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Exploring Income Supplementation for Farm Sustainability

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This is to certify that the doctoral study by

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Walden University
2013

Abstract

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Elizabeth Penny Persson

MBA, Keller Graduate School of Management, 2009

BSBA, DeVry University, 2008

Doctoral Study Submitted in Partial Fulfillment

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Abstract

Sustainable farms are critical to United States' food independence and they positively contribute to the global economy. Farms in the United States are not sustainable without profitable supplemental income. The purpose of this case study was to explore the historic profitability of farm income supplementation methods. Maslow's hierarchy of needs theory served as the conceptual framework. A purposive sample of 25 farmers from 5 regions of the continental United States completed semistructured interviews and described their personal experiences. Archival supplemental income data came from the United States Department of Agriculture census. All the data were analyzed using coded keywords, phrases, and concepts to identify the following profitable supplemental income themes: (a) government subsidies, (b) custom work, (c) sales of other products, (d) patronage dividends, (e) insurance payments, (f) cash rent, and (g) agtourism. The implications for positive social change include new insights that farmers may use to improve farm business practice, increase farm sustainability, and improve quality of life for farm families.

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Dedication

The last promise I made to my mother was to complete my education – Mom wherever you are in the universe – this one is for you.

Never let it be said that I didn't keep my word . . .

Acknowledgments

I would like to thank my classmates Winston, Shari, and Kevin for their encouragement and assistance.

I would like to acknowledge my husband for doing the housework, the shopping, the cooking, sleeping alone, traveling alone (even when I was with him), keeping me going when I wanted to quit, making me rest when I could not go on, and loving me through thick and thin. You (kind, tolerant, and incredibly patient husband) are truly the love of my life and I am amazed every day that I had the opportunity to be your wife—thank you for your love and support.

Finally I would like to thank my canine companion Annabelle for being at my side (or feet) through the entire process. If they gave dog degrees, she certainly earned one! May she chase horses and hunt squirrels forever . . .

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Section 1: Foundation of the Study

In 2010, every U.S. farmer created enough food for 135 people, but averaged less than $21,000 in farm earnings (U.S. Census Bureau, 2012; U.S. Department of Agriculture [USDA], 2012). The United States has the most efficient food production in the world (Food and Agriculture Organization of the United Nations, 2012; Fuglie, 2010), yet without supplemental income sources, 89% of the farms in the United States would fail (Hoppe & Banker, 2010; USDA, 2012). The availability of supplemental income options and awareness of the historically profitable options for each U.S. farming region are critical to farm sustainability (Atack, Coclanis, & Grantham, 2009; Barbieri, Mahoney, & Butler, 2008; Jackson-Smith & Jensen, 2009). Such awareness would allow U.S. farmers to choose the most profitable income supplementation sources available for the sustainability of their individual farms. A study to determine the most profitable income supplementation sources for each farming region of the United States appears necessary (Barbieri & Mahoney, 2009).

Background of the Problem

Sustainability of farms and ranches is a problem for U.S. farmers, for rural communities, and for the continuation of U.S. food production (Atack et al., 2009; Castellani & Sala, 2010; Wang, 2010). The farming industry contributed more than $130 billion to the U.S. economy and employed 14% of the U.S. workforce in 2007 (USDA, 2012; Wojan & Lambert, 2010). The efficient continuation of the U.S. farming industry may be in jeopardy if profitable solutions to supplement farm income are not found and implemented (Coman, 2008; Panyik, Costa, & Ratz, 2011).

The United States has more than 3 million farms and ranches (USDA, 2012), referred to as farms for the purpose of this study. A farm business in the United States must produce sufficient quantities of agricultural commodities to meet USDA baseline standards (USDA, 2012). A sustainable farm must include income in sufficient quantity to cover farm debt, operating expenses, and property maintenance (Rodrigues, Rodrigues, Buschinelli, & de Barros, 2010; Wei, Davidson, Chen, & White, 2009). In 2010, U.S. farm-grown products generated $342 billion in gross income through direct production (USDA, 2012). In 2010, the United States exported $115 billion of farm-produced products (USDA, 2012). The cumulative effect of farm income and the farm service industry influences the U.S. economy, as does the amount of farm-produced exports (Jackson-Smith & Jensen, 2009; Mishra, El-Osta, & Shaik, 2010a). However, 89% of U.S. farms are at risk of failure without supplemental income sources (Hoppe & Banker, 2010; USDA, 2012).

In 1997, the U.S. government began tracking supplemental income sources for farms using the USDA farm census (USDA, 2012). Government legislation requires 100% participation in the USDA census by U.S. farmers (USDA, 2012). Researchers have not explored which supplemental income sources measured by the USDA census are most profitable for U.S. farmers (Brown & Reeder, 2008). The USDA identifies farmers as persons living in the United States who have at least $1,000 in annual sales of agricultural products (USDA, 2012). In 1997, analysts at the National Agriculture Statistics Service (NASS), which is a sector of the USDA, divided the United States into five farming regions according to geographic and production criteria (USDA, 2012).

Regions defined by the USDA were the (a) West, (b) Plains, (c) Midwest, (d) Atlantic, and (e) South regions (USDA, 2012). Alaska and Hawaii were not in any of the USDA regions and remained separate. Data recorded by the USDA census after 1996 align with the NASS regions (USDA, 2012). Each region encompasses a number of states, as shown in Figure 1.

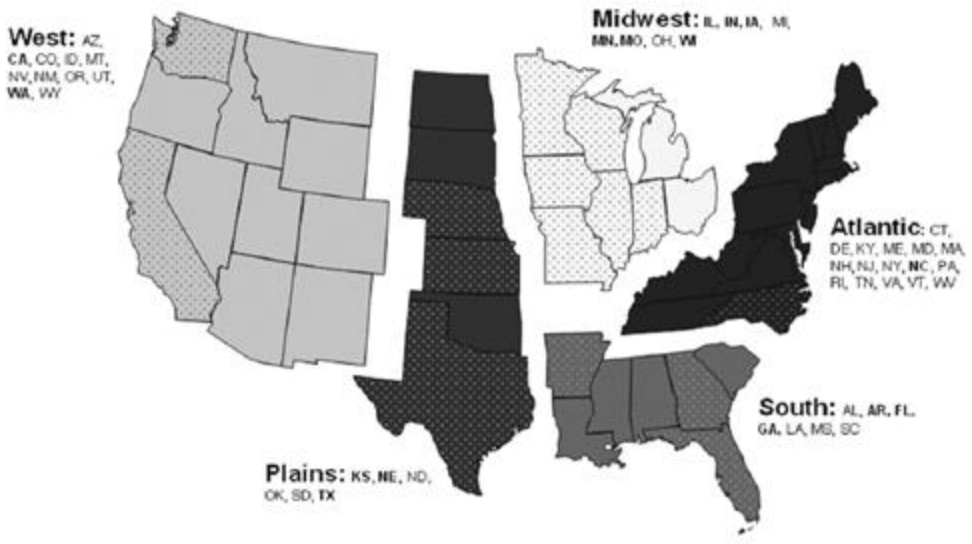

Figure 1. United States Department of Agriculture farming regions (USDA, 2012; in the public domain, see Appendix A).

Problem Statement

The problem of farm poverty threatens the sustainability of U.S. farms and ranches, which average less than $21,000 in annual farm earnings (Featherstone, Park, & Weber, 2012). Profitable income supplementation is critical to farm sustainability because 65% of all U.S. farms report a farm operating loss and 89% of U.S. farms are dependent upon successful income supplementation sources (Hazell, Poulton, Wiggins, & Dorward, 2010; Hoppe, 2010). A general lack of understanding exists in the agricultural

community on profitable income supplementation sources to enable economic diversification for farmers (Mishra & Chang, 2012). Specifically, U.S. farmers do not know which supplemental income sources are most profitable in their region of the United States (Blank & Klinefelter, 2012).

Purpose Statement

The purpose of this qualitative multiple case study was to explore profitable supplemental income sources for U.S. farmers in five U.S. farming regions. This comparative study involved comparing and contrasting the findings from archival record data to data obtained from personal interviews with U.S. farmers. The archival record data are the most uniform and comprehensive database of U.S. agricultural data (USDA, 2012). I conducted five interviews per case with a stopping criterion of three interviews conducted without new ideas emerging for a minimum of 25 personal interviews with farmers who met selection criteria (see Appendix B). The bounded units (Yin, 2009) that comprised the cases of this study were five U.S. farming regions identified by the USDA: the (a) West, (b) Plains, (c) Midwest, (d) Atlantic, and (e) South cases (USDA, 2012). The output from this study includes a prioritized list of cost-effective farm income supplementation sources organized by case that I designed to present information in a format that will be useful to U.S. farmers (Blank & Klinefelter, 2012). Awareness of the appropriate options available may help U.S. farmers to choose the most profitable income supplementation sources for sustainability of their individual farms.

Nature of the Study

Using a secondary analysis of previously gathered archival data, I explored the quantitative data from archival records to prioritize profitable income supplementation sources. I compared and contrasted the results from the archival record data exploration with interview data collected from personal interviews with U.S. farmers. The use of longitudinal data sets collected from all U.S. farmers in the most recent 10-year censuses enabled a broader exploration than was possible by personal interviews alone. By including data from a span of time, I explored the phenomena of farm income supplementation sources in ways not originally intended in the data collection process with a more multidimensional view (Jarvensivu & Tornroos, 2010). The focus of the research question was to explore the data to create a prioritized list of profitable farm income supplementation sources for each of the five cases. This type of exploration is possible when working across longitudinal data sets in a comparative manner (Irwin et al., 2012). Reconfiguring the quantitative data for qualitative analysis enabled a comparison not previously presented and not currently available to U.S. farmers (Blank & Klinefelter, 2012). This case study included a multiple case study design suited to a qualitative research method (Yin, 2011). Each of the five U.S. farming regions was a case, and each case was included in the multiple case study design for comparative analysis, as described by Yin (2009), using replication design. Yin (2009) included quantitative survey data and archival data as viable data sources to interpret a phenomenon or to address research questions in multiple case study design.

Choosing the best research method for this study required an in-depth examination of three research methods, quantitative, mixed method, and qualitative, based upon the unique aspects of this study (see Appendix C). The three research methods were considered in a pluralistic fashion, as recommended by Yin (2009) to determine the most advantageous approach. A quantitative research method is appropriate in causal and correlational studies when a statistical analysis proves or disproves a hypothesis with variable relationships (Carlson, 2008). Yin (2009) noted that if the research question is a *what* question, then this form of question is a justifiable rationale for conducting an exploratory study (p. 9). Further, Yin noted that when the research question is also a question of an operational link traced through time, a researcher might be better off doing a case study instead of an examination of archival records such as occurs when using a quantitative research method. The advantage of using a case study method for this study was the ability to deal with a full variety of evidence—documents, artifacts, interviews, and observations as recommended by Yin (2009).

A mixed method research design was a possibility because the study included numerical data and a comparative exploratory design. This study, however, did not include quantitative and qualitative data mixed into one set of data for analysis (Yin, 2009; 2011). The initial data set from the archival records contained only quantitative data but was compared in a synthesis, which, according to Yin (2009; 2011), did not meet the definition of a mixed method study, but instead was consistent with a multiple case study design.

Qualitative research is not limited to fixed designs such as researchers use in experiments (Yin, 2011). Qualitative studies vary in design, enabling the customization of a research design to fit the need of a researcher (Yin, 2011). The exploratory, comparative research method included a multiple case study design. Researchers can combine observational evidence such as personal interviews with quantitative data in case studies. Yin (2009) noted that case studies can include quantitative evidence. A multiple case study design is appropriate for comparative studies (Yin, 2009), and this study was a comparative study. Multiple case studies include replication design, as was the case in this study (Yin, 2009). A multiple case study entails a cross-case analysis in a comparative mode (Yin, 2009) as occurred in this study.

This study involved exploring the characteristics of real-life events captured in the archival records to understand the complex social phenomena of farm income supplementation. This exploration was appropriate for a research design using multiple case studies (Yin, 2009; 2011). Interviews with farmers who have participated in a USDA census were conducted to compare and to contrast archival record data results to real-life perceptions on the research subject. The farmers participated in interviews to meet triangulation recommendations suggested by Yin (2011) and Denzin (2012). Triangulation supports the use of three sources of data in data collection to assist in verifying study results and thus strengthening the validity of the study (Denzin, 2012). Triangulation can occur by using three data sources, if available (Denzin, 2012).

This study included three USDA census documents (referred to as archival records in this study) as the initial data source. Personal interviews conducted with

farmers who had participated in a USDA census of agriculture served as the second data source. Other peer-reviewed supplemental farm income articles comprised the third data source. Three sources of data are necessary for triangulation (Denzin, 2012). Participants in the personal interviews conducted in each of the five cases formed a purposeful sample. The purpose of the interviews was to compare the data collected from the archival records in that case to data collected from the interviews. The goal was to ask the farmers to explain their use and choice of income supplementation sources from those included in the archival records as well as their opinion of the profitability of the sources they use and then to compare the results of the interviews with data from the archival records and literature. A qualitative analysis ensued and results appeared in the study to demonstrate the phenomenon of farm income supplementation and to add depth to the study (Yin, 2011).

Research Question

The research question for this study was as follows: What supplemental income sources are most profitable for U.S. farmers? The study included archival record data from the three most recent census surveys as the initial data source for the study. Because the study involved extracting sample data from the population data of the archival records, I included the questions used for that extraction as protocol questions (Yin, 2011). Using the following protocol questions helped to extract sample data from the initial data source, which were the archival records (see Appendix D):

1. How much income from government subsidies was paid to farmers in 1997, 2002, and 2007 for each of the 50 U.S. states?

2. How much income from custom work and other related agricultural services was paid to farmers in 1997, 2002, and 2007 for each of the 50 U.S. states?

3. How much income from gross cash rent or share payments was paid to farmers in 1997, 2002, and 2007 for each of the 50 U.S. states?

4. How much income from sales of other products was paid to farmers in 1997, 2002, and 2007 for each of the 50 U.S. states?

5. How much income from agtourism and recreational services was paid to farmers in 1997, 2002, and 2007 for each of the 50 U.S. states?

6. How much income from patronage dividends and refunds from cooperatives was paid to farmers in 1997, 2002, and 2007 for each of the 50 U.S. states?

7. How much income from crop and livestock insurance payments was paid to farmers in 1997, 2002, and 2007 for each of the 50 U.S. states?

For triangulation, the study included individual interviews conducted with farmers from all cases who had participated in a USDA census. Yin (2011) recommended using open-ended interview questions in case study research. The interview questions served to produce information similar to the data produced by the protocol questions so that triangulation can occur, as recommended by Denzin (2012). Appendix E contains the following interview questions:

The USDA includes these farm income supplementation sources in their census: (a) government subsidies, (b) custom work and other agricultural services, (c) sales of other products, (d) patronage dividends and refunds from cooperatives, (e) insurance payments, (f) cash rent or share payments, and (g) agtourism and recreational services.

1. Which of the USDA farm income supplementation sources do you use?
2. Why did you choose this/these particular income supplementation source(s)?
3. How profitable is/are the chosen income supplementation source(s) for you?
4. How does income supplementation affect your standard of living?
5. Discuss any additional information about these income supplementation sources such as return on investment, ease of use, labor involved, pros and cons, or any other information pertinent to each income supplementation source that you would like to share.

Conceptual Framework

This study included Maslow's (1943) hierarchy of needs theory as the conceptual framework. The conceptual framework guided this study by shaping the data collection plan, designing the protocol and interview questions, guiding the literature review, prioritizing analytic strategies, and establishing the boundaries of the study (Yin, 2009). The study contained an action agenda that may improve the lives of the U.S. farm population sector the study addressed (Collie, Liu, Podsiadlowski, & Kindon, 2010; Cuellar-Padilla & Calle-Collado, 2011). The farm population is a marginalized sector of the U.S. population affected by an important social issue, poverty (Hoppe & Banker, 2010; USDA, 2012), which was the focus of the research study.

The theory that the desire to fulfill a human need motivates human behaviors was the basic concept proposed by need theorists (Maslow, 1943). In the original theory research, Maslow (1943) identified a hierarchy of needs human beings are motivated to attain. Maslow (1943) noted the difficulty for humans to move to a higher level of

existence when basic needs were not met and therefore placed these needs at the bottom of a pyramidal illustration whereby the first levels of need in human existence were for food, water, air, safety, love, and belonging. Maslow posited that when a human lacked these needs, the major motivation would be to obtain them. When more than one motive was present, the most urgent would be satisfied before acting upon others (Maslow, 1943). Urgency prioritized human motivations, and the most urgent motivations were for food, shelter, and safety (Maslow, 1943). Using the hierarchy of needs theory, the needs of one level must be met before a human can rise to the next level; thus, only when basic needs and safety were met could a human begin to yearn for self-fulfillment rather than existence needs (Maslow, 1943). Maslow noted that humans are motivated to achieve, but rarely achieve a state of motivational quiescence, being subject to motivations at all times.

Average farm income is below poverty level in the United States (U.S. Census Bureau, 2012), and without supplemental income, 89% of U.S. farms would fail (Hoppe & Banker, 2010). The illustration in Figure 2 is an interpretation of Maslow's (1943) hierarchy of needs indicating the U.S. poverty line (U.S. Census Bureau, 2012). In this study, the two lowest levels of needs typically associated with Maslow's (1943) hierarchy of needs theory equates to the U.S. poverty line as represented in Figure 2. At the U.S. poverty line, the basic needs for food, shelter, and safety are met (U.S. Census Bureau, 2012). Profitable farm income supplementation enables economic diversity that increases farm income to above the U.S. poverty line (Hoppe & Banker, 2010; USDA, 2012) and is necessary to improve U.S. farmers' level of existence (Hoppe & Banker,

2010; USDA, 2012). According to Maslow, self-actualization such as higher educational opportunities, personal growth, and increased self-esteem are possible after meeting basic needs.

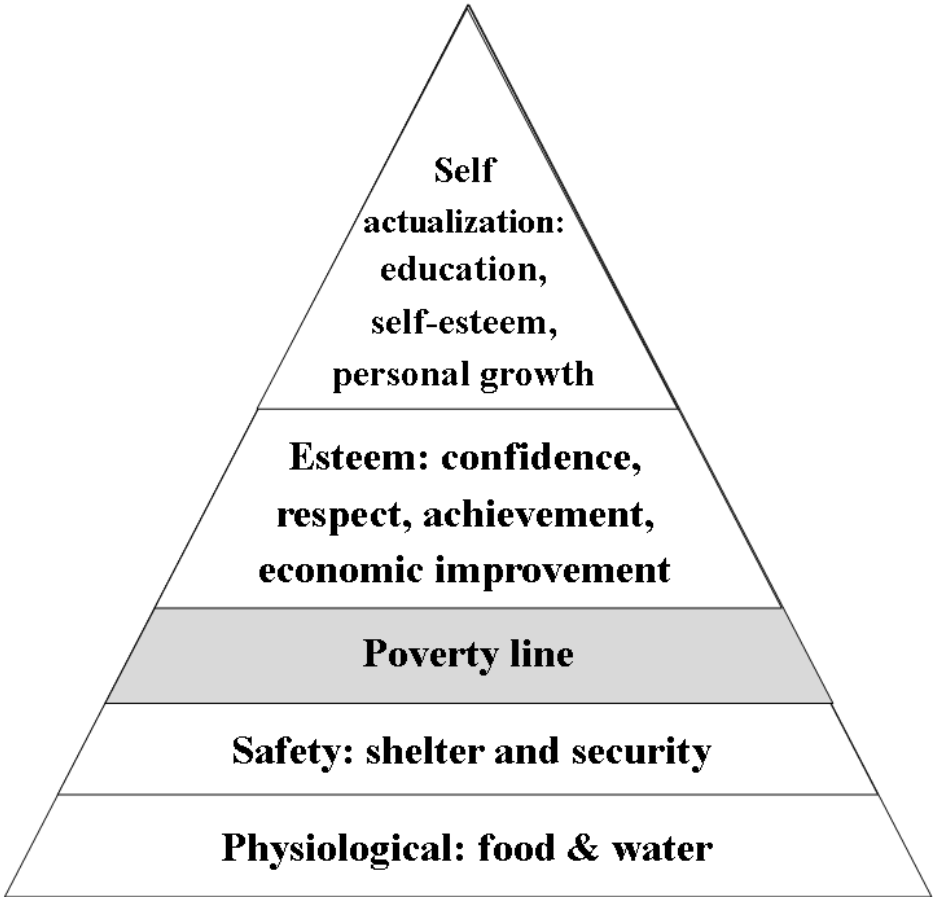

Figure 2. Interpretation of Maslow's (1943) hierarchy of needs with poverty line added.

The basis of this study was the premise that humans have basic needs, that poverty restricts humans from meeting those needs, and that after basic needs are met, humans can increase their education and personal growth (Maslow, 1943). A comparison of Maslow's (1943) hierarchy of needs as a conceptual framework appears in the pyramidal interpretation with poverty information from the U.S. government (U.S.

Census Bureau, 2012), indicating that at the poverty line, basic needs of shelter, food, and water are met for U.S. citizens. However, U.S. census and USDA census data indicated that average farm income was not sufficient to meet the U.S. poverty line and therefore, on average, U.S. farm income was not sufficient to enable farmers to meet their basic needs (U.S. Census Bureau, 2012; USDA, 2012). Farm income supplementation is essential for U.S. farmers to rise to the poverty line or above (U.S. Census Bureau, 2012) to meet or exceed their basic safety and physiological needs as indicated in Maslow's hierarchy of needs.

Other researchers have used Maslow's (1943) hierarchy of needs recently as a conceptual framework. Baslevent and Kirmanoglu (2012) used the hierarchy of needs to measure job attributes and indicated that a relationship exists between exceeding basic needs and improved economy and employment opportunities. Baslevent and Kirmanoglu related the hierarchy of needs to the proposition that farmers will explore educational and entrepreneurial opportunities when they are able to focus on more than survival needs, which is achievable by profitable farm income supplementation (Hoppe & Banker, 2010). Freitas and Leonard (2011) used the hierarchy of needs as a conceptual framework and indicated that academic success increased after meeting or exceeding basic needs and that humans were more likely to pursue higher educational opportunities after their basic needs were met or exceeded. Freitas and Leonard related the hierarchy of needs to the proposition that when adding profitable supplemental income to farm income, farmers would be more likely to pursue higher educational opportunities after meeting and exceeding their basic needs.

Hablemitoglu, Ozkan, and Purutcouglu (2010) also used the hierarchy of needs as a conceptual framework and indicated that after meeting or exceeding their basic needs, study participants focused on improving other aspects of their lives such as their homes, businesses, and surroundings. Hablemitoglu et al.'s finding related to my proposition that farmers would pursue higher forms of farming such as organic and ecological practices after they were able to meet and exceed their basic needs. Hopkins and Hill (2010) used the hierarchy of needs to study children and young people in rural settings and concluded if basic needs were met and exceeded, participants' prospects and economic potential in rural Scotland improved. Hopkins and Hill indicated the possibility of generalizing study results to include increasing the education and work potential of rural children on U.S. farms if the children were able to rise above the poverty level. Hopkins and Hill's findings related to this study because I proposed that economic improvement equates to improved opportunities for farmers and their families, as indicated in the hierarchy of needs.

Zagorski, Kelley, and Evans (2010) used the hierarchy of needs to measure economic development and happiness in 32 nations. By measuring the effect of education and income on happiness on a large sample from 32 nations, Zagorski et al. equated improved economics to happiness at the level where basic needs were met, but the results indicated that as economic development improved to the self-actualization level, a smaller gain on happiness occurred because of increased economic diffusion. The results of the Zagorski et al. study indicated that economic growth enhances well-being for poor people. The finding was directly relevant to this study, the hierarchy of

needs, and the proposition that exceeding basic needs by improving the farm economy would improve quality of life for U.S. farmers and their families.

Definition of Terms

Identifying the vocabulary to establish meanings and facilitate understanding was critical to the communication of items contained within the study. The following definitions enabled the exchange of knowledge. These terms appeared within the study, or were implied within the research, and led to a better understanding of the resultant literature.

Agricultural commodities: Agricultural commodities are food and agricultural products (Food and Agriculture Organization of the United Nations, 2012).

Agriculture: Agriculture is growing vegetable crops, livestock, or a combination of both (Atack et al., 2009).

*Agtourism (*also *agritourism* and *agrotourism)*: Agtourism is the integration of farming and tourism and includes tourists visiting a farm and tourist involvement in the farm activities (Phillip, Hunter, & Blackstock, 2010).

Census of agriculture: The census of agriculture is a farm survey undertaken by the USDA every 5 years. The data include farm information related to income, production, and demographics. The census involves gathering data for all regions of the United States from all U.S. farmers (USDA, 2012).

*Custom work (*also *custom farming):* Custom work is work performed for another farmer such as harvesting, planting, or leasing farm equipment (Aakre, 2011).

Family farm: A family farm is an agricultural business operated by a farm family, as opposed to corporate or managed ownership, that produces at least $1,000 per year in farm sales (O'Donoghue, 2009).

Farm or ranch: A farm or ranch is land and improvements that create at least $1,000 per year in farm sales (USDA, 2012). Within this study, these terms were interchangeable and the word farm referred to both.

Farm income: Farm income is income from the sales of crops or livestock produced (USDA, 2012).

Population: The population of this study was the 27 USDA census documents from the inception of the USDA in 1840 to 2007 (USDA, 2012) and all U.S. farmers.

Sample: Using Yin's (2009) case study sample criteria, the sample chosen for this study was the most recent 10 years of USDA census documents, 1997, 2002, and 2007, including all information contained within these documents and a contemporary, purposeful sample of farmers from the five U.S. farming regions.

Sample data: Using Yin's (2009) case study sample data criteria, the sample data for this study were raw data provided by U.S. farmers, including both archival record data captured in the USDA census documents for 1997, 2002, and 2007 and interview data from personal interviews with U.S. farmers.

U.S. Department of Agriculture (USDA): The USDA is a government agency responsible for programs and agencies overseeing all things agricultural: commodities, food safety, and rural development (USDA, 2012).

Assumptions, Limitations, and Delimitations

Assumptions

This study included an analysis of archival record data (Yin, 2009) as well as personal interview data. Researchers make assumptions when conducting studies. An assumption was the archival record data used would be generally accurate. Another assumption was the sample size would be sufficient and representative of the farms in the United States. A final assumption was archival record data from the three most recent agricultural censuses would be current, comprehensive, and relevant.

Limitations

Potential research study weaknesses included in the limitations needed identifying as they may have affected the credibility of the study (Yin, 2011). This study included only those archival record data that I deemed significant to the study. The study also included interview data that were subject to researcher interpretation. Additional data may exist that I did not include or identify. The study was a model of the analysis of the data, and further research not conducted within the scope of this study may enhance this study. The archival record data captured the participants' interpretations at that moment in time but further research may change the initial interpretation based upon new information or increased understanding of the subject.

Researcher interpretation during data analysis may have created themes or comparisons not intended in the initial data. Because interpretation involves a researcher formulating ideas and themes from the data obtained, researcher interpretation may affect

these themes (Yin, 2009). As time passes, evolving and emergent knowledge may alter the validity, results, and importance of the study.

The study involved personal interviews. Interview participants may have had language, emotional, or cultural barriers that prevented them from communicating openly with me. The personal interviews took place with limited numbers of U.S. farmers and therefore may not be representative of the entire farm population.

Delimitations

Delimitations restrict the scope of a research study (Yin, 2009). The scope of this study was restricted to those data retrieved from archival records during the period identified and available to me and to data collected by personal interviews with U.S. farmers. Conducting a widespread literature review served to ensure archival record data were representative of the current body of knowledge; however, all available information may not have been identified and included. This study did not include data retrieved from prior data collection periods, even though some data were available. The study included interviews from a purposeful sample of respondents selected to participate based upon meeting predetermined selection criteria and did not include all possible participants (see Appendix B).

Significance of the Study

Value of Study

Farm poverty endangers farm sustainability (Hoppe & Banker, 2010; USDA, 2012), and farm income supplementation is a method to relieve farm poverty (Barbieri et al., 2008). The choice of profitable supplemental income sources is critical to farm

sustainability and alleviation of farm poverty (Barbieri et al., 2008). This study provided increased knowledge of farm income supplementation and built upon prior research in the field of study (Barbieri & Valdivia, 2010; Jones & Milkove, 2010). Awareness of the most profitable income supplementation sources may enable U.S. farmers to choose appropriate income supplementation sources for their farm. By choosing profitable and appropriate income supplementation sources, farmers may increase their farm sustainability and alleviate farm poverty.

Reduction of Literary Gaps

Farm income supplementation is necessary to alleviate farm poverty (Hoppe & Banker, 2010; USDA, 2012). Researchers have conducted numerous studies since 2002 that identified the need for supplemental income to sustain the farming industry (Barbieri & Valdivia, 2010). However, no researchers have explored which sources of supplemental income are the most profitable for farmers in the various farming regions of the United States, nor has a vehicle been created to make the data gathered from the USDA census available to farmers and ranchers in a format that is useful and that they can understand (Blank & Klinefelter, 2012; Tew & Barbieri, 2012). This study involved exploring which supplemental farm income sources recognized by the USDA are the most profitable to augment U.S. farm income by region, the five cases of the multiple case study, and the results of the study appear in a format that is useful to farmers and easily understood by them. The resulting prioritized list of profitable supplemental income sources filled a gap in the literature identified by Blank and Klinefelter (2012) as a glaring omission. County extension agents, farm bureaus, growers or cattlemen's

associations, and other researchers can use the study findings to increase awareness of profitable income supplementation choices by U.S. farmers. Such awareness would allow U.S. farmers to choose the most profitable income supplementation sources for their farm region. Profitable income supplementation could increase profitability, improve long-term sustainability, and alleviate farm poverty (Hazell et al., 2010; Lipton, 2010). The study may contribute to the sustainability of U.S. family farms.

Implications for Social Change

Poverty alleviation remains a challenge in the United States (U.S. Census Bureau, 2012). The U.S. poverty rate was 14.3% in 2009, and poverty in the United States affects 43.6 million people (U.S. Census Bureau, 2012). In 2009, one of seven Americans lived in poverty (U.S. Census Bureau, 2012). Farmers are among the most affected segments of Americans according to census data (U.S. Census Bureau, 2012; USDA, 2012). The average farm in the United States was unable to generate enough farm income to rise above the poverty level in 2007 (U.S. Census Bureau, 2012; USDA, 2012). If dependent only upon farm income, 89% of U.S. farms would fail (Hoppe & Banker, 2010; USDA, 2012). The addition of profitable supplemental income increases farm income to sustainable levels, which enables farmers to stay on their farms (Jackson-Smith & Jensen, 2009; Uematsu & Mishra, 2012; Valdes & Foster, 2010). Supplemental farm income is a factor in preserving farmland and slowing the decline of U.S. farms (Mishra et al., 2010a). U.S. farms are important because they help to keep the price of U.S. food stable and independent from foreign food sources (Timmer, 2010; Vinnar & Tapio, 2011).

Review of the Professional and Academic Literature

The research question for this study was as follows: What supplemental income sources are most profitable for U.S. farmers in each of the five U.S. farming regions? The purpose of the study was to explore which income supplementation sources are most profitable for farmers in the five U.S. farming regions as defined by the USDA. Topics emerged in the course of the literature review that expanded the review beyond the research question. A comprehensive review of literature helped to establish the parameters of the study. The literature review includes background information, the problem, and research conducted in the industry. The following review of literature includes information about the conceptual framework for the study. The literature review also includes a historical background of farming in the United States, farm poverty, and the importance of farming in the United States. Additional information presented includes stress factors facing U.S. farmers, the types of farm income supplementation included in the USDA census reports, and information about each of those supplemental income sources. The review also includes information on the underlying theories and topics that form the basis of this study.

Journal Articles, Research Documents, Books, and Reports

The sources of information included the Internet, libraries, online databases, governmental sources, books, and reports. The primary source for peer-reviewed journal articles was the Elton B. Stephens Company (EBSCO) database that provided scholarly journals reviewed through Ulrich's Periodical Directory database to ensure they were peer-reviewed. Governmental agencies were the sources for governmental documents;

for example, USDA farm data came from the USDA and population census data from the U.S. Census. The dates of publication for the sources used in the literature review are in Table 1.

Table 1

Details of Literature Reviewed by Year of Publication

Publication	<2008	2008	2009>	Total
Peer-reviewed articles	1	11	179	191
Books	0	0	2	2
Government sources	0	0	7	7
Total	1	11	188	200

Note. Peer-review verified at Ulrichsweb periodical directory at http://ulrichsweb.serialssolutions.com

Government sources were not peer-reviewed and appear separately. I retrieved the books used in the literature review from a library; they were not peer-reviewed and appear separately. The publication date of one peer-reviewed article was before 2008 and the article appears as peer reviewed but separated by date. The literature in the literature review was from (a) 179 peer-reviewed journal articles published after 2008, (b) 11 peer-reviewed journal articles published in 2008, (c) one peer-reviewed journal article published in 1943, (d) two books, and (e) seven governmental sources. The percentage of peer-reviewed articles in the literature review is 95%.

Research Theory and Topics

The conceptual framework for the study was the hierarchy of needs proposed by Maslow (1943). Even though the Maslow hierarchy of needs theory was controversial, the hierarchy of needs continues to be a conceptual framework in studies from diverse disciplines. The EBSCO database includes 23,334 journal articles dated after 2008 that

include Maslow's hierarchy of needs, most of which are peer reviewed. The large number of journal articles including Maslow's hierarchy of needs was an indicator that the hierarchy of needs theory appears in current scholarly work even though Maslow created it in 1943. Examples of recent peer-reviewed journal articles using Maslow's hierarchy of needs theory appear in different disciplines and areas of study.

Recent works that illustrate the use of Maslow's (1943) hierarchy of needs theory include Zavei and Jusan (2012), who explored housing attributes in home selection based on the hierarchy of needs theory; De Brouwer (2009), who used the hierarchy of needs theory to create an alternative behavioral portfolio theory; and Duncan and Blugis (2011), who applied the hierarchy of needs to hospitality house services. Pulasinghage (2010) used Maslow's hierarchy of needs theory and applied it to employee motivation, Rossiter (2009) used the hierarchy of needs theory to address why humans work, and Cangemi (2009) used the hierarchy of needs to analyze a labor/management situation in industry. Gomes (2011) applied the hierarchy of needs to social values and their valuation, Juliano and Sofield (2011) applied the hierarchy of needs to leadership, and Paris and Terhaar (2010) used Maslow's pyramidal needs hierarchy to find quality indicators for nurse work environments. Rocha and Miles (2009) used the hierarchy of needs to create a model for entrepreneurship management, Sarin (2009) used the hierarchy of needs and applied it to corporate strategy and motivation, and Udechukwu (2009) applied Maslow's hierarchy of needs to correctional officer turnover.

Additional areas recently studied using Maslow's (1943) hierarchy of needs include Yount's (2009) study on aging, Venter and Venter's (2010) study on

globalization, and Sun and Wang's (2011) study on internet based learning and technology. Chou (2010) used the hierarchy of needs and applied it to ecology, Saeednia (2011) generated a scale to measure the hierarchy of basic needs expanding upon Maslow's original work, and Kenrick, Griskevicius, Neuberg, and Shaller (2010) renovated the pyramid of needs created by Maslow to contemporize the theory. The recent widespread use of Maslow's work and the transcendence of the theory throughout diverse disciplines and sectors indicated that although the theory may have been historically controversial, the use of Maslow's hierarchy of needs theory is contemporary and remains relevant to diverse areas of study.

The hierarchy of needs as a conceptual framework in this study served to illustrate the potential for improvement in the personal development and quality of life farmers may achieve when income supplementation increases financial resources. In the hierarchy of needs, Maslow (1943) theorized that the desire to fulfill human needs motivates human behaviors. In theory research, Maslow identified a hierarchy of needs human beings are motivated to attain. In the hierarchy of needs theory, Maslow indicated that as humans rise above basic needs, they are able to transcend to higher function by increasing education and personal growth. According to Maslow's hierarchy of needs theory, basic human needs usurp the human yearning for self-improvement, but after meeting and exceeding basic needs, personal growth has the opportunity to occur. Only after meeting basic needs could humans rise to a higher level of thinking to achieve the ultimate level of personal growth (Maslow, 1943). The levels of motivation proposed by Maslow rose in a pyramidal format from the basic needs of food, shelter, and safety to

higher needs as the realization of basic needs occurred. For farmers to meet their basic needs, profitable income supplementation must occur (Hengzhou, 2011; Hoppe & Banker, 2010). The literary review involved exploring farm income supplementation.

Four subtopics emerged from the review of the literature. First, U.S. farm poverty is real and sustained. Second, farming is important to the United States. Third, farm income supplementation is necessary for farm sustainability. Fourth, regional differences occur in the United States that may be important when planning farm income supplementation. Brief summaries of the subtopics serve to introduce the subtopics.

Farm poverty. Poverty affects U.S. farmers by limiting their access to education, health services, and quality of life and limits the succession of family farms (Barbieri & Valdivia, 2010). Farm income supplementation is a method of alleviating poverty for U.S farmers (Barbieri & Valdivia, 2010). Challenges that farmers face when trying to improve farm profit include factors beyond their control such as environment, international trade, and government policy (Fuglie, 2010; Gohin & Chantret, 2010). Farmers have increased production, but farm profits have not increased (USDA, 2012). Some governmental policies, while benefitting consumers, negatively affected farm income by increasing foreign imports for farm products through trade agreements (DiCaprio, 2010; Javalgi, Deligonul, Ghosh, Lambert, & Cavusgil, 2010). Adding other income sources to farm income helps to alleviate farm poverty, but which sources are profitable in which regions remains unclear (USDA, 2012).

Farm income supplementation. Barbieri, accompanied by other scholars, conducted seminal research into farm income supplementation using both qualitative and

quantitative methodologies; results indicated that farm income supplementation was critical to the sustainability of U.S. farming (Barbieri & Mahoney, 2009; Barbieri et al., 2008; Barbieri & Mshenga, 2008; Barbieri & Valdivia, 2010; Tew & Barbieri, 2012). Barbieri et al.'s (2008) research and continuing research conducted by Barbieri in collaboration with others on farm income supplementation inspired this study. Barbieri et al. and continuing research conducted by Barbieri and others indicated that profitable farm income supplementation was critical to the sustainability of U.S. farms (Barbieri & Mahoney, 2009; Barbieri et al., 2008; Barbieri & Mshenga, 2008; Barbieri & Valdivia, 2010; Tew & Barbieri, 2012).

A consensus of the literature indicated that farm poverty alleviation occurred when other profitable sources supplemented farm income (Barbieri & Mahoney, 2009; Barbieri et al., 2008; Barbieri & Mshenga, 2008; Barbieri & Valdivia, 2010; Chang, Mishra, & Livingston, 2011; El-Osta, 2010; Mishra & Chang, 2009, 2012; Mishra & El-Osta, 2009, Mishra, El-Osta, & Gillespie, 2009; Mishra et al., 2010a, 2010b; Mishra, Moss, & Erickson, 2009; Mishra, Wilson, & Williams, 2009; Tew & Barbieri, 2012; Uematsu & Mishra, 2012). Other researchers expanded upon and added to the Barbieri research, broadening the topic and adding to the body of knowledge on the subject. Of note are the research studies conducted by Mishra, Chang, El-Osta, Shaik, and Uematsu, who researched U.S. farm income and farm poverty (Chang et al., 2011; El-Osta, 2010; Mishra & Chang, 2009, 2012; Mishra & El-Osta, 2009, Mishra, El-Osta, et al., 2009; Mishra et al., 2010a, 2010b; Mishra, Moss, et al., 2009; Mishra, Wilson, et al., 2009; Uematsu & Mishra, 2012). Mishra, Chang, El-Osta, Shaik, and Uematsu all indicated

quality of life and poverty alleviation improved when profitable income sources were added to farm income (Chang et al., 2011; El-Osta, 2010; Mishra & Chang, 2009, 2012; Mishra & El-Osta, 2009, Mishra, El-Osta, et al., 2009; Mishra et al., 2010a, 2010b; Mishra, Moss, et al., 2009; Mishra, Wilson, et al., 2009; Uematsu & Mishra, 2012).

Research conducted on specific farm income supplementation sources such as agtourism was also valuable to the body of literature on the subject (Brown & Reeder, 2008; Bunten, 2010; D'Amore, 2010; Forbord, Schermer, & GrieBmair, 2012; Phillip et al., 2010; Zhao, 2009). Agtourism is a method of income supplementation included in the archival records (USDA, 2012). Significant start-up and operational costs can affect the profitability of agtourism (Zhao, 2009). Geographic location and proximity to urban areas also may play a part in agtourism success (Brown & Reeder, 2008). For some farmers, agtourism is successful and a profitable source of income supplementation (Barbieri & Mahoney, 2009). Recent research and articles included the use of farms as a destination for corporate meetings and team building with varying success (Ariffin, Ahmad, & Ishak, 2008).

Researchers have made comparisons between the United States and other countries, comparing methodology and success for alleviation of farm-poverty (Hazell et al., 2010; Kuethe & Morehart, 2012; Lipton, 2010; Quisumbing & Pandolfelli, 2009; Valdes & Foster, 2010; M. Yang, Hens, Ou, & De Wulf, 2009; Zhao, 2009). Hazell et al. (2010) indicated that the success of poverty alleviation directly relates to profitable income supplementation sources. Valdes and Foster (2010) suggested that finding the best income supplementation method may relate to location, farmer attitude, and the type

of income supplementation sources best suited to the farm. Yang, Cai, and Sliuzas (2010) conducted a recent study comparing agtourism as a method of poverty alleviation in China and the United States. Yang et al. (2010) indicated that whether income supplementation occurred in China or the United States, profitable income supplementation is critical to success.

Naipaul, Wang, and Okumus (2009) conducted further research on the benefits of diversifying farm income streams. Similar research conducted in Australia validated the research findings of Naipaul et al., who indicated that farmers benefited from diverse income streams (Pansiri, 2009). Ohe (2011) also confirmed Naipaul et al.'s findings by indicating benefits resulted for farm families when diversity occurred on Japanese farms. Effland and Whitaker (2009) concluded that diverse income sources were critical to farm household sustainability. Sheng (2011) indicated a positive relationship exists between tourism as an income supplementation method for farmers and improved economy for farm families.

Farm importance. Farming contributes to the economic growth of the United States (USDA, 2012). The government monitors the economic contributions from the agricultural sector of the United States by using census data (USDA, 2012). Analysis have used data from the U.S. Treasury economic reports, USDA, NASS, and Agricultural Resource Management Survey to monitor the effect of farm economics on the U.S. economy, the balance of trade, and the security of the U.S. food supply (USDA, 2012). The government data available as public domain information were primary data to this study. The use of governmental data for research purposes occurred in other recently

conducted research on topics similar to this study. Valdes and Foster (2010) and Blank and Klinefelter (2012) indicated a lack of output that was relevant and useful to U.S. farmers in current farm research.

Saving family farms is critical to keeping the United States independent from foreign food sources, and U.S. farm products are important to the food security of the United States (Chesky, 2009). Food security is a critical component of a secure economy and a factor in measuring quality of life for U.S. citizens (Andrews & Nord, 2009), and food insecurity is increasing in the United States (Coleman-Jensen & Nord, 2010; Jackson, 2010). Increased food prices equate to decreased food security, which increases the importance of U.S.-grown food sources and U.S. food independence (i.e., no dependence on food from other countries) (D'Souza, 2011). The basis of recent governmental bailouts of industries in other sectors such as manufacturing, insurance, and banking was historically successful farm income supplementation by the U.S. government (Briggeman & Akers, 2010). Farm lending is a relatively secure lending option because agricultural land backs the loans, even though loans on other types of property have depreciated in value (Briggeman & Jorgensen, 2009; Briggeman, Koenig, & Moss, 2012). Agricultural subsidies contribute to the stability of the U.S. economy, indicating the importance of the farming industry to the U.S. economy (Gomez-Limon & Sanchez-Fernandez, 2010). Farmland pricing relates to the pricing of nonurban land (Kirwan, 2009). The inclusion of conservation easements by farmers is important for the development of green space (i.e., plots of undeveloped land near urban areas) (Cross, Keske, Lacy, Hoag, & Bastian, 2011; Morris, 2008; Reyers et al., 2010). The farming

industry is important to U.S. economic stability and contributes to keeping the United States independent of foreign food (Valdes & Foster, 2010).

Regional differences. Regional differences affect farm income and may influence the choice of income supplementation sources (Gomez-Limon, Gomez-Ramos, & Fernandez, 2009). Regional differences include geographic location, climate, distance to urban centers, and distribution possibilities (USDA, 2012). The regional differences affect which crops can grow in different regions, the growth success of various crops, and the successful sale of those crops based upon distribution infrastructure (USDA, 2012). Regional differences are important when considering farm income supplementation choices (Mishra, Moss, et al., 2009). Mishra, El Osta, et al. (2009) indicated that regionality (i.e., the unique aspects of defined regions) might be of key importance when selecting crops and when selecting nonfarm income supplementation methods. Regional differences received consideration when analyzing data to compare the effect of regionality on the profitability of income supplementation sources.

History of U.S. Farming and Farm Poverty

Farm poverty has affected farmers throughout U.S. history (USDA, 2012). The federal poverty definition used by the U.S. Census Bureau has remained consistent since 1960 (U.S. Census Bureau, 2012). For this study, the definition of *poverty* used was the U.S. Census poverty line. The U.S. Census designed the definition of poverty so families can meet their basic needs (food, shelter, and clothing) at the poverty line level (U.S. Census Bureau, 2012).

During the 17th century, U.S. farming was restricted to areas near water transportation or population concentrations, except for farmers engaged in subsistence farming (Atack et al., 2009). Subsistence farming during that period entailed farms producing farm goods for personal use (USDA, 2012). The U.S. farming industry continued to expand as the British dispensed land grants to settlers (Frankema, 2010). Crops imported from Europe increased the diversity of crops grown by colonial farmers (Rousseau & Stroup, 2011). Tobacco was the first export crop from the United States, and the first tariff on agricultural goods was enacted in 1789 (Rousseau & Stroup, 2011).

The increasing value of agricultural production and corresponding taxes led American settlers to revolt against the British government. In 1776, the Declaration of Independence was drafted in protest of the British control on agricultural land as well as for other reasons (Xi, 2010). In 1790, the value of tobacco exports was $4.36 million (USDA, 2012). The total U.S. population was 4 million people in 1790, and farm labor comprised 90% of the U.S. labor force (Xi, 2010). Farmers endured hardships while adapting to the new environment (Xi, 2010). The U.S. farming industry continued to grow into the 18th century. George Washington recommended establishing a National Board of Agriculture, and the USDA began based upon his initial recommendation (USDA, 2012).

The 18th century brought increased farm product imports to the United States, including sheep and cattle. The number of farms increased as westward expansion occurred (Ayers, Gould, Oshinsky, & Soderlund, 2010a). During this century, the farming industry became widely established, and farm products were the largest export

(USDA, 2012). Though slave labor was abolished in the northern United States following the revolution in 1783, slave labor grew in the Southern states and by the early to mid-1800s, slaves displaced indentured servants as farm laborers even though importing new slaves was outlawed in 1807 (Ayers et al., 2010a). In the 1800s, Americans farmed with crude wooden implements and sowed and reaped their crops by hand using oxen and horses (Ayers et al., 2010a). The beginning of the technological age of the U.S. farming industry occurred in the last quarter of the 18th century with the invention of the cotton gin, the iron plow, and the cradle and scythe (USDA, 2012). The farming industry was a permanent part of the U.S. economy (USDA, 2012). Numerous societies and groups formed to encourage and promote the farming industry during the 18th century (USDA, 2012).

The 19th century included the expansion of the U.S. landmass through purchases and treaties, increasing the acreage farmed and U.S. crop diversity (Ayers et al., 2010a; Ayers, Gould, Oshinsky, & Soderlund, 2010b). Farmers pushed westward to overcome low income and poor quality of life (Ayers et al., 2010b). The first quarter of the 1800s was a time of expansion and invention for farmers. Turnpike roads, steamboats, the Erie Canal, the steam engine, and increasing communication created expanded markets for farmers (Ayers et al., 2010b). Increased U.S. agricultural exports to other countries and manufacturing and technological advances further increased farm productivity (USDA, 2012). Farmers invented different types of farm machinery in the 1800s, including the steel plow, the reaper, the mechanical thresher, the grain drill, grain elevators for storing grain, a mowing machine, the windmill, the cultivator, steam tractors, the harrow, barbed

wire, binders, combines, cream separators, and gasoline tractors (USDA, 2012). By 1870, U.S. farm production had increased to include commercial farms throughout the country (USDA, 2012). In 1860, 2.5 million farms existed in the United States, and 53% of the labor force in the United States worked on a farm (USDA, 2012). Between 1875 and 1899, horses replaced hand labor on U.S. farms (Hirschman & Mogford, 2009). The beginning of the tractor era occurred thereafter, replacing horses first with steam tractors and later with gasoline tractors (Hirschman & Mogford, 2009). The introduction of mechanized farming increased the number of farms to more than 4.5 million in the United States in 1880 (Hirschman & Mogford, 2009).

In the first quarter of the 1900s, the number of farms in the United States reached more than 6 million, and the farming industry experienced a brief period of prosperity (Hirschman & Mogford, 2009). The collapse of farm prices and the resultant agricultural depression in the 1920s and 1930s followed the prosperous years (Hirschman & Mogford, 2009). The Great Depression slowed farm growth but increased innovation, and farmers were able to take advantage of technological advances (Hirschman & Mogford, 2009). The effects of the stock market crash in 1929 and the dust bowl that occurred in the 1930s contributed to hardships suffered by farmers (Block, 2009). In response, the U.S. government created economic policy named the New Deal.

Stimulus acts designed to improve demand and supply were enacted in the New Deal (Block, 2009). The Agricultural Adjustment Act included a crop reduction program whereby farmers received payment to remove acreage from production (Block, 2009). The Agricultural Adjustment Act also included a commodity subsidy program that paid

farmers the difference between the government-established fair price and the market price for commodities farmers produced (Block, 2009). Both subsidy programs (crop reduction program and commodity subsidy) were controversial across political lines (Hellerstein, 2010). Conservatives questioned reducing U.S.-produced food yet importing food from other sources (Block, 2009). Liberals questioned the need for farm subsidies (Block, 2009). Regardless of party dissention, both subsistence programs are still in place (Hoppe & Banker, 2010; Hurt, 2010). Significant increases in production occurred based upon the introduction of mechanical farm vehicles and evolving technology (Hoppe & Banker, 2010; Hurt, 2010). On average, farm income remained below poverty level in the United States during the 20th and into the 21st centuries (Hoppe & Banker, 2010; USDA, 2012). Production by farmers increased throughout the last half of the 20th century and at the beginning of the 21st century. Farm production was not able to outpace the increasing cost of food production, and farm poverty continued to be problematic (Pressman, 2008). Farmers in the United States faced poverty, as did farmers located in underdeveloped nations (Hazell et al., 2010), even though U.S. farm production, measured by the amount of crops produced per farmer, is the highest in the world (Fuglie, 2010; USDA, 2012).

Some of the challenges that U.S. farmers faced were beyond the farmers' control (Hoppe & Banker, 2010; Miljkovic, Jin, & Paul, 2008; USDA, 2012). Farmers had little production cost control and no control for the prices received for their products (Miljkovic et al., 2008). The market drove prices, and environmental factors, international trade, and governmental commodity pricing affected the market (Ali &

Gupta, 2011; Atack et al., 2009; Nazlioglu, 2011). Farmers faced declining prices for their products because of governmental policies (DiCaprio, 2010). The North American Free Trade Agreement (NAFTA), the Andean Trade Preference Act, World Trade Organization's (WTO) Permanent Normal Trade Relations, and the General Agreement on Tariff and Trade are examples of government policies that affect U.S. farm product pricing (DiCaprio, 2010; Zahniser, 2011; Zahniser, Meilke, & Rude, 2009).

The NAFTA transition concluded in 2008 and removed barriers of agricultural trade between the United States, Canada, and Mexico (Zahniser, 2011; Zahniser et al., 2009). The NAFTA opened up trade of almost all agricultural products grown in the member countries (Zahniser, 2011; Zahniser et al., 2009) and was to equalize wages between Mexico and the United States, but wage equalization has not occurred (Javalgi et al., 2010). The NAFTA lowered prices for food and commodities imported from other countries, thereby benefitting consumers (Javalgi et al., 2010; Zahniser, 2011; Zahniser et al., 2009). A decline in illegal immigration from Mexico has not occurred (Rosenblum, 2012). Farm prices dropped on corresponding produce after the introduction of less expensive foreign-grown produce through NAFTA (Zahniser, 2011; Zahniser et al., 2009). Agricultural price drops had a negative effect on farmers in general, although the largest farms benefited from NAFTA by moving some operations to Mexico (Javalgi et al., 2010). The greatest benefit from NAFTA was to multinational companies that took advantage of the tariff-free export and import climate provided by the act (Javalgi et al., 2010). These companies took advantage of the correspondingly lower wage base in Mexico to move operations from the United States to Mexico (Zahniser, 2011; Zahniser

et al., 2011). Using Mexican resources to produce their products was less expensive than U.S. production costs (Kinnucan & Cai, 2010). Americans imported Mexican products into the United States to take advantage of subsidy-inflated farm pricing (Anderson & Nelgen, 2011). The removal of these trade barriers benefited consumers but the resultant lower pricing negatively affected U.S. farmers (Zahniser, 2011; Zahniser et al., 2011).

The Andean Trade Preference Act development program increased imports of produce from Bolivia, Columbia, Ecuador, and Peru (DiCaprio, 2010). Imports from the Andean Trade Preference Act countries displaced sales of produce from U.S. farmers (DiCaprio, 2010). The WTO inclusion of China in the Permanent Normal Trade Relations agreement increased the potential for Chinese import of agricultural products (Zahniser, 2011; Zahniser et al., 2011). Chinese products have lower labor and production costs when compared to U.S. production costs (Zahniser, 2011; Zahniser et al., 2011). Zahniser (2011) also credited the General Agreement on Tariff and Trade with lowering consumer pricing by increasing global imports of agricultural products. Global imports of agricultural products lowered the price for farm products, which was a benefit for consumers at the expense of U.S. farmers (Zahniser, 2011; Zahniser et al., 2011).

The reduction of farm poverty in the United States related to farmers adding supplemental income to farm income (Hazell et al., 2010). The income of farmers since 1993 depended on farm income less than on other supplemental income sources (USDA, 2012). The selection of profitable income supplementation was critical to the

sustainability of U.S. farming, so the USDA began monitoring income supplementation sources in 1997 (USDA, 2012).

No link existed between agricultural profits and the value of farm assets (Blank, Erickson, Nehring, & Hallahan, 2009). Even though farmers did not make enough farm income to live above the poverty level, their land appreciated, creating an ever-appreciating asset (Blank et al., 2009; Guiling, Doye, & Brorsen, 2009). The increase of farmland value created a public perception that farmers were rich (Ellison, Lusk, & Briggeman, 2010). The perception of nonfarming Americans regarding farm subsidies remained favorable based upon the belief that locally grown food was important (Hoffman, 2009). According to Ellison et al. (2010), U.S. taxpayers believed that all farmers, even farmers who operated small farms, had a higher level of income than their own and that subsidies for farmers contributed to that income. However, if the wealth of farmers was in their land, the only way to access that wealth was if they sold their land (Mishra & El-Osta, 2009). The live poor, die rich scenario for farmers arose from a comparison of low farm income with high farmland value (Blank et al., 2009).

Farmers stayed on the farm for reasons other than wealth accumulation (Hoppe, 2010). The decision to stay on the farm had limited rationale in financial decision-making processes, but was persistent no matter the income (Calus & Van Huylenbroeck, 2010; Farmar-Bowers, 2010). Farmers often stayed on the farm despite financial difficulties because of perceived cultural reasons such as family virtue, commitment, individual achievement, lifestyle, tradition, and religious beliefs (Calus & Van Huylenbroeck, 2010; McBride, 2011). Farming was more than a profession or

occupation. Leaving their farms had a negative effect on U.S. farmers' psychological and mental health, even if the outcome was financially positive (Price & Evans, 2009).

The importance of land succession was high for farmers because of the cultural and traditional associations with family farm ownership (Mishra et al., 2010b; Riley, 2011). Next generational farmers showed more concern regarding financial stability and a comfortable lifestyle than did prior generations (Mishra et al., 2010b; Wheeler, Bjornlund, Zuo, & Edwards, 2012). Intergenerational succession often depended on the financial gains possible for next generational farmers, not on the value of the asset being transferred (Ahearn, 2009; Mishra et al., 2010b). The decision to stay on the land depended upon income streams available for farm sustainability (Mishra et al., 2010b). Income supplementation availability was a part of successional decision making, no matter the value of the farm asset (Mishra et al., 2010b). Between 2010 and 2015, more than 50% of farmers in the United States will be old enough to retire (Mishra et al., 2010b). The number of farmers younger than age 35 years has declined by 86% since 1987 (Mishra et al., 2010b). Farmers younger than age 35 years represented only 20% of U.S. farmers in 2007 (Mishra et al., 2010b; USDA, 2012). Intergenerational succession was important to the continuance of U.S. farming (Mishra et al., 2010b).

Importance of Farming in the United States

The positive contribution made by farmers in the United States to the security of U.S. food supplies has been consistent (Hoppe & Banker, 2010; USDA, 2012; Valdes & Foster, 2010). The United States has had a secure food supply throughout its history (Jackson, 2010). The efficiency of U.S. farm production has contributed to the lack of

food anxiety in the United States, as well as to the economic stability of the country (Jackson-Smith & Jensen, 2009). Agricultural operations generated $221 billion in gross cash income, spent $171 billion in farm expenses, and created $50 billion in net farm income in 2002 (USDA, 2012). These numbers increased in 2007, with $71 billion in net farm income reported and the market value of agricultural products sold reported at $297.2 billion (USDA, 2012). Agricultural operations have had a positive economic effect on the gross domestic product and on the economy of the United States (Jackson-Smith & Jensen, 2009). The farming industry has also contributed economically to transportation, processing, and marketing (Elder, Houlden, Kotcherlakota, & Tenkorang, 2009; Jackson-Smith & Jensen, 2009). The farming industry contributed to the U.S. wholesale and retail food industry by producing U.S. farm products (Jackson-Smith & Jensen, 2009). In 2011, the farming industry contributed 4.3% of the gross domestic product (Jackson-Smith & Jensen, 2009; USDA, 2012).

Economies achieved by scale and scope are important reasons for farm consolidation (Melhim, O'Donoghue, & Shumway, 2009). Profitability for farmers is important to the sustainability of U.S. farming, but concerns exist that monopolies of U.S. food sources may arise if the economic trend does not alter (Melhim et al., 2009). If the competitive nature of the farming industry results in fewer, larger farms, then the long-term viability of small family farms may be threatened (Birner & Resnick, 2010; Hadrich & Olson, 2011; Melhim et al., 2009). The loss of farmland to gentrification and the increasing trend of estate formation rather than the continuance of the family farm influence the number of acres in farm production (Nelson, Oberg, & Nelson, 2010).

Urban sprawl, industrialization, and suburban growth also contribute to declining U.S. farm acreage (Nelson et al., 2010).

While commodity prices declined in general, prices, rents, and other costs of agricultural production increased (Jackson-Smith & Jensen, 2009). A cost price disconnect existed between growth in output, which increased, and growth in income, which did not rise to match output (Jackson-Smith & Jensen, 2009). The decrease in the number of farms and the declining acreage in farm production affected farm production, as shown in Figure 3 (USDA, 2012).

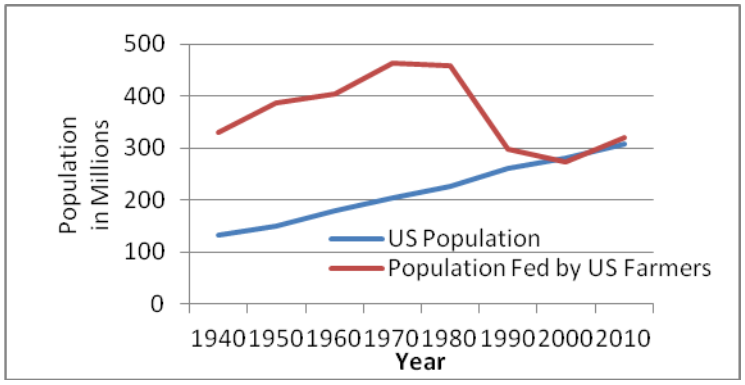

Figure 3. Total U.S. population versus the number of people fed by U.S. farmers 1940-2010 (USDA, 2012; in the public domain, see Appendix A).

Since 2003, farm ground acreage has decreased, the number of farmers has decreased, and the farms that remained became larger entities (Melhim et al., 2009; USDA, 2012). An estimated 98% of U.S. farms in 2010 were family farms, which was consistent with data collected in 2004 and 2007 (USDA, 2012). The USDA classified 90% of all farms in 2004 as small family farms, and classed 8% of farms as family farms producing larger amounts of annual farm income (USDA, 2012). The USDA classified a small family farm as being family owned and operated but generating less than $250,000

annually in farm income (USDA, 2012). In 2007, small family farms decreased to 88% from the 90% reported in 2004 (Hoppe & Banker, 2010; USDA, 2012). Small family farms are the most threatened segment of all U.S. farms (Hoppe & Banker, 2010; USDA, 2012). The challenge of keeping the family farm viable and maintaining a lifestyle that does not create enough income to live above poverty level is stressful on farmers (Price & Evans, 2009). That stress combined with the danger of farm living created a unique stress for farmers that remained at a high level throughout farmers' lifetime (Price & Evans, 2009).

Farm Stress in the United States

Farmers face stressors and challenges to continue farming (Price & Evans, 2009). Farming was the 12th most stressful U.S. occupation when compared with 130 other high-stress occupations in 1998 (Price & Evans, 2009). Farming had more fatal at-work injuries than other occupations (Jones, Parker, & Ahearn, 2009; Q. Williams et al., 2010). In 2008, the overall occupational fatality rate of U.S. workers was 3.6 per 100,000, but agricultural workers sustained higher occupational fatality rates at 28.7 per 100,000 workers (Jones et al., 2009; Scott, Earle-Richardson, Krupa, & Jenkins, 2011; Q. Williams et al., 2010). Injuries sustained by agricultural workers were also higher than other occupations, with agricultural work prioritizing as the most dangerous in 2008 and prioritizing consistently in the top three most dangerous since 2002 (Jones et al., 2009; Myers, Cole, & Westneat, 2009; Q. Williams et al., 2010). Farmers are at risk for injury and illness based upon the dangers inherent in farm operations such as chemicals, machinery, lifestyle, animal interaction, and distance from emergency medical care (Price

& Evans, 2009). In addition, high rates of suicide, illness, and occupational injury plagued farmers, attributed to the stress factors involved in farming, including financial stressors (Price & Evans, 2009).

The viability of the family farm decreased between 2002 and 2012, thus increasing stress on farmers (Price & Evans, 2009). Self-esteem and personal worth were questioned when farmers were unable to provide adequately for their families (Lonnqvist et al., 2009). Farmers' stress levels affect farmers' health (Price & Evans, 2009). The high stress level revealed for farmers contradicts the perception of farmers' bucolic rural lifestyle (Price & Evans, 2009). Stress-induced illnesses are overlooked because farmers do not seek medical help for such issues as often as those engaged in other occupations (M. Alston, 2012; Brannen, Emberly, & McGrath, 2009; Price & Evans, 2009).

A matrix of stress factors creates farm stress (Brannen et al., 2009). Farm stress factors include danger in daily living, declining profit margins, low family income, and financial pressure (Brannen et al., 2009). The desire to carry on a family tradition, a bond with the land farmed, and the physical ability to continue the farming responsibility contribute to farmer stress (Brannen et al., 2009). Factors beyond farmers' control include urban sprawl, competitive global markets, and devaluation of their way of life (Timmer, 2010). Additional stress factors include extended work hours for long periods and succession concerns (Brannen et al., 2009).

Poor quality of life and insufficient farm income were the highest farm stress factors contributing to mental illness, depression, spousal abuse, and suicide in farm families (M. Alston, 2012; Brannen et al., 2009). Farm stress factors include unique

financial stressors (M. Alston, 2012). Farmers cannot control the cost of producing the farm goods sold or the price received for the goods when sold (M. Alston, 2012). Commodity pricing, not local supply and demand, forms the basis for sale prices (M. Alston, 2012). Jackson-Smith and Jensen (2009) noted financial difficulty is the factor that most concerns farmers. M. Alston (2012) indicated a lack of financial resources as the leading cause of farm family suicide based upon the inability to create enough income no matter the hours spent working. Regardless of the amount of hours spent in farm work, the increase in farm production, and improved production efficiency, farm poverty continues to be a part of the U.S. farming industry (USDA, 2012). Profitable income supplementation sources are recommended to relieve financial stress (Atwell, Schulte, & Westphal, 2010; Y. Chang, 2012; El-Osta, 2010; Inwood & Sharp, 2012; Poon & Weersink, 2011).

Farm Income Supplementation Sources

The USDA has different categories of farms (USDA, 2012). Of 2.2 million U.S. farms in 2007, most were family owned (Hoppe & Banker, 2010; USDA, 2012). Small family farms comprised 88% of U.S. farms in 2007 (Hadrich & Olson, 2011; Hoppe & Banker, 2010). In the USDA 2007 census, all family farms averaged a net loss on farm income and small family farms were vulnerable to economic shutdown (USDA, 2012). Small family farms are the most vulnerable segment and benefit from income supplementation (Hoppe & Banker, 2010; USDA, 2012). Small family farms relied on income supplementation for continued operation (USDA, 2012). From 1997 to 2011, the contribution of farm earnings to farm daily operation expenses was minimal, and

supplementation of other income sources accounted for 90% of the overall farm family household income (USDA, 2012).

Farm income varies each year, with farmers sustaining losses and profits in varying degrees (Mishra, El-Osta, et al., 2009). Farmers have no determinate method of predicting income or loss from year to year (Garcia-Alonso, Torres-Jimenez, & Hervas-Martinez, 2010; Hoppe & Banker, 2010; USDA, 2012). To achieve nonpoverty status, U.S. farmers participate in different methods of income supplementation (U.S. Census Bureau, 2012; USDA, 2012). Farm-related income supplementation sources included in the USDA census are (a) government subsidies, (b) custom work and other agricultural services, (c) sales of other products, (d) patronage dividends and refunds from cooperatives, (e) insurance payments, (f) cash rent or share payments, and (g) agtourism and recreational services (USDA, 2012). Off-farm income is also a method of farm income supplementation (Jette-Nantel, Freshwater, Katchova, & Beaulieu, 2011) and farmers often borrow against farm assets to improve cash flow (Hoppe & Banker, 2010; USDA, 2012).

The U.S. Census Bureau poverty line does not account for farm assets, which may be substantial, and the ability to borrow against farm assets is a way that farmers contribute to cash flow (USDA, 2012). Borrowing against farm assets is a method to improve cash flow, but sustained losses leave farmers unable to repay the loans (Gunderson, Detre, Briggeman, & Wilson, 2011). Farmers cannot sustain borrowing against farm assets to maintain living standards for long periods of time (Hoppe & Banker, 2010; USDA, 2012). Farmers who achieved gross sales of $100,000 in 2011 had

a high debt to asset ratio, whether or not they had a positive net operating margin (Harris, Dubman, Williams, & Dillard, 2009; USDA, 2012). The farmers were marginally solvent, having borrowed against the farm asset and creating a debt to asset ratio greater than 40% (Harris et al., 2009; USDA, 2012). Atwell et al. (2010) recommended not borrowing against the farm asset but implementing methods to increase income (Atwell et al., 2010).

Off-farm employment. Off-farm employment by one or more members of a farm family is a common method of income supplementation by farmers (USDA, 2012). Off-farm employment combined with farm work is very stressful for farmers (M. Alston, 2012; Brannen et al., 2009). Farm stress plays a significant role in increased anxiety in farmers and contributes to increased hypertension as well as depression (Jones et al., 2009). Farmers also have a high rate of illness and suicide (M. Alston, 2012; Jones et al., 2009; Price & Evans, 2009). Farmers engaged in both on-farm employment and off-farm employment experience increased stress (Jones et al., 2009; Price & Evans, 2009). Since 2002, nonfarm employment in rural areas increased and farm employment declined (Mishra et al., 2010a). A relationship exists between the increase of nonfarm employment and the decline of farm employment when farmers participate in nonfarm employment to sustain the farm (Mishra et al., 2010a). The shift from traditional agriculture where all family members worked the farm to off-farm income supplementation by farmers increased income in the farm sector but reduced the time available for farmers to work the farm (Valdes & Foster, 2010). The correlation of reduced time to farm (by farmers who work off-farm) and increased cost of production

has been documented (Guthman, 2008; Jackson-Smith & Jensen, 2009; Valdes & Foster, 2010).

The limited availability of employment in rural areas affects farmers looking for off-farm employment (USDA, 2012). Average earnings 20% below similar work in more urban areas characterize rural labor markets (USDA, 2012). Typical employment opportunities in rural areas are agricultural service employers, industry jobs, and manufacturing jobs (Hoppe & Banker, 2010; USDA, 2012). The concentration of jobs around agricultural service employers limits farmers to seasonal employment opportunities that correspond with farm production. Seasonal employment negatively affects production of agricultural products (Hoppe & Banker, 2010; USDA, 2012).

A lack of education beyond the high school level influences employment opportunities outside the agricultural sector for farmers (USDA, 2012) and also influences farmers' ability to understand and engage in innovative farm and business practices (Oreszczyn, Lane, & Carr, 2010). In 2007, 80% of small farmers over the age of 50 had no more than a high school education (Hoppe & Banker, 2010; USDA, 2012). Ethnicity did not appear to be a factor in farmer employment, as more than 85% of the poorest farmers in 2007 were White (USDA, 2012). Minority farmers are generally fewer in number in the farm poverty ratio than minorities are in the general population poverty ratio (USDA, 2012). The effect on a farm when the farmer works off-farm is mixed; the ability to reach farm production goals is more difficult, but the added income is helpful (Price & Evans, 2009; USDA, 2012). Stress contributes to increased illness and suicide and decreased farm production when a farmer works off the farm (M. Alston,

2012; Jones et al., 2009; Price & Evans, 2009). The archival record data do not include off-farm income data (USDA, 2012). Other methods of income supplementation that enable farmers to remain on the farm are recommended (Atwell et al., 2010; Brandth & Haugen, 2011; Y. Chang, 2012; El-Osta, 2010; Inwood & Sharp, 2012; Poon & Weersink, 2011).

Governmental subsidies. Income supplementation through governmental subsidies and farm program payments is another method used by farmers to supplement farm income. The archival record data include governmental subsidy information (USDA, 2012). The USDA administers government subsidy payments under programs available to farmers (USDA, 2012). Low rental prices to use government-owned land through (a) the Bureau of Land Management, (b) the U.S. Forest Service, (c) the National Park Service, and (d) state agencies such as the State Land Boards are available to some farmers. The USDA considers these farm subsidies and they are included in the subsidy information in the USDA census (USDA, 2012).

Sixty percent of farmers received no government payments designed for social welfare (e.g.,welfare; subsidized housing; food stamps; Women, Infants & Children; or wage rate subsidies) in 2007 (USDA, 2012). Farm families might not have been eligible for food stamps and other government social welfare assistance programs because of their self-employment status, White ethnicity, or marital status and because farmers often own their own homes as part of the farm operation (USDA, 2012). Farm families use social welfare programs 50% less than nonfarm families, and the archival record data did not

include the use of social welfare supplementation available to the general U.S. population.

Farm subsidies are distributed as coupled and decoupled payments (Daniel & Kilkenny, 2009). Decoupled payments are those subsidies not attached or dependent upon farm production (Acs et al., 2010). Decoupled payments are similar to those paid under the 1996 Federal Agriculture Improvement and Reform Act (Bonfiglio, 2011). Coupled payments are those subsidies attached and dependent upon productivity and linked to raising welfare in rural areas (Daniel & Kilkenny, 2009). Coupled farm subsidy payments made through government agencies relate to commodity production, working-land programs, land-retirement programs, and wetland protection (Kropp & Whitaker, 2011). Because coupled payments are not industry wide, and are not targeted to small or at-risk farmers, these payments could not be a reliable industry-wide income supplementation plan (Viaggi, Raggi, & Gomez y Paloma, 2011). Farmers in some areas receive substantial payments through these programs (Kropp & Whitaker, 2011).

Determination of the equity of farm subsidies has been problematic; subsidies paid to larger farms are in larger amounts, whether the payments are from coupled or decoupled programs (O'Donoghue, 2009). The inequity of the subsidy payment structure to smaller, more vulnerable farms has been questioned (Kropp & Katchova, 2011). The effect of different farm subsidy payments on farms is also controversial, with specific concern regarding the effect on farm size and diversification of crops (O'Donoghue, 2010; O'Donoghue, Roberts, & Key, 2009). Since the 1960s, risk-adverse farmers have

diversified their crop production portfolios to ensure crop production, but diversity created lower overall returns (O'Donoghue et al., 2009).

The Federal Crop Insurance Reform Act of 1994 created a situation whereby farmers could receive subsidies for insurance payments, and insurance of crops increased after 1994 (O'Donoghue et al., 2009). Diversity of crops decreased after the Federal Crop Insurance Reform Act as farmers planted the crops with the highest prices no matter the risk, purchased crop insurance against possible production losses, and received subsidy payments to offset the cost of crop insurance (Ginder, Spaulding, Tudor, & Winter, 2009; O'Donoghue et al., 2009). Overproduction of some commodities and jeopardized crop rotation plans resulted in surplus crops with reduced pricing (Cardin-Pedrosa & Alvarez-Lopez, 2012; O'Donoghue et al., 2009) and was an unplanned and unforeseen consequence of the Federal Crop Insurance Reform Act (O'Donoghue et al., 2009). A similar problem arose with the 2002 Farm Act, whereby the decoupled direct payment plan included in the Act affected farmers' acreage decisions (O'Donoghue & Whitaker, 2010). The use of governmental payments to control farm prices is controversial (Effland, 2010; Kinnucan & Cai, 2010; Mishra, El-Osta, et al., 2009).

Opponents of farm subsidies disagree with government farm policy (Hamblin, 2009). A controversial issue is obesity in the United States, blamed on farm subsidies because increased farm production may make fattening foods cheap and available (J. Alston, Mullally, Sumner, Townsend, & Vosti, 2009). However, U.S. farm policy had a small effect on commodity pricing, which controlled the relative pricing of foods containing fats (J. Alston et al., 2009; Lock et al., 2010). Research and development

(R&D) had an effect on the price of commodities containing fats, while the public perceived R&D as positive and farm subsidies as negative, so blame was not placed on R&D by subsidy opponents (J. Alston et al., 2009; Ellison et al., 2010). Contrary to the claim that farm subsidies contributed to obesity in the United States, U.S. caloric consumption of high fructose corn syrup made from subsidized corn did not relate to the amount of corn produced or the amount of subsidies received by farmers for corn production (J. Alston et al., 2009).

For those who receive subsidy payments, farm subsidies improve farmers' quality of life (Mishra et al., 2010a; Mishra, El-Osta, et al., 2009). Farm subsidies contribute to increased organic and ecological farm practices because of increased farm income (Darnhofer, Fairweather, & Moller, 2010; Leviston, Price, & Bates, 2011; O'Donoghue, MacDonald, Vasavada, & Sullivan, 2011). Biodiversity and ecological production practices increase when profitability is less critical, as is the case when farmers receive farm subsidies (Darnhofer et al., 2010). Farm subsidies contribute to increased income, which increases higher education opportunities for farm children (Mishra et al., 2010a). Higher education is an unexpected benefit of increased farm income through sustained and long-term governmental subsistence programs (Mishra et al., 2010a; Mishra, Wilson, et al., 2009). Decreasing financial constraints enables farmers to invest in farm children's education (Mishra, El-Osta, et al., 2009). As their education levels increase, the farm children receiving higher education frequently move into the workplace rather than staying and working the family farm (Mishra, Wilson, et al., 2009).

The positive effect of higher education for farm children is another potential problem for farmers. As education increases, children are less willing to stay and work the family farm, which reduces the labor available to farmers and interrupts succession plans for the family farm (Mishra et al., 2010a). However, increasing a farmer's education increases the farmer's potential for long-term success, and increasing education for farmers broadens the possibilities for supplementing their income (Mishra et al., 2010a). Farm children who receive higher education and remain on the farm have a higher success level once educated (Mishra et al., 2010a).

Opponents to farm subsidies often call governmental farm payments farm welfare. Subsidy opponents cite increased total income for farmers since 1992 to prove their point that farm income increased at the expense of the taxpayer through subsidies (El-Osta, 2010). The increase in income for farmers since 1992 was not dependent upon increased or widespread farm subsidy payments (El-Osta, 2010). The increase in total income for farmers included supplementation sources other than governmental subsidies. For some farmers, governmental subsidies had a significant effect on their income, whereas for others the effect was not significant (El-Osta, 2010).

The expiration of the WTO Peace Clause in 2004 enabled member countries to dispute U.S. agricultural subsidy programs (Anderson & Nelgen, 2011; Keeney & Beckman, 2009; Kinnucan & Cai, 2010; Moon, 2011). The subsequent challenge by Brazil of the U.S. cotton subsidy and the suspension of the Doha Round trade negotiations created the potential for a challenge of U.S. farm subsidies (Anderson & Nelgen, 2011; Keeney & Beckman, 2009; Kinnucan & Cai, 2010). The basis for the

complaints was fear of price control and fear of potential price fixing due to multi-billion-dollar subsidy support for U.S. farms (Anderson & Nelgen, 2011; Keeney & Beckman, 2009; Kinnucan & Cai, 2010). The focus on U.S. farm subsidies by the WTO brought up the question of equity in U.S. farm policy for small versus large farms (Kinnucan & Cai, 2010; Mishra et al., 2009). The U.S. farm subsidy coupled payments went to farmers who grew the crops and met the production quotas necessary for subsidization (Effland, 2010; Kinnucan & Cai, 2010; Mishra et al., 2009). The location of the farm was important to the amount of subsidies farmers received. Farms in high-production regions received more subsidy payments than those farms in low-production regions (Mishra, Moss, et al., 2009). Farmers cannot depend on subsidies for long-term and consistent income supplementation in any region of the United States because of policy changes and expiring subsidy dividends (Effland, 2010; Lobianco & Esposti, 2010). In some regions, subsidies are a significant source of income to some farmers (Kinnucan & Cai, 2010; Mishra, Moss, et al., 2009).

The effect farm subsidies have on land values is controversial as well. The 2008 Farm Bill (Pub. L. No. 110-246) provided more than $284 billion in farm subsidies between 2008 and 2012 (Gomez-Limon & Sanchez-Fernandez, 2010). Whether subsidies benefit the producers, as most subsidy payments are allocated to producers, or benefit the landowners, whose land values increased, was questionable (Gomez-Limon & Sanchez-Fernandez, 2010; Kirwan, 2009). Farmland pricing increased based upon the land-attached farm subsidy programs such as the crop reduction program that was transferable when land sold under the crop reduction program (Gomez-Limon &

Sanchez-Fernandez, 2010; Guzman, Gonzalez de Molina, & Alonso, 2011). The stabilization of farm prices also provided a benefit by stabilizing farmland pricing (Gomez-Limon & Sanchez-Fernandez, 2010). Of the farm subsidies, 75% were collected through rental property, although region played a part in the division of percentage (Kirwan, 2009). Local competitiveness and rental prices affected the distribution between owners and renters of farmland (Kirwan, 2009).

Proponents for governmental farm subsidies believe that subsidies meet the goal of increasing farm income (Kirwan, 2009). The subsidies increase farm income and capitalize subsidy funding into land values, thus benefitting both landowners and farmers who rent farm ground (Kirwan, 2009). Regional differences affect the distribution of subsidies (Mishra, Moss, et al., 2009). Some regions receive a larger portion of subsidy funding than other regions (Mishra, Moss, et al., 2009). The inequity is that regional location is a factor when using farm subsidies as an income supplementation method (Mishra, Moss, et al., 2009).

Farm policy programs in the United States are controversial, conflicting, often misunderstood, and misused. The basis for farm policies is complex based upon the concerns of the government and not farm need (Effland, 2010). Effland (2010) described the farm policy program in general as a "social mess" (p. 2). Complex and difficult, the U.S. farm subsidy policy contributes to farm income. Whether farm income supplementation comes from the government in the form of farm subsidy payments or from other sources such as agtourism or off-farm employment, the supplementation of

farm income is critical to the future of U.S. farming (Daniel & Kilkenny, 2009; Gomez-Limon & Sanchez-Fernandez, 2010; Mishra et al., 2010a; O'Donoghue et al., 2009).

Custom work and other agricultural services. *Custom farmwork* (also called *custom farming*) contributes to farm income in the United States (USDA, 2012). Custom work and other agricultural service income information comprise part of the archival record data (USDA, 2012). Farmers are able to use their own equipment to assist other farmers with such work as planting and harvesting to supplement income (Aakre, 2011). The most frequent custom work occurs when farmers use harvesting and planting equipment to custom farm additional land for a predetermined and contracted amount (Aakre, 2011).

Other custom work involves using specialized equipment to apply pesticides (Aakre, 2011). Farmers also perform other agricultural services, including help with livestock operations, dairies, birthing, and irrigating (Aakre, 2011). The USDA includes other types of agricultural service income in custom farmwork only if the farmer is not an employee of the other farm (Aakre, 2011; Mishra et al., 2010a). The determinate factor for whether income is custom farmwork or off-farm income is the internal revenue designation (USDA, 2012). The use of custom work to supplement farm income is extensive in some states and negligible in others (Aakre, 2011). In those regions with large farms and high corn, wheat, and soybean production, custom work is common.

State extension services working under the state universities release annual rates for custom work for their area (Aakre, 2011). Other states with smaller farm sizes, less acreage in farm production, or regional topography that inhibits large tract farming have

less custom work (Aakre, 2011). The USDA assists cooperative extension services to publish local custom work rates (USDA, 2012). The basis for custom rate estimates are averages for Ohio, Indiana, Missouri, Iowa, Wisconsin, and Kansas adjusted for the area represented (USDA, 2012). To participate in custom work, farmers create a separate business, obtain insurance for that portion of the operation, and, in some areas, register for licensure (USDA, 2012). In some regions more than in other regions, farmers use custom work as an income supplementation method (USDA, 2012).

Sales of other products. The sales of other products are another source of income supplementation used by farmers. Archival record data include sales of other product income information (USDA, 2012). The sales included retail sales of products not considered farm produce (USDA, 2012). Sales of other products included forest products (except Christmas trees and maple), gravel, landscape material sales (rocks, lumber), or retail sales of other goods (USDA, 2012).

Sometimes retail shops were an extension of an agtourism business, and customers were at the farm already participating in other tourism-related activities that fall under the agtourism and recreational services supplementation area (Bunten, 2010; Hall & Page, 2009; Schmit & Gomez, 2011). Sales of other products by farmers were widespread and not specific to a region (USDA, 2012). Farmers may have had an advantage when operating small retail businesses because of their previous experience operating the farm (Cowan-Sahadath, 2010; Doz & Kosonen, 2010).

Operating numerous businesses could negatively affect the operation of a farm and the success of operating multiple businesses may depend on the entrepreneurial skills

of the farmer (Morgan, Marsden, Miele, & Morley, 2010; Sutherland, 2010). Farmers engaged in retail sales face small business challenges typical to small retail businesses not connected to the farming industry (Amami, Gharbi, & Frasson, 2010; Koster & Lemelin, 2009; Lawrence, 2008). The ability to make good business decisions using sound business practices is important to the success of small retail businesses operated by farmers (Friga & Chapas, 2008).

Patronage dividends and refunds from cooperatives. Farmers belong to agricultural cooperatives and use their membership for both buying and selling goods related to their farm business (Bijman & Doorneweert, 2010). Archival record data include cooperative dividend and refund income information (USDA, 2012). Members receive dividends in cash payments or retained per-unit certificates (Block, 2009; Briggeman & Jorgensen, 2009). The concept of cooperative ownership originated in areas where services needed by farmers were not available.

A farmer-owned cooperative is a way to bring needed services to rural areas as well as a way to market crops in larger amounts to a larger audience (Cook, 2011; Lliopoulos & Hendrikse, 2009; Soboh, Lansink, Giesen, & van Dijk, 2009). The use of cooperatives by farmers followed the rural electrification of the United States in the mid-1900s (Cook, 2011). Farmers began cooperatives to bring services needed, such as electricity, to rural areas (Cook, 2011).

Benefits of membership in a nonprofit cooperative are member dividends or patronage refunds allocated to members based either upon patronage amounts or upon membership percentage (Power, Salin, & Park, 2012; Soboh et al., 2009). The patronage

dividends are sometimes substantial if farmers use the cooperative to market their crops (Soboh et al., 2009). Patronage dividends are a way to supplement farm income and can be both sustained long term and predicted based upon use and membership contracts (Soboh et al., 2009). The use of patronage dividends and refunds from cooperatives to supplement farm income is widespread across the United States, with some regional separation based upon the rurality of the region (Soboh et al., 2009).

Insurance payments. In the 1930s, the U.S. government created crop insurance to assist farmers recovering from the dust bowl and the Great Depression, and insurance payment income information is available in archival record data (USDA, 2012). In 1980, during the farm crisis, the Federal Crop Insurance Act of 1980 expanded crop insurance (USDA, 2012). Ad hoc disaster assistance bills began after 1980, and each altered the insurance program until the Federal Crop Insurance Reform Act of 1994, which unified crop insurance coverage (USDA, 2012). The USDA Risk Management Agency manages crop insurance and other noninsurance-related programs (USDA, 2012). Crop insurance covers more than 100 different crops, as well as livestock (USDA, 2012). Plans for crop insurance exist, each with different coverage for different types of losses (J. Cooper, Zulauf, Langemeier, & Schnitkey, 2012; Ginder et al., 2009; USDA, 2012). Each is available as a stand-alone policy or as part of a package (J. Cooper et al., 2012; USDA, 2012).

Actual production history (APH) coverage provides insurance against yield losses from natural causes (Enjolras & Kast, 2012; USDA, 2012). Types of natural causes that create damage covered under APH include hail, wind, frost, excessive moisture, drought,

disease, and insect damage (Paulson, Schnitkey, & Sherrick, 2010; USDA, 2012). In the APH insurance plan, producers select the amount of average yield to insure up to 85% of the average yield for their area and select the price to insure (USDA, 2012).

Actual revenue history (ARH) is similar to the APH policy but instead of insuring historical yield, the ARH plan insures historical revenues (USDA, 2012). The ARH insurance policy is an endorsement to basic crop insurance policy and protects producers from low yields, low pricing, poor crop quality, or a combination of those problems (Ramirez & Carpio, 2012; USDA, 2012). The ARH is a revenue product structured to restate the APH yield procedures (Ginder et al., 2009; USDA, 2012).

Adjusted gross revenue insurance policies insure the entire amount of farm revenue, not just a particular crop (USDA, 2012). The adjusted gross revenue policy uses a percentage of gross farm revenue guarantee rather than specific crop insurance (USDA, 2012). The adjusted gross revenue policy uses information from prior farm revenue to calculate the guarantee policy revenue amount (USDA, 2012).

The dollar plan provides insurance against loss of value from damage that created a yield shortfall (Rejesus, Goodwin, Coble, & Knight, 2010; USDA, 2012). Production costs comprise the basis for the cost of the dollar plan; the payout occurs if the crop value is less than production costs (USDA, 2012). The producer selects a percentage of the maximum dollar amount stated in the policy that is equal to a catastrophic level of coverage or is able to purchase a higher coverage level if desired (USDA, 2012).

Group risk plan is a tool designed to insure a widespread loss of production at a county level (USDA, 2012). The county yield index is the basis for a group risk plan,

and payment is made to producers if the county yield falls below the trigger yield chosen by the producer when obtaining the insurance (Rejesus et al., 2010; USDA, 2012). Payments do not reflect individual loss and are only available for up to 90% of the average historical yield (USDA, 2012).

Group risk income protection (GRIP) protects against widespread loss of revenue at the county level on a particular crop (USDA, 2012). The GRIP insurance does not require farmers to have a poor yield to receive payment; the basis of the payments is not individual yields or revenues but the county yield estimates by the NASS and a trigger level chosen by the farmer (USDA, 2012).

The harvest revenue option under GRIP is a supplement to the basic GRIP insurance (Ramirez & Carpio, 2012; USDA, 2012). The harvest revenue option changes the trigger revenue by multiplying the county yield by either the expected price or the harvest price, whichever is greater, at the chosen percentage (USDA, 2012). The harvest revenue option supplement increases the potential for payment by expanding the coverage options (Ginder et al., 2009; USDA, 2012).

Livestock policies are available to insure against poor market prices but not peril (McPeak, Chantarat, & Mude, 2010; USDA, 2012). Under livestock coverage, producers are able to purchase insurance against low market pricing determined by the futures and options market (Sam, 2010; USDA, 2012). Two plans are available: livestock risk protection provides coverage against market price and livestock gross margin insures the difference between the feeding cost and the commodity price (McPeak et al., 2010; USDA, 2012).

Revenue protection insurance policies protect against yield loss from natural causes and against revenue losses when the harvest price is different from the projected price (Ginder et al., 2009; USDA, 2012). The types of natural causes included are the same that create coverage under APH: hail, wind, frost, excessive moisture, drought, disease, and insect damage (USDA, 2012). Farmers are able to select the percentage of yield insured and calculations between the greater of the harvest price or the projected price plus appraised production (USDA, 2012).

A harvest price exclusion supplement is also available for the revenue protection policy (USDA, 2012). If selected, the only basis of the insurance policy is the projected market price; calculations do not include the harvest price (Enjolras & Kast, 2012; USDA, 2012). If product of the projected price plus the appraised production multiplied by the projected price is less than the amount of protection, the farmer receives a payment (USDA, 2012).

Yield protection insures crops in the same manner as APH policies but uses a projected price to determine payment (USDA, 2012). Types of natural causes that create damage covered under APH are the same as in yield protection coverage: hail, wind, frost, excessive moisture, drought, disease, and insect damage (Rejesus et al., 2010; USDA, 2012). The basis for the projected price is futures and commodity pricing up to 100% if chosen by the farmer (USDA, 2012). Numerous endorsement options are available, including catastrophic risk protection against crop losses more than 50% (USDA, 2012). Crop and livestock insurance is complicated, and farmers work with a

crop insurance agent to determine which policies are cost-effective for their needs (USDA, 2012).

Cash rent or share payments. Cash rent or share payment income information is available in archival record data (USDA, 2012). Cash rents include leases to other farmers; oil, gas, or development companies; wind energy companies; and rights to hunt (Du & Hennessy, 2012; Nag & Reimer, 2011). Selling conservation easement areas is another method of share payments (LeVert, Stevens, & Kittredge, 2009). In each of these scenarios, the landowner leases the right to use owned land and receives money in exchange for that use (Nag & Reimer, 2011). Landowners may have two or more cash rent agreements that are compatible for the same land. Examples would be a farmer who has rights leased for oil and gas exploration, an agreement with a wind energy developer, and leased hunting rights (Harsh, Hamilton, & Wittenberg, 2010; Nag & Reimer, 2011; Smith, 2009; Valentine, 2010). The landowner may also receive surface damage payments coincidental to the cash rent agreement as reimbursement for crop reduction, surface damage during exploration or construction, or road construction (Smith, 2009).

Oil, gas, and other energy leases such as uranium exploration or shale exploration are common lease agreements between landowners and development companies (Smith, 2009). Wind energy development is a newer technology that benefits landowners by cash rent lease agreements that cover a long period, usually between 20 and 40 years (Harsh et al., 2010). The inclusion of a cash lease increases the value of farmland even if crop production is affected, based upon the income potential from the cash rent agreement (Kirwan, 2009; Laposa & Mueller, 2010). Managing mineral rights on farmland to

obtain a cash rent agreement that is beneficial to the landowner is of concern to farmers and landowners (Harsh et al., 2010; Smith, 2009; Valentine, 2010).

Hunting leases are a method of income supplementation for farm owners that enables farming of all acreage, but the amount of income potential is less than that of oil and gas (Kirwan, 2009; Munn, Hussain, Hudson, & West, 2011). The USDA considers hunting leases to be cash rent if the lease is for long-term use (Munn et al., 2011). Hunting rights may be divided for different game animals into separate leases with different groups (Munn et al., 2011).

Cash rent agreements between farmers are sometimes referred to as sharecropping agreements (Alasia, Weersink, Bollman, & Cranfield, 2009; Sen, 2011). Sharecropping contracts vary in scope and agreement (Ilbery, Maye, Watts, & Holloway, 2010; Sen, 2011). Sharecropping involves some type of crop share whereby the landowner receives a percentage of the production and the tenant receives a percentage of the production (Alasia et al., 2009; Sen, 2011). Sharecropping agreements are specific to the type of crop, the region, the tenant and landowner relationship, and the competition for the lease (Paulson et al., 2010; Sen, 2011). The agreements are sometimes profitable and work as an income supplementation source for ground that a farmer cannot farm him or herself or whose production requires specialized equipment that the farmer does not own and cannot afford (Sen, 2011).

Sharecropping agreements affect the profitability of land based upon the crops chosen for planting. Some agreements include the crop choices and planting options (Du & Hennessy, 2012). Other considerations included in sharecropping agreements are

applications and levels of applications, seed choice, planting, harvest criteria, production baselines, and cost sharing (Du & Hennessy, 2012). Sharecropping agreements are common in all regions but profitability and income supplementation effectiveness are dependent upon the agreement terms and production achieved (Du & Hennessy, 2012).

Cash rent agreements can increase income in significant amounts, and for some farmers cash rent agreements are effective supplementation strategies (Harsh et al., 2010). The use of cash rent agreements is widespread across the United States, but the leases, which form the basis for the income amounts, are for different types of use (Harsh et al., 2010; Kirwan, 2009). Long-term leases are the most effective income supplementation agreements because the longevity of the agreement provides stability (Du & Hennessy, 2012; Harsh et al., 2010; Valentine, 2010).

Agtourism and recreational services. Agtourism is the ability of farm families to include some type of tourism-based business in their daily farm operation in such a manner that the two businesses create a symbiotic relationship (Phillip et al., 2010). Agtourism and recreational service income information are available in archival record data (USDA, 2012). The types of tourism businesses that farmers add differ, depending on the farm and geographic location (Barbieri & Mahoney, 2009; Brown & Reeder, 2008; Forbord et al., 2012). Variations of agtourism enterprises exist, including pick-your-own produce, mazes, holiday farm experiences, and bed-and-breakfast experiences. Other agtourism enterprises include animal interaction such as horseback riding, hunting expeditions, clinics, and on-farm or on-ranch interactive experiences (Grande, 2011; Hackbert & Lin, 2009). Retail shops are a frequent extension when adding tourism to a

farm (Schmit & Gomez, 2011). Types of shops added include farmers' markets, farm product stands, gift shops, and handcraft shops (Schmit & Gomez, 2011). Tourism did not become a widespread industry in the United States until the westward expansion began to occur in the first quarter of the 19th century (Barbieri & Valdivia, 2010). In addition to those who explored the frontier, writers, public officials, presidents, and the wealthy traveled to experience life in the American West, to hunt, and to explore (Tew & Barbieri, 2012). Thus, agtourism was a part of the growth of U.S. tourism (Sheng, 2011). Tourists travel to take part in the lifestyle of farmers and ranchers, and the variety of experiences offered has increased (Tew & Barbieri, 2012).

Tourism comprises a significant segment of the U.S. economy, representing more than $1 trillion expended per fiscal quarter in 2011 (U.S. Bureau of Economic Analysis [BEA], 2011). Of the $1.2 trillion spent in the second quarter of 2011, $803.9 billion or 68% was direct sales of goods and services such as those sold and provided by agtourism ventures (BEA, 2011). The remaining $383.3 billion or 32% was indirect tourism-related spending such as the cost of farm production or the cost of an agtourism enterprise (BEA, 2011). Tourism-related employment in the second quarter of 2011 involved the employment of 7.7 million persons, with 5.4 million or 71% of those being direct tourism jobs where the worker produced goods and services sold to tourists, and the remaining 2.3 million or 29% were indirect tourism-related jobs (BEA, 2011).

Agtourism is not a new concept, and research exists on agtourism as a method of rural economic development and farm income supplement (Barbieri & Mahoney, 2009; Barbieri, Mahoney, & Butler, 2008; Barbieri & Mshenga, 2008; Barbieri & Valdivia,

2010; Brandth & Haugen, 2011; Brown & Reeder, 2008; Carpio, Wohlgenant, & Boonsaeng, 2008; Chesky, 2009; Forbord, Schermer, & GrieBmair, 2012; Guiling, Doye, & Brorsen, 2009; Hackbert & Lin, 2009; Koster & Lemelin, 2009; Ohe, 2011; Panyik, Costa, & Ratz, 2011; Phillip, Hunter, & Blackstock, 2010; Tew & Barbieri, 2012; Vogel & Low, 2010; Yang, Cai, & Sliuzas, 2010; Zhao, 2009). The number of farmers selling their produce to consumers via agtourism avenues increased by 17% from 2002 to 2007 (USDA, 2012). Consumers have shown an increased desire to know where their food is from to establish a connection to the production of the food they eat (Nordstrom & Thunstrom, 2011). An increased desire for locally produced food has driven consumers to pursue farm fresh produce (Schmit & Gomez, 2011). Agtourism businesses have increased the ability of farmers to sell produce directly to consumers and have given farmers another income stream (Vogel & Low, 2010).

Consumer education created a group of consumers who desire fresh, quality food products and are willing to travel to fulfill their desires (Vogel & Low, 2010). A method of consumer education is the agricultural cooperative extension service, which educated through research, teaching, partnerships, and interactive farm experiences (Baughman, Boyd, & Franz, 2012). The extension service is a government-supported agency that promotes a greater understanding of farm production and farming by using university-based knowledge and dispersing that knowledge to local communities (Baughman et al., 2012). The cooperative extension service works with state universities to share information to consumers within their respective states (Baughman et al., 2012). The educational opportunities available to the public in agtourism businesses echo the

extension service philosophy to disseminate information about the farming industry to the public (Baughman et al., 2012). The extension service works in cooperation with agtourism business owners to develop the agtourism industry (Barbieri & Valdivia, 2010; Bunten, 2010).

Improved quality of life occurs in rural communities based on agtourism development (Durand, 2010). Farmers can create economic diversity through agtourism, improving the quality of life for farmers (Baughman et al., 2012). Agtourism has a positive impact on farmers and on communities (Durand, 2010). Jackson-Smith and Jensen (2009) reported a positive effect, with agtourism visitors expending up to $17 million annually in direct economic activity. When Jackson-Smith and Jensen added multiplier effects, the economic effect of agtourism increased to $31 to $32 million annually.

There appear to be social benefits as well as cultural benefits when agtourism is part of a farm community (Bunten, 2010). Unrelated to profitability, farmers view the interactions with tourist clientele as a life-enriching experience (Barbieri & Valdivia, 2010). The positive interaction between farmers and tourist clients improves the social environment for the community as well as the farmer (Barbieri & Mahoney, 2009).

Pick-your-own-produce acreages or farm product stands are agtourism businesses where farmers interact with clients who desire to purchase fresh farm produce directly from the farm (Barbieri et al., 2008). A farm product stand agtourism business is sometimes a simple stand along the side of the road stocked with seasonal produce or a larger retail business that combines produce grown at the farm with other goods and

produce purchased for resale at the facility (Barbieri et al., 2008). Pick-your-own flower, fruit, and vegetable agtourism businesses enable clients to pick the produce from the vine, bush, or tree and are interactive experiences. A typical example is a pumpkin patch where tourists pick their own pumpkins (P. Williams & Soutar, 2009). A pick-your-own agtourism business occasionally adds seasonal entertainment for clients. Seasonal entertainment includes wagon rides, corn mazes, gift shops, craft fairs, heritage exhibitions, clinics, food service, and sometimes lodging (P. Williams & Soutar, 2009). The farm retail business is sometimes seasonal, offering tourists the products produced at the peak of freshness. The retail business often changes the product offerings seasonally to reflect the desires of the tourist clients. An example is when farmers offer summer produce, followed by a fall corn maze and harvest craft fair, and finally by winter holiday offerings of hayrides, cider, gift items, and fresh greenery sales all in the same retail agtourism business (P. Williams & Soutar, 2009).

A retail sales business often grows from a produce stand after adding other farm-related items (P. Williams & Soutar, 2009). Families frequently work cooperatively in a retail shop to increase the amount of goods available for sale. The cooperation also provides more workers so that farmers can still work the farm during high tourist seasons (Rodrigues et al., 2010). Exhibitions and clinics are sometimes included in the agtourism business and offer tourists a way to see the production of the goods for sale or to learn to create the product at home (P. Williams & Soutar, 2009). Agtourism businesses can include exhibiting or teaching heritage crafts such as quilting, cooking, weaving, spinning, and carving to tourists (P. Williams & Soutar, 2009). A natural progression for

farm retail businesses is to include food service for clients who journey to a rural area from a distance (Schmit & Gomez, 2011; P. Williams & Soutar, 2009).

Foods served in these establishments may include regional dishes or specialty food items related to the ethnicity of the farmer or traditional farm family fare (P. Williams & Soutar, 2009). The desirability of regional food or drink by urban dwellers may be the reason for the journey to the farm, and any sale of retail items may be secondary to the dining experience (P. Williams & Soutar, 2009). The seasonality of the ingredients of the specialized food or drink products can create a seasonal tourist business that coincides with times of high labor needs on the farm (Carpio, Wohlgenant, & Boonsaeng, 2008). As a secondary benefit, seasonal tourist businesses create employment opportunities in rural areas (Carpio et al., 2008). Areas of the country have become known for fine farm products sold to tourists by farmers. Clusters of agtourism businesses increase tourist traffic to those areas and name recognition has occurred through time (Carpio et al., 2008).

As tourism increases to farm areas, the need for local lodging increases, and bed-and-breakfasts or farm stays are sometimes included in farm agtourism businesses (Carpio et al., 2008). The bed-and-breakfast or farm stay is unique to the farm and the geographic area (Carpio et al., 2008). The opportunity to interact with a farmer by staying on the farm is popular with tourists (Carpio et al., 2008). The experience could include actual farm participation by the tourist client or could be less interactive and included lodging and breakfast only (Brown & Reeder, 2008; Carpio et al., 2008). When the farm stay includes farm participation, the level of participation also varies from farm

to farm and is dependent upon the experience offered by the farmer (Brown & Reeder, 2008). Tourist guests can milk cows, gather eggs, grind grain, pick produce, or assist in the daily farm chores (Brown & Reeder, 2008).

Horseback riding and wagon rides are also popular tourist attractions in agtourism businesses (Brown & Reeder, 2008). The amount of participation in horse-related activities varies by farm and by region, from simple wagon or buggy rides around the farm to intensive cattle work participation on working ranches (Brown & Reeder, 2008). As the intensity of the horse-related experience increases, so does the length of stay offered by the agtourism business, with guest ranch operations offering stays of one or more weeks for tourists who want total immersion in the farm experience (Brown & Reeder, 2008). Offering the opportunity to participate in hunting is another agtourism business that farmers offer (Barbieri et al., 2008). The regional wild game availability limits the number of tourists farmers can offer hunting packages to, so farmers include game-type animals in the animals raised on the farm (Barbieri et al., 2008). Bird hunting and buffalo hunting are two popular hunts that enable farmers to raise domestic game animals that are included in hunting packages to tourists desiring a hunting experience (Barbieri et al., 2008). Guided hunts are also included in agtourism offerings for wild game hunts on family-owned farmland (Barbieri et al., 2008).

The variety of agtourism businesses is wide, and farmers have further adapted or altered the agtourism business to their clientele or seasonal needs on farms (P. Williams & Soutar, 2009). Income production of agtourism business varies and the profitability of the agtourism business is debatable (P. Williams & Soutar, 2009). Numerous studies on

agtourism have been conducted each addressing specific areas or nuances of the agtourism phenomenon (Carpio et al., 2008).

Agtourism businesses involve costs that influence the potential for profit for farmers (Barbieri et al., 2008). Seasonality of income is also a potential problem because income supplementation occurs on an irregular basis throughout the year. Tourism relates to the amount of disposable income tourists have available (Barbieri et al., 2008). Therefore, farmers have the potential to invest in an agtourism business but not receive a reliable return on investment (Tew & Barbieri, 2012). Regional location affects the effectiveness of the agtourism business, based upon the regional ability to offer specific types of agtourism and accessibility to tourist clientele (Tew & Barbieri, 2012). Some agtourism businesses are able to market to European guests, thus widening their market and lowering their dependence upon the U.S. economy (Tew & Barbieri, 2012). The diversity of agtourism makes agtourism a viable option for farm income supplementation because farmers can start with a small agtourism operation and grow (Barbieri et al., 2008). The use of agtourism for income supplementation is widespread across the United States and represented in every region (USDA, 2012).

The inclusion of supplemental farm income sources in the USDA census is an indication that these are long-term and viable sources of farm income supplementation (USDA, 2012). Farmers may have additional sources of income, but the comprehensive literature review did not support other sources as widespread income supplementation sources. Income supplementation for farmers is important to the sustainability of family

farms (Jackson-Smith & Jensen, 2009; USDA, 2012). Family farms are important to the U.S. economy (Hoppe & Banker, 2010; USDA, 2012).

Themes and Perceptions

Themes are abstract constructs identified before and during the research process of literature review, data collection, and data analysis (Yin, 2009). Themes come from different sources, including the literature review, the phenomenon under study, researchers' personal experience with the study subject matter, and the conceptual framework through which the study is designed (Yin, 2009). Themes identified in the literature review include farm poverty, farm income supplementation sources, the importance of U.S. farming, and regional differences. Themes conceived from my personal experience included the relationship between farm income supplementation and farm sustainability, a known lack of information available to farmers outlining the profitability of income supplementation sources, and the ability of income supplementation to improve the quality of life of farm families. Unknown and unanticipated themes emerged from the data collection and analysis (Yin, 2009).

Farm poverty was a recurrent theme throughout the literature and occurs both in the United States and in other countries (Hazell et al., 2010; Lipton, 2010; Quisumbing & Pandolfelli, 2009). The review of literature involved exploring methods of overcoming farm poverty, and income supplementation was a method revealed in the literature that keeps farmers farming and yet has the potential to alleviate farm poverty (Atwell et al., 2010). The perception that a positive relationship exists between some types of income supplementation and improved quality of life for farm families arose from my personal

experience, and a review of the literature revealed Maslow's (1943) hierarchy of needs to be a theory that corresponded to my perception.

This perception then became the conceptual framework through which this study was constructed: the premise that profitable income supplementation could improve quality of life for farmers and enable farm families to experience a richer and more fulfilling existence, per the Maslow theory, after the implementation of profitable income supplementation. Further exploration of the literature revealed that the USDA had gathered data that could reveal which income supplementation sources were indeed the most profitable by U.S. state. This was a recurring theme throughout the literature because peer-reviewed journal articles frequently referenced data from the USDA or studies that used archival record data (USDA, 2012).

Another recurring theme revealed in the literature and supported by researcher experience was the farmers' frustration that these data were not available to them in any format that they could easily use or understand (Blank & Klinefelter, 2012). Existing quantitative studies are at a level that farm families had difficulty applying to their daily lives, and peer-reviewed journals often are written at a level above the average farmer's understanding or are too time consuming to decipher and are discarded (Blank & Klinefelter, 2012). From this literary revelation, the idea germinated to use the readily available USDA data in a study that would create an output that was both relevant and useful to farmers by including study results in a format that would be simple and easy for farmers to understand.

The application of using a case study design of data analysis with USDA data emerged from the literature review and was refined by further exploring Yin (2009, 2011) and Denzin (2012), who suggested that a case study both qualitative and quantitative data was possible. I spent significant time reviewing appropriate methods of data extraction, conversion, and consolidation during data collection. Yin (2011) identified the use of protocol questions to extract sample data from the population data. I organized, categorized, and subcategorized data systematically and then recoded the data for analysis (Yin, 2009). After the archival record data collection was complete, data analysis of the archival record data ensued (Yin, 2009). Following data analysis of the recoded archival record data, interviews took place with U.S. farmers from the five cases, and I compared and contrasted data obtained from the interviews with the data results from the archival record data for triangulation, as recommended by Denzin (2012).

I incorporated themes and perceptions revealed in the literature review, compared and contrasted income supplementation sources, and introduced the conceptual framework. The literature review included the historical roots of farming and the importance of farming and farm poverty. Also included was the potentially important theme of regionality as revealed in the literature.

Transition and Summary

The background of the problem contained an introduction to farm poverty and the potential problem of sustainability of farms and ranches for U.S. farmers solely dependent upon farm income. The problem identified was a lack of knowledge about which income supplementation sources are the most profitable in each farming region,

and the purpose of the study was to fill the gap in literature by providing a prioritized list of the most profitable income supplementation sources by region.

This study was a case study with each of the five U.S. farming regions representing a bounded unit in the case study. To answer the research question about what supplemental income sources are most profitable for U.S. farmers, the study involved exploring archival record data to compare and contrast the data with data from personal interviews with farmers from the five cases. The study involved collecting and reconfiguring archival record data from the three most recent USDA census surveys for analysis to explore which of the seven income supplementation sources included in the USDA census are the most profitable in each of the five cases. The data thus reconfigured underwent analysis and the output was a list of income supplementation sources prioritized by profitability for each farming region. The resultant prioritized list was then compared with interview data obtained in personal interviews with U.S. farmers from each of the five cases for triangulation and depth of inquiry (Denzin, 2012).

This study contributed to the body of knowledge and may assist U.S. farmers when choosing income supplementation methods. The study findings provided increased knowledge of farm income supplementation built upon prior research in the field of study. The choice of profitable supplemental income source is critical to farm sustainability and alleviation of farm poverty.

The literature reviewed included peer-reviewed journal articles, books, and government sources on the subject under study. The literature reviewed led to other areas of interest and revealed further information relevant to the study. The literature included

was relevant to the research question. Exploring the historical background of farming in the United States involved exploring the history of farming and farm poverty in the United States. The historical review led to information on the importance of farming to the U.S. economy and to government policies that affect farming and U.S. trade with foreign countries. Farm stress was an emergent problem revealed in the literature review. A review of the types of farm income supplementation included in the USDA census led to an in-depth exploration of available literature on those topics. The literature review aligned with the nature of the study as detailed in depth in Section 2. Section 2 will include information on the population and sample, as well as information on data selection, methodology, techniques, and the framework of the study. Section 3 will contain the findings of the study and conclusions from the analysis of data, as well as recommendations for future studies and application of the results of the study.

Section 2: The Project

Averaging less than $21,000 in farm earnings annually, farmers are feeding the nation yet farm earnings are below poverty level (Food and Agriculture Organization of the United Nations, 2012; U.S. Census Bureau, 2012). If solely dependent upon farm income, 89% of U.S. farms would fail, making profitable supplemental income sources critical to farm sustainability (Hoppe & Banker, 2010; USDA, 2012). Profitable income supplementation is important because 65% of all U.S. farms report a negative operating profit and 89% of U.S. farms are dependent upon successful income supplementation sources (Blank & Klinefelter, 2012; Featherstone, Park, et al., 2012; Featherstone, Wood, et al., 2012; Hazell et al., 2010; Hoppe, 2010; Hoppe & Banker, 2010). Farmers recognize the need to supplement their incomes and the USDA census contains relevant data that indicate which supplemental income sources are most profitable, but U.S. farmers do not know which supplemental income sources are most profitable in their region of the United States (Ahearn & Weber, 2011; Blank & Klinefelter, 2012; Hazell et al., 2010; Hoppe, 2010; Mishra & Chang, 2012; USDA, 2012).

Purpose Statement

The purpose of the multiple case study approach was to explore the most profitable supplemental income sources for U.S. farmers in each farming region and to present the findings in a form that farmers will understand and be able to use (Blank & Klinefelter, 2012). The use of archival record data from the USDA census of agriculture helped to explore supplemental income sources from 1997 to 2007, complemented by literature and personal interviews to triangulate the archival record data. Farm

sustainability is dependent upon profitable income supplementation (Hoppe & Banker, 2010; USDA, 2012). This study contributed to the body of knowledge a prioritized list of profitable income supplementation sources by farm region.

Role of the Researcher

The role of the researcher during the data collection process was to identify which data to extract from the farm data included in the archival records. The data collection process included using protocol questions (Yin, 2011) to extract relevant data from three USDA censuses. The archival record data were quantified information that I explored for input to the research question. Personal interviews with farmers from five cases followed the data collection phase of the archival record data. I added interview data to the archival record data for comparison and analysis.

Thirty-three years' experience in the farming industry provided me with personal insight in the farming industry. Experience in the farming industry revealed the need for profitable income supplementation for farm sustainability. As a farmer, law mandates participation in the agricultural census surveys conducted by the USDA; however, the USDA census data are difficult to use in daily farm decision making (Blank & Klinefelter, 2012). Prior participation in the USDA census led to the realization that data available in the USDA census may contain information relevant to farm income supplementation (Featherstone, Park, et al., 2012) and that reconfiguring the data may make them more useful to farmers (Blank & Klinefelter, 2012; Featherstone, Park, et al., 2012). I was a farmer and may have personal biases created from prior farm experience.

To ensure that personal beliefs and prior knowledge did not interfere with the study, I set aside or bracketed personal bias so that I could refrain from judgment and prejudices to study the phenomenon as presented (Yin, 2011). Bracketing enables a researcher to suspend or set aside personal bias, previous understandings, and preconceptions during a study so that the researcher is open to the data and emergent information during the course of the study. The use of a journal to document the research process (Yin, 2009) serves to keep a researcher aware of any bias discovered during a study (Yin, 2009) so the researcher can set those biases aside. The continual process of putting aside any personal preconceptions and comparing the journal to the ongoing study process enabled me to capitalize on personal experience in the farm industry while minimizing bias during all phases of the study.

Participants

For this study, the initial data source was archival records from the USDA farm census. Interviewees who participated in personal interviews consisted of farmers from the five cases. I compared and contrasted data collected from the archival records and data collected from the personal interviews in the data analysis phase of the study. The study included interviews for triangulation, to add richness, and to add depth to the study (Denzin, 2012).

The personal interviews involved individuals who met the study criteria (see Appendix B), which defined them as farmers for the purpose of this study. Access to farmer participants occurred through USDA Farm Service Agency state offices and through state cooperative extension agencies, which are in every U.S. state. To smooth a

path and limit any initial awkwardness that might have been present, I requested assistance from farm extension agents to mention the study and ask participants if they would like to speak with me. I was a farmer for decades and established a working relationship with participants by meeting them at extension offices where the farmer participants were comfortable. I explained to the participants that the output of the study would be a prioritized list of profitable income supplementation sources. The farmers I approached indicated they would welcome and appreciate the output. I speak the language of a farmer, understand the challenges farmers face, and believed farmers and I would quickly establish a rapport.

In case study research, researchers identify a population and then select a sample from the population to participate in interviews (Yin, 2009). Researchers then analyze the data collected from the population sample and present results (Yin, 2009). This study included both archival record population samples and human population samples, so the study involved collecting and analyzing data from both archival records and humans.

Archival Record Population and Sample

In this study, the archival record population was the 27 USDA census surveys collected from the inception of the USDA census, including the years 1840 to 2007. The archival records represented all USDA census data. Yin (2009) indicated that the population size should be predetermined and should include all possible participants. The study included archival record data that were representative of all U.S. farmers; therefore, the entire population of U.S. farmers (all possible participants) was included in the study population (Yin, 2009).

For the study, the sample selected from the archival record population was the three most recent USDA census surveys: 1997, 2002, and 2007. Using archival record data from 1997 to 2007 was appropriate to the study based upon Yin's (2009) recommendation that to be relevant, research should consist of data from the most recent 10 years. To extract data from the sample archival records, the study included a purposeful sampling technique (Yin, 2011).

Human Population and Sample

In this study, the human population was people who lived in the five U.S. farming regions and met the selection criteria. Selection criteria were people who were at least 21 years old, who had completed at least one USDA census survey, and who were actively farming at the time of the interview. People who met these criteria represented the human population for this study (see Appendix B).

The sample selected from this population was a purposeful sample of farmers located in each geographic region represented in the five cases. A purposeful sampling represents participants who meet specific criteria relevant to the research question (Leedy & Ormrod, 2010). Determining an appropriate sample size may be difficult (Leedy & Ormrod, 2010). Thomson (2011) studied 100 articles with interviews as a data collection method to determine an appropriate sample size for grounded theorists based upon theoretical saturation. Thomson's findings indicated an average sample size of 25 to reach theoretical saturation. Thomson (2011), when discussing grounded theory, mentioned theoretical saturation as the point where an appropriate sample size is reached, as did O'Reilly and Parker (2012).

O'Reilly and Parker (2012) indicated that saturation is an accepted and expected marker for sampling adequacy. However, O'Reilly and Parker contended that theoretical saturation may not be appropriate for all qualitative studies and that data saturation was another viable alternative for qualitative studies. Tracy (2010) questioned the notion that saturation is appropriate for qualitative research and suggested using eight universal quality markers rather than saturation. O'Reilly and Parker disagreed with Tracy, noting that defensibility of research quality relates to depth and transferability of sampling adequacy and that saturation could provide sampling adequacy as long as the appropriate type of saturation was used (data versus theoretical). All three sets of researchers—O'Reilly and Parker, Thomson (2011), and Tracy—agreed that an adequate sample size is one that answers the research question.

Bowen (2008) related sampling adequacy to a demonstration that a researcher reaches saturation after gathering sufficient depth and breadth of information. Bowen further posited that data saturation occurs when nothing new is being added and data are gathered to the point of diminishing returns. Yin (2009) indicated that when using replication design, each case should be able to stand alone, and discretionary choice is the basis for the sample size within each replicated case. Yin also noted that the sample size should reflect the number of cases included in the study. Data saturation is a method of determining a sample size that has gained widespread acceptance and is different from theoretical saturation that involves collecting data until the sources of data generate nothing new in data collection (Francis et al., 2010).

Samples should consist of participants who best represent the research topic and be large enough to represent the topic but not so large so that the sample is repetitious, and the guiding principal should be saturation (Mason, 2010). Further, more data do not always equate to more or better information (Mason, 2010), and recruiting additional participants yet not making full use of data already collected is also problematic and potentially unethical (Francis et al., 2010). Mason (2010) also noted that although quantitative methodology includes the expectation that larger numbers equate to greater impact, this is not applicable to qualitative methodology.

Researchers cannot agree on sample size or sufficiency, but even though the topic is controversial, researchers mostly accept the notion of obtaining saturation when sampling as a quality indicator (Bowen, 2008; Francis et al., 2010; Mason, 2010; O'Reilly & Parker, 2012; Thomson, 2011; Tracy, 2010). Achieving data saturation is easiest when focused research parameters exist (O'Reilly & Parker, 2012). Particular areas of interest should be identified prior to data collection so that saturation on those specific areas can be measured (O'Reilly & Parker, 2012), which can be achieved by creating interview questions to focus and guide the data collection process (Yin, 2009) and by researcher focus to ensure the areas of interest are covered during the interview process (O'Reilly & Parker, 2012). Yin (2009) recommended using open-ended interview questions when interviewing human subjects and protocol questions when collecting data from other data sources to maintain researcher focus and obtain data relevant to the research question. Francis et al. (2010) recommended specifying a minimum sample size for initial analysis and then specifying the number of interviews to

conduct without new ideas emerging as a stopping criterion. Francis et al. used an initial analysis sample size of 10 and a stopping criterion of three (10/3 criterion) for the purpose of their research. Using these criteria, Francis et al.'s (2010) findings indicated that the use of an initial analysis sample size and stopping criterion were successful and that data saturation was achieved using the 10/3 criterion studied.

A synthesis of information from recent peer-reviewed articles on sample size indicated that data saturation is a useful method of determining sample size in studies that (a) have clear boundaries or research parameters, (b) use interview or protocol questions, (c) establish particular areas of interest so that saturation can be measured, (d) samples participants who represent or are knowledgeable on the topic, and (e) use both initial analysis sample size and a stopping criterion.

Because this study had clear boundaries, included interview and protocol questions, had specific areas of interest, and involved sampling knowledgeable participants, I used an initial analysis sample size of five participants in each case for a total minimum sample size of 25 participants, with a stopping criterion of three interviews conducted without new ideas emerging. Using the approach of a sample size of five with a stopping criterion of three interviews translated to a 5/3 criterion for each of the five cases for a minimum of 25 interviews overall. The goal was for each case to individually reach data saturation based upon potential unique qualities or ideas through the 5/3 criterion rather than by a predetermined number of interviews. Doing so met the quality indicator of data saturation as evidenced by Francis et al. (2010) and also met the ideology of other recent peer-reviewed articles that interview numbers should be large

enough to represent the topic but not so large they are repetitious (Mason, 2010). This also met Yin's (2009) recommendation that the sampling logic used should reflect the number of replicated cases included in the study. Because the study included five cases, using a minimum of five interviews in each case was a reflection of the number of replicated cases (Yin, 2009).

Because the study included human participants, the Walden University Institution Review Board (IRB) provided permission to conduct the study. The IRB approval number is 01-24-13-0189635. All participants signed a form noting their consent to participate (see Appendix F) approved by the IRB. Participation in the personal interviews was voluntary, and permission to audio record was included in the consent to participate form. To ensure confidentiality and ethical protection of participants, all participants received pseudonyms. The pseudonyms were generic in nature. Only I know participants' identities and the coding system used to identify participants, and no detail was associated with participants that would identify them. All published versions of this study include only the participants' pseudonyms as identifiers. Interview data will remain in a safe deposit box, maintained for 5 years as required by Walden University, and then destroyed.

Research Method

A qualitative design, multiple case study research method was appropriate for the study. As illustrated in Appendix C, an in-depth examination of the three research designs helped to determine whether quantitative design, mixed method design, or qualitative design was best for this study (Yin, 2009). To determine the most

advantageous research design and method (Yin, 2009), all three designs received consideration in a pluralistic fashion (Yin, 2009).

The output for the study was a prioritized list of the seven themes (profitable farm income supplementation sources) by case and the comparative analysis of these and any emergent themes. The prioritized list and any corresponding explanatory analysis is appropriate for U.S. farmers to read, understand, and use, which factored into the choice of the best research method for the study (Blank & Klinefelter, 2012; Yin, 2009). The study involved exploring change through group behavior by reviewing real-life events over time, specifically, the inclusion of historical sources of income supplementation that have been used on U.S. farms from 1997 to 2012 and their relative profitability by case as presented in archival record data and interview data. This type of study was suited to case study design (Yin, 2009).

Qualitative research is not limited to fixed designs, as used in experiments (Yin, 2011Every case study can vary in design, enabling customization of a research design to fit the need of the researcher (Yin, 2011). Using quantitative data to establish relevant priority was appropriate, even though the analysis of the main case study question was qualitative (Yin, 2011). This study included numerical archival record data reconfigured during data collection to establish relevant priority for each of the themes that emerged during the literature review.

Blank and Klinefelter (2012) recommended reconfiguring census data in a form more useful to farmers. The study then involved comparing the theme data reconfigured from archival record data by case using multiple case study synthesis (Yin, 2009; 2011).

Each region represented a case in the multiple case study, and each case represented the corresponding U.S. farming region. The five cases were (a) West, (b) Plains, (c) Midwest, (d) Atlantic, and (e) South. Archival record data are acceptable in a multiple case study design (Yin, 2009). Researchers may combine direct observational evidence with quantitative data in case studies (Yin, 2009). The contrast between quantitative and qualitative evidence does not preclude a case study (Yin, 2009). Using archival records such as census documents can reveal trends over time and is appropriate for a case study design (Yin, 2011). The archival record data were quantified information explored in data collection to obtain qualitative input to the research question, but I did not carry forward the numerical survey data into data analysis. Archival record data served to establish relevant priority of the cases for qualitative analysis (Yin, 2011).

Researchers frequently use quantitative research to measure causal relationships and use statistical procedures to examine variable relationships (Denzin, 2012). A quantitative research method is most relevant when measuring analytical results or statistical outcomes and is frequently associated with testing hypotheses using statistical data (Carlson, 2008). Researchers and analysts at the USDA have conducted extensive quantitative statistical analyses of USDA census data (USDA, 2012). Even though USDA census data have been quantitatively researched, the statistical analyses of USDA census data did not produce the output planned for this study: a prioritized list of the seven themes (profitable farm income supplementation sources) and a comparative analysis of these themes and any emergent themes from interviews designed for farmers to use and understand (Blank & Klinefelter, 2012). A quantitative research method was

not the most appropriate research method for this study, and an alternative research method produced the desired output. Yin (2009) noted that when the research goal is to explore differentiating circumstances, a case study is appropriate. Yin (2009) also noted that the use of multiple sources of evidence is an advantage because it enables converging lines of inquiry to triangulate and corroborate the findings, making them more convincing.

A mixed method research design received consideration because this study included both numerical data and a comparative exploratory analysis. The study did not involve mixing the quantitative and qualitative data into one set of data for analysis (Denzin, 2012). The initial data set was solely quantitative data that I later compared in a synthesis which, according to Yin (2009; 2011), did not meet the definition of a mixed method study, but instead was consistent with a multiple case study. Researchers conducting mixed method studies incorporate both statistical analysis from numerical data and qualitative analysis of emergent themes into one data set (Denzin, 2012).

The choice of a multiple case study research method was also based upon the exploratory research question and the longitudinal design of the study (Yin, 2011). A review of scholarly perspective exposed further justification for my choice of qualitative research method. Using D. Cooper and Schindler's (2010) descriptors assisted in the choice of research method, and the evidence indicated that a qualitative design was appropriate to the study because (a) the study was not rigid but exploratory; (b) the two main data sources were personal interviews and archival records and both were interpreted by emergent theme; (c) the study involved exploring what has happened

historically as well as analyzing contemporary data, so my will had no control over the archival data collection but only on the interpretation of those data; (d) the study included a summarization and analysis of the data to promote greater understanding; and (e) the longitudinal nature of the study was a cross-sectional study catching perceptions and characteristics at four separate points in time: 1997, 2002, 2007 through archival records, and in 2013 via interview.

Scholars have identified characteristics of qualitative research from different perspectives. Leedy and Ormrod (2010) described qualitative research as a method to study a factor of the phenomenon of human behavior and the reasoning of human behavior through a conceptual framework or theoretical lens and believed the qualitative process allowed the analysis of data to proceed by theme, topic comparison, or as the exploration of data occurred. Tracy (2010) noted the qualitative research method uses data exploration without quantifiably measuring variables or variable relationships. Yin (2011) identified qualitative research as a method to produce insights contributing to human social improvement. A qualitative research method and a multiple case study design was the best fit for this study because (a) the study included personal interview data and archival records, (b) the study was exploratory, (c) the USDA census data were archival, (d) the study was longitudinal, (e) the study involved researcher interpretation in data collection and analysis, (f) I analyzed data by theme, (g) a comparative cross-case analysis occurred, (h) the study involved exploring differentiation, and (i) a qualitative design produced the desired output (D. Cooper & Schindler, 2010; Leedy & Ormrod, 2010; Yin, 2009, 2011).

Research Design

This study was a multiple case study design. Yin (2009, 2011) indicated a multiple case study design was the best design choice when comparing replicated cases. Direct observational evidence can be combined with other evidence in case studies (Yin, 2009), and the use of archival record data is acceptable in a case study design (Yin, 2009). According to Yin (2009), case studies can include quantitative evidence.

Researchers may use a multiple case study design in comparative studies (Yin, 2009) and may use quantitative and qualitative data in a multiple case study design (Yin, 2009). Multiple case study design uses a comparative structure (Yin, 2009). A replication design (Yin, 2009) was appropriate for this study using cross-case analyses (Yin, 2009), as researchers use both in multiple case study design. Literal replication is a rationale for choosing a multiple case design rather than a single case design (Yin, 2009); this study included a literal replication design. In literal replication, each case within the multiple case study can stand alone, and the design method used in one such case is replicated for each individual case throughout the study (Yin, 2011). The cases chosen should be literal replications of each other (Yin, 2011), such as occurred in this study.

In this study, each case was a literal replication of the other cases. Following the analysis of each case (the five U.S. farming regions), I wrote individual case reports (Yin, 2011). In the study, I placed case reports for each state in a table, and then combined the 50 U.S. states' case report information into the five cases. I wrote a report for each case prior to cross-case analysis. The cross-case analysis included a comparison of interview

data from the region in each case and a cross-case conclusion then described the results of the cases compared to one another (Yin, 2011).

In a longitudinal study, the ability to study the same case over time helps to identify changes that occurred (Yin, 2009). Researchers conducting longitudinal case studies are able to trace patterns of change, give a truer analysis, and make stronger comparative interpretations (Neale & Bishop, 2012). Of particular relevance to this study, longitudinal studies exclude time-invariant differences and observe a temporal order of events. Thus, a researcher has more power to distinguish short-term from long-term phenomena such as the historical development of profitable income supplementation using a longitudinal case study design (Neale & Bishop, 2012). This study involved exploring the manifestation of supplemental income using a multiple case study to explore economic alterations of U.S. farmers from 1997 to 2013 based upon profitable income supplementation.

Scholarly literature contains further justification for the choice of a multiple case study design in this study. Woodside (2010) indicated that case studies are appropriate when studying a phenomenon or process as the process or phenomenon develops over time within one or more cases. Survey data are suitable for case study designs when researchers wish to humanize survey data by exploring the social phenomena contained within survey data (Woodside, 2010). Irwin et al. (2012) recommended case study research when exploring secondary data. Neale and Bishop (2012) identified case study research as a method to explore longitudinal data.

The multiple case study research design was the most appropriate of the five research designs. A multiple case study research design was the design best suited to the research question and the design most suited to the desired research output (Yin, 2009). The study involved exploring a social phenomenon and the process of the phenomenon in a multiple case study (Yin, 2009). The exploration included real-life events captured by archival records and involved comparing them to contemporary personal interviews to understand the social phenomenon of farm income (Yin, 2009).

Four qualitative design approaches received consideration other than a case study design: (a) ethnography, (b) grounded theory, (c) phenomenology, and (d) narrative. Ethnography includes interviews and ongoing observation of the participant's world (Van Maanen, 2010). This study did not include ongoing observation in data collection, so an ethnographic approach was not appropriate (Van Maanen, 2010). Grounded theory as a research design is appropriate when gathering data, usually by interviews or observation, and then identifying linkages and theoretical concepts (Mello & Flint, 2009). The iterative process of grounded theory was not relevant to this study because one of the data sources was archival records gathered by the U.S. government and not by me (Mello & Flint, 2009). Phenomenology involves analyzing statements, units, and the essence of meaning from interviews (Flood, 2010). Phenomenology includes a focus on people's experiences and interpretations based upon interviews or observations (Flood, 2010), and one of the data sources in this study was archival records, so even though interviews were not the primary source of data, the use of archival records precludes phenomenology. The focus of the study was not to observe farmers but to include the interview data as a

supplement to the archival record data source for comparison and contrast. Narrative design combines individuals' lived experiences to create a larger story with a larger meaning than that which the individual interviews could reveal (Frank, 2012). Narrative design received strong consideration because the opportunity to hear and share stories from farmers throughout the United States was of interest to me. However, to be scholarly and comprehensive, the desired output of the study, a prioritized list of profitable income supplementation sources, should be based upon more interviews than could be conducted in the scope of the study. The USDA data were comprehensive and all-encompassing, as they include all U.S. farmers from the three survey periods of 1997, 2002, and 2007, and provided more relevant data for the output than could be collected through personal interviews. Therefore, narrative design would not have been appropriate, even though I conducted personal interviews from all farming regions. The initial data source was USDA census data for five cases; interview data were the secondary data source from all cases for triangulation purposes and appear in the results section of each case.

Population and Sampling

The study included three population sources: archival records, personal interviews with farmers from all cases, and literature that used archival records. The archival records were the initial data population. Interview data were the population used for triangulation, and interviews took place with farmers from five case regions. Literature on farm income was the third data population source, included for triangulation. The data analysis and the results section of the study included all populations.

Archival Record Population and Sampling

The archival record population of the study was the 27 USDA census documents from 1840 to 2007. The USDA census of agriculture has been conducted 27 times since 1840, and USDA census documents were therefore representative of the entire U.S. farm population since 1840 (USDA, 2012). The data represent a complete compilation of U.S. farm information as specified by the USDA (USDA, 2012).

Data obtained in the archival records were from participants identified through the NASS census mail list. The NASS list contains agricultural acreage meeting the NASS farm definition of an operation that produces at least $1,000 of agricultural products per year (USDA, 2012). The USDA census contains farm income and production data from every farm in the United States, as mandated by U.S. law (USDA, 2012). Census data from the USDA are collected from the approximately 3 million farmers in the United States every 5 years (USDA, 2012).

The archival record sample included the most recent three USDA census documents from 1997, 2002, and 2007 that represented the U.S. farm population for the most recent continuous 10-year period (Humble, 2009; Leedy & Ormrod, 2010). The sampling method for the archival population was purposive sampling. Purposive sampling involves choosing the sample with a specific goal in mind that directs the sample to the most relevant data for the topic of the study (Humble, 2009). Themes emerged from the literature review that described farm income supplementation sources and helped to establish the sample selection from the population (Yin, 2011). Using themes enabled extraction of the most relevant data to obtain a range of information

applicable to the study (Yin, 2011). Yin (2011) supported using a purposive sampling technique for case study research.

Relevant and current research should consist of recent data (Leedy & Ormrod, 2010). Yin (2009) recommended researchers use data from the most recent 10 years. The most recent archival records uncovered in an exhaustive search comprised the document sample for the study. The archival record sample included the three census documents from 1997, 2002, and 2007 that represent the U.S. farm population for the most recent continuous 10-year period, and personal interviews were contemporary (Humble, 2009; Leedy & Ormrod, 2010; Yin, 2009).

The archival records were the initial source of data. Eligibility criteria for the archival record data were (a) comprehensive U.S. farm data, (b) representative of the U.S. farm population, (c) contains a recent 10-year period, and (d) was available to me. Characteristics of the archival record population aligned with the criteria for a data source in this study. Archival record data characteristics were relevant because (a) census data are collected from the nearly 3 million U.S. farmers every 5 years; (b) census data are representative of all U.S. farmers in every region of the United States; (c) census data include farming industry production, types of farm income, farm expenditures, asset compilation, and farm demographic information; and (d) census data were available to me.

Different factors contributed to the decision to use archival records. The archival records were an appropriate source of data for the study because the documents produced broader, more robust data than could be gleaned by direct interview with farmers for data

collection in the study. The archival records are the leading source of data on the U.S. farming industry and are the only source of comprehensive agricultural data for every U.S. state (USDA, 2012). The size and the scope of the archival records are comprehensive, including 10 years of recent, concurrent data from the U.S. farm population. Using archival records is both cost and time-efficient. The archival records were the highest quality source of data available.

Human Population and Sample

In this study, the human population was people who lived in the U.S. farming regions and met the selection criteria. Selection criteria were a participant age at least 21 years, who had completed at least one USDA census survey, and who was actively farming at the time of the interview. People who met these criteria met the USDA definition of a farmer, which equated to the subjects surveyed in the archival records. Therefore, the archival record population and the human population of the study were the same population from which both the archival record and human samples were drawn. People who met the human participant criteria represented the human population of the study (see Appendix B).

The study included a purposeful sampling method to obtain valid participants. To be valid participants, participants should understand the subject matter and be a part of the population identified for the initial data source (D. Cooper & Schindler, 2010). For the purpose of triangulation for the study (Denzin, 2012), participants need to meet the selection criteria (D. Cooper & Schindler, 2010). A purposive sample is necessary when participants need to meet specific criteria (Leedy & Ormrod, 2010) such as in this study.

The purposive sample consisted of farmers from five cases. Cooper and Schindler (2010) recommended that study participants should have experienced the phenomenon under study. Leedy and Ormrod (2010) noted that a purposive sample of participants should have a better understanding of the study material and can supply greater detail than those not familiar with a phenomenon under study. A purposive sampling can obtain valid participants from those who are conveniently available (Leedy & Ormrod, 2010). Purposive sampling is acceptable in studies with a small number of participants (Leedy & Ormrod, 2010). I used an initial analysis sample size of five participants in each case for a total minimum sample size of 25 participants with a stopping criterion of three interviews conducted without new ideas emerging. This translated to a 5/3 criterion for each of the five cases for a minimum of 25 interviews overall. The goal was to reach data saturation for each case individually based upon potential unique qualities or ideas through the 5/3 criterion rather than by a predetermined number of interviews. Participants were part of the farmers identified by cooperative extension service agents in the case region who agreed to participate, and interviews took place immediately on site at a cooperative extension office, or at a cooperative extension booth.

Human participant interviews were open-ended and semistructured. Semistructured interviews are appropriate when an in-depth exploration of participants' experience is necessary (Adams, 2010). I selected semistructured interviews to keep the topic area narrow to correspond with the archival record data and to remain closely related to the research question (Rabionet, 2011). The semistructured interview process enabled an opening statement followed by general questions to elicit conversation but the

open-ended format still allowed participants to speak freely at length about the topic subject (Diefenbach, 2009). The development of the participant interview questions closely followed the protocol questions used to collect archival record data so that triangulation could occur (Adams, 2010).

Schatz (2012) outlined the use of semistructured interviews as a nested component when a research study used census or survey data as the initial data source. Researchers frequently use nested components in mixed method research; however, semistructured interviews in a multiple case study that used census data as the initial data source were also acceptable (Schatz, 2012). Schatz recommended selecting participants for the semistructured interviews from the same participant base from which the census data were drawn (Schatz, 2012), as occurred for this study. Conducting semistructured interviews as a nested data source was beneficial for several reasons: (a) doing so allowed a macro and micro perspective on the research question, (b) doing so allowed a direct comparison of census data with interview response data, (c) doing so enabled a comparison of findings between data sources, (d) interview data elaborated on the census data, (e) the data from different sources initiated new avenues for future research on the subject, and (f) a direct comparison of census findings with a subsample of interview participants had analytical benefits (Schatz, 2012). In this study, participants who met selection criteria participated in individual interviews. The interview consisted of the following questions:

The USDA includes these farm income supplementation sources in their census: (a) government subsidies, (b) custom work and other agricultural services, (c) sales of

other products, (d) patronage dividends and refunds from cooperatives, (e) insurance payments, (f) cash rent or share payments, and (g) agtourism and recreational services.

1. Which of the USDA farm income supplementation sources do you use?
2. Why did you choose this/these particular income supplementation source(s)?
3. How profitable is/are the chosen income supplementation source(s) for you?
4. How does income supplementation affect your standard of living?
5. Discuss any additional information about these income supplementation sources such as return on investment, ease of use, labor involved, pros and cons, or any other information pertinent to each income supplementation source that you would like to share.

Ethical Research

Archival record data from the USDA census of agriculture were the initial source of data. Consent to use the USDA database was obtained (see Appendix A). Archival record data used in the study will remain on a USB flash drive for 5 years, as required by Walden University guidelines. The USDA removed all individual names from the archival record data used in this study prior to distribution.

Ethical issues such as protection from harm, informed consent, and confidentiality arise when research participants are human subjects (Yin, 2011). The Walden University IRP provided permission to interview participants. IRB approval number is 01-24-13-0189635. All participants signed a form noting their consent to participate (see Appendix F) approved by the IRB. Participation in the interviews was voluntary, and participants could withdraw at any time before or during the interview process. Participants received

no incentives. Interview data will remain in a safe deposit box for 5 years as required by Walden University. To ensure confidentiality, all participants' identities were altered to classification labels in the study document. The classification labels were generic in nature. Only I knew participants' identities.

I collected data for the study from the USDA database. I did not collect data prior to receiving Walden University IRB approval. To ensure the research was not unethical, the research portion of the study did not begin until after receiving approval from the IRB at Walden University.

Data Collection and Analysis

Data Collection Instruments

The study involved extracting relevant data from the archival records using protocol questions (Yin, 2011) as the extraction tool. In the study, protocol questions acted as the screening procedure for data collection from the archival records. Appendix D contains protocol questions. Yin (2011) indicated that the researcher may be the instrument for data collection of secondary archival and interview data (Yin, 2011). Lin & Zhou (2011) used protocol questions as a screening procedure for data collection. Lauckner, Paterson, & Krupa (2012) included the use of protocol questions as an extraction tool in case study research when presenting successful types of methodological questions in research.

Human participant interviews were open-ended and semistructured. Semistructured interviews were chosen to explore the participants' experience with farm income supplementation sources. Adams (2010) indicated that the use of semistructured

interviews is appropriate to explore the participants' experience. The use of semistructured interviews kept the topic area narrow and closely related to the research question (Rabionet, 2011). Diefenbach (2009) recommended using a semistructured interview process since the open-ended format allowed participants to speak freely about the topic subject. The inclusion of semistructured interviews as one component of a research study was recommended by Schatz (2012) when combining interview data with census data in a multiple case study when participants were from the same participant base from which the census data were drawn, as occurred for this study. Conducting semistructured interviews was beneficial to the study for several reasons: (a) doing so allowed a macro and micro perspective on the research question, (b) doing so allowed a direct comparison of census data with interview response data, (c) doing so enabled a comparison of findings between data sources, (d) interview data elaborated on the census data, (e) the data from different sources initiated new avenues for future research on the subject, and (f) a direct comparison of census findings with a subsample of interview participants had analytical benefits.

Concepts measured were profitable income supplementation sources for U.S. farmers. The profitable sources of farm income (the themes of the study) appeared in list format by income amount for each of the five cases for data analysis. The themes that emerged from the literature review were the sources of farm income supplementation as recognized by the USDA and measured by me: (a) government subsidies, (b) custom work, (c) sales of other products, (d) patronage dividends, (e) insurance payments, (f) cash rent, and (g) agtourism.

Critical components for successful data collection include appropriate skills, training, protocol, screening, elimination of bias, and a pilot case study (Yin, 2009). Researchers must remain unbiased and use an analytical frame of mind when making decisions and preliminary analyses in the data collection process (Yin, 2009). To ensure personal beliefs and prior knowledge would not interfere with the study, personal bias was set aside or bracketed to the highest extent possible in an effort to restrain myself from judgment and prejudices to study the phenomenon as presented (Denzin, 2012; Yin, 2011). Bracketing helps researchers to suspend or set aside any personal biases, previous understandings, and preconceptions during the study so they are open to the data and emergent information during the course of a study. Using a journal to document the research process kept me aware of any biases discovered during the study (Yin, 2009) so I could set those biases aside. The continual process of putting aside any personal preconceptions and comparing the journal to the ongoing study process enabled me to capitalize on personal experience in the farm industry while guarding against bias during all phases of the study.

I received training through Walden University coursework designed to teach appropriate skills and research protocol. The training applied to all areas of this study, including reliability and validity. The process to ensure reliability and validity in data collection included (a) practical application of training received through Walden University coursework, (b) constant comparison and review, (c) bracketing of personal bias, (d) a systematic and organized process of data coding, and (e) the use of a protocol during data collection.

The focus of a qualitative research design using a multiple case study methodology is on the study of the phenomenon as it emerges from the data collection process, rather than defending a preconceived hypothesis (Yin, 2009). Therefore, no preconceived variables existed in this study (Friga & Chapas, 2008); instead, the study involved interpreting the archival record data collected during the data collection process as they emerged in an exploratory fashion, then comparing and contrasting the archival record data to personal interview data for each case as recommended by Yin (2011). I collected raw data from personal interviews by note taking and audio recording, as recommended by Yin (2009). Data analysis involved using the transcribed audio recordings. I compared the transcriptions to my notes to compare my perception of what the participants stated to the transcription, and I put forth additional effort to remove any bias identified in this comparison prior to data analysis.

The strategies used to address threats to validity were (a) pilot study, (b) systematic data collection, (c) continual researcher review, (d) bracketing of researcher bias, and (e) organization of data. A pilot study helped to ensure the accuracy of the protocol questions and to improve the reliability and validity of the research study (Yin, 2009). The pilot study served to establish the replication process for each case in the multiple case study (Yin, 2009). A review of all data captured during the pilot study against the protocol questions ensured accuracy and completeness. The pilot study validated the protocol questions and reliability of the replication protocol for the study (Yin, 2011).

The study involved reviewing all data to ensure accuracy and completeness (Yin, 2009). The study involved systematically collecting, recording, and organizing data (Yin, 2009). A pilot study addressed threats to validity to validate the data collection process, researcher review, organization, and systematic data collection. The study did not include any standardized research instruments.

Data Collection Technique

The study included both archival record data and interview data. One data collection technique used was collecting the archival record data from the archival record documents. Collecting interview data from the human participants involved a different technique.

Archival record data collection technique. The multiple case study design in the study included archival record data from three sources of USDA census data. For the purpose of the study, archival record evidence was appropriate because the data needed to answer the research question within the archival record data. The comprehensive nature of the archival record enabled a large and rich sample of evidence relevant to the research question.

Yin (2009) recommended developing a simple and easy-to-use coding protocol. A simple coding protocol helped to identify data extracted from archival record data. The five farming cases consisted of several states. The use of state abbreviations by the U.S. Postal Service is widely accepted and recognized and used in the coding protocol, as illustrated in Table 2.

Table 2

State Coding Protocol for Data Collection

U.S. Postal Service abbreviation	State	U.S. Postal Service abbreviation	State	U.S. Postal Service abbreviation	State
AK	Alaska	LA	Louisiana	NY	New York
AL	Alabama	MA	Massachusetts	OH	Ohio
AR	Arkansas	MD	Maryland	OK	Oklahoma
AZ	Arizona	ME	Maine	OR	Oregon
CA	California	MI	Michigan	PA	Pennsylvania
CO	Colorado	MN	Minnesota	RI	Rhode Island
CT	Connecticut	MO	Missouri	SC	South Carolina
DE	Delaware	MS	Mississippi	SD	South Dakota
FL	Florida	MT	Montana	TN	Tennessee
GA	Georgia	NC	North Carolina	TX	Texas
HI	Hawaii	ND	North Dakota	UT	Utah
IA	Iowa	NE	Nebraska	VA	Virginia
ID	Idaho	NH	New Hampshire	VT	Vermont
IL	Illinois	NJ	New Jersey	WA	Washington
IN	Indiana	NM	New Mexico	WI	Wisconsin
KS	Kansas	NV	Nevada	WV	West Virginia
KY	Kentucky			WY	Wyoming

To determine relevance, I extracted data using protocol questions (Yin, 2011). A recommendation for case study research, and applied in this study, is a systematic search of archival record data (Yin, 2011). I searched the data from the sample by year and applied the protocol questions using the same technique for each year in a literal replication (Yin, 2009). The categorization of data from each year appeared by state. After I categorized each state, I arranged subcategories for each state. In each state, seven subcategories of data represented the seven cases, which were themes identified in

the literature that corresponded to the seven types of income supplementation sources as recommended by Yin (2009).

Step 1 in the document data collection process included (a) creating an Excel folder for each year (1997, 2002, and 2007), as illustrated by the sheaf of papers at the top of Figure 4; (b) creating a page within that Excel folder for each U.S. state (using coding protocol to establish a unique name for each state and year) illustrated in Figure 4 as an oval beneath the paper sheaf; (c) creating seven headings on each individual state Excel sheet, one for each theme (subsidies, custom work, sales, dividends, insurance, cash rent, and agtourism), that represent the seven income supplementation sources contained in the archival records as illustrated in Figure 4 by contained rectangles; and (d) populating the themes with numerical data extracted from the archival records using protocol questions. Figure 4 shows the categorization of data in Step 1 of document data collection.

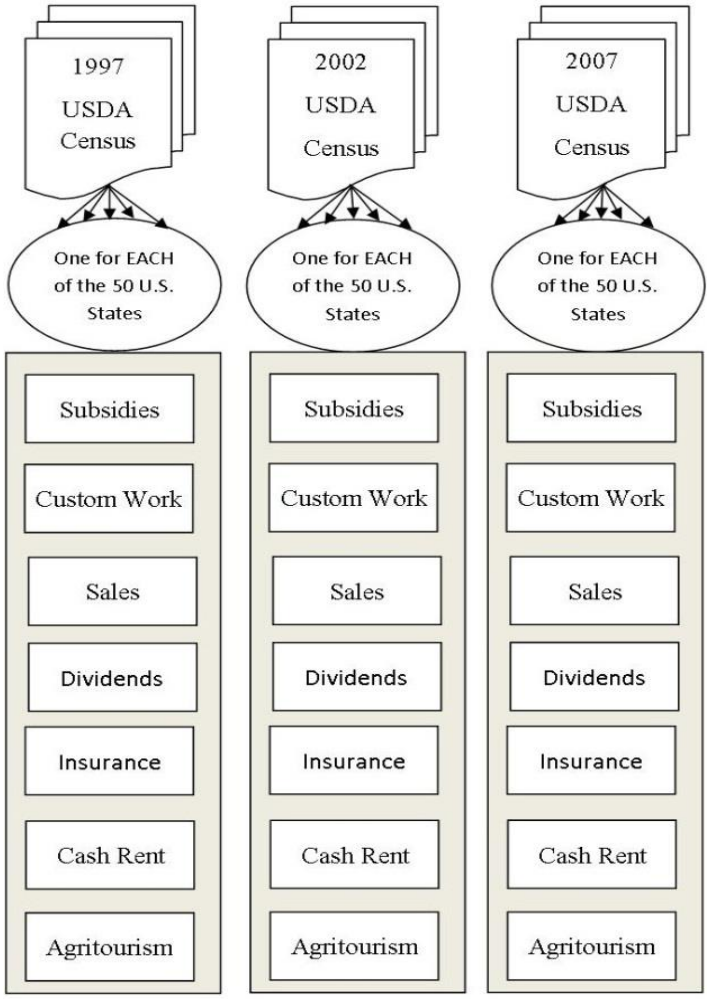

Figure 4. Systematic data collection.

Step 2 of the document data-collection technique involved consolidating the data collected in Step 1 into one master Excel spreadsheet (master table) with a row for each state by year and a column for each theme. Numerous steps were involved: (a) creating a master table; (b) within the master table of eight columns, creating one column for the state and year and one column for each of the seven themes (subsidies, custom work, sales, dividends, insurance, cash rent, agtourism); and (c) inserting a row for each state and year in the master table by transferring the data from the Step 1 sheets to the newly

created master table. The master table created in Step 2 included 150 rows organized by state and year with corresponding data in each column. At this point in the data collection process, the data populating the theme columns were still numerical and in the same format as when extracted from the archival records. Table 3 shows an example of the format of the table created in Step 2.

Table 3

Master Table Format Example

State/year	Government Subsidies	Custom work	Sales of product	Dividends	Insurance	Cash rent	Agtourism
AL97	Numerical data populated all columns at this stage of data collection						
AL02							
AL07							
AK97							
AK02							
AK07							
AR97							
AR02							
AR07							
AZ97							
AZ02							

Step 3 in the data collection process began the consolidation and reconfiguring of numerical data extracted from the archival records by (a) combining columnar state data to consolidate the 3 years of state data into one row for each state (Data Reduction A), (b) reconfiguring state rows by case within the master table (Case Configuration), and (c) combining columnar state data by case into one row of case data (Data Reduction B). At this stage, the data were still numerical but were no longer in the same raw data state as when extracted from the archival records. Table 4 is an example of the data reduction and case configuration proposed for Step 3.

Table 4

Step 3 Data Reduction and Case Configuration Example

State	Government Subsidies	Custom work	Sales of product	Dividends	Insurance	Cash rent	Agtourism
			Data Reduction A				
AL	Columnar data were numerical but combined at this stage						
AK							
AR							
AZ							
			Case configuration				
Case 1	States were re-sorted to appear in the correct case at this stage						
AZ							
CA							
CO							
ID							
MT							
NM							
OR							
UT							
WA							
WY							
			Data Reduction B				
Case 1	Columnar data were numerical, all state data were combined into one case row						
Case 2							
Case 3							

Step 4 finalized document data collection and prepared documental data for analysis. Step 4 involved replacing numerical data with themes and reorganizing themes by priority for each case. The priority list placed each theme in relevant priority for data analysis. This was the only line item that moved forward from data collection to data analysis. Table 5 shows an example of the data priority and priority reorganization proposed for Step 4.

Table 5

Step 4 Relative Priority by Case

Priority	Case 1	Case 2	Case 3	Case 4	Case 5
Most cost effective					
	Themes were entered in relative priority from most cost effective to least cost effective by case				
Least cost effective					

Interview data collection technique. Interviews took place in person with farmers from all cases who met the selection criteria (see Appendix B). Interviews were one-on-one and took place in a private meeting room at cooperative extension offices located in the five case regions. The basis for exact locations was determined in cooperation with extension agents and meeting room availability on the date or dates selected. The dates and locations of interviews were determined after obtaining IRB approval for the study. Interviews were audio recorded, and I took notes during the interview process. I encouraged participants to discuss at length their use and perspective on income supplementation as prompted by interview questions and with further encouragement from me as needed. Participants appeared in order of interview occurrence and no personal information was included in interview data that could identify the participant. Transcriptions of interview data were verbatim. I added the transcribed data to my notes, and at that time, interview data collection concluded and data analysis began.

Pilot Study

A pilot study for archival record data collection using the protocol question technique described took place prior to archival record data collection (Yin, 2009). The two states used in the pilot study were Alaska and Hawaii. I reorganized the pilot study data by data reduction in systematic steps to reduce data to a fictitious case and then by priority, as also occurred for data in the actual cases in the study. The reason for choosing Alaska and Hawaii for the pilot study is these two states are outliers not included in the five cases. The actual study replicated the coding and data collection protocol established in the pilot study (Yin, 2009).

A pilot study for human interviews using the interview questions described took place prior to human interviews (Yin, 2009). The pilot study included two interviews. I transcribed, coded, and categorized the interview data to reduce the data to useful and relevant information. The actual study replicated the coding and data collection protocol established in the pilot study (Yin, 2009).

The pilot studies (a) established the repeatable data collection technique, (b) validated the participant sample, (c) created a coding protocol for replication validity, (d) validated that the protocol/interview questions were sufficient and correctly designed to extract relevant data, and (e) validated that the coding procedure planned would be adequate and appropriate for the research study (Yin, 2011). Were there any reason to redesign the protocol/interview questions, I would have placed the alterations or redesign before the IRB for review and approval before undertaking the study.

Organization During Data Collection

The study entailed using Excel to organize archival record data during data collection. The systematic process planned for data collection (Yin, 2011) involved compiling data from the sample and disassembling data into an organized Excel table first by year, then by state, and then by theme as illustrated in Figure 4 and Tables 2, 3, 4, and 5. NVivo 9 computer-assisted qualitative data analysis software helped to organize archival data results and interview data. A qualitative researcher may use NVivo 9 to code data under multiple headings or themes, as done in this study. NVivo 9 also may be applied to themes by grouping data from interview transcripts, as done for this study.

The study involved logging data collection and data analysis procedures into a research journal to track and validate research procedures (Yin, 2009). The research journal contained notes, topics, themes, and ideas to record my understanding during the research process. The research journal helped me to ensure bracketing remained successful and consistent throughout the research process to eliminate researcher bias. The combination of a procedure journal and data tracking enabled the comparative tracking of data in the hierarchy of data collection (Yin, 2011).

I secured data with a password during the research study. Data will remain on a USB flash drive stored in a safe at my location for 5 years, and an electronic copy of the research data will remain in a Dropbox account online. After the 5-year period, I will delete online data and incinerate the USB flash drive.

Protocol Questions for Archival Record Data Collection

Protocol questions (Yin, 2011) served to extract data from the archival records. I used the protocol questions to collect raw data to answer the following research question: What supplemental income sources are most profitable for U.S. farmers? The protocol questions for the study were as follows:

1. How much income from government subsidies was paid to farmers in 1997, 2002, and 2007 for each of the 50 U.S. states?
2. How much income from custom work and other related agricultural services was paid to farmers in 1997, 2002, and 2007 for each of the 50 U.S. states?
3. How much income from gross cash rent or share payments was paid to farmers in 1997, 2002, and 2007 for each of the 50 U.S. states?
4. How much income from sales of other products was paid to farmers in 1997, 2002, and 2007 for each of the 50 U.S. states?
5. How much income from agtourism and recreational services was paid to farmers in 1997, 2002, and 2007 for each of the 50 U.S. states?
6. How much income from patronage dividends and refunds from cooperatives was paid to farmers in 1997, 2002, and 2007 for each of the 50 U.S. states?
7. How much income from crop and livestock insurance payments was paid to farmers in 1997, 2002, and 2007 for each of the 50 U.S. states?

Interview Questions for Human Data Collection

Human participants participated in interviews. Participants who met selection criteria participated in individual interviews. The interviews consisted of the following questions:

The USDA includes these farm income-supplementation sources in their census, (a) government subsidies, (b) custom work and other agricultural services, (c) sales of other products, (d) patronage dividends and refunds from cooperatives, (e) insurance payments, (f) cash rent or share payments, and (g) agtourism and recreational services.

1. Which of the USDA farm income supplementation sources do you use?
2. Why did you choose this/these particular income supplementation source(s)?
3. How profitable is/are the chosen income supplementation source(s) for you?
4. How does income supplementation affect your standard of living?
5. Discuss any additional information about these income supplementation sources such as return on investment, ease of use, labor involved, pros and cons, or any other information pertinent to each income supplementation source that you would like to share.

Software Used for Data Collection

Excel database software helped to organize document data during data collection in the study, as illustrated in Figure 4 and Tables 2, 3, 4, and 5. Excel can organize data by line in tables that researchers can integrate, reorganize, or combine for analysis and categorization. Excel contains built-in functions that performed calculations as needed for the study.

I organized the human interview data using NVivo 9 software. With NVivo 9 software, a qualitative researcher may code data under multiple headings or themes, as done in this study. Researchers may also apply NVivo 9 software to themes and use it to group data from interview transcripts, as done in this study.

Five-Phase Cycle

In case study research, data analysis involves a five-phase cycle, in which some phases may take place concurrently in a nonlinear fashion (Yin, 2011). The five phases are (a) compiling, (b) disassembling, (c) reassembling (and arraying), (d) interpreting, and (e) concluding (Yin, 2011). The basis for the data collection and analysis techniques for this study was Yin's (2011) five-phase cycle using data organization techniques recommended by Denzin (2012).

The first phase of data collection and analysis was a data compilation stage. For the document data collection, this occurred as previously discussed and illustrated in Figure 4 and Tables 2, 3, 4, and 5. Organizing the sample by concurrently selecting and categorizing the sample data into types and then labeling and coding the categories occurred in this phase for both document data and interview data (Yin, 2009). The second phase of data collection and analysis was the disassembling process, which occurred in data collection and involved dividing the data into individual groups that were meaningful for the research study. In the disassembling process, each step enabled a further refinement of data and left a trail of data that remained organized for reassembly in the analysis process (Yin, 2009). Figure 5 shows the five-phase data collection and analysis process.

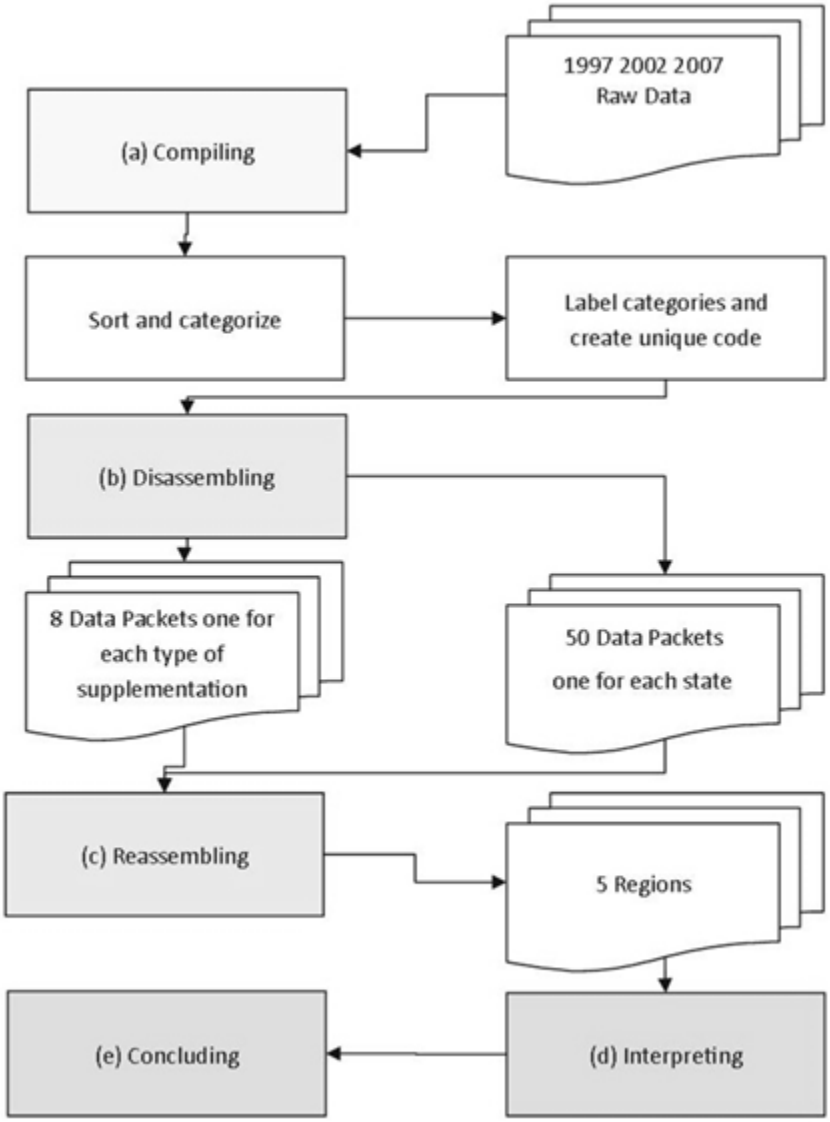

Figure 5. Illustration of data organization.

In the data collection disassembling phase, I grouped each type of data individually, coded the group appropriately by the hierarchal level of data contained therein, and organized the data in an Excel database to present information systematically, as illustrated in Figure 4 and Tables 2, 3, 4, and 5 (Mello & Flint, 2009). I grouped data first by year, then by state, and then by income source. State data were

assigned to cases identified by USDA farm region mapping (USDA, 2012). I used postal service abbreviations to code each state, as postal abbreviations are easy to recognize and remember. The study included 3 years of data coded by the last two numbers of the year. Codes for types of income included themes (subsidies, custom work, sales, dividends, insurance, cash rent, and agtourism). Cases codes were Case 1 West, Case 2 Plains, Case 3 Midwest, Case 4 Atlantic, and Case 5 South. The categorization and coding processes involved organizing the data into a tier matrix for analysis to answer the research question.

Data Analysis

The third phase of the five-phase cycle, reassembling, involved analyzing the archival record data after being reassembled into a prioritized list by relevance discovered in the data collection process using themes. This phase occurred in data analysis. I reassembled the themes so I could observe relationships to answer the research question (Yin, 2009). During the third phase, I reassembled and analyzed human interview data by themes (subsidies, custom work, sales, dividends, insurance, cash rent, and agtourism) to correspond with the document data.

The fourth phase of the five-phase cycle, interpreting, involved analyzing the themes of archival record data and interview data by case and comparing document data to interview data. Each of the cases comprised an individual case in the multiple case study. This phase occurred in data analysis. Researcher interpretation of data is a part of case study research (Yin, 2009). I used the reassembled prioritized themes to explore the phenomenon under study in a comparative analysis by case (Yin, 2009), and the strategy

employed was flexible so an exploration occurred, not an examination (Yin, 2009). Comparison occurs between cases in a cross-case analysis (Yin, 2011). The comparison of emergent themes in the five cases created qualitative analysis at a broader and richer level than the original census data could be analyzed using quantitative statistical analysis (Yin, 2011). I interpreted the data from all cases in depth, with rich description of contrast and comparison between archival record data and human interview data collected within the case. Contrasts and similarities revealed between the two data sources were analyzed between data sources and between cases in Phase 4.

The fifth phase of the five-phase cycle, concluding, involved writing a description of the study findings. The Results section includes five cases; I compared and contrasted interview and archival record data by theme and then compared the data to the literature. The human interview data expanded the research results from archival records providing rich data and perspectives from farmers in each case. Items discussed in the fifth phase of the five-phase cycle were triangulation and congruence.

Triangulation

The triangulation strategy involved a variety of data, investigators, time, and methods (Denzin, 2012). Denzin (2012) noted that a satisfactory form of triangulation includes a combination of different methods and data to measure the same unit. Denzin (2012) identified this type of triangulation as across-method triangulation. I chose across-method triangulation because the study included the quantitative data already available from the USDA farm census, the available scholarly literature on the subject of farm income supplementation methods, and the qualitative data that I gathered from

interviews with 25 farmers. As recommended by Denzin (2012) the study included different methods and data sources to explore farm income supplementation. Combining flaws and biases in one method with the strengths of another helps to overcome deficiencies and achieve a high degree of validity (Denzin, 2012). The use of three data types helped to triangulate the study: archival records (census survey data), literature (peer-reviewed farm income articles), and personal interviews (with individual farmers). Table 6 shows the data sources.

Table 6

Triangulation Data Sources

Data	Time variants	Investigators	Types	Methodology
Archival data (census survey data)	1997–2007	U.S. Census takers	Mail in and telephone survey	Quantitative
Literature (peer-reviewed farm income articles)	2009–present	Authors and scholars	Emergent, may use grounded theory, ethnography, phenomenology, narrative, quantitative	Quantitative or qualitative
Interview (personal interviews with farmers)	2013	Researcher	Personal interview	Qualitative

The triangulation strategy included time variants so that outside occurrences (such as cattle diseases or e-coli outbreaks) would not skew the data based upon data collection times. Numerous investigators were introduced by using various data types that created greater reliability by removing potential bias (Denzin, 2012). The study involved using various types of data. The initial source of data was archival record data from the USDA census, the second source of data were personal interviews with individual farmers, and

the third source of data were other studies on farm income. Triangulation involved both quantitative and qualitative data.

Using varying data types and sources with a different research methodology or design is acceptable in triangulation (Diaz-Andrade, 2009). When using survey data as an initial source, other study documents and personal interviews are acceptable for triangulation (Denzin, 2012; Diaz-Andrade, 2009; Timmer, 2010; Yin, 2011). To achieve sufficient personal interviews from farmers, I pursued data saturation using an initial sample size of five participants in each case for a total minimum sample size of 25 participants with a stopping criterion of three interviews conducted without new ideas emerging. This translated to a 5/3 criterion for each of the five cases for a minimum of 25 interviews overall. The goal was for each case to reach data saturation individually based upon potential unique qualities or ideas through the 5/3 criterion rather than by a predetermined number of interviews.

Relation to Conceptual Framework

This study related to Maslow's (1943) hierarchy of needs theory. The farm population is a marginalized sector of the population (Hoppe & Banker, 2010; USDA, 2012) affected by an important social issue (poverty) that was the focus point of the research study from within the conceptual framework (Maslow, 1943). Researchers have conducted other studies advocating for improvement in the lives of marginalized sectors of the population using Maslow's (1943) hierarchy of needs as the conceptual framework (Baslevent & Kirmanoglu, 2012; Cangemi, 2009; Chou, 2010; Coleman-Jensen & Nord, 2010; De Brouwer, 2009; Duncan & Blugis, 2011; Durand, 2010; Freitas & Leonard,

2011; Gomes, 2011; Hablemitoglu et al., 2010; Hopkins & Hill, 2010; Juliano & Sofield, 2011; Kenrick et al., 2010; Lonnqvist et al., 2009; Paris & Terhaar, 2010; Pulasinghage, 2010; Reyers et al., 2010; Rocha & Miles, 2009; Rossiter, 2009; Sarin, 2009; Sun & Wang, 2011; Udechukwu, 2009; Venter & Venter, 2010; Yount, 2009; Zavei & Jusan, 2012).

Reliability and Validity

Reliability

Data must be trustworthy and research processes repeatable to establish reliability (Yin, 2009). Archival record data for the study were from a trustworthy source: the USDA census. The study involved comparing interview data to archival record data, thereby increasing the reliability of document data results. Because I acted as the data collection aggregator by selecting data from the archival records and the interview instrument for the human interviews for the study, continuous self-review of the data collection and data analysis processes occurred. Comparison of data took place throughout the data collection and data analysis processes. The review and comparison of data enhanced reliability by ensuring research content was accurate and consistent between the five cases and when comparing and contrasting themes between archival record data and interview data (Yin, 2009). Yin (2009) recommended keeping a chain-of-events journal or database to document each step of the case study to enable process repeatability and establish reliability. The data organization process for the study included a research journal outlining each step in the research process to create process repeatability. Yin (2009) indicated that validity emerges from reliability. Therefore, the

effort expended upon reliability that included using a research journal, continually monitoring research procedures, establishing the reliability of the document data population, and comparing archival record data to current interview data also enhanced the validity in the study (Yin, 2009).

Internal Validity

Yin (2009) noted that in case study research, internal validity represents the confidence that can be placed in the cause and effect relationship in the research study. Internal validity is important to research studies that contain a causal relationship (Yin, 2009). This study had causal connotations based upon the research question. However, the study was not an experimental cause and effect study. Instead, the study involved (a) exploring historic uses of income supplementation for farmers through USDA census archival record data and (b) interpreting and comparing interview data from personal interviews with farmers to determine which of the historically recorded uses was the most profitable for the farmers in each case. Therefore, the focus of internal validity as applied to this study is on the effect that I as the instrument had on the research study results and on the research design (Yin, 2009). The effect of using myself as the data collection instrument also affected validity through the reliability of the research conducted by me. The systematic research analysis plan helped me to draw accurate conclusions from the study findings when comparing cases and comparing archival record data to interview data by creating order and a protocol plan to follow (Yin, 2011).

Credibility testing occurred in every phase of the study by self-audit, a review of collection and coding mechanisms, and repeatability (Yin, 2009). A manual review of

patterns, output, code accuracy, consistency, and measurement occurred to enhance internal validity (Denzin, 2012; Yin, 2009). The study included a research journal, data organization, and coding techniques. The chain of evidence created in the research process created a pattern to enable future readers to follow the study logic and reach the same conclusions (Yin, 2009). Such evidence eliminates bias or lost data that would alter research results (Yin, 2009).

External Validity

External validity was (a) the ability of the study to generalize into the larger (farm) population and (b) the ability to replicate coding and analysis techniques in the multiple cases (Yin, 2009). The ability of the research study to generalize into the farm population (Yin, 2009) was high because the archival record data from the USDA census were representative of the entire U.S. farm population, and the personal interview data provided a comparison and contrast to the archival record data. The analytic generalization proposed by Yin (2009) relies upon the ability of a researcher to generalize study results to the theory from which the case study is derived. Andersen and Kragh (2010) suggested that building upon theory creates new generalizations as study results expand theory. In the case of this study, the conceptual framework was Maslow's (1943) hierarchy of needs that was used to develop the research project so the results can be better generalized upon conclusion of the research (Yin, 2009).

The protocol established for the study was followed consistently. Self-performing a conformability audit helped to ensure the resultant research used the correct research measures as outlined in the research protocol (Yin, 2009). To perform the conformability

audit, I documented each case in the research journal and I checked and cross-checked the techniques and processes of data collection and analysis repeated for each case between cases and journal to ensure each case was a true replication of the other cases (Yin, 2009). In addition, I checked and cross-checked protocol for each case and between each case during the conformability audit to ensure each case met the research protocol established for the study (Yin, 2009). Transferability should occur after a study is complete to determine if results provide strong support for the theory (Yin, 2009). Section 3 will contain a recommendation for further research to occur with similar populations, characteristics, and parameters that will enable transferability of the research conducted in this study.

Transition and Summary

Section 1 and 2 included 250 references, 94% of which were peer-reviewed articles published in or after 2009 and verified as peer reviewed through Ulrich's, 234 were peer reviewed journal articles, seven were books, seven were governmental sources, and two were either not peer-reviewed articles or the year of publication was before 2009. Section 2 revealed details regarding the research process of the research study. The section included discussions on the role of the researcher, the use of secondary documents for the data population of the study, and interview participants. The section contained a description of the sampling method, research method, research design, and ethical considerations. The section also contained an explanation of data collection instruments and techniques, data analysis, reliability and validity concerns, and methods to ascertain both. A data organization plan was also included.

Section 3 contains the research findings from the study. The section includes a discussion of the application to professional practice, implications for social change, and recommendations for further study. The section also contains a recommendation for action and reflections upon the study process.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this qualitative multiple case study was to explore profitable supplemental income sources for U.S. farmers in five cases. The five cases in this multiple case study were the five USDA farming regions. The data collection results and findings answered the following research question: What supplemental income sources are most profitable for U.S. farmers? The study includes findings from exploring USDA archival census data and personal interview data I collected from farmers in each case. I used a case study method to explore and interpret the data sources, which included three data sources for triangulation (Denzin, 2012). Archival record data from the USDA census were the initial data source, personal interview data from farmer participants were the second data source, and peer-reviewed literature on farm income that used USDA archival record data comprised the third data source.

Government subsidies, cash rent, and dividend payments were the three most profitable income supplementation sources in five cases according to archival data findings. Through personal interviews, participants stated that subsidy payments were the most consistent dollar amount received through supplementation sources. The interview findings collected from farmer participants varied by case but generally supported the findings from archival data. Interview findings in three cases supported government subsidies as the most profitable, the findings in one case supported cash rent, and the findings in one case supported dividend payments as the most profitable supplemental income sources. The difference in priority between interview findings and

archival data findings was greatest when interview participants did not use all supplemental income sources included in the study. Findings from the study indicated that farmers who add supplemental income sources experience profitability and that profitability increases as farmers include multiple sources of supplemental income. Participants who used more supplemental income sources experienced more profitability than those who used fewer. The interview findings supported the concept presented in the literature review that regionality may affect the choice of income supplementation.

Presentation of the Findings

This section includes the study findings presented in the order of analysis. Archival findings are presented by protocol question, interview findings are presented by interview question, findings appear individually in each of the five cases, then by cross-case analysis, and finally as overall conclusions. All findings address the research question. The research question for this study was as follows: What supplemental income sources are most profitable for U.S. farmers? I address the findings by evidence collected from USDA archival data, personal interviews with farmers from each case region, and literature on the subject of farm income supplementation.

A correlation between findings and the conceptual framework of Maslow's (1943) hierarchy of needs occurred, and I compared the findings to existing literature on farm income supplementation sources as a business practice. The archival data findings supported the literature review discovery of seven supplemental income sources. Those sources were (a) government subsidies, (b) custom work and other agricultural services, (c) sales of nonfarm products, (d) patronage dividends and refunds from cooperatives, (e)

insurance payments, (f) cash rent or share payments, and (g) agtourism and recreational services.

Personal interviews took place at farm events in four locations over a 3-week period. The farm events included a large farm and livestock exposition centrally located and attended by farmers from all U.S. farm regions, two USDA town meetings, and one regional USDA event. From these locations, 286 persons received an invitation to participate, and 133 (47%) agreed to do so. Of those who agreed to participate, I interviewed the first 30 who met the criteria to participate in the study and who were from case regions where I needed interviews. The criteria limited participation to those who were at least 21 years of age, had completed at least one USDA farm census survey, and were actively farming. The study design was to interview a minimum of five farmers from each of the five case regions. Of those who agreed to participate, many were from regions where the interviews for that case were already conducted, so I did not interview them.

Of the 30 interviews conducted, two were incomplete and I did not use them in the study. One participant subsequently contacted me and requested I remove the interview from the study, and I did so. Of the 27 included interviews, the first two comprised the pilot study and the study included the remaining 25 interviews (five from each case). The study design supported using a minimum of five interviews per case with a stopping criterion of three interviews conducted without new ideas emerging for a minimum of 25 interviews. The interviews conducted met the data saturation criterion for each case because they included no new ideas. The study included three data sources

for triangulation (Denzin, 2012). Archival data from the 1997, 2002, and 2007 USDA censuses were the initial data source, personal interviews with 25 farmers from the five cases were the second data source, and peer-reviewed literature on the subject of supplemental farm income was the third data source for triangulation.

The pilot studies for both the archival record data and the personal interviews were successful, with no alterations or changes needed in either procedure. Two states not included in the five cases served as a pilot study to establish the archival data collection technique and to create a coding protocol for replication validity. Those states were Alaska and Hawaii. The archival data pilot study confirmed that the data collection technique planned was appropriate and would gather relevant data from the data source. Two interviews not included in the interview findings served as an interview pilot study. The resulting data from the pilot interviews met my expectations and were appropriate to answer the research question, so no changes to the interview questions were necessary and the interviews proceeded using the planned interview questions.

Data Analysis Technique

I entered both the archival record data and the interview transcript data into NVivo 9. NVivo 9 helped me to facilitate the exploration and coding of both the extracted archival data and the subsequent personal interview data. I explored all data by query to identify themes using a broad brush analysis and then a tag cloud analysis. I coded data into NVivo 9 nodes first by case and then by theme for analysis. Themes identified in NVivo 9 included the seven income supplementation themes and two additional themes. Emergent themes of regionality and multiplicity appeared using the

NVivo 9 tag cloud analysis tool. I conducted further exploration of the interview data to analyze the two emergent themes and included them in the presentation of findings. I completed individual case analysis for each of the five cases first and then completed a cross-case analysis of five cases with a comparative analysis of overall results across all cases. Analysis techniques that I used to determine priority included frequency analysis, participant and case comparison, language exploration of interview transcripts, comparison of my notes and perceptions of interview responses to interview transcripts, and comparison of archival data to interview data. I compared the combined findings from archival data and interview data to literature data for triangulation as recommended by Denzin, (2012).

Archival, Interview, and Literature Data Findings

Archival data findings that answer the protocol questions for all states were included in Appendix G. Protocol questions were used to extract raw data from the archival records. The raw data for each of the seven protocol questions were compiled, disassembled, and reassembled using Excel then entered into NVivo 9 for analysis during the five-phase analysis process. Excerpts from the interview questions were included in the presentation of findings. Raw interview data for each of the five interview questions and the archival data findings were coded into nodes in NVivo 9 by case and theme to answer the research question using query, broad brush analysis, and tag cloud analysis. Literature was compared by theme to the archival and data findings in each case for triangulation. Literature selection was conducted in the same manner as interviews were, using a 5/3 criterion for each of the five cases for a minimum of 25 literature sources

overall. The conceptual framework was Maslow's (1949) hierarchy of needs, and in all cases interview findings indicated a positive relationship between profitable income supplementation and quality of life. The study findings on this relationship were significant in all cases, and therefore were included in a separate section following the presentation of individual case findings.

Individual Case Findings

The study involved comparing and contrasting the archival record data findings, the interview data findings, and the literature in each case. A breakdown of both archival data and interview data indicated where data were analyzed and themes prioritized from 1 to 7, where 1 was the most profitable and 7 was the least profitable in each case. The prioritized theme data findings were compared to literature sources. This section includes the individual case findings presented in the order of analysis.

Key study findings were discovered during data analysis. Key findings in this study were; (a) government subsidies were the most important supplemental income source, (b) supplemental income sources provide more income than growing crops, (c) without sustainable income U.S. farms were unsustainable, (d) using multiple income supplements was the most profitable no matter which were chosen, (e) geographic region affected the choice and profitability of the seven studied income sources, and (f) income supplementation improved quality of life for U.S. farmers. Table 7 below illustrates key findings supported by significant statements from interview data.

Table 7

Key Findings Supported By Significant Statements From Interview Data

Key finding	Significant statements
Government subsidies were the most important supplemental income source.	Without subsidies, we could not farm at all. We couldn't survive without government subsidies. The (government subsidies) are a huge part of our business plan.
Supplemental income sources provide more income than growing crops.	We make as much with just subsidies as we do with crops. Custom work is not highly profitable, but it is more income than our crops.
Without supplemental income U.S. farms were unsustainable.	We would not be in business without these income supplements. Before supplementing our income we were barely able to eat and keep the power on. We were struggling with our farm income to survive.
Using multiple income supplements was the most profitable no matter which were chosen.	Income supplementation helps out tremendously.
Geographic region affects the choice and profitability of the seven studied income sources.	Agritourism is very profitable. (Case 1) Ain't no tourists here, agtourism is a joke. (Case 2) We pick our crops based on which are the most subsidized. (Case 5) It doesn't matter if the crop is subsidized if it doesn't grow here. (Case 4)
Income supplementation improved quality of life for U.S. farmers	Supplementation increases our income so that we are able to . . . improve our standard of living. We are able to afford to put our daughters through college now. For the first time in my life our income is above poverty level. It (income supplementation) has paid for many extra things in our lives.

Case 1 West. States included in Case 1 West are Arizona, California, Colorado, Idaho, Montana, New Mexico, Nevada, Oregon, Utah, Washington, and Wyoming. Archival record data findings in Case 1 West indicated that government subsidies were the most profitable supplemental income source for farmers in this case, with all states (100%) prioritizing government subsidies first in profitability. Participant 4 (P4) did not consider government subsidies to be at all important to his income, indicating that the agtourism business was more profitable.

> I have a guest ranch, and I came into the agriculture business from a tourism background. I wanted to have the lifestyle of a rancher, but I wanted a higher income. The guest business is also seasonal, so this allows us the freedom to leave the ranch during the winter months to visit friends and family. This type of business is also very lucrative and allows us the ability to keep our high standard of living while enjoying the outdoors. The only government subsidy I receive is a CRP payment for some land that I bought to expand our ranch. As soon as the time is up for the CRP program, that land will be grazed like the rest of our property and I will not use government subsidies at all.

P23 indicated that the agtourism business was the most profitable supplemental income source, stating "Agritourism is very profitable and is our most important income supplementation. We sell many different products from our gift shop and do wine tastings and vineyard tours." Other Case 1 West participants indicated government subsidies were a critical part of their income. P5 stated "We count on government money. We pick our crops based on which are the most subsidized, we purchase land

based on this as well, and they are a huge part of our business plan." P19 responded "We make as much with just subsidies as we do with our crops." Findings from Case 1 West are in Table—a 8.

Table 8

Case 1 West Priority

Data Source	Government subsidies	Custom work	Sales of products	Dividends	Insurance	Cash rent	Agtourism
Archival data							
Arizona	1	2	6	3	5	4	7
California	1	4	7	2	5	3	6
Colorado	1	4	7	2	5	3	6
Idaho	1	4	6	3	5	2	7
Montana	1	4	7	2	5	3	6
New Mexico	1	3	7	4	5	2	6
Nevada	1	3	7	5	4	2	6
Oregon	1	3	5	4	6	2	7
Utah	1	3	7	4	5	2	6
Washington	1	4	6	2	5	3	7
Wyoming	1	4	7	2	5	3	6
Priority	1	4	7	3	5	2	6
Interview data							
Farmer 1	3	—	2	4	—	—	1
Farmer 2	1	2	—	3	4	—	—
Farmer 3	1	2	—	3	4	5	—
Farmer 4	3	5	1	7	6	4	2
Farmer 5	—	3	2	—	—	—	1
Priority	1	3	4	5	6	7	2

Note. A dash represents supplemental income sources not used by interview participants.

Archival record data findings indicated that cash rent prioritized second and dividends prioritized third in Case 1 West, which was not consistent with overall findings that prioritized dividends second and cash rent third. The least profitable supplemental income source according to archival record data findings for Case 1 West was sales of other products, which prioritized seventh, with agtourism prioritized sixth. Other

supplemental sources clustered in the middle, according to archival record data findings, with dividends prioritized third most profitable, custom work prioritized fourth most profitable, and insurance prioritized fifth most profitable in Case 1 West. Interview data findings were not consistent with archival record data findings in Case 1 West. Interview data findings indicated that farmers interviewed for Case 1 West used all seven supplemental income sources, but not all farmers used all supplemental income sources. Findings indicated that 80% of farmers interviewed for Case 1 West used government subsidies and custom work; 60% of farmers interviewed used sales of other products, dividends, insurance, and agtourism; and 40% of farmers used cash rent. Interview participants for Case 1 West were diverse in their use of supplemental income sources.

Barbieri & Mahoney (2009) indicated that agtourism prioritized the most profitable income supplementation source; however that was not consistent with Case 1 West findings which prioritized agtourism sixth. Government subsidies prioritized first in Case 1 West and this was not consistent with literature findings, which placed government subsidies second (Danlel & Kilkenny, 2009). Cash rent prioritized seventh in the literature which was not consistent with Case 1 West findings (Du & Hennessy, 2012)). Other supplemental income sources were consistently represented in the literature and in Case 1 West, with custom work prioritized fourth, insurance fifth, and dividends third in both (Aakre, 2011; Bijman & Doorneweert, 2010; Rejesus et al., 2010). Sales of other products were prioritized seventh in Case 1 West findings, which were not consistent with the literature which prioritized sales of other products sixth (Bunten, 2010).

Case 2 Plains. States included in Case 2 Plains were Kansas, Nebraska, North Dakota, Oklahoma, South Dakota, and Texas. Archival record data findings from Case 2 Plains indicated government subsidies were the most profitable supplemental income source for farmers, with all states (100%) prioritizing government subsidies first in profitability. P1 indicated that subsidies were the most profitable stating "Government subsidies are great because it is guaranteed income in a very unreliable market." Archival record data findings indicated that dividends prioritized second and cash rent prioritized third in Case 2 Plains, which was consistent with overall findings that prioritized dividends second and cash rent third. P15 noted "The crops we grow lend well to government subsidies, which are the most profitable to us. Custom work is the second most profitable for us." For P21 custom work is more profitable "Custom work is not highly profitable but it is more income than our crops and more than the other supplemental income sources we use." The least profitable supplemental income source according to archival record data findings for Case 2 Plains was sales of other products, which prioritized seventh, with agtourism prioritizing sixth. Other supplemental sources clustered in the middle according to archival record data findings, with cash rent prioritized third most profitable, custom work prioritized fourth most profitable, and insurance prioritized fifth most profitable in Case 2 Plains. Interview data findings were not consistent with archival record data findings in Case 2 Plains. Findings from Case 2 Plains are in Table 9.

Table 9

Case 2 Plains Priority

Data Source	Government subsidies	Custom work	Sales of products	Dividends	Insurance	Cash rent	Agtourism
Archival data							
Kansas	1	4	7	2	5	3	6
North Dakota	1	5	7	2	4	3	6
Nebraska	1	4	7	2	5	3	6
Oklahoma	1	4	7	3	5	2	6
South Dakota	1	4	7	2	5	3	6
Texas	1	4	7	3	6	2	5
Priority	1	4	7	2	5	3	6
Interview data							
Farmer 1	1	2	—	3	4	5	—
Farmer 2	1	7	5	2	4	3	6
Farmer 3	1	2	—	3	4	5	—
Farmer 4	1	3	—	5	2	4	—
Farmer 5	—	1	4	2	3	—	—
Priority	1	2	6	3	4	5	7

Note. A dash indicates supplemental income sources not used by interview participants.

Interview data findings indicated that farmers interviewed for Case 2 Plains used all seven supplemental income sources, but not all farmers used all supplemental income sources. Findings indicated that 100% of farmers interviewed for Case 2 Plains used dividends and insurance, and 80% of farmers interviewed for Case 2 Plains used government subsidies, custom work, and cash rent. Forty percent of farmers used sales of other products, and 20% used agtourism. Interview participants for Case 2 Plains were diverse in their use of supplemental income sources.

Agtourism prioritized first in the literature (Forbord et al., 2012), this was not consistent with Case 2 Plains findings which prioritized agtourism sixth with 20% of farmers interviewed using agtourism. Government subsidies prioritized first in Case 2 Plains and this was not consistent with literature findings which prioritized government

subsidies second (Viaggi et al., 2011). Cash rent prioritized seventh in the literature which was not consistent with Case 2 Plains findings (Nag & Reimer, 2011). Custom work, insurance, and dividends were clustered in the middle in both the literature and in Case 2 Plains (Aakre, 2011; Briggeman & Jorgensen, 2009; J. Cooper et al., 2012). Sales of other products were prioritized seventh in Case 2 Plains findings, which was not consistent with the literature which prioritized sales of other products sixth (Hall & Page, 2009).

Case 3 Midwest. States included in Case 3 Midwest were Iowa, Illinois, Indiana, Michigan, Minnesota, Missouri, Ohio, and Wisconsin. Archival record data findings for Case 3 Midwest indicated that government subsidies were the most profitable supplemental income source for farmers, with all states (100%) prioritizing government subsidies first in profitability. P2 stated "The government makes subsides rather painless to obtain. These programs have been around for a long time, so I was taught about them as I learned to farm." P18 responded "Government subsidizes some crops because they are needed, so I grow the subsidized crops based on the need."

Archival record data findings indicated that dividends prioritized second and insurance prioritized third in Case 3 Midwest, which was not consistent with overall findings that prioritized dividends second and cash rent third. The least profitable supplemental income source according to archival record data findings for Case 3 Midwest was sales of other products, which prioritized seventh, and agtourism prioritized sixth. Other supplemental sources clustered in the middle according to archival record

data findings, with insurance prioritized third most profitable, custom work prioritized fourth most profitable, and cash rent prioritized fifth most profitable in Case 3 Midwest. Findings from Case 3 Midwest are in Table 10.

Table 10

Case 3 Midwest Priority

Data Source	Government subsidies	Custom work	Sales of products	Dividends	Insurance	Cash rent	Agtourism
Archival data							
Iowa	1	4	7	2	5	3	6
Illinois	1	4	7	2	5	3	6
Indiana	1	4	6	3	5	2	7
Michigan	1	4	6	3	5	2	7
Minnesota	1	4	7	2	5	3	6
Missouri	1	4	6	2	5	3	7
Ohio	1	4	6	2	5	3	7
Wisconsin	1	4	6	2	5	3	7
Priority	1	4	6	2	5	3	7
Interview data							
Farmer 1	1	4	—	2	3	5	—
Farmer 2	1	3	—	4	2	5	—
Farmer 3	1	2	7	3	5	4	6
Farmer 4	1	5	—	2	3	4	—
Farmer 5	—	—	2	5	4	3	1
Priority	1	5	7	2	3	4	6

Note. A dash indicates supplemental income sources not used by interview participants.

Interview data findings were not consistent with archival record data findings in Case 3 Midwest. Interview data findings indicated that farmers interviewed for Case 3 Midwest used all seven supplemental income sources, but not all farmers used all supplemental income sources. Findings indicated that 100% of farmers interviewed for Case 3 Midwest used dividends and insurance, and 80% of farmers interviewed used government subsidies, custom work, and cash rent. P11 stated “I help the neighbors hay their meadows for a portion of their hay. This helps keep costs down in the winter for

feeding my cattle, this is profitable for me." Twenty percent of farmers used sales of other products and agtourism. Interview participants for Case 3 Midwest were diverse in their use of supplemental income sources.

Government subsidies prioritized first in Case 3 Midwest, this was not consistent with literature findings, which prioritized government subsidies second (Bonfiglio, 2011). Agtourism prioritized first in the literature (Baughman et al., 2012), this was not consistent with Case 3 Midwest findings which prioritized agtourism seventh. Cash rent prioritized seventh in the literature which was not consistent with Case 3 Midwest findings in fifth priority (Harsh et al., 2010). Custom work and insurance were clustered in the middle in both the literature and in Case 3 Midwest (Aakre, 2011; Enjolras & Kast, 2012). Dividends prioritized third in the literature (Block, 2009) which was not consistent with Case 3 Midwest findings, which prioritized dividends second. Sales of other products were prioritized sixth in Case 3 Midwest findings, which was consistent with the literature (Cowan-Sahadath, 2010).

Case 4 Atlantic. States included in Case 4 Atlantic were Connecticut, Delaware, Kentucky, Massachusetts, Maryland, Maine, North Carolina, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Tennessee, Virginia, Vermont, and West Virginia. Archival record data findings from Case 4 Atlantic indicated that government subsidies were the most profitable supplemental income source for farmers, with all states except New Jersey, prioritizing government subsidies first in profitability. P8 stated "Without subsidies, we could not farm at all. We would not be in business without these income supplements." Archival record data findings indicated that dividends

prioritized second and cash rent prioritized third in Case 4 Atlantic, which was consistent with overall findings that prioritized dividends second and cash rent third. The least profitable supplemental income source according to archival record data findings for Case 4 Atlantic was agtourism, which prioritized seventh; insurance prioritized sixth. Findings from Case 4 Atlantic appear in Table 11.

Table 11

Case 4 Atlantic Priority

Data Source	Government subsidies	Custom work	Sales of products	Dividends	Insurance	Cash rent	Agtourism
Archival data							
Connecticut	1	6	4	2	5	3	7
Delaware	1	4	7	2	5	3	6
Kentucky	1	5	6	4	2	3	7
Massachusetts	1	4	2	3	5	6	7
Maryland	1	4	6	2	5	3	7
Maine	1	3	2	4	6	5	7
North Carolina	1	5	6	3	4	2	7
New Hampshire	1	3	2	5	4	6	7
New Jersey	1	5	1	6	4	3	7
New York	1	4	5	2	6	3	7
Pennsylvania	1	4	6	2	5	3	7
Rhode Island	1	5	2	3	4	6	7
Tennessee	1	5	6	2	4	3	7
Virginia	1	5	6	2	4	3	7
Vermont	1	4	3	2	6	5	7
West Virginia	1	5	2	3	6	4	7
Priority	1	5	4	2	6	3	7
Interview data							
Farmer 1	1	3	—	2	5	4	—
Farmer 2	7	4	1	5	3	6	2
Farmer 3	1	4	—	2	3	—	—
Farmer 4	—	5	2	4	3	—	1
Farmer 5	—	3	4	1	5	—	2
Priority	6	4	5	1	3	7	2

Note. A dash indicates supplemental income sources not used by interview participants.

Other supplemental sources clustered in the middle according to archival record data findings, with cash rent prioritized third most profitable, sales of products prioritized fourth most profitable, and custom work prioritized fifth most profitable in Case 4 Atlantic. Interview data findings were not consistent with archival record data findings in Case 4 Atlantic. Even though archival data indicated that agtourism was the least profitable, P6 responded "Agritourism is even more profitable than farming." Interview data findings indicated that farmers in Case 4 Atlantic used all seven supplemental income sources, but not all farmers used all supplemental income sources. P22 stated "The most profitable would be dividends when I sell my crops." Findings indicated that 100% of farmers interviewed for Case 4 Atlantic used dividends, insurance, and custom work. Sixty percent of farmers interviewed used sales of other products and agtourism, and 40% of farmers used government subsidies and cash rent. Interview participants from Case 4 Atlantic were diverse in their use of supplemental income sources.

Government subsidies prioritized first in Case 4 Atlantic, this was not consistent with literature findings, which prioritized government subsidies second (Darnhofer et al., 2010). Agtourism prioritized first in the literature (Guiling et al., 2009), this was not consistent with Case 4 Atlantic findings which prioritized agtourism seventh. Cash rent prioritized seventh in the literature which was not consistent with Case 4 Atlantic findings in third priority (Ilbery et al., 2010). Custom work and insurance were clustered in the middle in both the literature and in Case 4 Atlantic (Aakre, 2011;McPeak et al., 2010). Dividends prioritized third in the literature (Cook, 2011) which was not consistent with Case 4 Atlantic findings, which prioritized dividends second. Sales of other

products were prioritized fourth in Case 4 Atlantic findings, which was not consistent with the literature, which placed sales of other products sixth (Amami et al., 2010).

Case 5 South. States included in Case 5 South were Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, and South Carolina. Archival record data findings from Case 5 South indicated that government subsidies were the most profitable supplemental income source for farmers, with all states (100%) prioritizing government subsidies first in profitability. P7 stated "Government subsidies are where it is at. I have to do very little for the income. We couldn't survive without government subsidies." P9 stated "Government subsidies are easy money."

Archival record data findings indicated that cash rent prioritized second and dividends prioritized third in Case 5 South, which was not consistent with overall findings that prioritized dividends second and cash rent third. P17 utilized cash rent, stating "We recently allowed BP to put wind turbines on our land. The windmill money is extremely profitable. We have paid off our mortgage with windmill money." The least profitable supplemental income source according to archival record data findings for Case 5 South was agtourism, which prioritized seventh; insurance prioritized sixth. P10 commented "Our tourism business is very profitable. The riding school brings in plenty of income to cover the costs and then some." Other supplemental sources clustered in the middle according to archival record data findings, with dividends prioritized third most profitable, sales of other products prioritized fourth most profitable, and custom work prioritized fifth most profitable in Case 5 South.

Interview data findings were not consistent with archival record data findings in Case 5 South. Interview data findings indicated that farmers in Case 5 used all seven supplemental income sources, but not all farmers used all supplemental income sources. Findings indicated that 100% of farmers interviewed for Case 5 South used dividends, insurance, and custom work; 60% of farmers interviewed used sales of other products and cash rent; and 40% of farmers used government subsidies and agtourism. Interview participants for Case 5 South were diverse in their use of supplemental income sources. Findings from Case 5 South appear in Table 12.

Table 12

Case 5 South Priority

Data Source	Government subsidies	Custom work	Sales of products	Dividends	Insurance	Cash rent	Agtourism
Archival data							
Alabama	1	5	4	3	6	2	7
Arkansas	1	3	5	2	6	4	7
Florida	1	4	6	3	5	2	7
Georgia	1	5	4	3	6	2	7
Louisiana	1	4	5	3	6	2	7
Mississippi	1	5	4	2	7	3	6
South Carolina	1	5	3	4	6	2	7
Priority	1	5	4	3	6	2	7
Interview data							
Farmer 1	—	1	—	2	3	—	—
Farmer 2	1	5	2	4	6	7	3
Farmer 3	7	4	1	5	3	6	2
Farmer 4	—	1	—	3	4	2	—
Farmer 5	1	4	3	2	5	6	7
Priority	5	1	3	2	4	7	6

Note. A dash indicates supplemental income sources not used by interview participants.

Agtourism prioritized first in the literature (Durand, 2010), this was not consistent with Case 5 South findings which prioritized agtourism seventh. Government subsidies

prioritized first in Case 5 South, this was not consistent with literature findings, which prioritized government subsidies second (El-Osta, 2010). Cash rent prioritized seventh in the literature which was not consistent with Case 5 South findings second in priority (LeVert et al., 2009). Custom work and insurance were clustered in the middle in both the literature and in Case 5 South (Aakre, 2011; Ramirez & Carpio, 2012). Sales of other products were prioritized fourth in Case 5 South findings, which was not consistent with the literature, which placed sales of other products sixth (Doz & Kosonen, 2010). Dividends prioritized third in the literature (Cook, 2011) which was consistent with Case 5 South findings, which prioritized dividends second.

Cross Case Analysis

Interview findings supported the literature findings that regionality may affect the choice of supplemental income source. The interviewed farmers did not always use all supplemental sources included in the archival data, and the interview data findings reflected the farmers' limited use of supplemental income sources included in the study. Archival record data findings indicated that government subsidies were the most profitable in five cases, but only Case 1 West, Case 2 Plains, and Case 3 Midwest interview findings prioritized government subsidies first. The Case 5 South interview findings prioritized custom work as most profitable, and the Case 4 Atlantic interview findings prioritized dividends as most profitable. Participants interviewed in Case 4 Atlantic and Case 5 South indicated that subsidies were less profitable for them based upon the crops they raised. In one case, the participant indicated that as a cattle rancher, he did not receive any subsidies because cattle are not government subsidized.

Archival record data findings indicated that dividend payments prioritized as the second most profitable farm income supplementation source in Case 2 Plains, Case 3 Midwest, and Case 4 Atlantic and that dividend payments were prioritized third most profitable in Case 1 West and Case 5 South. The reverse was true of cash rent payments. Archival record data findings indicated that cash rent payments prioritized second most profitable farm income supplementation source in Case 2 Plains, Case 3 Midwest, and Case 4 Atlantic and third most profitable in Case 1 West and Case 5 South. The findings of the cross-case analysis appear in Table 13.

Table 13

Cross-Case Comparison

Data Source	Government subsidies	Custom work	Sales of products	Dividends	Insurance	Cash rent	Agtourism
Archival data							
West	1	4	7	3	5	2	6
Plains	1	4	7	2	5	3	6
Midwest	1	4	6	2	5	3	7
Atlantic	1	5	4	2	6	3	7
South	1	5	4	3	6	2	7
Interview data							
West	1	3	4	5	6	7	2
Plains	1	2	6	3	4	5	7
Midwest	1	5	7	2	3	4	6
Atlantic	6	4	5	1	3	7	2
South	5	1	3	2	4	7	6

Interview data findings varied widely depending on the case. Interview data findings indicated that governmental subsidy payments prioritized most profitable in Case 1 West, Case 2 Plains, and Case 3 Midwest, dividend payments prioritized most profitable in Case 4 Atlantic, and custom work prioritized most profitable in Case 5 South. According to interview data findings, the second most prioritized supplemental

income source in Case 1 West and Case 4 Atlantic was agtourism, custom work in Case 2 Plains, and dividend payments in Case 3 Midwest and Case 5 South. Interview findings from Case 1 West, Case 4 Atlantic, and Case 5 South indicated cash rent prioritized as the least profitable, the Case 3 Midwest findings indicated sales of other products prioritized as the least profitable, and the Case 2 Plains findings indicated agtourism prioritized as the least profitable.

Findings from interviews were diverse, with fourth, fifth, and sixth place varying across the cases and throughout all supplemental income source themes. Archival data findings indicated that the seventh or least profitable supplemental income source in Case 3 Midwest, Case 4 Atlantic, and Case 5 South was agtourism, whereas findings indicated Case 1 West and Case 2 Plains prioritized agtourism sixth. In sales of other products, the prioritizing reversed, with Case 3 Midwest, Case 4 Atlantic, and Case 5 South prioritizing sales of other products sixth, and Case 1 West and Case 2 Plains prioritized sales of other products seventh or least profitable overall.

Conclusions

The purpose of the study was to explore which supplemental income sources were the most profitable for U.S. farmers by region, and the anticipated output was a prioritized list of profitable income sources by case regions. Analysis included exploring three data sources: USDA census data from 1997, 2002, and 2007; personal interview data from farmers in five cases, and peer-reviewed literature on supplemental farm income. The study conclusions successfully answered the research question: What supplemental income sources are most profitable for U.S. farmers?

The variation in findings between archival data and interview data was extensive and the variation of findings may be significant. The reason for the diversity in findings between interview and archival data is unclear, but interview findings indicate that the diversity in findings may be may be attributed to the differences in respondent numbers in the two data sources. I extracted the archival data findings from USDA census data compiled from approximately 3 million farmers, whereas the interview data were from a much smaller sample of 25 farmers. The 25 farmers interviewed grew a variety of crops and had a variety of farm types, but this representation may not be reflective of the diversity of farms included in the larger archival data sample. The interview findings were more current than the archival data and may reflect trending not apparent in the historic archival data sample. Another potential reason for the difference in findings may be that interviews enabled farmers to expand upon the reasoning and use of supplemental income sources beyond purely numerical data and that adding farmer perception and daily practice altered the priority of those sources. The findings of the study do not include the reasons for the diversity, which is a potential topic for future studies on supplemental farm income.

The case prioritization of the synthesis of archival data and interview data findings varied, with Case 1 West, Case 2 Plains, and Case 3 Midwest prioritizing government subsidies as the most profitable, Case 4 Atlantic prioritized dividends as most profitable overall, and Case 5 South prioritized custom work as most profitable overall. Case 1 West and Case 4 Atlantic prioritized agtourism second, Case 2 Plains prioritized custom work second, and Case 3 Midwest and Case 5 South prioritized

dividends second. Case 1 West prioritized custom work third, Case 2 Plains prioritized dividends third, Case 3 Midwest and Case 4 Atlantic prioritized insurance third, and Case 5 South prioritized sales of products third.

The synthesized data findings indicated the seventh prioritized or least profitable supplemental income source in Case 3 Midwest was sales of other products, and the sixth prioritized supplemental income source was agtourism. Case 1 West and Case 4 Atlantic prioritized cash rent as the least profitable supplemental income source, with Case 1 West prioritizing insurance sixth and Case 4 Atlantic prioritizing government subsidies sixth. Case 2 Plains and Case 5 South prioritized agtourism as the least profitable source of supplemental income, with Case 2 Plains prioritizing sales of products sixth and Case 5 South prioritizing cash rent sixth. Other supplemental sources were widespread across all supplementation sources, as indicated in Table 14, an illustration of the synthesis of the findings from archival and interview data sources.

Table 14

Case Prioritization Combined Archival and Interview Data

Case	Government subsidies	Custom work	Sales of products	Dividends	Insurance	Cash rent	Agtourism
West	1	3	4	5	6	7	2
Plains	1	2	6	3	4	5	7
Midwest	1	4	7	2	3	5	6
Atlantic	6	4	5	1	3	7	2
South	5	1	3	2	4	6	7
Overall	2	3	6	1	4	7	5

Multiplicity. During the analysis of interview data, it became apparent that when interview participants included multiple supplemental income sources, they experienced more profit than those who used fewer. The interview findings expanded upon the

archival data findings to reveal that the most profitable supplementation may be a matrix of supplemental income sources. Findings indicated that the more supplemental income sources farmers used, the more profit those farmers realized. The response from participants showed that farmers actively engaged in numerous supplemental income sources experienced higher profits. Participants verbalized that their quality of life improved because of that engagement, and 100% of farmers interviewed indicated that increasing the number of supplemental income sources increased their profit and improved their quality of life.

Farmers engaged in agtourism experienced the highest effects of stress created by engaging in multiple supplemental income sources, and 64% cited time spent managing and conducting the agtourism business as the most stressful. Farmers also indicated agtourism start-up costs increased stress when using agtourism as a supplemental income source. Of those farmers using multiple supplemental income sources, 100% of those who used dividends indicated that was the easiest and least stressful supplemental income source. Of those farmers using insurance as one of their supplemental income sources, 73% stated that it was the most stressful, and farmers not using insurance indicated that one of the reasons they did not use insurance was because doing so was difficult and hard to understand. Of those farmers who discussed stress as it related to their supplemental income sources, 88% indicated that gaining the income was worth the stress. Engaging in multiple supplemental income sources may create a negative impact. Seventy-six percent of farmers who engaged in more than one supplemental income source stated that managing numerous income sources negatively affected them, as illustrated in Table 15.

Table 15

Negative Impacts of Income Supplementation

Themes	Negative impacts identified by interview participants
Management	1, 6, 9, 10, 12, 14, 17, 21, 25
Stress	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25
Start-up cost	4, 6, 9, 10, 12, 13, 14, 20, 22, 23, 25

Regionality. The possibility that the location of the geographic region affected the choice and profitability of supplemental income sources for U.S. farmers emerged in the literature review. The findings from interview data revealed that regionality was a factor in the profitability and choice of farm income supplementation sources. Interview data supported regional differences in all cases. Interview data revealed emergent information indicating why participants believed regional diversity affected their supplemental income choices. Reasons mentioned most frequently were (a) climate, (b) farm size, (c) ability to grow subsidized crops, (d) crop diversity, and (e) tourism. Additional factors mentioned in interview data that might also contribute to regionally diverse supplemental income sources were tradition, culture, lack of knowledge, and lack of crop to market infrastructure.

Relation to Literature on Farm Income Supplementation

The literature review revealed emergent themes of the most prevalent farm income supplementation sources and those themes were the supplementation sources used in the analysis of this study. To confirm that the themes used in this study were the most prevalent sources of farm income supplementation, I entered the 191 peer-reviewed articles discovered in the literature review into NVivo 9. Using the seven theme sources of income supplementation included in this study, I performed a word frequency query to

explore which supplemental income sources were most prevalent in the literature. Agtourism was the most prevalent, with government subsidies second in prevalence. Dividends were the least prevalent, and custom work was second to last. The order of prevalence was (a) agtourism, (b) government subsidies, (c) insurance, (d) sales of other products, (e) cash rent, (f) custom work, and (g) dividends. A word frequency query using USDA, USDA census data, and government data revealed that government subsidies were most prevalent, followed by insurance. The findings were not consistent with either the archival record data or the interview data. Further exploration of the peer-reviewed articles revealed that rather than attempting to determine the profitability of these supplementation methods or their use in farm business practice, the articles often disseminated information on a particular type of supplemental income source to advocate for the use of that source. This discovery was useful as it offered a reason why the literature findings were inconsistent with the other data sources used in this study. The basis of the archival record and interview data included in this study was a farmer's prior or current use of supplemental income sources, and the study did not involve advocating for a specific supplementation source. This finding indicated the need for the current study to fill the gap exposed in the literature.

Correlation to Maslow's Hierarchy of Needs

All farmers interviewed (100%) indicated that they were happy to include supplemental income sources, appreciated the increased profit, and would do so again if given the choice. All farmers interviewed indicated that increased profit enabled them to pursue a higher quality of life, including maintaining their properties better, engaging in

higher quality leisure pursuits, sending children to college, improving the safety of their farm environment, and helping them to continue farming. P3 stated "Supplementation increases our income so that we are able to make improvements to our property, buy the equipment that we need, and give us a little extra to improve our standard of living." P12 responded "Income supplementation helps out tremendously. We are able to afford to put our daughters through college now."

All farmers interviewed stated that using supplemental income sources contributed positively to their income, but only one stated that supplemental income specifically contributed enough income to rise above poverty level. P17 stated, "The money from the wind generators paid off our mortgage. First time in my life our income is above poverty level." Only those engaged in agtourism indicated that using a supplemental income source negatively affected them in some way. P20 responded "Marketing and management are time consuming and difficult for my agtourism business." Time spent on the agtourism business, stress of management, cost of start-up, and impact on home life were the negative impacts of agtourism mentioned during interviews. P23 stated "Anytime the public is at your place, it affects your home life. Also, I have had to employ additional employees and now have the stress of running multiple businesses." Farmers using agtourism indicated that they would do so again and appreciated the increased profit. P23 also stated "Agtourism has increased the value of my property, improved our lifestyle, and has paid for many extra things in our lives."

The study findings related increased farm profits to improved quality of life. The premise of the study was Maslow's (1943) hierarchy of needs theory that increasing

profit by supplementing farm income improved the lives of the U.S. farm population, potentially raising them from poverty level or below to above poverty levels. The findings indicated that increasing profit for farmers did raise their level of existence above basic needs, as Maslow (1943) theorized could happen. Increased income is necessary to enable farmers to rise above poverty level to achieve self-actualization needs such as higher educational opportunities, personal growth, and increased self-esteem. P14 responded "Before supplementing our farm income we were barely able to eat and keep the power on. Now we can travel and enjoy life a bit." P6 stated "We were struggling with our farm income to survive, adding our agtourism business gave us enough to build a new house, improve our farm, and send our kids to college." P17 stated "Money from cash rent paid off our farm, built my wife a new house, and allowed us to go to Hawaii for our honeymoon. We were 43 years late, but we went." Profitable income supplementation sources could increase the total income of farmers to above the poverty level. The findings supported this premise, and farmers interviewed indicated that they were able to afford higher education for their children when supplemental income was sufficient to increase their income above basic needs. P12 responded "Income supplementation helps out tremendously. We are able to afford to put our daughters through college now. We could not have done that before." Farm income alone has not historically been sufficient to raise farmers above poverty level, making farm families a marginalized group. Farmers facing poverty may incorporate the results of this study when choosing multiple supplemental income sources to increase their income. Farmers can easily understand the study findings, so they can take advantage of

the findings and use them in their daily lives. Interview data supported this premise, and 100% of farmers interviewed agreed that the income supplementation sources they used, regardless of the source, improved their quality of life, as illustrated in Table 16.

Table 16

Interview Question 4 Emerging Themes

Themes	Participants
Happy to include	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25
Appreciate profit	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25
Would do again	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25
Improved quality of life	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25
Positive income contribution	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25
Negatively affect farmer	6, 9, 10, 14, 17, 21, 25
College for children	2, 6, 9, 10, 14, 17, 21, 25
Improvements on farm	1, 2, 6, 9, 10, 12, 13, 17, 20, 23

Comparison of Study Findings to Literature on Farm Business Practice

The study findings indicated which supplemental income sources were most profitable in five case regions across the United States. Comparing the overall profitability of supplemental income source findings to literature on farm business enabled a realization that a symbiotic relationship exists between successful farm business and profitable supplemental income sources. An example from farm business literature included encouragement for farmers to use resources to increase their farm income such as purchasing seed from large seed distributors and using cooperatives for both better purchasing power and bulk sales options (Ahearn, 2009). Using cooperatives

created a supplemental income source: cooperative dividend payments. Following the recommendation for successful farm business practices to use cooperatives enabled profitable supplemental income at no additional cost or time investment by the farmer. This is a successful symbiotic relationship that naturally occurs and is an example of the link between the study results and the farm business literature. Following the lead provided in this example, if farmers are aware of the historic regional use of cooperative dividend payments, they may be more likely to follow recommended farm business practice and purchase or sell from a cooperative.

Other such relationships exist in successful farm business practices. Cash rent and custom work agreements may also optimize the investment in farm equipment and use farmland at peak efficiency (Sen, 2011). Engaging in cash rent or custom work was a recommendation for good farm business, and both were profitable supplemental income sources for farmers in many regions. The findings from the study provide U.S. farmers with more data and increase knowledge about the historic profitability of cash rent and custom work in each case region. Learning that both were a profitable source of supplemental income may assist them in their decision-making process when considering these agreements. Farm business literature recommended both government subsidies and insurance as viable ways to supplement farm income (Mishra, Moss, et al., 2009) and the study findings also indicated that they were profitable in most case regions. The correlation between good farm business practice and profitable supplemental income sources is positive and may be easy and inexpensive for farmers to incorporate. The study findings supported the relationship between recommended farm business practice

and profitable supplementation sources. The study also filled a gap in the literature to provide farmers with data indicating if other farmers have used these sources of supplementation and their relative profitability. This knowledge may encourage them to use supplemental income sources to improve their farm economy.

Applications to Professional Practice

Average income from farm products is below the poverty level for U.S. farmers (U.S. Census Bureau, 2012; USDA, 2012). Supplemental income is critical for farm sustainability and is necessary to improve quality of life for farm families (Atack et al., 2009, Barbieri & Mahoney, 2009). Choosing profitable supplemental income sources is important to U.S. farmers (Hoppe & Banker, 2010). This study involved combining USDA census data with current interview data to create an easy-to-understand list of farm income supplementation sources in each of the five cases prioritized by profitability. Farmers in each region can use these findings to make a more informed choice when considering supplemental income sources. The prioritized list creates a matrix of the most profitable supplemental income sources for farmers in each case, so farmers can add a source and consider numerous profitable sources in their region to add income to their farm business. The USDA historically disseminated its census data in such a manner that the information was difficult for farmers to obtain and to understand (Blank & Klinefelter, 2012).

This study included a combination of USDA census data and personal interview data. The findings appear in an easy-to-read and easy-to-understand format that may enable U.S. farmers to include the findings in their business practice. The findings from

this study may help farmers to become aware of multiple sources of historically profitable supplemental income in their region. Once they are aware, farmers can make more confident and informed choices and may be more likely to use profitable supplemental income sources than they would have previously. Knowledge and understanding of the profitability of supplemental income sources in their region may assist farmers in choosing supplemental income sources that increase their farm sustainability and may alleviate farm poverty.

Implications for Social Change

The findings from this study may affect social change in two distinct areas: farm poverty and farm sustainability. Farm poverty is an important social issue in the United States. Another area of social importance is the continuing supply of U.S.-produced farm products. The security of U.S. food supplies keeps the United States food independent, and U.S.-grown farm products contribute positively to the gross domestic product. Sustainable U.S. farms are necessary to keep farmers producing plentiful farm products.

Farm poverty. Farm poverty is real and has existed for a long time (U.S. Census Bureau, 2012). The findings of this study include an easy-to-read and easy-to-understand list of historically profitable income supplementation sources in each case region. The study findings supported the premise that using profitable supplementation sources improves the quality of life for farmers (see Table 16). Increasing awareness of those supplemental income sources that were profitable in their region may increase the number of farmers choosing profitable income supplementation sources and thus alleviate farm poverty by increasing income for farm families.

Farm sustainability. Food security has been consistent throughout U.S. history (Jackson, 2010). The efficient production of U.S. food products has alleviated food anxiety in the United States and contributed to the economic stability of the country (Jackson-Smith & Jensen, 2009). Farmers generated $297 billion in revenues in 2007 (USDA, 2012) and in 2011 contributed 4.3% of the gross domestic product (Jackson-Smith & Jensen, 2009). Farm sustainability is necessary to keep U.S. farmers in food production so farm revenue contributions continue and increase in the future. Farm income alone is not enough to sustain U.S. farms, and supplemental income sources that keep U.S. farmers farming are critical to farm sustainability (Hoppe & Banker, 2010). The findings from this study supported farm sustainability by creating an easy-to-read and easy-to-understand list of profitable income supplementation sources for farmers to use when making supplementation choices. Increased awareness of the supplementation sources that are profitable in their region may help farmers to choose profitable sources of supplementation and increase the chance for farm sustainability.

Recommendations for Action

The farmer interviews indicated that profitable income supplementation sources are important to farm sustainability. All farmers interviewed expressed their dependence upon supplementation to keep them farming. Farmers are the primary target of the findings of this study, and they will most benefit from the study. The findings from the study indicated that the most profit occurs when farmers use numerous sources of income supplementation. The barrier to farmers' use of profitable income supplementation sources is a lack of knowledge. A lack of knowledge about which sources of income

supplementation are available to them, and which are profitable in their area, are primary barriers to farmers choosing to use profitable supplemental income sources. One reason the knowledge barrier exists is that many scholarly sources of knowledge regarding income supplementation are difficult for farmers to read and understand. The leap from scholarly understanding to practical understanding in the field is large for many farmers. Farmers have many demands on their time and may not even have a high school education. I presented the findings of this study in as simple a fashion as possible, and most people will be able to easily understand the resultant prioritized lists, even if they do not have a high level of education. I will forward this study to the approximately 3,000 USDA extension offices in the United States in the hopes that USDA extension agents will share this study and the findings with farmers in their area so those farmers can see in plain and easily understood language which income sources famers in their area have used and which were the most profitable. I am hopeful that USDA extension agents will take advantage of this information to initiate discussions with farmers in all U.S. farming regions about increasing their exposure to profitable income supplementation sources and ways to integrate those sources into their farms. In addition to sharing the study with USDA extension agents and attempting to publish study results, I am available to speak at farm events to share the results of the study with farmers throughout the United States. More research is necessary and perhaps this study will encourage other researchers to expand upon the findings of this study.

Specific recommendations for farmers are: (a) review the study findings from your region and consider adding unused or underused methods of income

supplementation identified as profitable in your region, (b) proactively look at each supplementation method to explore ways to increase income and include multiple supplemental income methods in your farm operation, (c) discuss the inclusion and success of income supplementation methods with friends and farm neighbors and consider their input when making decisions regarding income supplementation methods, (d) talk to your local farm extension officer about supplemental income sources to learn more about them, and (e) implement one new supplementation method at a time, but try to include as many as are practical for you to use. A specific recommendation for policymakers would be to consider funding the implementation of supplemental income by diverting funds from government subsidies. The findings of this study indicate that those farmers who utilize successful income supplementation methods such as agtourism use less government subsidies. This may be a way to lower farm dependence on government subsidies. Specific recommendations for extension agents include: (a) learning about income supplementation methods and their success in your area so that you can educate farmers about their use and implementation, (b) supporting researchers who wish to study farm income by sharing your resources with them, and (c) encouraging farmers to include multiple sources of farm income supplementation methods. Findings from this study indicate that those farmers who utilize multiple methods of income supplementation increase their total income and improve their quality of life.

Recommendations for Further Study

As the study progressed, numerous ideas for future research emerged. Conducting the same study in one region, one state, or even with farmers who produce

the same crop such as vineyard or orchard farmers would be relevant to farmers and would enable interviews to take place in a small geographic area or within one type of farm. This could be extremely useful to those farmers included in the study and could be replicated in other regions or states or among other specific crop farmers. Conducting a similar study on one specific supplemental income method such as agtourism or cash rent would be relevant and would expand the knowledge of the profitability of that specific method. Comparative studies would be particularly useful to compare regions, states, or specific types of crop farmers' experiences. This study did not include all types of income supplementation methods, and a recommendation is to conduct a similar study to explore those sources not included in this study. An immersion study with a farmer who used one or more sources of income supplementation may provide valuable insight.

I would have liked to include more interviews but was unable to do so within the scope and time available. I recommend more interviews in future studies; they were extremely valuable and introduced many concepts not available through the quantitative census data. The findings from this study included differing results between archival data findings and interview data findings, which indicates the need for a study to determine the reason this diversity exists. I recommend that researchers conducting future studies on the subject consult with USDA extension agents, as they were invaluable to this study. Finally, I recommend that researchers continue to perform studies that are helpful to marginalized groups to encourage social change and improved quality of life for those people.

Reflections

I was a farmer who struggled to survive and to continue to farm. Through nothing more than luck, I was able to find a source of supplemental income that was profitable. There was no literature or fact-based information available at that time to influence my decisions or to guide me to choose an income supplementation source that was profitable. I was one of the lucky farmers who chose wisely. Others I knew were not as lucky, and I watched farm after farm fail in the 1980s in what became known as the farm crisis. Years later, I was still immersed in the farm lifestyle and it seemed as though every discussion at our children's school, in the coffee shop, at the livestock auction, and even at social meetings or church centered on farmers trying to determine how to make enough money to keep farming. When I sold my farm and retired, I decided to pursue a doctorate and study farm income supplementation.

As the study commenced, I realized numerous sources of supplemental income existed of which I was not aware. I also realized that much of the literature was either propaganda to influence farmers to choose a specific supplemental income source or was at such a high academic or conceptual level that it was too complicated for many farmers I had known over the past 3 decades to understand. That left a gap in the literature that it was my intent to fill. My primary goal in the planning stages of this study was to find profitable sources of income supplementation, not numerous sources. Another goal was to make the findings relevant to farmers where they lived in real life out on farms throughout the United States and not just in theory. These two preconceived notions may have created bias prior to the start of the actual study had there been literature that

included those two ideas, but I could find none. My personal history combined with observations of farm life left me with a desire to explore profitable and relevant income supplementation sources for U.S. farmers. I was able to open my mind and gain new insight from many perspectives. As I read hundreds of peer-reviewed journal articles, I found a centric and open mind-set to work from, and from that new perspective I created and conducted this study.

During the interview portion of the study, I had the opportunity to interact with hundreds of farmers from all U.S. farm regions. I have been away from farming for 5 years and when conducting research for this study, I was reminded of the grace and incredible work ethic by which so many farm families live. Farmers are on a mission to produce quality crops and to carry farming into the future. I often saw a spark of interest in farmers' eyes when they heard what I was working on. Even those who did not participate in my study asked where they could go to find the results. I am hopeful that the findings may help farm families to increase their incomes, keep the farm in the family, and create opportunity for their children.

Summary

I undertook this study to answer the following research question: What supplemental income sources are most profitable for U.S. farmers? Data for the multiple case study came from three sources: I extracted the initial data from the USDA census data, the second source of data was personal interviews with farmers from five cases, and the third source was literature on farm income. Income supplementation sources included in this study were (a) government subsidies, (b) custom work and other

agricultural services, (c) sales of other products, (d) patronage dividends and refunds from cooperatives, (e) insurance payments, (f) cash rent or share crop payments, and (g) agtourism and recreational services.

Study findings indicated that farmers in all U.S. farming regions used all seven supplemental income sources, but not all farmers used all sources. Study findings indicated that the use of multiple supplemental income sources was more profitable than the use of fewer supplemental income sources. Study findings indicated that regionality was a factor in the choice of income sources and how profitable they were. Study findings also indicated that the inclusion of multiple sources of supplemental income may increase stress, especially if agtourism was one of the sources used. The study findings included a list of income sources by region and prioritized by profitability (see Table 15). This list may be helpful for U.S. farmers when choosing supplemental income sources to increase profitability on their farm. Study findings indicated that including supplemental income sources increased farm profitability and encouraged farm sustainability.

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Appendix A: Reprint Permission for USDA

Subject: Reprint permission for USDA

Date : Thu, Nov 17, 2011 02:42 PM CST
From : **Customer Service - NASS <nass@nass.usda.gov>**
To : 'Elizabeth Persson' <elizabeth.persson@waldenu.edu>

Attachment : image001.gif

Hello Elizabeth, This information is considered to be public domain and you do not need to request permission for use, you therefore may print the picture on page 2 or any other USDA information available through the website.

Sincerely,

NASS Customer Service
Washington, D.C.

Appendix B: Qualifying Questions for Human Participants

Qualifying questions for human participants to participant in interviews

1. Are you at least 21 years of age? (Must have a 'YES' response to continue)
2. Have you completed at least one USDA farm census survey? (Must have a 'YES' response to continue)
3. Are you actively farming at this time? (Refers to the time of the interview) (Must have a YES response to continue)

Appendix C: Rationale for Choosing Research Method

Purpose and Output:	Proposed study combined archival record data on income supplementation sources into regionally based groups for further comparison with personal interview data. Within each region, both types of data were organized into a prioritized list for comparison between regions. Regional results were compared to literature discovered in literature review. Output desired was a prioritized list of profitable income supplementation sources organized by U.S. region. Regional lists were compared to each other, to interview data, and to literature discovered in the literature review by researcher.		
Audience:	United States farmers are the intended audience for the study results. Study results must be presented in simplistic terms that farmers can understand and assimilate.		
Method:	Quantitative (QUAN)	Mixed Method (MM)	Qualitative (QUAL)
Pros:	Numerical data in study fits QUAN method	Study uses both numerical data and comparative qualitative elements	Comparisons between data QUAL method, Yin (2009) for multiple case study using QUAN data and QUAL data comparison a potential fit
Cons:	Not able to obtain output using statistical analysis. Statistical results difficult for farmers to assimilate.	Need to combine QUAN and QUAL into one set of data	Use of QUAN data in QUAL case studies not widely understood – may require greater explanation in study.
Support in literature:	Based upon the desired outcome and audience of the proposed study QUAN is not the most advantageous research method. QUAN best for identifying factors that	A mixed methods study is not being done if initial set of analysis is drawn solely on either QUAN or QUAL, (as in this study) even if results are then	Can use survey data within a case study (Yin, 2009, p.13). Case study not just QUAL, ok to use mix of QUAN and QUAL, in multiple case studies (Yin, 2009, p. 19). Case

	influence an outcome, an intervention, best predictors of outcomes, test a theory (Yin, 2009). Used for examining relationships among variables and analyzing data using complex statistical procedures (Yin, 2009). Results report support or discard of hypothesis and statistical significance (Yin, 2009).	compared – this is not a mixed method, but research synthesis and would not meet the definition of a mixed method study (Yin, 2009, p. 63: 2011, p. 291)	studies do not need direct and detailed observational evidence but can include interview data (Yin, 2009, p. 19). Embedded or multiple case study design can include both QUAN and QUAL data (Yin, 2009, pp. 50, 53-59). Multiple case study design for comparative studies (Yin, 2009, p. 53). Replication design for multiple case studies is exactly what the analysis plan is for the proposed study (Yin, 2009, pp. 53-57). Literal replication is a rationale for multiple case design (Yin, 2009, p. 59).
Most advantageous:	A qualitative multiple case study using quantitative archival record data and personal interview for each case (region) then comparing cases (Yin, 2009, p. 59). Using a literal replication for each case (each region) within the multiple case design (Yin, 2009, pp. 53-59), then comparing cases (with each other and with literature) in results section (Yin, 2009, pp. 19, 176).		
Choice:	Qualitative multiple case study method and design was chosen for the proposed study.		

Appendix D: Protocol Questions for Document Data Collection

The sample data was extracted from the document population data using protocol questions (Yin, 2011). The questions used for that extraction were included as protocol questions in lieu of interview questions. Appendix D is the protocol question instrument that was used to extract sample data, and contained the following questions:

1. How much income from government subsidies was paid to farmers in 1997, 2002, and 2007 for each of the 50 U.S. States?
2. How much income from custom work and other related agricultural services was paid to farmers in for 1997, 2002, and 2007 for each of the 50 U.S. States?
3. How much income from gross cash rent or share payments was paid to farmers in 1997, 2002, and 2007 for each of the 50 U.S. States?
4. How much income from sales of other products was paid to farmers in 1997, 2002, and 2007 for each of the 50 U.S. States?
5. How much income from agri-tourism and recreational services was paid to farmers in 1997, 2002, and 2007 for each of the 50 U.S. States?
6. How much income from patronage dividends and refunds from cooperatives was paid to farmers in 1997, 2002, and 2007 for each of the 50 U.S. States?
7. How much income from crop and livestock insurance payments was paid to farmers in 1997, 2002, and 2007 for each of the 50 U.S. States?

Appendix E: Interview Questions for Human Participants

Individual interviews were conducted with farmers who met selection criteria. Appendix E was the interview question instrument that was utilized to conduct personal interviews for triangulation, and contained the following questions:

The USDA includes these farm income-supplementation sources in their census,

a. Government subsides
b. Custom work and other agricultural services
c. Sales of other products
d. Patronage dividends and refunds from cooperatives
e. Insurance payments
f. Cash rent or share payments
g. Agtourism and recreational services

1. Which of the USDA farm income supplementation sources do you use?
2. Why did you choose this/these particular income supplementation source(s)?
3. How profitable is/are the chosen income supplementation source(s) for you?
4. How does income supplementation affect your standard of living?
5. Discuss any additional information about these income supplementation sources such as return on investment, ease of use, labor involved, pros and cons, or any other information pertinent to each income supplementation source that you would like to share.

Appendix F: Interview Consent to Participate Form

CONSENT FORM

You are invited to take part in a research study of farm income supplementation. The researcher is inviting farmers who have participated in a USDA farm census survey to be in the study. This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to take part. This study is being conducted by a researcher named Elizabeth Penny Persson, who is a doctoral student at Walden University. Research gathered in this study will be used to explore the cost effectiveness of farm income-supplementation sources recognized by the USDA farm census. Your participation should take about one hour.

Background Information:

The purpose of this study is to explore the cost effectiveness of the farm income-supplementation sources that are included in the USDA farm census. Your input will be compared to the researcher's interpretation of the USDA farm census data.

Procedures:

Participate in an interview with questions about the farm income-supplementation sources you use on your farm

The interview will be audio taped for analysis by the researcher

Here are some sample questions:

The USDA includes these farm income-supplementation sources in their census,
Government subsides
Custom work and other agricultural services
Sales of other products
Patronage dividends and refunds from cooperatives
Insurance payments
Cash rent or share payments
Agtourism and recreational services

Which of the USDA farm income-supplementation sources do you use?

Why did you choose this/these particular income-supplementation source(s)?

How profitable is/are the chosen income supplementation source(s) for you?

How does income supplementation affect your standard of living?

Discuss any additional information about these income-supplementation sources such as return on investment, ease of use, labor involved, pros, and cons, or any other information pertinent to each income-supplementation source that you would like to share.

Voluntary Nature of the Study:

This study is voluntary. Everyone will respect your decision of whether or not you choose to be in the study. No one will treat you differently if you decide not to be in the study. If you decide to join the study now, you can still change your mind during or after

the study. You may stop at any time. You may skip any questions that you feel are too personal.

Risks and Benefits of Being in the Study:
Your personal information will remain confidential, and no personal risk is associated with participating in the study. Participation will not have a negative impact on your standing with in the farm community. The study does not involve any physical risk and it is highly unlikely that you will be psychologically affected. The benefit of the study is to compare the researcher's interpretation of the USDA census data with farmer's perceptions of income supplementation sources they use, or to guide the researcher's interpretation by providing additional data for the researcher to take into consideration.

Payment:
Participants will not be compensated, but your participation is greatly appreciated.

Privacy:
Any information you provide will be kept confidential. The researcher will not use your personal information for any purposes outside of this research project. Also, the researcher will not include your name or anything else that could identify you in the study reports. Data will be kept secure by placing all electronic data in a password protected computer, and paper documents and audio recordings in a locked safe. Data will be kept for a period of at least five years, as required by Walden University, and then destroyed.

Contacts and Questions:
You may ask any questions you have now. Or if you have questions later, you may contact the researcher via telephone (717-614-7380) or email (elizabeth.persson@waldenu.edu). If you want to talk privately about your rights as a participant, you can call Dr. Leilani Endicott. She is the Walden University representative who can discuss this with you. Her phone number is 1-800-925-3368, extension 1210. Walden University's approval number for this study is 01-24-13-0189635 and it expires on January 23, 2014.

The researcher will give you a copy of this form to keep.

Statement of Consent:

I have read the above information and I feel I understand the study well enough to make a decision about my involvement. Electronic signatures are regulated by the Uniform Electronic Transactions Act. Legally, an electronic signature can be the person's typed name, email address, or any other identifying marker. An electronic signature is just as valid as a written signature as long as both parties have agreed to conduct the transaction electronically.
By signing below, I understand that I am agreeing to the terms described above.

Printed Name of Participant _____

Date of Consent _____

Participant's Written or Electronic* Signature _____

Researcher's Written or Electronic* Signature _____

Appendix G: Data Table for Protocol Questions in $1,000

State	Government Subsistence	Custom Work	Sales of Product	Dividends	Insurance	Cash Rent	Ag Tourism
AK2002	72	40	18	7	36	16	13
AK2007	81	24	15	3	0	20	28
AK1997	116	50	16	9	0	26	1
AK	269	114	49	19	36	62	42
AL2002	12863	1222	1830	2215	1986	2556	839
AL2007	15177	1364	1948	2787	880	3136	591
AL1997	9253	2214	1930	2711	0	2766	301
AL	37293	4800	5708	7713	2866	8458	1731
AR2002	7811	1648	1640	3415	1081	1586	478
AR2007	11978	1589	1268	4378	854	2375	268
AR1997	9477	2469	1589	3718	0	1738	413
AR	29266	5706	4497	11511	1935	5699	1159
AZ2002	833	287	11	330	624	261	55
AZ2007	1394	423	152	269	42	304	111
AZ1997	992	291	49	311	0	290	35
AZ	3219	1001	212	910	666	855	201
CA2002	7228	4058	503	4934	4187	4215	499
CA2007	7667	3869	546	5381	1511	4652	685
CA1997	6540	4261	668	5038	0	4594	560
CA	21435	12188	1717	15353	5698	13461	1744
CO2002	10163	2131	183	3188	3422	2529	867
CO2007	11989	2191	269	3647	1307	4387	679
CO1997	8972	2710	197	4079	0	3378	453
CO	31124	7032	649	10914	4729	10294	1999
CT2002	254	131	158	263	552	173	30
CT2007	450	187	219	225	23	236	101
CT1997	417	250	200	278	0	240	31
CT	1121	568	577	766	575	649	162
DE2002	617	157	16	433	183	269	36
DE2007	1047	123	38	450	220	367	24
DE1997	694	205	31	424	0	233	47
DE	2358	485	85	1307	403	869	107
FL2002	2554	914	694	1086	1905	1252	278
FL2007	4998	983	769	1523	334	1888	281
FL1997	2921	1382	739	1602	0	1422	18
FL	10473	3279	2202	4211	2239	4562	577
GA2002	15510	1709	2118	1876	2860	3742	1059
GA2007	15875	1575	2043	1968	1329	4285	602

GA1997	12371	2023	1663	2102	0	3490	23
GA	43756	5307	5824	5946	4189	11517	1684
HI2002	113	181	21	40	134	103	24
HI2007	257	197	23	49	7	116	121
HI1997	116	213	25	60	0	140	7
HI	486	591	69	149	141	359	152
IA2002	63074	10771	688	24233	8445	12081	256
IA2007	77071	9911	697	28817	4259	20621	245
IA1997	67795	10656	774	25645	0	11241	2849
IA	207940	31338	2159	78695	12704	43943	3350
ID2002	7098	1769	487	1744	1887	2580	105
ID2007	9396	1765	465	2335	573	3700	135
ID1997	7848	1981	597	2347	0	2800	261
ID	24342	5515	1549	6426	2460	9080	501
IL2002	47857	7707	751	15644	5310	6625	606
IL2007	57600	6866	740	17592	3691	12261	665
IL1997	47711	7954	719	17114	0	6363	1902
IL	153168	22527	2210	50350	9001	25249	3173
IN2002	26841	4681	1159	5774	4478	7027	172
IN2007	36535	4089	1241	6879	2237	9850	267
IN1997	30295	5282	1136	5846	0	6458	650
IN	93671	14052	3536	18499	6715	23335	1089
KS2002	39191	5799	288	13194	5087	7225	1290
KS2007	44433	5775	356	14724	9009	12585	930
KS1997	39735	6333	271	14220	0	8643	1580
KS	123359	17907	915	42138	14096	28453	3800
KY2002	22825	2772	1727	4293	24727	8986	421
KY2007	32684	2891	2488	4462	1174	5765	428
KY1997	20965	5129	1645	6534	0	9234	726
KY	76474	10792	5860	15289	25901	23985	1575
LA2002	7562	778	554	1141	837	2250	307
LA2007	10959	791	594	1370	301	1823	170
LA1997	6132	1012	579	1002	0	1324	111
LA	24653	2581	1727	3513	1138	5397	588
MA2002	415	315	361	333	874	242	52
MA2007	708	318	482	407	89	246	154
MA1997	401	416	487	407	0	254	45
MA	1524	1049	1330	1147	963	742	251
MD2002	3372	809	264	1318	1250	1168	238
MD2007	5145	776	297	1468	628	1542	231
MD1997	2673	872	456	1773	0	1129	197
MD	11190	2457	1017	4559	1878	3839	666

ME2002	1244	337	705	308	644	274	73
ME2007	1607	296	688	257	55	292	112
ME1997	934	546	903	425	0	237	47
ME	3785	1179	2296	990	699	803	232
MI2002	18133	3087	1557	3247	5177	5446	615
MI2007	23846	3006	1524	4698	1560	7532	645
MI1997	18851	3312	1494	4312	0	4372	479
MI	60830	9405	4575	12257	6737	17350	1739
MN2002	43927	6577	1116	25850	6726	11000	400
MN2007	57972	6543	862	28662	7239	16798	367
MN1997	46977	6627	1431	26881	0	8853	2987
MN	148876	19747	3409	81393	13965	36651	3754
MO2002	43379	6400	2596	13977	7775	7939	773
MO2007	46820	6172	2764	15268	1718	11019	588
MO1997	33842	7690	2285	14871	0	7874	1646
MO	124041	20262	7645	44116	9493	26832	3007
MS2007	17669	1171	2146	3492	482	2844	506
MS2002	12383	1136	2070	2910	881	1868	608
MS1997	9439	1385	2088	3131	0	1912	348
MS	39491	3692	6304	9533	1363	6624	1462
MT2002	12389	1782	327	4729	3998	3109	1044
MT2007	13301	1674	370	5474	221	4510	790
MT1997	12008	1902	517	4331	0	2774	481
MT	37698	5358	1214	14534	4219	10393	2315
NC2002	12312	2211	1669	3375	7638	5397	622
NC2007	14614	2229	1632	3345	1933	5113	602
NC1997	12269	3074	1743	3542	0	6008	394
NC	39195	7514	5044	10262	9571	16518	1618
ND2002	23892	2797	6	12029	5109	7342	200
ND2007	15650	2848	15	12680	5731	9607	213
ND1997	24185	3082	10	12002	0	4834	1334
ND	63727	8727	31	36711	10840	21783	1747
NE2002	32007	5845	93	14835	4578	7299	350
NE2007	35641	5680	86	16989	717	10428	301
NE1997	35367	5292	134	13713	0	7343	1524
NE	103015	16817	313	45537	5295	25070	2175
NH2002	359	174	294	108	406	83	16
NH2007	511	202	376	145	88	93	88
NH1997	310	239	361	167	0	107	19
NH	1180	615	1031	420	494	283	123
NJ2002	582	323	926	317	1139	408	204
NJ2007	910	294	1131	312	91	479	322

NJ1997	629	442	1009	392	0	684	44
NJ	2121	1059	3066	1021	1230	1571	570
NM2002	3246	620	76	446	676	716	372
NM2007	3643	752	244	534	181	942	345
NM1997	2586	823	128	472	0	813	52
NM	9475	2195	448	1452	857	2471	769
NV2002	439	162	13	65	275	170	55
NV2007	335	171	4	69	4	191	38
NV1997	254	175	15	76	0	255	8
NV	1028	508	32	210	279	616	101
NY2002	9896	2182	2170	4217	4978	2776	419
NY2007	14878	2285	2199	3692	448	3453	575
NY1997	7841	2128	2080	3852	0	2623	428
NY	32615	6595	6449	11761	5426	8852	1422
OH2002	28851	5787	2067	7428	6636	7250	299
OH2007	39091	5174	2248	9371	2769	9414	418
OH1997	29019	6201	1803	7641	0	5716	849
OH	96961	17162	6118	24440	9405	22380	1566
OK2002	24316	3801	540	4772	3709	4601	891
OK2007	28583	4122	622	4996	3265	5927	616
OK1997	20218	4750	579	4658	0	4983	518
OK	73117	12673	1741	14426	6974	15511	2025
OR2002	4430	2125	1492	1981	2679	3622	350
OR2007	5267	2095	1488	2611	396	4225	376
OR1997	4521	2726	1626	1842	0	3693	205
OR	14218	6946	4606	6434	3075	11540	931
PA2002	11991	3718	2091	5579	7049	4011	303
PA2007	18131	3752	2130	5505	1281	5293	552
PA1997	9963	3627	1830	4514	0	3080	502
PA	40085	11097	6051	15598	8330	12384	1357
RI2002	52	18	40	21	89	21	6
RI2007	109	28	65	39	5	30	43
RI1997	46	43	41	39	0	26	4
RI	207	89	146	99	94	77	53
SC2002	6112	665	1294	757	1515	1473	528
SC2007	7966	738	1140	901	657	1790	376
SC1997	5834	1059	827	953	0	1521	106
SC	19912	2462	3261	2611	2172	4784	1010
SD2002	20259	3588	47	11607	4576	5213	735
SD2007	23459	3137	36	12150	5149	7669	667
SD1997	22037	3888	173	11185	0	4746	1243
SD	65755	10613	256	34942	9725	17628	2645

TN2002	16034	2824	2171	7102	10965	6234	637
TN2007	19814	2578	2248	7698	1112	4514	510
TN1997	12878	4358	1933	10857	0	6481	1206
TN	48726	9760	6352	25657	12077	17229	2353
TX2002	42217	9338	1645	9279	6598	12096	8230
TX2007	49748	9570	1676	12184	4567	15179	5322
TX1997	41537	10941	2005	10343	0	14264	1149
TX	133502	29849	5326	31806	11165	41539	14701
UT2002	2987	863	28	598	802	976	212
UT2007	3095	955	40	820	197	1376	191
UT1997	2284	1023	72	1103	0	1105	123
UT	8366	2841	140	2521	999	3457	526
VA2002	9206	1914	1679	6189	6077	3727	610
VA2007	10822	1800	1700	6236	1280	3371	476
VA1997	7972	2596	2050	6500	0	3670	722
VA	28000	6310	5429	18925	7357	10768	1808
VT2002	1296	341	604	763	580	347	57
VT2007	1794	416	827	739	68	420	109
VT1997	916	454	798	879	0	364	98
VT	4006	1211	2229	2381	648	1131	264
WA2002	7332	2011	762	4166	2461	2385	250
WA2007	7092	1852	933	4496	616	3318	342
WA1997	5711	2035	1010	3967	0	2360	441
WA	20135	5898	2705	12629	3077	8063	1033
WI2002	37234	5206	3220	20127	8567	11222	628
WI2007	49075	5551	2657	23350	3644	13784	568
WI1997	36946	5336	2800	22233	0	7622	2470
WI	123225	16093	8677	65710	12211	32628	3666
WV2002	1675	462	1025	805	879	613	175
WV2007	2453	479	1040	1089	134	778	112
WV1997	1901	762	815	815	0	784	91
WV	6029	1703	2880	2709	1013	2175	378
WY2002	3163	524	72	1250	986	998	729
WY2007	3013	597	62	1660	642	1375	464
WY1997	2329	635	95	1190	0	1134	132
WY	8505	1756	229	4100	1628	3507	1325

Curriculum Vitae

Elizabeth Penny Persson

EDUCATION

2009-2012 Doctor of Business Administration – Marketing; Walden University (in process)

2008-2009 Master of Business Administration, With Distinction – Hospitality Management; Keller Graduate School of Management

2006-2008 Bachelor of Science in Business Administration, Summa Cum Laude – Hospitality Management; DeVry University

EMPLOYMENT

2010 – Present Owner, Moonstone Manor

1991 – 2010 Owner Colorado Cattle Company

HONORS

2013 Best of The Knot Brides Choice Award

2013 Best of Wedding Wire Brides Choice Award

2012 Best of The Knot Brides Choice Award

2012 Best of Wedding Wire Brides Choice Award

2009 Keller Graduate School of Management George P. Doherty Award