

**OBSTACLES ENCOUNTERED AND OVERCOME BY FEMALE
AGRICULTURAL ENTREPRENEURS IN NICHE MARKETS**

by

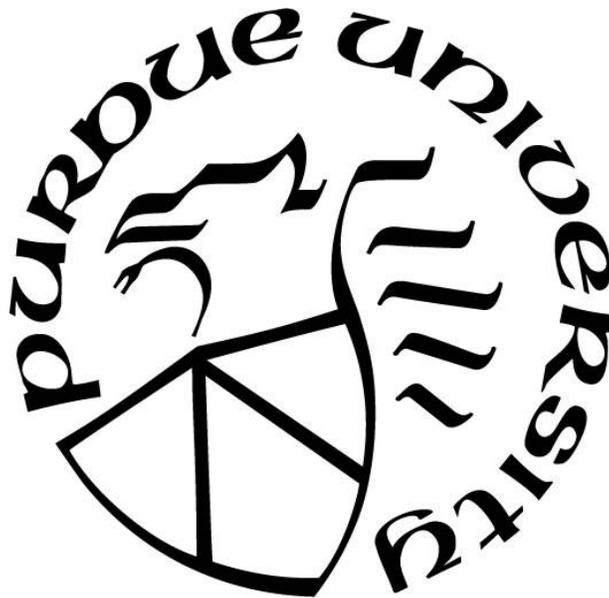
Elizabeth M. Alexander

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**THE PURDUE UNIVERSITY GRADUATE SCHOOL
STATEMENT OF COMMITTEE APPROVAL**

Dr. Levon Esters, Chair

Department of Agricultural Sciences Education and Communication

Dr. Maria Marshall

Department of Agricultural Economics

Dr. Neil Knobloch

Department of Agricultural Sciences Education and Communication

Approved by:

Dr. Mark Russell

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ABSTRACT

Women who operate small-scale farms and sell to small markets in Indiana may encounter certain obstacles and constraints due to self-employment in the traditionally male-dominated field of agriculture. Researchers have recognized the role of sustainable agriculture ideology in attracting women to these niche agricultural markets. Despite increasing opportunities for women in sustainable agriculture, research suggests that traditional gender roles are often maintained, manifesting itself through several obstacles (Pilgeram & Amos, 2015). Female agricultural entrepreneurs encounter obstacles including work-family balance, geographic barriers, access to physical resources, access to financial resources, access to places of information. Previous research indicates that female entrepreneurs have less access to human, social, and financial capital to support their business ventures (Powell & Eddleston, 2013). However, this study explored the feminine perspective and management styles which may serve as beneficial resources.

The purpose of this study was to explore and describe existing obstacles encountered by female entrepreneurs in niche agricultural markets and their methods of building resilience in their business. Quantitative data was collected through an online survey of 62 agricultural entrepreneurs across the state of Indiana. Participants were asked questions pertaining to their business structure, resources, constraints, processes, achievements, and demographics. Several responses to open-ended questions were also collected and analyzed through open, axial coding. Study results include the diversity of the population, value of human capital resources, prioritization of quality products, significance of internal constraints, discrepancies in division of labor and women's obstacles to access to social networks. A greater understanding of the obstacles encountered by women agricultural entrepreneurs can also provide valuable insight to Land-Grant University Extension, policymakers, and stakeholders in the Indiana agriculture industry.

CHAPTER 1. INTRODUCTION

1.1 Introduction

Female agricultural entrepreneurs must conquer obstacles unique to their position as small business owners, small-scale farmers, and women in a traditional field. In recent years, there has been a divergence in the field of agriculture between small-scale, alternative agriculture and the traditional productivist industry (Fuad-Luke, 2017; Sumner, Mair, & Nelson, 2010). Alternative agriculture evolved from small farmers selling to niche agricultural markets on a local level. Along with the bifurcation of the American agricultural industry, the demographics of farm operators have shifted as well. More women are entering the agricultural industry, primarily in the quickly growing alternative agriculture sector (Little, Ibery & Watts, 2009). Availability of capital and markets support the rise of alternative agriculture, but there remain barriers to accessibility and obstacles including policy and information dissemination (Bruni, Gherardi, & Poggio, 2004; Bird & Sapp, 2004; Powell & Eddleston, 2013). Beyond the obstacles affecting niche agriculture, there are additional hindrances female entrepreneurs encounter in a traditionally male-dominated agricultural industry. For example, women small business owners need to overcome ingrained societal gender roles that affect access to certain markets, access to loans, and childcare (Bruni, Gherardi, & Poggio, 2004; Bird & Sapp, 2004; Powell & Eddleston, 2013). Despite the obstacles women entrepreneurs encounter, they have developed coping strategies and built resilience in their small businesses.

1.1.1 Overview of Niche Agriculture

For the context of this study, “niche agriculture” is an inclusive term which is more easily described by what it is not (Table 1.1). In the increasingly polarizing and political agriculture sphere, many terms have attached connotations. For example, both large-scale, Confined Animal Feeding Operations (CAFOs) and small urban community gardens can qualify as sustainable. According to the USDA, small farms are those who have a gross cash farm income less than \$350,000. The term “niche agriculture” was found primarily in the literature on European, small-scale alternative agriculture production.

Table 1.1 Terms Included and Excluded Under the Umbrella Term of Niche Agriculture

Included	Excluded
Small scale, organic certified farms	Large-scale, organic certified farms
Farms using growing methods but are not certified (i.e. organic, animal welfare, etc.)	Conventional, commodity production
Regenerative agriculture	Corporate-owned farms
Hobby farming, Homesteading	CAFOs
Specialized production of artisanal or lesser known products	Specialized production of mainstream, commodity crop
Diversified farming practices, polyculture	Monoculture farming

Two of the most common examples of niche agricultural markets are community supported agriculture (CSA) and farmers markets, where agricultural entrepreneurs are marketing their products directly to consumers. Most of the agricultural entrepreneurs in the niche agriculture sector are smallholder farmers with small agricultural businesses. While the population of smallholder farmers and niche agricultural business owners is diverse and heterogeneous, they do share a common set of certain characteristics. One of the identifying characteristics of small businesses in niche agriculture is a grounding in sustainability ideology. The emerging niche agricultural market is constructed to be more socially sustainable and ethical than the conventional agricultural industry (Arguelles, Anguelovski, & Sekulova, 2018). The sustainable ideology underlying niche agriculture manifests itself in both the business operations as well as the demographics of the producers. Small businesses operations within niche agriculture are characterized by direct marketing, allowing farmers to interact directly with consumers (Little, Ibery, & Watts, 2009). The demographic makeup of small farmers utilizing sustainable agricultural practices are commonly younger and more educated, with a greater proportion of women serving as business owners than in conventional agriculture (Pilgeram & Amos, 2015). In addition to the characterization of sustainable ideology and direct marketing approach, niche agricultural markets are widely recognized for the demographic makeup of their small business owners.

1.1.2 Obstacles in Small Businesses in Niche Agricultural Markets

Small businesses who participate in the emerging niche agricultural market encounter obstacles relating to access to financing, fair markets, and information. One of the most well-documented obstacles for small agricultural business owners is access to information on financing (Bruni, Gherardi, & Poggio, 2004; Bird & Sapp, 2004; Powell & Eddleston, 2013; Van Auken & Carraher, 2012). While programs serving the agricultural business sector have expanded over recent years, researchers report the capital acquisition process is difficult to navigate without information or assistance (Van Auken & Carraher). After obtaining funding for their businesses, small farmers must overcome the obstacle of access to fair marketplaces (Saulters, Hendrickson, & Chaddad, 2018). Part of the difficulties associated with market access are due to location. Because many small agricultural businesses are located in rural areas, they encounter geographic obstacles to economic opportunities and consumer markets (Danes, Stafford, & Loy, 2007). The geographic location of a firm presents additional obstacles to centers of information and communication as well (Danes, Stafford, & Loy, p.1058). The geographic location of niche agriculture business is one example of the interconnected web of obstacles small businesses in niche agriculture encounter.

1.1.3 Obstacles for Women Entrepreneurs

Despite increasing opportunities for women in alternative agriculture, scholars are still documenting gender-related obstacles to small business success. Previous research suggests these obstacles are the result of traditional gender roles maintained by society (Pilgeram & Amos, 2015). Childcare is one example of the influence of societal gender roles in entrepreneurship which can become an obstacle when childcare responsibilities limit entrepreneurs' ability to access agricultural education, networking events, and other outside resources (Barbercheck et al., 2009; Danes, Stafford, & Loy, 2007). Due to their primary responsibility for children, female business owners adapt their business framework to balance their "professional, social, family and personal demands" (Danes, Stafford, & Loy, p. 1058). The prioritization of family balance can become an obstacle to entrepreneurial success when business health is measured only by traditional financial indicators. The negative effects of prescribed gender roles extends beyond credibility and human capital to the social networks of female entrepreneurs as well (Bruni, Gherardi, & Poggio, 2004).

Building social capital and utilizing social networks is vital to small business success. However, entry into networks that bolster business success and building up the social status of a business is an obstacle for many female entrepreneurs (Bruni, Gherardi, & Poggio, 2004; Bird & Sapp, 2004).

In addition to social capital limitations, research indicates women entrepreneurs have less access to physical and financial capital to support their business ventures (Powell & Eddleston, 2013; Danes, Stafford, & Loy, 2007; Bruni, Gherardi, & Poggio, 2004). For example, women “encounter greater barriers than males in obtaining business credit,” (Danes, Stafford, & Loy, p. 1058). Access to financial capital is often tied to business ownership experience, and in Bird and Sapp’s (2004) study of women business owners in Iowa, women often had less ownership experience and thus experienced greater difficulty obtaining credit. Another resource women entrepreneurs have a difficult time acquiring is land. Pilgeram and Amos (2015) concluded “despite the increasing numbers of women in farming, for many women access to land is directly tied to a male partner” (p. 17). In addition to a lack of physical resources, women have historically been faced with obstacles to obtain information (Pilgeram & Amos; Trauger et al., 2008; Gherardi, & Poggio, 2004). The Extension network provides an invaluable system for information dissemination and assistance, but past research has concluded mechanisms of gender exclusion have impeded access to Extension (Bruni, Gherardi, & Poggio, 2004). While ideology may attract women entrepreneurs to small-scale agriculture, it is also a financial decision founded in their limited access to resources that would bar them from mainstream markets (Pilgeram & Amos).

1.1.4 Resiliency in Small Businesses

Despite the disadvantages female entrepreneurs may have encountered, they have found ways of overcoming the obstacles for small business success. The ability to overcome obstacles in startup and sustaining small business is invaluable to entrepreneurs. A form of human capital, resilience is defined as “the owning family’s use of an ability to adjust resource and interpersonal processes to disruptions” (Danes, 2013; Danes, Stafford & Joy, 2007, p. 1060). When the business encounters an obstacle, the business owner can tap into the store of resilience and utilize trust and creativity to solve problems and adapt to difficult situations (Danes; Danes, Stafford, & Joy). Building resilience into small businesses then is composed of utilizing small adaptive strategies in an ever-evolving process (Roberts et al., 2017). While there is no singular way to build resilience,

Roberts, Anderson, Skerratt and Farrington identified some of the more common themes on small business resilience. For example, resilient business owners are able to develop their ability to utilize outside resources and consider cultural, political and historical context when making future decisions (Roberts et al.).

1.2 Problem Statement

Women who operate small-scale farms and sell to small markets in Indiana are confronted with obstacles and constraints due to self-employment in a traditionally male-dominated field. The latest census reported the number of female producers has increased by 27%, while the number of male producers lowered by 1.7% from 2012-2017 (White & King, 2019; USDA, NASS, 2017). Now, 14% of farms are operated by women, 36% of producers are women and just over half of American farms have at least one woman serving in a decision-making role (White & King; Christian, 2015). Interestingly, most of the women entering the agricultural field are involved in small-scale farming in the alternative agriculture sector. While mainstream media has noted the trend for years, only the most recent 2017 Census of Agriculture data provided data to confirm the prevalence of women participating in alternative agriculture. More women are entering agriculture to focus on small livestock operations, organic crops, or produce for the local community (Doering, 2013; White & King). These women are more likely to grow diverse crops and market directly to consumers (Christian, 2015). Some researchers have connected the “rise in the number of women in farming parallels the dramatic rise in the number of organic and sustainable farming operations and farmers markets in the United States” (Trauger, et al., 2009, p. 43).

Yet despite their increasing presence in the agriculture industry, women are still confined to gender-specific roles on the farm. Female producers are most likely to be helping with day-to-day decisions and desk work (e.g., record keeping and financial management; White & King). An article in USA Today reiterated this sentiment, explaining “in most cases, women were depended on to keep the house running and make sure the farm’s paperwork was up to date and the bills were paid” (Doering, 2013, para. 6). The obstacles women experience in the greater agriculture industry are well documented. However, the alternative agriculture sector has been described as more liberal compared to the conservative, conventional agriculture industry. Prior research provides conflicting accounts on whether or not sustainable agriculture perpetuates the same

gender roles and obstacles as conventional agriculture, or if there is greater freedom and gender equity (Pilgeram & Amos; Jarosz, 2011; Trauger, 2004). Due to the vast differences between conventional and alternative agricultural practices, women may experience different obstacles in small-scale farming. Understanding the degree to which obstacles affects the success of female agricultural entrepreneurs will advance extension programming, inform policymakers, and educate the larger agricultural community on how to alleviate constraints to entrepreneurship, thereby supporting local communities and sustainable food systems.

1.3 Significance

This study is significant for three reasons: 1) it brings attention to ways Land-Grant University Extension can better serve female agricultural entrepreneurs, 2) it informs agricultural policy on how to guard the interests of the small-scale agriculture sector, and 3) it advances economic and entrepreneurship development by addressing barriers women in agriculture face.

1.3.1 Advise Land-Grant University Extension

This study can inform land-grant university Extension systems on how to best meet the needs of the female niche agricultural entrepreneurs. Women in both conventional and alternative agriculture encounter obstacles to centers of information and are largely underserved by agricultural education and technical assistance programs provided by Extension (Bruni, Gherardi, & Poggio, 2004; Trauger et al., 2008). The Extension network provides an invaluable system of information dissemination and assistance. Without an accessible source of agricultural knowledge, small farmers will encounter more barriers to business success. This study seeks to highlight the economic and social importance of extending resources to small farmers and raise awareness of gender equity issues within the agricultural field. With a greater understanding of the role of local markets and female entrepreneurs in community development, extension educators will be able to better serve their communities.

1.3.2 Inform Agricultural Policy

Agricultural policies tend to favor large producers. However, with the rising number of small farms within niche agriculture and the changing demographic of farm operators, it is important for policymakers to reevaluate the needs of their constituents. Alternative agriculture, including niche markets and the local food movement, has gained traction in Indiana, yet there is little attention to the issues small farmers, particularly women, encounter. Many of the obstacles to resources small farmers face can be remedied through deliberate and informed policy. Government grants are a valuable financial resource to farmers and business owners. However, grants are often for extravagant sums that are impractical or unavailable for most small farmers. It is imperative that informed Indiana policymakers create new legislation, which reflects the reality of the situation and alleviates the obstacles faced by small agricultural businesses. Furthermore, with the rise of urban agriculture, agriculture should be a consideration for local city government. Zoning laws can prove to be difficult obstacles for urban agricultural entrepreneurs. This study will provide an overview of the many obstacles niche agricultural entrepreneurs encounter, as well as highlight the benefit they are to the community. Policymakers can use this information to inform their legislative decisions and support programs to benefit female agricultural entrepreneurs.

1.3.3 Advancing Economic and Entrepreneurship Development

This study can assist in advancing economic and entrepreneurship development by addressing barriers faced by women in agriculture. Through a better understanding of the obstacles that are encountered by female agricultural entrepreneurs, more attention and effort can be directed towards alleviating unintentional pressure on women in agriculture. In assisting female agricultural entrepreneurs, small agricultural businesses will see greater success and improve their local economy. According to Berger and Kuckertz (2016), “prior research suggests the best way to tap the full potential of an ecosystem is to develop policies that make the job market in general accessible to women” (p. 5167). Addressing the barriers women in agriculture face will increase their entrepreneurial success and thus create an ecosystem benefiting entrepreneurship development.

1.4 Purpose

The purpose of this study was to explore and describe existing obstacles encountered by female entrepreneurs in niche agricultural markets and their methods of building resilience in their business.

1.5 Research Questions

The research questions guiding this study were:

1. What obstacles have Indiana women encountered in their small-scale agricultural business ownership?
2. What did female agricultural entrepreneurs consider their most valuable resources?
3. How did female agricultural entrepreneurs cope when faced with obstacles to business success?
4. How do Indiana female agricultural entrepreneurs measure achievement?

1.6 Assumptions

The following assumptions were made for this study:

1. Participants answered all questions diligently, honestly, and to the best of their ability.
2. Participants completed the survey instrument independently without any external influence or assistance.
3. The researcher is operating under the post-positivist paradigm and the epistemological assumption that there is one reality which is measurable and knowable, although difficult to access (Bisel & Adame, 2017).
4. The bias of the researcher was minimized so as to conduct the study objectively.

1.7 Limitations

The following limitations were identified in the development of this study:

1. Self-reporting was a limitation in this study. The accuracy in the data is reliant on the honesty and accuracy of participants' responses. In addition, the personal nature of the subject enhances the limitation of self-reporting. According to Powell and Eddleston (2013), female entrepreneurs are personally connected to their small businesses and a

discussion on the obstacles faced can cause frustration. Therefore, in answering questions pertaining to potentially sensitive issues, participants may not be completely forthcoming. The researcher intends to minimize this threat through carefully worded questions to collect accurate data.

2. Another limitation is the collection of quantitative data in an exploratory study. Quantitative data may not provide a complete representation of the different constructed realities from participants. To address this limitation, a qualitative component in the form of a few open-ended questions was included in the study. A quantitative study with three open-ended questions provides an alternative form of data to complement and reveal the underlying explanation behind the quantitative data collected.
3. The third limitation is that due to time poverty (Danes, Stafford, & Loy, 2007), I may miss a portion of the population in my sample. Female entrepreneurs have many responsibilities outside of their businesses, which may have prevented them from completing the questionnaire. To minimize this threat, I sent out frequent reminders and allowed adequate time for questionnaire completion.
4. The fourth limitation is the possibility of sampling bias due to use of a convenience sample. Sampling bias may come from the frame used to select the population and the interest level of respondents. To minimize the effects of this limitation, the researcher obtained data using several data collection methods. In particular, data was collected through questionnaires disseminated through email lists from agricultural organizations, Farmers' Market Managers, and local food guides.
5. The fifth limitation is that the open-ended questions used in the study did not allow for rich, descriptive detail similar to that of a qualitative study. To minimize this limitation, the response options for the open-ended questions did not have a character limit, which allowed participants to provide as much detail as they were willing to share.
6. Lastly, the results of this study were limited to female agricultural entrepreneurs within the state of Indiana who operate in niche agricultural markets. The results cannot extend to other environments, as the study of small business enterprises is reliant on specific contexts.

1.8 Definition of Terms

Agricultural Entrepreneurship: Related to the marketing and production of agricultural products including food and fiber products (Fitz-Koch, Nordqvist, Carter, & Hunter, 2017).

Community: A continually changing social system which is composed of a collective interaction of individuals who share certain ties (Danes, Lee, Stafford, & Heck, 2008).

Congruity: The degree to which a family can align the members different schedules to achieve harmony (Danes, Lee, Stafford, & Heck, 2008).

Constraints: Economic, technical, legal, or socio-cultural limitations on resources, acceptable processes, and desirable achievements (Danes, Lee, Stafford, & Heck, 2008).

Direct Marketing: A marketing tactic often used by small farmers on a local level to obtain a larger share of the food dollar by selling products directly to consumers (Arguelles, Anguelovski, & Sekulova, 2018; Qazi & Selfa, 2005; Tegtmeier & Duffy, 2005).

Entrepreneurship: The creation of a new business, usually includes some degree of risk (Merrett & Gruidl, 2000).

Extension (Cooperative Extension Service): A public service that provides non-formal education resource for people (especially farmers) using knowledge gained through the research and education of Land-Grant Universities (United States Department of Agriculture, 2016).

Financial Capital: Pooled monies of the entrepreneur, nuclear and extended families, and funds from formal financial institutions (Danes, Lee, Stafford, & Heck, 2008).

Functional Integrity: A component of the achievements in the Sustainable Family Business Model, Functional Integrity refers to the stability of the family business, involving adaptation, growth, and resolution (Danes, Lee, Amarapurkar et al., 2009; Danes & Olson, 2003; Fitzgerald, Haynes, Shrank et al., 2010).

Human Capital: Often used as a measure of an individual's productivity. Human capital is the set of skills, abilities, attitudes and work ethic at an individual level (Danes, Lee, Stafford, & Heck, 2008)

Interpersonal Transactions: A component of the processes in the Sustainable Family Business Model that transform resources and constraints into achievements. Interpersonal Transactions, such as leadership in the community, strengthen the relationship between the

business and community which improves customer loyalty and creates a resilience capacity (Fitzgerald, Haynes, & Shrank et al., 2010).

Obstacles: A constraint; something that impedes business achievement (Keller, 2014).

Physical Capital: Things such as real estate, equipment, and production infrastructure (Danes, Lee, Stafford, & Heck, 2008).

Resilience Capacity: A form of human capital, resilience is defined as “the owning family’s use of an ability to adjust resource and interpersonal processes to disruptions” (Danes, 2013; Danes, Stafford, & Joy, 2007).

Resource Transactions: A component of the processes in the Sustainable Family Business Model that transform resources and constraints into achievements. Resource Transactions, such as financial donations, strengthen the relationship between the business and community which improves customer loyalty and creates a resilience capacity (Danes, Lee, Amarapurkar et al., 2009; Fitzgerald, Haynes, & Shrank et al., 2010).

Resources: Objects, personal characteristics, conditions, or energies valued in their own right or because they act as conduits to the protection or achievement of valued goals (Danes, Lee, Stafford, & Heck, 2008).

Small-scale agriculture: Farming which takes place on a small farm, producing non-commodity agricultural products using non-commercial practices (McMahon, 2009).

Social Capital: Relationships of good will which stretch between people and social institutions that maintain social norms and reciprocal favor (Danes, Lee, Stafford, & Heck, 2008).

Structural Integrity: A component of the achievements in the Sustainable Family Business Model, Structural Integrity refers to the ability of the business to operate efficiently, involving clear coordination and decision making procedures (Danes, Lee, & Amarapurkar et al., 2009; Danes & Olson, 2003; Fitzgerald, Haynes, & Shrank et al., 2010).

CHAPTER 2. LITERATURE REVIEW

2.1 Overview

This chapter serves to provide the reader an introduction and general overview of female entrepreneurship in niche agricultural markets. The review of literature provides a comprehensive overview of entrepreneurship in niche agriculture, characteristics of women-owned businesses, obstacles encountered by female agricultural entrepreneurs, and the role of resilience in small business success. This chapter will also provide the conceptual and theoretical frameworks used to guide the study.

2.2 Literature Review Methodology

This study was informed by academic resources from multiple academic disciplines, through various search methods. Literature was collected from Purdue University e-Journal Database, Purdue University library catalog, Google Scholar, and relevant articles cited by relevant researchers. Literature searches included terms such as “female entrepreneurs in niche agriculture,” “alternative agriculture entrepreneurship,” “women agricultural small business owners,” “gender and sustainable agriculture,” and “obstacles for female entrepreneurs.”

2.3 Purpose of the Study

The purpose of this study was to explore and describe existing obstacles encountered by female entrepreneurs in niche agricultural markets in Indiana and their methods of building resilience in their business.

2.4 Research Questions

The research questions guiding this study were:

1. What obstacles have Indiana women encountered in their small-scale agricultural business ownership?
2. What did female agricultural entrepreneurs consider their most valuable resources?

3. How did female agricultural entrepreneurs cope when faced with obstacles to business success?
4. How do Indiana female agricultural entrepreneurs measure achievement?

2.5 Theoretical Framework

The Sustainable Family Business Theory (SFBT) served as the theoretical framework for this study. The SFBT was developed to explain the overlapping family and business systems and how they contribute to family business sustainability (Amarapurkar & Danes, 2005). The main components of the SFBT are resources, structure, constraints, processes, and achievements of the family and business systems, as well as the transactions between family and business systems. As this study seeks to examine the resources, constraints, and resilience of small agricultural businesses, the SFBM (Fig. 2.1) was useful in providing a theoretical foundation in how these businesses transform resources into achievements. The SFBT was developed from the general systems theory, recognizing the interplay between family and business systems in achieving mutual sustainability (Danes, et al. 2007; Danes et al., 2008).

Central Tenets of the SFBT are listed below.

1. Family is a rational system.
2. Family and business systems interact by exchanging resources at their boundaries.
3. Owning families manage both family and business systems together instead of each apart from the other to optimize achievement.
4. If the boundaries are too diffuse, the family or business system can be destroyed.
5. Conflicts arise when demands and resources do not match.
6. Family business sustainability is a function of both business success and family functionality.
7. During times of change, managers must reconstruct resource and interpersonal processes from times of stability.
8. Symbiosis between family, business, and community is positive for both the business and the community.

The researcher selected the SFBT to provide theoretical framing to the evaluation of a small business that will apply to the diverse population of agricultural entrepreneurs in this study. Several

studies have used the SFBT to inform the resources, structure, constraints, processes, and success of small family businesses (e.g. Amaranpurkar & Danes, 2005; Danes et al., 2007; Danes et al., 2008; Fitzgerald et al., 2010). The SFBT provides a simple structure for understanding the complex influences of constraints, resources, and processes on business achievement. Furthermore, the theory also allows for objective and subjective measures of success, which better evaluates the target population for this study.

In the SFBT, the family and the business systems are recognized as “purposive, rational social systems” through their solid resources and interpersonal transactions within each system (Danes et al., 2007; Winter et al., 2004). The SFBT is unique as it allowed the researcher to analyze issues that transcend the boundary from one system to the other (Winter et al.). According to the SFBT, family capital includes human, financial and social capital as well as capital stocks and capital flow (Danes, 2013). Family resources within small businesses are unique and thus contribute to competitive advantage (Danes et al., 2007). In the business system, structure is the ownership, governance, and legal filing (Danes et al., 2008). Business structure evolves as the business grows.

A major premise of the SFBT is achievements can be both objective and subjective. For example, a business achievement may be the family business income as well as family congruency or meeting goals (Amarapurkar & Danes, 2005; Danes et al., 2008). Danes et al. (2009) assert business performance measures can be better measured by the entrepreneur’s perceived business success, a subjective measurement, rather than profit, an objective measurement. The subjective measures of business achievement are reflective of short-term viability, which impacts the entrepreneur’s problem-solving efforts and thus lays the foundation for long-term sustainability (Danes, 2013). As such, subjective measures of achievement in small business analysis can provide insight into the family business’ process of change over time (Winter et al., 2004). The SFBT includes community as the context of the family business. Community is composed of the social interactions between people and the foundation of culture (Danes et al., 2008). When family members interact with the community, they gain social capital (Danes et al., 2008).

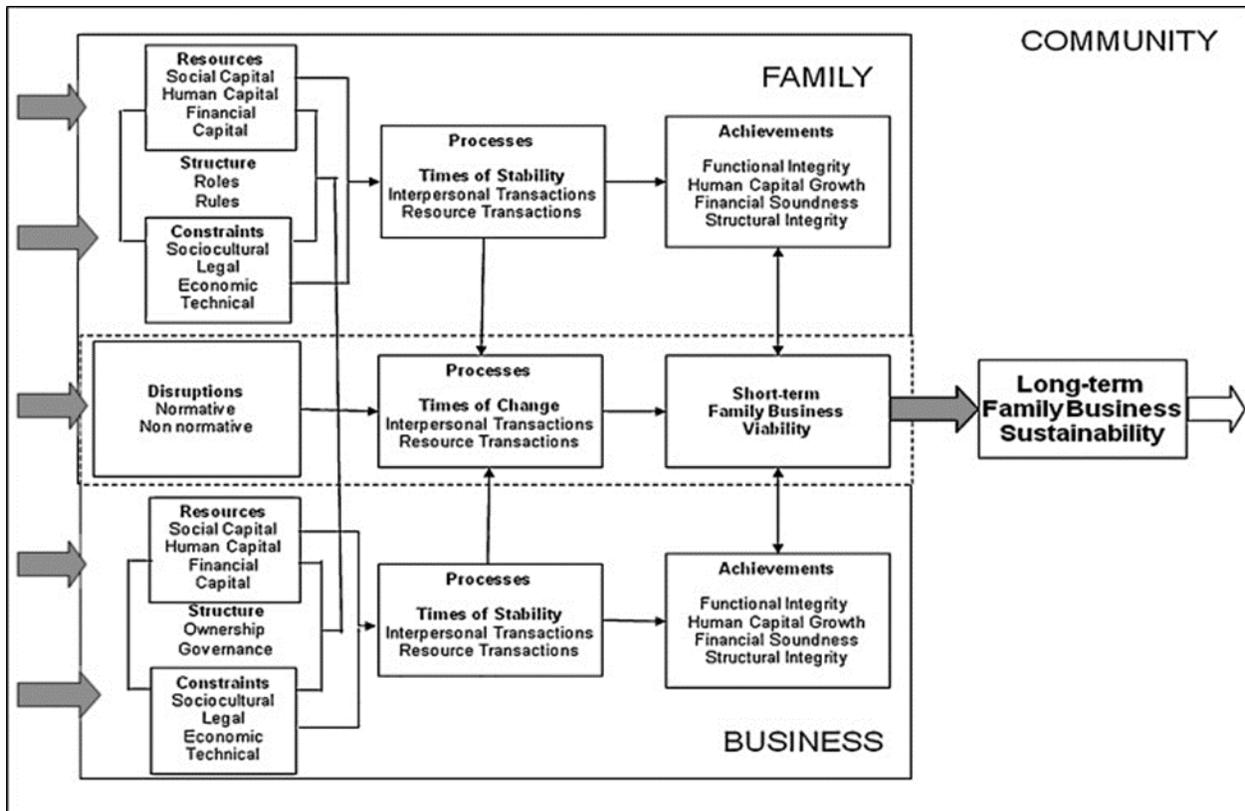


Figure 2.1 Sustainable Family Business Model (Danes et al., 2008)

2.6 Conceptual Framework

The conceptual framework of this study was developed from the theoretical framework, the Sustainable Family Business Model (SFBM), and operationalized to fit this study (Fig. 2.2). The original SFBM (Fig. 2.1) contains both the family system, the business system, and the interaction between both systems. Danes, Haberman & McTavish (2005) explained the SFBM was created in a way that allows researchers to focus on one system or the larger web. Therefore, the conceptual framework (Fig. 2.2) was modelled after the business system from the SFBM and operationalized for this study.

The main components of the conceptual framework are the resources, structure, constraints, processes, and achievements, which are all situated in a community (Fig. 2.2). The resources studied in this study are human and social capital. The structure of this study includes role and decision-making power. The constraints studied in this study are access to land, access to information, work-family balance, access to markets, access to physical resources, access to credit, and location. The business processes are the daily business protocol, where resilience is developed.

The resilience developed during the business processes helps the businesses overcome obstacles and cope with constraints. The community in this context is the local community, including the direct marketing consumer and the entrepreneur’s professional social network of producers. The conceptual framework is aligned with the research questions guiding this study. Each question corresponds to a part of the business system model in the conceptual framework. In Figure 2.2, the corresponding research question is marked with a numbered star.

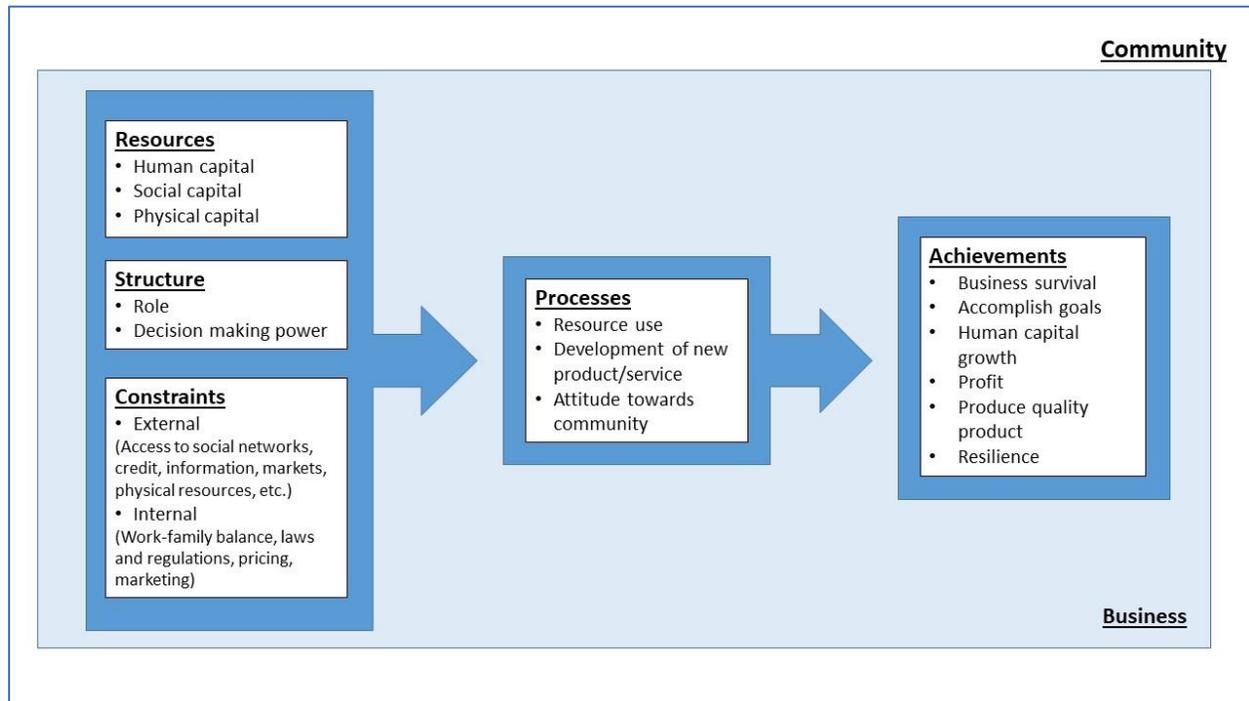


Figure 2.2 Conceptual Framework Model

Note. The conceptual framework is informed by the business component of the Sustainable Family Business Model and operationalized for this study.

2.7 Entrepreneurship in Niche Agriculture

2.7.1 Entry

Entry into niche agricultural markets encompasses multiple pathways to business startups. The pathways to niche agricultural entrepreneurship entry can be divided into three categories or profiles: the resource-exploiting entrepreneur, the pluriactive farmer, and the portfolio entrepreneur (Table 2.1). The resource-exploiting entrepreneur will pursue niche agricultural

marketing through the utilization of their unique resource. The pluriactive farmer, who values their primary farm operation above all, will dabble in niche agricultural entrepreneurship to bring in additional income. The portfolio entrepreneur finds opportunity in niche agricultural markets and creates another new business venture to generate a profit. These categories provide context and insight into the underlying motivations, practices, and business structure of entrepreneurs in niche agriculture.

The resource-exploiting pathway to niche agricultural entrepreneurship originates in a farmer's unique resources. Because businesses are a collection of a diverse group of resources (both material and immaterial assets), through different arrangements of resources, the business can create new capabilities and competitive advantage in the market (Alsos, Ljunggren, & Pettersen, 2003). In the resource-exploiting pathway, farmers recognize the unique resources at their disposal and use them to build a niche agricultural business. For resource-exploiting entrepreneurs, their unique resource drives business startup and provides the means for competitive advantage in the market for quality niche products. Grande (2011) also describes the entrepreneurship venture as created by bundles of farm resources. According to Grande's resource-based view, business resources must be valuable, rare and inimitable and be observed and developed in different ways to create superior business performance. Resource-exploiting entrepreneurs strategize and orient their perspectives to create new combinations of resources in this pathway for niche agriculture entrepreneurship. Through leveraging their resource base, resource-exploiting entrepreneurs can overcome obstacles such as work-family balance and financing to gain entry and maintain competitive advantage in niche agricultural markets.

The obstacle of work and family balance is also encountered along the pluriactive farmer entry pathway. Some farmers become niche agricultural entrepreneurs by starting small side businesses to produce multiple goods, a practice known as pluriactivity. There is a long history of agricultural households "combining farming activities with other sources of income," often motivated by a desire to preserve the family farm, work from home to take care of parents, or an affinity for the nature of farm work (Alsos, Ljunggren, & Pettersen, 2003). Alsos et al. provided an overview of European pluriactive farm households and found it to be an economic strategy as well as a survival method to keep the family farm. Creating additional income through farm activities allows the entrepreneur a way to balance work and home. Through creating the small on-farm business, entrepreneurs create agricultural products they can market locally and to specialized

markets. Hall and Mogyorody (2007) interviewed 259 organic farm operators and completed a case study of 20 female operators, several of which would be categorized as pluriactive farmer entrepreneurs. Several participants were women who decided to make their home gardening into a business to earn an income. This is a clear example of niche agriculture entrepreneurship born out of pluriactivity, as it required little capital input, remained a small family business, but brought in additional income. Pluriactivity brings in added income through farm activities which are an extension of the primary business, and includes activities such as agritourism, environmental schemes and other agricultural projects (Marsden & Smith, 2005; Morris, Henley & Dowell, 2017). Morris, Henley and Dowell interviewed Welsh farmers and found common themes of farmers wanting to generate more money in a way they are in more control of. Niche agricultural entrepreneurship can therefore be a response to instability or uncertainty of the agriculture sector, and thus pluriactivity is a survival strategy for farm households. In prioritizing the farming operation, the pluriactive farmer will take little input for their niche agricultural business. While the low capital inputs may ensure access to physical and financial resources does not block the pluriactive farmer from their path to entry, they do encounter barriers to places of information. Pluriactive farmers find their niche agriculture business as an offshoot of their farm, run by family, and often do not have small business experience necessary to ensure the success of the business.

Access to places of information can pose a barrier to portfolio entrepreneurs as well. Unlike the pluriactive farmer who lacks business experience, portfolio entrepreneurs are business owners who intentionally enter niche agricultural markets after recognizing an opportunity, but may not have the understanding of the niche agricultural market and practices. Portfolio entrepreneurs may seize opportunities born out of external pressures. In their 2005 study, Marsden and Smith explore the entrepreneur response to the crisis of conventional agriculture in the European Union. They found niche agricultural marketing to be a response to the changes in conventional agriculture, as well as an opportunity to exploit a lucrative market for quality, value-added products (Marsden & Smith, 2005). Portfolio entrepreneurs are motivated to expand their businesses by exploiting opportunity in niche agriculture markets and with the objective of generating greater sales. The experience of seeking opportunity and building businesses builds upon itself, as Alsos, Ljunggren, and Pettersen (2003) describe in how a farmer becomes a portfolio entrepreneur. A farm business can sprout a new related business through capitalizing on prior experience and existing social networks (Alsos et al.). Portfolio entrepreneurs are good at identifying new business opportunities,

since founding and running a business gives them the knowledge, experience, and skills to seek market niches. Niche agricultural entrepreneurs can therefore be portfolio entrepreneurs who identify emerging niche markets and capitalize on the opportunity. Hamlin, Knight and Cuthbert (2016) paint a clear picture of portfolio entrepreneurship in the niche agriculture sector. All 50 black currant producers in Hamlin, Knight and Cuthbert's case study had a portfolio of products spanning several markets—not just a single agricultural product. Portfolio entrepreneurs exploit new business ideas and target several markets by diversifying production and developing multiple products. Many of their participants produced a primary commodity and one or more niche products, such as black currants. The portfolio entrepreneur gains entry to niche agricultural markets by capitalizing on their ability to identify a lucrative business opportunity and diversifying their products to overcome obstacles they encounter. Obtaining physical resources is often the greatest obstacle portfolio entrepreneurs encounter, (i.e., buying the land for an urban farm).

Portfolio entrepreneurs encounter different obstacles than the pluriactive farmer or the resource-exploiting entrepreneur, in part due to their background. The pluriactive farmer and resource-exploiting entrepreneur create and operate their businesses alongside the family farm and rely on family members to own and operate. The portfolio entrepreneur, on the other hand, has a larger business, may include external employees and remains separate from the household (Alsos et al.). The pluriactive farmer and resource-exploiting entrepreneur differ in their prioritization of the business—pluriactive farmers keep their business very small and embed their business into the farm operation whereas the resource-exploiting entrepreneur sets their business as the top priority. The pathway to entry into niche agricultural entrepreneurship is reflected in the obstacles they encounter as well as the structure of the business (Table 2.1).

Table 2.1 Structural Factors of Each Type of Entrepreneur

Type of Entrepreneur	Structural Factors
Resource-Exploiting Entrepreneur	<ul style="list-style-type: none"> • New business created to use own resources. • Farm is the basis of the household, but new business is just as important. • Small business, but larger than pluriactive farmers. • Farm is usually owned and operated by family.
Pluriactive Farmer	<ul style="list-style-type: none"> • New business is created to expand or sustain farm. • Farm is their top priority and business is embedded in farming activities. • Usually very small business. • Farm is owned and operated only by family. • Requires very little capital to begin business.
Portfolio Entrepreneur	<ul style="list-style-type: none"> • New business is created to exploit new business ideas. • Larger business than other two entrepreneur types. • Requires higher capital to begin business. • New business is registered separately from farm.

Note. Table contents informed by Alsos, Ljunggren, and Pettersen (2003).

2.7.2 Structure

Most niche agriculture businesses evolve from a family farm, particularly resource-exploiting entrepreneurs and pluriactive farmers. Niche agricultural entrepreneurs rely on the support of their family, lending to the farm household providing the structure and backbone for the business. In Hall and Mogyordy's (2007) case study of organic farmers, they found those serving niche markets viewed the farm and household as a cohesive, single unit. The entrepreneur shares labor and farm resources with the family, which lends to both a stronger resource base as well as unique challenges. Family dynamics, particularly as it relates to ownership structure and management decisions can pose a significant obstacle to small business success. Amarapurkar and Danes (2005) studied how structure and family dynamics of farm households influence conflict and tension within the business. In addition to family dynamic tension, when entrepreneurs live in

close proximity to their home and work, striking a balance between work and family can be difficult. A common example of the overlap of family and business in niche agriculture are farm business owning couples, or copreneurs. Both copreneurs are typically involved in the business, but the degree to which they are involved, and the distribution of decision-making power can vary (Amarapurkar & Danes; Hall & Mogyorody; Ilbery & Watts, 2009). The copreneur dynamic is often manifested as the wife managing the household and bookkeeping of the business while the husband makes a majority of the farm management decisions and oversees day-to-day business operation. In other circumstances where the small family farm income is insufficient, one of the owners must work off-farm, offsetting the copreneurship balance. However, researchers (e.g., Hambleton, 2008; Trauger, 2004) have hypothesized niche agriculture businesses operating under alternative agricultural ideology may have a more equitable business structure.

2.7.3 Ideology

In contrast to the strict division of labor on family farms of the past, agricultural businesses which align with alternative agriculture ideology show promise for more equitable gender relations in niche agriculture business structure. There is a growing body of research examining the role of women in agriculture at the forefront of the local food movement and sustainable food systems (Ball, 2014; Peake & Marshall, 2017; Pilgeram, 2019; Wright & Annes, 2019). Many researchers propose the alternative agriculture ideology as the driver for many women creating new agricultural businesses and entering local niche markets. Part of the potential for greater gender equality is connected to a greater number of women entering niche agricultural markets. In contrast to the 14% of principal producers nationally (AgCensus, 2012), Pilgeram and Amos (2015) found “women represent 40% of community-supported agriculture operators and 21% of organic farmers, suggesting that women may be more likely to be drawn to the sustainable agriculture paradigm” (p. 16). The women interviewed by Pilgeram and Amos decided to enter niche markets (such as sustainable agriculture) rather than follow conventional agricultural norms. The alternative agriculture ideology attracts women to niche agriculture, establishing a belief system that serves as a valuable human capital resource for female entrepreneurs.

Entrepreneurial initiative, utilizing human, social, and physical capital, is necessary to create and sustain a sustainable agricultural business. The sustainable agriculture paradigm is composed of sustaining economic, environmental, and social development through local

innovation, decentralization, and cooperation (Fuad-Luke, 2017; Marsden & Smith, 2005). Sustainable agriculture paradigm in action involves developing sustainable wealth creation (economic), reinforcing social development by meeting the consumption needs of the community (social), and utilizing agricultural practices which are harmonized with nature (environmental). Alternative agriculture ideology aligns closely with the sustainable agriculture paradigm in its value of community networks and environmental stewardship. Agricultural entrepreneurs subscribe to the alternative agriculture ideology by developing sustainable wealth creation and bolstering community development.

The alternative agriculture ideology initiates entry into niche agriculture for many female entrepreneurs. Guided by their beliefs on the responsible use of land resources, Hambleton (2008) asserted women are more inclined to pursue personal fulfillment in their small businesses and produce for niche markets using “more physical labor than capital investment in big machinery” (Pilgeram & Amos, 2015, p. 19). Hambleton draws upon her experience working closely with Annie’s Project, an Extension program focused on women farmers. Women inspired by alternative agriculture ideology will utilize farming practices which are viewed as more environmentally sustainable, thereby providing a sense of personal fulfillment in their work. Researchers have found a personal connection to work draws women to niche agriculture markets and serves as a valuable human capital resource (Hambleton; Jarosz, 2011; Pilgeram & Amos). Niche agricultural products are often created with the responsible use of land resources and physical labor, demonstrating fulfillment of the alternative agriculture ideology. Alternative agriculture ideology can serve as a strong human capital resource when it provides a guiding belief system for the entrepreneur. With a strong belief system, an entrepreneur’s business achievement can be measured by the degree of personal fulfillment as well.

Alternative agriculture ideology has not only driven producers toward niche agricultural markets, but also opened up demand for entrepreneurs. For many consumers, the how and where of their food production has been of increasing importance, creating a viable niche position for smaller producers to fill (Hamlin, Knight, & Cuthbert, 2016). In Canada and New Zealand, Hamlin, Knight and Cuthbert analyzed diversification practices on farms serving niche markets such as “organic,” “welfare-friendly,” and “locally produced.” These niche markets have expanded to other regions, such as the Midwest, as consumers advocate for greater transparency from the agriculture sector. Through local initiatives, small producers and consumers counter the forces

undermining their economic, political, and social sustainability (Fuad-Luke; Little, et al.; Marsden & Smith). Therefore, understanding the networks behind local food production is important to understanding how small agricultural businesses operate in ways reflective of alternative agriculture ideology. The agricultural products produced by women are often sold in farmers markets, a decision made based on personalized production, sales strategies, and connection to consumers.

2.7.4 Direct Marketing

In alignment with alternative agriculture ideology, agricultural entrepreneurs engage in the creation of short supply chains and direct marketing to consumers. Two of the most prominent examples of direct marketing are Community Supported Agriculture (CSA) and Farmers' Markets. One of the significant components of short supply chains and direct marketing is the social relationship between consumers and producers. Previous research has indicated the economic and social aspects of direct marketing are difficult to separate due to the socially embedded nature of niche agricultural businesses (Bellows, Alcaraz & Hallman, 2010; Hinrichs, 2000; Lyson, Gillespie, & Hilchey, 1995). Through decreasing geographical and social proximity, the agricultural entrepreneur builds a social relationship with the consumer based on shared values, trust, reciprocity, proximity, familiarity, and appreciation (Bos & Owens, 2016; Hinrichs, 2000). Bos and Owens completed eight case studies of Farmers' Markets, CSAs, and farm shops in England as models of short food chains, where agricultural entrepreneurs market their goods directly to consumers. In an era of increased distance between food production and consumption, the transparency of face-to-face connection, fostering a social network between consumers and producers establishes consumer trust and confidence in their food. The social capital with consumers becomes an invaluable resource for agricultural entrepreneurs in their normal business processes and builds resilience for times of change. A key characteristic of niche agricultural businesses, decreasing the distance between producers and consumers creates a social connection within an economic transaction. Direct marketing meets consumer demand for farmer transparency and quality goods. However, direct marketing has benefits for the entrepreneur beyond a reliable consumer base.

Marketing agricultural products directly to consumers is an economic strategy for many entrepreneurs. Hinrichs explains the benefits of direct marketing for farmers, reporting "family

farmers can receive a larger proportion of the income generated by their crops and reassert farm-level control over their production decisions” (p. 297). Hinrich’s study of direct marketing examined the relationship between social and economic factors of CSAs and Farmers’ Markets. While there are strong social elements embedded in direct agricultural marketing, which cannot be ignored, there are certain economic benefits to agricultural entrepreneurs as well. As opposed to long food chains, which consist of several intermediaries between farmers and consumers, often involving markup prices which the farmer does not receive, direct marketing allows agricultural entrepreneurs to receive a greater portion of the profits. In addition, there are no external stakeholders to influence farmer production decisions—granting the agricultural entrepreneur more freedom and control.

Because direct marketing provides a closer connection to consumers and greater freedom, the entrepreneur is better able to target niche markets. In their analysis of niche agricultural marketing practices in New Zealand and Canada, Hamlin, Knight and Cuthbert (2016) studied the overlap between direct marketing and niche marketing, explaining small and medium sized firms are more inclined to utilize niche marketing. In local food networks, the agricultural entrepreneurs who market directly to consumers are often catering to a specific niche in the market (Hamlin et al.). With their close relationship with consumers, producers can have their hand on the pulse of consumer demand and recognize opportunity. The smaller businesses are better equipped to target niche agricultural markets as they can adjust their practices more quickly while mainstream businesses would not find it worthwhile. Both niche marketing and direct marketing allow for the producer to reduce risks, such as price pressure and market turbulence, while using a smaller resource base to try out new ideas and begin new business ventures (Hamlin, et al.; Lyson et al.). When marketing directly to consumers, agricultural entrepreneurs have a dependable niche market and can evade price pressure and the turbulent market while utilizing their creativity to try new ideas. For example, the resource-exploiting entrepreneur may creatively bundle their resources in new ways, which is an economic decision given their position as a smaller business who has a niche market where they directly sell their products to their consumers.

In summary, direct marketing is integral to niche agriculture entrepreneurship as both a social and economic strategy. The social network established between producer and consumers is a valuable form of social capital for the entrepreneur. Marketing directly to consumers provides the agricultural entrepreneur with more freedom over production decisions, better insight into

consumer demand, and reduced risk in exploring new market niches. Female agricultural entrepreneurs often utilize direct marketing for many reasons, but especially to leverage their strengths in relationship building and community development.

2.8 Characteristics of Women-Owned Businesses

2.8.1 Resources

Trauger et al.'s (2010) study with 22 female agricultural entrepreneurs in Pennsylvania uncovered a pattern in how they would approach the topic of gender in interviews. Participants fell into two categories, downplaying their gender to combat gender bias or viewing their feminine perspective as a resource and not a constraint. Ahl (2006) argued for the importance of the latter viewpoint, feminine traits should be seen as beneficial resources to be used constructively. Through Ahl's perspective and Trauger et al.'s observations, women possess a unique and innate resource base, which can be utilized to overcome obstacles and obtain small business success. Studies on female entrepreneurs show the importance of relationships in their business decisions and management style (e.g., Bird & Brush, 2002; Campopiano et al., 2017; Danes et al., 2005). The relationship-focus of women business owners can be observed through three unique forms of human capital: (1) maintaining a cohesive family unit, (2) multitasking, and (3) feminine management.

The relationship-focus of women business owners creates a stable foundation for the business and family when faced with obstacles. Women business owners prioritize the needs and satisfaction of employees, who are often family. In Danes et al.'s (2005) study on conflict and satisfaction of farm business owning couples, the female participants reported a strong connection between business tensions and relationships. When the business encounters obstacles, women business owners can utilize this valuable skill to hold family and businesses together through their ability to build relationships (Danes, Haberman, & McTavish, 2005). The skill in maintaining a cohesive family unit assists in creating harmony within the family and business, a non-financial indicator of business achievement.

Another skill associated with women business owners is multitasking. In Danes et al.'s (2007) survey of over 500 farm-owning couples, they found multitasking abilities of women are one of the key skills which assist in sustaining the structure and success of family businesses. This

is a valuable skill for all entrepreneurs and especially important for agricultural entrepreneurs. Hammond et al. (2013) were surprised to find the importance of farmer knowledge is key to building resilience in their study of small farms in Washington. Hammond et al. explain the agricultural entrepreneur must possess knowledge and experience in weather patterns, mechanic's work, financial planning, business management, social networking, building community relationships, cultivating a media presence and more. Women's multitasking skill is an invaluable asset to their small agricultural business as it allows them to manage different tasks and carry out several roles at the same time.

Because women business owners possess a relationship-focus, it becomes an integral part of their business management skills. Feminine management was characterized by participative decision-making, strong commitment to people, personal, and resistant to growth (Bird & Brush, 2002). Bird and Brush analyzed existing literature to create a theoretical perspective that balances the masculine and feminine perspectives in entrepreneurship, which has been utilized by other researchers (e.g., Ahl; Danes et al., 2007; Loscocco & Robinson, 1991; Marshall & Flaig, 2014; Powell & Eddleston). The personal nature of feminine management carries over to the management of resources, where women would be more likely to make a strong commitment to people, opportunity, resources and risk themselves as an individual. The personal nature of feminine management corresponds to the ideology of niche agriculture. Women have strong beliefs on proper use of environmental resources and local food networks and may be drawn towards niche agriculture due to their feminine management resource base. Interacting with consumers in niche markets provides female entrepreneurs an environment an opportunity to showcase their strengths: social skills and community-orientation. The relationship-focus of women business owners allows them to excel at direct marketing in niche markets, leveraging their strong commitment to people and relationship prioritization. Niche agriculture is rooted in community connections, which allows women's skill in relationships to shine through and be reflected in their business accomplishments. However, the prioritization of relationships can become a constraint when the entrepreneur struggles to balance work and family responsibilities.

2.8.2 Constraints

One of the disadvantages of the relationship-focus of women is how it has contributed to the invisibility of women in family businesses, where mothers, daughters, and wives do not have

official titles and salaries (Campopiano et al., 2017; Danes, 2013; Danes & Olson, 2003, Danes et al., 2005). Traditionally, women's involvement in family firms has been limited to an unrecognized and unpaid family member. When family farms move into agriculture entrepreneurship ventures, such as through the resource-exploiting entrepreneur or the pluriactive farmer entry pathway, the business just becomes a side business to the farm and the woman's role is still seen as mainly organizing the household rather than the business or farm at large. When women are relegated to invisible tasks of the household, childcare, and bookkeeping for the farm, their contribution to the business is not valued as a leadership position in the business. The structure of the family farm business is built to continue the gender roles and consequentially the invisibility of women.

Because family business dynamics are influenced by the same patterns of behavior, values, beliefs, and expectations as the business; conflict or tension arise if women step into a nontraditional or leadership role (Amarapurkar & Danes, 2005; Danes & Olson, 2003). Amarapurkar and Danes studied relationship conflict in farm couples and utilized the same framework as Danes and Olson to understand the impact of the relationships between family members for the success of the business. Gender bias within family can lead to conflict and tension in the business. Because women are traditionally responsible for household organization and childcare, if they are to take a larger role in farm business and step into an ownership position, it may likely cause conflict between the other family members who must re-adjust their business structure status quo. Because women possess a relationship-focus, they may be negatively affected and discouraged by the conflict that arises from the structural change.

After interviewing 10 women farming independently and 12 women farming with their spouses, Trauger et al. (2009) concluded "women still shoulder the burden of domestic work in addition to taking on more of the productive work of the farm" (p. 44). Gender roles can be amplified by cultural context, which may affect the human capital and skills female agricultural entrepreneurs possess. When women are limited to a smaller role on the farm, they are not expected nor given the opportunity to learn key skills to agricultural production (Pilgeram & Amos, 2015; Barbercheck et al., 2009; Trauger et al.). Professional social networks and access to places of information can be limited for women entrepreneurs due to social stigma and gender bias against women business owners. Limited social networks and places of information therefore constrain the human capital growth potential women business owners can achieve. Trauger et al. (2009)

found most of their respondents shared they were “not being taken seriously as farmers in the community” (p. 51) and encountered barriers to financial support, purchasing equipment, and overall integration into the farming community.

It is not just the local communities where gender bias limits the success of the women entrepreneurs, the academic community is also guilty of unintentional bias in their external evaluation of the success of entrepreneurs. Several researchers have commented on how women may measure success in methods other than financial indicators (Bird & Brush, 2002; Bird & Sapp, 2004; Danes et al., 2007; Hedberg & Danes, 2012). Furthermore, most literature analyzing impact of gender and business performance uses financial data as the standard and “therefore fails to consider the complexities of the socialized perspective of gender” (Danes et al., 2007, p. 1058). Research on gender and entrepreneurship frequently over-emphasizes differences between the sexes, describing strong entrepreneurship qualities using traditionally masculine language and mentioning family balance only in describing female entrepreneurs (Ahl, 2006). Inadequate consideration has been given to the feminine resources and strengths women entrepreneurs utilize.

2.9 Obstacles Encountered by Female Agricultural Entrepreneurs

2.9.1 Work-Family Balance

Women have historically been the primary child caretaker. Due to both personal preference and external expectations, work-family balance is a considerable obstacle to entrepreneurial success. Work-family balance obstacles can come in the form of conflict between family members, time constraints for childcare, and societal pressures. While all entrepreneurs struggle with work-family balance, this obstacle is particularly challenging for agricultural entrepreneurs, where there is a greater overlap between work and family since the business is built on the family farm.

While there are some benefits when family and business are closely intertwined, unresolved conflict in either sphere can affect business sustainability and success (Hedberg & Danes, 2012). Copreneurs may experience more family tension due to the evolution of the entrepreneurship field to be a valid career choice for both genders and in doing so, disrupted traditional balance between work and family obligations (Danes & Olson, 2003). As women step away from childcare responsibilities to focus more time on their business, there may be tension

and conflict within the family as a result of the change in structure. Family tension and shifting dynamics may pose an added stress for women in their prioritization of harmony between members of the business.

Even when their family is not experiencing discord, the torn loyalties between family and work can prove a considerable obstacle for women. Having a family can negatively affect a small business as it decreases the amount of time the entrepreneur is able to devote to their work. The allocation of domestic responsibilities, including housework and childcare, is frequently cited as the reason why women have less free time than men (Loscocco & Robinson, 1991; Mattingly & Bianchi, 2003). Marshall and Flaig (2014) explored this topic in a study on the effect of marriage on women's self-employment earnings. Marshall and Flaig explain women spending more time on childcare than work "may be a result of household-related time constraints associated the gender roles of being married, and women are actually balancing a self-employment venture as well as managing the household" (p. 319). Domestic responsibilities require a considerable amount of time, energy, and resources from the entrepreneur.

However, work-family balance is still not addressed as a barrier by the entrepreneurship field at large. Rouse and Kitching (2006) found childcare was perceived as a private matter and ignored by the entrepreneurship training programs in their study. Despite the delicacy of the issue, it is important for researchers and entrepreneurship resources to consider childcare in addressing the barriers to entrepreneurship, particularly for women. Societal expectations, particularly those around domestic responsibilities, perpetuate the gender bias women encounter in building their small business. Gender bias in the entrepreneurship field can be experienced through judgement of working mothers or from inadvertent actions, such as scheduling meetings during times mothers are unable to attend. In addition to external pressure, childcare responsibilities can put a strain on female entrepreneurs' resources, such as time.

2.9.2 Geographic Barriers

Gender bias is often dependent on the cultural setting and context. Geographic location is one of the outside forces which influences access to important resources and aggravates certain obstacles, such as gender bias. Depending on whether the entrepreneur is located in a rural or urban area, they may experience obstacles to accessing to social networks, financial resources, markets, and land.

In their comparison study of entrepreneurship in rural versus urban communities in Iowa, Bird and Sapp (2004) found there was a larger gender gap in urban areas because urban women do not share the same social network as men. In rural environments where there are smaller population, there is a greater overlap of the social circles of men and women. Social networks are an invaluable resource for small business owners, and according to Bird and Sapp's study, the higher collective social status and common gender practices of men are more conducive to business success. Social resources are invaluable to entrepreneurs, especially women in utilizing their relationship and community strengths. Portfolio entrepreneurs need access to places of information and people who are well-versed in agriculture and the pluriactive farmer and resource-exploiting entrepreneur need business training. Female entrepreneurs in cities may experience geographic barriers in obtaining access to places of information and professional networks, which may hinder business success. While smaller social networks may be conducive to professional social networks for rural female entrepreneurs, they encounter other obstacles.

In rural environments, the availability of capital is a significant obstacle (Kaufman & Bailkey, 2000; Bird & Sapp). After their data demonstrated more businesses owned by men were able to acquire financial assistance, Bird and Sapp proposed rural lenders viewed female-owned businesses as risky investments, rural female entrepreneurs were hesitant to seek loans or both. Oftentimes, more ownership corresponded to greater access to credit because they were viewed as less risky investments. However, the unconventional entry pathways to agriculture entrepreneurship exemplify the entrepreneurs in niche agriculture often lack business experience because their business evolved from the family farm. Gender bias can also influence in how the lender perceives female agricultural entrepreneurs and negatively impact access to capital. Business success is often contingent on adequate financial resources to acquire land and inputs, as well as transportation to market.

Distance to market is another geographic barrier for rural agricultural entrepreneurs. In addition to obstacles accessing consumers, transportation time, costs, and logistics can put a considerable strain on small agricultural businesses (Grande, 2011). Grande completed a longitudinal study of three farms who were engaged in on-farm diversification and building side businesses to understand their resource base and capabilities. Agricultural businesses in rural environments may need to travel significant distance to access a market for their niche agricultural products. For female agricultural entrepreneurs with work-family constraints, travel to market adds

another time constraint when they are already stretched thin with responsibilities. For pluriactive farmers and resource-exploiting entrepreneurs, who see their businesses as secondary to their farm, transportation time and costs can limit the growth potential for their business. While urban agricultural entrepreneurs may have easier access to a consumer base, they encounter greater obstacles obtaining land to farm.

Urban agricultural entrepreneurs encounter obstacles to land access due to their geographic location. Vacant lots can be transformed into successful urban farms, but according to DeLind's (2014) case study of an urban farm in Michigan, they are passed over in favor of restaurants, high end shops, and student housing (Kaufman & Bailkey, 2000). In Kaufman and Bailkey's study of 120 people involved in inner city farming from over 70 organizations across the U.S., they found agricultural entrepreneurs are overlooked by local government officials seeking other businesses who will pay more in taxes. In cities, where there is greater competition for land, access to land is a major constraint on agricultural entrepreneurs.

2.9.3 Access to Physical Resources

Access to physical resources, especially land, is an obstacle female agricultural entrepreneurs encounter in rural areas. In Pilgeram and Amos's (2015) study of women participating in sustainable agriculture production, they found despite more women entering small farming, "for many women, access to land is directly tied to a male partner" (p. 17). For example, unless women marry into farming, they will likely only be able to attain small-acreage farms (Grande, 2011; Pilgeram & Amos). In Indiana, 82% of farms with a female primary producer are classified as small farms (less than 179 acres), according to the 2017 Census of Agriculture. Small acreage farms are best suited for sustainable agriculture practices; therefore, researchers and policymakers should recognize female agricultural entrepreneurs may not be utilizing sustainable agricultural practices due to personal choice alone. Rather, their decision may be a result of limited opportunity—limited access to physical resources, such as the land, machinery, and other inputs necessary to operate a larger farm.

It is not just land female agricultural entrepreneurs have difficulty accessing; physical inputs and tools required to farm may also be more difficult for women to obtain. Trauger et al. (2009)'s fieldwork with women farm owner/operators in rural Pennsylvania revealed participants encountered obstacles in obtaining farm equipment. Additionally, Hamlin, Knight, and Cuthbert

(2016)'s study of niche agriculture businesses concluded small agricultural businesses lacked the physical resources of their big competitors in most American produce markets. Agricultural entrepreneurs serving niche markets are small businesses that require a lot of inputs and physical resources to grow their agricultural products. Access to physical resources is a significant barrier to entry for entrepreneurs. The gender-related constraints encountered by women business owners, coupled with the obstacles related to participating in an emerging industry, limits access to physical resources to grow the business. Therefore, some researchers predict it is not only ideology which draws female entrepreneurs in niche agriculture to use less intensive practices (i.e., less machinery), but rather a result of the constraints in acquiring resources. Less intensive practices also require less capital, as female agricultural entrepreneurs often encounter obstacles to obtaining financial resources.

2.9.4 Access to Financial Resources

Access to financial resources can assist in obtaining physical resources. However, female agricultural entrepreneurs encounter obstacles related to obtaining financing for their business as well. Van Auken and Carraher (2012) explained obtaining financing is a difficult process for all small business owners, but especially so for agricultural entrepreneurs as they often lack business knowledge and do not fully understand the process. Through a focus group and questionnaire with participants representing niche agriculture entrepreneurs, economic developers, and providers of capital, Van Auken and Carraher sought to study the flow of capital between lenders and niche agriculture producers. One of the greater obstacles in financing is a lack of understanding between the entrepreneur, who oftentimes lacks previous business experience, and the lenders, who do not understand the niche agriculture market and business model. Lenders may not understand the niche agricultural market and perceive related businesses as high risk (Anna et al., 1999; Grande, 2011; Van Auken & Carraher). While agricultural entrepreneurs, particularly the pluriactive farmers and resource-exploiting entrepreneurs, have limited business experience and are isolated, rural environment with limited access to financial information.

2.9.5 Access to Places of Information

Information dissemination is imperative for the acquisition of financial and physical resources, as described above. Agricultural entrepreneurs also need a reliable source and a place to share information to increase agricultural productivity, improve business skills, and build a professional network. Relevant information is vital to small business success, yet entry to the places of information remains a significant obstacle for female agricultural entrepreneurs. Historically women have been excluded from places of agricultural knowledge (Pilgeram & Amos, 2015; Trauger et al., 2008), and while today women are welcome at the places of information, they still experience obstacles in both conventional and sustainable agriculture.

Despite there being room for female agricultural entrepreneurs in professional spaces, Kiernan et al. (2012) found men were more likely than women to hear of educational opportunities through Extension. Kiernan et al. pulled their data from four years of evaluation data from 37 Extension events. While research in alternative agriculture fails to show any significant and consistent changes in gender equity, there are more public spaces such as professional organizations, farmers' markets, and related agricultural associations that allow women to assert their position as small business owners more readily. This demonstrates places of information, such as Extension, need to make a greater effort to reach the emerging demographic of women agricultural entrepreneurs who are using sustainable farming techniques and direct marketing to niche markets. Barbercheck et al.'s (2009) results also identified a need to foster a more inclusive environment for women in agricultural groups. Fifty-one percent of respondents indicated "women not welcome in many ag groups" was a considerable or moderate problem in making their farm successful and 64% responded they were not taken seriously as men according to Barbercheck et al.'s Pennsylvania State Cooperative Extension needs assessment. Female agricultural entrepreneurs need access to places of information that are also places of belonging and foster professional social networks.

Berger and Kuckertz (2016) argued the most effective way to reach the full potential of a set population is "through the medium of entrepreneurial and technological training and education tailored for women" (p. 5167). Part of accomplishing this is creating clear access to places of relevant information. The few formalized networks which dominate the agricultural field are providing information on large-scale farming and conventional methods which are irrelevant, insufficient, and inappropriate information for female entrepreneurs in niche agriculture (Grande,

2011; Kiernan et al., 2012). Kiernan and her research team argued to better address female agricultural entrepreneurs' needs, educational programs need to address small-acreage farms, production of vegetables, fruits, cheese, flowers, and diverse herds, use of niche marketing strategies, and sustainable agricultural practices. Removing obstacles to places of relevant information and inclusivity provides female agricultural entrepreneurs with the means to develop their human capital, expand their professional social network, and the tools to obtain physical and financial resources. Places of information should cultivate niche agricultural entrepreneurs to reap positive impacts on the community and local economy.

2.10 Indiana Agricultural Businesses

Indiana is a strong agricultural state, boasting 56,649 farms and producing 3% of U.S. agriculture sales (Ag Census, 2017). Between 2012-2017, the number of small farms of 1-9 acres has increased 15% while the average size of Indiana farms has increased by 5% (Ag Census). This trend demonstrates the increasing divide between large scale, conventional farming and small, alternative farms. According to the 2017 Ag Census, only 1% of Indiana farms are certified organic and 6% sell directly to consumers. The Indiana farms that sell directly to consumers, use direct marketing techniques which cater to the local agriculture niche. The direct marketing agriculture sector in Indiana is comprised of 199 Farmers' Markets, 16 CSAs, and 45 on-farm markets, as reported in the USDA-AMS directory of local food in Indiana.

The strong agriculture presence in Indiana is made possible by the 94,350 producers—a third of which are women. According to the latest Ag Census data, the number of female producers increased from 23,989 in 2012 to 31,225 in 2017. The same five-year span also saw an 84% increase in the number of female primary producers. The term “producer” was defined by the in the Ag Census to mean an individual who is involved in farm decisions. Each farm that responded to the Ag Census could report up to four producers, one of which was designated a “primary producer” who makes the most farm decisions or works the least amount off-farm. The 18.7% of primary producers who are women operate 30.9% of farms or 21.6% of farmland in Indiana. The small percentage of Indiana farmland operated by women supports the Pilgeram and Amos' (2015) claim on how women are more likely to operate small acreage farms. While this data may look promising for women leadership in Indiana agriculture, data from before 2017 does not accurately represent the number of women in agriculture and their role in farm leadership. The Census of

Agriculture was changed in 2017 to more accurately record the participation of farm women. Therefore, the increase in female farmers is not entirely addressed just by women entering farming, but rather their previous exclusion from Ag Census. The inaccurate data on female farm operators demonstrates the history of marginalization of women in agriculture and hints at obstacles female agriculture entrepreneurs may encounter in obtaining recognition and acceptance from larger agriculture networks.

2.11 Need for the Study

Research on the topic of female entrepreneurs in niche agriculture is limited. Of the prior work in this field, obstacles encountered by women business owners, family businesses, and small farms have been identified. However, no research studies were found that examined the obstacles encountered by female niche agricultural entrepreneurs in Indiana. This study also serves to address the gap of female agricultural entrepreneurship literature in states, such as Indiana, which are primarily known for their conventional agricultural practices. Furthermore, this study is unique in using the Sustainable Family Business Theory (SFBT) to analyze niche agricultural businesses. No research was found that addressed this specific population and sought to understand how female agricultural entrepreneurs are overcoming the obstacles they encounter. This study seeks to fill this need in exploring the obstacles female agricultural entrepreneurs encounter in niche markets and how they overcome them.

There is much research on the obstacles women encounter in traditional agriculture (Doering, 2013; White & King, 2019) and why women may be drawn to the sustainable agriculture paradigm (Little, Ilbery, & Watts, 2009). However, researchers (e.g. Pilgeram, 2019; Pilgeram & Amos, 2015; Wright & Annes, 2019) have recently been proposing women may not always choose niche agricultural production, but rather are forced into sustainable farming by circumstance. Furthermore, while alternative agriculture has been regarded as more liberal than conventional agriculture and lauded as a place of greater opportunity for women, some gender-related obstacles may carry over (Pilgeram & Amos). The obstacles encountered by female farmers in conventional agriculture, such as access to capital, access to places of information, lack of professional social networks, asserting their identity as a farmer and access to land, may also be encountered by female agricultural entrepreneurs in alternative agriculture. In addition to gender-related obstacles, female

agricultural entrepreneurs in this study may encounter obstacles related to their niche agricultural businesses.

This study addressed a gap in the literature by focusing on previously unexplored population, female entrepreneurs in Indiana niche agriculture. Specifically, this study will identify what obstacles female agricultural entrepreneurs encounter and examined the extent to which they overcome the obstacles to achieve success. Finally, this study will extend the research on women in agriculture within niche agricultural entrepreneurship literature and address the need to understand this emerging population of Indiana agrifood system.

2.12 Chapter Summary

This chapter provided the methodology used to review literature as well as reiterated the purpose and research questions guiding this study. As there was little research found on women in niche agriculture businesses, the review of literature encompassed small businesses in alternative food networks, characteristics of women-owned businesses, obstacles faced by female agricultural entrepreneurs, and measures of business success.

To frame the study, both a conceptual and a theoretical framework were presented. The Sustainable Family Business Model (Stafford, 1999) theoretically grounded the study and guided the conceptual framework. For this study, I will be focusing exclusively on the business aspect of the Sustainable Family Business Model. The need for this study was also addressed in this chapter. This study seeks to fill a gap in the literature in exploring the obstacles female agricultural entrepreneurs encounter in niche markets and how they overcome them.

CHAPTER 3. METHODOLOGY

3.1 Overview

This chapter provides an overview of the research methods and procedures used for this exploratory study. In particular, this chapter will present the selection and description of the research design, the selection of participants and corresponding response rate, and the development of the instrument. Both the reliability and validity measures for the questionnaire are detailed and the data collection procedures are recorded. The variables and data analysis techniques of this study are stated clearly.

3.2 Purpose of the Study

The purpose of this study was to explore and describe existing obstacles encountered by female entrepreneurs in niche agricultural markets and their methods of building resilience in their business.

3.3 Research Questions

The research questions guiding this study were:

1. What obstacles have Indiana women encountered in their small-scale agricultural business ownership?
2. What did female agricultural entrepreneurs consider their most valuable resources?
3. How did female agricultural entrepreneurs cope when faced with obstacles to business success?
4. How do Indiana female agricultural entrepreneurs measure achievement?

3.4 Research Design

This descriptive exploratory study used a quantitative research design with qualitative elements to understand the obstacles encountered by female agricultural entrepreneurs and their methods of building resilience in their business. The research design was selected based on the theoretical framework and informed by the literature review. A post-positivist perspective was

used in this research study, a viewpoint that is based in the belief that subjectivity is inherent in scientific research and proving causality is problematic in social science research.

3.5 Institutional Review Board Committee

To protect the rights of participants involved, the researcher first completed the Collaborative Institutional Training Initiative (CITI) Course in The Protection of Human Research Subjects online training. Following completion of the training, an application, complete with all materials and instrumentation was submitted to the Institutional Review Board (IRB) and Committee on the Use of Human Research Subjects at Purdue University. The IRB granted approval for research to begin on July 16, 2019. The approval letter is attached in Appendix A, for the research study entitled “Obstacles Encountered and Overcome by Indiana Female Entrepreneurs in Niche Agricultural Markets” (IRB protocol: 1906022315).

3.6 Participants

The target population for this study was niche agricultural entrepreneurs who own and manage small businesses and produce agricultural products in Indiana. Study participants had to meet the following criteria in order to be included in the final data analysis: 1) grow or make and sell agricultural products, 2) market their products directly to consumers, and 3) own their own business. Though the study was focused primarily on the perspectives of women niche agricultural entrepreneurs, men were also invited to participate to enable comparisons of the experiences between the two groups. A comprehensive overview of participants in this study is provided in Chapter 4 under “Demographic Characteristics of Participants.” In this section, participants’ gender, age, geographic location and other demographic information is provided. Additionally, a profile of the participants’ businesses are also described in Chapter 4 which includes information such as age of business, agricultural products, and markets served.

The target population was invited to participate in this study through Farmers’ Market Managers, email newsletters, and an individual frame. Contact information for the Farmers’ Market Managers was found through www.farmersmarketonline.com/fm/Indiana.htm. Three email newsletters were used to contact the target population: Indiana Grown Newsletter, Purdue Diversified Farming and Food Systems Newsletter, and Vegetable Growers Hotline Newsletter.

Contact information for the frame of Indiana small farmers was obtained through Purdue Extension’s Local Food Guide and the Hoosier Farmers’ Market Association’s Indy Local Food Guide. Due to the constraints of an Internet-based questionnaire, there was a portion of the target population that was excluded from this study. Specifically, Amish and other agricultural entrepreneurs who do not have Internet access were unable to gain access and complete the questionnaire.

3.7 Instrumentation

After a thorough review of literature, no established instrument was found that aligned with the objectives of this study. Therefore, a multi-method approach was used to create a single instrument to measure the variables of this study. The final instrument (Appendix B) included six sections which were informed by the conceptual framework (Figure 3.1): 1) Business Structure, 2) Business Constraints, 3) Business Resources, 4) Business Processes, 5) Business Achievements, and 6) Demographics. The survey instrument was administered through Qualtrics, a secure Internet website.

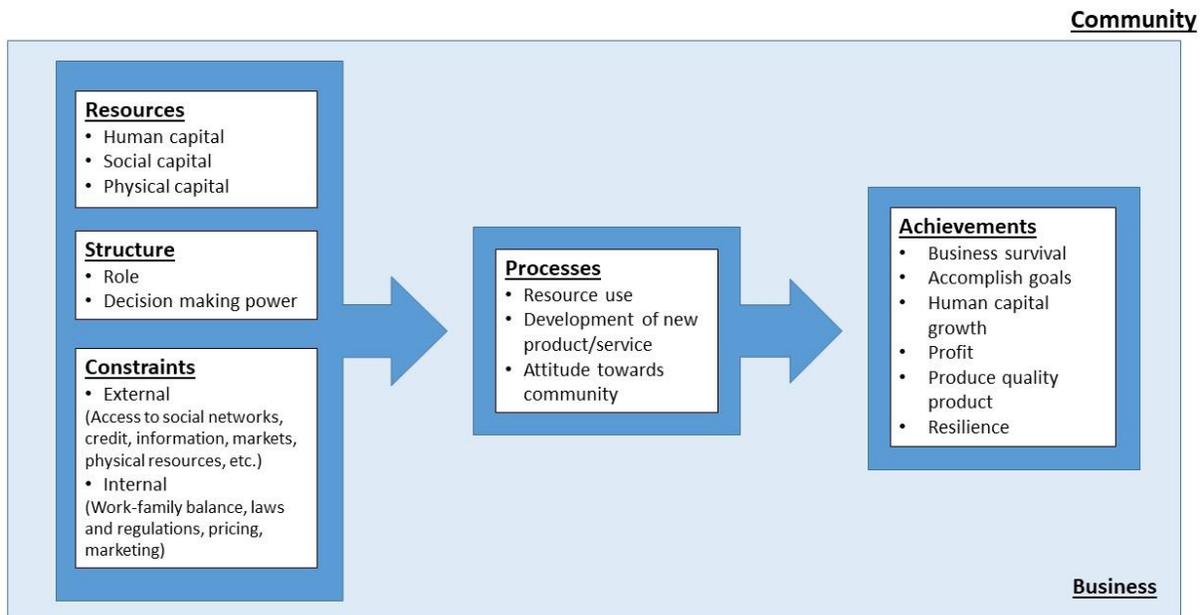


Figure 3.1 Conceptual Framework Model

3.7.1 Business Structure

The first section elicited information regarding the participant's business structure, specifically, what they produce, their farming practices, where they sell their products, the ownership structure of the business, and the roles of men and women in the business. The first 17 questions in this section were informed by Purdue's 2012 survey of MarketMaker organic vegetable growers, Kiernan et al.'s 2012 study, and the National Young Farmers Coalition 2017 Survey Report and modified for the target population. The first question asks participants "*What do you grow? Check all that apply.*" Other example items included: "*How would you describe your farming practices?*," "*Where do you sell your products?*," and "*What percentage of your work related to farm business is spent on recordkeeping/paperwork?*"

3.7.2 Business Constraints

Items 18, 19, and 20 composed the business constraints section, which sought to capture factors limiting participants' business achievement over the last three years. The three questions were developed from the Penn State WAgN Needs Assessment Survey (2009). Questions 18 and 19 listed 12 external and 8 internal problems and required the participant to rank the extent of the problem on a four-point rating scale: *Not at all*, *Minimal*, *Moderate*, and *Considerable*. External problems included access to markets, credit, land, information and social networks. Internal problems included pricing, regulations, internal family stress, and work/family balance. The list of external problems was informed by the National Young Farmers Coalition 2017 Report. The list of internal problems was informed by Barbercheck et al.'s 2009 study. The last question in this section asked the participants their experience with obtaining financing over the last three years.

3.7.3 Business Resources

The 12 questions in the third section inquired about the participant's business resources. Questions 21-32 in this section were informed by Danes et al. (2009), Barbercheck et al. (2009), and Hintz (2015). In alignment with the conceptual framework, resources were divided into human capital, social capital, and financial capital. The six human capital questions focused on the education level and previous experience. An example item related to human capital included: "*Do you have prior agriculture-related work experience?*" The six social capital questions focused on

membership in professional organizations and participation in the community. An example item related to social capital included: *“Have you held a membership (registered or dues-paying) in a professional organization within the last 3 years?”* The three financial capital questions focused on annual gross sales, business growth, and acres of land. An example item related to financial capital included: *“Has your business gross revenue increased in the last 3 years?”*

3.7.4 Business Processes

The business processes section of the questionnaire (questions 33-37) sought to understand the standard operating procedure or routine for the participant’s business. The five questions in this section were modified based on the Purdue 2012 survey of MarketMaker organic vegetable growers and Danes, Stafford, and Loy’s (2007) study. Example items included: *“Do you ever address business cash flow problems by using household income to meet firm needs?”*, *“How satisfied are you with the local community’s support of your business?”*, and *“During the past 3 years, has your business developed any new products or services?”* The last question in this section asked participants to *“Please provide comments regarding your thoughts and experience on how you have overcome barriers to your farm business success.”*

3.7.5 Business Achievements

The business achievements section asked participants to share the priorities and success of their business. The three questions for the Business Achievements section were modified from studies conducted by Danes and Olson (2003) and Hintz (2015). Question 38 asked participants to rank goals from most important to least important, then question 39 asked how successful the participant was in achieving their goals on a five-point scale: *Very Successful*, *Somewhat Successful*, *Neutral*, *Somewhat Unsuccessful*, and *Very Unsuccessful*. Another example item asked: *“Is your farm meeting or on target to meet your financial goals for your business?”* Question 40 asked if the participants’ business was meeting or on target to meet the financial goals.

3.7.6 Demographic Characteristics

The 7 questions in this section of the instrument elicited participant demographic information such as age, gender and race. Additional items included: *“Currently, how many*

children in your household are between the ages of 6 and 18 years old?” and “Currently, how many children do you have under 6 years old?” Both questions were adopted from the 2012 Intergenerational Farm and Non-farm Family Business Survey (Peake & Marshall, 2017).

3.8 Instrument Format

After the items of all six sections were finalized, the instrument delivery format was developed. The instrument was delivered to participants in a web-based survey format, through the online survey system (i.e., Qualtrics) made available through the researcher’s institution. Specific considerations were given to readability, user friendliness, and consistency to appeal to the target population.

Online survey platforms can present barriers to some participants, such as inaccessibility, incompatibility, and low motivation to complete the questionnaire (Dillman, Smyth, & Christian, 2014). The researcher sought to overcome these obstacles by using survey software accessible and compatible with most computers and mobile devices. The researcher tested the questionnaire using several different devices, connection speeds, and browsers to ensure the questionnaire displays similarly for all participants. To encourage respondents to finish the questionnaire, the respondents can stop the questionnaire and finish completing it at a later time and are not required to answer any questions.

3.8.1 Validity

Validity is the extent to which the instrument is able to accurately assess the intended construct (Thomas, 2009). For this study, face and content validity were evaluated by the panel of experts who reviewed the survey instrument. The panel of experts was comprised of five faculty members and four graduate students. These individuals were selected based on their knowledge of research methods, questionnaire development, and subject matter. The panel of experts provided feedback and guidance through the finalization of the instrument. No major issues of validity were identified in this process.

3.8.2 Reliability

Reliability is the extent to which the instrument will consistently measure the same result at different occasions (Thomas, 2009). Items for the questionnaire used in this study were modified based on those used in previous research: the 2012 Intergenerational Farm and Non-Farm Family Business Survey (Peake & Marshall, 2017) and Danes and Olson's (2003) five-item scale. Previous research established reliability for the selected items with reliabilities being above 0.70, which is considered acceptable (Kline, 1999; Nunnally, 1978).

Most of the items on the questionnaire did not measure a single construct, as such, assessing the reliability using an inter-item reliability (Schutt, 2015) was not warranted. Rather, the use of a test-retest reliability was considered most appropriate. However, due to the inability of gaining access to the participants' email addresses, a test-retest was not feasible nor conducted.

3.9 Data Collection

Data collection for this study followed a modified Dillman Tailored Design Method for use with Internet surveys (Dillman et al., 2014). Dillman's method includes short, personalized emails, following timing protocol for sending out requests, and a five-step process of multiple contacts. For this study, Dillman's five-step process of multiple contacts was modified to use four steps and omit the survey launch email (Table 3.1).

Table 3.1 Modified Dillman's Four Step Process for Data Collection.

Action	Date of Contact	
	Farmers' Market Managers	Small Farmers
Introduction Email	August 7 th	August 21 st
1 st Reminder	August 21 st	September 4 th
2 nd Reminder	September 4 th	September 18 th
3 rd Reminder	October 2 nd	October 16 th

To increase the reach of this study to the entire target population of Indiana agricultural entrepreneurs, a three-pronged approach was taken for data collection. The researcher relied on (1) email newsletters, (2) Farmers' Market Managers, and (3) a list of small farmers to distribute the questionnaire.

The first data collection approach relied on Indiana agricultural organizations to share the questionnaire. Five Indiana agricultural organizations were contacted to request their assistance in disseminating questionnaire information through their email newsletter. Purdue Diversified Farming and Food Systems, Vegetable Growers Hotline, and Indiana Grown responded positively. Hoosier Young Farmers Coalition was unresponsive and Hoosier Farmers Market Association required a fee to include outside information in their newsletter. A short summary to explain the purpose of the research project was developed with assistance from a Purdue Agricultural Communication faculty member for newsletter distribution of the questionnaire (Appendix H). Three organizations agreed to share a short summary with the questionnaire link in their organization newsletters (Table 3.2). Purdue Diversified Farming and Food Systems newsletter was sent out in August to over 1,800 people. The Vegetable Crop Hotline included the questionnaire and short summary in their August 1st newsletter to 575 producers via email and 64 copies through U.S. mail throughout Indiana. One of the farmers’ market managers connected the researcher with the Indiana Grown Marketing and Communications Manager, who agreed to share the questionnaire in their upcoming newsletter. Indiana Grown sent out the short summary in their Labor Day issue newsletter to 1764 individuals in Indiana.

Table 3.2 Timeline of Indiana Agricultural Newsletters Data Collection.

Newsletter	Newsletter Sent	Number of People Reached
Purdue Diversified Farming and Food Systems (DFFS)	July; August	1800
Vegetable Growers Hotline	August	575 (email); 64 (U.S. mail)
Indiana Grown	September	1764
TOTAL		4,203

The second data collection approach relied on Farmers’ Market managers to share the questionnaire and information with their vendors. An introductory email was sent to 104 Farmers’ Market managers asking if they would be willing to share a questionnaire with their vendors. Two Farmers’ Market managers responded to explain they were not able to help. The 39 who responded positively were included in the dissemination of the questionnaire. While not all Farmers’ Market managers responded with the number of vendors they were sharing the questionnaire with, the

researcher averaged the numbers from the Farmers' Market managers who did respond and estimated this method reached 1,150 agricultural entrepreneurs throughout Indiana. Those who were interested in assisting with data collection were sent an invitation to participate and three reminder emails to share with their vendors (Table 3.1; Appendices D, E, F, G).

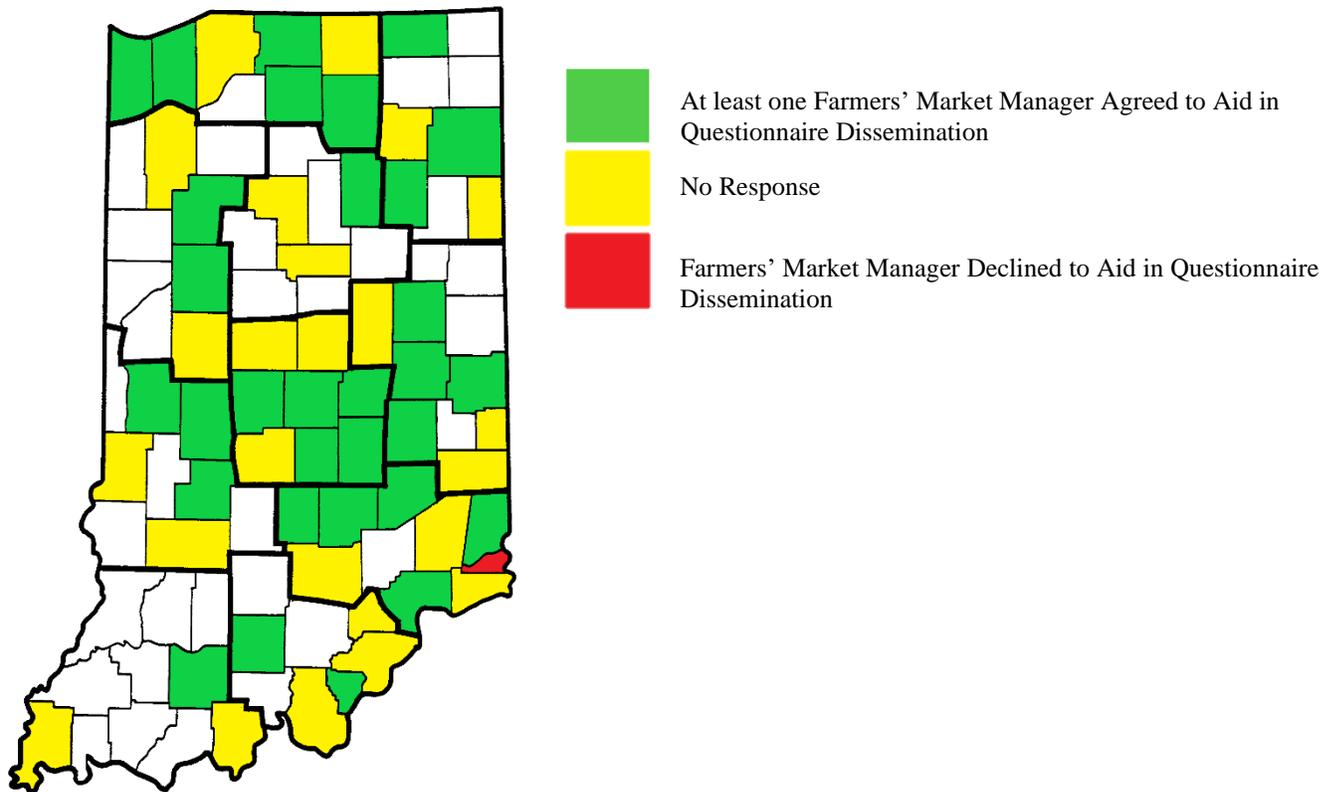


Figure 3.2 Map of Indiana Counties Corresponding to the Farmers Market Managers Reached to Aid in Questionnaire Dissemination

The third data collection approach utilized a list of small farmer emails and individual invitation to participate in the study. The researcher created a list by compiling contact information from the Local Food Guide, Indy Local Food Guide, and a few individuals shared by Farmers' Market Managers. The Local Food Guide is a pamphlet created by Purdue Extension in 2018 that contains the contact information for 49 small farmers from Tippecanoe, Benton, Boone, Carroll, Clinton, Fountain, Montgomery, Warren, and White Counties. The Indy Local Food Guide is a small booklet detailing the local food businesses in the Indianapolis area. The Indy Local Food Guide was created by the Hoosier Farmers Market Association and contained a list of local food

vendors from Boone, Hamilton, Hancock, Hendricks, Johnson, Madison, Marion, Morgan, and Shelby Counties. The researcher selected all businesses listed in the Indy Local Food Guide which sold agricultural products directly to consumers. One hundred and forty-seven of the small businesses listed in the Indy Local Food Guide were selected as agricultural entrepreneurs. A total of 187 emails were sent, 20 of which bounced back or replied saying they are no longer in business. All participants were emailed directly with an invitation to participate in the study and three reminder emails (Table 3.1; Appendices I, J, K, L).

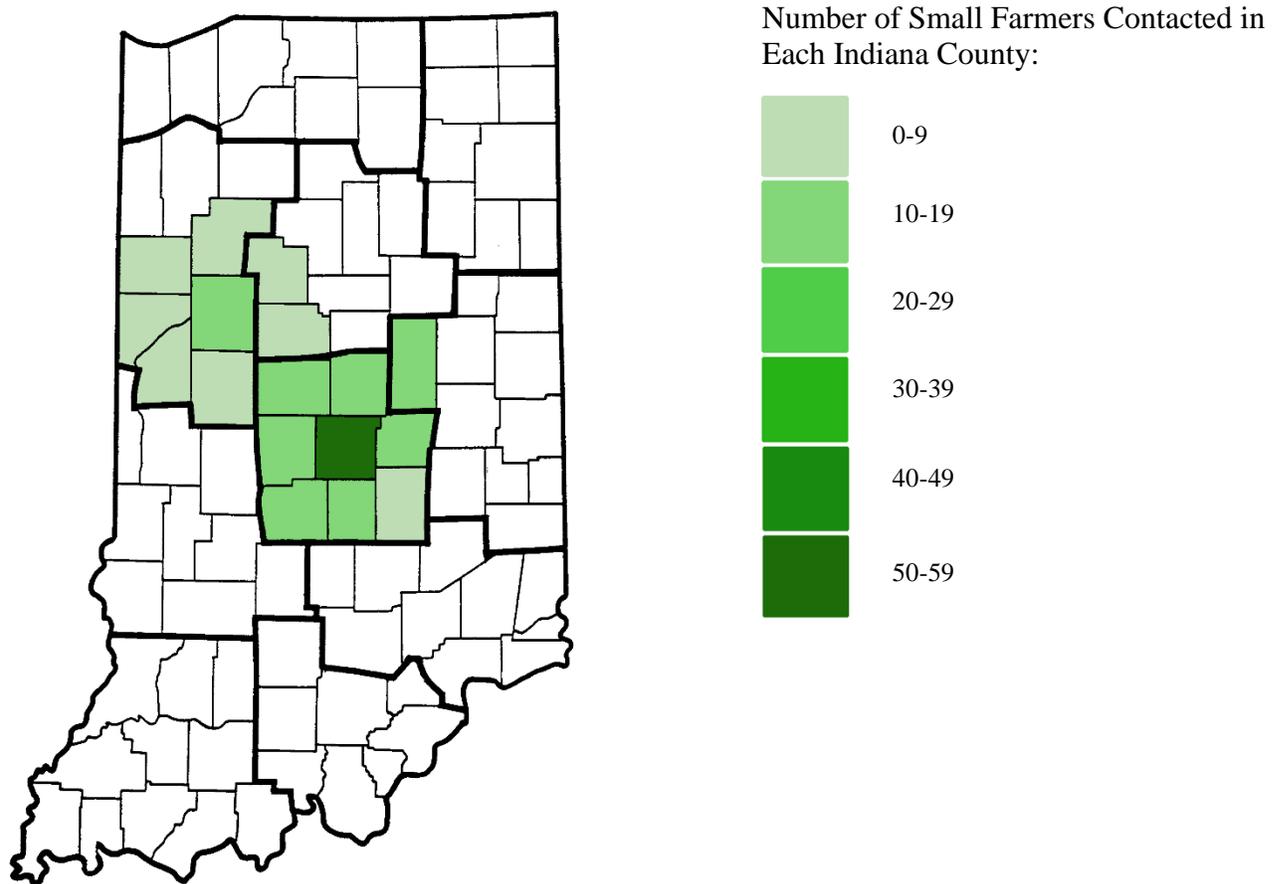


Figure 3.3 Map of County Representation and Number of Small Farmers Contacted Directly

3.9.1 Participant Response

In adding the total participants reached through each of the three approaches, it is estimated that 5,520 agricultural entrepreneurs were reached (Table 3.3). However, it is likely there was some overlap between the three approaches and thus some participants may have received an

invitation to participate in the study from multiple email newsletters. According to the 2017 AgCensus, the number of farms that market agricultural products directly to consumers in Indiana is 3,235. For the purpose of calculating participant response rate while accounting for the overlap in approaches used to collect data, the AgCensus data was used as the total population reached. Of the estimated 3,235 agricultural entrepreneurs reached, 88 participants responded to the questionnaire, resulting in a response rate of 2.7%. However, 27 of the 88 participants did not complete the questionnaire and were therefore omitted. The total number of participants recorded in this study is 61, resulting in a 1.9% cooperation rate.

Table 3.3 Total Number of Individuals Contacted Through Each Data Collection Method

Data Collection Method	Individuals Reached
Indiana Agricultural Newsletters	4,203
Farmers' Market Manager	1,150
Small Farmers List	167
TOTAL ^a	5,520

^a Total is the sum of the individuals reached through all three methods of data collection.

3.10 Data Management

Data from this study was stored online using the Qualtrics survey software. After the completion of data collection, all data collected was stored within the online Purdue Box storage system in a secure folder that only the two-member research team could access, in accordance with IRB guidelines.

3.11 Data Analysis

All quantitative data were analyzed using the Statistical Package for the Social Sciences (SPSS), Version 20. All five sections of the questionnaire included quantitative items, were coded into SPSS according to a researcher-designed codebook (Appendix C). Table 3.4 lists the research questions, variables, scale of measurement and analysis procedures. Frequencies, standard deviations, means, and rank-biserial correlations were reported in Chapter 4. A rank-biserial correlation was performed to analyze the relationship between participant gender and responses to

questions on constraints and gender roles. For the rank-biserial correlations, descriptions of relationships were explained using Hopkins (2000) conventions (Table 3.5). Effect sizes were utilized to determine practical significance. To compute and describe effect sizes of relationships, Cohen's R^2 and conventions were used (Table 3.6).

Qualitative data analysis was used for three open-ended items by categorizing data into themes using inductive open coding followed by axial coding (Saldaña, 2013). According to Bernard (2011), open coding involves closely studying the data and allowing an understanding to emerge in the form of a specific label. These labels naturally clustered into larger themes. The terms used in the title of the themes are reflective of the conceptual elements found within the literature. After the first cycle of open coding, axial coding is used to identify the dominant themes, combine synonyms and organize the data into categories (Saldaña). The categories that were used were informed by the conceptual framework.

Table 3.4 Research Questions, Variables, Scale of Measurement and Analysis Strategies

Research Questions	Variables		Statistical Analysis
	Independent	Dependent	
1. What obstacles have Indiana women encountered in their small-scale agricultural business ownership?	Structure ^a Demographics ^a	Constraints ^b	<i>M</i> <i>SD</i> Frequencies Percentages Rank-biserial correlations
2. What do female agricultural entrepreneurs consider their most valuable resources?	Structure ^a Demographics ^a	Resources ^b	<i>M</i> <i>SD</i> Frequencies Percentages Qualitative (Open/Axial Coding)
3. How do female agricultural entrepreneurs cope when faced with obstacles to business success?	Structure ^a Demographics ^a	Processes	Qualitative (Open/Axial Coding)
4. How do Indiana female agricultural entrepreneurs measure achievement?	Structure ^a Demographics ^a	Achievement ^b	<i>M</i> <i>SD</i> Frequencies Percentages Qualitative (Open/Axial Coding)

^a Scale of measurement for this variable is nominal. ^b Scale of measurement for this variable is ordinal.

Table 3.5 Conventions for Relationships (Hopkins, 2000)

Relationship Coefficient (r)	Convention
0.0-0.1	Trivial
0.1-0.3	Low
0.3-0.5	Moderate
0.5-0.7	High
0.7-0.9	Very Large
0.9-1.0	Nearly Perfect

Note. Relationships were reported as positive or negative.

Table 3.6 Conventions for Effect Sizes of Relationships (Cohen, 1988)

Effect Size Coefficient (R^2)	Convention
0.01-0.08	Small
0.09-0.24	Medium
≥ 0.25	Large

3.12 Role of Researcher

The instrument used in this study included three open-ended questions that were analyzed through qualitative methods. Qualitative research requires the researcher to serve as an instrument while the researcher must be aware of their own identities, culture, and personal experiences that may influence the interpretations of the data (Creswell, 2014). Therefore, as the researcher, I must be transparent in sharing my experiences and identities. I am a young, white woman who has grown up in the suburbs, most recently outside of Indianapolis. My first exposure to agricultural producers was through Farmers' Markets and agritourism. I am not married, do not have children, and have never started my own business. However, local agri-food systems and female entrepreneurship have been interests of mine for many years.

To minimize my bias, I have used sound research methods, worked closely with my advisor, used direct quotes, and carefully worded the open-ended questions. In using sound research methods, I closely followed the methods outlined by Bernard (2011) and Saldaña (2013). I also worked closely with my advisor to verify that my data collection methods and analyses were appropriate. Whenever possible, I used direct quotes from participants in relaying the results of my study, so as to minimize researcher influence. Furthermore, I took care to use clear, simple wording in the creation of the open-ended questions in my instrument to ensure that questions did not lead the participant. Collectively, these four methods described herein were used to minimize the researcher's influence in interpretation of the data.

CHAPTER 4. RESULTS

4.1 Introduction

The findings of this study will be presented in this chapter. Data was analyzed using SPSS version 26 for Windows. An overview of the demographic characteristics of participants was presented first, followed by the findings for each of the four research questions.

4.2 Purpose of the Study

The purpose of this study was to explore and describe existing obstacles encountered by female entrepreneurs in niche agricultural markets and their methods of building resilience in their business.

4.3 Research Questions

The research questions guiding this study were:

1. What obstacles have Indiana women encountered in their small-scale agricultural business ownership?
2. What do female agricultural entrepreneurs consider their most valuable resources?
3. How do female agricultural entrepreneurs cope when faced with obstacles to business success?
4. How do Indiana female agricultural entrepreneurs measure achievement?

4.4 Demographic Characteristics of Participants

This section presents the demographic characteristics of the study's participants. Of the 61 participants who met the study criteria (owning and operating a small business and participating in direct marketing agricultural products in Indiana) and completed at least half of the questionnaire, about two-thirds were female and one-third male (Table 4.1). The two most prominent age groups were 25-44 (36.8%) and 45-64 (42.1%; Table 4.2). A vast majority (92.6%) of participants reported their ethnicity as White, there were three participants to identify as non-White. One participant selected other and explained that they preferred not to answer.

Table 4.1 Gender Identity of Participants

Gender	<i>n</i>	%
Male	17	30.9
Female	37	67.3
Trans male/Trans man	-	-
Trans female/Trans woman	-	-
Genderqueer/Gender non-conforming	-	-
Prefer not to answer	1	1.8

Note. $N = 55$. No participants reported identifying as trans male, trans female, or genderqueer.

Table 4.2 Demographic Characteristics of Participants

Category	<i>Male</i>		<i>Female</i>		<i>Total</i>	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Age ($N = 57$)						
18-24	3	17.6	-	-	3	5.3
25-44	6	35.3	14	37.8	21	36.8
45-64	5	29.4	17	45.9	24	42.1
65 and older	3	17.6	6	16.2	9	15.8
Ethnicity ($N = 54$)						
White	17	100.0	33	89.2	50	92.6
Black, African American	-	-	1	2.7	1	1.9
Asian, Pacific Islander	-	-	-	-	-	-
Multiracial	-	-	1	2.7	1	1.9
Other	-	-	1	2.7	2	3.7
Hispanic/Latino ($N = 52$)						
Yes	-	-	-	-	-	-
No	17	100.0	34	91.9	52	100

Note. No participants reported identifying as Asian, or Hispanic/Latino.

Of the 61 agricultural entrepreneurs, 37 (68.5%) were married (Table 4.3). Participants reported their spouses often being involved in the business. Forty-seven percent of participants had a spouse who worked part time on their business and 21% of participants' were copreneurs. Copreneurs are a team of two entrepreneurs, often spouses, who both work full time on their business. Eight participants (13.1%) reported their partner is not involved in their agricultural business. Thirty-three participants (60%) shared that they did not have any children. Having older children (between the ages of 6-18) was more common than young children (under the age of six), as ten participants (18.2%) had one child, five (9.1%) have two children, and five (9.1%) have three or more older children.

Table 4.3 Household Demographic Characteristics

Category	<i>Male</i>		<i>Female</i>		<i>Total</i>	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Marital Status (<i>N</i> = 54)						
Married	13	76.5	22	59.5	37	68.5
Single	4	23.5	7	18.9	11	20.4
Separated	-	-	-	-	-	-
Divorced	-	-	4	10.8	4	7.4
Widowed	-	-	2	5.4	2	3.7
Spouse involvement (<i>N</i> = 61)						
Part-time	7	41.2	18	48.6	29	47.5
Full-time	5	29.4	7	18.9	13	21.3
Has related side business	-	-	1	2.7	1	1.6
Partner is not involved	2	11.8	4	10.8	8	13.1
N/A	3	17.6	7	18.9	10	16.4
Children ages 6-18 (<i>N</i> = 55)						
0	9	52.9	23	62.2	35	63.6
1	2	11.8	8	21.6	10	18.2
2	2	11.8	3	8.1	5	9.1
3 or more	4	23.5	1	2.7	5	9.1
Children under age of 6 (<i>N</i> = 55)						
0	16	94.1	28	75.7	47	85.5
1	1	5.9	6	16.2	7	12.7
2	-	-	1	2.7	1	1.8

Note. No participants reported separated when asked their marital status.

Many farm-based businesses are family based; therefore data was collected pertaining to business structure and family involvement (Table 4.4). Only three participants reported their agricultural businesses was not a family business. On average, participants employed 2.24 family members and 1.42 non-family members. Thirty-nine participants reported they had no non-family employees and the maximum non-family member employees reported was 12. Most participants (70.5%) reported they considered their business a family business, but still in their first generation. A significant portion of participants (11.5%) reported operating a farm that had been in their family for four or more generations. One such participant explained they have a “5th generation farm but now most of the land is leased to another farmer – always have sold vegetables as a part time job.” Figure 4.1 reflects a similar trend in reporting the year participants’ agricultural businesses began. The frequency of agricultural businesses created in the last 20 years makes up the majority of participants. However, there are a group of participants who have businesses that have been established since the 1940s and 1980s. A few participants elaborated on this, one explaining that

their family business began in 1986 and “changed ownership in 2013” and another participant explained that their dairy farm was established in 1983, but their new agricultural business, a creamery, was established in 2017.

Table 4.4 Agricultural Business Structure Characteristics

Category	<i>Male</i>		<i>Female</i>		<i>Total</i>	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Primary decision maker (<i>N</i> = 61)						
Self	8	47.1	27	73.0	38	62.3
Partner	2	11.8	-	-	3	4.9
Shared equally	7	41.2	10	27.0	20	22.7
Family business generation (<i>N</i> = 61)						
First	10	58.8	28	75.7	43	70.5
Second	1	5.9	2	5.4	4	6.6
Third	4	23.5	0		4	6.6
Fourth (or more)	1	5.9	5	13.5	7	11.5
Not a family business	1	5.9	2	5.4	3	4.9
Ownership shared with another family member (<i>N</i> = 61)						
Yes	10	58.8	23	62.2	39	63.9
No	4	23.5	11	29.7	16	26.2
I don't know/I'm not sure	3	17.6	3	8.1	6	9.8
Agricultural business (<i>N</i> = 55)						
Full time	8	47.1	16	43.2	27	49.1
Part time	8	47.1	16	43.2	28	50.9
N/A	-	-	-	-	-	-

Note. No participants responded N/A when asked about their agricultural business.

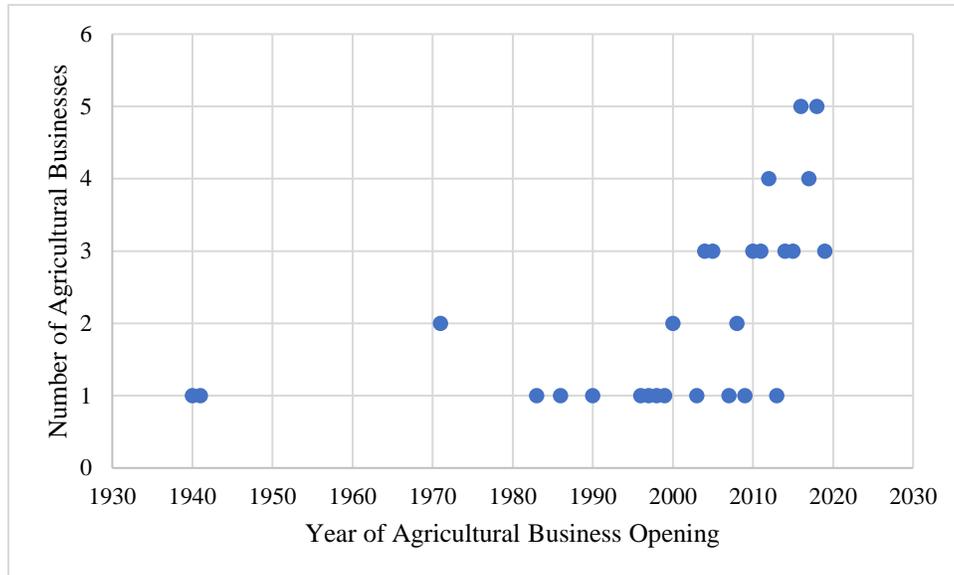


Figure 4.1 Graph of Age of Participant’s Agricultural Businesses

When asked if their business is part-time or full-time, results indicated participants responses were split evenly ($n = 27$ full time, $n = 28$ part time; see Table 4.4). Participants were also asked what percentage of their work was spent on recordkeeping. On average, participants spent 21.5% of their time on recordkeeping ($SD = 18.7$). However, there was a wide range of responses to this question. While some participants spent a small portion of their time (e.g., “2 hours a month”), others responded with significantly more. For example, one participant reported spending 35-40% of their time on paperwork, “but most of that is accounting, process control and the record keeping necessary for directly serving our partner members.” The participant went on to explain that other agricultural entrepreneurs may have “significant record keeping burden(s) by local, state or federal government” depending on the agricultural crops they sell and any certifications they obtain. Other participants explained that seasons and external factors can impact the amount of time spent on paperwork. For example, when data was collected in peak Farmers’ Market season, one participant reported spending 5% of their time on recordkeeping, “but that is changing. The books, paperwork and records are behind.” Other agricultural entrepreneurs solved similar problems by hiring a part-time employee to handle business paperwork. Participants were also asked what the official business structure was (Table 4.5). The two most common answers were Sole Proprietorship (44.3%) and Limited Liability Company (36.1%).

Table 4.5 Frequency and Percentage for Agricultural Business Structure of Participants

Business Structure	<i>Male</i>		<i>Female</i>		<i>Total</i>	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Sole Proprietorship	7	41.2	16	43.2	27	44.3
Limited Liability Company (LLC)	6	35.3	13	35.1	22	36.1
Sub-Chapter (S) Corporation	1	5.9	2	5.4	3	4.9
Corporation	1	5.9	3	8.1	4	6.6
Partnership	2	11.8	3	8.1	5	8.2
Cooperative	-	-	-	-	-	-
N/A	-	-	-	-	-	-

Note. $N = 61$. No participants reported having a Cooperative business structure or selected N/A.

Responses from participants indicating the agricultural products they grow and sell are listed in Table 4.6. The most popular crops were vegetables (65.6%), herbs and spices (44.3%), small fruits and brambles (31.3%), tree fruits/nuts (24.6%) and horticulture plants/nursery/flowers (23.0%). The most popular livestock were beekeeping (23%) and chickens (layers) (16.4%). Value-added products, including wool, honey, roasted coffee, and maple syrup, were also very popular (24.6%). Responses such as pumpkins, gourds, and microgreens were categorized as vegetables. Participants who selected “other” listed edible floral, mushrooms, popcorn, alpacas and rabbits.

Table 4.6 Frequency and Percentage of Participants' Agricultural Products

Product	Male		Female		Total	
	<i>n</i>	% of Cases	<i>n</i>	% of Cases	<i>n</i>	% of Cases
Vegetables	12	70.6	24	64.9	40	65.6
Small fruits and brambles	4	23.5	14	37.8	19	31.3
Pasture	4	23.5	4	10.8	8	13.1
Horticulture plants/nursery/flowers	3	17.6	9	24.3	14	23.0
Alfalfa/hay	4	23.5	6	16.2	10	16.4
Tree fruits/nuts	4	23.5	11	29.7	15	24.6
Corn/soybeans	7	41.2	1	2.7	8	13.1
Small grains	2	11.8	-	-	2	3.3
Forest products	-	-	3	8.1	3	4.9
Value-added products	3	17.6	10	27.0	15	24.6
Herbs, spices	5	29.4	21	56.8	27	44.3
Chickens (layers)	3	17.6	7	18.9	10	16.4
Chickens (broilers)	1	5.9	1	2.7	3	4.9
Other poultry	1	5.9	3	8.1	5	8.2
Sheep, lambs	3	17.6	3	8.1	6	9.8
Goats, kids	1	5.9	3	8.1	4	6.6
Hogs, pigs	3	17.6	1	2.7	5	8.2
Dairy cattle	1	5.9	-	-	1	1.6
Beef cattle	3	17.6	1	2.7	5	8.2
Horses	-	-	4	10.8	4	6.6
Aquaculture	-	-	-	-	-	-
Beekeeping	5	29.4	8	21.6	14	23.0
Other crops	1	5.9	3	8.1	5	8.2
Other livestock	-	-	3	8.1	3	4.9

Note. Participants could select multiple choices. $N = 61$. No participants reported participating in aquaculture.

Participants also reported how they would describe their farming practices (Table 4.7). The most popular selections were sustainable (62.7%) and conventional (35.6%). Participants who selected other provided responses which included “natural,” “no pesticide used,” “no chemicals,” and “regenerative.” One participant shared that they use only hydroponic farming. Another response stood out from the rest in its thorough description and origin of their practices:

Was raised with old eastern European practices. [These practices included using] Compatible [sic], benefiting practices with each plant and doing old English/Scottish practices as well. Lots of mulching, very little tilling, rotational of crops, the 3 sisters, raises beds and potted as well. Some of it is also what they do in the Napa/Boise, ID area with their fields. Flooding on a rotational time frame. Letting livestock graze after harvest over the fields to spread manure and to eat what was left from harvest.

Table 4.7 Frequency and Percentage of Participants’ Farming Practices

Farming Practices	<i>Male</i>		<i>Female</i>		<i>Total</i>	
	<i>n</i>	% of Cases	<i>n</i>	% of Cases	<i>n</i>	% of Cases
Sustainable	11	64.7	20	54.1	37	62.7
Organic	6	35.3	11	29.7	18	30.5
Holistic management	3	17.6	9	24.3	13	22.0
Integrated pest management	2	11.8	9	24.3	15	25.4
Permaculture	1	5.9	3	8.1	4	6.8
Conventional	6	35.3	13	35.1	21	35.6
Biodynamic			3	8.1	3	5.1
Other	2	11.8	3	8.1	6	10.2

Note. Participants could select multiple choices. $N = 59$. Two participants did not complete this question, therefore the total number of participants (N) for this item does not equal 61.

Participants were also asked to share where they sell their products. Over three-quarters sell at a Farmer’s Market (Table 4.8). The average number of Farmer’s Markets participants serve is 1.87 ($SD = 1.41$). Fifteen participants did not complete this question, therefore the total number of participants (N) for this item does not equal 61. One participant reported serving 291 Farmer’s Markets, a response nearly three times the second largest response. Therefore, the researcher designated the response as an outlier and removed it from the analysis. Only three participants reported serving more than three Farmer’s Markets. Several respondents went into detail concerning how they are “expecting further growth” or have served more markets in the past, but their market closed. Farm stands (42.6%) and Retail markets (26.2%) were the second and third

most popular markets. Other responses from participants included through Facebook, florist, garden shows, historical reenactments, produce auction, a legally established livestock sourcing partnership, and direct to individual.

Table 4.8 Frequency and Percentage of Participants' Markets

Markets	<i>Male</i>		<i>Female</i>		<i>Total</i>	
	<i>n</i>	% of Cases	<i>n</i>	% of Cases	<i>n</i>	% of Cases
Farmers' Market	10	58.8	31	83.8	47	77
Farm stand or on-site farm store	8	47.1	15	40.5	26	42.6
Retail markets	7	41.2	6	16.2	16	26.2
Restaurant	3	17.6	7	18.9	13	21.3
Farm website	2	11.8	8	21.6	11	18
Other	1	5.9	9	24.3	11	18
CSA	2	11.8	5	13.5	8	13.1
Institution	2	11.8	3	8.1	6	9.8
Food hub or value-added producer	2	11.8	3	8.1	5	8.2
Forward contracting to sell directly to an individual processor	2	11.8	1	2.7	3	4.9
Distributor	1	5.9	0	0	2	3.3
Production contracts or custom feeding for livestock you do not own	1	5.9	1	2.7	2	3.3
Commodity market through a cooperative	0	0	1	2.7	1	1.6

Note. Participants could select multiple choices. $N = 61$.

In order to grasp the geographical reach of the study, participants were asked to share what county they farm in. Figure 4.2 demonstrates what counties were reported and how many participants were from that county. Tippecanoe County had the most participants ($n = 7$) followed by Hamilton ($n = 5$) and Marion ($n = 5$). Table 4.9 illustrates the study population by categorizing participant counties by the USDA Economic Research Service (ERS) Rural-Urban Continuum Codes. Metro counties with an ERS code of one ($n = 19$) and three ($n = 14$) and Non metro counties with an ERS code of six ($n = 17$) were had the most participants in this study. All eight categories on the ERS Rural-Urban Continuum were represented except Metro ERS code five.

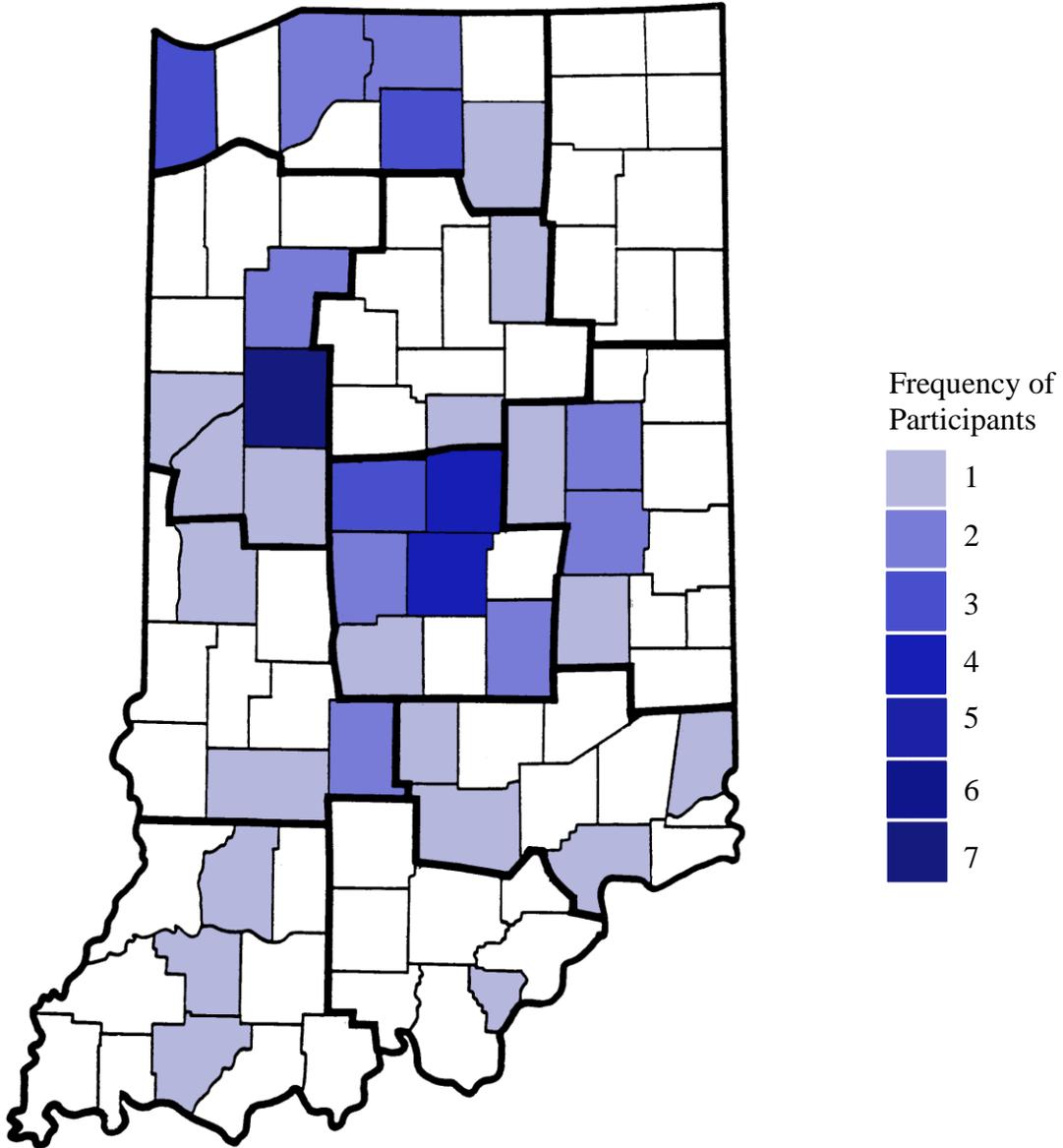


Figure 4.2 Frequency of Indiana Counties Represented in this Study

Table 4.9 Representation of Metro and Nonmetro Counties in Participant Responses

ERS Code	Description	Indiana counties	<i>n</i>	%
1	Metro - Counties in metro areas of 1 million population or more.	Boone, Brown, Clark, Dearborn, Floyd, Hamilton, Hancock, Harrison, Hendricks, Jasper, Johnson, Lake, Madison, Marion, Morgan, Newton, Ohio, Porter, Putnam, Scott, Shelby, Union, Washington	19	32
2	Metro - Counties in metro areas of 250,000 to 1 million.	Allen, Posey, St. Joseph, Vanderburgh, Warrick, Wells, Whitley	3	5
3	Metro - Counties in metro areas of fewer than 250,000.	Bartholomew, Benton, Carroll, Clay, Delaware, Elkhart, Howard, LaPorte, Monroe, Owen, Sullivan, Tippecanoe, Vermillion, Vigo,	14	23
4	Nonmetro - Urban population of 20,000 or more, adjacent to a metro area.	Cass, DeKalb, Grant, Henry, Jackson, Kosciusko	4	7
5	Nonmetro - Urban population of 20,000 or more, not adjacent to a metro area.	Dubois, Knox, Wayne,	-	-
6	Nonmetro - Urban population of 2,500 to 19,999, adjacent to a metro area.	Adams, Blackford, Clinton, Decatur, Fayette, Fountain, Franklin, Gibson, Greene, Huntington, Jay, Jefferson, Jennings, LaGrange, Lawrence, Marshall, Miami, Montgomery, Noble, Orange, Parke, Perry, Pulaski, Randolph, Ripley, Rush, Starke, Tipton, Wabash, White	17	28
7	Nonmetro - Urban population of 2,500 to 19,999, not adjacent to a metro area.	Daviess, Fulton, Martin, Steuben	1	2
8	Nonmetro - Completely rural or less than 2,500 urban.	Crawford, Pike, Spencer, Switzerland, Warren	2	3

Note. *N* = 60. No participants reported belonging to a county with an ERS code of 5.

4.5 Results for the Research Questions of the Study

The results for the four research questions of the study will be presented in this section. As described previously in Chapter 2, the research questions align with the conceptual framework (Figure 4.3). Research question 1 seeks to understand what constraints the participants encounter, research question 2 asks about the participants' resources, research question 3 pertains to the processes for overcoming obstacles, and research question 4 seeks to understand the participants' success. Furthermore, in Chapter 3 the instrument format was influenced by the conceptual framework. The sections of the questionnaire were resources, structure, constraints, processes and achievements. Therefore, the sections of the questionnaire and the research questions are also aligned with the conceptual framework. This chapter will present the results for each research question which are aligned with each component of the conceptual framework. The structure of the participant's business was provided in the previous demographic characteristics section. The constraints will be presented first, as results to the first research question.

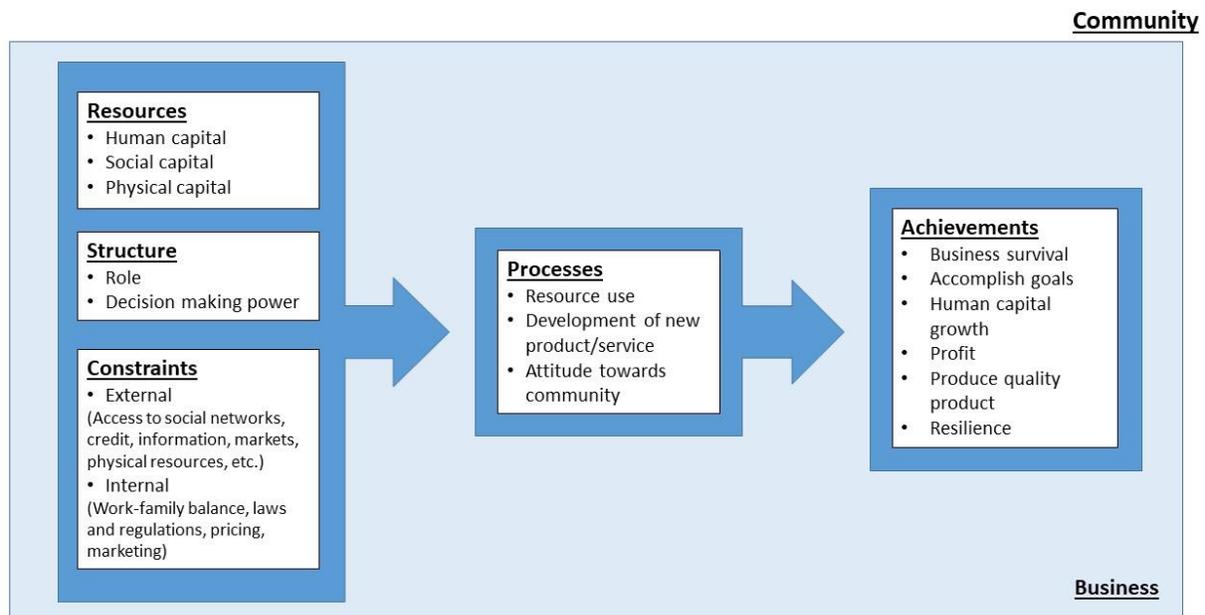


Figure 4.3 Conceptual Framework Model

4.6 Results for Research Question 1

The first research question was: “What obstacles have Indiana women encountered in their small-scale agricultural business ownership?” This question sought to understand the “constraints” section of the conceptual framework. To answer this question, participants were asked to rate the extent of ten external business constraints and eight internal business constraints, financing experience, and the participation of men and women on their farm. The data collected through these questions was analyzed through frequencies and percentages for men, women, and total participants. Furthermore, the data collected from constraints and participation of men and women was analyzed using a rank-biserial correlation.

4.6.1 External Constraints

The extent to which participants encounter external business constraints was measured on a scale of *not at all* (1), *minimal* (2), *moderate* (3), *considerable* (4). When comparing frequencies of responses for total participants ($N = 61$), gender or racial discrimination was most frequently reported as “not at all” a constraint ($n = 48$) and the most “considerable” constraints were access to credit ($n = 11$) and access to land ($n = 11$). Women ($N = 37$) most frequently reported discrimination as “not at all” a constraint ($n = 25$, 68%), followed by access to social networks ($n = 19$, 51%), and the most “considerable” constraint was access to credit ($n = 7$, 19%). Men ($N = 17$) more frequently reported distance to market ($n = 2$, 12%), access to market ($n = 3$, 18%), access to land ($n = 5$, 29%) as “considerable” than women ($N = 37$; $n = 1$, 3%; $n = 5$, 14%; and $n = 5$, 14% respectively). Women more frequently reported access to credit ($n = 14$, 38%), access to physical resources ($n = 12$, 32%), access to agricultural or technical information ($n = 8$, 22%), access to financial information ($n = 13$, 35%), access to business management information ($n = 14$, 38%), access to social networks ($n = 7$, 19%), and discrimination ($n = 7$, 19%) as “moderate” or “considerable” constraints than men ($N = 17$; $n = 4$, 24%; $n = 4$, 24%; $n = 2$, 12%; $n = 3$, 18%; $n = 1$, 6%; $n = 0$, 0%; and $n = 0$, 0% respectively). The greatest discrepancy between the frequency of “moderate” and “considerable” responses between men and women was between access to social networks and access to business management information, both of which women reported as greater constraints than men on average.

Figure 4.4 depicts the frequency of responses for each external constraint for total participants, male participants, and female participants. The comparisons between genders mentioned previously can be seen in the figure below. Figure 4.4 also illustrates the range of responses for most constraints. For example, access to social networks was the most frequent constraint women reported as “not at all,” yet there were still five (14%) of women who reported it as a “considerable” constraint on their business. Data not included in this figure were participants’ responses for “other” external constraints. Such responses included “access to disability resources,” “access to labor,” “CDC and other chemicals killing honeybees,” “consumer knowledge,” “education,” “flow of financial resources coming in to continue operation,” “government regulation,” “health care,” and “not having available WiFi to grow my business.”

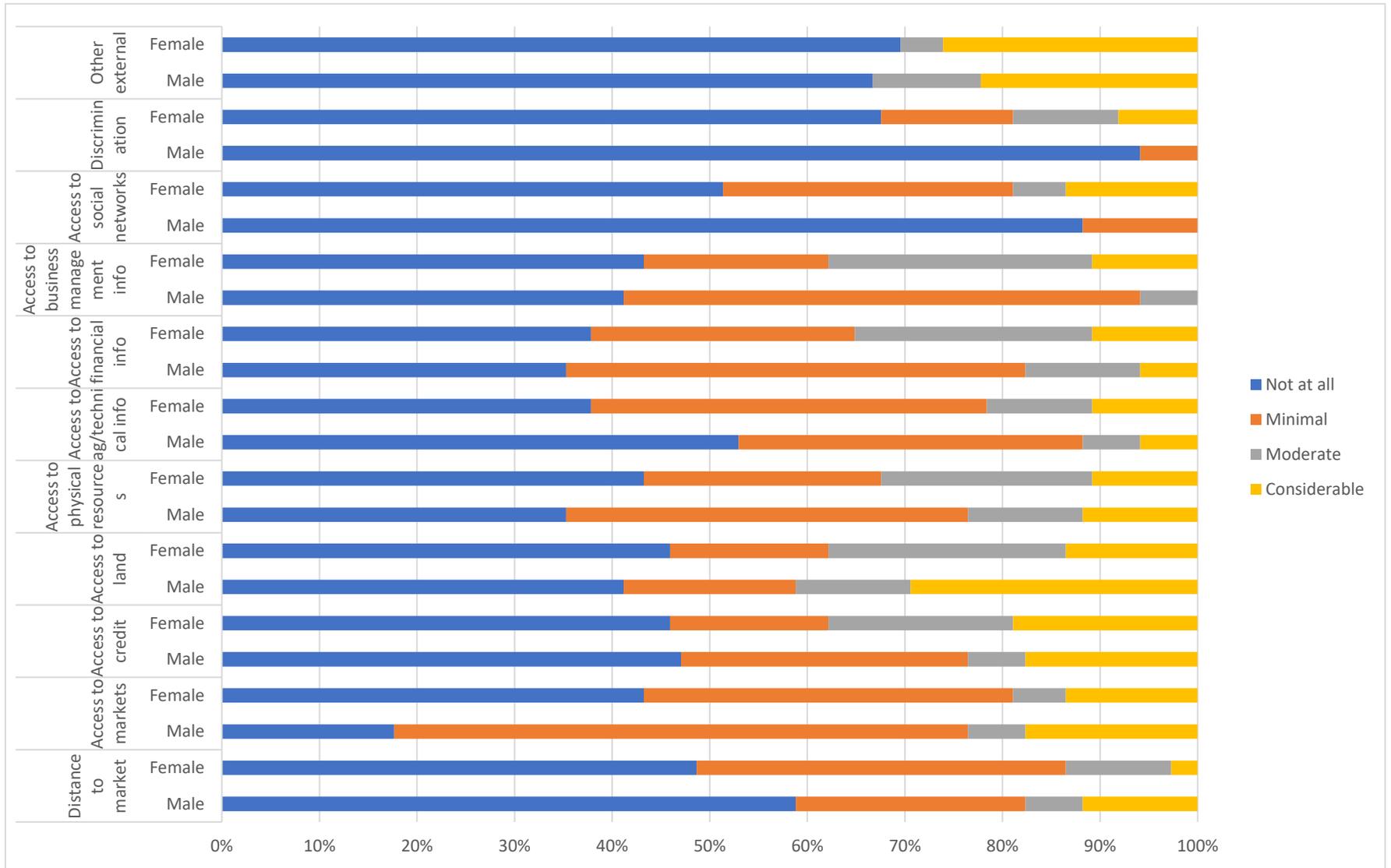


Figure 4.4 Participant Responses for Extent of External Constraints

4.6.2 Internal Constraints

Participants were also asked the extent of internal business constraints on a scale of *not at all* (1), *minimal* (2), *moderate* (3), or *considerable* (4). When comparing frequencies of responses for total participants ($N = 61$), federal regulations and laws and finding qualified personnel were most frequently reported as “not at all” a constraint ($n = 20$) and the most “considerable” constraints were internal family stress ($n = 15$) and work family balance ($n = 15$). Women ($N = 37$) most frequently reported finding qualified personnel as “not at all” a constraint ($n = 12$, 32%), followed by federal regulations and laws ($n = 11$, 30%), and the most “considerable” constraint was work family balance ($n = 12$, 32%). Women more frequently reported all internal constraints as more “considerable” than men with the exception of internal family stress. Women more frequently reported assessing customer needs ($n = 13$, 35%), finding qualified personnel ($n = 16$, 43%), other internal constraints ($n = 7$, 30%), and work family balance ($n = 27$, 73%) as “moderate” or “considerable” constraints than by men ($N = 17$; $n = 5$, 29%; $n = 5$, 29%; $n = 2$, 22%; $n = 9$, 53% respectively). Men more frequently reported pricing products ($n = 7$, 41%), state and local regulations and laws ($n = 9$, 53%), and federal regulations and laws ($n = 8$, 47%) as “moderate” or “considerable” constraints than by women ($n = 12$, 32%; $n = 16$, 43%; $n = 15$, 41% respectively). Both developing marketing strategies ($n = 8$, 47% male; $n = 17$, 46% female) and internal family stress ($n = 7$, 41% male; $n = 15$, 41% female) were equally reported as “moderate” or “considerable” constraints by men and women. The greatest discrepancy between the frequency of “moderate” and “considerable” responses between men and women was work family balance, which women reported as greater constraints than men on average.

Figure 4.5 depicts the frequency of responses for each external constraint for total participants, male participants, and female participants. The comparisons between genders mentioned previously is visible in the figure below. Figure 4.5 also illustrates the range of responses for most constraints. For example, finding qualified personnel was the most frequent constraint women reported as “not at all” ($n = 12$, 32%), yet there were still nine (24%) women who reported it as a “considerable” constraint on their business. Data not included in this figure were participants’ responses for “other” external constraints. Such responses included “age and disabilities,” “childcare,” “finding help to get things finished,” “labor,” “milk price in general,” “outside full time jobs to pay bills,” “poor WiFi signal [sic],” “start up assistance to expand financially such as an agricultural grant,” “transition of farm operations to children,” and “travel.”

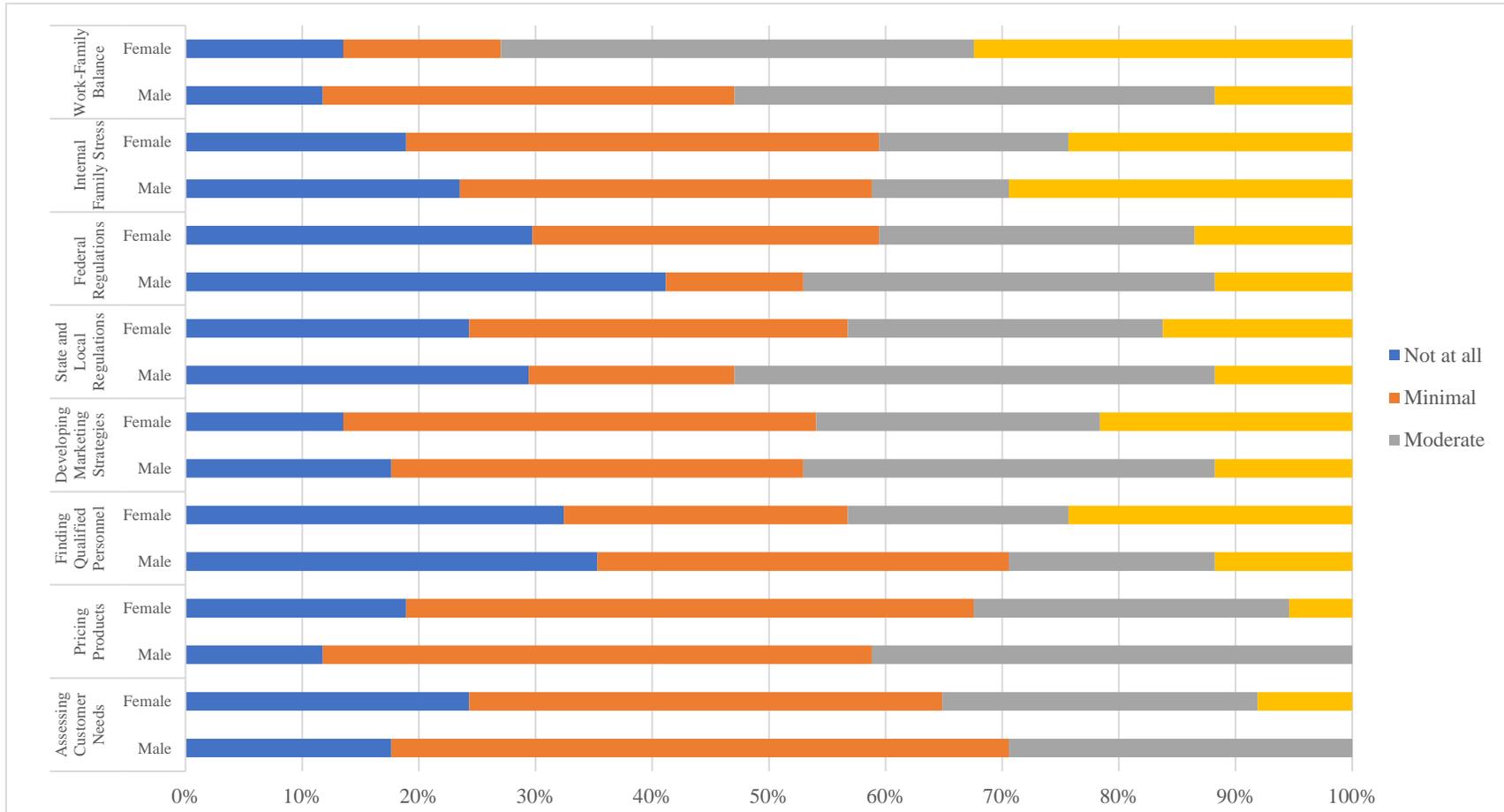


Figure 4.5 Participant Responses for Extent of Internal Constraints

4.6.3 Financing Experience

Another constraint item on the questionnaire asked for participants' experience in obtaining financing. Of the total participants, most (60.7%) did not seek credit (see Table 4.10). Of the total participants who did seek financing, 19.7% obtained money from the bank while 13.1% were denied credit. Most women did not seek credit (67.6%). While most men sought and obtained financing through a bank (47.1%), only 10.8% of women received financing through a bank. Women were the only participants to report obtaining financing through a friend or family member (10.8%). No participants reported obtaining financing through a grant or other program.

Table 4.10 Frequency and Percentage of Participants' Financing Experience

Category	Male		Female		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Did not seek credit	6	35.3	25	67.6	37	60.7
Obtained financing through a bank	8	47.1	4	10.8	12	19.7
Obtained financing through a friend or family member	-	-	4	10.8	4	6.6
Obtained financing through a grant or other program	-	-	-	-	-	-
Denied credit	3	17.6	4	10.8	8	13.1

Note. *N* = 61. No participants reported obtaining financing through a grant or other program.

4.6.4 Relationship between Constraints and Gender of Participant

In an effort to understand what constraints female agricultural entrepreneurs encountered, a correlation analysis was calculated to explore the relationships between the participants' reported constraints and gender. The results of the correlation analysis contributed to understanding if the constraints identified disproportionately affect female entrepreneurs and provide further insight above and beyond what was reported by the frequency data. Subsequently, a rank-biserial correlation was conducted between participant's gender and each of the external and internal constraint items. As explained in Chapter 3, Cohen's (1988) effect sizes were utilized to determine practical significance of the relationships. The results from correlation analysis indicated a relationship between gender and two constraints: access to social networks and discrimination

(Table 4.11). Among female participants, there existed a moderate correlation ($r = .35$) with constraint of access to social networks. This correlation was practically significant with a medium effect size ($R^2 = .12$), indicating that women were more likely to experience constraints to access to social networks. There was also a low correlation ($r = .29$) between gender and discrimination with a small effect size ($R^2 = .08$). Thus women were more likely to experience constraints related to discrimination.

Table 4.11 Rank-Biserial Correlation Coefficients Between Gender and External and Internal Constraints

Constraint	r	p	R^2
Distance to market	-.02	.91	
Access to markets	-.16	.25	
Access to credit	.07	.63	
Access to land	-.10	.49	
Access to physical resources	.00	1.00	
Access to agricultural/technical information	.15	.28	
Access to financial information	.10	.49	
Access to business management information	.20	.15	
Access to social networks	.35*	.01	.12
Gender, racial or other discrimination	.29*	.03	.08
Work/Family Balance	.19	.18	
Assessing customer needs	.04	.78	
Pricing products or services	-.06	.65	
Finding qualified personnel	.12	.38	
Developing marketing strategies	.06	.65	
State and local regulations and laws	.00	1.00	
Federal regulations and laws	.03	.83	
Internal family stress	-.01	.97	

Note. $N = 54$. 1 = male and 2 = female. * $p < .05$. ** $p < .01$

4.6.5 Level of Male and Female Participation in Farm Business

In order to determine if female agricultural entrepreneurs encounter constraints related to gender roles in their business, participants were also asked about the contributions of men and women to their farm business. First, participants were asked if they had both men and women in their business. Those who responded positively were asked to indicate the level of participation

for males and females respectively on four farm business operations (Table 4.12). Participants were able to select an answer from a scale of *not at all* (1), *a little* (2), *about half* (3), *most* (4), or *all* (5). On average, men were “a little” involved in accounting or record keeping, “most” involved in physical labor, “about half” involved in hiring decisions, and “about half” involved in management decisions. On average, women were “most” involved in accounting or record keeping, “about half” involved in physical labor, “about half” involved in hiring decisions, and “about half” involved in management decisions.

Table 4.12 Comparison of Mean Male and Female Participation on Farm Business Operations

Farm Business Operations	Male		Female	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Accounting or record keeping	2.42	1.53	3.79	1.47
Physical labor	3.54	1.16	3.06	1.20
Hiring decisions ^a	2.64	1.56	3.38	1.51
Management decisions	3.12	1.28	3.38	1.29

Note. N = 52. 1 = *not at all*, 2 = *a little*, 3 = *about half*, 4 = *most*, and 5 = *all*.

^a N=50. Two participants skipped the questions pertaining to hiring decisions.

4.6.6 Relationship between Participant Gender and Reported Levels of Male and Female Participation

In an effort to better understand the data from a gender role perspective in farm business operations, a correlation analysis was employed to understand if there was a relationship between the participants’ responses and gender. As such, a rank biserial correlation was conducted between gender of participant and level of gender participation on farm business operations (Table 4.13). All participants, regardless of gender, were asked to evaluate active participation on farm business operations for both men and women. The results of the correlation analysis contributed to understanding if women were relegated to specific roles in farm business operation and therefore determine if gender roles and/or invisibility of women are constraints for female entrepreneurs.

All correlation coefficients were found significant at a $p < 0.1$ level and practically significant with effect sizes larger than .25. There was a high correlation between male participants

and male participation on farm business operations (accounting/record keeping $r = -.62$; physical labor $r = -.52$; hiring decisions $r = -.61$; management decisions $r = -.53$). In other words, men were more likely to report greater levels of male participation in all four categories. One item of female participation in farm business operations had a high correlation with female participants (accounting/record keeping $r = .58$). The other three items of female participation in farm business operations had a moderate correlation with female participant responses (management decisions $r = .50$; physical labor $r = .47$; hiring decisions $r = .46$). Thus, women were more likely to report greater levels of female participation in all four categories. The correlation between gender and accounting or record keeping was strongest for both male and female participation.

Table 4.13 Rank-Biserial Correlation Coefficients Between for Mean Male and Female Participation on Farm Business Operations and Gender

Farm Business Operation	r	p	R^2
Male			
Accounting or record keeping	-.62**	.00	.38
Physical labor	-.52**	.00	.27
Hiring decisions ^a	-.61**	.00	.37
Management decisions	-.53**	.00	.28
Female			
Accounting or record keeping	.58**	.00	.34
Physical labor	.46**	.00	.21
Hiring decisions ^a	.47**	.00	.22
Management decisions	.50**	.00	.25

Note. $N = 52$. Nine participants did not have both men and women working in their business and were omitted. 1 = male and 2 = female. * $p < .05$. ** $p < .01$

^a $N = 50$. Two participants skipped the questions pertaining to hiring decisions.

4.7 Results for Research Question 2

The second research question was: “What do female agricultural entrepreneurs consider their most valuable resources?” This question sought to understand the “resources” section of the conceptual framework. As shown in the conceptual framework, business resources can be divided into human, social, and financial capital. Human capital is the set of skills, abilities, attitudes and work ethic at an individual level. Examples of human capital resources include education, previous

experience, and values. Social capital is the relationships of good will, which stretch between people and social institutions that maintain social norms and reciprocal favor. Professional social networks, community connections, and relationships with customers, peers and experts are examples of social capital resources. Financial capital is the pooled monies of the entrepreneur, nuclear and extended families, and funds from formal financial institutions. Acres of land, revenue, and increase in revenue are examples of financial capital resources. To answer research question 2, responses to the resources section of the questionnaire were collected and analyzed through frequencies and percentages for men, women, and total participants. Furthermore, the data collected from the open-ended question on values impacting business was analyzed using qualitative open axial coding.

4.7.1 Human Capital

To assess human capital resources of participants, data was collected on education level, off-farm job, previous agriculture experience, and previous business ownership experience (Table 4.14). Most participants had some college or technical school education ($n = 25$). There was also a notable number of participants who obtained a post-graduate degree (19.7%). On average, male participants were more educated than female participants. The most frequent response for women was “some college or technical school education” ($n = 18$, 48.6%), while the most common response for men was “post-graduate degree” ($n = 8$, 47.1%). One fifth of total participants did not have a separate off-farm job (17.6% of men and 16.2% of women). Of the male participants who reported an off-farm job, responses were split evenly between part time and full time ($n = 7$, 41.2%). Conversely, more female participants reported having part time, off-farm job ($n = 17$, 45.9%) than a full time, off-farm job ($n = 13$, 35.1%).

Fifty-nine percent of total participants reported not having previous business ownership experience and 36.1% had no previous agriculture experience. Men more frequently reported having previous agriculture experience ($n = 13$, 76.5%) than women ($n = 21$, 56.8%). Women reported more frequently having previous business experience ($n = 16$, 43.2%) than men ($n = 6$, 35.3%). Agricultural experience was more common than business ownership experience for both

genders. The 63.9% of total participants who had previous agriculture experience were also asked to quantify their experience in years. Twenty-four of the thirty-one respondents (77.4%) had over 10 years of agriculture experience. Female participants more frequently reported having over 10 years of agriculture experience (85.7%) than men (75%). In addition, female participants more frequently reported over 45 years of experience and the maximum number of experience (70 years) was reported by a woman. Six of the participants (19.4%) reported that they grew up on a farm and all six were women.

Table 4.14 Frequency and Percentage of Participant's Human Capital Resources

Category	Male		Female		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Highest level of education (<i>N</i> = 61)						
Grade school	-	-	-	-	-	-
Some high school	-	-	-	-	-	-
High School Diploma	1	5.9	4	10.8	6	9.8
Some college/vocational technical work	5	29.4	18	48.6	25	41.0
4-year College Degree	2	11.8	8	21.6	13	21.3
Some post graduate work	1	5.9	4	10.8	5	8.2
Post-Graduate Degree	8	47.1	3	8.1	12	19.7
Off-farm job (<i>N</i> = 60)						
None	3	17.6	6	16.2	12	20.0
Part-time	7	41.2	17	45.9	25	41.7
Full-time	7	41.2	13	35.1	23	38.3
Previous business ownership experience (<i>N</i> = 61)						
Yes	6	35.3	16	43.2	24	40.7
No	10	58.8	21	56.8	35	59.3
Previous agriculture experience (<i>N</i> = 59)						
Yes	13	76.5	21	56.8	39	63.9
No	4	23.5	16	43.2	22	36.1

Note. No participants reported their highest level of education as grade school or some high school.

In another question on human capital, participants were asked how many hours a week they spend on farm business. There were a wide range of responses and many of the responses indicated

it was difficult to quantify and dependent on the season. Three participants reported spending zero hours a week in the winter, but then work upwards of “55 hours a week” or “sunrise to sunset” during the marketing season. Three participants reported their business requires less than 10 hours a week. On average, women reported spending less time on their agricultural business than men. Other participants shared that during peak season, they spend between 80-100 hours a week on their agricultural business. One woman detailed the reality of seasonally dependent agricultural businesses:

Mid-January through Mid-March roughly 65 hrs a week primarily sugaring for maple syrup production. Mid-March through Mid-May roughly 40 hrs a week primarily planting & preparing for farmers market season. Mid-May through end of September roughly 40 hrs a week primarily harvesting & producing goods for farmers market. September through Mid-January roughly 25 hrs a week primarily attending conferences/spending time furthering education on farming related topics, planning for next years production, and evaluating how the business is operating.

Even during the same season, the amount of hours spent on their business can change week to week. The demands of a small agricultural business does not follow a traditional work schedule, as one woman shared:

We work full-time jobs and are trying to build a business on a part-time basis. We are beekeepers and take orders for honey throughout the day. We also have a 4th generation farm that we cash rent the crop land. We also have a hay field that we sell the bales of hay. We also have a rental house on the farm that we rent out to a single family. To estimate the amount of hours is impossible. Even when we are at work, we are dealing with farm issues or honeybee issues.

One open-ended question was included in the questionnaire to measure participant values and motivation as a component of human capital. Participants were asked to: “List three to five important values that shape your farm business.” Most participants responded to this question in phrases or using a few words. Responses were divided based on the individual values provided, then inductively coded into specific codes (Saldaña, 2013), then sorted through axial coding into larger themes (Table 4.15). The themes that emerged are reflective of the conceptual elements

found within the literature. There were 12 themes identified through axial coding. Of the 51 participants who answered this question, 90% of responses included the theme of ethics. Of the codes included under the theme of ethics, “honesty” and “hard work” were the most common responses. The theme of ethics encompasses the character traits and personal values that were conveyed through specific codes. An example of one female participant’s response included the labels of animal welfare, healthy and quality food, and gratitude:

“We care about our livestock and how they live. We eat the food that we raise so we want it to be healthy and great quality. We love our customers and appreciate that they give us the opportunity to do what we love.”

The last sentence was coded in the participant’s response was coded as gratitude, which was categorized under the theme of “ethics.” The first sentence in the participant’s response was coded as animal welfare, which was categorized into the theme of agricultural practices.

Agricultural practices was another common theme, with 69% of participant responses including codes such as “organic growing,” “no sprays,” and “animal welfare.” The theme of agricultural practices encompasses the specific codes that pertain to the methods and practices that were used for growing their agricultural product. Other female participants’ responses that were categorized under this theme include “being a diversified farm,” “no sprays,” “sustainable farming practices,” “consistent growing methods,” and our business “will integrate sustainable and renewable energy sources along with advanced monitoring systems to provide a cost efficient growing environment.”

The third most common theme to emerge from participants’ responses was culture. The theme of culture encompasses the specific codes that pertain to the business culture values and employee relations. Examples of the specific codes in this theme are “communication (within),” “employee development,” “teamwork,” “people matter,” and “pride in product.” Some of the responses from female participants that were coded under culture include “looking professional when delivering products or selling at farmers markets, communicating with all members of staff and the customers,” “welcoming,” and “teachable spirit.”

Table 4.15 Themes from Qualitative Data Analysis of Participants Values that Shape Farm Business Responses

Themes	Codes	<i>n</i>	%
Affordability	Value per cost, Affordability	6	12
Agricultural Practice	Animal welfare, Healthy animals, Care for land, Soil health, Farming practices, Biomimicry, Cost-efficient farming, Diversified farming, homegrown, Minimal chemicals, No sprays, Organic growing, Righteously grown, Supply sourcing provenance, Sustainability, Sustainable farming, Sustainable packaging, Sustainable, Organic, Sustainable, Renewable energy, Sustainably grown product, Variety, Simple, Timing	35	69
Belief	Biodiversity, Essentialism, Faith, Holism, Wonder of nature, Luck	7	14
Community Engagement	Form cooperatives, Build community, Community, Community engagement, Community relationships, Community service, Food access	13	25
Culture	Communication (within), Employee development, Employee respect, Teamwork, Community-focused decision making, Good values, Humor, Not compete, Open, People matter, Positive, Pride in farming, Pride in product, Respect employees, Teachable spirit, Family business, Family farm, Learning, Mentorship	23	45
Customer Service	Communication (with customers), Customer loyalty, Customer relations, Customer relationship, Customer satisfaction, Customer service, Good service, Respect neighbors, Serve community, Customers, Service, Welcoming	14	27
Education	Educate customers, Agritourism	4	8
Ethics	Land integrity, Respect Environment, Family, Friendly, Good people, Gratitude, Hard work, Honesty, Honor, Humility, Integrity, Kindness, Moral business practices, No greed, Respect, Responsibility, Transparency, Professional appearance	46	90
Financial Success	Economic viable, Income, No debt, Profitability, Success	6	12
Local	Build local food system, Eat local, Local economy, Regional economic benefit, Support local,	5	10
Non-financial Success	Excellence, Rewarding without stress, Work/family balance	3	6
Quality Product	Clean product, Unique products, Tasty product, Specialty items, Quality, Natural product, Healthy food, Quality food, Good product	26	51
Skills	Cleanliness, Collaboration, Consistency, Creativity, Efficiency, Innovation, Observation, Organization, Problem solving, Knowledge, Time, Work ethic	13	25

Note. $N = 51$. ^a Percentages reported are the percent of cases. Participant responses could have been recorded as under several codes and themes.

4.7.2 Social Capital

Social capital data was also collected from participants. The social capital variable was measured using involvement in professional organizations, involvement in community activities, and attitude toward community. Total participants were split nearly evenly between those who were involved in professional organizations ($n = 29$) and those who were not ($n = 28$; see Table 4.16). Just over half of the female participants reported not being a member of a professional organization. Of those who were members of a professional organization, the most common level of involvement for both men and women was “frequently” (41.2% of men and 24.3% of women).

Table 4.16 Participants’ Involvement in Professional Organizations in the Past 3 Years

Participation in Organizational Activities	<i>Male</i>		<i>Female</i>		<i>Total</i>	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Never	-	-	-	-	-	-
Sometimes	2	11.8	3	8.1	6	20.7
Frequently	7	41.2	9	24.3	17	58.6
Always	1	5.9	5	13.5	6	20.7
Not a member of a professional organization	7	41.2	19	51.4	28	49.1

Note. $N = 57$. No participants reported “never” participating in professional organization activities.

Another component of social capital is community involvement. On average, female participants were more involved in the community than male participants. Female participants “sometimes” served as a leader in a local organization, assisted community planning, and donated to local youth programs and were “often” involved in one or more community activities (Table 4.17). In contrast, men were “seldom” involved as a leader in a local organization and assisting community planning and “sometimes” donated to local youth programs and involved in community activities.

Table 4.17 Frequency of Participants' Community Involvement in the Past 3 Years

Community Involvement	<i>Male</i>		<i>Female</i>		<i>Total</i>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Served as leader in civic/local organization	2.35	1.27	3.08	1.62	2.78	1.53
Assisted community development/planning	2.47	1.13	2.81	1.58	2.67	1.42
Donated to local schools/youth programs	3.35	1.32	3.38	1.30	3.34	1.31
Involved in one or more community activities	3.06	1.14	3.95	1.00	3.57	1.17

Note. $N = 58$. 1 = *never*, 2 = *seldom*, 3 = *sometimes*, 4 = *often*, and 5 = *very often*.

To assess social capital, participants were also asked about their attitude toward their community. Most participants reported a “neutral” attitude toward their community (84.5%). Men more frequently reported dissatisfaction of the community (17.6%; as compared to 10.8% of women). Of note, only 3.4% of total participants reported being satisfied with the community—the two participants were women. When asked their attitude on their community’s support of their business, however, 62.1% of total participants reported they were “satisfied” (Table 4.18). For both general attitude and attitude towards community support, 12.1% of total participants indicated they were “dissatisfied.” Conversely, women more frequently reported satisfaction with the community’s support of their business (67.6%; compared to 52.9% of men). Also, in contrast to the previous question on attitude towards community, women most frequently reported dissatisfaction towards community’s support of their business ($n = 5$, 13.5%; as compared to 11.8% of men).

Table 4.18 Frequency and Percentage of Participants' Attitude toward Community

	Male		Female		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
General attitude toward community						
Satisfied	-	-	2	5.4	2	3.4
Neutral	14	82.4	31	83.8	49	84.5
Dissatisfied	3	17.6	4	10.8	7	12.1
Attitude toward local community's support of your business						
Satisfied	9	52.9	25	67.6	36	62.1
Neutral	6	35.3	7	18.9	15	25.9
Dissatisfied	2	11.8	5	13.5	7	12.1

Note. *N* = 58.

4.7.3 Financial Capital

To measure participant financial capital, participants were asked questions regarding their farm size, acreage of land rented and owned, and if their gross revenue had increased in the last 3 years (Table 4.19). Farm revenue was used to operationalize farm size. Each farm size category was represented in the study participants. Overall, men reported having greater farmer revenue than women. Only one woman reported having a farm with a revenue greater than \$50,000 while the most frequent responses for men were \$100,000-\$249,999 and over \$250,000. Farms that made between \$5,000 and \$9,999 were the most common response for female participants with 29.7% indicating as such. Over three quarters of participants (*n* = 45) reported their businesses' gross revenue increasing in the past three years. Most women (80.6%) reported their business growing in gross revenue, a greater percentage than that of men (76.5%). However, only half of female participants reported they were on target to meet their financial goals for 2019. Men more frequently reported their farm was on target to meet their financial goals (64.7%) than women (50%).

Table 4.19 Frequency and Percentage of Financial Capital

Category	<i>Male</i>		<i>Female</i>		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Farm Revenue (<i>N</i> = 55)						
Less than \$5,000	1	5.9	8	21.6	9	16.4
\$5,000-\$9,999	3	17.6	11	29.7	14	25.5
\$10,000-\$24,999	1	5.9	9	24.3	11	20.0
\$25,000-\$49,999	1	5.9	5	13.5	7	12.7
\$50,000-\$99,999	1	5.9	-	-	2	3.6
\$100,000-\$249,999	5	29.4	1	2.7	7	12.7
More than \$250,000	5	29.4	-	-	5	9.1
Business gross revenue increased over past 3 years (<i>N</i> = 57)						
Yes	13	76.5	29	80.6	45	78.9
No	4	23.5	7	19.4	12	21.1
Farm on target to meet the financial goals for your business (<i>N</i> = 56)						
Yes	11	64.7	18	50.0	30	53.6
No	6	35.3	18	50.0	26	46.4

Participants also reported the exact acreage of land they both own and rent. Due to the wide range of responses, the mean did not describe the full sample. Therefore, the researcher sorted the data first into the categories used in the Census of Agriculture, then divided the categories further at the researcher's discretion based on what made sense for the data. For example, there was a natural break in participant responses around 15 acres. Over half (56.4%) of total participants owned between 1 and 14 acres of land (Table 4.20). Women most frequently reported owning 1-14 acres ($n = 21$, 56.8) and not renting any land ($n = 22$, 59.5). Most (59.6%) participants also reported not renting any land.

Table 4.20 Frequency and Percentage of Acres of Land Owned and Rented

Category	<i>Male</i>		<i>Female</i>		<i>Total</i>	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Acres of Land Owned (<i>N</i> = 55)						
None	2	11.8	2	5.4	5	9.1
Less than 1 acre	-	-	1	2.7	1	1.8
1 to 14 acres	7	41.2	21	56.8	31	56.4
15 to 50 acres	2	11.8	3	8.1	5	9.1
51 to 99 acres	1	5.9	2	5.4	3	5.4
100 to 499 acres	2	11.8	4	10.8	6	10.9
500 to 999 acres	1	5.9	1	2.7	2	3.7
1000 to 1999 acres	-	-	-	-	-	-
2000 or more acres	1	5.9	1	2.7	2	3.7
Acres of Land Rented (<i>N</i> = 52)						
None	7	41.2	22	59.5	31	59.6
Less than 1 acre	-	-	-	-	-	-
1 to 14 acres	4	23.5	5	13.5	11	21.2
15 to 50 acres	-	-	3	8.1	3	5.7
51 to 99 acres	2	11.8	-	-	2	3.8
100 to 499 acres	2	11.8	-	-	2	3.8
500 to 999 acres	-	-	-	-	-	-
1000 to 1999 acres	-	-	1	2.7	1	1.9
2000 or more acres	2	11.8	-	-	2	3.8

Note. No participants reported renting 1-14 acres or 500 to 999 acres of land.

4.8 Results for Research Question 3

The third research question was: “How do female agricultural entrepreneurs cope when faced with obstacles to business success?” This question sought to understand the “processes” section of the conceptual framework. To answer this question, participants were asked if they had developed or improved parts of their business as well as responding to an open-ended question on methods of overcoming barriers. The data collected through the quantitative questions was analyzed through frequencies and percentages for men, women, and total participants. Furthermore, the data collected from the open-ended question on overcoming barriers was analyzed using qualitative open axial coding.

Participants were asked four yes or no questions that pertained to their businesses processes (Table 4.21). Business processes provided an indication as to how participants were able to overcome obstacles. Almost all participants (94.8%) reported improving their methods of production or service in the past three years. The majority of total participants also responded positively when asked if they had developed new products or services (74.1%) and developed new methods of marketing (84.5%). Male participants responded “yes” to the agricultural business processes items more frequently than female participants. However, most of the female participants responded positively to all items, particularly with improved methods of production or service, where 94.6% of women responded “yes.”

Table 4.21 Frequency and Percentage of Agricultural Business Processes

Category	<i>Male</i>		<i>Female</i>		<i>Total</i>	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Use household income to meet firm needs (<i>N</i> = 57)						
Yes	12	70.6	24	64.9	38	66.7
No	5	29.4	12	32.4	19	33.3
Developed new products or services (<i>N</i> = 58)						
Yes	13	76.5	27	73.0	43	74.1
No	4	23.5	10	27.0	15	25.9
Improved methods of production or service (<i>N</i> = 58)						
Yes	16	94.1	35	94.6	55	94.8
No	1	5.9	2	5.4	3	5.2
Developed new methods of marketing (<i>N</i> = 58)						
Yes	15	88.2	30	81.1	49	84.5
No	2	11.8	7	18.9	9	15.5

Note. Participants were asked to respond to each question as it applies to the past 3 years.

To measure the processes of overcoming obstacles, participants were also asked an open-ended question. Specifically, participants were asked to: “Please provide comments regarding your thoughts and experience on how you have overcome barriers to your farm business success.” Responses were inductively coded (Saldaña, 2013) using specific codes, and then sorted into larger themes using axial coding. The themes that emerged are reflective of the conceptual elements found within the literature. The themes identified were then organized into one of three categories

(human, social, and physical capital). The vocabulary terms for the categories that were used were reflective of the conceptual framework. As defined by Danes, Lee, Stafford, and Heck (2008), human capital is the set of skills, abilities, attitudes and work ethic at an individual level. Social capital is the relationships of good will which stretch between people and social institutions that maintain social norms and reciprocal favor. Physical capital is the tangible tools and resources, such as equipment and land, used by an entrepreneur.

The human capital category included themes of advertising changes, business structure changes, creativity, education, hard work, expand markets, passion, persistence, faith, proactive planning, changes in business strategy, and simplification (Table 4.22). An example of a response categorized as human capital, with the themes of simplification and business strategy, is provided by one female agricultural entrepreneur: “My primary barriers have been resources: finances and time. I have simplified operations (simplified products sold, markets they're sold at, and limited my crops to drastically reduce expenses this year), which frees up both time and resources.” Changes to advertising, specifically social media was another common response. For example, one woman explained, “I have utilized Social Media outlets (specifically Facebook and Instagram) to help boost sales...” The most common themes categorized as human capital include expanding markets (31%), education (19%), and business strategy (19%). Expanding markets was the most common theme to emerge from participant responses, as nearly a third of participants explained they have overcome obstacles through expanding to new markets, increasing their participation in existing markets, marketing improvements and offering new classes or programs.

Physical capital included themes such as equipment, advertising, and product changes. One woman provided an interesting response on how they leveraged their physical capital, namely equipment, to overcome weather-related obstacles:

We lost our largest wholesale buyer through closure after the 2019 crops were planted. We marketed to other buyers and networked within 20 miles of our operations for new buyers to replace 60% of our revenue that was lost. We were not able to achieve the full amount but have come close. You did not ask about climate change effects on our farm business. The excessive additional rain, increased pest pressure and unseasonably temperature ranges caused many

challenges for us that were not addressed in this survey. We have adapted our farming processes to include season extension tunnels, shade cloth, mulching and cover crops to adapt to the changing weather patterns.

This participant also touched on the theme of networking. Networking, along with community, customers, professional, peers, networking, advice, partnerships, and mentors was categorized as social capital. Another social capital example is provided by a female participant that details their business relationship as a resource: “We have a good arrangement with a local orchard. For our pollination services, she sells our honey with her produce at her roadside stand. We no longer need to participate in festivals and events.” The two most common themes to emerge in the social capital category were customer relationships (19%) and professional network (8%).

Table 4.22 Themes from Qualitative Data Analysis of Participants Methods of Overcoming Barriers Responses

Categories	Themes	Codes	<i>n</i>	% ^a
Human Capital	Advertising	Advertising, Social media, Facebook, Discounts	5	14
	Business Structure	Bookkeeping changes, Employee reorganization, Reduce expenses, Business restructuring	4	11
	Creativity	Creativity, New classes/programs	4	11
	Education	Observation, Learn the hard way, Research, Business education, Study to improve, Workshops/conferences	7	19
	Hard Work	Hard work, Consistency	5	14
	Expand markets	Public access, New markets, Increased participation in Farmers' Market, Marketing, Simplify markets, New classes/programs	11	31
	Passion	Love the work	1	3
	Persistence	Persistence	4	11
	Faith	Pray	1	3
	Proactive	Proactive, Identify opportunity	4	11
	Business strategy	Grow gradually, Improve efficiency, Eliminate inefficient products, Pricing changes, Simplify products sold, Sales analysis	7	19
	Simplify	Common sense	2	6
Physical Capital	Equipment	Used equipment, New physical adaptations	2	6
	Advertising	Market display	1	3
	Product changes	Product improvement, product changes	2	6

Table 4.22 continued

Categories	Themes	Codes	<i>n</i>	% ^a
Social Capital	Community	Joined merchant group, Community relationships	2	6
	Customers	Educate customers, Work with customers, Accept wider customer base	7	19
	Professional	Professional relationships, Professional network	3	8
	Peers	Peers	2	6
	Networking	Networking	2	6
	Advice	Ask peers, Learn from others	2	6
	Partnerships	Build partnerships, Partnership arrangement	2	6
	Mentors	Mentors	2	6

Note. $N = 36$. Twenty-four participants did not complete this question and one participant replied that barriers were minimal, therefore the total number of participants (N) for this item does not equal 61.

^a Percentages reported are the percent of cases. Participant responses could have been recorded as under several codes and themes.

4.9 Results for Research Question 4

The fourth research question was: “How do Indiana female agricultural entrepreneurs measure achievement?” This question sought to understand the “achievements” section of the conceptual framework. To answer this question, participants were asked to rank their top priorities, indicate their level of success, and answer an open-ended question asking what their overall goal is. The data collected through the quantitative questions was analyzed through frequencies and percentages for men, women, and total participants. Furthermore, the data collected from the open ended question on goals was analyzed using qualitative open axial coding.

Participants ranked a list of goals from most important to least important (Table 4.23). Female participants prioritized “a positive relationship with customers” ($M = 1.87$), followed by “profit” ($M = 2.17$), and “business survival” ($M = 2.93$). This is in direct contrast to male participants, who prioritized “profit” ($M = 2.35$) above “a positive relationship with customers” and reported “keeping the business in the family” and “opportunity to work with family members” as more important goals than “business survival.” On average, all participants found “profit” (M

= 2.18) and “a positive reputation with customers” ($M = 2.04$) to be the two most important goals for their business. The least important goals were “keeping the business in the family” ($M = 4.07$) for women and “business survival” ($M = 3.53$) for men.

Table 4.23 Means and Standard Deviation for Participants’ Prioritization of Goals

Goal	Male		Female		Total	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Profit	2.35	1.12	2.17	1.02	2.18	1.04
A positive reputation with customers	2.41	1.42	1.87	.86	2.04	1.09
Business survival	3.53	1.51	2.93	1.17	3.16	1.28
Keeping the business in the family	3.47	1.23	4.07	.94	3.88	1.06
Opportunity to work with family members	3.24	1.48	3.97	1.45	3.74	1.47

Note. $N = 50$. Participants ranked each item from 1 (*Most Important*) to 5 (*Least Important*).

To measure success, participants were also asked to rate their level of success in the top two goals from the previous question and overall. On average, female participants were “somewhat successful” in achieving their first and second most important goals and overall success (Table 4.24). Female participants reported greater success in achieving their second most important goal than their first most important goal on average. Male participants reported they were somewhat successful in achieving all of their goals as well, although they reported higher levels of overall success and most important goals than female participants.

Table 4.24 Frequency and Percentage of Business Success

Achievement	Male		Female		Total	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Most important goal ($N = 56$)	4.24	1.25	3.78	1.36	3.93	1.31
Second most important goal ($N = 49$)	3.75	1.07	3.97	1.16	3.92	1.12
Overall success ($N = 52$)	3.75	.68	3.55	1.09	3.60	0.96

Note. 1 = *Very unsuccessful*, 2 = *somewhat unsuccessful*, 3 = *neutral*, 4 = *somewhat successful*, and 5 = *very successful*.

To measure the processes of overcoming obstacles, participants were also asked an open ended question. Participants were asked to: “Please write your overall or holistic goal or mission for your farm.” Responses were inductively coded into specific codes Bernard (2011), then sorted into larger themes through axial coding (Saldaña, 2013). The themes that emerged are reflective of the conceptual elements found within the literature. While some responses were short and simple (e.g., “Grow the best plants”), most participants provided detailed responses. The complex responses were broken up into several codes through inductive (open) coding and sorted into multiple themes. An example of a response that fits the multiple themes (care of the environment, community, personal satisfaction, and income) is provided by this female participant:

Farming--which necessitates the care of the environment, promotes the care of our community, and allows our family to work together-- embodies most fully the meaning of life for us. To be able to live a meaningful life, fulfill our personal values, achieve personal goals, all while providing an income, is the reason why we choose to farm.

Some participants did not have a concise mission statement, but rather explained the gradual development of their business and what they try to accomplish. For example, one woman shared her goal to improve food access:

I started growing over 30 years ago within my family's Garden Center. Where I then saw a need, because the county we live in is a food desert, for fresh local produce and I then started growing and producing produce to sell at our local farmers market. My husband and I then found the need after starting a family to garden sustainably, organically and environmentally friendly. We then saw the need to offer a CSA in our area and the surrounding communities. Our biggest belief is to offer fresh local produce to those who may not have the funds or access for good, fresh, healthy food.

Through qualitative analysis, eight themes emerged: animal welfare, community, customer service, education, care of environment, income, personal satisfaction, and quality product. Responses that were coded for animal welfare described caring for their animals as part of their overall mission. For example, one woman responded, “We strive to raise the healthy chickens and lambs to sell quality products...We believe in humane handling and treat our animals with great

care and stand behind all our farm products.” Responses that were coded for community described the business goal of serving the community, especially related to issues of food security and access to healthy food. An example of a response coded as community is the previous block quote regarding food access. Responses that were coded for customer service described customer appreciation, hospitality, and affordable pricing. For example, one woman reported her overall business goal is to “better serve customers with quality produce and cut flower bouquets.” Responses that were coded for education described one of their business goals was to educate their customers, the community, and youth. For example, one female participant reported that their overall mission was to “provide premier education and agritourism of organic specialty crops.” Responses that were coded for care of the environment described the prioritization of environmentally friendly considerations in their agricultural practices. For example, one woman responded, “we seek to recycle/repurpose/reuse wherever we can to ensure that we are using as many resources as possible without adding to the landfill.” Responses coded as income described earning a profit and economic sustainability for their business as an overall goal. Example responses from female participants include sentence fragments such as “make a living” and “all while providing an income” as part of larger goals. Responses coded as personal satisfaction described achieving personal goals, lifestyle choices, and family prioritization. For example, one woman reported her business goal sought to “provide a healthy farm where my children will be able to thrive eventually...” Responses coded as quality product described the overall goal of their business was to grow the healthiest, tastiest, and best product. Example responses from female participants include “to make the best better,” “...to grow the best tasting strawberries that my customers have ever tasted,” and “to provide gourmet, hard to find food items to Southern Indiana.” Producing a quality product was the most frequent response (85%), followed by serving the community (56%) (Table 4.25).

Table 4.25 Themes from Qualitative Data Analysis of Participants Overall Goal Responses

Themes	Codes	<i>n</i>	% ^a
Animal Welfare	Animal health, Animal welfare, Care of animals	4	10
Community	Build community relationships, Community care, Community responsibility, Community responsibility, Food desert, Food security, Food/nutrition access, Grow urban farmers, Serve community, Serve local producers, Whole people, Serve community customer base, Provide peaceful location	22	56
Customer Service	Customer satisfaction, Customer service, Respect customers, Affordable price, Reasonable cost	10	26
Education	Education/agritourism, Teach urban farmers, Teach youth	5	13
Care of Environment	Environment care, Environmentally friendly practices, Healthy farm, Improve land, Organic practices, Redeem the land, Regenerative agriculture, Sustainable practices	19	49
Income	Income, Profit, Expand business	6	15
Personal Satisfaction	Achieve goals, Family pride in farm, Family time, Lifestyle, Meet family needs, Personal development, Preserve family farm, Personal satisfaction, Pride in products, Uphold faith principles, Serve family	18	46
Quality Product	Alternative option for customers, Best product, Best priced, Best tasting, Chemical-free, Clean, Fresh, Gourmet, Hard to find, Healthy, Nutritious, Organic, Specialty, Quality, Taste, Transparent, Whole food, Wholesome, Responsible choice	33	85

Note. *N* = 39.

^a Percentages reported are the percent of cases. Participant responses could have been recorded under several codes and themes.

CHAPTER 5. CONCLUSIONS AND DISCUSSION

5.1 Introduction

The conclusions for the research study are presented in this chapter. Furthermore, this chapter will also include the implications for theory, research and practice will be discussed. Recommendations for future research will also be presented at the end of this chapter.

5.2 Purpose of Study

The purpose of this study was to explore and describe existing obstacles encountered by female entrepreneurs in niche agricultural markets in Indiana and their methods of building resilience in their business.

5.3 Research Questions

The research questions guiding this study were:

1. What obstacles have Indiana women encountered in their small-scale agricultural business ownership?
2. What did female agricultural entrepreneurs consider their most valuable resources?
3. How did female agricultural entrepreneurs cope when faced with obstacles to business success?
4. How do Indiana female agricultural entrepreneurs measure achievement?

5.4 Conclusions and Discussion

The conclusions of the study will be presented in this section. There were six conclusions from the study that addressed the heterogenous population, human capital resources, prioritization of quality products, significance of internal constraints, division of labor and access to social networks. Each conclusion is followed by a discussion of the contribution of the knowledge claim and an interpretation related to previous research. As described previously, both the research

questions, instrument format, and the presentation of study results were aligned with the conceptual framework. Thus, the conclusions made in this chapter will also reflect the components of the conceptual framework. The first conclusion addresses the structure of the participants' businesses. The second conclusion relates to research questions two and three as it pertains to the resources of participants' business and the processes used to cope with obstacles. The third conclusion corresponds to the fourth research question and addresses the measures of success for female agricultural entrepreneurs. Conclusions four through six are tied to research question one and also help explain the constraints encountered by female agricultural entrepreneurs.

5.5 Conclusion 1

Participants had diverse experiences, business structures, and agricultural practices.

5.5.1 Discussion

This conclusion is reflective of the structure component of the conceptual framework and the lack of previous research on the population of female agricultural entrepreneurs in niche markets in Indiana. This conclusion also supports previous literature which often describes the niche agriculture entrepreneur population as "heterogeneous" (Barberchek, et al., 2014; Brandth, 2002; Danes, 2013; Seuneke, Lans, & Wiskerke, 2015; Peake & Marshall, 2017; Wright & Annes, 2016).

The results of this study indicate diversity in participants' experience, which is reflected by the pathways to entrepreneurship and demographic characteristics of participants. Participant responses to previous business ownership and agriculture experience, support previous research which examined the difference in pathways to agriculture entrepreneurship (Alsos Ljunggren, & Pettersen., 2003; Barbieri & Mahoney, 2009; Jarosz, 2011; Kuo, 2015; McGehee, Kim & Jennings, 2007; Morris, Henley, & Dowell, 2017). Previous research by Alsos, Ljunggren, and Pettersen categorized the diverse agricultural entrepreneur population into three types of entrepreneurs, based on their entry pathway. The results of this study support the three entrepreneur types. For example, one participant mentioned how they have a conventional row crop farm but have always

grown and sold vegetables on the side—a response which would be categorized as pluriactive farmer. The participant who mentioned growing vegetables to start a CSA in a food desert would be categorized as a resource-exploiting entrepreneur. The third of participants without previous agriculture experience are likely portfolio entrepreneurs. The results of this study suggest representation of all three entrepreneur types and thus, diverse participant background experiences. Diversity of participant experience also includes the variance in demographics. The results of this study also support previous research describing the diversity in demographics of niche agriculture entrepreneurs (Barbercheck et al., 2009; Bird & Sapp, 2004; Hinrichs, 2000; Pilgeram, 2019; Sumner & Llewelyn, 2011). For example, Pilgeram and Amos (2016) found that the niche agriculture entrepreneurs are traditionally younger with a greater population of women serving as business owners. The participants in this study were primarily women, which supports Pilgeram and Amos’s claims. While participants reported a wide range of ages, although the average age of participants is younger than the average farmer (AgCensus, 2017). Beyond age and gender, some participants volunteered other demographic information, such as retiree and veteran, which further demonstrated the diversity of experiences of participants as a whole.

The results of this study also revealed diversity in participant business structure. The business structure includes the age of the business, degree of family involvement, ownership, and time invested in the business. The age of businesses ranged from over four generations to less than a year old, supporting previous research on the emergence of young farmers and diversification of existing farms (Barbieri & Mahoney, 2009; Pilgeram & Amos, 2015). Almost all participants reported their business as a family business, supporting previous research claims connecting niche agriculture entrepreneurship and family involvement (Danes, 2013; Danes & Olson, 2003; Pilgeram, 2019; Pilgeram & Amos, 2015; Seunke & Bock, 2015). Many of the studies on women in niche agricultural entrepreneurship recognized that often their businesses were structured as copreneurships, where ownership is shared between husband and wife (Danes, 2013; Hedberg et al., 2012; Peake & Marshall, 2017; Pilgeram & Amos; Trauger, 2004). The results of this study support previous research as a quarter of participants were copreneurs, sharing ownership and decision making with their spouse. Another example of diversity in business structure in the results of this study is the hours per week spent on business. Participants were split evenly between full-

time and part-time businesses and provided responses ranging from five hours a week to over a 100 hours per week during peak season. The results of this study indicate a wide range of participant responses on many aspects of business structure.

The results of this study also indicate the diversity of agricultural businesses among participants. Participant responses indicated a variety of agricultural products produced, markets served, and practices used. The diversity of responses for participant's agricultural products can be explained through relevant literature. Niche agriculture entrepreneurship is often aligned with diversified farming (Barbercheck et al., 2009; Beus & Dunlap, 1990; Darnhofer, Fairweather, & Moller, 2010; Valliant et al., 2017; Wright & Annes, 2019). Not only did study participants produce a variety of products, but they also serve diverse markets. While three-quarters of participants served Farmers' Markets, there was a wide range of other market outlets. Some participants also shared they were looking at expanding to other markets, while others explained that they have served more markets in the past, but they closed. Results from this study agree with the previous research on the direct market outlets utilized by niche agricultural entrepreneurs (Bellows, Alcaraz & Hallman, 2010; Hinrichs, 2000; Little, Ibery, & Watts, 2009; Lyson, Gillespie, & Hilchey, 1995). Another example of diversity in agricultural practices are the variety of farming practices that participants identified with. Participants also reported a wide range of farming practices—some of which were supplied by participants as their responses were not included in the questionnaire. While seven options were provided for participants to select all that apply, there are many more forms of agricultural practices which are not traditionally recognized (i.e., regenerative agriculture, hydroponics, low stress livestock handling, etc.).

In summary, the diversity in participant experience, business structure, and agricultural practice indicates the heterogeneity of the population. Therefore, the diversity of the population prevents researchers from making any generalizations for the niche agricultural entrepreneur population. Furthermore, the diversity in experiences, structure, and practices directly affect the constraints an agricultural entrepreneur may encounter. Thus, the heterogeneity of the participants may explain the diversity in responses to extent of constraints as well.

5.6 Conclusion 2

Innovation and ethics were common human capital resources that participants reported utilizing to overcome obstacles to business success.

5.6.1 Discussion

Almost all participants reported some form of human capital as their method for overcoming obstacles. Two of the most notable forms of human capital to emerge from the results were innovation and ethics. The results of this study indicated that the participants were innovative and able to adapt to overcome obstacles and achieve business success. Innovation and flexibility were valuable human capital resources that participants utilized to overcome obstacles and achieve their goals. Perhaps the use of human capital resources such as innovation and flexibility are critical for female agricultural entrepreneurs to overcome obstacles associated with work family balance. Results from this study indicated that women spend less time on their business and are more likely to have an off-farm job than men. Therefore, with what limited time women have, to overcome work family balance constraints, they must be flexible and innovative to maintain and grow their agricultural business. In addition, innovation may be an essential human capital resource due to resource limitations such as land for all niche agriculture entrepreneurs. Results from this study indicate that most of the participants (and over half of the female participants) own less than 15 acres. In order to grow an agricultural business, increasing production and sales with limited land requires an innovative business plan, and therefore, human capital resources such as innovation.

Most participants had improved their methods of production or service and also developed new methods of marketing in the last three years, aligning with Roberts et al. (2017)'s description of the ever evolving process of utilizing small adaptive strategies as building resilience. On average, a greater percentage of men than women reported changing their product, marketing, or service in the last three years. The difference in responses between gender groups may be linked to their reported obstacles. For example, female participants also reported that access to business information and developing marketing plans were greater obstacles than male participants on

average. Beyond the multiple-choice responses, participants also provided responses to the open-ended questions that reiterate their innovative thinking. For example, creativity, proactive measures, product improvements, expand markets and business strategy changes, all components of innovative thinking and adaptation, were reported by participants as methods of overcoming obstacles. In particular, female participants provided longer responses in which they described specific innovative measures to support their business. These findings support Hamlin, Knight, and Cuthbert's (2016) claims that small agricultural businesses are nimble and can adjust their practices more quickly when they recognize opportunity.

Another valuable form of human capital, participants drew upon ethics and beliefs as guiding principles to overcome obstacles. As the results of this study indicate, participants have strong ethics and belief systems, which are closely tied to their small agricultural business. When asked what values shape their farm business, almost all participants reported ethics. Most of the ethics (e.g., passion, persistence, faith, hard work) participants reported as values that shape their business were repeated as methods used to overcome obstacles. Therefore, because ethics are valuable forms of human capital for business processes, the results of the study suggest that participants have a personal connection to their business. The results of this study support similar findings in other niche agriculture entrepreneurship research. Specifically, niche agriculture is governed by ethical management of resources as defined by the sustainable agriculture paradigm and alternative agriculture ideology (Arguelles, Anguelovski, & Sekulova, 2018; Hambleton, 2008; Jarosz, 2011; Pilgeram & Amos, 2015). Alternative agriculture ideology is a foundation for many niche agriculture entrepreneurs and serves as a belief system which guides the farming practices and responsible use of land. Multiple participants provided responses to the open-ended questions that provide ethical thinking behind their choice for certain agricultural practices (i.e., "heal the land"). Previous research also supports the conclusion that participants feel a personal connection to the work, which can serve as a valuable form of human capital (Jarosz; Pilgeram & Amos) and be drawn upon to overcome obstacles as the participants in this study conveyed through their responses to the open-ended questions.

5.7 Conclusion 3

Subjective goals, specifically producing a quality product, are important measures of achievement for the female agricultural entrepreneurs who participated in this study.

5.7.1 Discussion

As the results of this study demonstrate, producing a quality product was a top priority for agricultural entrepreneurs. In particular, the women who responded rated the positive reputation of their business as a more important goal than profit or other measures of success. In participants' responses to the open-ended questions, over half of total participants reported producing a quality product is a value that shapes their farm business and most participants reported producing a quality product is their overall goal. The importance of producing quality goods is well documented in the niche agricultural entrepreneurship literature, as the alternative agriculture ideology that inspires agricultural entrepreneurs and the demand which enables niche agricultural markets is closely tied to high quality products (Barbera & Dagnes, 2016; Carbieri & Mahoney, 2009; Hamlin et al., 2016; Lucan et al., 2015; Parkins & Craig, 2009). The Hamlin et al. (2016) study elaborated on the demand for high quality goods, such as organic, welfare-friendly, and locally produced, is what creates a viable niche position for agricultural entrepreneurs like those in this study.

The Sustainable Family Business Theory (SFBT) allows for measurement of business achievement through both objective and subjective measures of success (Danes et al., 2008; Amarapurkar & Danes, 2005). As indicated by participant responses, producing a quality product is a top priority and would be considered a subjective measure of success. For a majority of participants, the subjective measure of success takes precedence over monetary measures. For example, in ranking their prioritization of goals, on average participants rated "a positive reputation with customers" higher than "profit," which further illustrates the top priority of most participants as a reputation for producing a quality product.

5.8 Conclusion 4

Participants reported internal constraints as more considerable obstacles to business success than external constraints.

5.8.1 Discussion

On average, participants rated the extent of external constraints lower than the extent of internal constraints. While there were a range of responses from considerable to not at all across all constraints; internal constraints were more frequently reported as greater constraints by all participants, but especially female agricultural entrepreneurs. The severity of internal constraints was evidenced through female participants more frequently reporting nearly all internal constraints as more considerable than male participants. The internal constraints, which men rated as moderate or considerable, were federal and state regulations, and internal family stress. These three constraints are not individual issues, but rather obstacles encountered by all entrepreneurs. Therefore, these results may indicate that the other obstacles female participants reported as more considerable constraints are more significant barriers than the generic obstacles (i.e., federal and state regulations) reported as more considerable by male participants.

The least pressing constraints were access to social networks, gender, racial or other discrimination, access to agricultural/technical information, access to business management information and distance to market—all of which were external constraints. These results were surprising, as most of the literature on obstacles for niche agricultural entrepreneurs and female entrepreneurs pertains to external obstacles. For example, distance to market (Grande, 2011), access to land (DeLind, 2014; Kaufman & Bailkey, 2000) and access to places of information (Pilgeram & Amos, 2015; Trauger et al., 2008; Kiernan et al., 2012; Barbercheck et al., 2009; Berger & Kuckertz, 2016; Grande) are among the most cited barriers to female agricultural entrepreneurs. In this study, participants reported the extent of distance to market, access to agricultural information and access to business management information as the lowest of the external constraints. However, some external constraints were reported as larger obstacles. For example, over a third of female participants reported access to land, credit, financial information,

and physical resources was a moderate or considerable constraint. Therefore, the results of this study support the findings of previous studies that document the barriers for niche agriculture entrepreneurs to access adequate financing (Van Auken & Carraher, 2012; Anna et al., 1999; Grande, 2011) and access to physical resources (Pilgeram and Amos, 2015, Trauger et al, 2009; Hamlin, Knight, and Cuthbert, 2016). Previous research also suggested geographic location poses unique obstacles and there are differences between urban and rural agricultural entrepreneurship constraints. For example, Kaufman and Bailkey (2000) found that access to land was a considerable constraint for urban farmers while access to capital is a greater constraint for those in rural areas. The results of this study deviate from the previous research, as there was no correlation between location and internal or external constraints. While most of the literature focused on external constraints, many of the internal obstacles that participants in this study reported were also mentioned in the agricultural entrepreneurship literature.

In this study, female participants reported their most pressing constraints were work/family balance, finding qualified personnel, and developing marketing strategies--all internal constraints. Over a third of women reported that every internal constraint listed was a moderate or considerable barrier, and nearly two-thirds of women reported that work-family balance was a moderate or considerable obstacle. Given the results of this study and wealth of literature on work-family balance, it is unsurprising that work family balance would pose a considerable constraint for participants. While some participants can use their business time to work alongside their family members, it can also prove to be a considerable constraint for others, particularly women who are married with young children. A fifth of the women in this study had children under the age of six, nearly triple the percentage of men in this study. Agricultural entrepreneurship may be more susceptible to work family balance constraints due to the close proximity of home and farm and time demands during marketing and growing season. Several participants detailed their irregular work schedule that can reach as high as 100 hours a week during peak season. On average, male participants reported spending more time on their business every week. This may perhaps be due to the constraints on women's time that does not permit them to spend more time on their business. The extra household demands associated with having children limits the time women can spend on maintaining and building their business (Loscocco & Robinson, 1991; Mattingly & Bianchi,

2003; Marshall & Flaig, 2014). In addition to childcare, spouses and family dynamics can play a role in work-family balance. In this study, most of participants' spouses were involved in their business. When spouses work together, it can be difficult to separate home and work and lead to a break-down in communication. Copreneur conflict is documented in the literature as being another constraint associated with working with family (Danes & Olson, 2003; Hedberg & Danes, 2012).

Work family balance is well documented in the female entrepreneurship literature (Buttner & Moore, 1997; Sharafizad & Coetzer, 2017), yet rarely appears in the general entrepreneurship studies (Rouse & Kitching, 2006). In light of the claims found in the existing literature, and difference in reporting between male and female participants, it was surprising to find there was no relationship between participant gender and the extent of work family balance constraint. The results of this study suggest that work-family balance is a significant barrier for female agricultural entrepreneurs, but not exclusively, but niche agricultural entrepreneurs at large.

Kiernan et al.'s study of extension's service to female agricultural entrepreneurs concluded with recommendations to expand the programming to better serve the needs of the target audience, more specifically to provide niche marketing strategies. The results of this study support the conclusions of Kiernan et al.'s study, as participants reported that developing marketing strategies is one of their more pressing constraints.

Several participants reported responses to the open-ended questions, such as finances and time, which were the greatest constraints on their business. When asked how participants overcame barriers, human capital resources, such as change in internal business strategies were the most common, perhaps reflecting the nature of the barriers encountered. This may be due to the background of participants, particularly those who are pluriactive farmers or resource-exploiting entrepreneurs who lack previous business experience (Alsos, Ljunggren & Pettersen, 2003).

5.9 Conclusion 5

There was a disparity between the gender of participants and their responses on levels of male and female participation in their business.

5.9.1 Discussion

Most participants self-identified as family businesses and appear to split work evenly between men and women. In this study, a quarter of participants' businesses were copreneurs and a majority of participants' spouses were involved in their business in some capacity. At first glance, farm business operations for both men and women appear to be shared equally. However, after comparing the gender of participant and their responses to male and female participation on farm business operations, it was clear that there was a discrepancy. Men were more likely to say that men were more likely to rate male participation higher on all farm operations. Women were more likely to rate female participation higher on farm operations, specifically accounting and recordkeeping. As such, there was a clear discrepancy between the responses of male and female participants on the division of labor in the business. The correlation between gender of participant and involvement in accounting and recordkeeping can be explained as being a result of a likelihood that the email questionnaire being responded to by the employee who usually manages office work. However, the overall differences between responses are reminiscent of the literature on the invisibility of farm women (Campopiano et al., 2017), lack of clarity in roles in small family businesses (Danes & Olson, 2003), and breakdown in communication leading to unrecognized contributions of other family members. Previous research indicates that the lack of clarity in roles in small family business leads to tension and conflict within the business and therefore decreased achievement (Danes & Olson). Furthermore, Campopiano et al. found women's invisibility in family businesses, through lack of acknowledgement, title and compensation, leads to an unsuccessful business when evaluated on subjective terms. When women step outside the traditional gender roles in their business and take on greater leadership responsibilities, family business structure shifts and conflict ensue. Obstacles related to family business dynamics are well documented in the family farm business literature as the source of internal family stress and internal problems (Amarapurkar & Danes, 2005; Danes & Olson, 2003; Hedberg & Danes, 2012). Miscommunication, and resulting conflict, can be detrimental to the sustainability of businesses and achievement of goals for copreneurs (Hedberg & Danes, 2012). A lack of understanding the responsibilities and effort of other family members can be an innocent mistake, but a pattern of

overlooking contributions can damage the business processes and communication. Overlooking the contributions of women is commonly referred to as the invisibility of women in family businesses in entrepreneurship literature (Campopiano et al., 2017; Danes, 2013; Danes & Olson, 2003; Danes et al., 2005). The invisibility of family members and miscommunication are components of internal family stress. The results of this study also indicate that internal family stress was one of the top three greatest constraints for participants, supporting previous research claims on the importance of family dynamics to business sustainability.

5.10 Conclusion 6

Despite emergence of community as an important theme, access to social networks was a barrier for a fifth of female agricultural entrepreneurs in this study.

5.10.1 Discussion

Results indicated access to social networks was one of the largest discrepancies between men and women's responses regarding constraints. No men in this study reported that access to social networks was a moderate or considerable constraint while nearly a fifth of women reported it as a significant obstacle. However there were divergent answers among the female participants—as just over half of participants reported that access to social networks was “not at all” a constraint. Over half of female participants reported not having membership to a professional organization and those that were members were less involved than the male participants on average. Additionally, the quantitative analyses revealed there was a moderate relationship between female participants and access to social networks as a greater constraint. Based on the results of this study, it is clear that access to social networks is a barrier for some female agricultural entrepreneurs in this study. This finding supports previous research that documents the exclusion of women from agriculture social networks (Trauger et al, 2009; Barbercheck et al., 2009; Pilgeram & Amos, 2015). In Kiernan et al.'s (2012) study, they found women were more likely to know of educational opportunities than women and Barbercheck et al. called for more inclusive agriculture groups in conclusion with her study. Previous studies have identified a possible explanation for obstacles for

female entrepreneurs' access to social networks. For example, Bird and Sapp (2004) found that in urban areas, there is a greater number of people and less overlap between men and women's social circles than in less populous rural areas. The claims of Bird and Sapp cannot be refuted or supported by the results of this study.

Participants reported that social capital, in particular professional social networks, was used to overcome obstacles to their business. Social capital is composed of the relationships of good will between people and social institutions, including peers, experts, customers, and the community. While female participants were less involved in professional organizations, they reported higher levels of involvement in the community than male participants. Many participants reported serving the community as an overall goal and guiding value for their business. The emergence of community as an important theme in this study is not surprising, as niche agriculture businesses are known for their socially embedded nature (Bellows, Alcaraz & Hallman, 2010; Hinrichs, 2000; Lyson, Gillespie & Hilchey, 1995). Beyond business transactions, niche agricultural businesses have a social relationship with their customers. However, participant responses indicated their view of community spans beyond serving their customers, to supporting other producers and aiding in larger social issues such as food access and affordability. Some participant responses indicate the needs of the community are also the inspiration for business creation. Their responses align with the findings of Hamlin, Knight and Cuthbert (2016), who found that the niche market is created by consumer demands for transparency with their food source. Community is also a component of the social component of the sustainable agriculture paradigm (Fuad-Luke, 2017; Marsden & Smith, 2005). The larger purpose that some participants reported (i.e., providing access to healthy food to communities in food deserts) is also aligned with the social component of sustainable agriculture ideology includes collaborating to improve community food security and building alternative food networks for improved access to nutrition (Allen et al., 2003; Barbera & Dagnes, 2016; Charatsari et al., 2019; Little, Ilbery, & Watts, 2009; Parkins & Craig, 2009; Wright & Annes, 2019).

While participants indicated caring for their community, it was surprising to find that only two (both women) had a positive opinion of their community overall. Furthermore, when asked about their attitude towards community support of their business, results of female participants

were divergent. Although the majority of women were satisfied, women more frequently reported they were unsatisfied with the community's support of their business than the men in this study.

5.11 Implications for Theory and Research

The Sustainable Family Business Theory (SFBT) was selected as the theoretical perspective utilized to inform the variables and overall design of this study and was central to interpreting the results of this study. The SFBT was used to understand the interactions between business constraints, resources, structure, processes (how entrepreneurs overcome obstacles), and business achievement (how the entrepreneurs measure their success). Results from this study suggest the importance of family dynamics to business sustainability and the necessity of subjective measures of achievement, both supported by the central tenants of the SFBT (Amarapurkar & Danes, 2005; Danes et al., 2007; Danes et al., 2008).

According to the Sustainable Family Business Theory (SFBT), family business sustainability is a function of both business success and family functionality. The results of this study support the SFBT's claim on the importance of healthy family dynamics, as two of the top constraints were work-family balance and internal family stress. The SFBT states that while resources are exchanged across family and business boundaries, when the boundaries between business and family become too diffuse, the system can be destroyed. Nearly half of participants in this study reported spending over 40 hours a week on their business and internal family stress and work-family balance as major constraints (particularly for female participants). One female participant in particular explained that it was impossible to estimate how much time spent on the business, because even when they are at their full time job or off the clock they are still working on their small business. The constraint of work-family balance often occurs when resources are flowing from family to business without clear boundaries and internal family stress often involves the flow of resources from business to family. Both constraints, work-family balance and internal family stress, can be overcome through the reconstruction of resources and creating interpersonal processes according to the SFBT. Together, the family, business and community, can reach symbiosis wherein all receive positive benefits. The results of the study also indicate the

importance of community to participants, which is reflective of the community context in the SFBT.

Another one of the major premises of the Sustainable Family Business Theory (SFBT) is that achievements can be both objective and subjective. The participants' responses to the open-ended questions demonstrate the necessity of subjective measurement of business achievement and support the central tenants of the SFBT. In particular, female participants reported subjective measures, such as reputation of their business and quality products, as greater priorities than objective measures such as profit. Participant responses indicate that they have a personal connection to their business, which is guided by their ethics and belief system. When asked their overall goal for their business, participants' responses pertained to subjective measurements. For example, most participants reported their overall goals as personal satisfaction, quality of product, care of environment, animal welfare, and customer service. Very few participants reported profit as a priority for their business. The SFBT supports subjective measurements of success, which was a more appropriate evaluation of achievement for the population of this study.

5.12 Implications for Practice

There are several practical implications of this study. The results of this study identified a number of obstacles that can be addressed through Extension services, agriculture stakeholders, and policy makers. First, Extension educators can provide targeted programming for niche agricultural entrepreneurs. Second, non-profits, corporations, and institutions can increase the availability and visibility of grant opportunities for small agricultural businesses. Finally, policy makers can create legislation addressing the considerable constraints identified by participants. The three practical implications of this study are detailed further in the following paragraphs.

The results from this study can inform Extension educators on what topics niche agricultural entrepreneurs want additional assistance in. For example, participants reported developing marketing strategies as the most pressing constraint, behind work-family balance. After reviewing the results of this study, Extension educators will have a better understanding of the present situation of niche agricultural entrepreneurs and be better equipped to serve their needs.

Grant programs provided through Purdue Extension, including Annie's Project, Purdue Institute for Family Business, and Purdue Women in Agriculture are working towards addressing the constraints identified through this study. Therefore, a practical application for this study is to expand Extension programming to reach niche agricultural entrepreneurs and meet their needs for business marketing training.

Stakeholders in the Indiana agriculture industry can also aid in funding opportunities for niche agricultural entrepreneurs. The results of this study indicated that access to funding was an obstacle for some participants. One participant in particular explained their frustration with financing and argued for more grant opportunities for small agricultural businesses. Therefore, one practical application for this study is increased grant opportunities for small farmers. Agriculture stakeholders such as non-profits, agriculture corporations, and institutions should make sure the agricultural grants they offer are practical and available for small agricultural businesses. Furthermore, stakeholders and Extension should aid visibility of grant opportunities for small agricultural entrepreneurs and aid in connecting potential applicants to these opportunities.

Finally, policymakers can propose legislation to alleviate the constraints participants reported. The results of this study indicate there are considerable external issues that are affecting small businesses. State and federal government can also work toward alleviating other constraints raised by participants in this study, such as access to health insurance, expand internet access, and providing emergency assistance for small farmers. Organizations and related grants, such as Wabash Heartland Innovation Network and USDA ReConnect grant are available to improve broadband access to rural regions of Indiana. Also, federal policy makers are prioritizing the healthcare of farmers through policies such as the Seeding Rural Resilience Act. While these are timely efforts to support rural farmers, small farmers and their unique needs are often overlooked. For example, while disaster relief was provided for large commodity farms after the heavy rain in 2019, one participant expressed their frustration with how their vegetable farm did not receive aid. Since collecting data for this study, small agricultural businesses have been affected by the stay at home orders related to the COVID-19 pandemic. Legislators have responded through the Coronavirus Aid, Relief, and Economic Security (CARES) Act. State and federal government should continue to consider the unique obstacles encountered by agricultural entrepreneurs and

respect their contribution to the Indiana economy and local food systems when enacting policies pertaining to the agriculture industry.

5.13 Recommendations for Future Research

This study is the first to focus on niche agricultural entrepreneurship in Indiana. Furthermore, there have been no other studies found that explore gender or use the Sustainable Family Business Theory to explore agricultural entrepreneurship in Indiana. However, there exists additional opportunities for further research to be pursued on the topic of obstacles encountered by niche agriculture entrepreneurs. For example, the following recommendations for future research are suggested.

1. Constraints for niche agricultural entrepreneur may differ based on their race and ethnicity. For example, discrimination and access to professional social networks may be greater obstacles for minorities in agriculture. Future studies should explore the obstacles encountered by other historically underrepresented populations, such as African American and Hispanic entrepreneurs in niche agricultural markets in Indiana.
2. While this study did not find any significant differences between the constraints of entrepreneurs from rural and urban areas, geographic location can pose unique and specific constraints. For example, zoning regulations and home owners association may pose a considerable constraint for entrepreneurs in suburban Indiana, but not in other regions. Future studies should also study the obstacles encountered by agriculture entrepreneurs in more specific regions in Indiana (i.e., Indianapolis-metro, southeastern Indiana).
3. The results from the open-ended questions in this study provided a more vivid description of the participant experiences than the quantitative data analysis alone. Participants often tried to explain the intricacies and nuances for what were intended to be numerical answers. Due to the more descriptive nature of exploratory studies, further studies should be qualitative through interviews or focus groups to explore the experiences of agricultural entrepreneurs more closely.

4. While this study provides an overview of the diversity in niche agriculture in Indiana, further research in this field should select a more specific population if more specific conclusions are to be made. Future studies should analyze a sector of the niche agricultural market and understand the obstacles associated with specific agricultural products (i.e., goat milk, organic vegetables).
5. Constraints may also vary depending on the farming practices used by the agricultural entrepreneur. For example, access to physical resources such as organic fertilizer may be a larger constraint for an organic vegetable operation than for other operations. Future studies should analyze the experiences of niche agriculture entrepreneurs based on their specific practices (i.e., organic, regenerative, etc.).
6. Many participants used terms such as sustainability in reference to their guiding principles or practices, yet there was no way to measure their definition or understanding of sustainability. Future studies should use an instrument such as the Environmentally Sustainability Index (Sands & Podmore, 2000) to understand the participants' definition of sustainability and measure of the level of sustainability of their own practice.
7. Work-family balance was a considerable constraint for participants in this study, yet the format of the survey instrument did not lend itself for participants to explain their response further. Work-family balance can refer to childcare concerns, family values, care of elderly or disabled relatives and many other situations. As a multi-faceted issue, alleviating constraints on work-family balance will require solutions tailored to their experience. Future research should explore the obstacles associated with work-family balance and to what extent it affects business success.
8. Results from this study indicated a discrepancy between men and women's responses to gender and participation on the farm. To more accurately measure the division of labor in niche agricultural businesses, future studies should make an effort to survey both men and women from the same small business to obtain a more well-rounded view of the gender roles and family dynamics in niche agricultural copreneurship.
9. Community service (i.e., alleviating food insecurity, providing healthy food options) was a source of inspiration for some of the participants in this study. However, participants

were not asked to assess their impact of the small agricultural businesses in their community. Future research should seek to measure the reach of agriculture entrepreneurs who seek to alleviate food insecurity and the impact of their efforts.

APPENDIX A. IRB APPROVAL



HUMAN RESEARCH PROTECTION PROGRAM
INSTITUTIONAL REVIEW BOARDS

To: ESTERS, LEVON T
From: Institutional Review Board
Date: 07/16/2019
Committee Action:(2) Determined Exempt, Category (2)
IRB Action Date: 07 / 16 / 2019
IRB Protocol #: 1906022315
Study Title: Obstacles Encountered and Overcome by Indiana Female Entrepreneurs in Niche Agricultural Markets

The Institutional Review Board (IRB) has reviewed the above-referenced study application and has determined that it meets the criteria for exemption under 45 CFR 46.101(b).

Before making changes to the study procedures, please submit an Amendment to ensure that the regulatory status of the study has not changed. Changes in key research personnel should also be submitted to the IRB through an amendment.

General

- To recruit from Purdue University classrooms, the instructor and all others associated with conduct of the course (e.g., teaching assistants) must not be present during announcement of the research opportunity or any recruitment activity. This may be accomplished by announcing, in advance, that class will either start later than usual or end earlier than usual so this activity may occur. It should be emphasized that attendance at the announcement and recruitment are voluntary and the student's attendance and enrollment decision will not be shared with those administering the course.
- If students earn extra credit towards their course grade through participation in a research project conducted by someone other than the course instructor(s), such as in the example above, the student's participation should only be shared with the course instructor(s) at the end of the semester. Additionally, instructors who allow extra credit to be earned through participation in research must also provide an opportunity for students to earn comparable extra credit through a non-research activity requiring an amount of time and effort comparable to the research option.
- When conducting human subjects research at a non-Purdue college/university, investigators are urged to contact that institution's IRB to determine requirements for conducting research at that institution.
- When human subjects research will be conducted in schools or places of business, investigators must obtain written permission from an appropriate authority within the organization. If the written permission was not submitted with the study application at the time of IRB review (e.g., the school would not issue the letter without proof of IRB approval, etc.), the investigator must submit the written permission to the IRB prior to engaging in the research activities (e.g., recruitment, study procedures, etc.). Submit this documentation as an FYI through Coeus. This is an institutional requirement.

Categories 2 and 3

- Surveys and questionnaires should indicate
 - only participants 18 years of age and over are eligible to participate in the research; and
 - that participation is voluntary; and
 - that any questions may be skipped; and
 - include the investigator's name and contact information.
- Investigators should explain to participants the amount of time required to participate. Additionally, they should explain to participants how confidentiality will be maintained or if it will not be maintained.
- When conducting focus group research, investigators cannot guarantee that all participants in the focus group will maintain the confidentiality of other group participants. The investigator should make participants aware of this potential for breach of confidentiality.

Category 6

- Surveys and data collection instruments should note that participation is voluntary.
- Surveys and data collection instruments should note that participants may skip any questions.
- When taste testing foods which are highly allergenic (e.g., peanuts, milk, etc.) investigators should disclose the possibility of a reaction to potential subjects.

You are required to retain a copy of this letter for your records. We appreciate your commitment towards ensuring the ethical conduct of human subjects research and wish you luck with your study.

APPENDIX B. FINAL INSTRUMENT

RESEARCH PARTICIPANT INFORMATION SHEET

Obstacles Encountered and Overcome by Indiana Female Entrepreneurs in Niche Agricultural Markets

Principal Investigator: Levon T. Esters, Ph.D., Associate Professor

Co-Principal Investigator: Elizabeth Alexander, Graduate Student

Agricultural Sciences Education and Communication

Purdue University

Key Information

Please take time to review this information carefully. This is a research study. Your participation in this study is voluntary which means that you may choose not to participate at any time without penalty or loss of benefits to which you are otherwise entitled. You may ask questions to the researchers about the study whenever you would like. To participate in this study, you must: be a small business owner that sells agricultural products and participate in direct marketing to consumers in Indiana. The purpose of this study is to explore the obstacles that agricultural entrepreneurs encounter and overcome. The duration of the study will take place over a 3 month period.

What is the purpose of this study?

The purpose of this study is to explore and describe existing obstacles encountered by entrepreneurs in niche agricultural markets and their methods of building resilience in their business. You are being asked to participate in this study because you are an agricultural entrepreneur in Indiana. We would like to enroll 2000 people in this study.

What will I do if I choose to be in this study?

If you agree to participate in this study, you will be asked to complete a five section online survey. You will be asked to describe your business structure, processes, resources, and achievements. The survey will take approximately 15 minutes to complete.

How long will I be in the study?

The online survey will take approximately 15 minutes to complete.

What are the possible risks or discomforts?

Risks are minimal and no greater than everyday life. Breach of confidentiality is always a risk with data, but we will take precautions to minimize risk as described in the confidentiality section.

Are there any potential benefits?

There are no direct benefits to the participants in this research study. However, you may receive indirect benefits from participation in this survey. Additionally, your insight may inform research focused on gender equity within the agriculture industry.

Are there costs to me for participation?

There are no anticipated costs to participate in this research.

This section provides more information about the study.

Will information about me and my participation be kept confidential?

Research records must be maintained for a minimum of three years following the closure of the study. However, identifiers such as names will be destroyed immediately. Any digital data collected will be stored in a secure, password protected file on a password protected computer at Purdue University. Any hard copies will be stored in a locked cabinet in a secure office. The principle investigator and co-principle investigators will have access to the data, which will be password protected. The project's research records may also be reviewed by departments at Purdue University responsible for regulatory and research oversight.

What are my rights if I take part in this study?

You do not have to participate in this research project. If you agree to participate, you may withdraw your participation at any time without penalty.

Who can I contact if I have questions about the study?

If you have questions, comments or concerns about this research project, you can talk to one of the researchers. Please contact Dr. Levon Esters at (765) 494-8432 or via email at lesters@purdue.edu.

To report anonymously via Purdue's Hotline see www.purdue.edu/hotline

If you have questions about your rights while taking part in the study or have concerns about the treatment of research participants, please call the Human Research Protection Program at (765) 494-5942, email (irb@purdue.edu) or write to:

Human Research Protection Program - Purdue University
Ernest C. Young Hall, Room 1032
155 S. Grant St.
West Lafayette, IN 47907-2114

I have read and understand this information sheet.

- I consent
- I do not consent

QUESTIONNAIRE

Obstacles Encountered and Overcome by Indiana Female Entrepreneurs in Niche Agricultural Markets

Principal Investigator: Levon T. Esters, Ph.D., Associate Professor

Co-Principal Investigator: Elizabeth Alexander, Graduate Student

Agricultural Sciences Education and Communication

Purdue University

All responses will be kept confidential, and your identity will remain private. Your responses to these questions are optional but will be extremely helpful in our research.

A. Business Structure

In this section, you will be asked about the roles, rules, and ownership structure of your business.

1. What agricultural products do you grow and/or sell? Check all that apply.

Row or Horticultural Crops		Livestock	
<input type="checkbox"/>	Vegetables	<input type="checkbox"/>	Chickens (layers)
<input type="checkbox"/>	Small fruits and brambles	<input type="checkbox"/>	Chickens (broilers)
<input type="checkbox"/>	Pasture	<input type="checkbox"/>	Other poultry
<input type="checkbox"/>	Horticulture plants/nursery/flowers	<input type="checkbox"/>	Sheep, lambs
<input type="checkbox"/>	Alfalfa/hay	<input type="checkbox"/>	Goats, kids
<input type="checkbox"/>	Tree fruits/nuts	<input type="checkbox"/>	Hogs, pigs
<input type="checkbox"/>	Corn/soybeans	<input type="checkbox"/>	Dairy cattle
<input type="checkbox"/>	Small grains	<input type="checkbox"/>	Beef cattle
<input type="checkbox"/>	Forest products	<input type="checkbox"/>	Horses
<input type="checkbox"/>	Value-added products	<input type="checkbox"/>	Aquaculture
<input type="checkbox"/>	Herbs, spices	<input type="checkbox"/>	Beekeeping
<input type="checkbox"/>	Other crops: _____-	<input type="checkbox"/>	Other livestock: _____
<input type="checkbox"/>	N/A	<input type="checkbox"/>	Agritourism

2. How would you describe your farming practices? Check all that apply.

- Sustainable
- Organic
- Holistic management
- Integrated pest management
- Permaculture
- Conventional
- Biodynamic
- Other: _____

3. Where do you sell your products? Check all that apply.

- Farmers' Market
- CSA (Community Supported Agriculture)
- Retail markets (supermarkets, food cooperatives, grocery stores, etc.)
- Commodity market through a cooperative
- Farm stand or on-site farm store
- Restaurant
- Food hub or value added producer
- Forward contracting to sell directly to an individual processor
- Distributor
- Farm website
- Institution (schools, universities, hospitals, food banks, prisons, etc.)
- Production contracts or custom feeding for livestock you do not own
- Other: _____

4. How many farmers' markets do you serve? _____

5. In which county is your farm located? County_____

6. What is the structure of your farm business?

- Sole proprietorship
- Limited Liability Company (LLC)
- Sub-Chapter (S) Corporation
- Corporation
- Partnership
- Cooperative
- Not applicable/I don't know

7. In what year did your business begin its current operations? _____

8. Is your farm business full-time or part-time? (Check one)

- Full Time
- Part Time
- Not Applicable

9. Who is the primary decision maker of the business?

- Self
- Partner
- Shared equally

10. What percentage of your work related to farm business is spent on recordkeeping/paperwork? _____

11. What generation does the current business owner represent?

- First generation
- Second generation
- Third generation
- Fourth generation (or more)
- Not a family business

12. Does at least one other member of your family have an ownership interest in the business or is likely to have an ownership interest in the business in the future?

- Yes
- No
- I do not know/I am not sure

13. Is your spouse involved? At what level?

- Part-time
- Full-time
- Has related side business
- Partner is not involved

14. How many people (family and non-family employees) including yourself work on the farm business?

- a. Number of family members _____
- b. Number of non-family employees _____

15. Do you have both men and women working in your farm business?

- Yes
- No

16. In your current farm business operations, how much are men actively participating in:

Accounting or record keeping	<input type="checkbox"/> Not at all	<input type="checkbox"/> A little	<input type="checkbox"/> About half	<input type="checkbox"/> Most	<input type="checkbox"/> All
Physical labor	<input type="checkbox"/> Not at all	<input type="checkbox"/> A little	<input type="checkbox"/> About half	<input type="checkbox"/> Most	<input type="checkbox"/> All
Hiring decisions	<input type="checkbox"/> Not at all	<input type="checkbox"/> A little	<input type="checkbox"/> About half	<input type="checkbox"/> Most	<input type="checkbox"/> All
Management decisions	<input type="checkbox"/> Not at all	<input type="checkbox"/> A little	<input type="checkbox"/> About half	<input type="checkbox"/> Most	<input type="checkbox"/> All

17. In your current farm business operations, how much are women actively participating in:

Accounting or record keeping	<input type="checkbox"/> Not at all	<input type="checkbox"/> A little	<input type="checkbox"/> About half	<input type="checkbox"/> Most	<input type="checkbox"/> All
Physical labor	<input type="checkbox"/> Not at all	<input type="checkbox"/> A little	<input type="checkbox"/> About half	<input type="checkbox"/> Most	<input type="checkbox"/> All
Hiring decisions	<input type="checkbox"/> Not at all	<input type="checkbox"/> A little	<input type="checkbox"/> About half	<input type="checkbox"/> Most	<input type="checkbox"/> All
Management decisions	<input type="checkbox"/> Not at all	<input type="checkbox"/> A little	<input type="checkbox"/> About half	<input type="checkbox"/> Most	<input type="checkbox"/> All

B. Business Constraints

In this section, you will be asked about factors which may limit the resources, processes, and achievements of your business.

18. During the past 3 years, to what extent have these external problems affected the success of your agricultural business?

EXTENT OF PROBLEM (<i>check one</i>)				
Distance to market	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Access to markets	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Access to credit	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Access to land	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Access to physical resources	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Access to agricultural/technical information	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Access to financial information	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Access to business management information	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Access to social networks	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Gender, racial or other discrimination	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Other (<i>please specify</i>):	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable

19. During the past 3 years, to what extent have these internal problems affected the success of your agricultural business?

EXTENT OF PROBLEM (<i>check one</i>)				
Work/family balance	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Assessing customer needs	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Pricing products or services	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Finding qualified personnel	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Developing marketing strategies	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
State and local regulations and laws	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Federal regulations and laws	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Internal family stress <i>(Health issues, marriage, marital reconciliation, retirement, etc.)</i>	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Other (<i>please specify</i>):	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable

20. What has been your experience with financing during the past 3 years?

- Did not seek credit
- Obtained financing through a bank
- Obtained financing through a friend or family member
- Obtained financing through a grant or other program
- Denied credit

C. Business Resources

In this section, you will be asked about the objects, personal characteristics, or other factors that support the achievements of your business.

Human Capital

Human capital is composed of the skills, abilities, attitudes and work ethic of an individual.

21. What is your highest level of education?

- Grade School
- Some High School
- High School Diploma
- Some college/vocational technical work
- 4-year College Degree
- Some post graduate work
- Post Graduate Degree

22. How many hours a week do you work on farm business? _____

23. Do you work an off-farm job?

- Yes, full time
- Yes, part time
- No

24. Do you have prior agriculture-related work experience?

- Yes
- No

a. Number of years: ____

25. Do you have prior business ownership experience?

- Yes
- No

Social Capital

Social capital is the relationships between people and their social network that is built upon good will and social norms.

26. Do you have an overall or holistic goal or mission for your farm business?

Yes

No

a. **If so, write it here:**_____

27. Have you held a membership (registered or dues-paying) in a professional organization within the last 3 years?

Yes

No

28. Indicate the frequency with which you participate in various activities of these organizations (e.g., visiting websites, reading publications, communicating with staff and other members, attending educational events and serving in leadership positions.)

Not applicable

Never

Sometimes

Frequently

Always

29. In the past 3 years, how often have you:

Served as leader in civic organization or other local organization.	<input type="checkbox"/> Never	<input type="checkbox"/> Seldom	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Often	<input type="checkbox"/> Very often
Provided assistance in community development/planning.	<input type="checkbox"/> Never	<input type="checkbox"/> Seldom	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Often	<input type="checkbox"/> Very often
Donated to local schools or youth programs.	<input type="checkbox"/> Never	<input type="checkbox"/> Seldom	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Often	<input type="checkbox"/> Very often
Involved in one or more community activities.	<input type="checkbox"/> Never	<input type="checkbox"/> Seldom	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Often	<input type="checkbox"/> Very often

Financial Capital

Financial Capital is the entrepreneur's pool of money and funds acquired.

The following question will only be used as a measure of farm size.

30. Please identify the size of your operation by selecting the category that best describes your annual gross sales. *(Check one and estimate to the end of the year, if necessary.)*

- Less than \$5,000
- \$5,000-\$9,999
- \$10,000-\$24,999
- \$25,000-\$49,999
- \$50,000-\$99,999
- \$100,000-\$249,999
- More than \$250,000

31. Has your business gross revenue increased in the last 3 years?

- Yes
- No

32. How many acres of land do you currently own and/or rent?

- a. Own_____
- b. Rent/lease_____

D. Business Processes

In this section, you will be asked about the routine or standard operating procedure of your business.

33. Do you ever address business cash flow problems by using household income to meet firm needs?

- Yes
- No

34. How would you describe your general attitude toward the local community?

- Good
- Neutral
- Poor

35. How satisfied are you with the local community's support of your business?

- Satisfied
- Neutral
- Dissatisfied

36. During the past 3 years, has your business:

a) Developed any new products or services

- Yes
- No

b) Improved methods of production or service

- Yes
- No

c) Developed new methods of marketing

- Yes
- No

37. Please provide comments regarding your thoughts and experience on how you have overcome barriers to your farm business success.

E. Business Achievements

In this section, you will be asked about the success of your business.

38. Please rank the following goals from most important (1) to least important (5) to your farm business.

- Profit
- A positive reputation with customers
- Business survival
- Keeping the business in the family
- Opportunity to work with family members

39. Using your responses from Question 39, please rate your achievement of the following on a scale from (1) very successful to (5) very unsuccessful.

Your most important goal	<input type="checkbox"/> Very successful	<input type="checkbox"/> Somewhat successful	<input type="checkbox"/> Neutral	<input type="checkbox"/> Somewhat unsuccessful	<input type="checkbox"/> Very unsuccessful
Your second most important goal	<input type="checkbox"/> Very successful	<input type="checkbox"/> Somewhat successful	<input type="checkbox"/> Neutral	<input type="checkbox"/> Somewhat unsuccessful	<input type="checkbox"/> Very unsuccessful
The overall success of the farm business	<input type="checkbox"/> Very successful	<input type="checkbox"/> Somewhat successful	<input type="checkbox"/> Neutral	<input type="checkbox"/> Somewhat unsuccessful	<input type="checkbox"/> Very unsuccessful

40. Is your farm meeting or on target to meet the financial goals for your business?

- Yes
- No

F. Demographics

41. What is your current gender identity? (Check all that apply)

- Male
- Female
- Trans male/Trans man
- Trans female/Trans woman
- Genderqueer/Gender non-conforming
- Different identity (please state): _____

42. What is your ethnicity?

- White
- Black, African American
- American Indian, Alaska Native
- Asian, Pacific Islander
- Multiracial
- Other _____

43. Are you Hispanic/Latino?

- Yes
- No

44. What is your marital status?

- Married
- Single
- Separated
- Divorced
- Widowed

45. Currently, how many children in your household are between the ages of 6 and 18 years old? _____

**46. Currently, how many children do you have under 6 years old? _____
What is your age?**

- 18-24
- 25-44
- 45-64
- 65 and older

Thank you for taking the time to complete this survey!

APPENDIX C. CODEBOOK

All responses will be kept confidential, and your identity will remain private. Your responses to these questions are optional but will be extremely helpful in our research.

Business Structure

In this section, you will be asked about the roles, rules, and ownership structure of your business.

- 1. What agricultural products do you grow and/or sell? Check all that apply. 1=yes, 2=no**

Row or Horticultural Crops		Livestock	
<input type="checkbox"/>	Vegetables S1a	<input type="checkbox"/>	Chickens (layers) S1n
<input type="checkbox"/>	Small fruits and brambles S1b	<input type="checkbox"/>	Chickens (broilers) S1o
<input type="checkbox"/>	Pasture S1c	<input type="checkbox"/>	Other poultry S1p
<input type="checkbox"/>	Horticulture plants/nursery/flowers S1d	<input type="checkbox"/>	Sheep, lambs S1q
<input type="checkbox"/>	Alfalfa/hay S1e	<input type="checkbox"/>	Goats, kids S1r
<input type="checkbox"/>	Tree fruits/nuts S1f	<input type="checkbox"/>	Hogs, pigs S1s
<input type="checkbox"/>	Corn/soybeans S1g	<input type="checkbox"/>	Dairy cattle S1t
<input type="checkbox"/>	Small grains S1h	<input type="checkbox"/>	Beef cattle S1u
<input type="checkbox"/>	Forest products S1i	<input type="checkbox"/>	Horses S1v
<input type="checkbox"/>	Value-added products S1j	<input type="checkbox"/>	Aquaculture S1w
<input type="checkbox"/>	Herbs, spices S1k	<input type="checkbox"/>	Beekeeping S1x
<input type="checkbox"/>	Other crops: _____ - S1l	<input type="checkbox"/>	Other livestock: _____ S1y
<input type="checkbox"/>	N/A S1m	<input type="checkbox"/>	Agritourism S1z

- 2. How would you describe your farming practices? Check all that apply. 1=yes, 2=no**

- Sustainable **S2a**
- Organic **S2b**
- Holistic management **S2c**
- Integrated pest management **S2d**

- Permaculture **S2e**
- Conventional **S2f**
- Biodynamic **S2g**
- Other: _____ **S2h**

3. Where do you sell your products? Check all that apply.

1=yes, 2=no

- Farmers' Market **S3a**
- CSA (Community Supported Agriculture) **S3b**
- Retail markets (supermarkets, food coops, grocery stores, etc.) **S3c**
- Commodity market through a cooperative **S3d**
- Farm stand or on-site farm store **S3e**
- Restaurant **S3f**
- Food hub or value added producer **S3g**
- Forward contracting to sell directly to an individual processor **S3h**
- Distributor **S3i**
- Farm website **S3j**
- Institution (schools, universities, hospitals, food banks, prisons, etc.) **S3k**
- Production contracts or custom feeding for livestock you do not own **S3l**
- Other: _____ **S3m**

4. How many farmers' markets do you serve? _____ **S4**

5. In which county is your farm located? County _____ **S5**

6. What is the structure of your farm business? **S6**

- Sole proprietorship **1**
- Limited Liability Company (LLC) **2**
- Sub-Chapter (S) Corporation **3**
- Corporation **4**
- Partnership **5**
- Cooperative **6**
- Not applicable/I don't know **7**

7. In what year did your business begin its current operations? _____ **S7**

8. **Is your farm business full-time or part-time?** (Check one) **S8**
- Full Time **1**
 - Part Time **2**
 - Not Applicable **3**
9. **Who is the primary decision maker of the business?** **S9**
- Self **1**
 - Partner **2**
 - Shared equally **3**
10. **What percentage of your work related to farm business is spent on recordkeeping/paperwork?** _____ **S10**
11. **What generation does the current business owner represent?** **S11**
- First generation **1**
 - Second generation **2**
 - Third generation **3**
 - Fourth generation (or more) **4**
 - Not a family business **5**
12. **Does at least one other member of your family have an ownership interest in the business or is likely to have an ownership interest in the business in the future?** **S12**
- Yes **1**
 - No **2**
 - I do not know/I am not sure **3**
13. **Is your spouse involved? At what level?** **S13**
- Part-time **1**
 - Full-time **2**
 - Has related side business **3**
 - Partner is not involved **4**
14. **How many people (family and non-family employees) including yourself work on the farm business?**
- a. Number of family members _____ **S14a**
 - b. Number of non-family employees _____ **S14b**
15. **Do you have both men and women working in your farm business?** **S15**
- Yes **1**
 - No **2**

16. In your current farm business operations, how much are men actively participating in:

Not at all=1; Minimal = 2; Moderate = 3; Considerable =4

Accounting or record keeping S16a	<input type="checkbox"/> Not at all	<input type="checkbox"/> A little	<input type="checkbox"/> About half	<input type="checkbox"/> Most	<input type="checkbox"/> All
Physical labor S16b	<input type="checkbox"/> Not at all	<input type="checkbox"/> A little	<input type="checkbox"/> About half	<input type="checkbox"/> Most	<input type="checkbox"/> All
Hiring decisions S16c	<input type="checkbox"/> Not at all	<input type="checkbox"/> A little	<input type="checkbox"/> About half	<input type="checkbox"/> Most	<input type="checkbox"/> All
Management decisions S16d	<input type="checkbox"/> Not at all	<input type="checkbox"/> A little	<input type="checkbox"/> About half	<input type="checkbox"/> Most	<input type="checkbox"/> All

17. In your current farm business operations, how much are women actively participating in:

Not at all=1; Minimal = 2; Moderate = 3; Considerable =4

Accounting or record keeping S17a	<input type="checkbox"/> Not at all	<input type="checkbox"/> A little	<input type="checkbox"/> About half	<input type="checkbox"/> Most	<input type="checkbox"/> All
Physical labor S17b	<input type="checkbox"/> Not at all	<input type="checkbox"/> A little	<input type="checkbox"/> About half	<input type="checkbox"/> Most	<input type="checkbox"/> All
Hiring decisions S17c	<input type="checkbox"/> Not at all	<input type="checkbox"/> A little	<input type="checkbox"/> About half	<input type="checkbox"/> Most	<input type="checkbox"/> All
Management decisions S18d	<input type="checkbox"/> Not at all	<input type="checkbox"/> A little	<input type="checkbox"/> About half	<input type="checkbox"/> Most	<input type="checkbox"/> All

Business Constraints

In this section, you will be asked about factors which may limit the resources, processes, and achievements of your business.

18. During the past 3 years, to what extent have these external problems affected the success of your agricultural business?

Not at all=1; Minimal = 2; Moderate = 3; Considerable =4

EXTENT OF PROBLEM (<i>check one</i>)				
Distance to market C18a	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Access to markets C18b	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Access to credit C18c	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Access to land C18d	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Access to physical resources C18e	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Access to agricultural/technical information C18f	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Access to financial information C18g	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Access to business management information C18h	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Access to social networks C18i	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Gender, racial or other discrimination C18j	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Other (<i>please specify</i>): C18k	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable

19. During the past 3 years, to what extent have these internal problems affected the success of your agricultural business?

Not at all=1; Minimal = 2; Moderate = 3; Considerable =4

EXTENT OF PROBLEM (<i>check one</i>)				
Work/family balance C19a	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Assessing customer needs C19b	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Pricing products or services C19c	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Finding qualified personnel C19d	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Developing marketing strategies C19e	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
State and local regulations and laws C19f	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Federal regulations and laws C19g	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Internal family stress <i>(Health issues, marriage, marital reconciliation, retirement, etc.) C19h</i>	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable
Other (please specify): C19i	<input type="checkbox"/> Not at all	<input type="checkbox"/> Minimal	<input type="checkbox"/> Moderate	<input type="checkbox"/> Considerable

20. What has been your experience with financing during the past 3 years? C20

- Did not seek credit **1**
- Obtained financing through a bank **2**
- Obtained financing through a friend or family member **3**
- Obtained financing through a grant or other program **4**
- Denied credit **5**

Business Resources

In this section, you will be asked about the objects, personal characteristics, or other factors that support the achievements of your business.

Human Capital

Human capital is composed of the skills, abilities, attitudes and work ethic of an individual.

21. What is your highest level of education? RH21

- Grade School **1**
- Some High School **2**
- High School Diploma **3**
- Some college/vocational technical work **4**
- 4-year College Degree **5**
- Some post graduate work **6**
- Post Graduate Degree **7**

22. How many hours a week do you work on farm business? _____ RH22

23. Do you work an off-farm job? RH23

- Yes, full time **1**
- Yes, part time **2**
- No **3**

24. Do you have prior agriculture-related work experience? RH24

- Yes **1**
- No **2**
- a. Number of years: ____ **RH24a**

25. Do you have prior business ownership experience? RH25

- Yes **1**
- No **2**

Social Capital

Social capital is the relationships between people and their social network that is built upon good will and social norms.

26. Do you have an overall or holistic goal or mission for your farm business? RS26

- Yes **1**
- No **2**
- a. If so, write it here: _____ **RS26a**

27. Have you held a membership (registered or dues-paying) in a professional organization within the last 3 years? RS27

- Yes **1**
- No **2**

28. Indicate the frequency with which you participate in various activities of these organizations (e.g., visiting websites, reading publications, communicating with staff and other members, attending educational events and serving in leadership positions.) RS28

- Not applicable **1**
- Never **2**
- Sometimes **3**
- Frequently **4**
- Always **5**

**29. In the past 3 years, how often have you:
Never =1; Seldom =2; Sometimes =3; Often =4; Very often =5**

Served as leader in civic organization or other local organization. RS29a	<input type="checkbox"/> Never	<input type="checkbox"/> Seldom	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Often	<input type="checkbox"/> Very often
Provided assistance in community development/planning. RS29b	<input type="checkbox"/> Never	<input type="checkbox"/> Seldom	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Often	<input type="checkbox"/> Very often
Donated to local schools or youth programs. RS29c	<input type="checkbox"/> Never	<input type="checkbox"/> Seldom	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Often	<input type="checkbox"/> Very often
Involved in one or more community activities. RS29d	<input type="checkbox"/> Never	<input type="checkbox"/> Seldom	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Often	<input type="checkbox"/> Very often

Financial Capital

Financial Capital is the entrepreneur's pool of money and funds acquired.

The following question will only be used as a measure of farm size.

30. Please identify the size of your operation by selecting the category that best describes your annual gross sales. (Check one and estimate to the end of the year, if necessary.) RF30

- Less than \$5,000 **1**
- \$5,000-\$9,999 **2**
- \$10,000-\$24,999 **3**
- \$25,000-\$49,999 **4**

- \$50,000-\$99,999 **5**
- \$100,000-\$249,999 **6**
- More than \$250,000 **7**

31. Has your business gross revenue increased in the last 3 years? RF31

- Yes **1**
- No **2**

32. How many acres of land do you currently own and/or rent?

- c. Own _____ **RF32a**
- d. Rent/lease _____ **RF32a**

Business Processes

In this section, you will be asked about the routine or standard operating procedure of your business.

33. Do you ever address business cash flow problems by using household income to meet firm needs? P33

- Yes **1**
- No **2**

34. How would you describe your general attitude toward the local community? P33

- Good **1**
- Neutral **2**
- Poor **3**

35. How satisfied are you with the local community's support of your business? P35

- Satisfied **1**
- Neutral **2**
- Dissatisfied **3**

36. During the past 3 years, has your business:

b) Developed any new products or services P36a

- Yes **1**
- No **2**

b) Improved methods of production or service P36b

- Yes **1**
- No **2**

c) **Developed new methods of marketing P36c**

Yes **1**

No **2**

37. Please provide comments regarding your thoughts and experience on how you have overcome barriers to your farm business success. P37

Business Achievements

In this section, you will be asked about the success of your business.

38. Please rank the following goals from most important (1) to least important (5) to your farm business.

a. Profit **A38a**

b. A positive reputation with customers **A38b**

c. Business survival **A38c**

d. Keeping the business in the family **A38d**

e. Opportunity to work with family members **A38e**

39. Using your responses from Question 39, please rate your achievement of the following on a scale from (1) very successful to (5) very unsuccessful.

Very successful =1; Somewhat successful =2; Neutral =3; Somewhat unsuccessful =4; Very unsuccessful =5

Your most important goal A39a	<input type="checkbox"/> Very successful	<input type="checkbox"/> Somewhat successful	<input type="checkbox"/> Neutral	<input type="checkbox"/> Somewhat unsuccessful	<input type="checkbox"/> Very unsuccessful
Your second most important goal A39b	<input type="checkbox"/> Very successful	<input type="checkbox"/> Somewhat successful	<input type="checkbox"/> Neutral	<input type="checkbox"/> Somewhat unsuccessful	<input type="checkbox"/> Very unsuccessful
The overall success of the farm business A39c	<input type="checkbox"/> Very successful	<input type="checkbox"/> Somewhat successful	<input type="checkbox"/> Neutral	<input type="checkbox"/> Somewhat unsuccessful	<input type="checkbox"/> Very unsuccessful

40. Is your farm meeting or on target to meet the financial goals for your business? A40

Yes **1**

No **2**

F. Demographics

41. What is your current gender identity? (Check all that apply) D41

- Male **1**
- Female **2**
- Trans male/Trans man **3**
- Trans female/Trans woman **4**
- Genderqueer/Gender non-conforming **5**
- Different identity (please state): _____ **6**

42. What is your ethnicity? D42

- White **1**
- Black, African American **2**
- American Indian, Alaska Native **3**
- Asian, Pacific Islander **4**
- Multiracial **5**
- Other _____ **6**

43. Are you Hispanic/Latino? D43

- Yes **1**
- No **2**

44. What is your marital status? D44

- Married **1**
- Single **2**
- Separated **3**
- Divorced **4**
- Widowed **5**

45. Currently, how many children in your household are between the ages of 6 and 18 years old? _____ D45

46. Currently, how many children do you have under 6 years old? _____ D46

47. What is your age? D47

- 18-24 **1**
- 25-44 **2**

45-64 **3**

65 and older **4**

APPENDIX D. INTRODUCTORY EMAIL TO FARMERS' MARKET MANAGERS

Hello!

My name is Liz Alexander and I am a graduate student in the Department of Agricultural Sciences Education and Communication at Purdue University. I am conducting research for my masters thesis and am reaching out with hope you can assist me in my data collection.

My thesis research explores the experiences of agricultural entrepreneurs selling to niche markets in Indiana and I intend to send out a short, online survey to small farmers throughout the state to collect data. (Specifically, I am looking for small business owners who sell agricultural products and participate in direct marketing to consumers in local markets in Indiana.) **Would you be able to send out my survey to your farmers market vendors email list?**

The survey will take approximately 20 minutes to complete and all responses will be kept confidential. I appreciate any assistance you can provide in the data collection process!

Warmest regards,

Liz Alexander

APPENDIX E. FIRST REMINDER EMAIL TO FARMERS' MARKET MANAGERS

Hello,

First, thank you to all who have shared my survey so far! All responses are much appreciated. For those of you who have not had a chance to share my survey, the link to the survey has been included at the bottom of this email as well.

As understanding the experiences of small business owners is vital to the local agricultural economy, a research study concerning the “*Obstacles Encountered and Overcome by Indiana Entrepreneurs in Niche Agricultural Markets*” is being conducted. This study will examine your insight and experience as an agricultural entrepreneur selling to niche markets. We respectfully request your assistance in this study!

For those willing to participate, please click the link at the bottom of this paragraph. You will be taken to a web-based survey. The survey will only take a few minutes of your time (less than 15 minutes) and is composed of questions regarding your business structure, processes, resources, and achievements. The survey can be found and completed at this link: https://purdue.ca1.qualtrics.com/jfe/form/SV_5bh6sFdN66hHiPH

Due to standard research protocol, I will be sending out several reminder emails. Please remind your farmers market vendors to complete the survey as well. In addition, please let me know how many vendors you are sharing this survey with for my records.

Thank you in advance for your cooperation toward supporting local agriculture businesses.

Warmest regards,

Levon T. Esters, Ph.D. & Liz Alexander

APPENDIX F. SECOND REMINDER EMAIL TO FARMERS' MARKET MANAGERS

Good afternoon!

First, thank you to all who have shared my survey so far! All responses are much appreciated. For those of you who have not had a chance to share my survey, the link to the survey has been included at the bottom of this email as well.

As understanding the experiences of small business owners is vital to the local agricultural economy, a research study concerning the “*Obstacles Encountered and Overcome by Indiana Entrepreneurs in Niche Agricultural Markets*” is being conducted. This study will examine your insight and experience as an agricultural entrepreneur selling to niche markets. We respectfully request your assistance in this study!

For those willing to participate, please click the link at the bottom of this paragraph. You will be taken to a web-based survey. The survey will only take a few minutes of your time (less than 15 minutes) and is composed of questions regarding your business structure, processes, resources, and achievements. The survey can be found and completed at this link: https://purdue.ca1.qualtrics.com/jfe/form/SV_5bh6sFdN66hHiPH

Due to standard research protocol, I will be sending out several reminder emails. Please remind your farmers market vendors to complete the survey as well. In addition, if you have not already done so, please let me know how many vendors you are sharing this survey with for my records.

Thank you in advance for your cooperation toward supporting local agriculture businesses.

Warmest regards,

Levon T. Esters, Ph.D. & Liz Alexander

APPENDIX G. THIRD REMINDER EMAIL TO FARMERS' MARKET MANAGERS

Good morning!

Thank you for all of your assistance in my data collection. I truly appreciate your taking the time to share my survey with your vendors. Please forward this last reminder to your network:

This email also serves as a **final reminder** for those of you who have not been able to complete the survey on “*Obstacles Encountered and Overcome by Indiana Entrepreneurs in Niche Agricultural Markets*”. Due to the anonymity of this survey, we apologize if you have already completed the survey and received this email.

We urge you to please take a few minutes out of your day to complete the survey. The survey will only take a few minutes of your time (less than 20 minutes) and is composed of questions regarding your business structure, processes, resources, and achievements. The final day that the survey will be open is Friday, October 18. Directions for accessing the survey are provided below.

On an internet accessible device, please click the link at the bottom of this paragraph. You will be taken to a web-based survey. Follow the on-screen directions. The survey can be found and completed at this link:

https://purdue.ca1.qualtrics.com/jfe/form/SV_5bh6sFdN66hHiPH

Thank you in advance for your participation and cooperation toward supporting local agriculture businesses.

Warmest regards,

Levon T. Esters. Ph.D. & Liz Alexander

APPENDIX H. NEWSLETTER SUMMARY

How have YOU built your business to burst through barriers?

We know as a business owner, your time is valuable and in short supply, but if you can please spare 15 minutes to answer a few questions, we would like to invite you to participate in a Purdue Agricultural Sciences Education and Communication study entitled “Obstacles Encountered and Overcome by Indiana Entrepreneurs in Niche Agricultural Markets.” We are interested in the experiences of small business owners who market agricultural products directly to consumers and seek their insight on business resources, processes, and achievements. All responses will be kept confidential and will be used for a graduate research thesis to further research and support local agricultural businesses.

The survey can be found and completed at this link:

https://purdue.ca1.qualtrics.com/jfe/form/SV_5bh6sFdN66hHiPH

APPENDIX I. INTRODUCTORY EMAIL TO AGRICULTURAL ENTREPRENEURS

Hello,

My name is Liz Alexander and I am a graduate student in the Department of Agricultural Sciences Education and Communication. I am conducting research for my masters thesis and would like to invite you to participate in a research study entitled, “*Obstacles Encountered and Overcome by Indiana Entrepreneurs in Niche Agricultural Markets.*”

The purpose of this study was to explore and describe existing obstacles encountered by entrepreneurs in niche agricultural markets and their methods of building resilience in their business. As an agricultural entrepreneur selling to niche markets, you are an ideal candidate to provide us with valuable insight about your experiences. Specifically, I am looking for small business owners who sell agricultural products and participate in direct marketing to consumers in local markets in Indiana.

Should you choose to accept my invitation, you will be asked to complete a five section survey on qualtrics. Your responses will be kept confidential. Participation in this study is voluntary and all participants must be 18 years or older to participate. If you are willing to participate, please click the link at the bottom of this paragraph. You will be taken to a web-based survey. The survey will only take a few minutes of your time (less than 20 minutes) and is composed of questions regarding your business structure, processes, resources, and achievements. The survey can be found and completed at this link:

https://purdue.ca1.qualtrics.com/jfe/form/SV_5bh6sFdN66hHiPH

Thank you in advance for your participation and cooperation toward supporting local agriculture businesses.

Warmest regards,

Levon T. Esters, Ph.D. & Liz Alexander

APPENDIX J. FIRST REMINDER EMAIL TO AGRICULTURAL ENTREPRENEURS

Hello,

First, thank you to all who have completed the survey so far! Your responses are vital and much appreciated. For those of you who have not had a chance to participate, the link to the survey has been included at the bottom of this email as well.

As understanding the experiences of small business owners is vital to the local agricultural economy, a research study concerning the “*Obstacles Encountered and Overcome by Indiana Entrepreneurs in Niche Agricultural Markets*” is being conducted. This study will examine your insight and experience as an agricultural entrepreneur selling to niche markets. We respectfully request your assistance in this study!

If you are willing to participate, please click the link at the bottom of this paragraph. You will be taken to a web-based survey. The survey will only take a few minutes of your time (less than 20 minutes) and is composed of questions regarding your business structure, processes, resources, and achievements. The survey can be found and completed at this link:

https://purdue.ca1.qualtrics.com/jfe/form/SV_5bh6sFdN66hHiPH

Thank you in advance for your participation and cooperation toward supporting local agriculture businesses.

Warmest regards,

Levon T. Esters, Ph.D. & Liz Alexander

APPENDIX K. SECOND REMINDER EMAIL TO AGRICULTURAL ENTREPRENEURS

Good afternoon,

Due to the anonymity of the survey, we are unable to identify who has completed the survey thus far. Thank you to all who have completed the survey! Your responses are vital and much appreciated. For those of you who have not had a chance to participate, the link to the survey has been included at the bottom of this email as well.

As understanding the experiences of small business owners is vital to the local agricultural economy, a research study concerning the “*Obstacles Encountered and Overcome by Indiana Entrepreneurs in Niche Agricultural Markets*” is being conducted. This study will examine your insight and experience as an agricultural entrepreneur selling to niche markets. We respectfully request your assistance in this study!

If you are willing to participate, please click the link at the bottom of this paragraph. You will be taken to a web-based survey. The survey will only take a few minutes of your time (less than 20 minutes) and is composed of questions regarding your business structure, processes, resources, and achievements. The survey can be found and completed at this link:

https://purdue.ca1.qualtrics.com/jfe/form/SV_5bh6sFdN66hHiPH

Thank you in advance for your participation and cooperation toward supporting local agriculture businesses!

Warmest regards,

Levon T. Esters, Ph.D. & Liz Alexander

APPENDIX L. THIRD REMINDER EMAIL TO AGRICULTURAL ENTREPRENEURS

Good morning!

This email also serves as a **final reminder** for those of you who have not been able to complete the survey on “*Obstacles Encountered and Overcome by Indiana Entrepreneurs in Niche Agricultural Markets*”. Due to the anonymity of this survey, we apologize if you have already completed the survey and received this email.

We urge you to please take a few minutes out of your day to complete the survey. The survey will only take a few minutes of your time (less than 20 minutes) and is composed of questions regarding your business structure, processes, resources, and achievements. The final day that the survey will be open is Friday, October 18. Directions for accessing the survey are provided below.

On an internet accessible device, please click the link at the bottom of this paragraph. You will be taken to a web-based survey. Follow the on-screen directions. The survey can be found and completed at this link:

https://purdue.ca1.qualtrics.com/jfe/form/SV_5bh6sFdN66hHiPH

Thank you in advance for your participation and cooperation toward supporting local agriculture businesses.

Warmest regards,

Levon T. Esters. Ph.D. & Liz Alexander

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