Determinants of Returns in Rural Tourism

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The goal of this study, based on data collected through community surveys and visitors' surveys, is to determine and analyze factors impacting returns from rural tourism. Our first model shows that age of event, median family income, and hired labor have a significant impact on the revenues collected from tourism events. Furthermore, it shows brochures and flyers to be the most effective form of advertisement. The second multivariate regression model proves that traveling greater distances, staying overnight at a hotel, and plans for visiting surrounding areas contribute positively and significantly to higher individual expenditures by tourists.

Key Words: advertising, rural development, tourism

JEL Classifications: R11, R21

Since 2003, the Texas Department of Agriculture (TDA) has been leading several programs designed to support the viability of rural communities. One such program is the GO TEXAN Hometown STARS (Supporting Tourism and Rural Success) program. This program was created with an aim to capitalize on the distinctive rural culture of Texas and it is helping communities leverage marketing dollars to promote economic growth and the prosperity of Texas. Program participants need to have certified or associated membership. Certified membership is available to counties or cities with a population of less than 20,000 and whose city limits do not adjoin another city with a total population of 50,000 or more. Associate membership is available to the Chambers of Commerce, economic development corporations, visitor bureaus, and sole proprietors. Benefits of the certified membership include reimbursable funding through

the TDA's Hometown STARS program, which offers recipients up to $10,000. Other program benefits include promotion through the GO TEXAN marketing campaign, informative workshops, and networking opportunities.

The TDA requires communities to submit a product marketing plan. In this plan, the community describes preparations for an event with an actual description of how the event will take place, estimating amounts of human and monetary resources and investment funds. Communities of Texas use branding of tourism events by using the GO TEXAN logo, similar to other destination branding campaigns (e.g., Paris: Paris is for Lovers; Las Vegas: What Happens in Vegas, Stays in Vegas).

During the eight years since the initiation of this program, only positive returns were reported and observed for every participating community. Each community receives funds that constitute from 1–5% of total funds spent by TDA on these events. These funds can only be spent on advertisement of the rural event. In addition to TDA funds, the community invests its own funds to organize an event. Vendors and restaurants are invited to sell their goods and products. Community volunteers help with the hosting of an

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event, and in some cases additional labor is hired. Tourists and visitors provide benefits to the communities by attending these events, staying at local hotels, and dining. Current funds have been appropriated to participating members through August 2011. This program will continue past this date on the availability of state funds.

The benefits that communities receive from this program are tremendous. The IMPLAN model is used by the authors to calculate returns on investment. In 2009, estimated direct returns on investment for Texas communities ranged from $1.7 to $214 per $1 of invested funds (Murova, Hanagriff, and Lyford, 2009). A variety of factors influence this return value for each event. The objective of this study is to investigate factors that influence total revenues collected by rural communities organizing tourism events and to examine the factors impacting individual tourists' expenditures.

The outcome of this research will help the TDA to appropriate state funds more efficiently, although the authors understand that distribution of state funds should be done with the consideration of many economic factors besides getting the highest revenues or highest individual tourists' expenditures.

Literature Review

As mentioned, the IMPLAN model is used by the authors to determine returns on TDA investment of state funds. Using individual visitors' surveys and attendance numbers, the total direct economic impact from each event is calculated. The direct return on state funds is calculated by dividing the total direct economic impact by the amount of state funding. Based on IMPLAN Type II Economic Multiplier values, the total economic impact is calculated and return on investment from total economic impact is estimated. Several reports conclude that state support of rural tourism creates positive and significant returns on investment of state funding (Hanagriff and Lau, 2009; Murova, Hanagriff, and Lyford, 2009).

To conduct a more detailed analysis, the authors use correlation analysis and logistic regression to investigate what influences individual visitors' expenditures (Hanagriff, Murova, and Lyford, 2010). A panel data set from 2005–2009 containing nearly 12,000 data observations of visitors from 61 events is used for this analysis. Correlation analysis is shown that visitors traveled, on average, 98 miles and spent an average of $170.00 per visitor. Visitors that travel over 60 miles spend three times more than visitors that travel lesser distances. Miles traveled and tourists visiting surrounding areas significantly contribute to the increase of individual visitors' expenditures.

Current research goes a bit further in investigating and connecting variables influencing individual visitors' expenditures and variables affecting total revenues collected from a tourism event. To determine proper variables and appropriate methodology for current research, a number of relevant articles is reviewed. Total revenues in this article are calculated as a product of average individual visitors' expenditures times attendance. The number of tourists attending a rural event is the component of total revenues gained at the event. Gabroveanu, Stan, and Radneantu (2009) analyze the main factors that influenced the number of tourists in Romania in 2001–2007. Using ordinary least squares regression, the authors show that total household income and consumer price indices significantly influence the number of tourists. Seetaram (2010) investigates factors affecting the number of international tourists to Australia using dynamic panel data set for 1991–2007. He uses a correlated least squares dummy variable technique to show that demand elasticity of arrivals to Australia depends on income, exchange rates, and airfare. Results confirm that demand is of a dynamic nature, and in the short run demand is inelastic with respect to all determinants. However, it becomes elastic with respect to all three variables in the long run.

Kara, Tarim, and Tatoglu (2003) investigate the determinants of tourism revenue in Turkey. They assume the dependence of tourist revenue on the quality of physical environment, the quality of social environment, the level of economic development, and the prices of vacation packages. Log-linear regression is used to estimate elasticities. They found that price reductions generate more than proportional increases in

tourism demand, leading to an increase in tourism revenue; if a state tax is imposed on the vacation packages and the amount of this tax overweighs the revenues from increased vacation prices, the overall effect will be negative.

A study by Untaru and Seitan (2010) investigates macroeconomic factors that have a significant impact on earnings from tourism. Stepwise regression shows that unemployment rate, employment, and investment in the economy explain 97.3% of variation of earnings from tourism.

Tyrrell and Johnston (2009) conducted an econometric analysis of the effects of tourism growth on municipal revenues and expenditures. A simple linear regression is used to show how population, employment, average traffic, and urban or rural location in a municipality can explain property tax revenues for that municipality. All variables, except dummy for rural location, have significant impact on property taxes.

An article by Agarwal and Yochum (1999) investigated spending patterns of individual visitors to Virginia Beach during the summer of 1997. Results show that income, number of nights of stay, party size, and number of children in the party have a significant impact on individual tourists' spending; age and race do not show any impact on the dependent variable.

Differences in the effects of advertising by media were studied by Kim, Hwang, and Fesenmaier (2005). They found that television is the most powerful media channel followed by newspapers with magazines a close third. The Internet is the least used media channel within the context of travel planning.

Multiple regression analysis is used to analyze factors affecting revenues of a convention center located in a metropolitan city in the middle Atlantic region of the United States (Boo and Kim, 2010). Total room nights variable is used as a proxy for revenues. Snow days, attendance, exhibit hall size, ballroom size, and meeting room size are used to explain revenues. Snow days and attendance are not significant factors in this model.

The wealth of studies measuring visitor expenditures appear in three contexts: 1) an individual event or over 1 year; 2) an individual site or a geographic area; and 3) timeframe: past or future (Frechtling, 2006). There are somewhat different challenges and suspicions about the data collection when estimating visitor expenditures for a study area such as a country, province, city, or village than when estimating these expenditures for a given event. Number of methods has been used based on these three contexts. Collecting a sample of visitors at the individual event provides reliable and valid samples of the visitor population of interest (Vanhove, 2005). On the basis of studies reviewed previously, in the next section, we provide a discussion on variable selection and estimation procedure.

Data and Estimation Procedure

Two types of surveys are collected for the Hometown STARS program: community surveys and visitor surveys. A Chamber of Commerce representative of the organizing city fills out a community survey by answering questions like: approximate attendance, weather, amount of money invested by the community, amount of state funds, amount of restaurant sales, amount of hotel revenues, vendor revenues, etc. The panel data set was collected based on 29 community surveys for the Hometown STARS program for year 2009.

GO TEXAN Hometown STARS funds are used for event advertising and promotion, so an overall success measure of an event is attendance. In 2009, three events had a 100% increase in attendance. These are: the third annual Jacksonville Music Jam (Jacksonville), 50th Annual Yorktown Western Days Festival (Yorktown), and 13th annual Sealy-bration (Sealy). Two new events were organized this year: Cowboy Culture Celebration (Dublin) and Blanco Lavender Days (Blanco). These events were a success with attendance of 1,500 and 1,200 people, respectively. Several events such as the Cotton Gin Festival (City of Burton), Founders Day Festival (City of Dripping Springs), Sulphur Spring Ranch Rodeo (Hopkins County), and Festival of Lights (Smithville) had a decrease in attendance. The largest decrease across all events happened during the Cotton Gin Festival (City of Burton) as a result of bad weather and weather warnings on the radio and television. All 29 communities plan to hold these events again next year.

Community surveys evaluate the assistance of TDA staff. All communities had TDA staff assistance and rated the TDA staff as "excellent" with a score of 9.5 (on a 10-point scale). Several community contact personnel commented on staff assistance: 1) "The staff at GO TEXAN was very helpful throughout the process. This being the first year to receive grant funds, we had a lot of questions. The staff was always responsive and responded within a timely manner"; and 2) "very helpful staff."

All events on a community questionnaire related to one of the nine event types. Figure 1 shows event types in percentage terms during 2009. As seen on this figure, local heritage events represent the largest category among event types followed by music events and food/wine events.

The community questionnaire provides information on financial funding from the GO TEXAN rural community program. This describes the amount of support for each event. Program regulations are such that maximum support is 50%, but most communities invest some additional funds. Considering all 29 events, there was a total investment of $232,402 from GO TEXAN Hometown STARS events funding. Average support for each event was $8,014 with support amounts ranging from $1,175 to the maximum allowed amount of $10,000.

In addition to GO TEXAN support, each community invests funds in an event. Community investment for all 29 events was approximately $4.56 million, or on average $157,260 per event.

Community surveys contain all previously mentioned data about an individual event. However, the question that arises is: "How objective are these data which are provided to the Texas Department of Agriculture by the Chamber of Commerce representative?" For that very reason, the variables used in the first regression were selected from this survey with caution and with the consideration of relevant variables from reviewed research.

Total revenues are calculated by finding a product of average revenues from a tourist event times attendance. Average revenues for each event are calculated from individual visitors' surveys. List of independent variables include total number of years that event takes place, distance from major cities, median family income of the community, weather during an event, and additional labor hired. Description of these variables is given in Table 1. Data statistics for 29 events that took place in 2009 are provided in Table 2.

The second type of survey is the visitor survey filled out by the attendees of the tourism event. Approximately 20% of visitor surveys should be collected, unless the event is very large. For events with attendance greater than 3,500 people, 700 surveys are collected for the
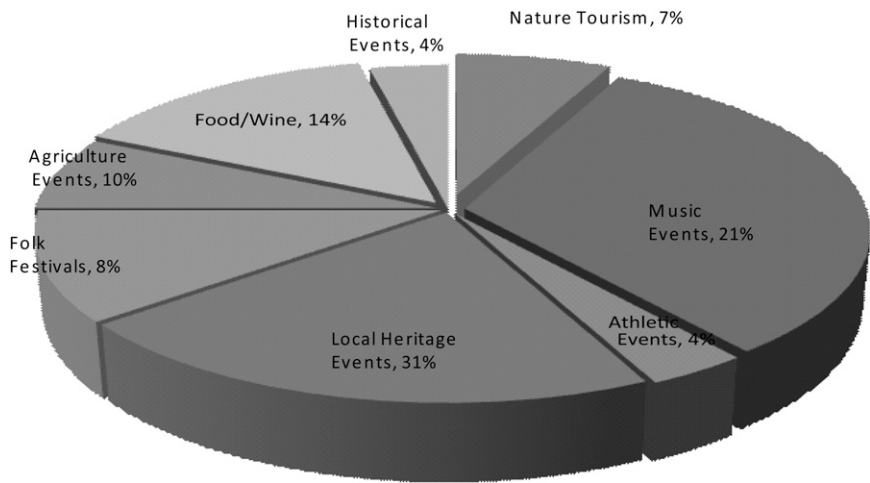

Figure 1. Types of Events

Table 1. Variables Description for the First Model, 2009

Variable Name	Description	Source	Units of Measurement
TOTREV	Total revenues	Community surveys	Dollars
YEARS	Total number of years that event takes place	Community surveys	Years
DIST	Distance from major cities with population of more than 200,000	U.S. Census Bureau, 2006	Miles
MFINC	Median family income in a community	U.S. Census Bureau, 2006	Dollars
W	Weather on the day of event	Community surveys	Dollars
ADL	Additional labor hired for a tourist event	Comm. surveys	Dollars

analyses. Table 3 contains a variables description for the model that uses individual visitors' surveys from 2009.

The second cross-sectional data set is based on 8,766 individual surveys of tourists who attended these 29 community events in 2009.

Table 2. Data Statistics from the Community Surveys Used in the Model, 2009

Observation Number	Community Name	TOTREV	YEARS	DIST	MFINC	W	ADL
1	Bandera	1,070,380	7	70	45,906	10	0
2	Bastrop	162,284	2	33	49,456	10	0
3	Jacksonville	66,204	3	113	31,176	9	200
4	Yorktown	5,951,236	50	100	28,921	10	40,000
5	Madisonville	1,511,286	7	98	29,077	10	1100
6	Atascosa Co.	22,635,888	62	77	35,779	7	0
7	City of Clifton	236,386	6	77	40,763	10	0
8	Cold Springs	99,492	26	61	37,781	3	0
9	Johnson City	4,289,042	19	45	49,456	10	2000
10	Smithville	185,865	18	45	49,456	10	0
11	City of Commerce	113,156	6	65	44,388	9	7340
12	City of Burton	194,688	20	78	43,982	4	0
13	Dripping Springs	382,787	22	24	56,287	4	0
14	Hopkins Co.	23,933	5	90	38,580	10	0
15	City of Dublin	54,362	1	82	39,491	10	0
16	Stockdale	440,131	65	39	45,681	10	58,000
17	Linden	189,146	4	155	35,623	8	33,987
18	La Feria	351,075	16	258	27,853	2	0
19	Hico	1,142,414	6	77	39,494	7	5000
20	Blanco	864,322	5	50	45,382	6	4000
21	Friona	168,840	4	71	34,149	10	0
22	Shackelford Co.	1,512,833	71	152	38,447	7	0
23	Sealy	150,428	12	49	46,342	1	0
24	Buffalo Gap	17,819	2	168	40,859	9	0
25	Electra	310,953	26	144	40,937	7	250
26	Johnson City	122,232	1	48	45,382	9	0
27	Giddings	846,883	10	55	42,073	10	0
28	Bandera	815,142	12	70	45,906	1	1500
29	Blanco	190,071	1	50	45,382	6	1200

Table 3. Variables Description for the Second Model, 2009

Variable Name	Description	Units of Measurement
INDEXP	Individual expenditures of the visitors to the event	Dollars
GND	Gender, dummy	1 = male, 0 = female
EBT	Have you ever been to this town before?	Percent of positive responses
PVSA	Do you plan on visiting surrounding areas?	Percent of positive responses
EAEP	Ever attended this event prior?	Percent of positive responses
PR	Plan on revisiting this community?	Percent of positive responses
CNY	Would you come next year?	Percent of positive responses
SO	Staying overnight at the hotel?	Percent of positive responses
SNT	Staying in the nearby town?	Percent of positive responses
MT	Estimated number of miles driven to the event	Miles
EXP	Rate your experience	Scale, 1–10
	How did you learn about this event:	(from worst to best)
RADTV	Radio Television	Percent Percent
PR	Print	Percent
BAN	Banners	Percent
BR	Brochure	Percent
WEB	Web site	Percent

Data statistics for all individual visitors' surveys for this year are given in Table 4.

Because the objective of this research is to determine the factors that affect total returns from tourist events and factors that affect individual tourists' expenditures, the decision was made to use multiple linear regressions to conduct these analyses. Initially, two functional forms were considered: log-linear and linear. However, as a result of some variables taking on binary responses, the linear equation is used in this study as the more appropriate functional form.

This study uses the ordinary least squares procedure to run two multiple linear regressions. The first model explains total revenues collected during a tourist event:

$$\text{TOTREV} = f\ (\text{YEARS, DIST, MFINC, W, ADL}).$$

The second model examines factors believed to affect the expenditures of individual visitors at the event based on 8,766 individual surveys of tourists:

INDEXP = f (gender, ever been to this town, visiting surrounding areas, attended this event prior, plans to revisit, coming next year, staying overnight, staying in the nearby town, miles travelled, rate your experience, radio, TV, print, banner, brochure, web).

Both data sets were collected for the same time period and for the same events.

Empiric Results and Policy Implications

The empiric results from estimation of two models are given in Tables 5 and 6. As a result of a small data sample and an issue of data reliability in the community surveys, only five explanatory variables that are believed to represent data accurately included in the model explain total revenues. Three explanatory variables are taken from surveys and two collected using Census data (U.S. Census Bureau, 2006). The explanatory power of this model is 30.2%.

The age of event variable significantly and positively contributes to the increase of revenues from an event. This outcome shows events that have been taking place for some number of years are not only well known among the members of the organizing community and neighboring communities, but long awaited and attendance is planned in advance. Such events become a tradition for a community. For example, the Fort Griffin Fandangle Festival in Shackelford County has taken place every year for the past 71 years, the Stockdale Watermelon Festival has been celebrated for 62 years, and the Yorktown Western Days Festival has been there for the last 50 years.

Table 4. Data Statistics from the Individual Surveys Used in the Model, 2009

Obs.	Community Name	INDEXP	GND	EBT	PVSA	EAEP	PR	CNY	SO	SNT	MT	EXP	RAD	TV	PR	BAN	BR	WEB
1	Bandera	237	39	76	73	48	99	48	26	59	174	9	9	2	36	12	1	19
2	Bastrop	30	29	84	66	18	98	99	5	59	25	7	15	19	38	29	14	8
3	Jacksonville	87	64	100	80	73	100	100	36	29	52	9	64	36	36	45	55	73
4	Yorktown	241	31	87	55	86	98	99	14	44	66	9	29	5	37	46	24	18
5	Madisonville	116	38	90	82	77	97	97	20	50	49	9	55	26	41	44	6	12
6	Atascosa Co.	433	29	82	81	84	89	98	36	61	83	9	32	12	15	5	8	14
7	City of Clifton	57	36	93	68	72	99	100	6	60	24	9	2	1	32	37	27	1
8	Cold Springs	123	22	95	72	93	100	99	9	22	30	9	1	0	49	16	41	30
9	Johnson City	154	30	76	81	57	97	94	17	54	161	9	4	8	12	9	7	12
10	Smithville City of	67	38	67	32	24	100	96	10	14	65	8	32	1	30	1	17	9
11	Commerce	95	51	65	36	62	96	100	21	8	93	9	17	0	32	15	38	10
12	City of Burton	361	55	74	68	70	91	98	26	44	195	8	48	27	27	35	27	9
13	Dripping Springs	204	49	95	75	89	99	97	14	69	48	8	3	2	22	16	9	6
14	Hopkins Co.	32	40	62	7	54	54	76	99	10	56	9	26	1	18	6	2	18
15	City of Dublin	73	23	87	78	0	93	93	12	68	73	8	0	4	25	21	12	16
16	Stockdale	144	41	79	71	74	95	98	17	49	47	8	34	8	27	35	23	18
17	Linden	151	49	63	76	42	97	99	18	12	86	8	20	0	14	1	16	32
18	La Feria	84	39	98	86	87	98	98	20	59	64	8	4	4	31	11	20	0
19	Hico	339	56	73	69	55	90	93	22	54	153	8	15	29	10	12	6	12
20	Blanco	134	22	61	77	21	97	98	16	57	111	9	8	3	21	7	15	30
21	Friona	85	52	78	54	59	99	98	9	49	76	9	37	49	27	36	9	25
22	Shackelford Co.	216	51	49	46	28	96	78	33	58	143	7	10	11	33	7	13	3
23	Sealy	60	58	51	54	35	97	86	6	90	52	7	44	1	17	18	1	32
24	Buffalo Gap	84	51	92	75	36	96	96	8	73	60	9	23	19	19	24	20	13
25	Electra	169	53	83	81	85	93	99	14	30	60	9	53	4	41	15	31	43
26	Johnson City	80	27	83	72	32	99	99	10	42	61	8	17	2	37	20	10	16
27	Giddings	52	34	93	69	72	99	95	8	59	23	9	7	2	36	29	23	1
28	Bandera	459	49	65	65	38	93	93	28	44	134	9	11	2	32	12	8	23
29	Blanco	181	47	83	61	57	94	97	18	49	154	9	21	3	32	17	21	14

Table 5. Results from the Final Regression on Determining Return on Investment for Tourist Events, 2009

Variable Name	Parameter Estimate	Standard Error
Intercept	11,480,234	77,716,236
Age of event	139,991***	38,330
Distance	−28,337.7	18,891
Community income	−243.6*	138.5
Weather during the event	83,397.1	245,583
Additional hired labor	−100.1*	56.7
R^2	0.427	
Adjusted R^2	0.302	

* Significance at 10% significance level; *** significance at 1% significance level.

The median family income of a community significantly and negatively impacts total revenues collected from an event. This outcome is not expected; however, after some deliberation, several reasons are found, which provide an interpretation of this outcome. The correlation coefficient between the distance variable and median family income is estimated to be equal to −0.67, which shows that communities located far from a metropolitan area will have lower median family income. Tourists from metropolitan areas have a greater entertainment choice and oftentimes will travel outside their community to participate in a tourism event and spend money on the entertainment there. Members of a small community located far from metropolitan areas do not have many entertainment choices and at times do not have resources to travel and spend somewhere else. Rural community members are aware of how important and profitable local festivals may be; they are willing to help their community by attending a local festival and contribute to the local economy by spending at a local festival. Support and pride for one's community are at play during rural tourism events.

Weather during an event has a large influence on attendance. It can make or break an event. Six events out of 29 had bad weather; however, weather overall was not statistically significant in impacting revenues from tourist events that took place in 2009.

The first regression shows that when additional labor is hired to conduct an event, it reduces collected revenues. Twelve communities hired additional labor to help conduct festivals.

Table 6. Results of Determinants of Individual Expenditures for Tourist Events, 2009

Variable Name	Parameter Estimate	Standard Error
Intercept	−75.468	55.893
Gender	38.405**	19.231
Ever been to this town	12.834	27.404
Planning on visiting surrounding areas	44.625**	19.702
Ever attended this event before	58.479***	23.205
Plan to revisit	12.668	43.557
Coming next year	1.628	40.526
Staying overnight	71.881***	23.611
Staying in the nearby town	0.525	4.820
Miles travelled to this event	1.011***	0.018
Rate your experience at the event	2.909	3.626
Event advertised on radio	−0.259	18.854
Event advertised on TV	4.211	31.524
Event advertised through print	23.449	18.674
Event advertised on banner	34.830	23.833
Event advertised on brochure	48.780*	26.197
Event advertised on the web site	0.981	6.028
R^2	0.274	
Adjusted R^2	0.272	

* Significance at 10% significance level; ** significance at 5% significance level; *** significance at 1% significance level.

The second regression explained 27.2% of all variations in the individual expenditures of visitors to tourism events. This model showed previous attendance to the same event contributes significantly and positively to the increase in individual expenditures of visitors. Also, the model showed that male visitors spend, on average, $38 more than female visitors at such events. Tourists that plan to visit surrounding areas are the same people who drive longer distances to get to the event; these people usually would spend the night and would positively and significantly contribute to higher individual spending by visitors. This model also includes dummies for different channels of tourism advertising such as radio, television, print, banner, brochure/flyer, and web site. The most effective form of advertising is using brochures or flyers with information about the upcoming event.

Both models were tested for heteroscedasticity using Breusch-Pagan and White's tests. Both tests prove no evidence of heteroscedasticity in these models; however, the Breusch-Pagan test for the first model showed no evidence of heteroscedasticity at a lower significance level of 5 percent.

Conclusion

In this article, the authors investigate factors that impact revenues collected by individual communities from organizing tourist events in the state of Texas and factors affecting individual visitors' expenditures. Two multivariate regressions revealed several factors that have a statistically significant effect on collected revenues and individual expenditures.

The first regression model revealed three such factors: age of event, hiring additional labor, and community income. Events that have been successfully in place for a number of years bring more revenues than newly created festivals. Age of event establishes its reputation and increases attendance over the years. If there are not enough volunteers at the festival, additional labor is hired and it reduces collected revenues from the event. The first regression has also shown that pride and willingness to help "my community" has a positive impact on revenues collected from a rural festival. Smaller communities have a greater sense of identity.

In support of the previous findings, the second regression model proves that traveling greater distances, staying overnight at a hotel, and plans of visiting surrounding areas contribute positively and significantly to higher individual expenditures by tourists (Hanagriff, Murova, and Lyford, 2010). It also shows that attendance to the same event in prior years and being male increase average expenditures by tourists. This model includes dummies that represent different types of advertising. It demonstrates that brochures and flyers about the upcoming event are the most effective type of advertising.

Based on the findings of this research, the following recommendations to the participating communities are proposed. First, because age of event has a great impact on revenues from tourist events, the culture of respect for old traditions should be promoted by communities. New festivals should be advertised more. Second, more volunteer labor should be employed for large events to avoid hiring additional help. Third, a higher percentage of the advertising budget should be used for the most effective forms of advertisement, i.e. brochures and flyers. The successful outcome of a tourist event should be promoted across the community to increase the sense of pride and belonging. Lastly, because returning tourists spend more at the event, communities should try to make their experiences more memorable and different from the previous year so that event-goers will want to return. Rooms should be available at local hotels when events are taking place. The authors of this research will take these results to the administration of Hometown STARS and Bootstrap Bucks programs at the Texas Department of Agriculture.

This study provided some additional insights on explaining revenues collected from rural tourist events and spurred some thoughts on modification of current surveys, especially individual visitors' surveys to increase explanatory power of individual visitors' expenditures. However, another objective of our involvement in the program, besides analyses of economic returns, impacts, and factors affecting revenues, is collecting a consistent data set across several years. This last objective may preclude any changes in the individual visitors' surveys or

changes in the definition of current returns on investment.

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