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Challenges for the agritourism sector in the United States: Regional comparisons of access

Chadley Richard Hollas [a] *
Austin, Texas

Weiwei Wang [b]
University of Vermont

Lisa Chase,[c] David Conner,[d] and Jane Kolodinsky [e]
University of Vermont

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Abstract

Agritourism has become a popular pursuit for farms and ranches in the United States, aiming to diversify revenue sources and meet agricultural education and community-building goals. However, there has been limited research around the challenges experienced by operators and limited access to resources that can help address these challenges. This article fills that gap in knowledge by examining the challenges agritourism operations currently face in the Northeast, Midwest, South, and West regions of the U.S. In this study, we use a mixed-methods approach to the Five Dimensions of Access framework developed by Penchansky and Thomas (1981). We operationalize their model in an ordinal probit regression to analyze data from a national survey of agritourism operators, analyzed by region. Results from the quantitative analysis are substantiated using qualitative, open-ended comments from the same survey. The analyses show that agritourism operators encounter different challenges according to their region. We find that operators in most regions of the United States are concerned about agritourism liability. However, states in the West region experience more challenges with regulations, zoning, and permitting, while operators in the South have more problems with e-connectivity. These results can be applied in three ways: support services for agritourism, policy and regulations, and future research.

[a] * *Corresponding author:* Chadley Richard Hollas, Independent Researcher; crhollas@gmail.com

[b] Weiwei Wang, Research Project Specialist, University of Vermont; weiwei.wang11@gmail.com

[c] Lisa Chase, Extension Professor, University of Vermont; lisa.chase@uvm.edu

[d] David Conner, Professor, University of Vermont; David.Conner@uvm.edu

[e] Jane Kolodinsky, Professor, University of Vermont; Jane.Kolodinsky@uvm.edu

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Introduction

Agritourism—welcoming visitors on farms and ranches for agricultural experiences and product sales—has grown into a popular operational model for small and medium farms throughout the United States and around the globe. Through agritourism, primary production operations are retained while new on-farm activities show promise of increasing revenue streams (Barbieri, 2013; D. M. Brown & Reeder, 2008; Chase et al., 2018; Rilla et al., 2011; Tew & Barbieri, 2012; Giaccio et al., 2018). Additionally, farms with agritourism enterprises may be motivated by nonmonetary goals such as community engagement and improved quality of life (Quella et al., 2021). Agritourism also provides benefits to consumers, such as access to open space, recreation, and education (D. M. Brown & Reeder, 2008). However, some studies have shown that agritourism may not be profitable for all operations, as originally asserted (D. M. Brown & Reeder, 2008; LaPan & Barbieri, 2014; Schilling et al., 2012; Van Sandt et al., 2018). These alternative farm enterprises can face issues related to regulations and liability (Centner, 2010; Colton & Bissix, 2005), suggesting there are greater challenges to agritourism that have not yet been explored.

A majority of research about agritourism has come from studies focused on individual states (e.g., Bernardo et al., n.d.; Gil Arroyo et al., 2013; Schilling et al., 2012; Tew & Barbieri, 2012) or on countries outside the United States (e.g., Colton & Bissix, 2005; Giaccio et al., 2018). Though a few studies have been conducted on a national-scale in the United States (e.g... Barbieri, 2013), their sample size is small. By presenting this research, we hope to add to the breadth of agritourism research in the United States with a national scope, like that of Liang and Dunn (2014), Van Sandt et al. (2018), and Quella et al. (2021), but that is divisible by region. Additionally, while a few examples exist (e.g., Bagi & Reeder, 2012; J. P. Brown et al., 2014; Liang & Dunn, 2014; Rilla et al., 2011; Van Sandt et al., 2018; Wilson et al., 2006), more effort and more current inquiry is needed to better understand the challenges experienced by agritourism operators. Together with previous research and this more recent study, we might better be able to highlight opportunities for state-level agritourism support, or opportunities for inter- or intrastate network building and collaboration (Che et al., 2005; Clarke, 1995).

Studies on agritourism have explored the place-based growth of agritourism (Van Sandt et al., 2018; Wilson et al., 2006), the economic benefits of agritourism (J. P. Brown et al., 2014), and the motivations and behavior of agritourism operators (Bagi & Reeder, 2012; Gascoigne et al., 2008; Liang & Dunn, 2014; Quella et al., 2021). More recently, the COVID-19 global pandemic has introduced more challenges for operators as consumers demand more local foods (Kolodinsky et al., 2020) and leave cities, flocking to rural spaces (Wojcieszak-Zbierska et al., 2020). These changes put pressure on agritourism operators, who experience these demands from both consumers of food and consumers of agritourism experiences. This increased pressure further highlights the need to understand the challenges agritourism operators face.

Due to geographic and cultural similarities of the USDA-defined regions of the United States, exploring data between regions provides a unique insight into trends that undivided national and state-level data cannot provide. The regions, broadly, have specific agricultural and land-based traditions which attract tourists (Che et al., 2005; Weaver et al., 1996). Utilizing these regions to analyze a large national dataset allows us to understand how agritourism support systems might be developed and how parties interested in agritourism development (rural development organizations, state agriculture departments, rural extension professionals, et al.) might be able to coordinate and collaborate. As seen with place-based growth (Van Sandt et al., 2018), economic benefits (Das and Rainey, 2010), and motivations and behavior (Chiodo et al., 2019), similar challenges may be experienced by operators within a specific region due to similarities in cultivation practices, demand,

available resources, culture, or even political viewpoints. Examining the challenges of agritourism operators between regions can help provide a better resource for implementing agritourism support in the United States.

Limited Access to Resources

Given that the challenges experienced by operators are centered on resources available to the farmer, analyzing these challenges can be framed by the concept of *access to resources*. In this study, resources include predominately information (about laws and regulations, and risks and liability, among others) and services (provided by extension professionals and government bodies, among others). Limiting access to these key sources of information and services can limit access to practical education, an operator's ability to scale, plan for the future, and attract and maintain consumers (Bagi & Reeder, 2012; Centner, 2010; Hardesty and Leff, 2020; Rilla et al. 2011).

E-connectivity

In 2012, access to e-connectivity services was found to be a significant factor in the motivations of farmers to participate in agritourism (Bagi & Reeder, 2012). Internet access increases a farmer's information resources, as well as expansion of their market both online and on-farm, as promotional materials can reach a wider audience. While Bagi and Reeder's (2012) study took place over a decade ago, together with the present study, it shows that access to this resource (e-connectivity) has been and still is an integral part of a successful agritourism enterprise. The rise of internet use by consumers has prompted Extension professionals across the country to develop resources for agritourism entrepreneurs to learn how to use online marketing strategies to their advantage (Colucci et al., 2011; Ferreira, et al., 2020; Rilla et al., 2011; Sullins et al., 2010).

As in many other sectors and industries, e-connectivity can greatly impact the viability of agritourism businesses. Consumers rely on online marketing to learn about agritourism activities (Sullins et al., 2010), which are a significant factor in operators' decisions to participate in agritourism activities (Bagi & Reeder, 2012). However, all these assume that e-connectivity resources, such as broadband, are available and accessible to operators in rural areas.

Regulations and Liability

In a study of agritourism operators in California, Rilla et al. (2011) found that some operators who experience difficulties with permitting had inadequate information from the permit-granting organization. Other studies have found that new liability statutes offer little support for agritourism operators (Centner, 2010), which can lead to an inability to scale up and difficulty earning profits. Similarly, complex and difficult-to-understand regulations act as a barrier to operators' access to information (Sznajder et al., 2009). In California, on top of extant permitting requirements, agritourism operators must obtain official certifications before opening to the public (Keith et al., 2003).

In this paper, we examine challenges experienced by agritourism operators (including those that offer direct sales) in the United States to better understand regional differences and issues around access. In the following sections, we will discuss the theoretical framework employed and methods used, present the data results, and discuss our findings.

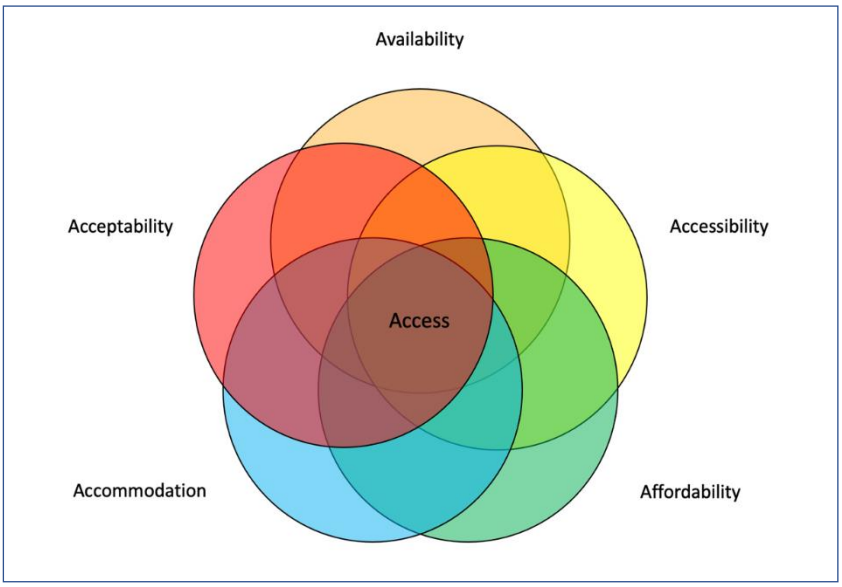
Theoretical Framework

Access has been defined most succinctly as an individual or a group's ability to benefit from services provided by another individual or group (Ribot & Peluso, 2003). This definition, however, is limiting as access can relate to more than simply a *benefit* or a *service*. The most comprehensive definition of access comes from the field of medical care, specifically from the work conducted by Penchansky and Thomas (1981), who posited five interrelated dimensions of access. These five dimensions are availability, accessibility, affordability, accommodation, and acceptability (Figure 1).

Availability of a resource refers to the existing supply of resources compared to the demand by users. While *accessibility* is focused on the physical location of a resource, it also considers the time, cost, and physical accessibility (e.g., is there transportation?). *Affordability* focuses on the cost of the resource and the ability of users to afford those

prices for the resource. *Accommodation* looks at how a resource is developed with the user in mind and whether the user of the resource feels like the resource accommodates the limitations of their circumstances (e.g., hours of operation, physical access options). Finally, *acceptability* looks at the user's opinion of their experience using the resource. While the first three dimensions (availability, accessibility, and affordability) are more typical in assessing accessibility, these two final dimensions (accommodation and acceptability) consider the culture of a community and its associated needs.

Figure 1. Adapted from Penchansky and Thomas' (1981) Dimensions of Access Framework



Penchansky and Thomas' (1981) dimensions of access framework have been applied to food systems research (Caspi et al., 2012; Charreire et al., 2010). These studies offered a geospatial perspective on issues of access. More recently, scholarship on food systems has utilized the five dimensions of access to explore how the dimensions interact with low-income consumers of direct-to-consumer agricultural marketing (Wetherill & Gray, 2015; White et al., 2018). The framework has not yet been used within agritourism contexts. However, it is a useful frame for our continued development of a healthy agritourism ecosystem. By exploring the challenges indicated by respondents, the present study can compare access in the four regions in the United States. By further exploring issues of access to resources, we can continue to uncover the burdens agritourism operators face. The following sections are an attempt to understand these burdens, as indicated in our survey, and to what extent various challenges can be addressed by shifting access to resources for agritourism operators.

Research Methods

Data for this study were collected as part of an online survey developed under the USDA Critical Agriculture Research and Extension grant project Critical Success Factors for Small and Medium-Sized Farms with Direct Sales and Agritourism, led by the University of Vermont in collaboration with the University of California Cooperative Extension, Oregon State University Extension, and West Virginia University. Qualitative data collected before the survey were used to guide instrument development (Quella et al., 2021). The project team designed and implemented an online survey using Limesurvey (Limesurvey GmbH, n.d.) to understand agritourism operations in the United States.

The survey was conducted between November 2019 and February 2020. Thus, all responses were completed prior to the onset of the COVID-19 pandemic. The research team used a snowball sampling method using known local, state, regional, and national networks. Agricultural service providers and operators were asked to forward the survey link to colleagues and other known operators. Additionally, press releases in local papers and notifications helped to capture additional respondents. This method is useful when surveying farming populations since this group is often hard to reach and has strong, internal group networking (Faugier & Sargeant, 1997; Morais et al., 2013). The snowball method also reduces the time and cost of locating hidden populations. However useful, this method resulted in a sample not representative of

the U.S. farming population, which limits the generalizability of the results.

The research team defined agritourism as any on-farm activity that attracts visitors (consumers) to the farm (Chase et al., 2018) for experiences or product sales. Examples include but are not limited to corn mazes, hiking, educational tours, and events. The team also included direct-to-consumer on-farm sales, as this is another method of attracting consumers to the farm. Respondents indicated the products and activities offered on their farm; quantitative visitor information; motivations and goals, challenges, supports needed, plans for the future, and helpfulness of available resources. Firmographic data, such as location, distance from cities, gross revenue and net income, and demographic data, including gender, education, and age, were also collected.

Variables

Dependent variables were selected from a list of twelve variables developed for the national agritourism survey and informed by qualitative interviews (see Quella, 2021). Respondents ranked each challenge as "not at all challenging" (0), "somewhat challenging" (1), or "very challenging" (2). For this analysis, we focused on four categories of challenges: *city and county zoning and permitting*, *concerns about agritourism liability*, *e-connectivity*, and *state and local regulations*. These variables provide insight into the challenges operators experience in accessing resources that might contribute to the success (or failure) of an agritourism enterprise (Centner, 2010; Rilla et al., 2011). Additionally, these variables constitute access to resources (such as capital, consumer markets, education, and information) that can greatly impact agritourism operators. Independent variables include the USDA-defined regions of the United States, self-identified gender, and years of experience with agritourism operations. The *regions* variable allows the data to account for regional similarities, e.g., culture and traditions, agricultural practices, and policies. We used USDA Agricultural Research Service (ARS) classifications to identify four regions in the US: Northeast, Midwest, South, and West (USDA ARS, n.d.). The survey offered binary gender choices (male=0, female=1) which, along with (continuous) years in agritourism, acted as a control variable in the regression. Gender (Ball, 2014; Pilgeram & Amos, 2015; Schmidt et al., 2021) and experience (Sutherland & Burton, 2011) are factors that can impact the outcomes of challenges, hence their use as a control. Female-identifying operators are more likely to have smaller operations and concerns about sustainability and the environment (Ball, 2014). However, female operators may face greater challenges, such as a lack of cultural capital, and knowledge of resources and services available to them (Ball, 2014; Daigle & Heiss, 2020; Schmidt et al., 2021). Similarly, the number of years working in agritourism undoubtedly has its benefits; an operator with generational knowledge of an area and a wealth of cultural capital may fare better than a new operator in the same geographic area (Inwood, 2013; Scott & Richardson, 2021; Sutherland & Burton, 2011). This is particularly true for small farms (as defined by the USDA (2021)), which describe many agritourism farms, that rely on resource gathering from community ties (Van Sandt & Thilmany McFadden, 2016). We could not find any evidence that this generational knowledge varies regionally; however, the data set we employed might offer the chance for future studies to explore this.

In addition to the quantitative data mentioned above, the survey asked respondents to comment on the listed or other challenges to agritourism, including direct sales. This qualitative data complement the findings from the quantitative responses, helping identify the barriers to access for each challenge that might hinder operations' success (Vaughn & Turner, 2016). Operators were provided space to respond in an open-ended response format.

Analysis

All analyses were completed using IBM SPSS Statistics (Version 27). We conducted descriptive analysis for the basic demographic variables and ordinal regression using the selected dependent and independent variables. For the ordinal regression, we transformed the region variable into three dummy variables (Midwest, South, and West), where Northeast was omitted to create a baseline for analysis (Suits, 1957). Gender (male=0, female=1) and (continuous) years in agritourism acted as control variables. The following are the results

from the descriptive analysis and ordinal regression.

Qualitative response data were open-coded by researchers on the team. Quotes were first grouped by region (Northeast, Midwest, South, and West), and then coded by alignment with the four challenges selected for quantitative analysis (*city and county zoning and permitting*, *concerns about agritourism liability*, *e-connectivity*, and *state and local regulations*). Each of these excerpts was then analyzed for its relationship to each of Penchansky and Thomas' (1981) dimensions of access (availability, accessibility, affordability, accommodation, and acceptability) and coded into the appropriate dimension(s). The following are the results from the descriptive analysis, ordinal regression, and coding of open-ended responses.

Results and Discussion

Analysis Results

There were 1,834 full or partial responses to the survey, with at least one respondent from each state. The average age of respondents was 55 years old. Most of the respondents (57.5%) identified as female, with a college degree or higher (70.5%), and operated less than 100 acres of land (61.2%) that were located 30 miles or more from a city of at least 50,000 people (51.6%). Most responses came from the South (29.2%) and West (25.8%), with the fewest responses coming from the Northeast (24.2%) and the Midwest (20.9%). The sampling method allows us to make internal statistical generalizations, but care should be taken to make broader generalizations of the findings (Collins, 2010).

We created four ordinal probit regression models based on the selected challenge-dependent variables (city and county zoning and permitting, concern about agritourism liability, e-connectivity, and state and local regulation) using the following equation:

$$\text{Challenge}_i = \text{Threshold1} + \text{Threshold2} + \beta_1\text{West} + \beta_2\text{Midwest} + \beta_3\text{South} + \beta_4\text{Gender} + \beta_5\text{YearsinAgritourism} + \varepsilon_i$$

Region, *gender*, and *years in agritourism* were included as independent variables, with gender and years in agritourism included as control variables, as noted in the Variables section above. Table 1 presents the

Table 1. Ordinal Regression Output of Challenges by Region Where Northeast Is Omitted

	City and county zoning and permitting	Concern about agritourism liability	E-Connectivity	State and local regulation
n	1,254	1,334	1,330	1,281
Predicated response category	1 (Somewhat challenging)	1 (Somewhat challenging)	0 (Not at all challenging)	1 (Somewhat challenging)
Predicated Probability	0.51	0.55	0.42	0.44
Actual Probability	0.39	0.41	0.36	0.36
Threshold likelihoods				
Not at all challenging	1.084	**0.564*** **	0.963	**0.608*** **
Somewhat challenging	**2.579*** **	**2.609*** **	**2.691*** **	**2.028*** **
Regions				
West ($\square_1$)	**2.067*** **	**1.603*** **	1.054	**1.511*** **
Midwest ($\square_2$)	1.142	**1.292** **	1.191	1.020
South ($\square_3$)	0.851	**1.329*** **	**1.594*** **	**0.835***
Gender ($\square_4$)	1.089	1.067	1.073	1.020
Years in Agritourism ($\square_5$)	0.998	1.003	1.001	1.002

Note. *$p \leq .05$; **$p \leq .01$; ***$p \leq .001$

outcome of the ordinal regression. Included are the predicted response category and both the predicted and actual probabilities of each response category, respectively. Threshold and independent variable odds ratios (Exp(B)) are included with significance level.

For *city and county zoning and permitting*, *concerns about agritourism liability,* and *state and local regulation*, the predicted response category was "1" (Somewhat Challenging). This indicates that, for most operators, these issues were somewhat challenging for their operations. *E-connectivity* was the least challenging of the four variables as most operators selected "0" (Not at all challenging), meaning this was a less challenging issue for most operators.

The results indicate that each region's experience with each challenge carries varying levels of significance. Responses from the West show that farmers in this region experience difficulty with all challenges except for *e-connectivity*. For the South, all but *city and county zoning and permitting* were significant. Responses from the Midwest we more likely to have *concerns about agritourism liability* than any of the other challenges we highlighted.

Discussion

Our findings on the regional differences in challenges to operations were supported by open-ended responses from operators. As one West Coast operator wrote, "This has been one of the hardest jobs and ventures I have ever been involved in, and I make little to nothing to show for all the effort and work put into this business." Low levels of access to key resources like appropriate zoning/permitting and liability legislation, reliable and affordable e-connectivity, and suitable regulations can significantly impact farm operations and their viability.

City and County Zoning and Permitting

The analysis shows that operators are 2.6 times more likely to experience some challenges associated than many challenges related to zoning and permitting. Operators were also likely not to have any challenges with zoning and permitting as they are to have many challenges. Regionally, the West was 2.1 times more likely to have challenges with zoning and permitting than Northeast. There was no significant difference between the Midwest and the South compared to the Northeast. Neither gender surveyed nor years in agritourism were significant in the model employed.

The operators' comments corroborated and expanded on the quantitative results. Operators in the West are frustrated with "city-based bureaucrats who govern sweeping restrictions on ag zoned operations," including restrictions on "on-farm dwellings for farm helpers and visitors" that can have a strong impact on the financial health of an operation. Operators in the West were particularly concerned about the land-use laws as they "block innovation" from within the agritourism community. "Getting visitors from 50 miles away requires more lodging in our area, but agricultural zoning precludes this. [The regulators] need to give farmers/ranchers flexibility to provide on-site overnight accommodations if land-use doesn't allow other entrepreneurs to develop in rural zones." Without the ability to host guests from further distances, operators may not be able to obtain the financial stability that leads to success.

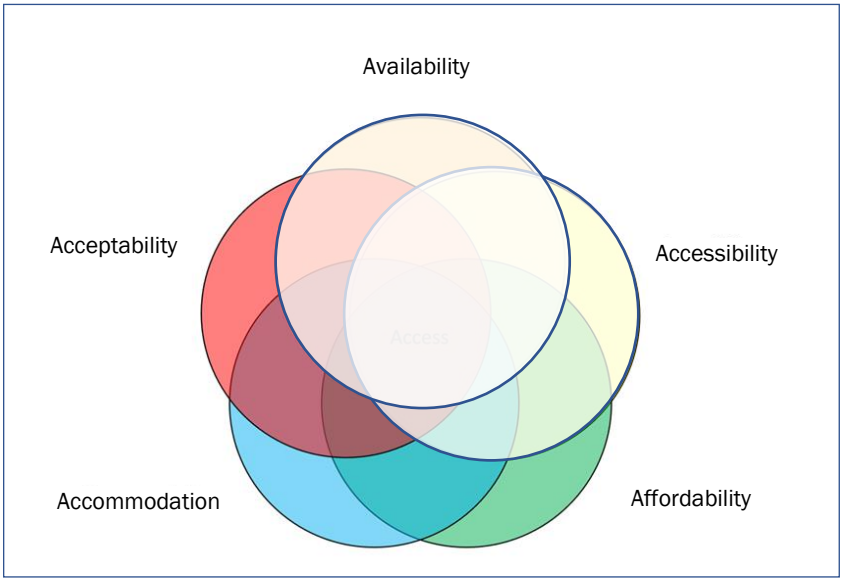
Similarly, respondents from the Northeast felt the pressure of local "building codes and requirements" as well as "conservation land restrictions" that hinder their operation's ability to provide more facilities for staff and visitors. In the Midwest, county regulations were "a huge obstacle" and the "process was exceedingly difficult" for operators. These challenges have led operators to feel "snubbed" by regulators and to feel "very limited" due to these restrictions.

However, other operators wanted stricter enforcement of zoning regulations. In some areas of the West, large operations with event venues without agricultural output have hindered the production capacity of other farms due to a higher volume of traffic to more rural areas. For these farmers, "farm operations and spraying [has] become more difficult" due to proximity near the fields. Northeast operators agree that "regulatory changes … don't recognize rural or zoning constraints."

A common difficulty among respondents has been the lack of transparency regarding what types of permits they need to comply with regulations,

indicating a lack of availability of and accessibility to the information needed for success. Where greater direct assistance from government entities, such as easy-to-find information on web-based resources, use of clear language in written materials, or informed local government staff may have eased access issues. Operators in the West region felt that local government officials were giving them "the run-around, no one seems to know the answers, and each gives a different interpretation of nonsensical, bureaucratic rules." This lack of transparency has also made agritourism an untenable model for some because there is an "unknown 'how' or 'what' to plan [for] let alone investing more capital into agritourism" even though operators "need to invest to make [a] plan better." These struggles with zoning and permitting (Figure 2) indicate a lack of accommodation afforded to agritourism operators when local policies are set, leading to difficult business environments, particularly in the West region.

Figure 2. Limits to Access Due to "City and County Zoning and Permitting"



Additionally, the lack of accommodation leads to affordability problems because operators must obtain permits to comply with the local regulations. However, local regulatory bodies are perceived to be under-educated about agritourism, causing a barrier to information for operators that can lead to frustration, non-compliance, and loss of operators' time for business development. This is possibly due to a one-size-fits-all approach many take to regulations. Different types of agritourism businesses (e.g., orchards, corn mazes, event barns) might require different regulatory frameworks. Exploring the challenges and access broken down by business type would be a beneficial area of future study.

Increasing the level of access, both in terms of availability and physical accessibility, to information and informed government officials can reduce the amount of work for operators as well as the cost of unnecessary permits. By creating access to the clear and digestible city and county zoning and permitting laws, agritourism enterprises can better plan their available resources, whether financial capital, employee-related, operational, or otherwise.

Concerns about Agritourism Liability Issues

The second ordered probit model focused on concerns about agritourism liability issues, which impacts the way a farm operates in terms of the activities it can offer onsite. We found that, in all, operations were 2.6 times more likely to experience some concerns about agritourism liability compared to many concerns. However, they were more likely to have many challenges with liability than none. The West (1.6 times more likely), Midwest (1.3 times more likely), and South (1.3 times more likely) were all more likely to experience challenges with liability compared to the Northeast.

In line with the regression findings, operators from all regions noted that liability was a concern, particularly due to visitor behavior patterns and lack of insurance availability. Inappropriate visitor behavior due to lack of knowledge about farm and land operations or general disregard for farm rules was a stressor for all operators, as many could not find insurance policies that covered their various activities. In the Midwest, operators found that

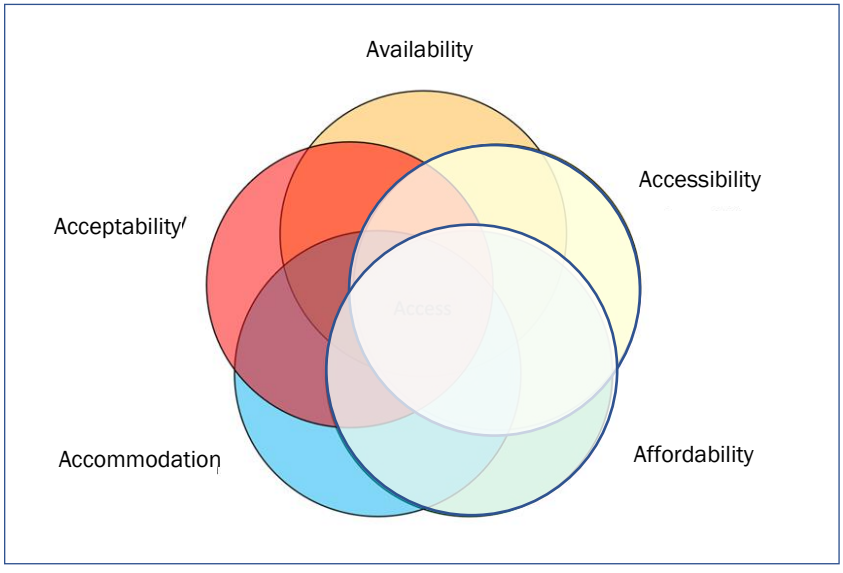
"Insurance is a challenge because most companies don't have a real idea about the actual risk factors, or how to write [the policy]." Others agreed, saying that "… very few [insurers] have any experience with what we do, and are therefore reluctant to provide the necessary insurance to help us thrive safely." Certain issues with liability and lack of insurance stem from the issues around how agritourism is defined or not defined at the federal, state, and local levels. As a result, insurance companies are less likely to cover agritourism activities, or there are significant barriers to getting coverage (due to cost and time).

According to our survey, problems with insurance can be broadly broken into the high cost and the lack of understanding on the part of the insurer. Many operators noted the high cost of coverage due to the various on-farm activities they offer. One operator noted that their yearly income was US$5,000 while the insurance policy for their on-farm transportation cost US$4,000 per year. In the West, operators also wrote of dropped insurance policies because of conflicting on-farm offerings, such as combining lodging and cut-your-own tree operations. Cases like this were experienced by many respondents across regions.

Challenges of liability result from the lack of accommodation of regulations for operators (Figure 3), which provides evidence found by Centner's (2010) analysis of agritourism liability statutes. This is coupled with the lack of awareness on the part of both visitors and insurers. Visitors are not always cognizant nor attentive of the guidelines of operators on their farms, leading to concerns about injury and other risks. Operators also have trouble finding insurers who can accommodate the needs of such multi-operational enterprises. Where there are available and willing insurers, the overwhelming cost is prohibitive for operators, particularly small-scale operations. State policies are also limited; some operators noted that states require enterprises to meet baseline requirements that are hard to achieve for small and mid-sized operations. Educating the voting public can help to alleviate some of these issues in the long term. However, broad state and federal support for agritourism operations around liability can also alleviate some of the burdens for operators.

While creating a unified definition of agritourism is a daunting task, a tangible step toward increasing accessibility is to educate the public, insurance carriers, and policymakers about agritourism on-farm liabilities. Through education, visitors may gain more respect for operators and have more fulfilling on-farm experiences. At the same time, insurers may redesign insurance models and policies that are more affordable and more accessible to agritourism and direct-sales operators. In doing both, operators may experience more visitors and become more financially stable.

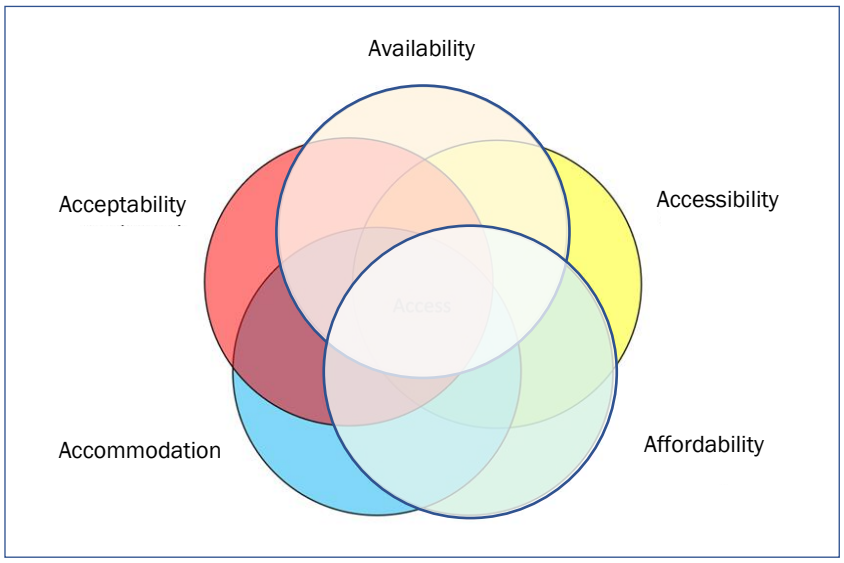
Figure 3. Limits to Access Due to Liability and Insurance



E-connectivity

Our results support the importance of e-connectivity to agritourism, as previously noted by Bagi and Reeder (2012). Reliable e-connectivity was less of an issue for agritourism operators compared to other challenges regression models, yet respondents were 2.7 times more likely to have at least some challenges compared as to none at all. We found that the South is 1.6 times more likely to have challenges with *e-connectivity* than

Figure 4. Limits to Access Due to E-Connectivity



the Northeast, while the West and Midwest had similar levels of challenge with *e-connectivity* as the Northeast; however, the analysis presented insignificant results.

Open-ended responses from operators in the South support the results. Operators lamented that the "lack of reasonable priced internet access is almost crippling" because it hinders their ability to "provide connectivity for overnight guests" and for their ability to "handle business operations and business development." The lack of internet access makes it harder for operators to attract guests to their operations and harder to advertise and conduct regular business. Moreover, the inability to connect online limits the operator's ability to educate themselves on changes in local or state regulations and agritourism innovations.

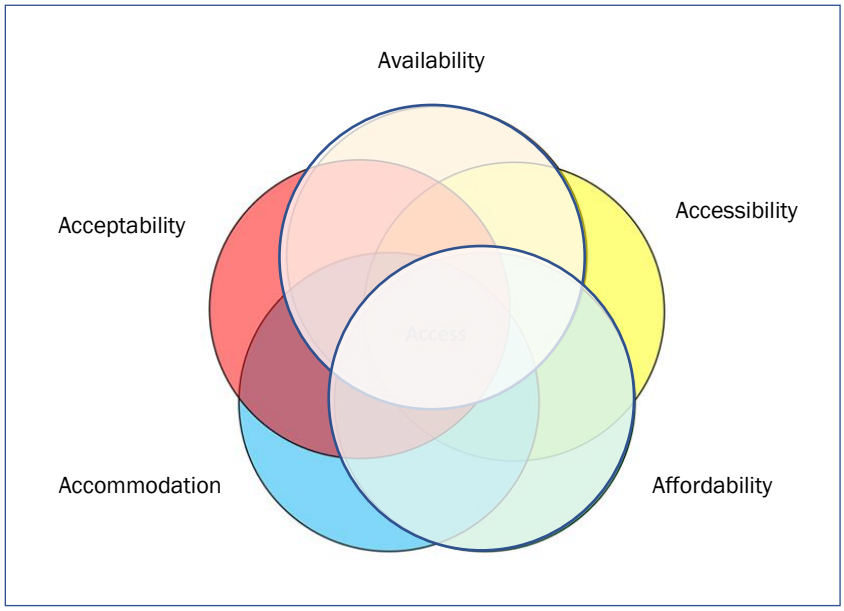
For some operators, it is harder to operate without internet access as they are dependent on wireless options for all their business activity. In the Midwest, one operator noted they "started to accept credit cards but our internet is not reliable, so we have trouble with the system." Others in the Northeast note that "since Airbnb is an online service, everything we do to manage our reservations, communication with guests, etc. depends on our internet to function. Unfortunately, it often does not." As more and more operational management is dependent on internet access, the lack of affordable and reliable connectivity heightens the burden on operations in rural areas as it can cut into operational budgets. In the Midwest, operators find that the "internet has become so commercialized that it is almost unaffordable … without spending considerable amounts of money."

The lack of *e-connectivity* also has implications in the era of the COVID-19 pandemic. Although the survey was conducted pre-pandemic, the dependence on e-connectivity is likely to have increased since COVID-19 restrictions were implemented in the U.S. beginning in March 2020. Evidence indicates that operators might rely more on online services to help keep potential customers informed about changes, particularly regarding COVID-19 mandates (Schmidt et al., 2020; Smith, 2020; Wicks, 2020). For farms in the U.S., this means that not having connectivity to update their farm information, hours, and activities or being unable to accept wireless payment could be a setback for their operation. By increasing e-connectivity across all regions, operators may improve consumers' awareness of their business and gain access to information and resources that may have previously been difficult to acquire.

In many locations, particularly in the South, challenges with *e-connectivity* result from availability and affordability of service (Figure 4). Most often, e-connectivity options are unavailable; where it is available, it is often costly and unreliable. However, in the modern e-connected world, not having this access reduces operational potential. Operators are frustrated with the lack of available services for areas where agritourism operations are located. As an operator in the American South wrote, "the lack of reliable high-speed internet is a huge issue for my education and also for the promotion of our farm and small business." The lack of available, affordable e-connectivity services hinders operational growth and has implications for the finances of agritourism operators.

By having access to reliable internet service, operators can seek personal education, market their operations via digital platforms to draw in a broader consumer base and provide visitors with more offerings. Improved *e-connectivity* may also increase the ability for operators to be more innovative with their business models, which may help to improve financial stability.

Figure 5. Limits to Access Due to State and Local Regulations



State and Local Regulations

The fourth ordered probit regression model sought to find differences *in state and local regulations* across regions. The results of our analysis support previous findings from Rilla et al. (2011) and Centner (2010), who emphasized the challenges created by state and local regulations and the resulting lack of access. Recent studies have shown that these regulations can be a hindrance outside of the U.S. as well (Paniccia & Baiocco, 2021). Our analysis shows that operators are 1.6 times more likely to have some challenges with regulations than not, but they are more likely to have many challenges compared to no challenges at all. The West was 1.5 times more likely to have such challenges compared to the Northeast. While the responses from the Midwest were similar to the Northeast, the South is less likely to have challenges around regulations compared to the Northeast.

Qualitative analysis found that the availability of information to both the operator and regulators was a key reason for challenges experienced in the West. An operator in the West explained, "Finding out, and then implementing the local regulations is very difficult. They [the local officials] give us the run-around, no one seems to know the answers, and each gives a different interpretation of non-sensical, bureaucratic rules." These experiences hinder operators' access to this resource.

Although agritourism operations can be a financially robust part of the local economy, many regulators appear to be uninformed about agritourism, causing confusion among operators. This has led, in some cases, to payment for multiple certifications that do not meet the actual requirements of regulations. Operators can end up paying for extraneous fees to expand their enterprises, similar to issues seen with *zoning and permitting*. An operator in the West expressed these costs: "Between state and county regulations (and expenses) and focused insurance availability (and expenses), it's usually been impractical to pursue larger events that would generate more revenue." The cost of following local and state regulations mean that operators must choose between scaling up and gaining more revenue or maintaining their smaller, less-profitable enterprises (Figure 5).

Without the availability of regulatory information, it is particularly difficult for new operators start their businesses and operate legally. In the case of one operator in the West, they "have just stayed under the radar" of local rules and regulations but noted that "if they ever do [become an issue] (water, permits and permit application fees exceeding [US]$1200) we will close instantly. Not enough margin in money or energy to deal with all of that." As they made clear, for some operators, it is easier to operate without the required permits because the

permitting fees alone would drive them out of business.

Many operators also expressed confusion, as evidenced by one Midwest operator who commented on our survey, "From the research I've done, it sounds like the state laws supersede the county laws, is that correct?" This type of confusion is indicative of the problems many operators are experiencing and serves as yet another burden to their enterprise.

The challenge of *state and local regulations* is that, although there is an abundance of regulations, information on them is not easily available and the cost of compliance is high. Increasing accessibility information and increasing accessibility to service providers and officials who can provide timely and accurate guidance to operators can mitigate challenges. Additionally, scaling regulatory fees to reflect the farm's size may reduce headaches for new and/or smaller operations that do not generate as much income.

Conclusions

This study's purpose was to understand better the differences in challenges faced by agritourism operators in four regions of the United States. The quantitative analysis offered a deeper understanding of the various extents to which zoning and permitting, liability, e-connectivity, and regulations present challenges differently within three regions of the U.S. Specifically, we found operators in the West region were most likely to experience challenges around city and county zoning and permitting, concerns around agritourism liability and state and local regulations compared to other regions. We also found that operators in the South were 1.6 times more likely than those in the Northeast to experience challenges around e-connectivity, while the West and Midwest were not significantly burdened by the resource.

Qualitative comments made by operators support our quantitative findings. Operators felt that zoning and permitting were significant obstacles in their daily operations and sought more assistance from local officials to understand the complexities of these rules. Increased access to clear and timely information can reduce the costs associated with the inaccurate application of permit and zoning laws. Liability challenges across the regions, and particularly in the West, Midwest, and South, were perceived to exist because visitors and insurers lack the necessary education. Where visitor education can reduce on-farm risk factors, insurer education can mitigate the problems caused by visitors on-farm. Operators, particularly in the South, noted the difficulty of running their operations without the availability of reliable internet, ranging from problems with credit card payments to the inability to educate themselves on new marketing and promotional tactics to expand their consumer base. Improvements to e-connectivity, including availability and accessibility, increase the opportunities for agritourism enterprises to expand their offerings to visitors and attract new consumers. The complexity of navigating state regulatory systems means low accessibility for operators, and a high cost of compliance, even where regulations are not flexible enough to fit the needs of an operation. Greater availability and accessibility to information can ease this burden for operators.

This study was limited by the use of in-network contacts, which increases bias in the responses, self-selection bias, and positive responses. It is also important to emphasize that these results are anecdotal. The snowball convenience sampling approach we took limited the number of responses in states with less active participation, resulting in a sample unrepresentative of the agritourism operator population in the U.S. Future studies using different sampling methods could provide insight into challenges that may better inform national-level policy and support mechanisms. It is also possible that the challenges we emphasized here are similarly significant to all small businesses, and not necessarily unique to agritourism. This study is not equipped to explore this comparison. Finally, the research team predetermined the variables we explored, which means that emergent challenges were ignored. Any possible emergent challenges from this data set should be explored in future studies.

The results of this study help to inform the field in three ways: support services for agritourism (e.g., Extension professionals, agritourism advocacy groups, and organizations), policy and regulations (policymakers), and future research (academ-

ics). Each of these three groups can increase access for operators by working in coordinated efforts, as discussed previously in the paper. Where service providers can increase the availability and accessibility of informational resources, policymakers can improve accommodation in regulations and e-connectivity services, and affordability of resources such as liability insurance and academic efforts can explore the acceptability of existing conditions that continue to create barriers to success. Agricultural service providers across the United States, particularly in the West, should offer understandable resources related to agritourism policies for operators. These resources must also be kept up-to-date, affordable (i.e., amount of time and effort to access), and easily available to operators. Additionally, a state-by-state resource should be developed to help operators find their state's policies and local key contacts who can interpret legal jargon and regulatory information.

Policymakers at community, state, regional, and national levels can use this information to understand better the impact of policies and regulations on agritourism operators. While policymakers may understand that agritourism aids farm profitability (Hollas et al., 2021), they may not understand how policy influences an operation's viability, particularly as related to liability concerns. Government officials and regulators need to be more aware of how policies are interpreted and applied, as well as how they are meant to be interpreted and applied, to ensure that operators are not overcommitting funds on unnecessary permits and other requirements in order to comply. Policymakers should consider the cost of operations as agritourism enterprises are often caught between multiple needs, often at the cost of either quality of life or production output. Creating policies that accommodate the needs of agritourism operators can have positive outcomes for local communities as money flows into rural communities from farm visitors.

Additional research and regional assessment are needed to understand the issues in availability, accessibility, and affordability of reliable e-connectivity in the South, as well as the economic implications for operators. This is particularly important as the COVID-19 pandemic continues to influence indoor activities, and there is greater interest in experiencing outdoor recreation, particularly on farms. Without adequate access, operators may lose customers due to the inability to market to a wider audience. Our study does not take into consideration the political and socioeconomic perspectives of farmers. Future research should also look at these perspectives and how they affect responses to surveys such as this one. Research is also needed on the impact of zoning and permitting and state and local regulations on operators in the West. The high cost of compliance and lack of accommodation of policies hinder the innovation and scalability in both directions for operators. Policymakers, service providers, and researchers like us must consider all the dimensions of access as we work with and for agritourism.

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