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Introducing a Framework to Assess Agritourism's Impact on Agricultural Literacy and Consumer Behavior towards Local Foods

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**TTRA 2018 Extended Abstract:
Introducing a Framework to Assess Agritourism’s Impact on Agricultural Literacy and
Consumer Behavior towards Local Foods**

INTRODUCTION

Agritourism – which entails visiting a working farm for recreational or educational purposes (Gil Arroyo et al., 2013) – contributes to rural livelihoods through diversifying family farms, providing farmers with a supplementary source of income, enhancing quality of life, and reducing risk and uncertainty to ever-changing agricultural markets (Barbieri, 2010; Blay-Palmer et. al, 2016). Agritourism may also generate educational benefits, as agritourism operators are strongly motivated to educate visitors about agricultural products and farming (McGehee & Kim, 2004; Tew & Barbieri, 2012). Yet, to our knowledge, the educational impact of agritourism on visitors has not been measured. The pedagogical potential of agritourism is particularly important considering the environmental and economic vulnerability of food systems, where the adoption and preservation of sustainable farming practices depend on agriculturally literate citizens and policymakers (Powell et al., 2008).

Agricultural literacy encompasses an understanding of the historical, economic, social, and environmental significance of the food and fiber system (National Research Council, 1988). Knowledge of these systems can influence the purchasing behavior of consumers, particularly in regards to preference for local products. However, there is mounting evidence indicating a lack of agricultural literacy among U.S. citizens (Hess & Trexler, 2011; Kovar & Ball, 2013; National Research Council, 1988) and growing disconnection between agricultural producers and consumers. To address these challenges, the priorities of the National Research Agenda of the American Association for Agricultural Education include: (1) Increasing the public understanding of agriculture and natural resources, (2) creating engaged learning opportunities in all environments, and (3) establishing efficient and effective agricultural education programs (Roberts et al., 2016). There has been limited research focusing on how agritourism can accomplish these priorities.

Therefore, the purpose of this work is to develop a theoretical and methodological framework that will help determine the role of agritourism experiences in influencing agricultural literacy and local food purchasing behavior among consumers. To achieve this purpose, this work will account for the current design of most agritourism experiences, which seek to educate children (e.g., through school-based field trips and observation of agricultural processes) and stimulate direct sales of farm products (e.g., u-pick, on-site markets) (Tew & Barbieri, 2012). The dual nature of these experiences provides the opportunity to examine agritourism’s impact on both children *and* their parents.

LITERATURE REVIEW

Benefits of Agritourism

Agritourism operations generate a suite of benefits for farmers, visitors, and society. These include environmental benefits through wildlife habitat improvement and water conservation; socio-cultural benefits through preservation of rural heritage and reconnection with agrarian culture and local food products; and economic benefits such as increasing revenue, profits, and employment

(Barbieri, 2013). Prior research demonstrates that agritourism operators benefit from increased direct sales, due to on-farm recreational purchasing, such as u-pick activities (Tew & Barbieri, 2012). However, other benefits of agritourism have not been fully examined. This work proposes two additional benefits of on-farm visit. First, visits may increase consumers' agricultural literacy which in turn may directly influence their proclivity for purchasing locally produced agricultural products (Figure 1). Secondly, as many agritourism activities are directed to children, agritourism may build agricultural literacy among future generations (affecting long-term purchasing behaviors) as well as encourage parents to purchase local products in the short term through conversations with their children.

While both of these channels for additional benefits of agritourism require further exploration, this work focuses on the relationship between on-farm visits, education, and change in consumer behavior. This is particularly valuable as the impact of farm visits on consumers' attitudes, knowledge, and behavior is unexplored. The following literature review will outline the connections between agritourism, agricultural literacy, and consumer behavior, and will highlight the potential for intergenerational learning to amplify these relationships.

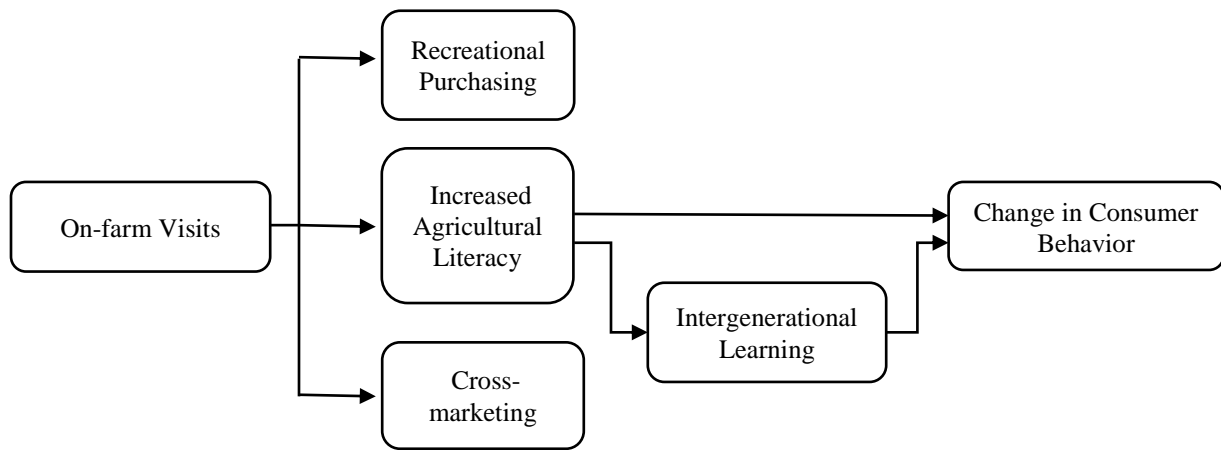


Figure 1. A framework to assess agritourism's impact on agricultural literacy and consumer behavior

Educational Potential of Agritourism

Tourism experiences are inherently educational but under-studied as a transformative process to create critical consciousness and reflection (Mair & Sumner, 2017). Such reflection is particularly important in the context of food systems as their sustainability depends on agricultural literate consumers and policymakers who see the connections between their decisions and the broader agro-ecological systems (Bui et al., 2016). Existing research has found that educational tourism experiences can facilitate learning opportunities for visitors, which are augmented by pleasurable recreational pursuits (Pitman et al., 2010). This evidence suggests that agritourism may be an appropriate milieu for facilitating learning experiences that increase agricultural literacy.

The need to educate the public on agricultural issues and bring consumers closer to their producers has been addressed through programs such as Farming and Countryside Education in the UK and Educational and Dairy Farms in Japan. However, the impact of these initiatives on agricultural literacy has not been measured. This is also challenging because agricultural literacy has evolved

from being concerned with mere knowledge transmission in the classroom to fostering opportunities to learn outside of the classroom through first-hand agricultural experiences and experiential learning (Damerell et al., Howe, & Milner-Gulland, 2013; Meischen & Trexler, 2003; Rumble et al., 2016; Specht et al., 2014).

Experiential learning theory (Kolb, 1984) follows constructivist approaches that connect the learner's pre-existing knowledge with new experiences (Baker et al., 2012). This theory suggests that authentic agricultural experiences, such as those found in agritourism operations, can rectify student and educators' stereotypes and misconceptions of agricultural systems (Vallera & Bodzin, 2016). In the environmental education field, experiential learning boosts environmental literacy, which includes environmental knowledge, attitudes, critical thinking skills, and behavior (Stevenson et al., 2013). Translated to an agricultural context, experiential learning (i.e., agritourism) may be vital to help increase consumer demand for local agricultural products.

Learning outcomes that extend beyond knowledge acquisition to include critical thinking skills and affective measures (e.g., attitudes) are needed to address complex issues such as support for local food systems (Vallera & Bodzin, 2016). Hence, agricultural literacy has evolved from traditional views of knowledge transfer about food and fiber systems to incorporate psychosocial variables, such as beliefs and attitudes, improving value-based judgment, and conversational skills (Powell et al., 2008). Development of both these cognitive and affective learning outcomes is necessary to instigate support for sustainable agriculture and food systems (Kovar & Ball, 2013).

Exposing youth and adults to agricultural systems can enhance their understanding of agricultural practices and introduce them to the importance of responsible consumption (Vallera & Bodzin, 2016). Although targeting young audiences can potentially exclude older audiences capable of impacting policy decisions and consumer trends (Kovar & Ball, 2013), children can pass this information on to their parents, influencing household behaviors (Damerell et al., 2013). Moreover, parents' knowledge may benefit from children engaging in interactive activities such as agritourism, as they are more likely to discuss exciting experiences with the parents in contrast with classroom activities, highlighting yet again the potential contribution of agritourism to agricultural literacy at large.

Intergenerational Learning

The interest in intergenerational learning has increased in the last decades as a path to magnify education efforts specifically in environmental education (Ballantyne et al., 2001). Intergenerational learning describes the exchange of knowledge between two or more generations (Istead & Shapiro, 2014). Due in part to intergenerational knowledge transfer, child-focused interventions have the potential to affect household behavior among both children and parents (Boudet et al., 2016; Calvert, 2013). Because agritourism experiences are frequently designed to appeal to children, but the purchasing of locally grown products is a decision made by parents, it is important to investigate how agritourism catered to children may influence parents' behavior related to purchasing of local food.

Despite the conventional perception that familial learning is unidirectional –parents educating children– growing evidence indicates that children's attitudes and behaviors also influence those of their parents (Damerell et al., 2013; Knafo & Galansky, 2008). Such influence is more effective when children demonstrate knowledge about a purchase than when they are merely asking for

something (Thomson et al., 2007). It is also pertinent to investigate children's influence on parents regarding local foods because environmental education research indicates that exploring a local issue and their potential solutions at the household or community levels have a greater impact in parents' knowledge (Ballantyne et al., 1998; Istead & Shapiro, 2014).

The impact of children on household consumption of food has been mixed, showing little or moderate influence in food purchasing decisions (Flurry & Veeck, 2009; Othman et al., 2013). Thus, it is important to further uncover dynamics of consumer behavior and purchasing decision making within families (Flurry & Veeck, 2009). At the same time, insight into food-related communication between parents and children may benefit programs concerned with promoting healthier food (Bech-Larsen & Jensen, 2011). More specifically, the "trickle up" effect of attitudes and behaviors from children to parents has not yet been investigated in the context of agritourism.

The Role of Agritourism in Influencing Consumer Behavior

Sustainable food systems depend on empowered and educated consumers who manifest their preferences through consumption patterns and voting power (Roberts et al., 2016; Sage, 2014). Reconnecting producers and consumers through relocalization of production and consumption is sustainable in economic, ecological and social terms owing to shorter distances, fewer intermediaries, more direct links between producers and consumers, and less industrial processing (Allen, 2010; Boys & Hughes, 2013; Pole & Gray, 2013). The potential of agritourism to motivate consumers to purchase local food is unexplored, limited to consumer loyalty for sustainable meats (Kline et al., 2016).

Consumer behavior is one of the most researched areas in tourism aiming to understand decision-making processes and the role of values, motivations, attitudes, self-concept and personality, expectations, perceptions, demographics, satisfaction, trust, and loyalty in consumer behavior (Cohen et al., 2013). An examination of consumer behavior research in both local food consumption and tourism studies denotes common ground in three aspects. First, both bodies of literature support the notion of the social dimensions of consumer behavior which searches for satisfaction not only of utilitarian needs but also psycho-social needs (Cassia et al., 2012; Chen & Scott, 2014; Choo & Petrick, 2014; Feagan & Morris, 2009). Thus, providing benefits to the community is important to both local food consumers and tourists. Hence, constructing a "fuller image" of consumers and their relationship with local food is necessary to contribute to both tourism and local food consumption body of knowledge (Carroll & Fahy, 2015 p. 574).

Second, there is the notion that past experiences influence satisfaction which in turn influences future behavior. In the specific case of agritourism behavior, Choo and Petrick (2014) found that different types of social interaction affect tourists' satisfaction and revisit intention, given that customers develop enduring positive relationships with service providers. Stone et al., (2017) found that food/drink experiences influence tourists' future behavior because tourists express a desire to revisit the destination as a result of favorable food experiences. Hence, intention to revisit, or intention to purchase local food may be mediated by farm-visit satisfaction.

Third, there is growing evidence of the role that local food consumption plays in tourism experiences as a source of authenticity (Sims, 2009) which is also a motivation for local food consumers (Hasselbach & Roosen, 2015). Local food is seen as a connection with place and territory (Cassia et al., 2012) and visitors experience culture through local food (Sengel et al.,

2015). In brief, most of the constructs in consumer behavior include a component of identification with the local context across several countries and cultures (Cassia et al., 2012; Chen & Scott, 2014; Feagan & Morris, 2009). Therefore, an agritourism experience might influence consumer behavior towards local food by highlighting its contribution to the community, providing a satisfactory and memorable experience for children and parents, and stressing connections of food with culture and territory.

To explore the potential impact of agritourism on consumer behavior, several approaches addressing the factors that limit or stimulate consumers' interest in local foods were explored. The Theory of Planned Behavior (Ajzen, 1991) has been one of the most influential theories in the field of consumer behavior in the tourism literature building on three main constructs: Attitude towards the behavior, subjective norms, which takes into account aspects of the surroundings of the consumers; and perceived behavioral control. Theory of Planned Behavior accounts for the influence of family and friends on behavior, emphasizing on the embeddedness of individuals in a social context. Nevertheless, in the specific case of local food consumption, knowledge and context considerably affect consumer behavior. Therefore, a more holistic theoretical framework to consumer behavior is needed.

The Alphabet Theory (Zepeda & Deal, 2009) is a framework for interactions between psychosocial variables and context found to be essential in local food consumption (Feldmann & Hamm, 2015). Departing from the Value-Belief-Norm (Stern, 2000) and Attitude, Behavior, and Context (Guagnano, Stern, & Dietz, 1995) theories, the Alphabet Theory has the potential of integrating several aspects that have been found to be useful influential in the purchasing decision of local foods it also accounts for consumers' demographics, knowledge, information seeking and habits (Zepeda & Deal, 2009). As such, this approach will be used to guide the analysis of agritourism's impact on consumer behavior. To our knowledge, there has been no attempt to operationalize this framework and build an empirical model to explain the impact of an agritourism experience in consumer behavior towards local food.

METHODOLOGY

This section explains the methodology that will be employed to assess the influence of agritourism experiences on children's agricultural literacy, and local food purchasing behavior on adults, as well as the "trickle up" effect of agricultural literacy from children to parents. A greater understanding of these relationships has the potential to maximize the impact of agritourism experiences on agritourism operators, consumers, and other members of local food systems.

To achieve the purpose of this project a quasi-experimental design will be employed to investigate the educational and market impacts of agritourism. The study will focus on two interconnected objectives measuring: (1) changes in agricultural literacy resulting from agritourism among upper elementary students, and (2) purchase intention of local agricultural products among their parents. This research design will also help to identify other variables (e.g., demographics) that may influence changes in agricultural literacy and purchasing behavior of local foods across all three agritourism contexts.

These objectives will be measured through a pre-post quasi-experimental design to contrast those impacts across spontaneous farm visits (unstructured agritourism), stand-alone school farm visits (semi-structured agritourism), and farm visits combined with existing curriculum (structured

agritourism). The data collection will occur in two stages. The first stage will use systematic sampling to collect data from visitors participating in spontaneous farm visits, via on-site data collection. In the second stage of data collection schools across five regions in North Carolina will be recruited and randomly assigned to semi-structured, structured, or control group treatments.

Instrument Development

Two survey instruments will be designed for children and parents to capture: (1) the gain of agricultural literacy resulting from agritourism among children and (2) the changes of purchasing intentions for local food in parents. Both instruments will rely on validated scales available in the literature adapted to reflect current knowledge in the field. This adaptation is necessary to capture all aspects of agricultural literacy beyond knowledge, such as attitudes, critical thinking skills, and behaviors (Powel et al., 2008), as well as the main aspects that influence consumer behavior. The following constructs have been identified in the literature to support both the contribution of agritourism to education and consumer behavior, thus they will be included in the survey instruments.

1. **Demographics** affect educational outcomes (Stevenson et al., 2013) and are strong determinants of consumer behavior (Govindasamy & Kelley, 2014; Shi & Hodges, 2016). Thus, data on gender, ethnicity, household income, age, and education level will be collected.
2. **Context** is perceived as an enabler or a barrier to local foods consumption (McGuirt et al., 2014) because place shapes values, personal experiences, and social networks (Carroll & Fahy, 2015). Context influences behavior when perceived barriers create dissonance with desired behaviors as individuals tend to modify their beliefs and attitudes to reduce dissonance (Decrop & Snelders, 2004). The instrument will capture context measuring perceived accessibility to local food purchasing.
3. **Attitudes**, the “enduring positive or negative feeling” (Kollmuss & Agyeman, 2002, p. 252) are most commonly defined as a summary evaluation captured in attribute dimensions as good or bad (Ajzen, 2001). Attitudes will be queried as positive or negative evaluations towards agricultural issues and local food attributes.
4. **Knowledge** is the process of learning, remembering, and relating concepts, principles, and information (Vallera & Bodzin, 2016). As consumers’ previous knowledge influences their evaluation processes, mediating final judgments about products (Sujan, 1985), changes in their knowledge influence consumer behavior (Parket et al., 1994). Knowledge transfer from children to parent and the potential trickle-up effect of increased agricultural literacy through agritourism is uncharted. Knowledge will be measured through respondents’ basic understanding of agricultural systems.
5. **Cognitive skills**, the application of knowledge in new contexts to reason and problem-solving issues (Vallera & Bodzin, 2016), provide a measure of critical thinking skills and ability to engage with agricultural issues conversationally. People are motivated to invest cognitive effort in a decision-making process when they are highly involved, for example, because an important personal need is not satisfied (Dervin, 1976). Thus, the survey will collect data on the respondents’ ability to assess the impact of their choices.
6. **Behavior** can measure self-reported actions (Stevenson, Carrier, & Peterson, 2014) carried out to support sustainable agricultural practices or a local market. Thus, the survey will include indicators of willingness to pay (through an approximation of spending threshold) and purchasing intention of local foods.

CONCLUSION

This research will contribute to the strengthening of local food systems by establishing the educational and marketing role of agritourism. For agricultural educators and producers, this research may unearth a strategy to better inform the U.S. public about its food and fiber systems through formal education programs and informal settings. By integrating education and tourism to strengthen local food systems, this research builds towards the sustainability concerns of the World Tourism Organization (2013) studying synergies between sectors to educate the public about agriculture. Furthermore, by examining the potential of agritourism directed at children and the trickle-up effect to modify parental knowledge and consumer behavior towards local foods, this project may support evidence indicating that decisions about children education or adults do not necessarily need to be mutually exclusive.

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