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CONTRIBUTING FACTORS TO THE SUCCESS OF SMALL-SCALE
DIVERSIFIED FARMS IN THE MOUNTAIN WEST

by

Mary Shepherd

A thesis submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

International Food and Agribusiness

Approved:

Kynda R. Curtis, Ph.D.
Major Professor

Ruby Ward, Ph.D.
Committee Member

Roslynn Brain, Ph.D.
Committee Member

Mark R. McLellan, Ph.D.
Vice President for Research and
Dean of the School of Graduate
Studies

UTAH STATE UNIVERSITY
Logan, Utah

2014

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ABSTRACT

Contributing Factors to the Success of Small-Scale
Diversified Farms in the Mountain West

by

Mary Shepherd, Master of Science

Utah State University, 2014

Major Professor: Dr. Kynda Curtis
Department: Applied Economics

Small farms and ranches represent 90% of all farms in the Mountain West; the long-term success of these operations is important to the economic survival of their communities. However, recent reports show a lack of profitability among small farms due to limited access to financial capital, land, and affordable health care. Current literature finds that the success of small farms may be enhanced by increased demand for local foods; expansion of direct market outlets; access to and use of smaller fragmented land plots; production of high-value crops; and diversified activities such as agritourism and value-added products. However, the literature is sparse and inconsistent with regard to key factors of small farm success as well as relevant measures of success.

This study aimed to identify small-scale farm operator, farm, market, and regulatory attributes that increase the probability of profitability and contribute to operator-perceived success among small-scale, diversified farms in the Mountain West.

The study used data collected in 2013 from an online survey of small-scale producers in five states. A total of one hundred and four farming operations responded to the survey, resulting in eighty usable observations. The results of the ordered logic models show that farms that fall into the highest level of self-rated success are somewhat diversified (3–4 enterprises), have a higher average single transaction range, use a financial or production plan, and use outside services. These farms are larger in terms of acreage, use local and organic labeling programs, and sell through CSA programs. These farmers are older and farming is their primary occupation. They also tend to have analytical personalities and degrees in agricultural production or agribusiness.

Farms with higher levels of profitability are larger and sell a portion of their product through wholesale outlets. Additionally, farmers with more experience, with farming as their primary occupation, those located near urban areas, and who use outside services are also more likely to be profitable. Study results suggest that key success factors are likely some enterprise-level diversification, market diversification (CSAs and wholesale), farming as a primary occupation, and use of outside resources and third party labeling programs.

(82 pages)

PUBLIC ABSTRACT

This study uses ordered logistic regression models with data collected from eighty-six online surveys completed by small-scale producers in Utah, Idaho, Colorado, Nevada, and Wyoming to assess factors which most contribute to the overall success and profitability of small-scale diversified farms. Results indicate success and profitability may be partially explained by the number of acres owned/leased, use of wholesale outlets, farming as a primary occupation, years of experience, and use of outside business related services. Results may be useful as they indicate producer and operation characteristics that are lead to more profitable and successful operations and thus indicate areas in which a producer may most improve his or her business.

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Writing a time-consuming, never-ending document like this is among the most challenging and trying experiences one may have in his or her life. Cooperation and coordination of time and objectives are paramount.

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Mary Shepherd

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ABBREVIATIONS AND ACRONYMS

AMS	USDA Agricultural Marketing Service
CSA	Community Supported Agriculture
DOT	Department of Transportation
FDA	Food and Drug Administration
FSA	Farm Service Agency
FSMA	FDA Food Safety Modernization Act
NCRS	USDA Natural Resources Conservation Service
PDO	Protected Designation of Origin
PGI	Protected Geographical Indication
RD	USDA Rural Development
SBA	Small Business Administration
SBDC	Small Business Development Center
SCORE	SBA nonprofit association supporting startup and growth of small businesses.
UDAF	Utah Department of Agriculture and Food
USDA	United States Department of Agriculture

INTRODUCTION

The United Nations (2013) projects that world population will grow to 8.1 billion by 2025 and 9.6 billion by 2050, creating a real need for innovation, entrepreneurship, and leadership in food and agribusiness industries. Exploring possibilities to meet the growing world demand for food, water, and subsistence will soon be imperative. It is widely accepted and can be assumed based on economic theory that large commercial operations focus mainly on economies of scale—looking for and operating large tracts of land—and generally stay away from the smaller ones, which do not allow them to achieve the same results and return on investment as larger areas might. Additionally, generally accepted economic theory suggests that larger operations tend to focus less on environmental concerns or externalities unless these directly affect profits; decisions about management are instead based on profitability (Cary and Wilkinson, 1997; Turvey, 1991).

These operations produce and provide mass volumes to markets that may store and ship long distances well but often do so with little or no account for taste, variety, and quality, as is evident in tactical models for production and distribution (Ahumada and Villalobos, 2011). These large-scale methods are potentially at risk from equally large-scale crop failures or losses, potential waste of perishable produce caught at country customs ports, food-borne pathogens, and natural losses as a result of erosion, pests, water availability, unpredictable weather patterns, and shifting of agricultural products to biofuel markets.

Partially in response to these issues, markets have shifted somewhat to accommodate increases in consumer demand for locally produced goods and foodstuffs.

Consumers with more disposable income are willing to purchase these locally produced goods at slightly higher than average prices (La Trobe, 2001). However, despite some localization, the industry is still very much ruled by the basic principles of economics; each producer is still guided by comparative as well as absolute advantage and is in direct or indirect competition with producers from around the globe (Watson and Thilmany, 2008). The United States has also seen an increase in entrepreneurial behavior among adults. In 2009, the number of people reporting entry into entrepreneurship in the United States reached its highest point since 2000 (Kaufman, 2012).

Despite individuals exiting from the agriculture industry at a rate of 9–10% per year (presumably older farmers now retiring), a large increase in entrants to small farming has kept the number of farms relatively stable since 1974 (Hoppe and Korb, 2006). Somewhat unexpectedly, it is not second- or third-generation farmers who are entering the industry, but rather than those with little or no farming background. Many of these people presumably see farming as a romantic and attractive occupation. Many are producing specialized crops, specializing in locally produced/locally sold, farmers' market, Community Supported Agriculture (CSA), or roadside stands. However, despite increases in direct marketing and an increase in popularity of local foods, it is unclear how successful small-scale producers are or what factors or traits may lead to success.

Research also indicates that despite the higher prices received for produce grown or livestock raised, the industry has not added much in the way of additional profitability; labor, marketing, and transportation costs have offset any increase in profits for these types of small-scale producers' operations (Hardesty and Leff, 2009). Due to this gap between potential and realized profit, there is a significant need for appraisal of small-

scale, specialized and/or specifically tailored agricultural businesses and operations working in smaller markets or potentially marginal tracts of land. The innovation and experience that successful small businesses and organizations possess could and should be reviewed for factors, best practices, or common traits lending to their success. If possible, the business models and practices can be replicated by other small-scale growers. These traits could be promoted and taught through small business development organizations or cooperative extension services to increase the probability of a producer's success and profitability.

Smaller specialty crop or livestock producers have the potential to farm or ranch on a smaller scale in fragmented farm lands or areas where it is unfeasible or undesirable for larger industrialized agribusinesses to enter. Smaller businesses and operations have more incentive to closely manage and protect fragile lands from erosion or misuse to ensure their ongoing livelihood. They are also more able to implement intensive managerial methods, utilize culls, or participate in agritourism. Additionally, they have the unique potential to fill immediate local market demands for fresh food, provide employment and development for the surrounding communities, decrease fossil fuel consumption, and in some instances decrease agricultural water use. While currently their size and scale overall is quite small, with just over half of the farms in Utah at forty-nine acres or less (USDA, 2009), world population growth and resulting food demand will no doubt necessitate movement into fragile, fragmented, or marginal lands. Small farmers will need to have the experience and knowledge to manage, develop, and utilize those areas.

While all of these factors have been looked at individually or even in groupings of like factors (Pendell et al., 2011; Mishra et al., 2010; Lans et al., 2011), few if any research projects have combined a broader spectrum of factors that may be involved with success and/or profitability (economic sustainability) into one study.

This study aims to examine current successful small agricultural operations, local markets, current regulatory or government controls, as well as other business environment aspects in order to identify successful business models from which the most applicable and best practices can be pulled. The end objective is to identify best practices that should be utilized to educate, train, and illustrate models to new small-scale agricultural businesses. These businesses, if properly planned and executed in their development and growth phases, will be able to compete locally and possibly even globally and become sustainable.

LITERATURE REVIEW

A review of current books, periodicals, and other literature suggests various factors that may contribute significantly to success and profitability and ultimately to a business's longevity and sustainability. Those factors include demographics, farm/land characteristics, financials, science and technology integration, day-to-day operations, suppliers and customers, products/product mix, and markets and marketing environment.

A. Demographics

U.S. farmers and ranchers are older and established, as the average age of a farmer or rancher in Utah is 57.4 years (USDA, 2009). The following table shows the age group of the principle operator (Table 1).

Table 1: Age Group-Farmers and Ranchers (Adapted from USDA, 2009.)

Age Group	Total
Under 25	54
25–34 years	964
35–44 years	1,771
45–49 years	1,988
50–54 years	2,322
55–59 years	2,370
60–64 years	1,976
65–69 years	1,798
70 years or over	3,457

Further breakdown of farm numbers shows that older operators tend to operate the largest acreage farms, while younger farmers tend to operate smaller farms (Ahearn,

2013). This is most likely due to increased land prices and decreasing availability of land. Farm exits indicate an exit rate of 9–10% nationally (Hoppe and Korb, 2006), which suggests that future censuses may show a shift in the age of principle operators.

USDA census data also indicate that older farms may be more successful, as they have acquired more assets and paid down their debt, leaving more profit at the end of the day (USDA, 2009). Additionally, in operating larger farms they are able to benefit from economies of scale in purchasing supplies or producing goods with lower overhead per unit. Other literature suggests the opposite—that younger farmers tend to be more successful as they are more willing to embrace new technology and research (Hoppe and Korb, 2006). Through this, young farmers are able to implement best practices in order to increase productivity/quality and thereby profitability on a somewhat smaller scale.

Gender and ethnicity also play a role in farming exits, as both woman and black farm operators are more likely to exit farming than their counterparts (Hoppe and Korb, 2006). While the specific reason for exit is not defined, it is safe to assume that they are not as successful or profitable for whatever reason as their counterparts and are motivated to exit based on financial situation. Since small farms and ranches are very often considered small businesses and research indicates that gender plays a role in the ability of a business to survive, one could extrapolate similar factors playing into lack of success and profitability. Suggested reasons include less aggressive or risk-averse behavior among women in entrepreneurial situations, social situation, or inability to acquire the

Table 2: Gender-Utah Farmers and Ranchers (Adapted from USDA, 2009.)

Gender	Total	Percentage
Male	14,903	89.2%
Female	1,797	10.8%
Total	16,700	100%

necessary start-up or operator loans due to social/financial status, and others (Lee and Stearn, 2012). Additionally, one might extrapolate farming requires a great deal of manual labor which could also be a deterrent to entry, as women may choose less physically strenuous lines of employment over farming. According to the USDA Utah Farm Census of 2007, 89.2% of principal operators of Utah farms and ranches are male (Table 2).

The USDA defines beginning farmers and ranchers as those who have operated a farm or ranch either as a sole operator for ten years or less or with others who have operated a farm or ranch for ten years or less (Ahearn, 2013). The farmers and ranchers the USDA classifies as beginning farmers and ranchers make up approximately 22% of the overall group. The USDA also defines a farm as any place from which \$1,000 or more of agricultural products are produced and sold, or normally would have been sold, during the reference year (Ahearn, 2013). Beginning farmers and ranchers can be further divided into those who work as producers for their main occupation versus those who work at another occupation full-time and reside on a farm. For the purpose of this study, no such delineation is made between primary occupation and secondary occupation.

While the national average of new farmers is 22%, some counties have as few as 10% new farms, while others counties average around 50% (Ahearn, 2013).

B. Farm/Land Characteristics

It is generally accepted that larger operations are better able to take advantage of economies of scale, a benefit that small-scale, diversified farms are not able to tap into. One of the greatest challenges facing new farmers and ranchers is the difficulty in finding suitable and/or affordable farm land for purchase or rent, especially farm land eligible for government aide or subsidies (Ahearn, 2013). Despite the financial crisis of 2008 and an overall decrease in valuation of real estate overall, speculation in farm or undeveloped lands has not decreased. Reasons for this include increased bioenergy uses for crops (Mueller, Anderson, and Wallington, 2011) and investors buying up farmland as part of a low-risk portfolio (Waggle and Johnson, 2009). A drive along the I-15 corridor in Utah demonstrates a massive loss of farmland to new commercial and residential developments, with little or no sign of slowing on such use of land previously zoned as agricultural. Size, location (proximity or access to appropriate markets), and other factors greatly influence the success of the overall operation, but agricultural land prices are continuously rising in the urban/rural interface.

USDA figures show that beginning farmers (those operating within their first ten years) operate farms of all sizes, but these are smaller on average than established farms: 174 acres compared with the average 461 acres for an established farm (Ahearn, 2013). When discussing beginning farms, there is often a tendency to speak of small farms, which is not incorrect. The majority of beginning farmers own some land, but beginning

farmers tend to have a higher share of rented land than established farmers (Ahearn, 2013). Debt from land purchases as well as rental costs can chip away at profitability and adversely affect sustainability and longevity if operators are unable to keep up with the debt load.

Once suitable land is found, water availability is the next major concern. Water rights are not always passed along with the property, the rights passed on may not be sufficient for any type of crop, well permits can be difficult to obtain, and water quality can additionally be an issue all creating barriers to entry into the market. The quantity, quality, and method of irrigation available can affect which crops or types of animals an operation can sustain. Cost of water, irrigation piping, and water delivery systems may also contribute or detract to profitability and success. Some systems may allow for more production or less production and may even affect quality of the crop produced.

Seasonal constraints such as length of growing season, first and last frost dates, and other constraints can have an effect on profitability (Ash et al., 2007) when taken in to consideration with other factors such as acreage and distance to market (Pendell et al., 2011; Martinez et al., 2010). If the growing and sales season is 6 months or less, the farm must then reach sales marks that will sustain the business through the nonproduction months or operators may be forced to seek outside employment in order to supplement farm income. Some farms have been quite successful at extending the growing season at relatively low cost by utilizing unheated tunnels or hoop houses (Wien, 2009).

Literature suggests that distance from primary markets can have an effect on success and profitability of an operation (Martinez et al., 2010). The further away from a metropolitan area, the longer distance one has to travel to sell goods. That cost must be

absorbed in pricing of goods and could prevent sales pricing from being competitive with other farmers. On the reverse, those too near metropolitan areas may have the added cost of owning assets (land) in highly populated areas, also increasing costs and pricing of goods. Some distant growers have proven to be successful in marketing over a great distance based on reputation alone; an example of such a reputation is that of the “Green River Melons,” as although they are grown a great distance from the Salt Lake metropolitan area, they are well known and sought out at farmers’ markets and roadside stands (Warchol, 2004).

C. Financials

There is some concern over whether or not producers truly know whether they are successful and profitable from year to year. Most can tell reasonably well whether they are successful and profitable, but knowing more specifically based on debt to income ratio or on a return on assets ratio can be somewhat more challenging for a producer who does more of the on-farm operations and less of the accounting and finance planning aspects (Mishra, El-Osta, and Shaik, 2010).

Individual producers possess different metrics for success. For example, an organic peach farm limited to only ten acres may vary greatly from that of a 10,000-acre grass-fed beef operation. Input costs and output values will vary greatly. While one producer might consider the lack of need for off-farm income a measure of success, another might consider return on assets or return on investment in livestock. Businesses often have multiple enterprises, with some enterprises making a profit one year while another enterprise may be less so; for example, in dairy, excess milk may be sold at a

loss, but cheese-making or other value-added products may easily make up for these losses (Thistlewaite, 2012).

While established farmers and beginning farmers make approximately the same annual income on average, a larger portion of beginning farmers' income comes from off the farm. For established farmers, a larger percentage of their income comes from farm earnings (Ahearn, 2013). However, USDA research indicates that breaking even for the first few years of a new operation is sometimes the best that can be hoped for (Ahearn, 2013).

D. Science & Technology Integration

New entrants into an industry can create an environment favorable to implementation of new technology and may also increase productivity through the creation of competition (Hoppe and Korb, 2006). Agriculture appears to be similar, and research from the USDA suggests that farm exits—and farm entries—may play an important role in introducing technologies and productivity growth (Hoppe and Korb, 2006). New science and technology integration might include, but is not limited to, accounting or bookkeeping software, Internet sales, marketing, advertising, and management of day-to-day operations.

E. Day-to-Day Operations

Specialized outside assistance, if utilized properly, can assist a business in achieving its financial goals (Thistlewaite, 2012). For example, using a part-time accountant may allow the farmer to spend more time focusing on production and operations rather than worrying about an area of his business which he is not the best

qualified or suited to perform. Small business owners often attempt to be jacks-of-all-trades in order to cut business expenses (Thistlewaite, 2012).

Some commonly used, value-added, outside services might include marketing service or onsite director/manager, farm manager, lawyer/attorney, accountant/bookkeeper, web developer/graphic artist, insurance agent, commercial real estate agent, mentor/coach, consultant(s), Chamber of Commerce activities, Small Business Administration (SBA), Small Business Development Centers, Cooperative Extension workshops/conferences, United States Department of Agriculture (USDA) agencies, such as the Farm Service Agency (FSA), the Natural Resource Conservation Service (NRCS), Rural Development (RD), and others.

Beginning farmers are much less likely to use USDA programs because they are less likely than established farmers to produce traditional agricultural commodities. As some USDA programs are generally geared towards commodities, beginning farmers may not meet the eligibility requirements for such programs (Ahearn, 2013). Justifying the use of such services requires weighing costs against the benefit gained, and services needed may vary from based on the type of operation in question.

Family involvement in the operation can both help and hinder an operation. Success is thought to be more likely if a spouse or family member is involved, supportive, and actively participating in a business than if only one partner is involved (Muske et al., 2009). Having children or other family members who are also able to help with operations or decision-making can also be a contributor to success. However, if family members are placed in a position due to their status as family and not based on skills or expertise, research has shown that businesses can struggle. Research also

indicates that intermingling of personal and business finances can have a negative effect on the operation (Yilmazer and Schrank, 2010).

F. Suppliers

Reliability as well as number of suppliers can affect success and profitability of a business (Gupta, 2004). If suppliers of goods needed to operate a business are unreliable, this can affect production, planting, and ultimately the success and profitability of an operation. The more suppliers available, the more options or access a business has to those things that it might need (seed, fertilizer, stock animals, etc.). However, using only 1 or 2 suppliers consistently can help with gross purchase discounts. Too many or even too few suppliers can negatively affect both success and profitability (Gupta, 2004).

G. Customers/Buyers

Business reputation, brand names, and other identifiable features add to the intrinsic value of a product and can raise the price a producer can ask over the production cost (Wirthgen, 2005). This increases the net profit and thereby the overall profitability of an operation. Consumers will buy repeatedly from a certain grower or producer if they perceive the product to be of better quality or value. This suggests producers need to provide consistently high-quality produce to their consumers.

The size of the customer base can make a large difference in success: the more customers served the less the impact that will be felt if there is an off day at the market or 1 or 2 customers move from the area. However, having too many customers and not being able to meet all of their needs can also be bad for business.

Repeat customers confirm a producer's product quality and reputation and are likely to bring in more customers by word of mouth (Butte, 1998; Thistlewaite, 2012). Word of mouth is one of the most effective forms of marketing and promotion available, especially in an age where there are many options. Additionally, switching barriers increase the consumer cost of switching to another provider. Homans (1958) and Bennis (1964) show that consumers examine the cost/benefit ratio when deciding whether or not to maintain a current relationship. When switching costs outweigh the benefits, the relationship will continue, even when the consumer is not completely satisfied with the service and/or product. Costs often include loss of special treatment, risk perceptions resulting from lack of experience with another provider, search costs, the need to explain preferences, and sunk costs of current relationship.

H. Products/Product Mix

It is widely believed and expressed in literature that not only the right product selection but also the right product mix can contribute to business success (Thistlewaite, 2012). If a business is the only one of its kind or carries a unique product not found elsewhere and that product is something consumers want or need, that business is likely to be successful. Additionally, too many or too little product or product types can affect sales of those products or may possibly cause the business operator to spread him or herself too thin.

Creation of value-added products to use up, extend the life of, and store over production of produce along with the use or sale of culls or byproducts can give the producer extra sources of income that would otherwise be counted as a loss. This may

allow for at least break-even or often times a higher profit than would be gained had produce been sold through normal methods. Agritourism is another option for creating additional income with regular sales. Agritourism is believed to increase community awareness and support of local producers, creating more customers, and it also serves as an alternate form of income to the operator/producer. This creates not only a product to sell but also an experience where the customer can become more actively involved in where their food comes from.

I. Markets and Marketing Environment:

Difficulty of regulatory requirements, overregulation, excessive oversight, or extreme lack of regulation can cause serious implications affecting success and profitability of a business (Salatin, 2007). If regulatory requirements are impossible to meet and large fines for noncompliance are imposed, a producer is likely to be unsuccessful. However, if there is little or no regulation and the industry suffers from issues with food borne illnesses, profitability will be negatively affected (Mozdoszka, 2004).

Branding and labeling are also closely interrelated with customer reputation and can seriously affect success and profitability. A damaging example of branding and labeling is that of the cantaloupe industry in Colorado, where the Rocky Ford growers' label was smeared due to improper usage of their labeling by an unassociated farm over ninety miles away, ruining the reputation of that group (Whitney, 2013). Thirty-three people died from listeria poisoning and many others were sickened; the responsible farm is now bankrupt. Rocky Ford melon growers are still suffering the consequences of an

unrelated farm using their label to sell melons at a premium in the market. A positive example of labeling is that of Brigham City peaches or Weeks Berries of Paradise, as those fruits are sought after and a coveted commodity at the farmers' markets around Utah and in a few surrounding states (Adams, 2011). The customer motivation to purchase this produce is directed by perceived quality and tradition of family purchases.

DATA DESCRIPTION

This study examined new and existing small-scale, diversified farms who primarily direct market their products. Direct markets often include farmers' markets, community supported agriculture (CSA basket or box schemes) programs, farm stands, and pick-your-own operations. The research goals were to identify strengths as well as weaknesses in the above listed types of operations and factors that contribute both to the success and profitability of the operation.

Study data were collected through a sixty-four question web-based survey conducted through Survey Monkey™. A request to complete the survey was emailed out to potential respondents through Cooperative Extension listservs in Utah, Idaho, Nevada, Colorado, and Wyoming as well as through farmers' market and CSA program managers in those states.

A total of 104 respondents started the survey. Surveys with little or no data were removed and surveys with key answers critical to the statistical analysis that were left blank on other survey responses were replaced with the average for each question. While not ideal, this allowed for maintaining the relatively small dataset of eighty-six respondents produced by the survey requests. Data were cleaned and standardized (e.g., growing season in weeks only). Open-ended questions are summarized in the results, and questions with too few or extremely varied answers (e.g., water usage) were removed as they were not usable in the final dataset. Sample summary statistics for primary operator characteristics are provided in Table 3. Averages of ranked items such as difficulty of regulations or totals of items such as number of products produced, number of market

Table 3: Sample Descriptive Statistics – Primary Operator Characteristics

Variable	Description	Std.			
		Mean	Dev.	Min	Max
Age	Age of primary operator; 1=Under 25 years, 2=25–34 years, 3=35–44 years, 4=45–49 years, 6=50–54 years, 7=55–64 years, 8=65–69 years, 9=over 70 years	4.87	1.90	1	9
Gender	Gender of primary operator; 0=Male, 1=Female	0.37	0.49	0	1
PerAnalyt	Analytical personality response; No=0, Yes=1	0.30	0.46	0	1
PerDriver	Driver personality response; No=0, Yes=1	0.42	0.50	0	1
PerAmia	Amiable personality response, No=0, Yes=1	0.16	0.37	0	1
PerExprsv	Expressive personality response; No=0, Yes=1	0.12	0.32	0	1
RiskRtgR1	Willingness to take on risk; 1=Very unwilling, 2=Unwilling, 3=Unsure, 4=Willing, 5 Very willing	3.76	0.68	2	5
PrmryOcc	Farming is primary occupation; 0=No, 1=Yes	0.40	0.49	0	1
SpEmpl	Spouse employed outside of the operation; 0=No, 1=Yes	0.34	0.48	0	1

Variable	Description	Mean	Std.		
			Dev.	Min	Max
YrsExper	Primary operator years of farming experience; 1=less than 1 year, 2=1–5 years, 3=6–10 years, 4=11–20 years, 5=more than 20 years	3.70	1.21	1	5
FrmAgDeg	Primary operator possesses a degree in Farming/Agriculture; No=0, Yes=1	0.30	0.46	0	1
HRDegr	Primary operator possesses a degree in Human Resources; No=0, Yes=1	0.09	0.29	0	1
AcctDeg	Primary operator possesses a degree in Accounting/Finance; No=0, Yes=1	0.16	0.37	0	1
CmpITDeg	Primary operator possesses a degree in Computers or IT; No=0, Yes=1	0.10	0.31	0	1
MechElec Deg	Primary operator possesses a degree in Mechanical/Electrical; No=0, Yes=1	0.12	0.32	0	1
DegOther	Primary operator possesses a degree in other educational area; No=0, Yes=1	0.29	0.46	0	1

outlets used, and research methods were constructed from the original data. Sample summary statistics for farm/ranch characteristics are provided in Table 4.

Table 4: Sample Descriptive Statistics – Operation Characteristics

Variable	Description	Std.			
		Mean	Dev.	Min	Max
SASucc2	Combined averaged self-assessed success and profitability rating, where 1=Very Unsuccessful/ Very Unprofitable, 2=Unsuccessful/Unprofitable, 3=Unsure, 4=Successful/Profitable, 5=Very Successful/Very Profitable	3.37	0.91	1	5
Profitability1	Profitability rating based on net income where 1=negative (loss), 2=breakeven, 3=slightly profitable, 4=profitable, 5=very profitable	3.35	1.12	1	5
DebtLd	Operation debt load; 1= None, 2=1–5%, 3=6–15%, 4=16–25%, 5=26–50%, 6=51–75%, 7=75–100%	2.20	1.77	1	7
CSA	Sales through CSA program; 0=No, 1=Yes	0.36	0.48	0	1
TNumProd	Total number of product types	3.37	1.69	1	7
AcresOL	Total acres owned/leased	3.65	2.20	1	8
TotOutlets	Number of sales outlets used	2.85	1.66	1	8
WhleSale1	Use of wholesale or local grocery outlets; 0=No, 1=Yes	0.33	0.47	0	1
ValAdBiP	Value-added or Byproduct sold; 0=No, 1=Yes	0.16	0.37	0	1

Variable	Description	Mean	Std.		
			Dev.	Min	Max
UrbvRural	Urban versus Rural Location; 0=Rural (>50 miles), 1=Urban (<50 miles)	0.58	0.50	0	1
AveSlAmt	Average single sale amount; 1=less than \$10, 2=\$11–25, 3=\$26–49, 4=\$50–75, 5=\$76–100, 6=more than \$100	2.29	1.56	1	6
TotProm	Total number of promotional methods used	2.12	1.49	0	6
OLPromo1	Use of online and/or social media promotional method; 0=No, 1=Yes	0.73	0.45	0	1
PromLocal1	Use of local as promotional method; 0=No, 1=Yes	0.55	0.50	0	1
OrgYN	Use of organics production methods; 0=No, 1=Yes	0.37	0.49	0	1
CompPrc17	Competitor perception; 1=Too many, 2=Just right, 3=Unsure, 4=Could use more variety, 5=Not Enough	2.33	1.00	1	5
LlcCorp	LLC or Corporation; No=0, Yes=1	0.36	0.48	0	1
Planning1	Use of business and/or marketing plan; 0=No, 1=Yes	0.43	0.50	0	1
ResUse	Number of research types utilized	2.60	1.80	0	7

Variable	Description	Std.			
		Mean	Dev.	Min	Max
DBusRev1	Difficulty rating of general business activities reversed; 1=Very difficult, 2=difficult, 3=Unsure, 4=Relatively Easy, 5=Easy	3.57	0.68	2	5
UseServcs	Number of outside services and/or agencies utilized	2.86	2.67	0	11
LeadAveR1	Leadership team skills rating; 1=Needs improvement, 2=Satisfactory, 3=Unsure, 4=Good, 5=Excellent	3.67	1.02	1	5
RegAve1	Difficulty rating of governmental regulations; 1=Easy, 2=Relatively easy, 3=Unsure, 4=Difficult, 5=Very difficult	2.35	0.82	1	5

Data Statistical Overview

This study specifically looks at small-scale producers' self-assessed success ratings (combined self-assessed success and profitability ratings) as well as reported profitability figures (high range of income minus low range of debt).

The self-assessed success rating was created by combining and averaging the survey participants' reverse response of success ratings (very successful, successful, unsure, unsuccessful, or very unsuccessful) and profitability (very profitable, profitable, unsure, unprofitable, very unprofitable). Self-assessed success rating found successful producers were using CSAs and on-farm shops more frequently and traveled on average

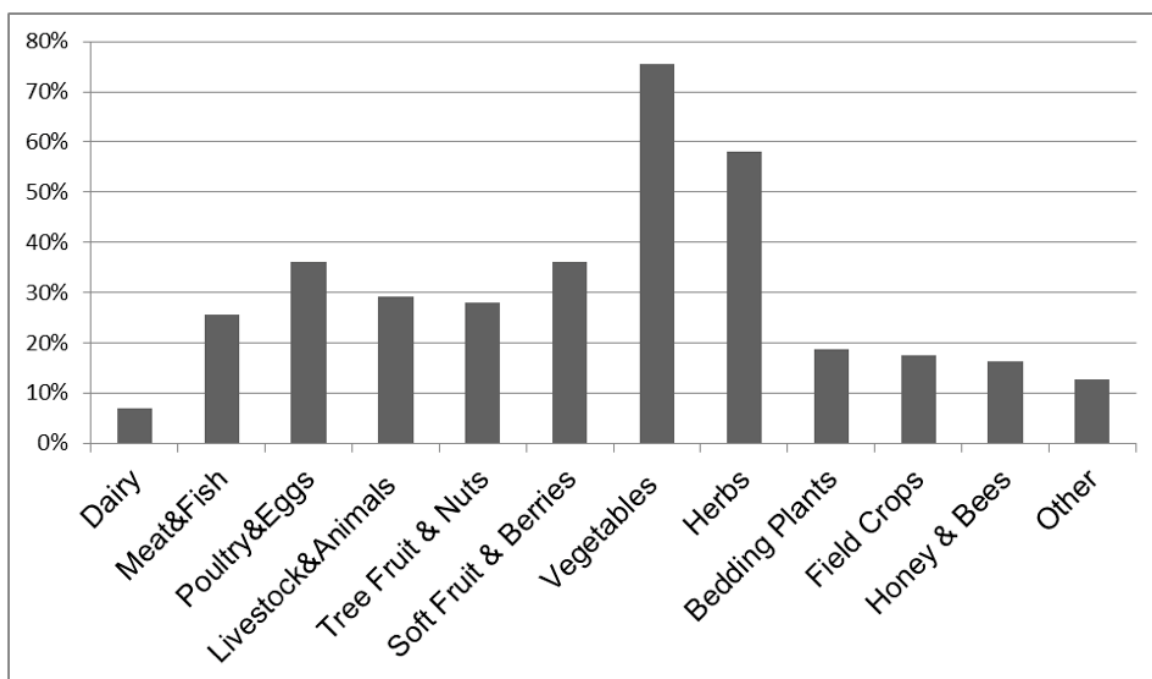


Figure 1: Types of Products Produced by Small-Scale Producer Survey Respondents

slightly longer distances to their primary market. Additionally, they tended to use outside services such as accountants and web designer/developers. Close to 66.3% of respondents reported they were producing vegetables, 51.2% reported herb production, 33.7% poultry/egg production, 32.6% soft fruit/berry production, and 27.9% in livestock/animal production. These 5 had the highest percentages of the twelve product types under production (Figure 1).

Those who self-assessed as very unsuccessful/very unprofitable or unsuccessful/unprofitable had on average 2.9 product types, with a median of 3. Those who were unsure had on average 3.3 product types, with a median of 4. Those who self-assessed as very successful/very profitable had on average 3.4 product types, with a median of 4. This suggests that more successful/profitable operations tend to have slightly more product variety. However, these more successful/profitable operations tend

Table 5: Total Number of Product Types Produced by Small-Scale Producers

	Unsuccessful	Unsure	Successful
1	5	4	6
2	2	5	9
3	3	0	6
4	3	6	11
5	2	5	7
6	0	2	4
7	1	1	1
Average	2.9	3.3	3.4
Median	3	4	4

not to diversify too much, as there were twelve possible product-type categories, but data showed an average of 3.4 (Table 5).

Tree fruits, soft fruits/berries, herbs, and field crops tend to be much more prevalent among successful/profitable operations, as well as to a lesser extent dairy, meat/fish, poultry/eggs, livestock, and honey/bees. For unsuccessful/unprofitable operations, vegetables, bedding plants, and the “other” category of product types tend to be slightly more prevalent.

Some literature suggests differentiation into too many different crops can be spreading the producer too thin, with the end result of less productivity with decreased profitability or success (Thistlewaite, 2012). Other literature indicates specialization and economies of scale in one area of specialization can increase profitability and success overall however, this can lead to lack of adequate market and inability to move larger

Table 6: Percentage of Respondents Producing Each Product Type

	Unsuccessful	Unsure	Successful
Dairy	6.3%	4.0%	8.9%
Meat & Fish	18.8%	28.0%	20.0%
Poultry & Eggs	25.0%	48.0%	28.9%
Livestock & Animals	25.0%	32.0%	26.7%
Tree Fruit & Nuts	12.5%	28.0%	31.1%
Soft Fruit & Berries	31.3%	24.0%	37.8%
Vegetables	68.8%	72.0%	62.2%
Herbs	43.8%	48.0%	55.6%
Bedding Plants	25.0%	0.0%	22.2%
Field Crops	6.3%	16.0%	22.2%
Honey & Bees	12.5%	20.0%	15.6%
Other	18.8%	8.0%	6.7%

amounts of product (Salatin, 2007). Since many small producers prefer selling to local markets, a more diverse product mix decreases risk and allows more security (Table 6).

Among self-rated successful/profitable respondents, 16% created and sold value-added products as compared to only 6% of unsuccessful/unprofitable respondents. No successful/profitable businesses reported producing or selling any byproducts or culls; this is possibly because they used excess production for value-added. Only 33% of successful/profitable businesses reported having agritourism, while 38% of unsuccessful/unprofitable businesses reported this as part of their business (Table 7).

Survey results showed the use of value-added to be more common in those with the highest success ratings in agreement with current literature suggesting an increase in profitability and success by utilizing produce that would otherwise be thrown away or

Table 7: Value Added, Culls, Byproducts, and Agritourism Activity of Small-Scale Producers

	Unsuccessful	Unsure	Successful
Value Added	6%	16%	16%
Byproducts & Culls	6%	8%	0%
Agritourism	38%	28%	33%
None	63%	60%	56%
1 Activity	25%	28%	40%
2 Activities	13%	12%	4%
3 Activities	0%	0%	0%

tilled back into the ground (Thistlewaite, 2012). However, no such agreement was found with culls and byproducts or agritourism.

When all 3 were assessed, successful/profitable businesses were more likely to choose only one of the 3 activities believed to boost success (40% reporting to do so), compared to 4% choosing 2, while no successful businesses reported all 3 activities. Among unsuccessful/unprofitable businesses, 25% participated in 1 of these activities, 12% chose 2, and none reported all 3. This could suggest that more successful/profitable businesses are better able to gauge what activities would increase success or that unsuccessful/unprofitable businesses were spreading themselves too thin by trying to take on too much (Table 7).

Data suggest that successful producers were more likely to use word-of-mouth advertising (word-of-mouth variable was generated from open-ended question, respondents were not prompted to select this option), to promote local, and to be a Limited Liability Company (LLC) or corporation. Successful producers are also slightly

Table 8: Other Business Factors Influencing Success and Profitability of Small-Scale Producers

	Unsuccessful	Unsure	Successful
Local Grocery/Wholesale	38%	12%	42%
Urban	56%	68%	53%
Online Promotion/Social Media	81%	64%	76%
Word of Mouth	13%	8%	24%
Utah's Own/Local	13%	8%	24%
Organic (Certified/Self Certified)	50%	36%	33%
LLC/Corporation	38%	20%	44%

more likely to use some form of wholesale market to supplement direct market sales (which may help to prevent overstock and/or wasted products). Additionally, data showed successful producers were less likely to use online promotion or to sell or market products as organic (Table 8). However, data still showed 76% of successful/profitable businesses used online promotion in comparison with 81% of unsuccessful/unprofitable businesses. This is not surprising in a digital age where most advertising has gone online, or is using social media or other networking sites (Table 8).

Data suggest relatively little difference in the length of sales season between successful/profitable respondents and unsuccessful/unprofitable respondents, which may be attributed to the set time lengths for the operation of farmers' markets from which they all sell or the growing seasons in which they can produce goods. Little to no difference was apparent between the mean, median, or mode regarding success or nonsuccess.

Successful/profitable respondents reported on average a higher single transaction range of \$11–25 over that of unsuccessful/unprofitable at \$10 or less, which could suggest a

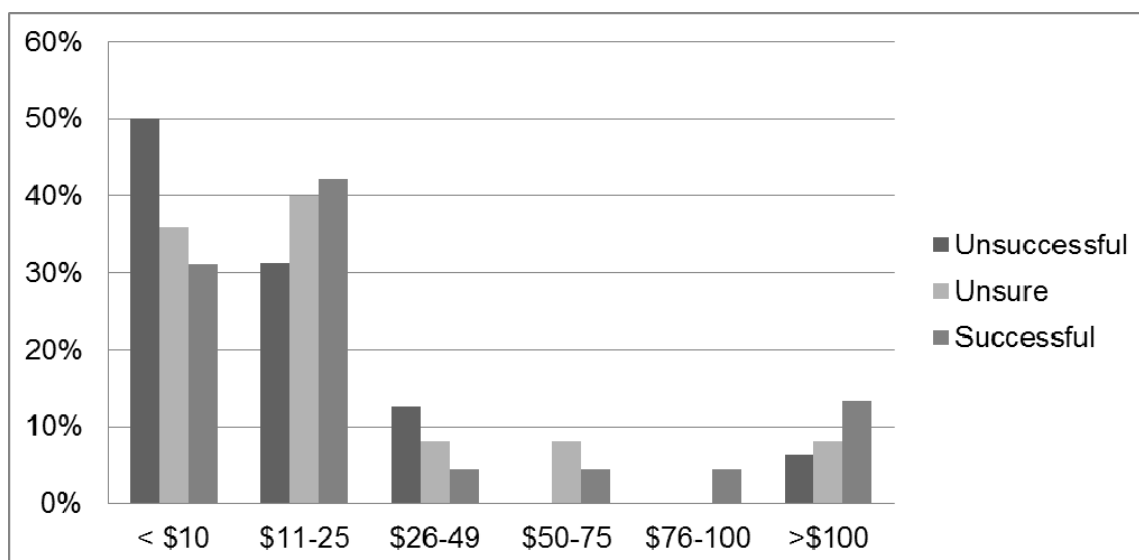


Figure 2: Average Single Sales Transaction Range for Small-Scale Producers

higher premium paid by consumers, more goods sold, better quality product produced, or other related sales factors that might be contributing to success (Figure 2).

Successful/profitable operations appear to perceive that they have more competition (in numbers of competitors) in their area than do unsuccessful/unprofitable operations. However, both successful/profitable and unsuccessful/unprofitable majority (mode) responded that the number of producers selling in their area was just about right.

Successful/profitable respondents tend to do only slightly more planning on average. However, when looking at the specific types of planning, they were much more likely to have a production plan and/or a financial plan than unsuccessful/unprofitable respondents but less likely to have just a general business plan (Table 9). Statistical analysis included the generated variable Planning 1, indicating respondent indicated they used either a business and/or marketing plan.

Table 9: Reported Business Planning Usage by Small-Scale Producers

		Unsuccessful	Unsure	Successful
Types of Planning	Business Plan	56%	28%	33%
	Marketing Plan	13%	28%	33%
	Production Plan	13%	36%	53%
	Financial Plan	6%	20%	27%
	Vision Statement	69%	16%	24%
	Values/Beliefs Statement	38%	28%	31%
	No Plan	25%	48%	31%
	Planning1	56%	32%	44%
Planning	Mean	1.937	1.56	2.022
Total	Median	2	1	2

On average, successful/profitable respondents were only slightly more likely overall to use research than were unsuccessful/unprofitable respondents. Additionally, successful/profitable respondents reported they used UDAF publications, soil and crop testing, and AMS pricing reports only slightly more often (Table 10).

Successful/profitable respondents were much more likely overall to use outside services to manage their businesses. This could mean usage of outside services enhances success/profitability or due to success/profitability they are able to hire these services. Most successful/profitable respondents reported using a marketing service or on-site director/manager, a farm manager, a lawyer/attorney, accountant/bookkeeper, a web developer, insurance agent, consultant, and FSA/NCRS assistance. Successful/profitable operations used on average 4 (Median of 3.733) of these outside services while

Table 10: Reported Research Usage by Small-Scale Producers

		Unsuccessful	Unsure	Successful
Research	Trade Magazines	44%	32%	49%
Use Types	Extension Publications	75%	60%	62%
	USDA Publications	44%	32%	42%
	UDAF Publications	13%	20%	22%
	Soil Testing	50%	52%	62%
	Crop Testing	13%	4%	16%
	Video Pricing	0%	0%	4%
	AMS Pricing Reports	6%	12%	11%
	Other, research	19%	12%	11%
	None	13%	28%	11%
	Research	Mean	0	0
Use Total	Median	2	2	2

Table 11: Reported Outside Services Usage by Small-Scale Producers

	Unsuccessful	Unsure	Successful
On-site Director/Manager	0%	8%	11%
Farm Manager	0%	8%	20%
Lawyer/Attorney	6%	8%	13%
Accountant/Bookkeeper	6%	16%	47%
Web Developer/Graphic Artist	13%	8%	33%
Insurance Agent	13%	32%	40%
Real Estate Agent	0%	0%	2%
Mentor/Coach	13%	12%	9%
Consultant	6%	0%	13%
Bookkeeping Software	13%	44%	56%
Chamber of Commerce Activities	0%	4%	4%

	Unsuccessful	Unsure	Successful
Small Business Administration (SBA), SBDC, Score Program	13%	4%	4%
Cooperative Extension Program Agency such as Farm Service Agency (FSA), NRCS, RD Program	56%	48%	64%
Other	13%	16%	47%
Use of Services (UseServcs)	0%	8%	9%
	1.5	2.16	3.733

Table 12: Reported Business Type Utilized by Small-Scale Producers

	Sole Proprietorship	Partnership	Corporation	LLC	Unknown
Unsuccessful	44%	6%	0%	38%	6%
Unsure	72%	0%	0%	20%	4%
Successful	44%	2%	18%	27%	4%

unsuccessful/unprofitable respondents only used on average 2 (Median of 1.5) outside services (Table 11).

Successful/profitable and Unsuccessful/Unprofitable were both equally as likely to be sole proprietorships, while successful/profitable were much more likely to be corporations and less likely to be a LLCs (Table 12).

By and far the most frequently used market type for producers is the farmers' market, with over 70% of successful/profitable and unsuccessful/unprofitable both reporting use of farmers' market as a market type (Figure 3).

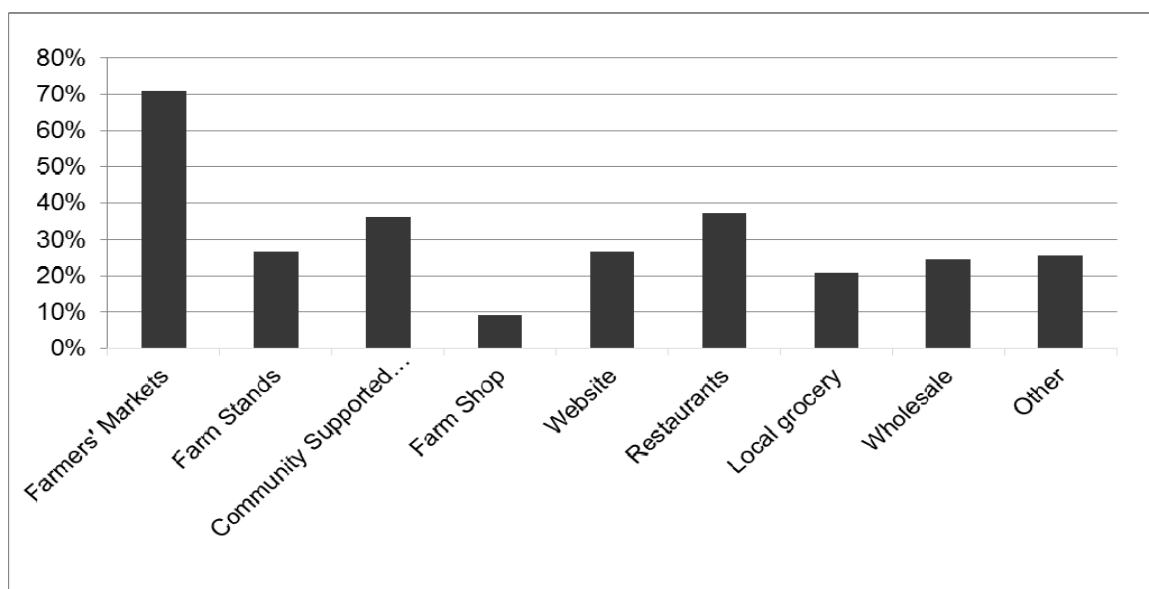


Figure 3: Markets Used by Small-Scale Producers -Which of the following markets do you use? (Check all that apply)

The data indicate, however, that the percentage of successful/profitable respondents who use a CSA or farm shop is near double the percentage of unsuccessful/unprofitable using CSA and farm shops as a market type. Successful/profitable respondents' average number of market types was 3.11 and slightly higher than unsuccessful/unprofitable average of 2.875. Successful additionally had a mode of 1, meaning that it was slightly more often the case that successful/profitable producers only had one market type or sales channel (Table 13).

Those producers who are most successful/profitable do in fact travel longer distances to their primary market, averaging 70 miles round trip, than unsuccessful/unprofitable producers, averaging 38 miles per round trip. This could be attributed to unsuccessful producers possibly paying more expensive land costs nearer

Table 13: Markets Used by Small-Scale Producers

	Unsuccessful	Unsure	Successful
Farmers' Market	75%	68%	71%
Farm Stand	25%	32%	24%
CSA	25%	16%	51%
Farm Shop	6%	8%	11%
Website	44%	20%	24%
Restaurants	44%	28%	40%
Local Grocery	25%	8%	27%
Wholesale	25%	8%	33%
Other Outlets	19%	24%	29%
Total Outlets Mean	2.875	2.12	3.111
Median	3	2	3

Table 14: Distance Round-trip to Primary Market from Small-Scale Production Location

	Unsuccessful	Unsure	Successful
Mean	37.618	33.988	69.907
Median	18.5	25	40
Standard Deviation	35.895	34.668	106.282

markets or those successful producers that live further away may budget in the travel times and expenses or may make fewer trips to their primary market (Table 14).

The most frequently used method for advertising was web-based or online advertising, such as Facebook or social media. Both were reported by 57% of all respondents. The next 2 most common forms of advertising were flyers and leaflets followed by road signage reported by 26 and 23% of total respondents, respectively (Figure 4).

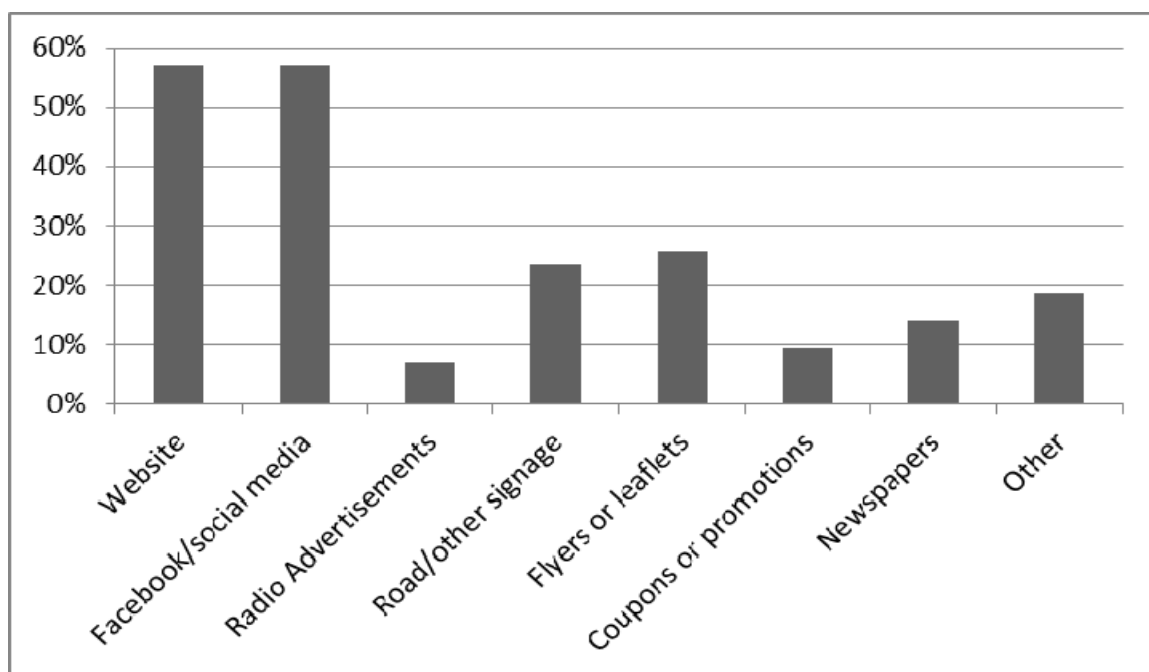


Figure 4: Promotional Methods-Marketing-Which of the following promotional methods do you use? (Check all that apply)

There was little difference between usage of web-based advertising and Facebook/social media between successful/profitable and unsuccessful/unprofitable respondents. However, successful respondents were slightly more likely to use radio advertising, road signage, coupons/promotions, newspaper, and other forms of promotion in their business (Table 15). The most common short-answer response in promotional methods marketing was that of word of mouth with approximately 18.6% of respondents replying with that answer without being prompted to do so.

Successful/profitable operations appear to be more likely to use branding, the Utah's Own labeling, Organic Certification, and other labeling and production methods in their operations. Results show unsuccessful/unprofitable respondents are claiming, albeit unsuccessfully, an Organic-Not Certified method of production, most likely to try

Table 15: Promotional Methods-Marketing Used by Small-Scale Producers

	Unsuccessful	Unsure	Successful
Website	63%	44%	62%
Facebook/social media	56%	60%	56%
Radio Advertisements	6%	0%	11%
Road/other signage	19%	20%	27%
Flyers or leaflets	31%	20%	27%
Coupons or promotions	0%	16%	9%
Newspapers	6%	12%	18%
Other	13%	20%	20%
Total Promotion Methods	1.937	1.92	2.288
Median	2	1	2

Table 16: Labels/Production Methods Used by Small-Scale Producers

	Unsuccessful	Unsure	Successful
Distinct/Specific Brand	31%	32%	40%
Utah's Own	19%	16%	27%
Local	56%	48%	40%
Organic, not certified	44%	24%	16%
Certified Organic Program	6%	12%	18%
Natural	56%	32%	27%
PDO/PGI	0%	0%	0%
Other	6%	8%	11%
Total Promotion	2.187	1.72	1.777
Median	2	2	2

to create an added intrinsic value to their product. Not surprisingly, no respondents claimed use of Protected Designation of Origin (PDO)/Protected Geographical Indication (PGI) labeling, as this is very uncommon in the United States (Table 16).

Table 17: Difficulty of Governmental Regulations as Reported by Small-Scale Producers

	Unsuccessful	Unsure	Successful
Zoning Regulations	3.13	2.56	2.44
Tax Regulations	2.81	2.16	2.22
Greenbelt Regulations	3.06	2.76	2.44
USDA Regulations	3.38	2.88	2.71
FDA Regulations	3.38	3.04	2.78
EPA Regulations	3.19	2.76	2.71
UDAF Regulations	3.06	2.88	2.76
County Health Regulations	3.31	3.00	2.36
Other Regulations	3.50	3.08	2.87
Regulations Average	3.20	2.79	2.59
Mean	3.25	2.84	2.53
Median	3	3	3

Successful/profitable businesses ranked difficulty of the following of governmental regulations on average as slightly easier ranging from 2.22–2.87 (2, relatively easy, to 3, unsure) as compared to the average ranking of unsuccessful/unprofitable businesses who rated difficulties on average ranging from 2.81–3.38 (3, unsure, to 4 ,difficult). However, the mean and median for the overall average for all respondents and was equal to 3, which does not demonstrate which difficulties were considered the most difficult. This suggests that the difference would be on a per regulation, case by case basis and not overall (Table 17).

Respondents' answers for rating the difficulty of following governmental regulations show a distinct difference between successful/profitable operations and unsuccessful/unprofitable operations. Successful/profitable operations data showed

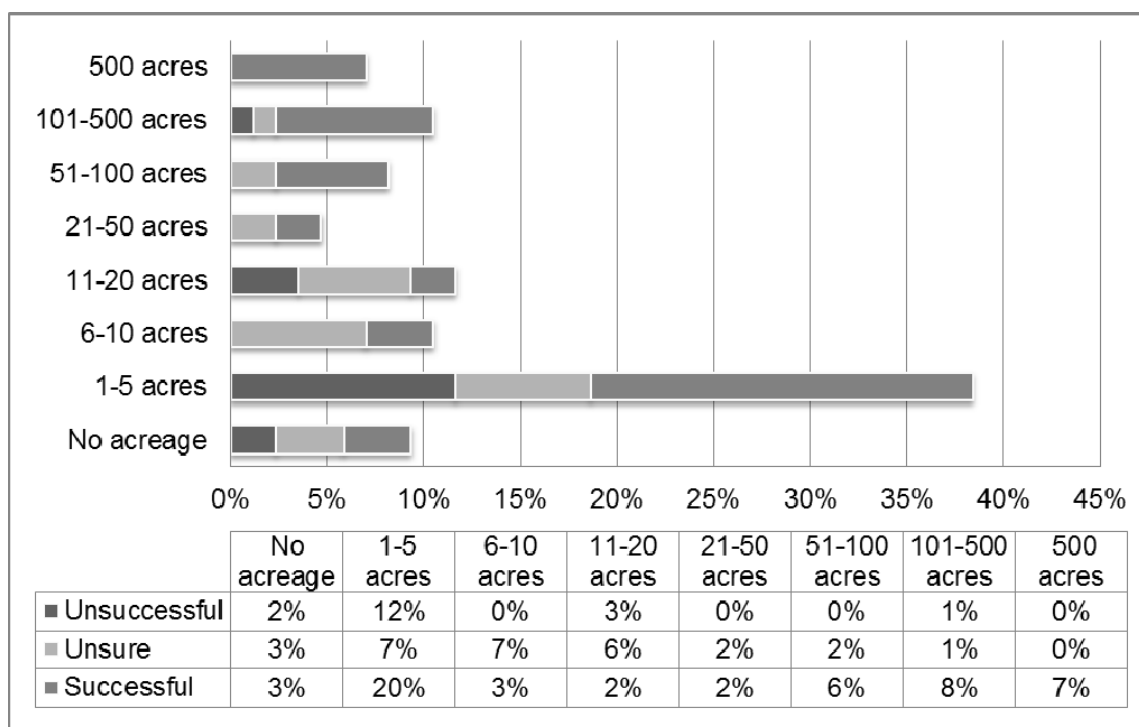


Figure 5: Operation Size of Small-Scale Producers in Acres (Owned/Leased)

2.356, 2, and 2 as a mean, median, and mode, (in other words, a rating of relatively easy for difficulty of county health regulations), while unsuccessful/unprofitable data showed 3.3, 3.5, and 5 as the mean, median, and mode, with an average rating of relative difficulty. It is worth mentioning that this difficulty rating is the respondent's perception and this could mean one of two things: actual difficulty of regulations and complying with those regulations could be negatively affecting success or those difficulties could negatively affect how respondents perceive their success.

Operation size in acres as predicted played a large role in the success/profitability of operations. Most operations of 6 or more acres in size were those of successful/profitable respondents, although there were a few larger operations that reported being unsuccessful/unprofitable (Figure 5).

Table 18: Primary Occupation of Owner(s) of Small-Scale Operations

	Primary Occupation	Spouse Employed
Unsuccessful	44%	44%
Unsure	20%	36%
Successful	49%	29%

Table 19: Age and Education Level of Small-Scale Producers

	Age			EdLevel	
	Mean	Median	Mode	Mean	Median
Unsuccessful	4.375	5	6	5.0625	5
Unsure	5.2	5	5	4.92	5
Successful	4.8	5	6	4.6	5

Successful/profitable respondents reported at a slightly higher rate that the small-farm operation was their primary occupation and more often than not their spouses did not hold outside employment, meaning the operation was successful enough to support the household (Table 18).

The median age of successful/profitable respondents is only slightly higher at 4.8 (4=45–49 years old and 5=50–54 years old) as compared to a median of 4.375 for unsuccessful/unprofitable respondents. Both groups had the same median and mode, indicating that for this study age could not necessarily be considered an indicator of success (Table 19).

Data also suggest relatively little difference among education levels of the respondents as well; however data indicated successful/profitable respondents did show a

Table 20: Formal Education-Degree Emphasis Reported by Small-Scale Producers

	Unsuccessful	Unsure	Successful
Business Management/Economics	13%	32%	27%
Farming/Agriculture	19%	28%	33%
Human Resources	19%	4%	16%
Accounting/Finance	19%	12%	22%
Computer/IT	13%	20%	9%
Mechanical/Electrical	13%	20%	11%
Other	13%	24%	24%

Table 21: Gender of Primary Operator of Small-Scale Farming Operations

	Male	Female
Unsuccessful	63%	38%
Unsure	56%	44%
Successful	66%	33%
Total	63%	37%

slightly higher tendency toward degrees in Business Management/Economics and Farming/Agricultural degrees (Table 20). Also, many of the successful/profitable respondents not only selected one educational emphasis, but often times they selected 2 or more emphases of study.

Overall, 57% of respondents were male while 37% were female. According to the data, gender only played a slight role in success/profitability, as males were only slightly more likely to be successful/profitable than females based on the ratios (Table 21). However, the percentage of female respondents far exceeds the national and state average of female farmers and ranchers, possibly indicating that more females responded to this

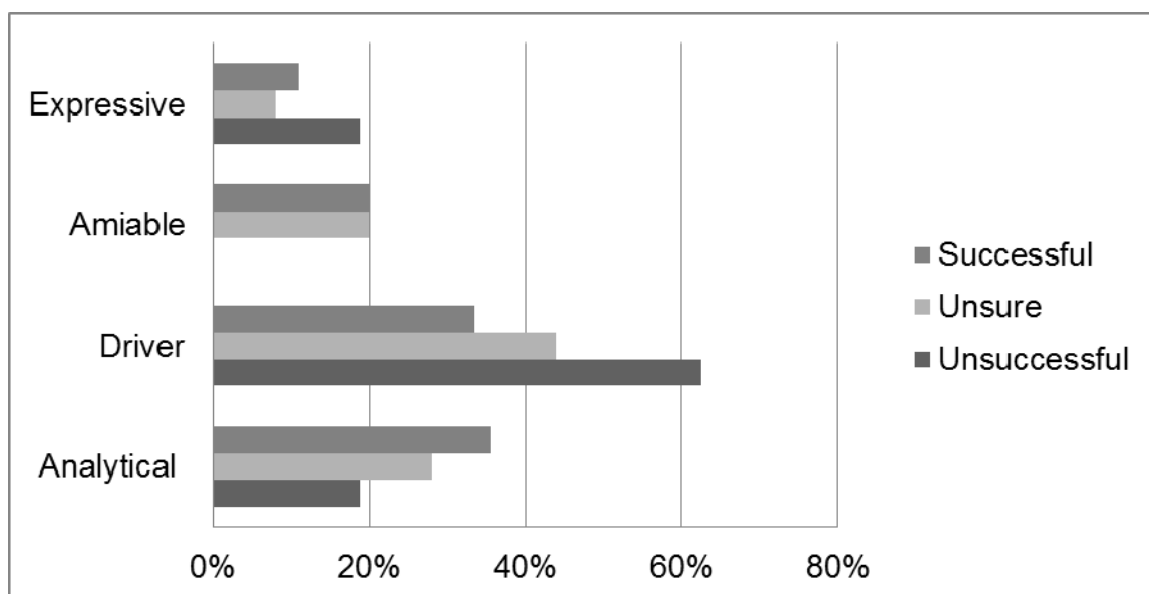


Figure 6: Personality Types of Primary Operator of Small-Scale Farming Operations

survey than males and/or are more likely to be pursuing a small-scale, diversified farm business endeavor than other types of farming and ranching operations.

Successful/profitable respondents were much more likely to be Analytical or Amiable rather than unsuccessful/unprofitable, many of whom responded as having a Driver personality (Figure 6). Personality types and their related descriptions incorporated as options in the survey included Expressive, Amiable, Driver, and Analytical.

Successful/profitable respondents demonstrate more caution by being “unwilling,” or just “willing,” but not “very willing” to take on risk. Unsuccessful/unprofitable seem to be “willing” or “very willing” to take on risk, either contributing to their being unsuccessful or since they are unsuccessful this is done in an effort to make a go of it or to take a gamble to stay in business (Table 22).

Table 22: Willingness to Take On Risk of Small-Scale Producers

	Very Unwilling	Unwilling	Unsure	Willing	Very Willing
Unsuccessful	0%	0%	19%	63%	19%
Unsure	0%	4%	16%	76%	4%
Successful	0%	11%	18%	67%	4%

This cursory descriptive analysis by no means was able to cover all of the data collected on information that might be extrapolated. The dataset could likely yield fifty times over the amount of analysis as just covered, however time and review involved would have been too extensive and beyond the scope of period available to work.

In review, this descriptive analysis indicated successful/profitable operations reported higher product diversification and variety, tree fruits, soft fruits, herbs, and field crops were most prevalent. Successful/profitable operations were slightly more likely to sell value-added goods and services. Word-of-mouth advertising and use of wholesale markets were positive for success, while social media or internet sales were not necessarily so, likely due to the fact that the majority of all operations were somehow online.

Successful/profitable operations on average reported higher single transaction range and were much more likely to have a production and/or financial plan in place. Additionally, they reported slightly more use of UDAF publications, soil and crop testing, and AMS pricing. They were also much more likely to use outside services in managing their businesses.

Use of CSA farm shops by successful/profitable operations was double that of unsuccessful/unprofitable operations. Successful/profitable operations generally tend to travel more to and from markets. Branding, labeling, and certified organic also appeared to contribute highly to success and profitability.

Other positive respondent factors included less perceived difficulty with regulations, 6 or more acres in production, the spouse not employed elsewhere, and an average age of 50–54 years of age. Successful respondents reported multiple fields of study for education, an analytical or amiable personality, and a little less willingness to take on risk.

METHODS AND PROCEDURES

Respondents were varied on products, product mix, age, and location and each had their own set of circumstances and definitions of success and profitability. Since SASucc2 was based on the respondents' combined self-ratings of success and profitability and Profitability1 was based on the reported gross income and expenses range, SASucc2 represents the respondents' perceptions where Profitability represents actual reported figures. Differences between self-assessed success and reported profitability suggest differences in factors affecting improved perceived successes and actual financial successes.

Out of the total respondents 53% claimed to be successful and profitable at some level, 29% were unsure, and 18% reported being unsuccessful and unprofitable at some level (Table 23).

One other important variable generated from subtracting reported expenses from the gross income was Profitability1, providing a financial or measurable metric which could be compared to factors such as acreage (Table 24). A producer with 5 acres may

Table 23: Success Self-Rating of Small-Scale Producers (SASucc2)

Ranking	Description	% Respondents
5	Very successful	6%
4	Successful	47%
3	Unsure	29%
2	Unsuccessful	16%
1	Very Unsuccessful	2%

Table 24: Profitability of Small-Scale Producers (Profitability1)

Ranking	Description	Range	% Respondents
5	Very Profitable	>100,000	14%
4	Profitable	10,000–100,000	26%
3	Slightly Profitable	<10,000	42%
2	Break Even	=0	9%
1	Not Profitable	<0 (loss)	9%

consider and rank himself as successful or very successful by only breaking even, but this variable shows the break-even events.

Following descriptive analysis, data were imported to Stata (version 12) and analyzed utilizing an ordered logit model of self-assessed success and a second-ordered logit model of profitability.

Due to the discrete, ordered, and multinomial-choice nature of the survey data, the self-assessed success and reported profitability are modeled using an ordered logit model. Further, this model is used to evaluate primary operator characteristics, as well as the operation characteristics that influence the probability a positive self-assessment and profitability. These characteristics may be modeled as a linear function of the observable explanatory variables, x_i , and the unobservable variables, ε_i .

$$(1) \quad y_i^* = x_i\beta + \varepsilon_i$$

The respondent's self-assessed success and reported profitability, α_j where $j = \{1, 2, 3, 4, 5\}$. Hence we observe for model 1,

$$\begin{aligned}
 (2) \quad y_i = 1 \text{ (Very Unsuccessful)} & \quad \text{if } y_i^* \leq \alpha_1 = 0 \\
 y_i = 2 \text{ (Unsuccessful)} & \quad \text{if } \alpha_1 < y_i^* \leq \alpha_2 \\
 y_i = 3 \text{ (Unsure)} & \quad \text{if } \alpha_2 < y_i^* \leq \alpha_3 \\
 y_i = 4 \text{ (Successful)} & \quad \text{if } \alpha_3 > y_i^* \leq \alpha_4 \\
 y_i = 5 \text{ (Very Successful)} & \quad \text{if } \alpha_4 > y_i^*
 \end{aligned}$$

And we observe for model 2;

$$\begin{aligned}
 (3) \quad y_i = 1 \text{ (Not Profitable)} & \quad \text{if } y_i^* \leq \alpha_1 = 0 \\
 y_i = 2 \text{ (Break Even)} & \quad \text{if } \alpha_1 < y_i^* \leq \alpha_2 \\
 y_i = 3 \text{ (Slightly Profitable)} & \quad \text{if } \alpha_2 < y_i^* \leq \alpha_3 \\
 y_i = 4 \text{ (Profitable)} & \quad \text{if } \alpha_3 > y_i^* \leq \alpha_4 \\
 y_i = 5 \text{ (Very profitable)} & \quad \text{if } \alpha_4 > y_i^*
 \end{aligned}$$

where the unknown α_j 's are estimated along with the β 's. The α_j 's are restricted such that $\alpha_1 < \alpha_2 < \alpha_3 < \alpha_4$, which is required for positive probability estimates. Assuming that the ε_i 's are independently and identically distributed the ordered-multinomial maximum likelihood estimator results. The probabilities are

$$\begin{aligned}
\text{Prob}(y_i = 1|x_i) &= F_{\varepsilon_i}(\alpha_1 - x_i\beta) \\
\text{Prob}(y_i = 2|x_i) &= F_{\varepsilon_i}(\alpha_2 - x_i\beta) - F_{\varepsilon_i}(\alpha_1 - x_i\beta) \\
\text{Prob}(y_i = 3|x_i) &= F_{\varepsilon_i}(\alpha_3 - x_i\beta) - F_{\varepsilon_i}(\alpha_2 - x_i\beta) \\
\text{Prob}(y_i = 4|x_i) &= F_{\varepsilon_i}(\alpha_4 - x_i\beta) - F_{\varepsilon_i}(\alpha_3 - x_i\beta) \\
\text{Prob}(y_i = 5|x_i) &= 1 - F_{\varepsilon_i}(\alpha_4 - x_i\beta)
\end{aligned}
\tag{4}$$

In the empirical implementation of the model, we define $F(\cdot)$ to be the standard logistic distribution with mean zero and standard deviation $\sigma = \pi / \sqrt{3}$. The solution can be characterized by an optimal estimating function represented by the first-order conditions of the maximum of the log likelihood function,

$$\tag{5} \quad L = \sum_i \left\{ \begin{array}{l} I_{D_i=1} \ln(F_{\varepsilon_i}(\alpha_1 - x_i\beta)) + I_{D_i=2} \ln[F_{\varepsilon_i}(\alpha_2 - x_i\beta) - F_{\varepsilon_i}(\alpha_1 - x_i\beta)] + \\ I_{D_i=3} \ln[F_{\varepsilon_i}(\alpha_3 - x_i\beta) - F_{\varepsilon_i}(\alpha_2 - x_i\beta)] + I_{D_i=4} \ln[F_{\varepsilon_i}(\alpha_4 - x_i\beta) - F_{\varepsilon_i}(\alpha_3 - x_i\beta)] \\ I_{D_i=5} \ln[1 - F_{\varepsilon_i}(\alpha_4 - x_i\beta)] \end{array} \right\},$$

where I_K is an indicator function for the event K , $D_i = j$ denotes that the j^{th} alternative occurred, and i denotes individual i . In these models coefficients are not marginal effects and the signs (+ or -) are the only indicators.

The following short vector of explanatory variables was considered for their effect on the probability of self-assessed success:

$$\tag{6} \quad x_i = \{ \text{Profitability1}, \text{DebtLd}, \text{AcresOL}, \text{WhleSale1}, \text{PrmryOcc}, \text{Planning1}, \\ \text{UrbvRural}, \text{SpEmpl}, \text{Gender}, \text{YrsExper}, \text{UseServices}, \text{CompPrc17}, \\ \text{PerDriver}, \text{ResUse}, \text{FrmAgDeg}, \text{MechElecDeg}, \text{RegAve1} \}$$

The following long vector of explanatory variables was considered for their effect on the probability of self-assessed success:

$$(7) \quad x_i = \{ \text{Profitability1, DebtLd, CSA, TNumProd, ValAdBiP, AcresOL,} \\ \text{WhleSale1, PrmryOcc, Planning1, UrbvRural, SpEmpl, Gender,} \\ \text{YrsExper, UseServcs, CompPrc17, PerDriver, PerAnalyt, PerAmia,} \\ \text{ResUse, FrmAgDeg, MechElecDeg, BusMgEconDeg, AcctDeg,} \\ \text{RegAve1, AveSIamt, OLPromo1, OrgYN, RiskRtgR1, DBusRev,} \\ \text{LeadAveR1} \}$$

The following short vector of explanatory variables was considered for their effect on the probability of reported profitability:

$$(8) \quad x_i = \{ \text{DebtLd, AcresOL, WhleSale1, PrmryOcc, Planning1, UrbvRural,} \\ \text{SpEmpl, Gender, YrsExper, UseServcs, CompPrc17, PerDriver,} \\ \text{ResUse, FrmAgDeg, MechElecDeg, RegAve1} \}$$

The following long vector of explanatory variables was considered for their effect on the probability of reported profitability:

$$(9) \quad x_i = \{ \text{DebtLd, CSA, TNumProd, ValAdBiP, AcresOL, WhleSale1,} \\ \text{PrmryOcc, Planning1, UrbvRural, SpEmpl, Gender, YrsExper,} \\ \text{UseServcs, CompPrc17, PerDriver, PerAnalyt, PerAmia, ResUse,} \\ \text{FrmAgDeg, MechElecDeg, BusMgEconDeg, AcctDeg, RegAve1,} \\ \text{AveSIamt, OLPromo1, OrgYN, RiskRtgR1, DBusRev, LeadAveR1} \}$$

A description of all model variables is provided in Tables 3 and 4.

RESULTS

Model 1: Self-Assessed Success

Results from the short and long self-assessed success models are given in Table 25. The short model resulted in an R-square of 0.2762, while the long model resulted in a somewhat higher R-square of 0.4057, suggesting the inclusion of additional variables increased the ability of the model to explain the self-assessed success rating of survey respondents. While additional variables may increase the R, they may not lend practicality to the model in helping the end user of the information.

As would be expected, those who reported greater profitability (Profitability1) were more likely to perceive themselves as successful/profitable. This held true for both the short and the long models. Debt load has a significant negative effect on perceived success of a producer. This is consistent with what would be expected, more debt makes one feel less successful. The greater the debt the less likely a producer is to perceive success.

Contrary to what one might expect, reported increased attention and effort given to planning appears to have a negative impact on perceived success. This could possibly be explained by producers not meeting their anticipated goals or expectations. Increased planning activities could result from lack of success/profitability, or an effort to improve on current situation or an indicator that the respondent is still in the beginning phases of operations. Specific types of planning tend to be more prevalent among self-perceived successful respondents, specifically marketing, financial, and production plans, while others were more prevalent among unsuccessful respondents, including actual business

Table 25: Ordered Logit Self Rated Success Model Results

Variables	Short Model		Long Model	
Profitability1	1.353***	(0.309)	1.325***	(0.355)
DebtLd	-0.299**	(0.133)	-0.280*	(0.164)
CSA			1.481**	(0.772)
TNumProd			-0.002	(0.183)
ValAdBiP			-0.149	(0.826)
AcresOL	0.004	(0.138)	0.068	(0.193)
WhleSale1	0.023	(0.602)	0.790	(0.873)
PrmryOcc	-0.490	(0.609)	-0.578	(0.757)
Planning1	-1.164**	(0.544)	-1.560**	(0.689)
UrbvRural	-0.814	(0.565)	-1.283*	(0.703)
SpEmpl	-0.102	(0.541)	-0.782	(0.735)
Gender	0.344	(0.558)	0.231	(0.744)
YrsExper	0.394*	(0.231)	0.308	(0.314)
UseServcs	0.360***	(0.133)	0.475***	(0.160)
CompPrc17	0.482*	(0.259)	0.702**	(0.319)
PerDriver	-1.638***	(0.543)	-1.982**	(0.962)
PerAnalyt			0.378	(1.013)
PerAmia			-1.202	(1.107)
ResUse	0.028	(0.179)	0.067	(0.208)
FrmAgDeg	-0.800	(0.592)	-0.658	(0.645)
MechElecDeg	2.035***	(0.809)	2.586***	(1.026)
BusMgEconDeg			-0.164	(0.739)
AcctDeg			0.646	(0.964)
RegAve1	-0.297	(0.295)	0.223	(0.396)
AveSlAmt			0.188	(0.203)
OLPromo1			-1.047	(0.746)
OrgYN			-0.175	(0.691)

Variables	Short Model	Long Model
RiskRtgR1		-1.010* (0.546)
DBusRev1		1.669*** (0.605)
LeadAveR1		0.045 (0.323)
Observations	86	86

Notes: Numbers in parentheses are standard errors in parentheses. Single, double, and triple asterisks (*, **, ***) denote $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively.

plan, and vision statement, as it has not yet become a reality. This held true for both the short and long models, with the significance changing from $p < 0.05$ from the short model to $p < .01$, meaning it became more significant as other variables were added to the model.

The number of years of experience had a positive impact on perceived success. This could be due to establishment in their markets, paid off debt, land ownership, skills possessed, experience, and other factors as would be expected. This result was only seen in the short model, the variable became insignificant in the long model.

As could be predicted, more outside services utilized, such as; marketing service or onsite director/manager, farm manager, lawyer/attorney, accountant/bookkeeper, etc., the greater the perceived success. This could be that use of outside agencies increases actual success, producers are better able to recognize success, or they are able to afford to use more outside services because of their actual financial success. This variable held true for both the short and long models.

Model results indicate the less competition respondents perceive the more successful they perceive themselves. The actual lack of competition could be allowing them to set higher prices and/or to sell out all of their produce and goods. The more

competition they perceive could also affect their self-valuation as a producer if others appear to be more successful than they are. Respondents with lower competition might also perceive themselves successful because they are the only ones in the business, or they might not perceive competition in the same way as those who rank themselves as unsuccessful. Competition may not matter or be a concern if they are already profitable. Less perceived competition is positively significant for both the short and long models.

Overall, respondents' degree types had little or no effect on model results.

However, respondents who held a mechanical/electrical engineering type of degree had a higher perceived success, holding true for both the short and long models. However, the Profitability models indicated the exact opposite result. The degree type for model 2 indicated lower profitability, or reported net income, for those respondents who held mechanical/electrical engineering degrees. This could indicate a higher level of perceived success due to enjoyment of the work but not necessarily a financially obvious rate of success.

Respondents who identified having a driver personality (PerDriver) appeared to perceive and rate themselves as less successful than those who did not identify with a driver personality. This likely could be as drivers are hard on themselves or set too high of expectations, they often don't interact well with customers and/or employees and have other entrepreneurial difficulties. This held true for both the short and long models.

Number of acres owned/leased, use of wholesale outlets, primary occupation (as a producer), and operating from urban location in the short model only, spouse employment outside the farming operation, gender, use of research, farm or agricultural

degrees, and regulatory difficulties appeared to play no role in the self-assessed success of the group.

Some of the variables added to or already included in the long model did prove to be statistically significant including; CSA sales, urban location, willingness to take on risk, perceived difficulty of business activities, and self-assessed leadership skills average.

Respondents with CSAs tended to perceive themselves as more successful than those without a CSA. This could potentially be the link to the customer base, knowing you have already sold what you are growing and have covered expenses, or other such factors.

Apparent for the long model only, if the operation reported their primary market was within fifty miles RT of their operation (urban location); this appears to have a negative correlation to perceived success/profitability. Consistent with literature this could be due to actual decrease of success/profitability due to higher land costs/expenses closer to market areas.

The self-assessed success long model results suggested the more willing a producer was to take risks in order to increase profitability, the lower the self-perceived success. Those who avoid taking risks perceived themselves as more successful. This might possibly be explained in that successful respondents' perception or definition of risk might differ, as those who take highly analyzed risks may not consider those actions as risky. Risky behavior in business tends to have a negative connotation to most, possibly because of the potential to lose out if the risk taken does not pay off.

The long model results also suggested that the more difficult specific business activities were perceived, such as; obtaining financing/loans, expanding markets, effective marketing/promotion, improving profitability, controlling costs, conducting customer service, acquiring land, conducting business planning, managing employees, other, the higher the perceived success. This might possibly be due to a sense of accomplishment or hard work put in on the part of the producers to challenge themselves through difficult tasks creating an actual increase in success of the operation.

Other variables in the long model, appeared to have no effect on the model outcome including; total number of product types, value added/byproducts, average sales amount, online promotion through social media or websites, organic marketing/promotion (certified or self-certified), analytical or amiable personality types, degree types, average sales amount, online promotion, organic marketing, and leadership skills average.

While not statistically significant in the models, it is worth mentioning that 38% of respondents were women, not at all in line with the average of all farmers and ranchers in Utah at 10.8%. Women appear to have been over-represented in overall farmers and ranchers' numbers. But this appears to be just about right for the small-scale, diversified farm scene, possibly because of the smaller scale of the operation. Literature suggested women are generally less able to or less successful in farming due to physical restraints, social, or economic position (Hoppe and Korb, 2006), but this does not appear to be the case with small-scale, diversified farming which is similar to small-business entrepreneurial entry numbers for women. This is also consistent with participation in extension programs geared toward small-scale, diversified farms where roughly 30–35%

of participants are female as compared to extension programs geared toward general agricultural operations where only 5–10% of participants are female.

Model 2: Reported Profitability, Net Income

The second model analyzed was that of actual farm profitability. Results from the short and long models on reported profitability are given in Table 26. As expected, this model showed some variation from the self-assessed success model since—as was demonstrated by the open-ended answers regarding a farmer’s success—there is no set metric or standard for comparing respondents’ personal definitions or perceptions of success.

Number of acres owned or leased was positively significant, indicating that for more acres per operation the more profitable the operation. Literature suggests that this result is accurate (Pendell et al., 2011; USDA, 2009). This was significant for both the short and long models.

Operations using wholesale channels (either local grocery and/or wholesale) to sell produce and goods were more likely to be profitable. While this means they may have received lower prices for goods closer to cost, they would be more likely to move most if not all of their produce or goods rather than taking a loss on what did not sell through direct markets.

Those who reported round-trip travel of less than fifty miles (meaning they had an urban operation location and/or on-farm shop or stand) to primary markets were more likely to be profitable than those who traveled greater distances. This result contradicts the results of the self-rated success models.

Table 26: Ordered Logit Profitability Model Results

	Short Model		Long Model	
DebtLd	0.050	(0.127)	0.065	(0.146)
CSA			0.815	(0.674)
TNumProd			-0.066	(0.164)
ValAdBiP			-0.632	(0.753)
AcresOL	0.454***	(0.140)	0.428**	(0.172)
WhleSale1	0.996*	(0.557)	1.289*	(0.702)
PrmryOcc	1.766***	(0.559)	1.805***	(0.647)
Planning1	0.028	(0.509)	-0.117	(0.576)
UrbvRural	1.828***	(0.563)	2.187***	(0.672)
SpEmpl	0.054	(0.508)	0.018	(0.597)
Gender	-0.720	(0.522)	-0.494	(0.639)
YrsExper	0.526**	(0.224)	0.657**	(0.287)
UseServcs	0.292**	(0.129)	0.360**	(0.147)
CompPrc17	-0.289	(0.247)	-0.276	(0.284)
PerDriver	0.572	(0.477)	-0.333	(0.797)
PerAnalyt			-1.332	(0.837)
PerAmia			-1.270	(0.994)
ResUse	-0.443**	(0.178)	-0.499**	(0.199)
FrmAgDeg	-0.060	(0.591)	-0.222	(0.654)
MechElecDeg	-1.477**	(0.730)	-1.629**	(0.821)
BusMgEconDeg			0.034	(0.632)
AcctDeg			0.308	(0.773)
RegAve1	-0.213	(0.285)	-0.145	(0.370)
AveSlAmt			0.180	(0.196)
OLPromo1			-0.325	(0.637)
OrgYN			-0.703	(0.618)
RiskRtgR1			0.351	(0.471)

DBusRev1	0.046	(0.509)
LeadAveR1	0.350	(0.296)
Observations	86	86

Notes: Numbers in parentheses are standard errors in parentheses. Single, double, and triple asterisks (*, **, ***) denote $p < 0.10$, $p < 0.05$, and $p < 0.01$, respectively.

Operators whose primary occupation was farming were more likely to be profitable. These results are not surprising, as focusing solely on their business would allow for these operators to be more profitable than those splitting their attention between different places of employment.

Model results indicated that producers with more years of experience were more likely to be profitable. This could be due to establishment, payment of debt, land ownership, and other factors as expected from current literature. These results are similar to self-assessed success short model.

A mechanical or electrical engineering degree actually decreased the likelihood of profitability. This could possibly be explained by operators' potential allocation of time on other handy-type projects rather than on business activities. No other type of degree held by respondents was significant in the model.

The more outside services—such as marketing service or onsite director/manager, farm manager, lawyer/attorney, or accountant/bookkeeper—the more likely the operation is to be profitable. This was again true for both the short and long profitability models.

Somewhat puzzling at first was the result that with the increased reported use of research (trade magazines, extension publications, USDA data/publications, UDAF publications) appeared to have a negative correlation with profitability. However, this

could likely be explained by higher research usage among new or struggling farmers in order to increase profitability, where older, more successful farmers have already learned or may already possess key skills to be profitable and are less likely to need to go to publications. Additionally, trade publications and magazines may also provide guidance or information not always suitable to every climate and region.

Variables included in the profitability short model that appeared to have no significant impact included debt load, planning, spouse outside employment, gender, perceived competition, driver personality, and difficulty of regulations.

DISCUSSION AND CONCLUSIONS

This study identified key characteristics and business practices of successful and profitable small-scale producers. The need to conduct agricultural operations in ways that increase productivity, decrease waste, and act as environmentally and ethically responsible stewards are increasingly imperative. Information gained from this study can help small-scale, diversified farms succeed and thrive. Small-scale producers need to be aware of the things that they can do to increase their profitability and success. Most current literature looks at only one or a few factors that might contribute to success, which does not paint the full picture but rather gives a small snapshot of one area or aspect of success. By combining many factors and studying them together, this study provides a more accurate and realistic result.

The results of this study suggest that operations need to manage debt levels and risk taking, conduct the right planning (as opposed to just any planning), utilize outside services where necessary and appropriate, and create balance when it comes to competition in order to achieve self-perceived success. Additionally, operations should not be located too near urban or primary markets; CSAs can also be very beneficial for increased success.

For increasing overall profitability, study results suggest operating more acres, using wholesale markets and outside services where necessary and appropriate, making the operation a primary occupation, and gaining additional years of experience. In addition, for profitability, operations should be located close to urban or primary markets, to provide unrestricted access to customers.

Study results indirectly indicate that there is no right personality type, gender, degree type, organic marketing technique, or level of online promotion that has significance for self-perceived success or in profitability. Since years of experience affect profitability, mentoring may be a way to transfer knowledge from older to younger generations. Perseverance over time in small-scale farming may also make the difference in success and profitability. As the size of the operation positively affects profitability, it should be recognized that maintaining, protecting, and conserving farmland for the specific purpose of farming is going to be critical to the success of small-scale, diversified farming operations.

Future studies should include a larger respondent base, which could be obtained by 1) expanding the study area into other intermountain states of similar geography, climate, and growing seasons; 2) making use of multiple methods of involving or contacting potential survey respondents (not only via email but also through hard copy surveys given out at farmers' markets or mailed directly to farmers' homes); additionally, using additional types of models and/or inclusion, exclusion, or generating additional variables could provide additional useful information to increase success and profitability of small-scale producers; 3) Reviewing the current datasets to identify other important factors that might contribute strongly to success and profitability; and 4) creating additional models utilizing variables not included here.

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APPENDIX: SURVEY

Small-Scale Producer Survey

Drs. Kynda Curtis and Ruby Ward in the Department of Applied Economics at Utah State University and graduate student assistant, Mary Shepherd, are conducting a research study to evaluate the factors contributing to the overall success and profitability of local small-scale agricultural and food producers and their use of direct market outlets, such as farm stands, farmers' markets, and CSA programs. The results of this study will provide agricultural producers and value-added food producers with valuable information regarding techniques, professional development opportunities, and loan/grant programs, which maybe used to increase overall success and profitability of their operation.

We are asking for your participation in this study due to your affiliation with small-scale agriculture or value-added food production (less than \$250K in yearly sales), direct market outlets, and/or participation in educational programs of a similar focus. Participation is entirely voluntary and if you choose to participate we ask that you complete an anonymous short survey. You may refuse to participate or withdraw at any time without consequence or loss of benefits. The survey should take approximately 15 minutes to complete. Research records will be kept confidential, consistent with federal and state regulations. Only the study researchers will have access to the data, which will be kept on a password protected computer in a locked room.

Should you have questions or research related concerns please contact Dr. Kynda Curtis at 435-797-0444 or by email at kynda.curtis@usu.edu. The Institutional Review Board for the protection of human participants at Utah State University has approved this research study. If you have any questions or concerns about your rights or a research-related injury and would like to contact someone other than the research team, you may contact the IRB Administrator at (435) 797-0567 or email irb@usu.edu to obtain information or to offer input.

Thank you for your time!

1. Which of the following products does your operation produce? (Check all that apply)

- Dairy products
- Meats/fish
- Poultry/eggs
- Livestock/live animals
- Tree fruits/nuts
- Soft fruit/berries
- Vegetables
- Herbs
- Bedding plants/vegetable sets
- Field crops (alfalfa, wheat, etc.)
- Honey/bees
- Value-added products (jams, sausage, cheese, etc.)
- Bi-products, seconds, and/or culls (wool, hides, etc.)
- Other (please specify)

Small-Scale Producer Survey

2. Does your operation offer agritourism activities? (corn maze, you pick, school/group educational tours, executive retreats, etc.)

- Yes
- No

3. What is the size of your operation in acres (owned/leased)?

- No acreage
- 1-5 acres
- 6-10 acres
- 11-20 acres
- 21-50 acres
- 51-100 acres
- 101-500 acres
- More than 500 acres

4. On average, how many head of animals do you manage?

- None
- 1-9
- 10-49
- 50-99
- 100-499
- 500-999
- 1000 or more

Small-Scale Producer Survey

5. Which of the following structures do you have on your farm/ranch? (Check all that apply)

- Greenhouses
- Hoop houses/high tunnels
- Shading
- Barns/stables
- Workshop/processing
- Employee housing
- Storage
- Cold Storage
- Other (please specify)

6. What is your main source of irrigation water?

- Not applicable
- Culinary (treated or safe to drink)
- Surface irrigation
- Underground irrigation
- Other (please specify)

7. What is your primary method of irrigation?

- Not applicable
- Flood
- Drip
- Pivot/Sprinkler
- Other (please specify)

8. What was your irrigation water use in acre feet for the 2012 season?

9. What is your irrigation water cost per acre foot?

Small-Scale Producer Survey

10. Which of the following markets do you use? (Check all that apply)

- Farmers' markets
- Farm stands
- Community Supported Agriculture (CSA) program
- Farm shop
- Website
- Restaurants
- Local grocery
- Wholesale
- Other (please specify)

11. What is the average length of your sales season?

Number of weeks

12. What is the average distance, in miles round trip, to your primary market?

13. Which of the following promotional methods do you use? (Check all that apply)

- Website
- Facebook/social media
- Radio advertisements
- Road/other signage
- Flyers or leaflets
- Coupons or promotions
- Newspaper advertisements
- Other (please specify)

Small-Scale Producer Survey

14. Which of the following labels/production methods do you use? (Check all that apply)

- Distinct/operation specific brand
- Utah's Own/Local First Utah program
- Local
- Organic, not certified
- Certified organic program
- Natural
- Protected Designation of Origin (PDO)/Protected Geographical Indication (PGI)
- Traditional Speciality Guaranteed (TSG)
- Other (please specify)

15. How would you rate your operation's reputation with customers?

- Excellent
- Satisfactory
- Unsure
- Needs Improvement
- Unknown (new business)

16. How many producers in your area provide similar products to those of your operation? (say within 200 miles)

17. How would you describe the number of producers in your area selling similar products? (Say within 200 miles)

- Too many
- Just right
- Unsure
- Could use more for variety
- Not enough

Small-Scale Producer Survey

18. How do your product prices compare to similar products?

- Higher
- Comparable
- Unsure
- Slightly lower
- Much lower

19. What form of business does your operation use?

- Sole Proprietorship
- Partnership
- Corporation
- LLC
- Unknown
- Other (please specify)

20. How successful is your operation?

- Extremely successful
- Successful
- Unsure
- Unsuccessful
- Very unsuccessful

21. What measure(s) of success are you using? (Profit, income, satisfaction with business, interest or love of farming, etc.)

Small-Scale Producer Survey

22. How profitable is your operation?

- Extremely profitable
- Profitable
- Unsure
- Unprofitable
- Very unprofitable

23. How willing are you to take risks in order to increase profitability?

- Extremely willing
- Willing
- Unsure
- Unwilling
- Very unwilling

24. Rate the following skills of your operation's leadership team.

	Excellent	Good	Unsure	Satisfactory	Need improvement
Leadership skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Communication skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strategic management skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marketing skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Networking skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employee management skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Financial analysis skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Small-Scale Producer Survey

25. Which of the following best describes your personality type?

- Analytical - Analytical people are known for being systematic, well organized and deliberate. These individuals appreciate facts and information presented in a logical manner as documentation of truth. They enjoy organization and completion of detailed tasks. They may seem too cautious, or overly structured to others. Descriptors include: controlled, orderly, precise, disciplined, deliberate, cautious, diplomatic, systematic, logical, and conventional.
- Driver - They thrive on the thrill of the challenge and the internal motivation to succeed. Drivers are practical folks who focus on getting results. They can do a lot in a very short time. They usually talk fast, direct and to the point. Often viewed as decisive, direct and pragmatic. Descriptors include: action-orientated, decisive, problem solver, direct, assertive, demanding, risk taker, forceful, competitive, independent, determined, and results-orientated.
- Amiable - They are dependable, loyal and easygoing. They like things that are non-threatening and friendly. They hate dealing with impersonal details and cold hard facts. They are usually quick to reach a decision. Often described as a warm person and sensitive to the feelings of others, but at the same time wishy-washy. Descriptors include: patient, loyal, sympathetic, team person, relaxed, mature, supportive, stable, considerate, empathetic, persevering, trusting, and congenial.
- Expressive - Very outgoing and enthusiastic, with a high energy level. They are also great idea generators, but usually do not have the ability to see the idea through to completion. They enjoy helping others and are particularly fond of socializing. They are usually slow to reach a decision. Often thought of as a talker, overly dramatic, impulsive, and manipulative. Descriptors include: verbal, motivating, enthusiastic, convincing, impulsive, influential, charming, confident, dramatic, optimistic, and animated.

26. Which of the following do you anticipate for your operation in the next 5 years?

- Substantial expansion
- Moderate expansion
- Stay relatively the same
- Slight reduction
- Substantial reduction

Small-Scale Producer Survey

27. Which of the following services does your operation use? (Check all that apply)

- Marketing service or on-site director/manager
- Farm manager
- Lawyer/attorney
- Accountant/bookkeeper
- Web developer/graphic artist
- Insurance agent
- Commercial real estate agent
- Mentor/coach
- Consultant(s)
- Record-keeping/bookkeeping software (Quickbooks, etc.)
- Chamber of Commerce activities
- Small Business Administration (SBA), SBDC, SCORE programs
- Cooperative Extension workshops/conferences
- Agency, such as Farm Service Agency (FSA), NRCS, RD programs
- None
- Other (please specify)

28. Rate the difficulty of the following business activities for your operation.

	Easy	Relatively Easy	Unsure	Difficult	Very Difficult
Obtain financing/loans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Expand markets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Effective Marketing/promotion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improve profitability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Control costs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conduct customer service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Acquire land	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conduct business planning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Manage employees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

Small-Scale Producer Survey

29. Which if the following tools does your operation have in place? (Check all that apply)

- Business plan
- Marketing plan
- Production plan
- Financial plan
- Vision statement
- Statement of values and beliefs
- None

30. Which of the following informational/research resources do you use? (Check all that apply)

- Trade magazines
- Extension publications/website
- USDA data/publications
- UDAF data/publications
- Soil testing
- Crop testing
- Video pricing
- AMS pricing reports
- None
- Other (please specify)

31. Which of the following discourages adoption of new technology, equipment, etc. on your operation? (Check all that apply)

- Time
- Cost/expense
- Knowledge/training
- Perceived risk
- None
- Other (please specify)

32. How many non-family member employees does your operation employ?

Small-Scale Producer Survey

33. What is your average labor cost per hour?

34. What is the average length of your growing season?

Number of weeks

35. On average, how many suppliers do you use?

36. How reliable are your suppliers?

- Very reliable
- Reliable
- Unsure
- Unreliable
- Very unreliable

37. How often are suppliers/supplies available to you?

- Always available
- Usually available
- Unsure
- Sometimes not available
- Mostly unavailable

38. What percentage of your supplies do you purchase online?

- 1-20%
- 21-40%
- 41-60%
- 61-80%
- 81-100%

39. How many customers on average do you serve annually?

- <40
- 40-99
- 100-499
- 500-999
- >1000

Small-Scale Producer Survey

40. What percentage of your customers are repeat customers?

- 1-20%
- 21-40%
- 41-60%
- 61-80%
- 81-100%

41. In what range is your average single transaction or sales amount?

- <\$10
- \$11-25
- \$26-49
- \$50-75
- \$76-100
- >\$100

42. What percentage of your product sales/orders are completed online?

- None
- 1-20%
- 21-40%
- 41-60%
- 61-80%
- 81-100%

Small-Scale Producer Survey

43. Rate the difficulty of the following governmental regulations on your operation?

	Easy	Relatively Easy	Unsure	Difficult	Very Difficult
Zoning Regulations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local Property Taxes/Regulations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Green Belt Regulations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
US Department of Agriculture (USDA) Regulations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
US Food and Drug Administration (FDA) Regulations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
US Environmental Protection Agency (EPA) Regulations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
UT Department of Food and Agriculture (UDAF) Regulations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
County Health Regulations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other Regulations or Agreements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

44. List two items that cause your operation the most concern/problems?

45. In what county is your primary farm/business located?

46. How many family members are involved in your operation?

- 1 (only you)
- 2 to 3
- 4 to 5
- More than 5

Small-Scale Producer Survey

47. In what percentage of business activities is your spouse involved?

- None, or I have no spouse
- <25%
- 25-49%
- 50%
- 51-74%
- 75-100%

48. Is farming/ranching your primary occupation?

- Yes
- No

49. Is your spouse employed outside of the farm/ranch?

- Yes
- No
- NA

50. Number of years on current farm/ranch?

51. Did you inherit farm/ranch land?

- Yes
- No

52. Do you have a formal education in any of the following? (Check all that apply)

- Business Management/Economics
- Farming/Agriculture
- Human Resources
- Accounting/Finance
- Computer or IT
- Mechanical/Electrical
- Other (please specify)

Small-Scale Producer Survey

53. Which of the following best represents your completed level of education?

- Middle School
- High School
- Some College
- 2-year associate's degree
- 4-year college degree
- Graduate degree or higher

54. How many years of experience do you have farming/ranching?

- < 1 year
- 1-5 years
- 6-10 years
- 11-20 years
- > 20 years

55. What was your 2012 annual total household income?

- <\$2,500
- \$2,500-4,999
- \$5,000-9,999
- \$10,000-24,999
- \$25,000 to 49,999
- \$50,000-99,999
- \$100,000-499,999
- >\$500,000

56. What is your current household size?

- 1-2 people
- 3-4 people
- 5-6 people
- 7 or more people

Small-Scale Producer Survey

57. What was the value of your operation's 2012 total sales? (gross revenue)

- <\$2,500
- \$2,500-4,999
- \$5,000-9,999
- \$10,000-24,999
- \$25,000 to 49,999
- \$50,000-99,999
- \$100,000-499,999
- >\$500,000

58. What were your 2012 total business operating expenses?

- <\$2,500
- \$2,500-4,999
- \$5,000-9,999
- \$10,000-24,999
- \$25,000 to 49,999
- \$50,000-99,999
- \$100,000-499,999
- >\$500,000

59. What was the 2012 value of all your farm/ranch assets such as land, equipment, tools, etc.? (total assets)

- <\$2,500
- \$2,500-9,999
- \$10,000-49,999
- \$50,000-99,999
- \$100,000-499,999
- \$500,000-999,999
- \$1 million - 1.5 million
- >\$1.5 million

Small-Scale Producer Survey

60. What percentage of your operation's assets do you currently hold loans on? (debt load)

- None
- 1-5%
- 6-15%
- 16-25%
- 26-50%
- 51-75%
- 76-100%

61. What is your age?

- Under 25 years
- 25-34 years
- 35-44 years
- 45-49 years
- 50-54 years
- 55-59 years
- 60-64 years
- 65-69 years
- 70 years and over

62. What is your gender?

- Male
- Female

Small-Scale Producer Survey

63. What is your race/ethnicity?

- American Indian/Alaska Native
- Asian
- Black/African American
- Hispanic/Latino
- Native Hawaiian/Pacific Islander
- White/Caucasian
- Middle Eastern
- Prefer not to answer
- Other (please specify)