result matches the previous literature on small events (Wilson, 2006; Amador et al., 2017).

It is also in line with the export base theory of growth, proposed by North (1955), based on previous work by Innis (1920, 1933, 1940). According to this theory, the community's economy can be divided into the export (also called basic) sector and the non-export (non-basic) one. The export sector brings dollars into the community because someone outside the community purchases goods and services produced in the community. (Thus, exports in this context constitute spending by non-local residents.) The non-export sector sells its product within the boundaries of the community and exists to support the export sector. The main result of the model, shown in its mathematical derivation, is that any change in the export base leads to a multiple change in the total local economy. Therefore, the growth of a region is ultimately tied to expanding the export base. Although this theory has not

been immune to criticism (Lewis, 1972), there seems to be a consensus about its applicability to relatively small regions (Blair and Carroll, 2009).

Therefore, while mega-sports events can be so expensive that staging them usually involves the host city contributing to the costs (Gratton et al., 2000), the rodeo's success depended proportionally less on the expenses of organizing it and more on the inflow of visitors. This is related to the literature on how smaller events face fewer supply constraints (Seaman, 2006; Agha and Taks, 2015).

However, it is not surprising that the net results were positive. After all, this was not a cost-benefit analysis, implying that opportunity costs were assumed nonexistent, and there wasn't any government contribution of funds. That raises the question of the meaningfulness of the results, which leads us to Table IV.

Note, for instance, that the total output generated by the rodeo was $20,293.74 plus $190,119.26, where the first value comes from Table I and the latter comes from Table III. The total is $210,412, much larger than any of the values in the first column of Table IV. Therefore, the total outputs generated in all hypothetical exercises are substantially less meaningful than the actual output generated by the rodeo. This fact is true even though the rodeo's implied output multiplier is 1.39, comparable to the values in Table IV, second column.

The reason is that the multiplier is simply the ratio between total output generated and direct output. (The direct output is obtained by adding $46,227.60 from Table I to $136,506.95 from Table III.) However, the proposed method compares the output generated with the cost of organizing the rodeo, which does not include tourist spending. The implication is that tourists are not considered part of the referent group, the group with the "standing" in the analysis. Most economic impact studies consider the region's residents the referent group, so this choice is standard procedure.

Thus, the reason for this large "bang" for the project's "buck" is the output created by the non-resident visitors' spending, in line with the export base theory of growth. By promoting monetary inflows from the outside to the region, the economic impact was much more significant than investing the same amount of money in other typical rural activities.

Study Limitations

As addressed in the introduction, this study is not a cost-benefit analysis and does not consider opportunity costs. It is also not a general equilibrium model, so the

possibility that the rodeo will affect multiple markets in such a way as to reverberate back to the rodeo is excluded. However, given the size of the event, the advantages of these more comprehensive analyses are less pronounced (Crompton et al., 2016; Mules, 1999).

Another research limitation is the sample size, which directly affects the accuracy of the estimates. The possibility of survey errors, which are inevitable and cannot be calculated, is more problematic in smaller samples since it is unlikely that mistakes "average out." Unfortunately, small sample sizes are inherent to small events. Achilleos et al. (2021) ended up with 51 survey responses (out of the 512 participants) and Kim (2021) with 203 after the incomplete questionnaires were discarded.

Finally, as in Wilson (2006), a non-probability convenience method was used for sampling, given the size of the event. Probability sampling techniques are utilized to avoid sample selection when requesting visitors to fill out the survey. For example, a young researcher may tend to invite mostly younger people to participate. To avoid this issue, an example of probability sampling is found in Kim and Dombrosky (2016). The research assistants selected a number from a random table and counted those who entered the event's gates. The person or group of people who passed by the research assistants at the corresponding number was asked for their willingness to complete the survey.

Nevertheless, almost, if not all, participants and spectators were asked to participate in the study, reducing the possibility of this type of error. Note that there is still the possibility of bias due to the willingness, after the invitation, to participate. For instance, those who enjoy the event the most may be not only more likely to agree to fill out the survey but also to spend more money on the rodeo, inflating the expenditure estimates. However, this is always an issue in studies based on surveys, including mega sports events.

Summary

This paper examines the economic impact of a small-scale sports event in a relatively limited-sized region. Considering that the budget of rural, local governments is often restricted, the idea is attractive since minor tournaments "require relatively little energy, moderate amounts of capital, and average amounts of skills when compared to mega sport-events (Kim and Dombrosky, 2016, p. 1)."

The case study is the 44th Annual Racer Roundup College Rodeo, and the economic impacts are estimated using IMPLAN's input-output model. The positive

effects were substantial considering the small costs of organizing the event, the leading cause being the influx of non-local visitors. They brought inflows of money to the region in the form of expenses on restaurants, hotels, and retail. These created a multiplier effect in the local economy through linkages with the different economic sectors.

This result aligns with the literature that recently started advocating the advantages of smaller sports events. Since they require fewer resources and face less stringent supply constraints, they have a higher potential for positive economic impact, and it has been argued that hosting multiple smaller-sized events may be a better strategy than hosting a big event (Agha and Taks, 2015; Agha and Rascher, 2016).

In addition to providing a case study, this paper adds to the literature by providing some simple suggestions that help reduce the risk of overestimating the results. For instance, sample weights were created using information on ticket expenses, obtained from the respondents' surveys, and on the tickets' sales revenue, obtained from the rodeo organizers. Thus, the estimated number of attendees, which is hard to estimate, was not required. And as long as the other expenses were not more overstated by the respondents than the expenses on tickets, the estimated economic impact is not exaggerated.

Moreover, geographical information was obtained not only from the event organizers, regarding their expenses, but also from the contestants and attendees, regarding their expenses and places of residence. That ensured the results reflect only monetary inflows from outside to the region, also avoiding inflating the impacts.

Furthermore, given the limited impact size of a small-scale event, it is difficult to evaluate its importance. Benchmark values were obtained for comparison using the accounting identity between expenses and output. Specifically, the direct outputs of agricultural, mining, and manufacturing, the most traditional rural sectors (Gartner, 2005), were hypothetically increased by the same amount as the cost to organize the rodeo. The rodeo effects on total output were much more pronounced, as expected, since the tourist expenditures were not included in the rodeo's costs. This is in line with the export base theory of growth, which is grounded in the idea that, to grow, a local economy must increase the monetary inflows from the outside to the region.

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Appendix: Questions Included in the Survey

1) In this Rodeo, are you competing in any of the events? (Please select one.)

a) Yes.

b) No, I am here only as a spectator.

2) During the whole event (November 21-23) how much money (in total) are you spending on tickets? $_____. If you are also a contestant, how much money are you spending on entry fees? $_____.

3) Gender (please select one):

a) Male

b) Female

c) Prefer not to disclose.

4) Age group (please select one):

a) 24 and under

b) 25-44

c) 45-54

d) 55-64

e) 65 and over

5) Residence (fill the blanks):

a) City: _____.

b) State: _____.

6) Which Rodeo events are you planning to attend/compete? (Mark all that apply.)

( ) Thursday night event.

( ) Friday morning event (slack round).

( ) Friday night event.

( ) Saturday morning and/or lunch event.

( ) Saturday night event.

7) Transportation to the Rodeo (please select one):

a) By car, truck or other motor vehicle.

b) Walking.

c) Other (please explain):_____.

8) If you came to the Rodeo by car, truck or other motor vehicle, please enter the following information:

a) Number of people attending the Rodeo travelling with you in the same motor vehicle: _____.

b) Number of miles driven (round trip): _____.

9) Do you have friends or family attending this rodeo who are not traveling with you?

(Please select one.)

a) Yes, and the number of friends or family members is: _____.

b) No

10) Regarding gasoline expenses you made or will make to attend the Rodeo, please enter the following information. If there was no gasoline expense, please write "zero" or "0" in all options.

a) Estimated total cost of gasoline, purchased in Murray, KY: $_____.

b) Estimated total cost of gasoline, purchased in Calloway County, but not in Murray, KY: $_____.

c) Estimated total cost of gasoline, not purchased in Calloway County: $_____. Please tell us the County: _____.

11) Regarding hotel/motel expenses to attend the Rodeo, please enter the following information. If there was no hotel/motel expense, please write "zero" or "0" in all options.

a) Estimated hotel/motel expenses incurred in Murray, KY: $_____.

b) Estimated hotel/motel expenses incurred in Calloway County, but not in Murray, KY: $_____.

c) Estimated hotel/motel expenses incurred outside of Calloway County: $_____. Please tell us the County: _____.

12) If you made other accommodation arrangements, such as a living quarter trailer, please enter the following information. If there was no other accommodation expense, please write "zero" or "0" in all options.

a) Estimated any other accommodation expenses incurred in Murray, KY: $_____.

b) Estimated any other accommodation expenses incurred in Calloway County, but not in Murray, KY:$_____.

c) Estimated any other accommodation expenses incurred outside of Calloway County: $_____. Please tell us the County: _____.

13) Please enter the following information. In each case, ONLY include the estimated expenses you are incurring BECAUSE you are attending the Rodeo. If there was no respective expense, please write "zero" or "0" in all options.

a) Estimated meals in restaurants purchased in Murray, KY: $_____; in Calloway County, but not in Murray, KY: $_____; outside of Calloway County: $_____. Please tell us the County: _____.

b) Estimated food (other than restaurants) purchased in Murray, KY: $_____; in Calloway County, but not in Murray, KY: $_____; outside of Calloway County: $_____. Please tell us the County: _____.

c) Estimated drink and entertainment expenses incurred in Murray, KY: $_____; in Calloway County, but not in Murray, KY: $_____; outside of Calloway County: $_____. Please tell us the County: _____.

d) Estimated retail shopping expenses incurred in Murray, KY: $_____; in Calloway County, but not in Murray, KY: $_____; outside of Calloway County: $_____. Please tell us the County: _____.

e) Estimated other significant expenses incurred in Murray, KY: $_____; in Calloway County, but not in Murray, KY: $_____; outside of Calloway County: $_____. Please tell us the County: _____. Please list the sources of other significant expenses: _____.