

Research Note

U-Pick Farms: Harvesting More than Pumpkins

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Abstract

Recreational experiences offer many benefits to individuals and society, including improved mental and physical health. Yet, limited evidence is available on the potential benefits of recreation as a path to stimulate desired behavioral outcomes. The purpose of this work is to discuss preliminary findings of whether participating in agritourism influences intended local foods purchasing behavior. To achieve this purpose, we surveyed 173 recreationists before and after visiting a farm offering recreational activities (agritourism) in 2018. Results of repeated measures multivariate analysis of variance indicate that agritourism influenced participants' attitudes and intended behavior toward local foods although subjective norms and perceived behavioral control remained unchanged. However, the regression analysis indicated that changes in subjective norms and perceived behavioral control predicted changes in intended behavior. We conclude that agritourism can encourage consumers' purchasing intentions of local foods, supporting an underexplored additional benefit of recreational experiences as a path to promote desirable behaviors. Further, agritourism experiences may be most effective at encouraging local foods purchasing when they show that buying local foods is socially supported and relatively easy.

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Introduction

Participating in recreation offers multiple benefits to individuals, including improved physical and mental health (Fenton et al., 2016; Twohig-Bennett & Jones, 2018), bonding with family and friends (Fenton et al., 2016; Henderson et al., 2012), and place attachment (Kil et al., 2012). These benefits have been studied in a variety of settings from parks to wildlands (Henderson-Wilson et al., 2017; Thomsen & Powell, 2018) and across different populations (Bocarro et al., 2008; Henderson, 2011). Altogether, these studies have helped to inform marketing strategies, public policies, and management of recreational spaces (Brown, 2016). More recently, there is a call to investigate the role that recreational experiences may have in educating and raising awareness among members of the public about major societal challenges (Pawlikowska-Piechotka & Sawicka, 2013).

Research on how recreational activities influence participants' behaviors is progressing. Thus far, evidence indicates that nature-based recreation reinforces participants' environmental attitudes and values, and can increase their engagement in environmentally responsible behaviors (Lee & Jan, 2015). Likewise, wildlife tourism creates transformative experiences that increase participants' concern for wildlife and their habitat, resulting in long-term adoption of environmentally sustainable practices (Ballantyne et al., 2011). Recreational experiences' influence on future behavior has also been studied in the context of visitation intentions (Kil et al., 2012), exercise and nutrition behavioral changes (Sanders et al., 2014), and promoting positive behavior in "at-risk/high risk" youth (Hopper & Iwasaki, 2017).

While these studies indicate that recreation can alter participants' behaviors, there is a need for understanding how these changed behaviors can benefit individual and societal well-being (Lee & Jan, 2015). Specifically, more research is needed to identify how a wide range of recreational spaces and activities can encourage positive participant behavior. The spaces and activities associated with agritourism (i.e., recreation in working agricultural settings) provide an opportunity to examine the impact that recreation has on participants' consumer behaviors. Due to increasing urbanization, agritourism has increasingly become the main access of urbanites to farm recreation through a variety of activities, such as petting farm animals, wagon rides, as well as the medium for connecting with food systems. Like many other recreational experiences, the impact of agritourism experiences on behavioral outcomes has not been fully examined (Kim et al., 2019). Thus, we utilize the theory of planned behavior (TPB; Ajzen, 1991) to contribute to this research gap by measuring the impact of agritourism experiences on participants' future local foods purchasing.

The Benefits of Agritourism

Agritourism refers to visiting a working farm or agricultural setting for education or recreation (Gil Arroyo et al., 2013). Allowing visitors to harvest their own product, "U-pick" is the most common agritourism activity in the United States (Barbieri et al., 2008) because it increases direct farm sales with low investments for the producer (Tew

& Barbieri, 2012). Although many economic (e.g., increased profits, family employment) and non-economic (e.g., women's empowerment, heritage preservation) benefits of agritourism have been determined at the farm and community levels (Barbieri, 2013; McGehee & Kim, 2004), the influence of agritourism experiences on future behavior is underexplored (Barbieri et al., 2019).

The impact of agritourism on behavioral outcomes has been researched particularly in the context of recreationists' satisfaction and its influence on intentions to revisit (Choo & Petrick, 2014). Agritourism has also been found to influence consumers' preferences for specialty meats (Kline et al., 2016) and grocery shopping (Kim et al., 2019). Yet, given that these studies did not assess consumers' purchase intention prior to engaging in agritourism activities, it is difficult to attribute the preferences solely to the agritourism experience. Agritourism has the potential to educate the public about agricultural products and improve ties with local farmers (McGehee & Kim, 2004) which may also stimulate local foods purchasing. Thus, there are not sufficient empirical studies to conclude on the extent to which agritourism experiences influence future participants' purchases (Kim et al., 2019). Demographic characteristics, attitudes, and access are among the main determinants of local food consumption (Ajzen, 2015; Feldmann & Hamm, 2015; McGuirt et al., 2014). Determining whether agritourism influences future behavior will contribute to the knowledge about the factors that may influence local food purchasing, and it is important to help farmers market their products and inform supporting initiatives from public officials and recreation managers.

We conducted a study to fill the aforementioned research gaps by measuring the impact of agritourism experiences on consumer behavior toward local foods. Increasing local foods consumption is important to foster a connection between consumers and producers, thus promoting local food systems sustainability (O'Hara & Pirog, 2013). Informed by previous studies (Kim et al., 2019; Kline et al., 2016), we specifically investigated the influence of agritourism on participants' intention to purchase local foods. We used TPB as a theoretical framework given its suitability to bring together the attitudes, perceived behavioral control, and subjective norms that may influence behavioral intentions (Ajzen, 1991). Within the TPB framework, attitudes are conceptualized as an evaluation of the behavior captured as positive or negative attribute dimensions, perceived behavioral control as the beliefs about the ease or difficulty of performing a given behavior, and subjective norms as the perceived social pressure from family or friends to perform a behavior.

Methods

We surveyed on-site participants before and after engaging in an agritourism experience. Informed by the literature related to TPB (Table 1), we developed a survey instrument to query participants' attitudes toward buying local foods and toward local foods attributes, subjective norms, and perceived behavioral control on five-point Likert scales (1 = strongly disagree, 5 = strongly agree). Participants' likelihood to purchase local foods was measured on a five-point Likert scale (1 = very unlikely, 5 = very likely). All the study constructs consisted of multiple items. Participants also self-reported sociodemographic characteristics of age, gender, race, education, income, and political leanings.

Table 1*Examples of the Survey Items Per Construct*

TPB - Constructs and Items	Source
Attitudes toward buying local food (4 items) E.g., Local foods help preserve agricultural landscapes	Onozaka, Nurse, and McFadden (2010)
Attitudes toward local foods attributes (3 items) E.g., Local foods are easy to find where I shop	Denver and Jensen (2014), Onozaka et al. (2010)
Subjective norms (4 items) E.g., People who are important to me would approve of me buying local foods	Hempel and Hamm (2016), Shin, Im, Jung, and Severt (2018)
Perceived behavioral control (7 items) E.g., I have money to afford local foods	Hempel and Hamm (2016); Shin et al. (2018)
Intended local food purchasing (6 items) E.g., Shop at a farmers' market	Hempel and Hamm (2016)
Likelihood to increase monthly budget to buy local foods (3 items) E.g., Increase my monthly budget by five percent to buy local food	Hempel and Hamm (2016); Shin et al. (2018)

We selected three agritourism operations with comparable recreational offerings, which included hands-on agricultural activities (e.g., U-pick produce), a playground for children, and an on-site market, located across the Piedmont, East, and West regions of North Carolina (U.S.). We surveyed participants during October 2018, when the main agritourism offering was U-pick pumpkins. Trained volunteers intercepted participants at the farms' entrance using systematic sampling and asked to complete a survey (pre-treatment). At the end of their visit, respondents were asked to complete a survey (post-treatment) containing the same TPB-related questions. For data analysis, we employed Cronbach's alpha ($\alpha > 0.6$) to measure the internal consistency and reliability of the scales (Nunnally, 1967). We conducted repeated measures multivariate analysis of variance (Rep-MANOVA) to measure the influence of agritourism on the TPB constructs and intended local foods purchasing ($p < 0.05$).

To calculate changes in each variable, we summed the individual scale items within each construct to generate an index and we subtracted the pre-scores from the post-scores. We then ran pre/post difference ordinary least squares linear regression to estimate the effect of the change in attitudes, subjective norms, and perceived behavioral control on changes in intentions to purchase local foods ($p < 0.05$). We included the pretest score in the regression to control for ceiling effect (Theobald & Freeman, 2014) and controlled for demographic variables. We transformed demographic data into dummy variables: gender (male = 1, female = 0), race (non-white = 1, otherwise = 0), education (at least college degree = 1, otherwise = 0), and household income (\$75,000 or above = 1, otherwise = 0).

Results

A total of 241 participants completed the pre-surveys and 182 the post-surveys. After pairing the pre and post responses, 173 usable answers were obtained resulting in a 78% completion rate. Respondents averaged 40 years old; they were predominantly

female (71.5%) and white (88.4%). They were also highly educated (63.6% held at least a college degree) and 61.3% reported a \$75,000 or higher pre-tax annual household income. In terms of political leanings, 40.7% of respondents identified as conservative or moderately conservative, and 16.3% as liberal or moderately liberal; 28.5% reported having “other” political affiliation. The scales measuring all TPB constructs and intended local foods purchasing demonstrated acceptable reliability ($\alpha \geq 0.66$).

Respondents presented positive attitudes toward local foods before engaging in an agritourism experience (Table 2). Rep-MANOVA analysis indicated that agritourism experiences have a positive influence on attitudes toward buying local foods ($M_{pre} = 4.55$; $M_{post} = 4.60$; $p = 0.002$) and attitudes toward local foods attributes ($M_{pre} = 4.30$; $M_{post} = 4.43$; $p < 0.001$). Subjective norms and perceived behavioral control did not present statistically significant differences, but the observed power is too low to accurately estimate the impact of agritourism experiences on these two constructs. Since there are six independent Rep-MANOVA analyses, each construct presents a different observed power. An agritourism experience also positively influenced intentions to purchase local foods ($M_{pre} = 4.24$; $M_{post} = 4.36$; $p = 0.017$) as well as likelihood to increase monthly budget to buy local foods ($M_{pre} = 3.53$; $M_{post} = 3.65$; $p = 0.001$).¹

The linear regression on the pre-post differences shows that changes in subjective norms and perceived behavioral control resulting from an agritourism experience significantly impact intentions to purchase local food ($F(11, 130) = 2.91$, $R^2 = 0.198$, $p = 0.02$; Table 3). While controlling for demographic variables and pretest score, we found that changes in subjective norms ($\beta = 0.290$, $p < 0.05$) and perceived behavioral control ($\beta = 0.197$, $p < 0.05$) were positively related to local foods consumer behavior. The changes in attitudes had no significant relationship with intentions to purchase local food.

Discussion

Respondents showing positive attitudes toward local foods before engaging in an agritourism experience is not surprising as U-pick activities are a form of direct local foods purchasing (Tew & Barbieri, 2012). Despite already positive attitudes toward local food, Rep-MANOVA indicated that an agritourism experience still has a positive influence on attitudes toward buying local foods and attitudes toward local foods attributes. This is congruent with research in other recreation contexts, in which nature-based tourism can positively influence attitudes toward related behaviors, such as pro-environmental behavioral intentions (Powell et al., 2009). Another thing to consider is that although reliability scores obtained were acceptable according to Nunnally's (1967) 0.6 threshold, the construct “attitudes toward local food attributes” falls short following Cortina (1993) more stringent thresholds. This suggests that the scale measuring this construct may require further development to improve its reliability.

Though the agritourism experience appeared to most directly boost attitudes toward purchasing local foods, agritourism operators wishing to increase intentions to buy local foods may be best served by focusing on activities designed to convey social acceptance of local foods and ease of purchasing. That attitudes were not related to behavioral intentions in our model was somewhat surprising, as attitudes are strong predictors of intentions (Lee & Jan, 2015) particularly in the context of diverse food consumption decisions (Ajzen, 2015). Further, subjective norms and behavioral con-

Table 2

Pre-Post Agritourism Experience Comparison of the TPB Constructs and Purchasing Local Foods (Rep-MANOVA)

TPB Constructs	n	Composite Mean		F	p-value	Observed Power
		Pre	Post			
Attitudes toward buying local foods ¹	167	4.55	4.60	9.606	0.002	0.936
Attitudes toward local foods attributes ²	168	4.30	4.43	9.845	< 0.001	0.998
Subjective norms ³	171	4.05	4.04	0.739	0.567	0.235
Perceived behavioral control ⁴	164	4.16	4.21	1.052	0.398	0.443
Intentions to purchase local foods ⁵	169	4.05	4.14	2.661	0.017	0.959
Likelihood to increase monthly budget to buy local foods ⁶	161	3.53	3.65	6.145	0.001	0.853

¹ Four items measured on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree); $\alpha = 0.89$

² Three items measured on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree); $\alpha = 0.66$

³ Four items measured on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree); $\alpha = 0.86$

⁴ Seven items measured on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree); $\alpha = 0.84$

⁵ Six items measured on a 5-point Likert scale (1 = very unlikely, 5 = very likely); $\alpha = 0.83$

⁶ Three items measured on a 5-point Likert scale (1 = very unlikely, 5 = very likely); $\alpha = 0.77$

Table 3

Effect of the Change in the TPB Constructs as a Result of an Agritourism Experience on Intentions to Purchase Local Foods (Multiple Linear Regression)

	Dependent Variable: Intentions to Purchase Local Foods ¹				
	Unstandardized Beta	Standard Error	Standardized Beta	t	p-value
<i>Independent Variables</i>					
Attitudes toward buying local foods ²	0.040	0.090	0.036	0.446	0.657
Attitudes toward local food attributes ²	-0.194	0.139	-0.120	-1.397	0.165
Subjective norms ²	0.290	0.121	0.202	2.390	0.018
Perceived behavioral control ²	0.197	0.066	0.249	2.975	0.003
Gender (male, otherwise)	-0.581	0.378	-0.122	-1.535	0.127
Age	0.001	0.026	0.003	0.032	0.975
Race (Non-white, otherwise)	-0.309	0.654	-0.038	-0.473	0.637
Education (College education, otherwise)	-0.024	0.414	-0.005	-0.057	0.955
Household income (\geq \$75,000, otherwise)	0.248	0.375	0.057	0.660	0.510
Consumer behavior (pre-test score)	-0.190	0.052	-0.290	-3.628	0.000
<i>Constant</i>	5.137	1.603		3.205	0.002
<i>Model Statistics</i>					
R	0.445				
R ²	0.198				
p-value	0.002				

¹ Composite score: Index generated from summing individual intentions to purchase local food scale items

² Pre-post treatments difference

trol seem to not be affected by the agritourism experience. This may be explained by the high proportion of respondents (34.5%) who experienced negative changes in subjective norms (i.e., their pre scores were higher than post scores). Accordingly, though the agritourism experience did not seem to consistently boost subjective norms or behavioral control for the entire sample when positive changes in these two constructs occurred, they seemed to be the primary drivers of increased intentions to purchase local food. We suggest future research utilize a larger sample to fully assess whether agritourism impacts these constructs in a way we were not able to detect with our sample size or study designs that enable to examine what attributes of agritourism experiences may impact these constructs specifically. As agritourism operators are motivated to promote positive outcomes for society by educating visitors about agriculture (McGehee et al., 2007; Tew & Barbieri, 2012), determining what factors lead to intended behavior will allow insight into whether and how agritourism experiences should focus on fostering subjective norms (e.g., encouraging peer sharing throughout the experience) and increasing behavioral control (e.g., communicating the ease of local foods purchasing).

Although TPB facilitated the understanding of how participating in agritourism influences consumer behavior, the low variance explained (20%) suggests that other constructs in the analysis might be required. For example, Shin et al. (2018) extended TPB's application with norm activation theory (Schwartz, 1977) which proved useful in the context of influencing pro-environmental behavior. As supporting the local economy and local farmers is often a motivation for local foods consumption (Onozaka et al., 2010), extending TPB to include personal norms (i.e., feelings of moral obligation to perform a behavior) may provide a more holistic understanding of agritourism's impact on local foods purchasing behavior.

We acknowledge a few limitations of this study. Although we used systematic sampling to approach respondents, the data do not allow testing of potential non-response bias, and the methods (i.e., in-person surveys) may have introduced social desirability bias. Further, as different seasons may provide different experiences, studies featuring other products or during different agritourism seasons may uncover nuances of the impact of agritourism on intended local foods purchasing behavior. Although TPB has received criticism for not theorizing about how cognitions change (Snihotta et al., 2014), this study provides initial evidence on how changes in cognitions might influence intentions. Finally, this study measured intentions rather than actual behavior, as people may act on their intentions only when they have control over the behavior (Ajzen, 2015), the gap between intentions and behavior should be acknowledged. As intentions are considered the immediate antecedent of behavior (Conner & Armitage, 1998) and temporally stable (Ajzen, 1991), future studies could examine behavior change through a follow-up survey. In summary, this research opens opportunities for more in-depth exploration of how recreational experiences influence desirable behaviors.

Conclusion

The recreational spaces and activities agritourism offer can be used to encourage local food consumption, which confirms the claim that recreational experiences provide further benefits to society beyond personal gains (Pawlikowska-Piechotka & Sawicka, 2013). In particular, results indicate that agritourism is suitable for fostering

positive attitudes about products (e.g., local foods), a behavior that may have societal benefits (Barbieri et al., 2018). Future research should also explore ways in which agritourism may boost subjective norms and behavioral control, as these were particularly predictive of changes in behavioral intentions. From a practical perspective, farmers may regard their agritourism operation beyond an additional source of income but also as a means to promote their products and leverage support for local food. Researchers can support farmers by continuing to understand the mechanisms of how tourism can translate into broader benefits for farmers and society as well as investigating strategies to reinforce (e.g., advertising) or facilitate (e.g., revisit discount) participants' attitudes and behaviors (Ballantyne et al., 2011). This work also opens the door to exploring the impact of recreational experiences on other types of participants' behaviors, such as pro-environmental efforts. In this way, we can continue to understand how agritourism and other similar recreational activities have the capacity to harvest positive social change.

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