

**Agroforestry Comes of Age:  
Putting Science into Practice**

Proceedings of the 11<sup>th</sup> North American Agroforestry Conference  
May 31-June 3, 2009  
Columbia, Missouri

**MICHAEL A. GOLD & MICHELLE M. HALL, EDS.**

# ATTENDANCE MOTIVATIONS BEHIND THE MISSOURI CHESTNUT ROAST FESTIVAL

Carla Barbieri<sup>1</sup>, Mihaela Cernusca<sup>2</sup>, Michael Gold<sup>2</sup> and Francisco X. Aguilar<sup>3</sup>

<sup>1</sup> Dept. of Parks, Recreation & Tourism, University of Missouri  
105 Anheuser-Busch Natural Resources Building, Columbia, MO 65211

<sup>2</sup> Center for Agroforestry, University of Missouri  
203 Anheuser-Busch Natural Resources Building, Columbia, MO 65211

<sup>3</sup> Department of Forestry, University of Missouri  
203 Anheuser-Busch Natural Resources Building, Columbia, MO 65211

Contact: [BarbieriC@missouri.edu](mailto:BarbieriC@missouri.edu)

**Abstract:** Festivals attract visitors with different types of motivations which are associated with a festival's theme. The Missouri Chestnut Roast festival combines recreational and educational activities to promote agroforestry, chestnuts and other agricultural specialty products. The objective of this study was to identify the motivations behind attendance at the Missouri Chestnut Roast festival given its unique theme. It also identified different socio-economic attributes, levels of chestnut consumption and event behavior associated with different motivations. Intercept interviews were carried out on-site. The survey queried 12 attendance motivations, levels of chestnut awareness (i.e., consumption, cooking), festival behavior, and socio-demographics. A total of 524 responses were collected. Statistical tests included principal component factor analysis with varimax rotation and multiple linear regressions.

The most important motivations drawing attendance to the Chestnut Roast festival were: enjoying a day out; the uniqueness of the festival; and tasting chestnuts and other Missouri specialty products. Factor analysis of the attendance motivations produced three motivational dimensions: (D1) *Fun and Entertainment* related to the types and variety of recreation and entertainment activities offered at Chestnut Roast; (D2) *Theme Identity* associated with the chestnut thematic; and (D3) *Educational Experience* associated with the educational offerings of this festival. Multiple linear regressions show that demographic characteristics and festival behavior are associated with the three motivational dimensions identified (D1; D2; and D3). However, frequency of chestnut consumption is not associated with any motivational dimension.

Study results suggest important implications for Chestnut Roast festival organizers. Advertising efforts (e.g., promotional material) and festival offerings (e.g., recreational activities; educational sessions) should consider all three identified motivational dimensions to ensure that the Chestnut Roast festival attracts a diverse set of visitors driven by different motivations.

**Keywords:** Festivals, Motivations, Factor Analysis

## INTRODUCTION

The University of Missouri Center for Agroforestry (UMCA) is working to establish a viable chestnut industry, focusing its efforts on three key areas: testing and identifying the best chestnut

cultivars and production techniques, conducting national market research, and working toward an increase in consumer awareness and demand. The long-term goal is to develop a thriving domestic chestnut industry in Midwest. In support of its long-term goal, in 2003 UMCA created the Missouri Chestnut Roast festival, a unique event that blends entertainment and educational activities to inform, promote and increase awareness and recognition of agroforestry, chestnuts and other Missouri agricultural specialty products.

The Missouri Chestnut Roast is held annually at the University of Missouri's Horticulture and Agroforestry Research Center (HARC), a 660-acre research farm located in the Missouri River Hills adjacent to New Franklin, Missouri. The festival is a free event for vendors and visitors. This one day event is an outstanding opportunity to introduce participants to the broad range of possibilities and benefits that can result from implementing agroforestry practices or consuming specialty products. The Missouri Chestnut Roast includes vendors offering a diversity of Missouri agricultural products (e.g., cheese, wine, honey and nuts); informational booths providing resources of agricultural products and strategies to diversify farm revenues; guided tours to various agroforestry-related research projects; and a combination of entertainment offerings including music, food, cooking demonstrations and children's activities, among others.

The Missouri Chestnut Roast has steadily increased in popularity among chestnut consumers and non-consumers. The first event (2003) attracted around 1,000 people, most of whom tasted roasted chestnuts for the first time while, the last one (2008) pulled about 4,000 visitors. The consistent growth of the number of Chestnut Roast visitors is very important for the UMCA purposes as it exposes more people to chestnuts, agroforestry practices and their benefits. As a case in point, the proportion of attendees who had never consumed a chestnut before attending the festival has consistently decreased over years, dropping from 67% in 2003 to 44% in 2008.

## LITERATURE REVIEW

Festivals are a popular form of tourism and many destinations employ them in their development strategies as they can attract a wide range of visitors in terms of number and characteristics (Getz 2007; Kim et al. 2007). Festivals bring several benefits, including the development and maintenance of cultural resources and traditions, enhancement of local economies, and improvement of the destination image, among others (Crompton and McKay 1997; Formica and Uysal 1998; Getz 1997). Many characteristics shape the uniqueness and novelty of festivals, including their theme (e.g., arts, agriculture); offerings and attractions (e.g., recreational activities; informative resources), duration (e.g., one-day, weekend); purpose (e.g., product awareness, fundraising), and others.

A key element of festivals and event research relates to motivations as these drive people to the venue. Research on festival motivations is not new, yet not settled (Getz 2008). Overall, studies conclude that festivals attract people with different motivations (Crompton and McKay 1997). Studies are also conclusive regarding some motivations that are consistently found to drive festival attendance, such as escapism, gregariousness, socialization, and family/personal-related motives (Backman et al. 1995; McDonnell et al. 1999). However, more recent studies suggest that there are other motivations that are associated with the uniqueness and novelty of festivals

that are still not fully understood (Nicholson and Pearce 2001; Schofield and Thompson 2007; Yuan et al. 2005).

Inconclusive findings regarding the set of motivations associated with the unique attributes of festivals demand further inquiry. This is especially pertinent for agriculture festivals as they have received little attention in the literature. Understanding these motives is important for festival marketing and programming in future years because they provide information that can help tailor the festival offerings to their target market addressing visitors' needs and expectations, thus strengthening their satisfaction levels (Fondness 1994; Lee et al. 2004).

## DATA AND METHODS

This study examines the demographic characteristics, behavior and attendance motivations of visitors to the Chestnut Roast Festival in New Franklin, Missouri. Specific objectives are: (1) to identify the motivations behind festival attendance, and (2) to identify attendees' characteristics and their levels of chestnut awareness associated with motivational dimensions. Festival attendees were intercepted and surveyed on-site in October 2008. Trained interviewers randomly selected festival attendees, explained the purpose of the study and asked for their participation. Those who agreed to participate completed the survey on site. A total of 524 responses were obtained; a very small proportion (less than 5%) refused to participate. The survey queried twelve attendance motivations, levels of chestnut awareness (i.e., frequency of consumption, familiarity with cooking), festival behavior, and socio-demographics.

Three types of analysis were conducted in this study. First, descriptive statistics were used to profile respondents regarding their socio-economic characteristics, festival behavior and level of chestnut awareness. Second, an exploratory factor analysis with varimax rotation was performed to reduce attendance motivations to fewer dimensions. Listwise, pairwise and mean imputation methods were tested to handle missing values. The pairwise method was finally used because it yielded a stronger model as compared to the other ones. Chronbach's alpha was used to assess the overall and internal factors reliability. Finally, a multiple linear regression was used to identify associations between respondents' attributes (i.e., socio-demographics and event behavior) and attendance motivational dimensions.

## RESULTS

### **Profile and Festival Behavior of Respondents**

Respondents are preponderantly female (59.5%) and over 45 years old (56.1%). They are also highly educated, having the vast majority (74.0%) at least a college degree and over a third (37.2%) a graduate degree. Over two-thirds of respondents are married or living with a partner (68.5%). The majority of respondents live with at least one other person at home (83.6%). From these, a relatively small proportion live with children younger than 7 years old (12.8%), between 7 and 12 years old (14.4%) or between 13 and 17 years old (11.9%) showing a late stage on respondents' family life-cycle. The majority of respondents (56.9%) reported over \$50,000 household income and about a third (31.4%) over \$75,000 which may be associated with respondents' age and their family life-cycle stage.

Although the Chestnut Roast Festival attracts a high proportion of first time attendees (76.7%), results suggest that the festival is also building a group of loyal visitors. Taking into account the repeated customers (23.3%, n=121), about half attended this festival in 2007 (49.6%), in 2006 (57.0%) and in 2005 (49.6%). The festival mostly attracts a very local and urban clientele. The majority of respondents traveled less than 30 miles to the festival (56.8%) and live in an urbanized area with a population of at least 50,000 (50.8%). Importantly, the vast majority of respondents spent at least one hour at the event (95.2%) and over a third (39.0%) at least three hours suggesting good event entertainment programs. On average, party size was composed by four people (mean=4.2); a very small proportion (8.0%) attended the festival alone.

Overall, festival attendees have little familiarity with chestnuts in terms of consumption, past purchase and cooking knowledge. Although about a third (35.4%) of respondents have purchased chestnuts in the past, regular consumption is not evident. About half of respondents (44.2%) do not consume chestnuts at all and over three quarters (84.2%) consume them once a year or less. Interesting though, a relatively large proportion of respondents are at least a little familiar with cooking with chestnuts, either roasting (41.3%) or preparing them using recipes (30.4%), suggesting some interest in chestnuts as a culinary specialty product.

Table 1: Motivations driving attendance to the Chestnut Roast Festival.

Motivations (n=415)	Mean <sup>a</sup>	S.D.
To enjoy a day out	4.36	0.97
The uniqueness of the Missouri Chestnut Roast festival	4.03	1.06
Taste chestnuts and other Missouri specialty products	4.03	1.19
I like to attend festivals	3.82	1.17
Learn about other Missouri specialty products	3.71	1.13
Learn about chestnuts	3.69	1.20
The variety of entertainment and activities offered	3.47	1.22
Buy other Missouri specialty products	3.39	1.22
Learn about agroforestry	3.25	1.23
Buy chestnuts	2.87	1.38
Visit the Hickman House	2.77	1.37
The activities for children	2.57	1.61

<sup>a</sup> Measured in a five-point Likert type scale where (1) not important; (2) somewhat important; (3) moderately important; (4) fairly important; and (5) very important.

### Attendance Motivations to the Chestnut Roast Festival

Results show that visitors attend the festival driven by a complex set of motivations. The most important motivations, measured using a five-point Likert-type scale anchored in one (not important) and five (very important), are: enjoying a day out (mean=4.36); the uniqueness of the festival (mean=4.03); and tasting chestnuts and other Missouri specialty products (mean=4.03), exemplifying a blend of leisure, festival and product –chestnut- related motives (table 1). Visiting the historic Hickman House (mean=2.77) and the activities for children (mean=2.57) are the least important attendance motivations, which is surprising as they are related to major and highly visited attractions.

Attendance motivations were reduced to fewer dimensions to facilitate their application in marketing strategies (e.g., advertising, positioning) and planning activities. An exploratory factor analysis used for this purpose produced three motivational dimensions with eigenvalues greater than one and accounting for 62.2% of variance (table 2). A loading higher than 0.50 was the threshold for including an attendance motivation as part of a motivational dimension. “To buy other Missouri specialty products” did not load in any dimensions and it was removed from further analysis. Results show very high overall ( $\alpha=.824$ ) and internal alpha reliability coefficients ( $\alpha \geq .71$ ).

Table 2: Rotated factor matrix of the attendance motivations to Chestnut Roast Festival.

Factors and Motivations	Factor Loadings	Explained Variance (%)	Eigenvalue
<b>Fun and Entertainment – D1 (<math>\alpha=.752</math>)<sup>1</sup></b>		37.08	4.08
I like to attend festivals	.836		
The variety of entertainment and activities offered	.769		
To enjoy a day out	.726		
The activities for children	.548		
<b>Theme Identity – D2 (<math>\alpha=.730</math>)</b>		15.44	1.69
Taste chestnuts and other Missouri specialty products	.801		
Learn about chestnuts	.714		
Buy chestnuts	.638		
The uniqueness of the Missouri Chestnut Roast festival	.521		
<b>Educational Experience – D3 (<math>\alpha=.705</math>)</b>		9.65	1.06
Learn about agroforestry	.768		
Visit the Hickman House	.678		
Learn about other Missouri specialty products	.608		
<b>Total Variance Explained</b>		<b>62.17</b>	

<sup>1</sup> Cronbach’s alpha reliability coefficients for domains. Overall reliability ( $\alpha=.824$ )

The three dimensions obtained were labeled based on the common characteristics of their loaded motivations as follows. Four motivations related to the types and variety of recreation and entertainment activities offered at the festival loaded on the *Fun and Entertainment* dimension (D1). This dimension explained 37.1% of variance in the data and had an eigenvalue greater than four. The second dimension, *Theme Identity* (D2), is associated with motivations defining the chestnut thematic and uniqueness of the festival. It explained 15.4 of variance and had an eigenvalue of 1.7. The last dimension was labeled *Educational Experience* (D3) as it comprised motivations related to the educational offerings of this festival (eigenvalue=1.1; explained variance=9.7%).

### Attributes Associated with Attendance Motivational Dimensions

Multiple linear regressions performed on the three motivational dimensions (D1; D2; and D3) produced three significant models suggesting that socio-economic attributes (i.e., age, education level; residence location) and event behavior (i.e., party size, travel distance and hours of stay) are associated with different motivations driving festival attendance (table 3). Product

recognition, measured in terms of chestnut consumption, is not associated with any motivational dimension, maybe due to the still low recognition of chestnuts in the U.S.

Table 3. Multiple linear regressions of socio-economic attributes, event behavior and levels of chestnut consumption on the attendance motivational dimensions.

Independent Variables	DV – Attendance Motivational Dimensions <sup>a</sup> (Standardized $\beta$ and Significance)		
	D1	D2	D3
Visitor's age	-.211***	.238***	.080
Visitor's level of education	-.053	.184**	.073
Residence distance from an urbanized area	.065	.011	.200**
Frequency of chestnut consumption	-.011	.084	-.111
Distance travelled to the festival	-.115	-.015	-.119*
Hours staying at the festival	.068	.035	.240***
Party size	.141*	-.116*	.146**
$p$ value	.001	.000	.000
$R^2$	.085	.130	.140

\* $p < 0.05$

\*\* $p < 0.01$

\*\*\* $p < 0.001$

<sup>a</sup> (D1) Fun and Entertainment; (D2) Theme Identity; and (D3) Educational Experience

The first statistically significant model shows that age ( $\beta = -.211$ ,  $p < .001$ ) and number of people in the party ( $\beta = .141$ ,  $p = .015$ ) are related to the motivations loading on the *Fun and Entertainment* dimension – D1 ( $R^2 = .085$ ,  $p = .001$ ). The second model shows that age ( $\beta = .238$ ,  $p < .001$ ), level of education ( $\beta = .184$ ,  $p = .002$ ), and number of people in the party ( $\beta = -.116$ ,  $p = .041$ ) are related to the motivations loading on the *Theme Identity* dimension ( $R^2 = .130$ ,  $p = .001$ ). The final model shows that residence proximity to an urbanized area ( $\beta = .200$ ,  $p < .001$ ), distance traveled to the festival ( $\beta = -.119$ ,  $p = .048$ ), number of hours staying at the festival ( $\beta = .240$ ,  $p < .001$ ), and number of people in the party ( $\beta = .146$ ,  $p = .010$ ) are related to the motivations loading on the *Educational Experience* dimension ( $R^2 = .140$ ,  $p = .001$ ).

Findings regarding age distribution and party size are not surprising. The older the participants, the less interested they may be in traditional forms of entertainment (D1) being more selective in choosing new and unique leisure experiences such as those defining the Chestnut Roast Festival (D2). In turn, larger parties seek for a greater variety of entertainment and recreational offerings (D1) and educational offerings (D3) as they need to satisfy the needs of their various members that may include different age compositions (e.g., young children, teenagers, and middle-age adults). The findings regarding residence location and distance travelled to the festival are surprising and need further examination. The farther respondents live from an urban area, the more associated with the educational-related motivations (D3) which is opposing to the romanticism of rural America usually included as an important tourism driver of agritourism and agriculture events among urban residents.

## CONCLUSIONS

This study confirms that festivals attract people with different motivations, including those frequently suggested in the literature (i.e., seeking entertainment) and those associated with the festival uniqueness (i.e., educational opportunities and theme identity). Specifically, results show

that the most important motivations driving people to the Missouri Chestnut Roast are enjoying a day out, the uniqueness of the festival and tasting chestnuts and other Missouri specialty products, showing a mixture of leisure, festival and chestnut related motives. The twelve motivations tested in this study resulted in three motivational dimensions using an exploratory factor analysis: *Fun and Entertainment* (D1) related to the types and variety of recreation and entertainment activities offered at the festival; *Theme Identity* (D2) associated with motivations defining the chestnut thematic and uniqueness of the festival; *Educational Experience* (D3) comprising motivations related to the educational offerings of this festival. These results have important marketing implications as festival organizers need to convey the three motivational dimensions found in this study in their promotion and advertising efforts to capture their diverse clientele.

Further, this study adds to the existing knowledge of festival research, identifying socio-economic attributes and different event behaviors associated with the motivational dimensions obtained, including visitor's age, party size, residence location and distance travelled to the Missouri Chestnut Roast. These results have important marketing and programming implications for the festival organizers in future years, especially taking into account the socio-demographic and group composition of festival attendees. For example, the older the visitors the less interested in entertainment activities but the most motivated by agroforestry and chestnut related opportunities. Taking into account that the majority of visitors were at least 45 years old, these results suggest that organizers need to keep offering and strengthening their chestnut thematic activities (e.g., demonstrations of cooking with chestnuts; sampling and tasting of chestnuts and other Missouri specialty products). But at the same time, festival organizers need to provide a broad variety of educational and entertainment activities, as these appear to attract large groups most likely composed of individuals with different age distribution, thus interests.

This study also brings two questions in need of further exploration. Results show that the farther respondents live from an urbanized area the more driven they are by the festival educational component. This may be suggesting an opposing direction related to the romanticism image of agriculture as a driver of agritourism among urban residents. This finding needs a closer examination taking into consideration that the Missouri Chestnut Roast predominantly attracts a local and urban market. In addition, the diversity of motivations and socio-demographic attributes found in this study suggest testing a motivation-based segmentation of Missouri Chestnut Roast visitors. This segmentation can assist in better attracting different groups of visitors using tailored marketing channels and messages, which is important as previous studies found that visitation increases chestnut recognition and consumption which is a critical goal of UMCA (Cernusca et al. 2008).

**Acknowledgements:** The authors acknowledge research assistants: C. Tew, Y. Katsube, S. Xu, J. Chen (Department of Parks, Recreation and Tourism), Z. Cai, A. Saunders (Department of Forestry) and I. Staiculescu (Department of Public Health) at the University of Missouri Columbia, who were instrumental during data collection and entering.



## LITERATURE CITED

- Backman, K. F., Backman, S. J., Uysal, M., and Sunshine, K. M. 1995. Event tourism: An examination of motivations and activities. *Festival Management and Event Tourism*, 3(1): 15-24.
- Cernusca M.M., Gold, M.A., and Godsey, L.D. 2008. Influencing Consumer Awareness through the Missouri Chestnut Roast. *Journal of Extension*, 46(6).
- Crompton, J. L., and McKay, S. L. 1997. Motives of visitors attending festival events. *Annals of Tourism Research*, 24(2), 425-439.
- Fodness, D. 1994. Measuring tourism motivation. *Annals of Tourism Research*, 21(3): 555-581.
- Formica, S., and Uysal, M. 1998. Market segmentation of an international cultural-historical event in Italy. *Journal of Travel Research*, 36(4): 16-24.
- Getz, D. 1997. *Event Management and Event Tourism* (1<sup>st</sup> ed.). New York: Cognizant Communications Corp.
- Getz, D. 2007. *Event Studies: Theory, research and policy for planned events*. Oxford: Elsevier.
- Getz, D. 2008. Event tourism: Definition, evolution, and research. *Tourism Management*, 29: 403–428
- Kim, K., Sun, J, Jogaratnam, G., and Oh, I. 2007. Market segmentation by activity preferences: Validation of cultural festival participants. *Event Management*, 10(4): 185–196.
- Lee, C. K., Lee, Y. K., and Wicks, B. E. 2004. Segmentation of festival motivation by nationality and satisfaction. *Tourism Management*, 25(1): 61–70.
- McDonnell, I., Allen, J., and O’Toole, W. 1999. *Festival and special event management*. Brisbane: John Wiley & Sons.
- Nicholson, R. E. and Pearce, D. 2001. Why do people attend events: A comparative analysis of visitor motivations at four south island events. *Journal of Travel Research*, 39(4): 449–460.
- Schofield, P. and Thompson, K. 2007. Visitor Motivation, Satisfaction and Behavioral Intention: The 2005 Naadam Festival, Ulaanbaatar. *International Journal of Tourism Research*, 9: 329–344.
- Yuan, J.; Cai, L.; Morrison, A. and Linton, S. 2005. An analysis of wine festival attendees’ motivations: A synergy of wine, travel and special events? *Journal of Vacation Marketing*, 11(1): 41-58.