

Grower Experience Affects Business Education Needs for a Profitable Specialty Crop Farm Operation in the Central United States

Abstract

Beginning and small-scale growers face significant challenges to maintain their economic sustainability, including maintaining a sufficient level of income. Despite this growing problem, there is little information currently available on what kind of education and/or skills beginning farmers need in order to make their operations profitable. The primary objective of this study was to conduct a needs assessment based on grower feedback to inform business education curricula for beginning small-scale specialty crop producers. We also compared the business skills, resources and obstacles that experienced and beginning small-scale specialty crop farmers viewed as necessary to be successful. A mixed-methods design was conducted in Kansas and Missouri. Electronic survey (n=106) results suggested that farmers place high emphasis on all standard business education curricula. However, perception of resources surrounding these skills were mostly neutral to unsatisfied. Responses differed among the types of farmers, indicating years of experience, status and ownership can impact the perception of skill importance and satisfaction of resources. Furthermore, a series of four asynchronous and synchronous online focus groups (n=24) revealed themes on business skills, obstacles to profitability, resources and desired courses surrounding business education. These findings can help provide educators a better idea of what beginning small-scale specialty crop farmers need for business education. Curricula developed from this data could promote farmer business literacy and ultimately improve farm business viability.

Keywords: beginning farmers; specialty crop; educational needs; online focus groups; business education; small farms

Introduction

There is an abundance of research on the notable changes in American agriculture over the last century. More recently, U.S. consumers have dramatically increased their consumption of local and organic foods (Nie & Zepeda, 2011). From 1994 to 2010, the number of farmers' markets in the US tripled (USDA 2010), sparked by consumer desire for local and organic foods (Nie & Zepeda, 2011). And yet, despite the demand for more localized specialty crop production, an ongoing longer-term trend has been the decline in number of farms and family-owned operations across the country.

USDA statistics show that the number of farms and the value of production are highly concentrated at opposite ends of the spectrum in regard to size and scale (USDA, 2018). This has resulted in a dramatic disparity between small- and large-scale farms. Over 91% of all U.S. farms are classified as small and yet they only make up about a quarter of the value of production. While the USDA definition of a small farm is an operation with a gross cash farm income (GCFI) of less than \$250,000, 60% of all small farms generate a GCFI of less than \$10,000 (USDA, 2019). These farms are vulnerable to financial hardships as they exhibit high turnover rates and a difficulty maintaining a sufficient level of income.

Similar trends are occurring with specialty crop farmers, which are defined by the USDA as "fruits and vegetables, tree nuts, dried fruits, horticulture, and nursery crops (including floriculture)". In 1969 specialty crops made up 20% of all U.S farms whereas today, only 12% of all U.S. farms raise

specialty crops (USDA, 1969; USDA, 2019). Today, only 7% of specialty crop producers make 100% of their household income from farming (USDA, 2019).

Specialty crop farmers in Kansas and Missouri are not exceptions to these trends. Recent census data from Kansas revealed over 80% of the surveyed specialty crop producers farmed less than 10 acres and made less than \$50,000 a year while 60% of all producers made less than \$10,000 a year (KDA, 2017). Similarly, 57% of surveyed specialty crop producers in Missouri grossed an annual on-farm income of less than \$10,000 (MU, 2017). Similar to national trends, specialty crop operations in Kansas and Missouri do not provide dependable income to support a successful business.

With the growing demand for specialty crops and the simultaneous declining number of specialty crop farms (and farmers), it is more important than ever to support beginning farmers that wish to enter the marketplace. The USDA defines a beginning farmer as a producer who has less than 10 years of experience (USDA, 2014). As a group, beginning farmers are typically more likely to grow specialty crops as opposed to commodity crops such as grains and soybeans (USDA, 2019). Like so many small farmers across the nation, brand new farmers often face many challenges. A recent survey by the National Young Farmers Coalition reported over 50% of new farmers felt that earning a sufficient income to maintain a standard of living was a primary challenge (Ackoff et al., 2017).

It is imperative that the various challenges currently presented to small scale specialty crop farmers are addressed in order to ensure these benefits to society are continued and to help improve the nation's small farm viability and profitability. One potential solution is through business education. Higher levels of farmer education also correlate with the farm's success and a farmer's ability to receive the same or better wages from farming as from other jobs (Lins et al., 1987). Business education has been shown to be positively related to profitability and farmers with a higher level of education are more likely to be successful in their farming operations (Castle et al., 1987). This presents a significant opportunity for agricultural educators to help farmers acquire the necessary knowledge for them to thrive.

A recent study that evaluated training methods in a Kansas City apprenticeship program identified a need for business education among beginning specialty crop farmers within the Kansas City region (Gilmore, 2019). Researchers interviewed past and current apprentices about the program and 94% of respondents stated that capital, land acquisition and/or financing were the biggest barriers to starting an agribusiness and 36% indicated that management-related barriers kept them from starting their own farms (Gilmore, 2019). This study revealed a need for training materials to be developed in the region that cover the processes of starting and managing a business. Similar research on Kansas City metro extension programs found that extension resources focused on financial information had the fewest number of extension educators involved in this type of programming, indicating a need for more business educators (Tanner et al., 2014).

Recent focus group research found young and beginning farmers identified agricultural business management skills, financial skills and legal knowledge as the most important educational needs (Bailey et al., 2014). More specifically, accounting, record keeping skills, managing expenses, incomes, taxes and decision making were emphasized (Bailey et al. 2014). In addition to defining key skills, the study found that lecture- only learning environments for beginning farmers are a major weakness of educational workshops and hands-on activities should be incorporated whenever possible (Bailey et al. 2014).

The development of beginning farmer training and programs is one of the most important and yet poorly understood areas of agriculture, and the boundaries of what constitutes meaningful education must be expanded (Niewolny & Lillard, 2010). Research recommends that agricultural education programs must focus on the specific needs of their audience in order to increase the effectiveness of their outreach program and that adults learn most effectively when they identify their own educational needs (Bailey et al., 2014; Knowles, 1973). Agricultural educators need to provide small-scale specialty crop producers with access to educational material that they view as important and valuable to their farm business. It is then that these farmers can have the tools they need to thrive in U.S. agriculture.

Purpose and Objectives

The purpose of this study was to identify business skills that small-scale specialty crop producers viewed as most important in order to improve educational resources. More specifically, the primary objectives of the study were to conduct a needs assessment (based on grower feedback) to inform business education curricula for beginning small-scale specialty crop producers and compare the business skills, resources and obstacles that various small-scale specialty crop farmers view as necessary to be successful.

Methods and Procedures

A mixed methods research design of quantitative and qualitative data collection was used in this project. The study was adapted to be conducted exclusively online so that participants did not need to meet in person due to circumstances surrounding COVID-19. An online survey was conducted among individuals who identified as small-scale specialty crop farmers in Kansas and Missouri. Multiple choice and Likert scale questions collected quantitative data that helped assess farmer perception of business skills. Qualitative data was obtained through a series of four focus groups that was conducted among 24 previous and current small-scale specialty crop farmers who met a specific set of criteria such as level of experience and business knowledge.

Data Collection

Quantitative data was collected through a web-based survey instrument via Qualtrics. The participants included any Kansas or Missouri farmer who self-classified as a small-scale specialty crop grower with any level of experience and were age 18 years or older. Of the 106 total responses collected from both survey and focus group participants, 91 responses were used in the final data analysis. Since the focus group participants took the same survey, their answers were aggregated into the final total and responses were cross-referenced to ensure there was no data duplication. The survey consisted of 8 questions that included multiple choice demographic questions and Likert scale questions. A three-point Likert scale was used in order to measure attitude and perception in a scientifically validated manner. Research shows three-point scales can be sufficient to meet criteria of test-retest reliability, concurrent validity and predictive validity (Jacoby et al., 1971). Survey respondents were asked to rank how important various components of business education are to small scale specialty crop farmers and how satisfied they are with the availability of resources related to these components. Questions were developed by incorporating the most common core subjects of standard business education curriculum as reported in the literature review. To address internal threats to rigor, survey questions were cross-checked by researchers to ensure that they were easy to understand and properly worded.

Qualitative data was collected through a series of online focus groups and a combination of critical case sampling and snowball sampling methods were utilized to recruit 24 farmers. Farmer demographics needed to align with the research study's objectives and be most characteristic of "financially successful/viable" farmers or "financially unviable" farmers, which included "former

farmers” that were defined as individuals who went through formal farm training and are no longer farming or not farming as a business. A total of 26 out of 34 farmers contacted from critical case and snowball sampling methods responded to the recruitment letters, for a response rate of 76%. Two farmers dropped out due to scheduling conflicts resulting in a final sample size of 4 groups of 6 participants each (n=24) as this is one of the most frequently used sizes among focus groups (Morgan, 1997). The online focus groups were heterogenous in farmer background, experience and inclusion criteria to allow for within-group comparisons. Individuals were randomly assigned to groups as much as possible given each participant’s scheduling constraints.

Asynchronous discussion board was conducted for 6 days and participants used the discussion platform, Focusgroupit (<https://focusgroupit.com/>) to post their written comments in response to a new question posted every day. This platform was chosen due to the ability for participants to respond to the moderators/researcher’s topics in the order of posting. Participants could choose anonymous usernames so only researchers knew the participant’s identity. Moderators were allowed to control postings, make comments to the topic posted and make comments on participant’s responses. This was used to prevent conformity or possible bias and ensure the participant’s thought was their own genuine thought. Participants also joined an online video call via Zoom for 60-90 minutes at the end of the asynchronous discussion. The Zoom discussion was led by a trained professional moderator and immediately after each focus group session, a researcher wrote brief discussion summaries and extensive descriptive notes from video recordings.

To ensure validity of the focus groups, a professional moderator was hired to provide guidance of the discussion without introducing bias. The depth, as well as the breadth of information obtained helped researchers to generalize the results. To ensure reliability of the data collection, researchers compared responses of each group to the other three parallel focus groups. To ensure validity of the study’s results, researchers worked to establish credibility among the farmers through prolonged engagement to build reputable relationships. For transferability, methods helped to provide for substantial descriptions from farmer perceptions on business skills and for dependability, an inquiry audit with a researcher outside of agriculture was used. Lastly, to achieve confirmability, triangulation was used by comparing the responses of focus group participants with differing views throughout a discussion.

Analysis

Quantitative data obtained from the surveys were analyzed using non-parametric statistics to obtain frequencies of ordinal and nominal variables from the sample group. The non-parametric equivalent of an Independent-Samples T Test (aka Mann–Whitney Test) were performed to determine if the rankings of skills and resources varied across the different categories of farmers (beginning vs. experienced, owner vs. employee and full-time vs. part-time). This was accompanied by the Mann–Whitney–Wilcoxon Test to determine which means were significantly different from others. All quantitative data was analyzed through the IBM SPSS Statistics (SPSS Version 27, 2020). To ensure validity of the quantitative survey, early to late respondents were compared to avoid nonresponse bias as a threat to internal validity. In an effort to improve the statistical conclusion of the survey, data collection was prolonged to increase the sample size and improve statistical power.

Qualitative focus group transcript data were coded and analyzed for thematic patterns using grounded theory to develop theories based on data collected. Verbatim notes from asynchronous focus groups were available in text format as the synchronous focus groups were video recorded, and audio was transcribed verbatim by an online transcription service. All data were imported into the software program NVivo for Mac and analyzed using content analysis (NVivo for Mac Release 1.4, 2021).

Transcripts were first read through to become familiar with the content and subject matter. Open coding was then used to link portions of text within each focus group question with themes of business skills and courses. Next, these codes were categorized by grouping and classifying in order to identify patterns relevant to the research objectives which also resulted in frequencies of reoccurring categories. To ensure validity of the data, consensus coding with interrater reliability helped to produce a more valid description of the data. To address the confirmability of the study, transcripts of participants were compared with one another to ensure the prevailing themes fit a pattern.

An outside researcher with an academic background in agricultural economics was utilized to examine data collection methods, analysis, and results. They followed the same qualitative analysis protocol and coded the data in order to conduct inter-rater reliability by computing the Kappa coefficient. Data analysis through NVivo revealed an average Kappa value of 0.812 with 79.6% of codes having a Kappa value over 0.81 (NVivo for Mac Release 1.4, 2021). According to the most comprehensive and widely cited interpretation by Landis and Koch, a Kappa value over 0.81 can be interpreted as almost perfect agreement (Landis & Koch, 1977).

Results

The survey was composed of demographic- related multiple-choice questions and a Likert scale question where respondents indicated perceived importance of skills and satisfaction of resources. Focus group respondents also provided lengthy discussions of topics surrounding business education including skills, obstacles, desired courses, and resources. Themes identified in the study are based on the study objectives to define and prioritize business skills and examine the perceived needs of growers.

Rankings of Business Skill Importance and Satisfaction

Participants in the survey were asked to rank using a Likert scale the importance of a series of skills that are common to standard business education curriculum as seen in Table 1. For the purpose of analysis, an important ranking is assigned a 3, neutral is a 2 and unimportant is a 1.

Table 1

Perceived Skill Importance of Study Participants

Skill	\bar{x}^b	SD ^c	Percent of Responses ^a		
			Important	Neutral	Unimportant
Record Keeping	2.96	0.19	96%	4%	0%
Financial Management	2.92	0.27	92%	8%	0%
Marketing	2.92	0.27	92%	8%	0%
Business Planning	2.91	0.29	91%	9%	0%
Accounting	2.90	0.31	90%	10%	0%
Budgeting	2.83	0.38	83%	17%	0%
Tax Management	2.82	0.39	82%	18%	0%
Risk Management	2.68	0.47	68%	32%	0%
Farm Law	2.56	0.57	60%	36%	4%
Credit Access	2.46	0.62	53%	41%	6%
Human Resources	2.28	0.66	40%	49%	12%

Note. $n = 78$ (for each skill). Responses included former, beginning, and experienced farmers that participated in survey and focus groups to determine business training needs.

^aPercent of respondents score distributed across the three categories: Important, Neutral and Unimportant

^bMean score for perceived skill importance based on all survey and focus group responses (1 = Unimportant, 2 = Neutral, 3 = Important)

^cStandard deviation of mean scores for perceived skill importance based on all survey and focus group responses

Rankings were statistically compared between different types of farming groups. Descriptive statistics showed experienced farmers ranked all skills as more important than beginning farmers. However, a Mann–Whitney Test was performed and there were no statistically significant differences among the means of the importance scores of beginning and experienced farmers.

Focus group respondents participated in the electronic survey. They answered similarly to the other survey participants in that all skills were ranked as important with the exception of credit access being neutral. There were no statistically significant differences in responses for skill importance among the different groups of farmers in the focus groups.

Survey respondents also ranked their satisfaction with resources available on the various business skills. A satisfied ranking is assigned a 3, neutral is a 2 and unsatisfied is a 1. Unlike the business skill rankings, the level of satisfaction of resources was much more variable. All resources had a mean within neutral limits; however, the percent of responses was divided among satisfied, neutral, and unsatisfied more unevenly as seen in Table 2.

Table 2

Perceived Resource Importance of Study Participants

Skill	\bar{x}^b	SD ^c	Percent of Responses ^a		
			Satisfied %	Neutral %	Unsatisfied %
Business Planning	2.03	0.71	26%	51%	23%
Record Keeping	2.01	0.77	30%	42%	29%
Marketing	2.00	0.81	32%	35%	32%
Budgeting	1.91	0.64	16%	58%	26%
Accounting	1.87	0.69	18%	51%	31%
Financial Management	1.82	0.70	17%	48%	35%
Risk Management	1.74	0.57	6%	61%	32%
Credit Access	1.74	0.64	10%	53%	36%
Human Resources	1.69	0.57	5%	58%	36%
Farm Law	1.62	0.69	12%	39%	49%
Tax Management	1.59	0.68	11%	38%	51%

Note. $n = 77$ (for each skill) with the exception of budgeting ($n = 74$) and tax management ($n = 76$). Responses included former, beginning, and experienced farmers that participated in survey and focus groups to determine business training needs.

^aPercent of respondents score distributed across the three categories: Important, Neutral and Unimportant

^bMean score for perceived skill importance based on all survey and focus group responses (1 = Unimportant, 2 = Neutral, 3 = Important)

^cStandard deviation of mean scores for perceived skill importance based on all survey and focus group responses

Rankings were statistically compared between different types of farming groups. When the Mann–Whitney Test was performed among beginning versus experienced farmers, median resource satisfaction for accounting, financial management, tax management, farm law and human resources were statistically significant. Results are shown below in Table 3 and experienced farmers had statistically significant higher rankings than beginning farmers for all resources with the exception of human resources.

Table 3

Statistically Significant Results of the Mann-Whitney U Test for Differences in the Mean Resource Satisfaction

	Experienced ^a		Beginning ^b		U	Z	P*
	\bar{x}^c	SD ^d	\bar{x}^c	SD ^d			
Accounting	2.10	0.62	1.73	0.71	491.50	-2.35	0.019
Financial Management	2.07	0.65	1.67	0.69	478.50	-2.49	0.012
Tax Management	1.93	0.70	1.38	0.57	393.0	-3.43	0.001
Farm Law	1.90	0.77	1.46	0.58	479.00	-2.52	0.012
Human Resources	1.52	0.57	1.79	0.54	521.00	-2.12	0.034

Note. Responses included beginning, and experienced farmers that participated in survey and focus groups to determine business training needs.

^an = 48 with the exception of Tax Management (n = 47)

^bn = 29

^cMean score for perceived resource satisfaction based on all survey and focus group responses (1 = Unimportant, 2 = Neutral, 3 = Important)

^dStandard deviation of mean scores for perceived resource satisfaction based on all survey and focus group responses

*P<0.05

Focus group respondents answered similarly with all resources having a mean within neutral limits. There were no significant differences between the different types of farmers in the focus groups.

Important Business Skills for Specialty Crop Farmers

Unlike the survey, focus group participants were not given a list of skills to choose from in the various discussion board topics and the themes identified originated from the farmer’s own thoughts and ideas. Of the 24 participants participating in the focus groups, 13 were experienced farmers, 6 were beginning and 5 were “former farmers” which included individuals who received formal farm training and are no longer farming or not farming as a business. There were nineteen recurring themes cited by focus group participants for the most important skills to a specialty crop operation as seen below in Table 4. Among the top five most frequently cited skills that are critical to a specialty crop farm business were: marketing, business management, labor management, budgeting or finances and business planning.

Table 4

Frequency of Perceived Important Business Skills Themes

Emergent Themes	Total Mentions ^a	Experienced ^b	Beginning ^c	Former ^d
Marketing	89	16%	17%	11%
Business Management	71	15%	9%	10%
Labor Management	66	14%	8%	7%
Budgeting, Finances	61	9%	13%	11%
Business Planning	42	6%	9%	10%
Recordkeeping	40	5%	8%	12%
Table Continued				
Production Planning	30	5%	7%	4%
Sales	26	5%	4%	5%
Communication Skills	24	4%	2%	10%
Accounting	17	4%	2%	1%
Access to Capital	15	2%	2%	5%
Legal & Tax Knowledge	14	3%	2%	2%
Profitability	14	3%	2%	1%
Balancing Values	13	2%	2%	4%
Work Ethic	12	2%	4%	0%
Land Management	11	2%	1%	5%
Outsource Accounting	11	2%	2%	0%
Land Access	9	1%	2%	2%
Problem Solving	7	1%	1%	2%
Total	572	100%	100%	100%

Note. Frequencies of themes mentioned among former, beginning, and experienced farmers that participated in focus groups to determine business training needs.

^aTotal number of mentions per theme for all focus group participants

^bExperienced farmer defined as any producer with 10 years or more of experience

^cBeginning Farmer is defined as any producer with less than 10 years of experience

^dFormer Farmer is defined as a farmer who went through a formal farm training program and is either no longer farming or not farming as a business

Many farmers stated the importance of being able to sell your product as stated by this experienced farmer, “Sales and marketing are a number one item for us. I never really thought of them as business skills, but of course they are. If you can’t sell what you produce, then the business is not going to last!”

Experienced farmers frequently cited labor management as an important skill to manage employees and daily tasks. One experienced farmer discussed how they use this skill on their operation, I think the idea of labor, how to go about hiring employees, how to retain employees, how to determine how much to pay your employee ... This is something that we've been looking at for

a few years, and we've finally come up with an end-of-the-year equation that we can do to determine if we were paying our employees accurately through season.

Perceived Obstacles to Profitability

During the focus groups, participants were asked to identify and describe their biggest obstacles to profitability as specialty crop growers. Participants were not given a list of obstacles to choose from and a total of 18 themes were created based on discussion responses as seen in Table 5. The most cited obstacles were labor and markets/sales which were mentioned a total of 40% of the time during the discussion.

Table 5

Frequency of Themes Mentioned for Perceived Obstacles to Profitability

Emergent Themes	Total ^a	Experienced ^b	Beginning ^c	Former ^d
Labor	86	24%	17%	15%
Markets, Sales	86	22%	16%	20%
Access to Capital	46	9%	11%	14%
Lack of knowledge	32	5%	10%	9%
Infrastructure	29	4%	11%	9%
Land	28	4%	8%	8%
Profitability	28	7%	5%	8%
Regulations	21	8%	1%	1%
Weather, Climate Change	20	7%	2%	2%
Insufficient resources	10	2%	4%	2%
Taxes	10	2%	3%	3%
Taking on too much	8	2%	3%	1%
Insurance	6	2%	2%	0%
Theft	6	0%	5%	1%
Inability to adapt	4	0%	3%	0%
Stress	4	1%	0%	2%
Verbal Agreements	3	0%	0%	2%
Recordkeeping	2	0%	1%	1%
Total	429	100%	100%	100%

Note. Frequencies of themes mentioned among former, beginning, and experienced farmers that participated in focus groups to determine business training needs.

^aTotal number of mentions per theme for all focus group participants

^bExperienced farmer defined as any producer with 10 years or more of experience

^cBeginning Farmer is defined as any producer with less than 10 years of experience

^dFormer Farmer is defined as a farmer who went through a formal farm training program and is either no longer farming or not farming as a business

Labor was one of the most cited obstacles across all types of farmers. Among beginning and former farmers, not having enough time to complete daily farming tasks was a prevalent obstacle. One former farmer described labor obstacles as,

Juggling running the farm with managing the administration of the farm is one of the biggest challenges. There are so many tasks to DO that it can be easy to postpone sitting down to manage the admin...yet, if you don't manage the admin side you can easily decrease or even threaten your profitability...having the discipline to stop while there is still light out to manage the admin is always tough. The flip side is having the energy to keep going at night to get it done after daylight is done can burn the candle at both ends and wasn't sustainable for me.

Experienced farmers cited different forms of labor obstacles as one explained, "One of the big challenges for us is to be able to retain that quality employee from season to season. We don't employ anyone year-round."

Some of the biggest challenges cited surround the obstacle of markets and sales included fluctuating markets, retaining and surveying customers, balancing pricing and volume of sales with different buyers (direct vs. wholesale) and using social media or online platforms to market. One experienced farmer gave their viewpoint on why beginning farmers may have difficulty with this,

One thing I see in younger starting individuals is that they see a particular crop as being very profitable and plant a lot. Then come harvest time they find out that their outlets for said product is very limiting in demand. Nothing worse than raising a good crop and not being able to find a home for it.

Access to capital was the third most cited obstacle and was commonly expressed among both experienced and beginning farmers. A beginning farmer expressed their challenges,

I also think that there is a gap between profitability as a small-scale farmer and that of a mid-size farmer for vegetable production. Finding efficient ways and techniques to scale up without having to over-extend yourself with investments in equipment/personnel/ inputs/post-harvest processing and handling/etc. is tough when trying to increase acreage or add a new market or distribution channel.

Experienced farmers cited regulations as an obstacle more than beginning farmers and former farmers. One experienced farmer summarized their frustration of regulations in this post,

As we grow and expand our operation, I find government regulation as an increasing obstacle. We are large enough that we are required to contribute to state unemployment, add in workman's comp and our labor bill is higher than our smaller competitors. We are subject to more food safety regulations as we grow, which smaller growers are not. Lots of growing pains when one expands his operation.

Beginning farmers often expressed frustration with acquiring infrastructure. As one beginning farmer pointed out,

Major obstacles related to business that make it difficult for farming to be profitable include the cost of land and equipment. I think it would be hard to expand your farm business through land acquisition if you didn't have another job with reliable income, though I have seen it done and am encouraged.

Desired Courses and Utilized Resources for Business Education

Focus group participants were asked to describe their most desired business courses. A total of 17 codes were created based on discussion responses. The top desired courses composed of 54% of all themes mentioned and included financial planning, legal/farm law/taxes, hiring professionals and accounting. Unlike the other topics of discussion, there were not enough themes mentioned to compare frequencies of responses among the different types of farming groups.

Participants were also asked to describe their top resources where they obtain information. Thirteen themes mentioned were analyzed to show frequencies of recurring themes as seen in Table 6. The most popular resource was peer support and networking which was brought up 23% of the time during the discussion among all farmers.

Table 6

Frequency of Themes Mentioned for Business Resources

Emergent Themes	Total ^a	Experienced ^b	Beginning ^c	Former ^d
Peer Support, Networking	72	25%	24%	20%
Formal Training Programs	48	10%	19%	32%
Conference, Event	35	15%	8%	10%
Internet	27	8%	10%	10%
Books	21	8%	7%	5%
Mentorship	20	5%	10%	5%
Extension	15	5%	5%	5%
Grower Groups	14	5%	5%	2%
Accounting Software	13	6%	1%	5%
Consultants, Professionals	13	6%	3%	0%
Podcasts	9	3%	1%	7%
USDA	9	1%	7%	0%
Customer Feedback	2	1%	0%	0%
Total	238	100%	100%	100%

Note. Frequencies of themes mentioned among former, beginning, and experienced farmers that participated in focus groups to determine business training needs.

^aTotal number of mentions per theme for all focus group participants

^bExperienced farmer defined as any producer with 10 years or more of experience

^cBeginning Farmer is defined as any producer with less than 10 years of experience

^dFormer Farmer is defined as a farmer who went through a formal farm training program and is either no longer farming or not farming as a business

Beginning farmers cited formal training programs as a resource more frequently than both experienced and former farmers. As one beginning farmer stated, “My most useful business knowledge didn't come from the state or USDA sponsored programs or conventions but from farmers actually demonstrating their business skills.” This was echoed among other beginning farmers with statements like, “I am always more energized and motivated to follow through by my peers” and “Learning from my peers is the best way for me to learn and definitely the most enjoyable!” Beginning farmers often associated peer support with mentorship as one farmer stated,

I think that I usually ask other farmers that I know to tell me what they've done, or do they have good ideas that might help me answer my question? That's probably the first thing that I do, go back to my mentors and ask them.

Unlike beginning farmers, experienced farmers commonly cited top sources of learning through other farmers, family and other career experience. One experienced farmer explained how they learned their skills, “I also had a career while farming and I learned from my employer. I was always curious and

investigated why decisions were made and how it would affect the bottom line. I learned the importance of attention to detail.”

Unlike other farmers, former farmers expressed notions of loneliness and isolation. One former farmer who was struggling to start and operate their own farm business stated, “the biggest obstacle, and almost overwhelming, is just putting the infrastructure in place, figuring out the point of sale, getting an accountant, getting the equipment... that’s daunting, and I am alone.” One experienced farmer shared their perspective on major obstacles that new farmers face, “Trying to farm alone, there’s a lot of people out there who are willing to work with you and give you information, and there’s organizations... There’s a lot of information out there you can get from people.”

Definition of Specialty Crop Business Education

All focus group respondents were asked how they defined business education and its role in relation to specialty crop farming. Many of the participants discussed that business education’s purpose is to provide training or competency in running a farm business efficiently and that it should be comprehensive or broadly focused. It was also mentioned several times that business education pertained to everything but the growing and cultivation aspect of farming. As one farmer stated, business education encompasses “Basically, everything that isn’t the actual growing or producing of the specialty crop.”

There was heavy discussion that curriculum should incorporate real world applications so that the knowledge learned could be used directly into their own operations. One experienced farmer summarized this belief with,

Getting to work with real world examples (even if old data, being able to look at and review real financials and books from companies both big and small [names can be changed], be given real world problems (such as crop enterprise budgets or short/medium term capital budgets) to work through that relate to decisions the farm was making at that time (how to price lettuce, can we justify a vacuum seeder [does it pay for itself in labor savings], how do we extend our income season with season extension without blowing our labor budget, etc.

Participant’s definitions were thematically coded for important subjects included in specialty crop business education curriculum. While there were 20 emergent themes of core subjects in business education cited among the study participants, the top 5 themes made up almost 50% of all total themes which included finances and economics, accounting, business planning, marketing and legal knowledge.

Discussion

The results of this study reveal the essential skills and resources related to business education that were identified by small-scale specialty crop farmers. We also determined the perceived importance of skills, satisfaction of resources, business-related obstacles to profitability, in-demand business educational courses and resources, and how farmers define business education. This study’s findings can provide agricultural educators with specific information on their target audience’s resource needs in order to provide the most relevant and beneficial support for these particular types of farmers.

In terms of obstacles, beginning famers cited their top three as marketing/sales, labor, and access to capital. Explanations of labor difficulties differed from experienced farmers in that beginning farmers struggled with having enough time to complete daily farming tasks. Beginning farmers also perceived infrastructure as a barrier more frequently when compared to experienced farmers revealing

that they could use more resources on navigating the process of acquiring infrastructure. Research on small-scale specialty crop producers found that labor demands and expenses such as infrastructure can impede a farmer's ability to earn a sufficient net cash income (Hendrickson, 2005).

When top resources for obtaining business education information were discussed, beginning farmers cited peer support/networking, formal training programs, use of the internet and mentorship. Mentorship was more referred to more frequently by beginning farmers than both former and experienced farmers suggesting that it is valued more by this group. "Peer support and networking" was the top resource for both experienced and beginning farmers, showing the importance of connecting with colleagues as a sustainable and reliable source of information for farmers. This was discussed in a previous study of Kansas City metro farmers that found growers primarily use self-driven independent sources for information, such as self-research, peers, family, and other farmers (Tanner et al., 2014). Future educational curriculum could incorporate and facilitate connection with other farmers as part of their training program.

This assertion correlates with other research that despite the desire of mentors, apprenticeships are currently not equipped to connect apprentices to business management resources and opportunities that promote entry into a farming career (Fischer, 2017). Similarly, a recent research study on the Growing Growers Kansas City program revealed the need for improved business curriculum by integrating learning environments such as classroom instruction with hands-on application. This study's data highlighted that a classroom learning environment for business management might not be enough experience for beginning farmers as this learning objective ranked 12th out of 14 for workshop score improvement indicating a strong need for improved workshop design (Gilmore, 2019).

Educational curricula should also hold real-world application and integrate hands-on practice such as filling out budgeting and finance-related sheets. This coincides with research that lecture-only learning environments for beginning farmers are a major weakness of educational workshops and hands-on activities should be incorporated whenever possible (Bailey et al., 2014). Data from focus group discussions suggests that business education for specialty crop production should broadly cover many of the same topics as standard business education but have real world application. Similar to popular topics for desired courses, finances, farm law, legal knowledge and taxes were some of the top cited core subjects of business education. There was also considerable discussion surrounding business planning related to marketing strategies such as identifying target markets, competitors and niche products. These cited topics were similar to non-agricultural business education. Standard entrepreneurship educational curriculum consists of accounting, management, law, finance, marketing, decision making, economics, business planning and other key concepts (Hood & Young, 1993; Wang et al., 2010).

Careful consideration of the needs of beginning farmers can help to create the most effective and beneficial business education curricula. Through this form of education, farmers can gain the skills they need to possess better management and planning skills which can help increase financial performance (Mishra et al., 2009).

Recommendations for Educators

Survey results showed that there is substantial room for improvement on availability of resources related to business skills. Tax management had the lowest ranking and highest number of unsatisfied responses (51%) followed by farm law which had 49% unsatisfied responses, and these are important resources for educators to improve upon. When asked about desired courses, focus group results showed farmers had strong desires for financial planning, legal/ farm law/ taxes, hiring

professionals, accounting and farm management software. The top two desired skills align with the low rankings in resource satisfaction showing the value in creating curriculum on these topics. This data coincides with recent focus group research that found young and beginning farmers identified agricultural business management skills, financial skills and legal knowledge as the most important educational needs (Bailey et al., 2014). Recent research on Kansas City metro extension programs also found that extension resources on financial information had the fewest number of extension educators involved in this kind of programing, despite the desire by farmers for more resources on these topics (Tanner et al., 2014).

Focus group results showed that the most common sources for farmers to obtain business education were peer support and networking. Educators could provide more opportunities for farmers to connect with other farmers in order to better support their farming community.

Finally, data also showed that there are statistically significant differences in resource perception among the types of farmers. One group in particular, beginning farmers, had a perceived resource satisfaction much lower than other farmers. They also had different views of resources, obstacles and business skills in the focus group research. Educators should be aware of their target audience in order to best serve their needs.

Limitations of the Study

This study required all recruited participants to have sufficient internet access, which is a limitation for interpreting the results. Adequate internet bandwidth was especially important for focus group participants as they had to not only consistently participate in an online discussion board but also be capable of joining a video conference call. Consequently, farmers who do not have internet access or severely limited internet connection could not participate. These factors contributed to nonresponse in survey data collection as a threat to internal validity. Lack of internet access for non-respondents and the limited sample size of respondents within the survey could have resulted in some bias towards the sample respondents and therefore data may not be generalizable to the population.

It should be noted that qualitative data collection is not necessarily generalizable to a study's population because it doesn't answer questions by producing numeric data in a controlled environment. However, qualitative methods can produce rich descriptive text representative of the bigger picture. In this study, the exploratory approach of grounded theory was used to reduce bias and explore how farmers perceived the importance of business skills, resources and obstacles without the influence of specific notions or theories to direct their discussion. There were also efforts to improve credibility by prolonging engagement to establish credibility, increase transferability by providing rich descriptions of participant perceptions, improve dependability with an inquiry audit with a researcher outside of agriculture and enhance confirmability through the triangulation of sources and comparing notably differing viewpoints of focus group participants to provide a more holistic perspective of the discussion.

Conclusion

This study provides new insight into the relationship between small-scale specialty crop farmers and business education, and to our knowledge, it is the first report on this topic. With limited research studies having been conducted on this particular group of farmers, agricultural educators have had restricted access to resources that allow them to create more tailored business education for this audience. The financial vulnerability of specialty crop farmers is indisputable as 60% of Kansas producers and 57% of Missouri producers earn less than \$10,000 a year (KDA, 2017; MU, 2017). Additionally, the decline in the number of farms and farm workers are resulting in fewer small-scale

farms than ever. If the lack of an educational resource prevents a farmer from dropping out of business, that represents the farmer's lost economic, social and environmental contribution to society. Because research shows that business education is positively related to profitability and that farmers with a higher education are more likely to be successful in their farming careers, the need for specialty crop business education is critical now more than ever. Accordingly, the business education needs of specialty crop farmers must be addressed (Castle et al., 1987).

This study aimed to define the most important business skills that successful and unsuccessful farmers view as necessary to be profitable. Our data suggests that there is great opportunity to develop curriculum and resources for specialty crop producers. While many of the business skills that correlate with standard business education subjects were perceived with importance, specialty crop farmers emphasized a low satisfaction with business education-related resources. Data also revealed that there are important differences in the needs of various types of farmers that educators should take into account when considering the development of business education programming.

Educators should be aware of their target audience's perception of resource satisfaction, skills, obstacles and desired courses because beginning farmers need different types of support than experienced farmers. Data produced in this study can provide educators with these perceptions in order to develop materials and curriculum that are most relevant to their audience. These data also provide insight into how certain farmer groups differ, identifying areas of business skill knowledge that can be strengthened in order to improve beginning farmer viability. The goals of developing curriculum from this data would be to identify skills and areas where beginning farmers need increased confidence and knowledge to get that boost and motivation to manage successful and viable farm businesses. The development of appropriate and useful business education resources could help farmers become more business literate and ultimately more financially viable and successful, securing the future of specialty crop farmers in Central US and beyond.

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