

Analysis of Factors Influencing Agritourism Businesses in Expansion¹

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by

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Abstract

This study assesses how characteristics of agritourism operations may influence future expansion plans. Differences in barriers which agritourism operations face, as well as types of promotion methods used are examined for expansion-minded agritourism operators. This information will be useful to agritourism operators, as they look for contributors to future growth.

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Background

Tourism constitutes an important component of the Tennessee economy. In 2011, Tennessee's tourism generated a \$15.36 billion economic impact to the state's economy. About 177,800 Tennesseans are employed in the state's tourism industry (Tennessee Department of Tourist Development 2012). Agritourism serves as a means for agriculturally-based operations to bring visitors to a farm or ranch. It can provide not only a recreational set of activities, but also educational activities about how food is produced. Agritourism can serve as a means for farmers to diversify their operations to add farm income, even on small farms. Some research has shown that smaller agritourism operations tended to rely more heavily on income from agritourism than larger operations (Schilling, Sullivan, Komar, and Marxen 2007). Tennessee is a state characterized by many small farms, with 76,000 farms overall and an average farm size of 146 acres. From the 2002 Ag Census to the 2007 Ag Census, the number of operations with income from agritourism increased from 292 to 510 (USDA 2002, 2007). However, with a slowdown in the economy in 2008-2009 (3.8 percent loss in real Tennessee GDP and 3.2 percent loss in U.S. GDP) and a modest recovery (BEA 2012, 2013), travel expenditures fell. Nationally, travel expenditures declined between 2005 and 2009. Likewise tourism expenditures in Tennessee fell during this time period with a 7.5 percent decline in 2009 alone (Tennessee Department of Tourist Development 2012). Despite a recently slowed economy and uncertainty about future growth, results from this study suggest that some agritourism operators plan to expand.

Objective

The purpose of this study is to assess to characteristics of agritourism operations, such as size, type, and location, which plan to expand their operations. Differences in barriers which

agritourism operations face, as well as promotion methods used will be examined across whether the agritourism operator is expansion-minded. This information will be useful to agritourism decision makers, including policy makers, as they look for contributors to future growth in the agritourism sector.

Prior Research

Findings from several studies highlight the influence of location near population centers as being an important influence on agritourism. Bagi and Reeder (2012) found that farms near central cities were more likely to participate in agritourism. Bernardo, Valentine, and Leatherman (2004) also noted the geographic advantages of agritourism being located near urban areas. However Brown and Reeder (2007), found that as the distance between the farm and a city of at least 10,000 in population increases, there is a greater likelihood of a farmer operating an on-farm recreation business. Yet they found that county population density had a positive impact on income from farm-based recreation.

Several studies have noted that farm size impacts agritourism. Bagi and Reeder (2012) noted that agritourism participation should increase with the farm size. However, in a Washington state study it was noted that the size of farms involved in agritourism tended to be smaller than other types of agricultural production, with about 40 percent of the agritourism farms operating on 20 acres or less (Galinato et al 2011). In dollar terms, findings by Brown and Reeder (2007) suggested that farms with farm-based recreation tended to have a higher net worth.

Bagi and Reeder (2012) found that age had a positive influence on participation in agritourism activities. Brown and Reeder (2007) found that experience in terms years operating

a farm did not significantly affect farmer participation in on-farm recreation or income from on-farm recreation.

Brown and Reeder (2007) found that farms with in areas with high natural amenities scores (based on climate, topography, and water area) tended to be more likely to be involved in farm-based recreation. They also found that a higher recreation score for the county (recreation-related income, employment, and seasonal housing) had a positive influence on on-farm recreation based income.

Rainey et al. (2010) found that several factors influenced Arkansas farmers' and landowners' attitudes toward participation in the agritourism industry. Three primary areas were identified including state's government support on training, certainty on laws and regulations, and state government's support on marketing and promotion. Their findings suggested that state promotion and agricultural extension agencies can play an important role in the future industry development. Galinato et al (2011) found that the most common marketing tools employed by our respondents are individual business websites, farm group associations, print advertisements, and local chambers of commerce in Washington state. The also noted that state regulations or rules and land use rules or zoning concerns are common among agritourism operations. Liability issues also create concern for agritourism operations.

Data and Methods

Data

To obtain information for the study, a mail survey of Tennessee agritourism businesses operators was conducted in early 2013. Existing and potential Tennessee agritourism businesses were identified through the Tennessee Department of Agriculture's Pick Tennessee Products listings and/or referrals from County Extension agents across the state. A total of 450 contacts identified

for the survey. The first survey mailing occurred January 4, 2013, with a follow up reminder postcard mailed January 15, 2013. A second mailing to those contacts who had not responded was conducted January 24, 2013. Of the contacts, 9 percent were bad addresses or the contact was deceased or out of business, leaving 429 viable contacts. In total, 171 responded, for an overall response rate of 39.9 percent.

The survey contained questions about several topics. The respondents were asked about their current agritourism status and information regarding the characteristics of the agritourism operations. They were also asked about estimates value of sales from the agritourism operations and their overall income, including agritourism based, other farm based, and non-farm income. Respondents were asked about how they market their agritourism attraction and types of challenges they face. A copy of the survey instrument is available upon request from the study authors.

Model of Probability of Expansion

Each farmer is hypothesized to have an expected utility from expanding the agritourism business or not expanding which is not directly observable. The unobserved utility, U_E , is a function of observed characteristics, \mathbf{X} , such that

$$U_E = \boldsymbol{\beta}'\mathbf{X} + \boldsymbol{\varepsilon}. \tag{1}$$

where $\boldsymbol{\varepsilon}$ is the random components, $\boldsymbol{\beta}$ is a vector of parameters, and \mathbf{X} is a matrix of the observed characteristics (see Table 2 for variable descriptions). Though the utility from choosing business expansion, E , cannot be observed, whether the business operator indicates their intention to expand is observable ($E=0,1$). The probability of choosing $E=1$, can be written as $\Pr\{U_{E=1} \geq U_{E=0}\} = F(\boldsymbol{\beta}'\mathbf{X})$ (Greene 2012). If the logit model is chosen to estimate this probability, then F follows the logistic distribution, and probability of choosing expansion is

$$\Pr(E = 1) = \frac{e^{(\beta'x)}}{1+e^{(\beta'x)}}. \quad (2)$$

The marginal effect of a given continuous variable, x_n , is

$$\frac{\partial E}{\partial x_n} = \frac{e^{(\beta'x)}}{[1+e^{(\beta'x)}]^2} \beta_n. \quad (3)$$

If the variable x_n is dichotomous, the marginal effect is calculated using equation 2 with the variable x_n vary set at 0 and then 1 and all the other explanatory variables set at their means. Then the difference between the two probabilities is taken $\Pr(E = 1|x_n = 1) - \Pr(E = 1|x_n = 0)$. The standard errors around the marginal effects are calculated using the delta method (Greene 2012). The overall fit of the model can be evaluated with log likelihood ratio test $LLR = -2(\log \text{likelihood model as coefficients set to zero but the intercept} - \log \text{likelihood full model} - \log \text{likelihood model})$. The test statistic LLR is distributed as χ^2 with the degrees of freedom being the number of coefficients restricted to zero. Another measure of fit is the percent of observations correctly classified by the model as $E=0$ or $E=1$.

Following Bagi and Reeder (2012) and Brown and Reeder (2007), the value of sales from agritourism is hypothesized to have a positive effect on expansion plans. Therefore they sales dummies (*Sales1-Sales7*) compared with the largest sales category (*Sales 8*) are hypothesized to negatively influence plans to expand. While Brown and Reeder (2007) did not find experience significantly affected farmer participation in on-farm recreation or income from on-farm recreation, we hypothesize it could have a negative effect, particularly as farmers near retirement age (*YrsBus*). If a farmer has no off-farm income, this may signal a larger share of their income earning efforts are focused on the farming operation, including the agritourism operation. In this case, it would be expected that *NoOffInc* would have a positive influence on expansion plans.

Effects of the types of agritourism attractions on the farms cannot be hypothesized a priori. However, some attractions were grouped that often occurred together. For example animal exhibits and petting zoos (*AnimalExhib*), events including birthdays or other parties (*Events*), fall fun activities including pumpkin patches, corn mazes, hayrides, or haunted attractions (*FallFun*), on-farm food service or gift shops (*Food*), outdoor activities including day camps, overnight camping, horseback riding, fishing, or ziplines (*Outdoor*), and school or other tours (*Tours*). Other types of attractions included on-farm retail markets (*Retail*), pick-your-own operations (*PickYourOwn*), and classes or workshops (*Workshops*).

Recent attendance at workshops offered will likely have a positive influence on willingness to expand. This hypothesis is based in part upon findings by Rainey et al. (2010). Following Brown and Reeder's findings that higher recreation index scores influence farm-based recreation income, it is hypothesized that the number per 1,000 county population of farmers' markets, agritourism operations, and travel expenditures would positively influence expansion plans (*FmrMktPop1000*, *AgtourPop1000*, *TravExpPop1000*). The number of farmers markets (2012) and agritourism operations (2007) were derived from the USDA/ERS Food Environment Atlas. The travel expenditures were derived from the U.S. Travel Association Research Department (2011) while 2012 county population data came from the Census Bureau.

Analysis of Barriers and Promotion Methods Used

In addition to examining factors which influence the probability of expanding, several opinions about problems affecting agritourism businesses and also promotional methods used were compared across whether the respondent was categorized as an expander. For the opinions about problems, which were ordered 1=Not a Problem, 2=Somewhat of a Problem, 3=A Moderate Problem, and 4=A Serious Problem, t-tests were used to test for significant differences

in opinions about a problem across where the respondent was an expander. To examine for association between whether they used a particular type of promotion, a chi-square test of association was used, with the degrees of freedom are $(R-1)*(C-1)$, where R=rows, and C=columns.

Results

Plans for Expansion

As can be seen in Table 1, about 90 percent agreed they had set attracting more customers as a goal (N=130). About 82.31 percent expected their sales to increase, while 66.15 agreed that they planned to expand the number of products or attractions they offered. The statement with which the operators were least agreement was that they planned to hire more employees. Only about 35.38 percent agreed with this statement. These results indicate that among the expansion indicators that hiring more employees is the most limiting expansion indicator.

For the purposes of this study, expanders are defined as firms which expect sales to increase, to expand the number of customers, to hire more employees, and to expand the number of products or attractions in the future. To be included in the category of expanders, the operator had to agree with each of the statements in Table 1. About 30.7 percent of the firms considered themselves to be “expanders” (N=130).

The names, definitions, and means for the variables and number of observations used in the logit model of expansion plans are shown in Table 2. The estimated logit model is displayed in Table 3, while the marginal effects are shown in Table 4. Using the log-likelihood ratio test (LLR), the model was found to be significant overall. The logit model correctly classified 77.57 percent of the observations. Variables with significant negative estimated coefficients included

Sales2, *YrsBus*, and *FmrMktPop1000*. The estimated marginal effects, from Table 4, for each of these variables are significant. In addition, the marginal effects are significant for *Sales1* and *Food*. These results suggest that smaller sized agritourism operations in terms of sales (less than \$10,000) are less likely to be expanders. In addition, as the businesses have been operating longer, they owner is less likely to plan expansion. This may reflect that newer firms are still expanding. The negative sign on having on-farm food, concessions, or gift shops may indicate this is not a growth area for agritourism businesses. However, to empirically answer this question would require further research. The number of farmers markets per 1,000 population was unexpected. However, farmers markets may serve as competition for agritourism operations selling directly on-farm. In addition, the farmers markets may serve as another outlet for these farm's produce. Hence, more farmers markets might draw away on-farm sales and lessen the operator's wishes to expand the on-farm retail market component.

Variables with significant positive estimated coefficients included *FarmWork*, *Workshops*, *AgtourPop1000*, and *TravExpPop1000*. The estimated marginal effects, from Table 4, for each of these variables are significant except *TravExpPop1000*. These results suggest that holding on-farm workshops and classes has a positive effect on expansion. Workshops and classes can inform visitors about how to use the products offered by the agritourism operation and can be offered to groups of visitors. In addition, the having other agritourism businesses and more travel expenditures positively influence expansion plans. Business operators may view having a cluster of agritourism businesses as advantageous and more likely to attract visitors to also visit their attractions.

As can be seen in Table 5, having enough capital was considered the most problematic by expanders, followed by deciding how to promote, and attracting customers. Working with

family members and maintaining good relationships with neighbors were cited as least problematic among expanders. In comparing the ratings of the potential problems across non-expanders and expanders, the expanders considered some issues as more problematic than non-expanders. These issues include having enough capital, finding and hiring employees, obtaining road signage permission, training and managing employees, scheduling employees, obtaining permits or licenses, understanding labor regulations, and meeting health department requirements. Other issues, scheduling employees, and meeting health department requirements were considered less problematic among expanders. Based on these results, it appears that obtaining capital, finding, training, and managing employees, and complying with regulations are perceived as more problematic to expanders.

Table 6 displays the percentage of firms which used given types of promotional methods across whether the firm was an expander. The most commonly used promotion among the expanders was a business website, followed by a Facebook business page, Pick TN Products¹, brochures, email, then TN Vacation². The least commonly used were Twitter, Agritourismworld.com³, samples, and billboards. For several of the promotion methods, their use was associated with being an expander. These included a business website, Facebook business page, email, TN Vacation, festivals, radio, , TAA⁴, news stories, coupons, coupons, online specials, and TV. Use of state sponsored agricultural promotion programs, Pick TN Products and TN Farm Fresh⁵, were similar across expanders and non-expanders. Notably, however, several of the promotion methods more commonly adopted by expanders involved the internet, for example Facebook business page, TN Vacation, TAA, and online specials.

Conclusions

This study attempted to measure how characteristics of agritourism operations, such as size, type, and location, may influence plans to expand their operations. Firms who planned to expand were positively influenced by attending workshops. Offering on-farm classes and workshops for visitors also appeared to positively influence expansion plans. This could suggest that educational components of agritourism attractions are a growth area. Presence of other agritourism operations in their county appeared to have a positive influence on growth plans. This result could reflect that agritourism operators see the benefit of having several attractions in an area to draw visitors and indeed travel expenditure levels in their county had a positive influence on expansion plans.

The results show that obtaining capital, finding, training, and managing employees, and complying with regulations are perceived as more problematic to expanders. Educational efforts focusing on business growth might focus on ways to mitigate these problems. Expanders tend to be more likely to use new technology in promoting their business, using such methods as a Facebook business page, TN Vacation, TAA, and online specials. Again, educational efforts that focus on promoting a business with intent to grow the business that focus on new technologies may be of particular use to expansion-minded firms.

References

- Bagi, F. and R. Reeder. "Factors Affecting Farmer Participation in Agritourism." *Agricultural and Resource Economics Review* 41, 2(2012):189-199.
- Bernardo, D., L. Valentine, and J. Leatherman. 2004. "Agritourism: If We Build It, Will They Come?" Paper presented at Risk and Profit Conference, Manhattan, Kansas.
<http://www.uvm.edu/tourismresearch/agtour/publications/Kansas> (Accessed June 2013).
- Brown, D. and R. Reeder. *Farm-Based Recreation A Statistical Profile*. United States Department of Agriculture Economic Research Service Report Number 53, December 2007. <http://ageconsearch.umn.edu/bitstream/56445/2/err53.pdf>. (Accessed June 2013).
- Galinato, G., S. Galinato, H. Chouinard, M. Taylor, and P. Wandschneider. *Agritourism in Washington State: An Industry Profile*. Washington State University Extension, EM040E 2011. <http://cru.cahe.wsu.edu/CEPublications/EM040E/EM040E.pdf>. (Accessed June 2013).
- Greene, W. *Econometric Analysis* (7th Edition). New York, NY: Prentice Hall, 2012.
- Hilchey, D. "Leisure Trends Create Opportunities for Farmers." *AgFocus: A Publication of Cornell Cooperative Extension* (November 1993):10.
- McGehee, N.G. , and K. Kim. "Motivation for Agri-tourism Entrepreneurship." *Journal of Travel Research* 43, 2 (2004):161–170.
- Rainey, D., H. Djunaidi, S. McCullough, B. Das. "Factors that Affect Arkansas Farm Operators' and Landowners' Decision to Participate in Agritourism." Selected Paper Southern Agricultural Economics Association Annual Meetings, Orlando, FL, February 6-9, 2010.
- Schilling, B., K. Sullivan, S. Komar, and L. Marxen. *The Economic Contributions of Agritourism in New Jersey*. Rutgers University Cooperative Extension Bulletin, E333,

2007. http://njsustainingfarms.rutgers.edu/Agritourismwp/_pdf/The%20Economic%20Contributions%20of%20Agritourism%20in%20New%20Jersey%20e333.pdf. (Accessed July 2013).
- U.S. Department of Agriculture. Economic Research Service. *Food Environment Atlas*. <http://www.ers.usda.gov/data-products/food-environment-atlas/data-access-and-documentation-downloads.aspx#.Uebty230iiM>. (Accessed July 2013).
- U.S. Department of Agriculture. National Agricultural Statistics Service. *2002 Census of Agriculture. State Level Data: Tennessee*. http://www.agcensus.usda.gov/Publications/2002/Volume_1,_Chapter_1_State_Level/Tennessee/. (Accessed June 2013).
- U.S. Department of Agriculture. National Agricultural Statistics Service. *2007 Census of Agriculture. State Level Data: Tennessee*. http://www.agcensus.usda.gov/Publications/2007/Full_Report/Volume_1,_Chapter_1_State_Level/Tennessee/. (Accessed June 2013).
- U.S. Department of Agriculture. National Agricultural Statistics Service. *Farms, Land in Farms, and Livestock Operations, 2012 Summary*. February 2013. http://www.nass.usda.gov/Publications/Todays_Reports/reports/fnlo0213.pdf. (Accessed July 2013).
- U.S. Department of Commerce, Bureau of Economic Analysis. *Widespread Economic Growth in 2012*. BEA News Release, BEA 13-25, June 2013. http://www.bea.gov/newsreleases/regional/gdp_state/2013/pdf/gsp0613.pdf. (Accessed June 2013).
- U.S. Department of Commerce, Bureau of Economic Analysis. *Widespread Economic Growth Across States in 2011*. News Release BEA 12-22, 2012. http://www.bea.gov/newsreleases/regional/gdp_state/2013/pdf/gsp0612.pdf. (Accessed June 2013).

U.S. Travel Association Research Department prepared for the Tennessee Department of Tourist Development. *The Economic Impact of Travel on Tennessee Counties 2011*. 2012.
<http://www.tnvacation.com/industry/uploads/135/Economic-Impact-of-Travel-on-Tennessee-Counties-2012.pdf>. (Accessed June 2013).

Table 1. Attitudes Regarding Future Expansion Among Agritourism Operators

Expansion Indicators	Strongly Disagree	Disagree	No Opinion	Somewhat Agree	Strongly Agree
	Percent (N=130)				
My goals include attracting more customers	4.62	1.54	3.85	16.92	73.08
I expect my sales to increase	2.31	3.85	11.54	32.31	50.00
I plan to expand the number of products	6.92	6.15	20.77	29.23	36.92
I expect to hire more employees	14.62	12.31	37.69	22.31	13.08

Table 2. Variable Names, Definitions, and Means for Model of Probability of Expansion

Variable Name	Definition	Mean (N=107)
Sales1, Sales2, Sales3, Sales4, Sales5, Sales6, Sales7, Sales8	Agritourism gross sales revenues in 2012, 1 if in sales category, 0 otherwise: 1=Less than \$2,500,2=\$2,500 - \$9,999, 3=\$10,000 - \$24,999, 4=\$25,000 - \$49,999, 5=\$50,000 - \$74,999, 6=\$75,000 - \$99,999, 7=\$100,000 - \$249,999, 8=\$250,000 or greater (omitted)	0.12, 0.14, 0.21, 0.11,0.05, 0.07, 0.12,0.18
YrsBus	Years in current agritourism business	11.22
NoOffInc	1 if have no off-farm income, 0 otherwise	0.46
Retail	1 if have an on-farm retail market that sells farm products, 0 otherwise	0.48
PickYourOwn	1 if have an on-farm retail market that sells farm products, 0 otherwise	0.36
AnimalExhib Events	1 if have animal exhibits or a petting zoo, 0 otherwise	0.24
FallFun	1 if host weddings, birthdays, or other events, 0 otherwise	0.41
Food	1 if have corn maze, hay ride, haunted attraction, or pumpkin patch, 0 otherwise	0.32
Outdoor	1 if have on-farm food service, concessions, café, or restaurant or an on-farm gift shop, 0 otherwise	0.26
Tours	1 if offer outdoor oriented activities (day camps, overnight camping, horseback riding, fishing, or ziplines), 0 otherwise	0.17
FarmWork	1 if offer school or other tours, 0 otherwise	0.48
Workshops	1 if offer workshops or classes, 0 otherwise	0.17
FmrMktPop1000	1 if attended workshop, conference or tour sponsored by the Tennessee Department of Agriculture, Center for Profitable Agriculture and/or Tennessee Farm Fresh Program in the last three (3) years, 0 otherwise	0.66
AgtourPop1000	Farmers' markets per 1000 population in county, 2012	0.02
TravExpPop1000	Number of agritourism businesses from 2007 Census per 1000 population in county	0.13
	Travel expenditures in county per 1000 population, 2011	1.85

Table 3. Estimated Logit Model of Expansion Plans by Tennessee Agritourism Businesses^a

Variable	Estimated Coefficient	Standard Error	Z	
Intercept	-1.285	1.428	-0.90	
Sales1	-1.786	1.254	-1.42	
Sales2	-2.828	1.382	-2.05	**
Sales3	0.278	1.034	0.27	
Sales4	1.043	1.122	0.93	
Sales5	-0.061	1.446	-0.04	
Sales6	-1.136	1.254	-0.91	
Sales7	0.267	0.980	0.27	
NoOffInc	-0.239	0.669	-0.36	
YrsBus	-0.077	0.043	-1.77	*
Retail	-0.612	0.643	-0.95	
PickYourOwn	-0.177	0.675	-0.26	
AnimalExhib	-0.350	0.778	-0.45	
Events	0.481	0.725	0.66	
FallFun	1.230	0.781	1.58	
Food	-1.126	0.786	-1.43	
Outdoor	-0.989	0.866	-1.14	
Tours	0.160	0.740	0.22	
FarmWork	1.997	0.881	2.27	**
Workshops	1.907	0.766	2.49	**
FmrMktPop1000	-62.458	21.297	-2.93	***
AgtourPop1000	5.571	2.658	2.10	**
TravExpPop1000	0.451	0.257	1.76	*
LLR Test 47.76 w 22 df***				
Pseudo R2=0.34				
Percent Correctly Classified= 77.57%				

^aThe asterisks indicate significance at $\alpha=.10$ *, $\alpha=.05$ **, and $\alpha=.01$ ***

Table 4. Estimated Marginal Effects of Variables on Expansion Plans by Tennessee Agritourism Businesses^a

Variable	Marginal Effect	Standard Error	Z	
Sales1	-0.232	0.102	-2.260	**
Sales2	-0.308	0.083	-3.720	***
Sales3	0.055	0.212	0.260	
Sales4	0.230	0.270	0.850	
Sales5	-0.011	0.267	-0.040	
Sales6	-0.164	0.131	-1.250	
Sales7	0.053	0.204	0.260	
NoOffInc	-0.045	0.125	-0.360	
YrsBus	-0.015	0.008	-1.870	*
Retail	-0.115	0.117	-0.980	
PickYourOwn	-0.033	0.125	-0.270	
AnimalExhib	-0.063	0.134	-0.470	
Events	0.093	0.144	0.650	
FallFun	0.254	0.170	1.500	
Food	-0.185	0.113	-1.640	*
Outdoor	-0.157	0.111	-1.410	
Tours	0.030	0.141	0.220	
FarmWork	0.447	0.187	2.390	**
Workshop	0.306	0.104	2.940	***
FmrMktPop1000	-11.857	3.995	-2.970	***
AgtourPop1000	1.058	0.514	2.060	**
TravExpPop1000	0.086	0.054	1.580	

^a The asterisks indicate significance at $\alpha=.10$ *, $\alpha=.05$ **, and $\alpha=.01$ ***

Table 5. Issues Influencing Agritourism Operations Across Expansion Plans

Potential Issues Influencing Agritourism Operations	Mean Opinion Rating Among ^a (N=107)		
	Non-Expanders	Expanders	T Statistic
Having enough capital for infrastructure, operation and marketing	2.13	2.53	-1.72 *
Finding/hiring employees	1.62	2.33	-3.26 ***
Obtaining permission for roadside signage	1.70	2.33	2.35 **
Deciding how to promote the business to target customers	2.12	2.33	-1.02
Attracting customers	2.27	2.21	0.26
Developing advertising and promotion materials	1.92	2.12	-0.97
Training and managing employees	1.38	2.00	-3.88 ***
Staying current with new promotion methods	1.74	1.97	-1.47
Keeping and evaluating records	1.64	1.88	-1.53
Obtaining liability insurance	1.66	1.79	-0.59
Identifying target customers	1.86	1.76	0.56
Scheduling employees	1.27	1.76	-3.42 ***
Obtaining financing	1.45	1.73	-1.44
Obtaining required permits or licenses	1.32	1.70	-2.19 **
Understanding labor regulations	1.32	1.70	-2.60 ***
Maintaining visitor safety	1.43	1.64	-1.44
Facing challenges with local zoning	1.19	1.64	-3.07 ***
Dealing with increased competition	1.70	1.61	0.56
Meeting health department requirements	1.15	1.58	-3.25 *
Scheduling groups for tours or parties	1.32	1.51	-1.34
Providing excellent customer service	1.27	1.42	-1.24
Working with family members	1.17	1.30	-1.23
Maintaining good relationships with neighbors	1.20	1.30	-0.86

^a1=not a problem, 2=somewhat a problem 3=moderate problem 4=serious problem

^bThe asterisks indicate significant difference between the means at $\alpha=.10$ *, $\alpha=.05$ **, and $\alpha=.01$ ***

Table 6. Promotion Methods Used Across Expansion Plans by Tennessee Agritourism Businesses

Promotion Methods	Percent Among ^a			Chi-Square
	All Firms	Non-Expansion Firms	Expansion Firms	
		(N=127)		
Business website	82.68%	79.55%	89.74%	1.96
Facebook business page	60.63%	54.55%	74.31%	4.44**
Pick TN Products	64.57%	65.91%	61.54%	0.23
Brochures	55.91%	53.41%	61.54%	0.72
Email	46.46%	40.91%	58.97%	3.55*
TN Vacation	43.31%	36.36%	58.97%	5.63**
Roadsigns	56.70%	57.95%	53.85%	0.19
Newspaper	42.22%	38.64%	51.28%	1.77
Festivals	37.01%	31.82%	48.72%	3.31*
Commerce	41.73%	39.77%	46.15%	0.50
Radio	25.92%	21.59%	35.90%	2.88*
TAA	23.70%	19.32%	35.90%	4.03**
News	20.47%	13.64%	35.90%	8.23***
Coupons	18.90%	12.50%	33.33%	7.65***
Regional	30.37%	30.68%	33.33%	0.09
TN Farm Fresh	23.62%	20.45%	30.77%	1.59
Online specials	16.53%	12.50%	25.64%	3.38*
TV	12.60%	7.95%	23.08%	5.61**
Billboards	15.75%	13.66%	20.51%	0.96
Samples	14.17%	11.36%	20.51%	1.86
Agritourismworld.com	9.45%	6.82%	15.38%	2.32
Twitter	10.24%	7.95%	15.38%	1.62

^a The asterisks indicate significant degree of association between the variable and expansion at $\alpha=.10$ *, $\alpha=.05$ **, and $\alpha=.01$ ***

ENDNOTES

¹ Pick TN Products is a website directory for directory for farm fresh, pick your own, and local food; agritourism activities and facilities; farmers markets; flowers, trees, and other in-state agricultural products and is sponsored by the Tennessee Department of Agriculture Market Development Division

² TN Vacation is an online directory for visitors and is sponsored by the Tennessee Department of Tourism Development.

³ AgriTourismWorld.com is a free website to advertise agritourism businesses and is sponsored by Group Travel Family.

⁴ TAA is the Tennessee Agritourism Association and is sponsored by the Center for Profitable Agriculture, Tennessee Department of Agriculture, and Tennessee Farm Bureau, and the Tennessee State Fair.

⁵ Tennessee Farm Fresh is a specialized program in cooperation with the Tennessee Farm Bureau and the Tennessee Department of Agriculture. This program is in place to assist producers market their Farm Fresh products.