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Perceived Benefits of Agricultural Lands Offering Agritourism

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ABSTRACT

This study investigated residents' perceived benefits of two types of agricultural lands (farms, cultivated forests) offering agritourism. Specifically, this study compared perceived socio-cultural, environmental, and economic services both types of lands produce and identified socio-economic, lifestyle behavioral, and past visit indicators associated with those perceptions. A survey was mailed to a random sample of 5000 households in Missouri (US), obtaining 969 responses. Respondents perceived that farms and forests produce several socio-cultural, environmental, and economic services to society, with few statistical differences between both. Socio-economic and lifestyle indicators were associated in different ways to residents' perceptions of the services farms and forests provide. Socializing with friends and visiting those settings during childhood had a positive influence on all types of services derived from both settings. Policy, management, and marketing implications are discussed as to incorporate the benefits agricultural lands provide to society in the planning and development of agritourism.

KEYWORDS

Agritourism; benefits; cultivated forest; farm; agricultural setting; sustainability

1. Introduction

Being the third-largest country in the world in terms of land with an average population density of only 87 people per square mile (US Census, 2010), it is easy to infer that the United States of America (US) is rich in open space (Walls, Darley, & Siikamäki, 2009). A significant proportion of that land is dedicated to agriculture, either for forest use (30%), grassland pasture and range (27%), or cropland (18%), according to the most recent land uses assessment (Nickerson, Ebel, Borchers, & Carriazo, 2011). The practice of agriculture produces a diversity of benefits to society besides the production of food and fiber (Marsden & Sonnino, 2008; Ploeg et al., 2000). Most cited benefits derived from agriculture include the stimulation of rural economies that help to upkeep and improve of local infrastructure and services, the beautification of surrounding landscapes, and control of urban sprawl (Bernardo, Valentin, & Leatherman, 2004; Bernath & Roschewitz, 2008; Kurtz & Lewis, 1981; Marsden & Sonnino, 2008). Farms and forests also provide amenity values in the form of outdoor recreation to society (i.e. agritourism), in particular to urban residents who may not have frequent or easy access to open spaces (Barbieri & Valdivia,

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2010a; Jolly & Reynolds, 2005; Karppinen, 1998). Following the sustainable development framework (United Nations General Assembly, 1987), the suite of benefits agricultural lands provide can be classified into three major dimensions: socio-cultural, environmental, and economic.

While society recognizes the importance of public lands (e.g. state parks, national forests) in protecting natural and cultural values due to their recognition and popularity (McCool & Reilly, 1993), information on residents' perceptions of the benefits that private agricultural lands (farms, forests) provide to society beyond food and fiber seems scarce. Information on the benefits private agricultural lands involved in agritourism produce is even more limited as most research efforts have focused on the producers' side, by examining either the various economic and non-economic benefits delivered to the farm household or greater society (e.g. Barbieri, 2013; Che, 2007; McGehee & Kim, 2004; Nickerson, Black, & McCool, 2001) or stewardship attitudes towards natural resources (Choo & Jamal, 2009; Douglass, 2000). Although some efforts have been directed toward understanding visitors' attitudes toward agritourism, these have mainly focused on landscape and activity preferences (Butler & Leatherberry, 2004; Gao, Barbieri, & Valdivia, 2014) and visit motivations (Barbieri, 2014; Sotomayor, Barbieri, Wilhelm Stanis, Aguilar, & Smith, 2014).

A better understanding of the public perceptions of the benefits private agricultural lands provide to society is needed to improve our knowledge of human interactions with the natural environment, increase the number of land management options, and enhance the quality of managerial actions (Anderson, Nickerson, Stein, & Lee, 2000). Information regarding the opportunities and benefits for private agricultural lands to provide recreational services is critical to assist farm and forest managers to evaluate potential improvements of their offerings, plan further developments, and promote their recreational activities in a more targeted manner (Kemperman & Timmermans, 2006; McCool & Reilly, 1993). Also, within the random utility framework, such knowledge is important because the benefits derived from the attributes of particular recreational activities determine participation (Lancaster, 1966). That is, users and visitors will choose to participate in the recreational activity they perceive as most beneficial and cost-effective (Loomis & Walsh, 1997).

Given the need and importance of increasing our understanding of human interactions with the environment and to promote the recognition of the benefits private agricultural lands to society, a study was conducted to evaluate the perceived benefits of private farms and managed forests involved in agritourism. Specifically, the study pursued three objectives: (1) to examine perceived socio-cultural, environmental, and economic benefits associated with privately owned farms and managed forests; (2) to compare residents' perceived benefits between both private agricultural settings; and (3) to identify socio-economic, lifestyle behavioral, and past visit indicators associated with benefit perceptions.

2. Literature review

Agricultural lands, both farms and forests, have been a traditional space for recreation in the US in addition to their traditional economic return (e.g. timber, crops, grazing) especially for landowners' friends and relatives (Barbieri & Valdivia, 2010a; Bernath & Roschewitz, 2008; Kurtz & Lewis, 1981). However, the profitability decline of small-scale agriculture since the eighties has encouraged landowners to diversify their revenues by

programming recreational and educational activities to visitors and tourists, an activity commonly referred as agritourism (Che, Veeck, & Veeck, 2005; Gil Arroyo, Barbieri, & Rozier Rich, 2013; Phillip, Hunter, & Blackstock, 2010). The steady growth of the demand and supply of agritourism over the years has made this enterprise to evolve from being a supplementary commercial activity to stand on its own right (Busby & Rendle, 2000). Such growth is expected to continue in the future pushed by the growing number of consumers seeking locally produced foods and desiring to reconnect with local farmers (Kline, Barbieri, & LaPan, 2016). Some of the most commonly offered activities in farms are tours, u-pick-up activities, and observation/participation in agricultural processes (Tew & Barbieri, 2012), while in forests these activities are hiking and viewing or photographing the natural scenery and its components such as birds, wildlife, and flowers (Cordell, 2008).

2.1. Study frameworks: sustainability and multifunctionality

Several studies have examined the local residents and visitors' perceived impacts of outdoor recreation and tourism in terms of benefits (e.g. increased community pride, economic revitalization) and detriments (e.g. traffic congestion, disturbance of wildlife). Among several available analytical frameworks, sustainable development is particularly appealing because it holistically captures the suite of positive and negative environmental, socio-cultural, and economic impacts that recreation and tourism produce (Xu, Barbieri, Leung, Anderson, & Rozier Rich, 2016). This framework emerged from the report developed by the Brundtland Commission that defined sustainable development as "progress which meets the needs of the present without compromising the ability of future generations to meet their own needs" (The World Commission on Environment and Development, 1987, p. 8). Although the sustainable development framework dates back to the eighties, its use to frame recreation and tourism studies has remained popular because of the increased awareness of environmental quality and protection of environmental assets at the forefront of central policy issues (Butler, 1999; Clarke, 1997; Erkus-Öztürk & Eraydın, 2010; Liu, 2003; Logar, 2010), and even more recently with the ongoing societal quest for sustainability (Gursoy, Chi, & Dyer, 2009; Northcote & Macbeth, 2006; Xu et al., 2016).

When analyzing the benefits of agriculture, the multifunctionality framework is salient for its suitability to holistically evaluate and increase awareness of multiple values derived from agricultural lands (Marsden & Sonnino, 2008; Ploeg et al., 2000). The multifunctionality framework captures the joint production of commodities and resources (energy, food, and fiber) and externalities (e.g. environmental amenities, recreation opportunities, runoff) of the agricultural sector, and respond to the emerging rural context in which challenges in the supply (e.g. profits decrease) collide with the increased number of consumers concerned with social and environmental issues (Durand & Van Huylenbroeck, 2003). In this scenario, Wilson (2008) argues that agricultural multifunctionality occurs within a weak-strong continuum, in which the strong end should be encouraged because it fosters rural development and local embeddedness while builds solid socio-cultural and environmental capitals. Recreation as a complementary function to farming fosters strong multifunctionality as it creates a synergistic system in which economic, socio-cultural, and environmental benefits extend beyond the farm business to preserve the natural and socio-cultural heritage of rural areas and stimulate their local economies (Barbieri, 2013, 2017; Barbieri & Valdivia, 2010b; Bianchi, 2011).

2.2. Benefits of outdoor recreation and agritourism

In a broad sense, benefits are any advantageous change, a condition improvement, the prevention of a worse condition, or a gain to individuals, communities, or overall society (Anderson, Wilhelm Stanis, Schneider, & Leahy, 2008; Driver, Nash, & Haas, 1987; McCool & Reilly, 1993). A broad range of socio-cultural, environmental, and economic benefits derived from outdoor recreation has been identified within the sustainability framework. The socio-cultural benefits most frequently cited are the preservation of cultural identity, local culture, and heritage (Andereck & Vogt, 2000; McGehee & Andereck, 2004; Todd & Anderson, 2005), improvements on the appearance of an area and incentives for restoration of historic buildings (Andereck & Vogt, 2000; Andriotis & Vaughan, 2003; Chin Yang & Chen, 2008; McGehee & Andereck, 2004), increased participation in a variety of cultural activities (Andereck & Vogt, 2000; Andriotis & Vaughan, 2003; McGehee & Andereck, 2004), improvement of visitors' understanding and image of local cultures (Andereck & Vogt, 2000; Besculides, Lee, & McCormick, 2002; Chin Yang & Chen, 2008; McGehee & Andereck, 2004), and diversification of recreational opportunities for locals and visitors (Andereck & Vogt, 2000; McGehee & Andereck, 2004; Todd & Anderson, 2005).

Environmental benefits most frequently identified in the literature are the conservation of natural resources, ecosystems, and restoration of wildlife habitats (Andriotis & Vaughan, 2003; Barbieri, 2013; Chin Yang & Chen, 2008), preservation of landscapes and scenic views (Tarrant & Cordell, 2002; Todd & Anderson, 2005), increase in residents' awareness of the importance of maintaining natural amenities (Chin Yang & Chen, 2008), and benefits derived from the protection of the environment and reduction of pollutants, such as cleaner air and water conservation (Tarrant & Cordell, 2002; Todd & Anderson, 2005). Economic benefits most commonly associated with recreation and tourism development include employment generation and revitalization of local economies (Andereck & Vogt, 2000; Chin Yang & Chen, 2008; McGehee & Andereck, 2004; Todd & Anderson, 2005), and enhancement of the quality of life of local people (Andereck & Vogt, 2000; McGehee & Andereck, 2004; Todd & Anderson, 2005).

Specific to agritourism, a suite of economic, socio-cultural, and environmental benefits delivered to surrounding communities, beyond those enjoyed by landowners (e.g. increased profits) have been recognized. From an economic perspective, agritourism promotes the revitalization and diversification of rural economies (Che et al., 2005; Reeder & Brown, 2005; Saxena, Clark, & Ilbery, 2007; Sharpley, 2007; Veeck, Che, & Veeck, 2006; Xu et al., 2016) and stimulates the consumption of locally produced foods, especially niche products (Kline et al., 2016). Environmentally, agritourism encourages the adoption of sustainable farming practices and conservation of natural resources (Carlsen, Getz, & Ali-Knight, 2001; Choo & Jamal, 2009) as well as the beautification of local landscapes (Xu et al., 2016). Finally, recreation on agricultural settings promotes the preservation of cultural heritage, crafts, and traditional lifestyles (Everett & Aitchison, 2008; Hegarty & Przezborska, 2005; LaPan & Barbieri, 2014; McGehee, 2007; Ollenburg & Buckley, 2007; Sharpley, 2002; Turnock, 2002; Yang, 2012), increases the variety of cultural activities for residents (Xu et al., 2016), and promotes youth retention (Barbieri, 2013; Oppermann, 1995; Sharpley, 2002). Despite the progressed assessment of outdoor recreation, including agritourism, it is yet to evaluate the extent to which the public perceive the benefits that agricultural lands offering recreation provide to society.

3. Study methods

Results presented in this manuscript are part of a larger study that investigated residents' motivations, preferences, and behaviors for visiting different types of natural settings offering recreational opportunities in Missouri. This manuscript focuses on the perceived benefits of two types of private agricultural settings, farms and forests. A sample of 5,000 households was drawn to represent Missouri residents (pop. 5,987,580); a contracted marketing agency provided mailing addresses of randomly selected households stratified to mimic the metropolitan (70%; $n = 3{,}500$) and non-metropolitan (30%; $n = 1{,}500$) county distribution of Missouri (USDA: ERS, 2004).

3.1. Survey instrument and procedures

The study used a 39-question self-administered survey instrument, formatted in an eight-page booklet. Data collected for the purpose of this manuscript included perceived benefits associated with private farms and forests, queried through nine statements in a five-point Likert-type scale anchored in "Very Unimportant" (1) and "Very Important" (5). The nine statements represented the three dimensions of sustainability as follows: The socio-cultural dimension (to preserve rural heritage and traditions, to provide recreational activities for visitors, and to share cultural heritage with visitors), the Environmental dimension (to preserve natural resources and ecosystems, to educate visitors about agriculture or nature, to provide scenic beauty and landscapes), the Economic dimension (to enhance the tourism appeal of rural areas, to revitalize local economies, to enhance the quality of life of local people).

Participants were also asked about their leisure lifestyle. How often they engaged in five types of indoor activities (watching TV or movies at home, reading for pleasure, hanging out with friends, doing exercises or participating in a sport, and surfing the Internet for fun) was queried in a five-point Likert-type scale (1 = "Very Rarely"; 5 = "Very Often"). Information about outdoor recreation was queried in terms of visit behavior to natural settings (e.g. occurrence of first visit, visit frequency, visitation during childhood). Socio-demographic (e.g. age, household income) and lifestyle attributes (e.g. residence proximity to an urban area, relationship to farmed/forested lands) of respondents were also collected.

Data were collected in 2010, following the Tailored Design Method (Dillman, 2000), including a postcard announcement, a first mailing of the survey instrument, a postcard reminder, and a second mailing. A drawing for the chance to win one of four $50 gift cards was offered as incentive for participation. A total of 969 complete questionnaires were obtained for a 19.6% response rate after adjusting for undeliverable surveys.

3.2. Statistical analysis and non-response bias

Statistical analyses included descriptive statistics, reliability tests, paired *t*-tests, and multiple linear regressions; significance levels for all statistical tests were measured at the 0.05 alpha level. A series of descriptive statistics were conducted to profile respondents based on their socio-demographic, lifestyle, and household attributes. A two-stage analysis was conducted to examine the perceived benefits associated with farms and forests. First, Cronbach's alphas were computed to test for internal reliability of the benefits

included in each sustainable dimension (socio-cultural, economic, and environmental). Then, composite means of each sustainable dimension was calculated using the importance ratings of the variables comprising each dimension. Paired *t*-tests were used to examine differences in perceptions between farms and forests (Bonferroni adjusted $p < .004$).

Finally, simultaneous multiple linear regressions examined the relationships between nine respondents' descriptors (independent variables) and the perceived socio-cultural, environmental, and economic benefits of each type of natural settings (dependent variables). Independent variables included three socio-demographic characteristics (age, annual household income, residence proximity to an urban area); three lifestyle behavioral attributes (frequency of watching TV/movies at home, frequency of pleasure reading, frequency of socializing with friends); and three descriptors of visitation to natural areas (first recreational visit to natural settings, number of visits in the last five years, visit frequency during childhood). Given that multicolinearity tests revealed moderate-to-strong correlation (>0.600) between visit frequency during childhood and first recreational visit to natural settings, the latter was removed from the regressions. No other evidence of multicolinearity was found between the remaining independent variables. Dependent variables were defined by the composite importance means of the three benefits dimension: environmental (D1), socio-cultural (D2), and economic (D3).

Non-response bias was examined by comparing the first- and second-wave responses on key demographic variables (Armstrong & Overton, 1977). Independent *t* and chi-square tests ($p < .001$) showed no significant differences in age ($t = -0.128$; $p = .898$), gender ($\chi^2 = 4.557$; $p = .036$), residence location ($\chi^2 = 4.294$; $p = .508$), and income ($\chi^2 = 9.283$; $p = .233$) between the first- and second-wave respondents.

4. Study results

4.1. Socio-demographic and recreational lifestyle of respondents

A slight majority of respondents were male (51.6%). One-third of respondents (33.6%) had some college studies or a two-year college degree and over one-third (37.4%) had a four-year college or higher degree. The majority (78.9%) of respondents lived with at least one person at home. Within this group, the majority (84.0%) lived with their spouse, partner, or significant other, about a half (46.5%) lived with at least one child 17 years old or younger, and a small portion (12.7%) lived with other relatives or friends. About one-half of respondents (49.3%) were full-time employees and about a third (30.1%) were retired from a previous job or profession. A large proportion of respondents (44.0%) were between 41 and 60 years old, and more than a third (35.0%) were at least 61 years old (Table 1). On average, respondents' age was 53.9 years old. A third of respondents (34.7%) reported a gross annual household income less than $35,000; 37.4% between $35,000 and $75,000; and 27.9% reported a gross annual household income of at least $75,000. More than a third (36.7%) of respondents lived within an urban area (i.e. 50,000 + pop); over one-quarter (26.5%) less than 30 miles away but not within an urban area; and 36.7% at least 30 miles away ($M = 3.3$). About one-fourth of respondents (27.2%) reported that at least someone in their household have a relationship with agricultural lands, either owning or leasing a farm or forested land or being a farmer.

Table 1. Composition, economic and residence attributes of responding households.

Attributes	*N*	%
Respondents age ($n = 960$)		
18–30 years old	81	8.4%
31–40 years old	121	12.6%
41–50 years old	186	19.4%
51–60 years old	236	24.6%
61–70 years old	201	20.9%
71 years old or older	135	14.1%
Mean		(53.9)
Annual household income before taxes ($n = 895$)[a]		
Less than $25,000	160	17.9%
$25,000–$34,999	150	16.8%
$35,000–$49,999	171	19.1%
$50,000–$74,999	165	18.4%
$75,000–$99,999	104	11.6%
$100,000–$149,999	100	11.2%
$150,000 or more	45	5.1%
Mean		(3.4)
Residence proximity to an urban area ($n = 949$)[b]		
Live in a 50,000 pop. city	348	36.7%
9 miles or less	96	10.1%
10–29 miles	156	16.4%
30–59 miles	157	16.5%
60 miles or more	192	20.2%
Mean		(3.3)
Household relationship with farms or forested lands ($n = 953$)		
Does not have any type of relationship	694	72.8%
Have at least one type of relationship	259	27.2%
Live on a farm land or forested land	183	70.7%[c]
Own or lease a farm land or forested land	138	53.3%
Is a full-time farmer	28	10.8%
Is a part-time farmer	63	24.3%

[a]Measured on an eight-point scale ranging from 1 (=less than $25,000) to 8 (=$200,000 or more).
[b]Measured on a six-point scale ranging from 1 (=I live in a 50,000 pop. city) to 6 (=60 miles or more). An urban area was defined as having at least 50,000 people.
[c]Percentages sum to more than 100%, as respondents were able to select multiple categories. This only includes those who have some type of relationship with farms or forested lands ($n = 259$; 27.2%).

Results show that respondents engaged in various leisure and recreational activities (Table 2). The majority of respondents watched TV or movies at home (69.1%; $M = 3.9$) and read for pleasure (56.1%; $M = 3.6$) often or very often. Other popular leisure/recreation activities among respondents were "hanging out with friends" ($M = 3.3$) and "doing exercises or participating in a sport" ($M = 3.2$). The least popular activity was "surfing the internet for fun" ($M = 2.6$), in which just over a quarter (27.9%) reported to do often or very often.

About half of respondents recalled having visited a farm (48.1%) or managed forest (51.2%) for recreation purposes in the past (Table 3). However, these proportions may be lower than actual ones as respondents may not recollect previous experiences,

Table 2. Respondent's rate of engagement on various recreational activities.

Recreational activities	*N*	Very Rarely	Rarely	Occasionally	Often	Very Often	*M*[a]	SD
Watching TV or movies at home	956	2.9%	3.8%	24.3%	42.5%	26.6%	3.9	1.0
Reading for pleasure	956	5.2%	10.3%	28.5%	31.8%	24.3%	3.6	1.1
Hanging out with friends	952	4.2%	13.3%	44.0%	29.7%	8.7%	3.6	0.9
Doing exercises or participating in a sport	947	9.8%	18.0%	33.9%	24.3%	14.0%	3.2	1.2
Surfing the internet for fun	941	28.3%	16.9%	27.0%	18.1%	9.8%	2.6	1.3

[a]Measured on a five-point scale ranging from 1 (=Very Rarely) to 5 (=Very Often).

especially during their childhood. A large proportion of those who have visited a farm (44.4%) or managed forest (50.1%) in the past went for the first time at least 10 years ago. Less than half of the respondents visited a farm (43.5%) or managed forest (46.1%) in the last five years. The majority of respondents recalled visiting a managed forest (62.2%) at least occasionally when they were 16 years or younger; such proportion dropped to less than half (45.2%) regarding farm visits.

4.2. Perceived benefits associated to farms and managed forests

Reliability tests showed high internal reliability in the perceived socio-cultural ($\alpha = 0.801$), environmental ($\alpha = 0.839$), and economic ($\alpha = 0.823$) benefits associated with farms (Table 4). Overall, respondents perceived farms to be very important in providing an array of benefits to society, especially to preserve natural resources and ecosystems ($M = 4.3$), preserve rural heritage and traditions ($M = 4.2$), provide scenic beauty and landscapes ($M = 4.2$), and revitalize local economies ($M = 4.2$). Although still perceived as important, enhancing the tourism appeal of rural areas ($M = 3.9$) was the benefit with the lowest ranking. Organized by dimensions, respondents perceived the most important benefits farms provide are environmental ($M = 4.2$); although respondents rated very similarly the importance of the economic ($M = 4.0$) and socio-cultural ($M = 4.0$) benefits.

Cronbach's tests also showed high internal reliability in the socio-cultural ($\alpha = 0.841$), environmental ($\alpha = 0.853$), and economic ($\alpha = 0.850$) benefit dimensions associated with managed forests (Table 5). Overall, respondents perceived that the most important benefits that managed forests provide were environmental ($M = 4.2$), closely followed

Table 3. Characteristics of past visitation to an agritourism farm, a private forest and a National/State park.

	Farm		Forest	
Past visitation descriptors	*n*	%	*n*	%
Past visitation for recreation purposes				
Did visit	433	48.1	464	51.2
Did not visit	467	51.9	443	48.8
First visit for recreation purposes[a]				
Last year	29	6.8	45	9.8
2–4 years ago	69	16.1	41	8.9
5–9 years ago	74	17.3	48	10.4
At least 10 years ago	190	44.4	231	50.1
Do not recall	66	15.4	96	20.8
Frequency of visits in the last 5 years				
None[b]	505	56.5	479	53.9
1 or 2 times	133	14.9	137	15.4
3–5 times	149	16.8	108	12.1
6–10 times	76	8.6	69	7.8
10–20 times	22	2.5	41	4.9
21 or more times	7	0.7	54	5.9
Frequency of visit during childhood[c]				
Never[b]	582	67.5	498	57.7
Rarely	85	9.9	76	8.8
Occasionally	132	15.3	130	15.1
Often	49	5.7	123	14.3
Always	14	1.6	36	4.2

[a]This only includes those who have visited farms ($n = 433$; 48.1%) or private forests ($n = 464$; 51.2%) in the past.
[b]This includes those who have not visited farms ($n = 467$; 51.9%) or private forests ($n = 443$; 48.8%) in the past.
[c]Childhood was defined as 16 years old or younger.

Table 4. Perceived socio-cultural, environmental, and economic benefits perceived to be derived from farms offering agritourism activities.

Perceived benefits	*N*	Very Unimportant	Unimportant	Neutral	Important	Very Important	*M*[a]	SD
Socio-cultural benefits ($\alpha = 0.801$)	958						4.0	0.7
Preserve rural heritage and traditions	955	2.2%	2.1%	10.6%	45.6%	39.5%	4.2	0.9
Share cultural heritage with visitors	946	2.0%	2.1%	18.8%	51.2%	25.9%	4.0	0.8
Provide recreational activities for visitors	951	2.3%	2.1%	16.8%	55.1%	23.7%	4.0	0.8
Environmental benefits ($\alpha = 0.839$)	959						4.2	0.7
Preserve natural resources and ecosystems	952	2.6%	0.7%	9.5%	39.8%	47.4%	4.3	0.9
Provide scenic beauty and landscapes	951	2.1%	0.8%	9.9%	48.6%	38.6%	4.2	0.8
Educate visitors about agriculture or nature	954	2.3%	1.9%	13.6%	50.4%	31.8%	4.1	0.9
Economic benefits ($\alpha = 0.823$)	956						4.0	0.8
Revitalize local economies	951	2.0%	1.7%	15.2%	42.0%	39.1%	4.2	0.9
Enhance the quality of life of local people	946	2.4%	1.4%	16.8%	48.3%	31.1%	4.0	0.9
Enhance the tourism appeal of rural areas	952	2.9%	3.0%	18.6%	50.4%	25.1%	3.9	0.9

[a]Measured on a five-point scale ranging from 1 (Very Unimportant) to 5 (Very Important).

by socio-cultural ($M = 4.0$) and economic ($M = 4.0$) benefits. Preserving natural resources and ecosystems ($M = 4.4$) and providing scenic beauty and landscapes ($M = 4.4$) were perceived as the most important benefits managed forests provide to society. In turn, sharing cultural heritage with visitors ($M = 3.9$) and enhancing the tourism appeal of rural areas ($M = 3.9$) were least important benefits associated with this agricultural setting, although still perceived as important (Table 6).

Table 5. Perceived socio-cultural, environmental and economic benefits perceived to be derived from private forests.

Perceived benefits	*n*	Very Unimportant	Unimportant	Neutral	Important	Very Important	*M*[a]	SD
Socio-cultural benefits ($\alpha = 0.841$)	935						4.0	0.8
Preserve rural heritage and traditions	930	2.4%	2.2%	14.7%	42.6%	38.1%	4.1	0.9
Share cultural heritage with visitors	929	2.7%	3.3%	23.8%	46.9%	23.3%	3.9	0.9
Provide recreational activities for visitors	931	2.3%	2.5%	16.0%	52.1%	27.1%	4.0	0.9
Environmental benefits ($\alpha = 0.853$)	936						4.2	0.7
Preserve natural resources and ecosystems	929	2.6%	0.9%	7.2%	37.6%	51.9%	4.4	0.9
Provide scenic beauty and landscapes	932	2.1%	0.8%	6.0%	41.8%	49.2%	4.4	0.8
Educate visitors about agriculture or nature	934	2.2%	2.6%	18.4%	47.6%	29.2%	4.0	0.9
Economic benefits ($\alpha = 0.850$)	936						4.0	0.8
Revitalize local economies	932	2.8%	3.2%	21.9%	40.1%	32.0%	4.0	1.0
Enhance the quality of life of local people	928	2.3%	1.5%	19.1%	45.8%	31.3%	4.0	0.9
Enhance the tourism appeal of rural areas	931	2.9%	3.3%	19.4%	49.8%	24.6%	3.9	0.9

[a]Measured on a five-point scale ranging from 1 (Very Unimportant) to 5 (Very Important).

Table 6. A comparison of the perceived benefits produced by farms and private forests (paired *t*-test).

Perceived benefits	Importance mean[a]		*t*	*p*-Value
	Farm	Forest		
Socio-cultural benefits	4.04	3.98	2.993	.003 *
Preserve rural heritage and traditions	4.19	4.12	2.774	.006 *
Share cultural heritage with visitors	3.97	3.85	5.076	<.001 *
Provide recreational activities for visitors	3.97	3.99	−1.132	.258
Environmental benefits	4.20	4.23	−2.015	.044
Preserve natural resources and ecosystems	4.30	4.36	−2.582	.010
Provide scenic beauty and landscapes	4.21	4.35	−5.974	<.001*
Educate visitors about agriculture/nature	4.08	3.99	3.716	<.001*
Economic benefits	4.04	3.96	4.185	<.001*
Revitalize local economies	4.15	3.96	8.216	<.001*
Enhance the quality of life of local people	4.05	4.03	0.952	.341
Enhance the tourism appeal of rural areas	3.93	3.90	0.925	.355

[a]Measured on a five-point scale ranging from 1 (Very Unimportant) to 5 (Very Important).
*Significant after applying Bonferroni correction ($0.05/12 = p < .004$).

Paired *t*-tests revealed some differences on benefits perceptions between farms and managed forests. Respondents perceived that farms, as compared to managed forests, were more important in providing overall socio-cultural ($M_{farm} = 4.04$; $M_{forest} = 3.98$; $t = 2.993$; $p = .003$) and economic benefits ($M_{farm} = 4.04$; $M_{forest} = 3.96$; $t = 4.185$; $p < .001$) to society, and specifically in sharing cultural heritage with visitors ($M_{farm} = 3.97$; $M_{forest} = 3.85$; $t = 5.076$; $p < .001$), educating visitors about agriculture or nature ($M_{farm} = 4.08$; $M_{forest} = 3.99$; $t = 3.716$; $p < .001$), and revitalizing local economies ($M_{farm} = 4.15$; $M_{forest} = 3.96$; $t = 8.216$; $p < .001$). Managed forests were perceived as more important than farms only in providing scenic beauty and landscapes to society ($M_{farm} = 4.21$; $M_{forest} = 4.35$; $t = -5.974$; $p < .001$). No significant differences were found between farms and private forests on the overall environmental benefit dimension, and the remaining specific benefits.

4.3. Socio-economic, lifestyle behavior, and past visit indicators associated with benefits perceptions

Statistical tests resulted in six significant models ($p < .001$) suggesting that socio-demographic, lifestyle behavioral, and visit attributes were systematically associated with the respondents' perceived importance of the socio-cultural, environmental, and economic benefit dimensions provided by private agricultural settings. Regarding the socio-cultural dimension, results indicated that the older the respondent ($\beta = -0.102$, $p = .007$), the lower the perception that farms are important in providing socio-cultural benefits to society, although no associations were found in relation to managed forests (Table 7). Residential distance from an urban area was positively associated with the perceived socio-cultural benefits that both agricultural settings provide to society ($p < .050$). Among lifestyle attributes, the frequency devoted to reading for pleasure ($\beta = 0.098$, $p = .006$) was positively associated with the perceived socio-cultural benefits provided by farms only, while the more often respondents socialize with friends, the higher perceptions they have about the socio-cultural benefits provided by both, farms ($\beta = 0.100$, $p = .005$) and managed forests ($\beta = 0.100$, $p = .005$). The positive influence of past visit on the perceived socio-cultural benefits of an agricultural setting was also significant. The more respondents visited a

Table 7. Multiple linear regressions of socio-demographic, lifestyle, and visitation attributes on the perceived importance of the socio-cultural benefit dimension.

	DV – perceived socio-cultural benefits (standardized β and significance)	
Independent variables	Farms	Forests
Respondent's age	−0.102**	−0.034
Household income	−0.021	−0.060
Residence distance from an urban area	0.091**	0.101**
Frequency devoted to reading for pleasure	0.098**	−0.017
Frequency devoted to watching TV/movies	0.048	0.002
Frequency devoted to socialize with friends	0.100**	0.095**
Visit frequency – last 5 years	0.077*	−0.015
Frequency of visit during childhood	0.168***	0.226***
p-Value	<.001	<.001
R^2	0.101	0.079
Adjusted R^2	0.091	0.069

*$p < .10$.
**$p < .05$.
***$p < .001$.

farm in the last five years, the more they acknowledge the socio-cultural benefits produced by this type of setting ($\beta = 0.007$, $p = .064$). Even stronger was the influence of visit during childhood to the benefits perceptions associated with both types of agricultural settings ($p < .001$).

Regarding the second dimension of sustainability, results showed that the respondent's age showed a negative association with the perceived environmental role of farms ($\beta = -0.102$, $p = .008$) and managed forests ($\beta = -0.102$, $p = .007$; Table 8). The frequency devoted to reading for pleasure was only positively associated with farms ($\beta = 0.069$, $p = .056$), while the frequency devoted to socialize with friends was positively associated with farms ($\beta = 0.101$, $p = .005$) and managed forests ($\beta = 0.083$, $p = .023$). The more visits to a farm in the previous five years ($\beta = 0.106$, $p = .012$), the higher perceptions of the

Table 8. Multiple linear regressions of socio-demographic, lifestyle, and visitation attributes on the perceived importance of the environmental benefit dimension.

	DV – perceived environmental benefits (standardized β and significance)	
Independent variables	Farms	Forests
Respondent's age	−0.102**	−0.102**
Household income	−0.036	−0.006
Residence distance from an urban area	0.024	0.053
Frequency devoted to reading for pleasure	0.069*	0.024
Frequency devoted to watching TV/movies	0.036	−0.011
Frequency devoted to socialize with friends	0.101**	0.083**
Visit frequency – last 5 years	0.106**	−0.017
Frequency of visit during childhood	0.110**	0.192***
p-Value	<.001	<.001
R^2	0.078	0.065
Adjusted R^2	0.069	0.055

*$p < .10$.
**$p < .05$.
***$p < .001$.

environmental role of this type of setting. The more frequently respondents visited both types of agricultural settings during childhood, the higher their perceptions of the importance that farms (β= 0.110, p = .011) and private forests (β = 0.192, p < .001) have in producing an array of environmental benefits.

Various socio-demographic, lifestyle behavior, and visit attributes were associated with the perceived economic importance of the examined agricultural settings. The greater the average respondent's household income, the lower the perceptions of the economic role of private forests (β = −0.086, p = .021) in surrounding communities and society (Table 9). The residence distance from an urban area (β = 0.084, p = .021) and the frequency devoted to reading for pleasure (β = 0.089, p = .013) had a positive influence in the economic perceptions of farms only. Once more, the time devoted to socialize with friends had a positive influence on the economic perceptions of both, farms (β = 0.111, p = .002) and managed forests (β = 0.111, p = .002). Frequency of visits to farms in the last five years was positively associated with the economic perceptions of the economic role of this setting (β = 0.092, p = .028). Once more, the more respondents have visited those natural settings during childhood, the higher their perceptions of the economic role that farms (β = 0.152, p < .001) and managed forests (β = 0.187, p < .001) provide to society.

5. Discussion and implications

Missouri residents perceived that privately owned farms and managed forests have an important role in providing an array of social, environmental, and economic benefits to society, especially to preserve natural and cultural resources and to provide scenic beauty and landscapes, results that are consistent with the extant literature in tourism (Andereck & Vogt, 2000; McGehee & Andereck, 2004; Xu et al., 2016) and multifunctionality (Barbieri & Valdivia, 2010b; Bianchi, 2011). Both types of agricultural settings were deemed important in providing environmental benefits to society, even to a greater extent than economic benefits. This finding is most likely associated with the growing concern and awareness of environment-related issues, such as protection of natural resources and

Table 9. Multiple linear regressions of socio-demographic, lifestyle, and visitation attributes on the perceived importance of the economic benefit dimension.

	DV – perceived economic benefits (standardized β and significance)	
Independent variables	Farms	Forests
Respondent's age	−0.035	−0.014
Household income	−0.051	−0.086**
Residence distance from an urban area	0.084 **	0.060
Frequency devoted to reading for pleasure	0.089**	−0.002
Frequency devoted to watching TV/movies	0.027	0.033
Frequency devoted to socialize with friends	0.111**	0.111**
Visit frequency – last 5 years	0.092**	−0.035
Frequency of visit during childhood	0.152***	0.187***
p-Value	<.001	<.001
R^2	0.083	0.061
Adjusted R^2	0.073	0.051

*p < .10.
**p < .05.
***p < .001.

habitat conservation among others (Cordell, 2008; Kline et al., 2016). Land owners and managers, public servants, and other related stakeholder should use the benefits the public identified beyond the food and fiber production (e.g. preserve rural heritage and traditions, enhance the tourism appeal of rural areas) to support policies incentivizing the conservation of private farms and forests, such as agricultural, conservation, and green-belt easements. These policies are especially important for small landowners as many of the benefits they deliver to society are external to the land, hence, yielding little to none financial benefits (Durand & Van Huylenbroeck, 2003; Vanslembrouck & Van Huylenbroeck, 2005).

Landowners offering or willing to engage in agritourism should capitalize on significant differences in the perceptions of benefits associated with farms and private forests to inform managerial and marketing decisions (Anderson et al., 2000; Kemperman & Timmermans, 2006). Benefit-based marketing strategies could be used to enhance the recreational image of farm/forested lands as people tend to participate in activities perceived to be most beneficial (Lancaster, 1966; Loomis & Walsh, 1997). For example, farmers could emphasize the role of their agritourism farms in educating and sharing cultural heritage and foresters the beauty of their landscapes to entice visitation in their promotional efforts. Given the study results and existing societal trends, marketing strategies should emphasize on capturing the interest of socially and environmentally concerned individuals. Beyond private landowners' initiatives, pertinent agencies and offices (e.g. Missouri Department of Agriculture) should stimulate visitation to farms and private forests offering agritourism by capturing these benefits in their social-marketing. In doing so, they can increase the tourism pull capacity of a destination at a larger scope (local, regional, state) and increase the many benefits these activities bring to rural communities (Barbieri, 2013; Kline et al., 2016; Tew & Barbieri, 2012).

Significant associations identified between socio-economic, lifestyle, and behavioral indicators and perceptions of benefits produced by farms and private forests can guide educational programs to increase awareness of the role that agricultural settings have in modern societies, beyond the production of food and fiber. Specifically, results suggest the need to educate the public, especially urban dwellers, regarding the array of socio-cultural benefits that those settings produce. Contrary to prevalent knowledge, the study results indicate that the farther residents live from an urban area, the higher their perceptions of the socio-cultural benefits agricultural lands provide. This finding challenges the notion of suggested nostalgia and greater awareness of rurality among urban residents (Nickerson et al., 2001). On this regard, the study results support that need to stimulate visiting farms and forests offering agritourism opportunities as these can restore the ties with rurality and increase the awareness of their values they provide to society beyond food and fiber (Kline et al., 2016).

Given the positive association found between visit during childhood and benefits perceptions, it is imperative that educational programs target young audiences. Also, it is suggested that educational programs are developed through social media channels as results show a positive influence of socializing with friends on the perceived benefits of agricultural settings. As Barbieri (2014) suggested, it is imperative that programs encouraging children's visitation to natural settings are created given the association found between previous and childhood visitation on the perceived benefits of both types of agricultural settings. For example, schools can develop partnerships with agritourism farms or

forests, especially those offering educational opportunities (e.g. hands-on activities, school tours), to stimulate visitation. Reduced entrance fees for school tours, or free access passes for children during weekends, are also good ways to stimulate first visitation, thus stimulate sustained visitation in the future.

It is worth discussing the large proportion of respondents who reported that at least someone in their household had a relationship with agricultural lands. Although this proportion is comparable to the non-metropolitan residents in the sample and fits within the large proportion (94.7%) of land in Missouri that is classified as rural (Missouri Census Data Center, 2017), it carries some implications when interpreting the study results. It may denote a sample that is mindful of the positive externalities (e.g. preservation of natural and cultural heritage, provision of scenic beauty, increase of tourism appeal) that agriculture provides beyond the production of food and fiber. That could be the case of lesser nostalgia for rurality with closer residential proximity to urban centers. As such, the very high perceptions of the socio-cultural, environmental, and economic benefits obtained in this study should be extrapolated to other contexts with caution. These findings call for future research to evaluate these benefits among a random sample that does not have such a strong connection with agriculture or even comparing perceptions between both groups. In conducting future research, it is also important to assess potential detrimental effects associated with any of the agricultural settings studied, also accounting for differences in respondents' relationship with agricultural lands. Assessing the negative effects stems from trade-offs in land usage (e.g. conservation of forestland limiting residential and agricultural development, and vice versa), and their incorporation along with the benefits will provide a comprehensive understanding of the perceived impacts that agricultural settings have on the three dimensions of sustainability.

6. Conclusion

This study responds to the need to better understand public perceptions of the benefits agricultural settings offering agritourism provide to society. Such information is important to support policies fostering the conservation of agricultural lands and the development of agritourism, as those benefits are usually financial externalities. Although respondents were cognizant of those benefits, more effort is needed to communicate the economic and socio-cultural benefits agricultural lands produce, especially regarding the role they have in sharing cultural heritage with the public and enhancing the tourism appeal of rural destinations. By contrasting the benefits associated with farms and forested lands, study results can support marketing, management, and planning decisions related to agritourism. It is advisable that landowners orchestrate efforts to reduce adverse competition and increase the complementarity of their recreational offerings based on visitors' interests, which in turn can increase the overall pull capacity of the rural destination.

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