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Perceived survival risk, motivation for new enterprises, and entrepreneurship knowledge: A case from small agricultural entrepreneurs in Tennessee, USA

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ABSTRACT

Entrepreneurship can create significant positive changes for economic development in rural and urban areas. Specific to small farmers, who find it difficult to directly compete with large operations through conventional production in local and global marketplaces, the development of new feasible enterprises could be an important sustainable strategy. To understand the motivations of farm businesses, perceived survival risks, and entrepreneurship knowledge, we conducted a primary survey among small agricultural entrepreneurs (SAEs) in Tennessee. Based on the findings from our sample, SAEs are highly passionate and motivated in farming, the majority have business-related education or background (67% of the sampled SAEs) and consider themselves as self-employed (51% of sampled SAEs). Over half (53.5%) of the sampled SAEs developed 1 to 3 new enterprises in their farm or related businesses in the past 5 years while a few (around 4%) SAEs developed up to 5 to 6 new enterprises. However, we found that SAEs find their operation risky to continue and are challenged mainly by the shortage of skilled and reliable labor, finance and loans, and market competition. We also examined SAE's level of understanding of different aspects of entrepreneurship and discussed the implications of our findings.

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1. Introduction

Entrepreneurship is described as a driver for market-based processes exploiting opportunities for economic development (Shane & Venkataraman, 2000). It can contribute to the sustainable development and mitigation of poverty among families, communities, and the broader society (Condor, 2020; Davidsson, 2016; Fitz-Koch et al., 2018). Entrepreneurship in agriculture could stimulate farmers to develop new feasible agricultural enterprises and to generate new opportunities and businesses leading to a rapid pace of economic development in rural areas. However, agricultural entrepreneurship has not been fully explored; studies suggest that mainstream entrepreneurship research has overlooked the agricultural sectors (Condor, 2020).

Diversification of agriculture and farming through the adoption of alternative profitable enterprises, new enterprise development, and crop/livestock diversification are some of the important means of risk management for small farmers (Adhikari and Khanal, 2021). In addition to economic and sociologic motivational factors in farming (Kliebenstein et al., 1981), agricultural entrepreneurship and the development of new innovative enterprises could be an important sustainable strategy for SAEs. Beginning farmers need additional motivation as they look forward to projecting their future growth and economic sustainability (Isleib, 2024). Therefore, motivation to develop new agricultural-based enterprises or agricultural entrepreneurship could boost the survival of small farms, which particularly are struggling to continue their farm business through conventional means. Approximately 91% of farms in the United States are small, family-run operations with yearly gross agricultural income earnings of $350,000 or less (MacDonald et al., 2017; ERS, USDA, 2022), have been facing challenges to compete and survive their farm operations and farm businesses (Omobitan & Khanal, 2022). The sources of challenges include the negative impacts of changing agricultural policies, low prices for their produce, high cost of inputs, and marketing of the produce. To alleviate the above problems, small farmers should pursue a strategy that can promote their viability. Small commercial farms are an important component of U.S. agriculture. However, their number and production share have been declining long-term (Hoppe et al., 2010). To keep continuing their farm businesses, small farms need to adequately overcome the challenges. Small farmers must adopt certain strategies as well as acquire certain skill sets

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supporting their farm business. One strategy is to develop new enterprises on their farm to supplement their incomes—incorporating entrepreneurship in their operations. Due to the lack of the ability to directly compete with larger farmers in production, small farmers need to find some innovative ways in production, management, and marketing that could be feasible for their operation. This not only requires an understanding of these survival challenges but also the entrepreneurial skills and knowledge to drive their business with motivation.

Kahan (2013) describes "*farm entrepreneurs see their farm as business… are willing to take calculated risks to make their farms profitable and their businesses grow*" (Kahan, 2013, chapter 1, page 2). Agricultural entrepreneurship and its dynamics need an understanding from both theoretical and empirical perspectives but have limited research (Cheriot et al., 2020). The literature on agricultural entrepreneurship research is just emerging and has great scope to explore many aspects (Dias et al., 2019). It is important to know the aspects of farmer's competitive skills and entrepreneurial capacity in agricultural businesses which are often operated in constrained, complex, and multi-faceted environments (Mcelwee, 2006; Graskemper et al., 2021). Specific to small farms, there has been very limited research on their motivation, new enterprise development, and entrepreneurship knowledge. To the best of our knowledge, there have been no such studies in Tennessee. Our study addresses this gap in the literature. To understand the motivations, entrepreneurship knowledge, and perceived survival of the farm, we conducted a primary survey among small agricultural entrepreneurs in Tennessee. Using Tennessee State University (TSU)'s existing cooperative extension network and utilizing extension agents working on the field, we administered a primary survey. We present our methodological approach and the findings from this primary survey in the following sections.

2. Materials and Methods

The main methodological steps in this study include a) creating a questionnaire, b) completing research ethics training and Institutional Review Board (IRB) application, c) getting IRB approval for the study, receiving approval from IRB of Tennessee State University, protocol # HS-2018-4172, d) prepare an electronic survey on Qualtrics, e) send email with the survey link to extension agents and county directors of cooperative extension, f) gather responses from the survey, and g) analyze primary survey data.

To facilitate sampling and survey, we used Tennessee State University (TSU)'s cooperative extension linkage and networks in different counties in Tennessee. The extension agents working on the field in respective counties have direct connections and good rapport with farmers. Using extension agents in the survey process helped us at least in two aspects: first, to identify small agricultural entrepreneurs (SAEs) in the respective county and regions for sampling, and second, to enhance the response rate using an established co-operative extension network across counties in Tennessee.

We compiled a list of extension agents and the county director of the TSU and University of Tennessee (UT) cooperative extension. We sent e-mails with templates to all representative agents requesting them to send out to SAEs within the area they were in-charge of overseeing. The email included a summary of survey objectives, a link to the Qualtrics survey, and a consent form approved by IRB. The extension agents sent the email with a survey link, based on their discretion and information, to the small agricultural entrepreneurs. Altogether, 350 email contacts were made by extension agents, based on the contacts lists maintained. In addition to the first survey email, two additional reminder emails were also sent to farmers. Based on this survey administered, we obtained 45 full survey responses from sampled representative SAEs and proceeded for analysis.

3. Results

We present our findings based on the primary survey of SAEs in Tennessee. Our sample consisted of different types of farmers: livestock and animal farmers listed together in the sample frame. We used the existing list and networking of extension agents in Tennessee to reach field crops and specialty crop (fruits, vegetables, and nuts) growers. Among these, 61% of the SAEs identified themselves as specialized farms while 39% as diversified farms. The majority of sampled SAEs (around 58%) have worked more than 10 years in the current agricultural business, followed by 18% who worked for 5 to 10 years. Around 51% of SAEs aged 50 to 64 years, 22% aged 36 to 49 years,18% aged 20 to 35 years, and 9% aged more than 65 years. Regarding formal education and business-related background, around 60% of SAEs had undergraduate degree or higher-level education. Around 67% of SAEs had some level of farm business or other business-related formal background.

3.1. SAE's financial sources and management

Our findings show that SAEs in Tennessee mainly rely on self-generated funds. Figure 1 shows that 76% of our sampled SAEs used their (self-earned, generated) funds for agricultural activities and businesses. Around 16% of sampled SAEs were financed through loans from private financial institutions, 4% received government subsidies and support, and 4% used other sources. Regarding financial record keeping and maintenance of financial information, such as records of profits, costs, expenses, and sales, only 24% indicated that they keep "excellent" records, 51% indicated that they keep "very well" records and 20% indicated that they keep "somewhat well" records.

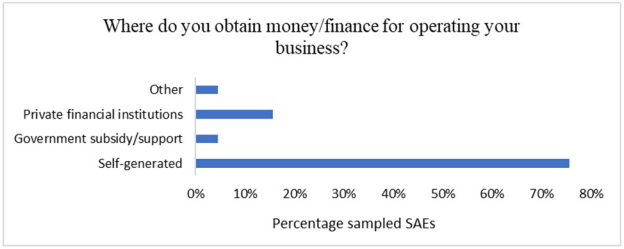

Figure 1. Sources of funds used for operating business by SAEs in Tennessee

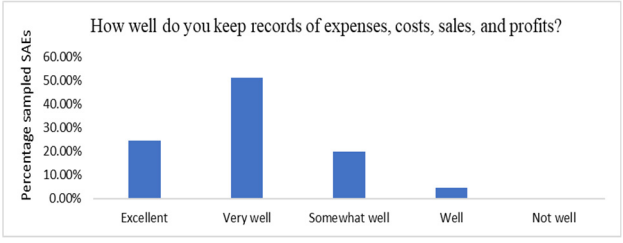

Figure 2. Self-rated record-keeping practice responded by SAEs in Tennessee

3.2 Motivations

Since small farmers and farm business households find it difficult to directly compete with large farms through commodity production routes, they seek alternative strategic decisions requiring motivation (Khanal and Mishra, 2014). In the case of Michigan, Isleib (2013) found that beginning farmers also value lifestyle benefits and community involvement along with economic success and future opportunities. Our findings in Tennessee are more or less consistent with the previous findings from Michigan. Regarding the question on the extent of motivation, 61% of the sampled SAEs rated themselves as "very passionate and motivated" while 39% rated themselves as "somewhat passionate and motivated" (Figure 3).

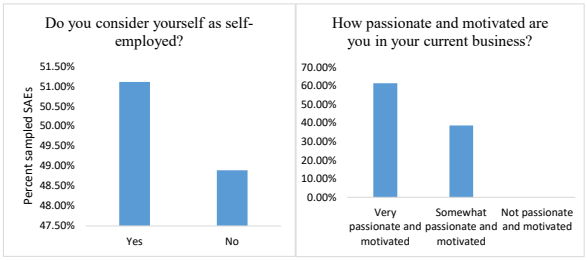

Figure 3. Self-employment and extent of motivation (self-rated) among SAEs in Tennessee

Additionally, we asked specifics of the motivating reason for farming or farm-related business. Figure 4 shows the top reasons of motivations. Around 29% (the highest proportion) of sampled SAEs expressed 'enjoyable activity', 28% find it as a 'way of life' and 22% as a "good way to raise the family" as their motivational factor for farming or farm business. Other motivational factors include "supplement off-farm income" (for 11% of sampled SAEs) and "tax benefits" (for 8% of sampled SAEs).

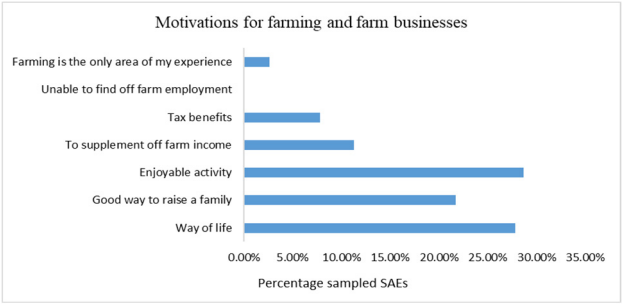

Figure 4. Motivational reasons for farming and farm business responded by sampled SAEs

3.3. Development of new enterprises

In the past five years, small farmers in Tennessee developed or adopted up to 6 new enterprises. However, only a few (around 2% of sampled SAEs) developed 5 or 6 new enterprises. Figure 5 shows that 28% developed 1 new enterprise, 16% developed 2 new enterprises, and 9% developed 3 new enterprises in the past 5 years.

3.4. Internet and social media use in the farm business

The use of the Internet and social media is an important component of modern-day business. The businesses use Internet for news and

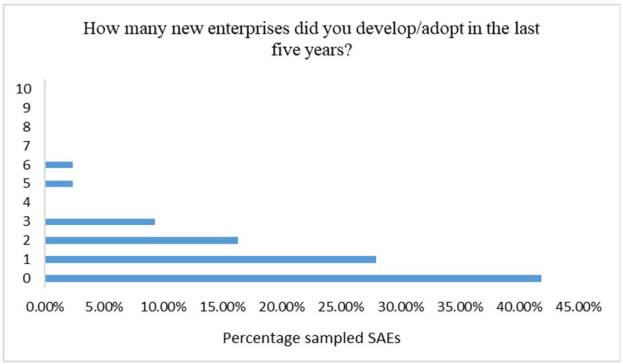

Figure 5. Development/ adoption of new enterprises by SAEs in past 5 years

information, marketing, promotion, and communication. We asked SAEs about their internet and social media use. Figure 6 shows the extent of use of the Internet and social media among SAEs in Tennessee. We found that about 73% of sampled SAEs used the Internet to communicate, sell products, or other activities related to their business. This is quite remarkable. Khanal and Mishra (2016), using nationwide data, have found that around 60% of small farm business households in the U.S. use the Internet for farm-related activities. Specific to the use pattern of the Internet among small farm businesses, 77% used it for getting farm business-related information and 71% used it for email communication and social networking (Khanal and Mishra, 2016). Our response from SAEs in Tennessee also suggests that around 51% of SAEs use Facebook, Twitter, or similar social media networks for their business-related activities. However, we also found that only 18% of the sampled SAEs had maintained the website of their business (figure 6).

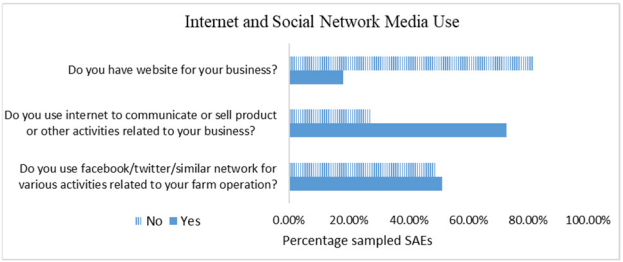

Figure 6. Internet and social media use among sampled SAEs in Tennessee

3.5. Perceived survival risk of the business

Small farms have constant challenges for survival and continuation of the business. We asked sampled SAEs to reflect on their perception of the risk of future survival and continuation of their own business. Figure 7 shows the results. On the scale of "not risky" to "highly risky", 41% perceived "slightly risky", 39% perceived "moderately risky", 2% perceived "highly risky" while only 18% of SAEs perceived "not risky."

3.6. Major challenges

We asked about major challenges for beginners in establishing new agricultural-related enterprises. SAEs expressed a range of challenges such as a shortage of skilled and reliable labor, national and global competition,

financial and loan issues, and changing agricultural policies and governmental supports. Among these, a shortage of skilled and reliable labor is the most frequently realized challenge, expressed by 29% of sampled SAEs, followed by 'hard to finance and receive loans' and 'national and global competition' by 12% of SAEs. The details of this finding are presented in figure 8.

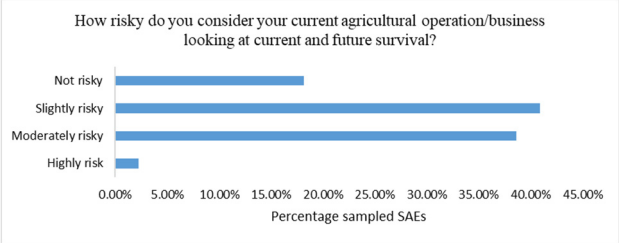

Figure 7. Perceived survival risk of their business by SAEs in Tennessee

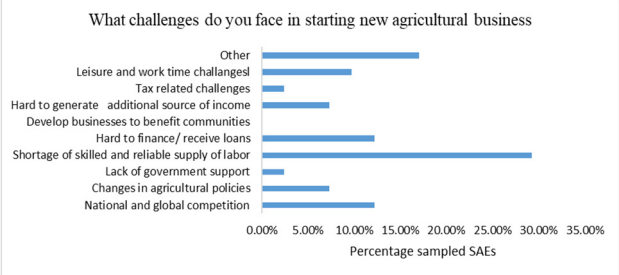

Figure 8. Major challenges in starting agricultural business, responded by sampled SAEs

3.7. Entrepreneurship knowledge

Assessment of the level of knowledge and understanding among SAEs on entrepreneurship is an important aspect of this study. On the question to self-rate their extent of entrepreneurship knowledge, 57% of sample SAEs chose "little' knowledge, 11% chose "very little" and 23% chose "a lot." Figure 9 shows the response from sampled SAEs.

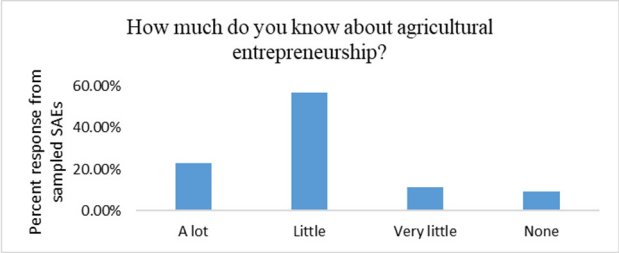

Figure 9. Response on the extent of entrepreneurship knowledge by sampled SAEs

To explore more on entrepreneurship knowledge, we tested the agreement or disagreement of the sampled SAEs on 10 standard entrepreneurship knowledge statements. Table 1 presents the results. On the scale of 'strongly disagree' to 'strongly agree', sampled SAEs have expressed their knowledge of entrepreneurship. Overall based on sampled SAEs, our findings suggest that SAEs in Tennessee are aware of some critical aspects of entrepreneurship. The numbers in Table 1 represent the percentage responses from SAEs on the various entrepreneurship knowledge statements.

Bold percentages indicate the highest agreement-level responses for the respective statements. For example, the highest percentage of SAEs strongly agree on the characteristics of the entrepreneur that the entrepreneur should be innovative, motivated, and passionate, should be approachable and network friendly, and should be knowledgeable of economic and non-economic aspects. Additionally, the highest percentage of SAEs moderately disagree on 'entrepreneurship is the same as management', agree on 'government policies can affect the supply of entrepreneurship', and moderately agree that the focus of entrepreneurs is to develop business.' These are indications of some level of knowledge and understanding. However, the distribution of responses on each agreement level in each sentence also shows the heterogeneous level of understanding among SAEs.

4. Discussion and implications

It is important to streamline the notion of a contextualized understanding of entrepreneurship in agriculture. The review from past studies suggests that mainstream entrepreneurship research has largely overlooked the agricultural sector. The mainstream entrepreneurship literature has focused on other business activities in other areas such as manufacturing, technology, construction, financial business etc. than agricultural business. However, the importance of entrepreneurship cannot be overemphasized in the changing context of globalization, the intense competitive landscape, and the market. Stimulating entrepreneurship among small to medium-sized farms could help them find niche markets, innovate, and sustain their business performance. Research on agricultural entrepreneurship should address the concern of motivations—why, when, and how individuals identify and exploit opportunities (Shane & Venkataraman, 2000), how opportunities generated could translate to drive the market process, and business growth (Davidsson, 2016) as well as link it towards the welfare of farm families (Fitz-Koch et al., 2018).

5. Summary and Conclusion

Despite the importance of entrepreneurship in agriculture, there have been very limited studies on agricultural entrepreneurship, particularly focusing on small entrepreneurs. Particularly, SAEs continue to strive under pressure for survival and need strategic sustainable means. In this paper, we assessed SAE's motivation, perceived survival risks, planning horizon, and their demographic and socio-economic characteristics using a sample of SAEs in Tennessee.

Diversification of agriculture and farming through the adoption of alternative profitable enterprises, new enterprise development, and crop/livestock diversification are some of the important means of risk management for small farmers (Adhikari and Khanal, 2021). In addition to economic and sociologic motivational factors in farming (Kliebenstein et al., 1981), agricultural entrepreneurship and the development of new innovative enterprises could be an important sustainable strategy for SAEs. Using sampled SAEs in this study, we found that SAEs are motivated and passionate about farming and plan to continue the farm business. The majority of selected SAEs have business-related education or background

Table 1. Entrepreneurship Knowledge among SAEs

Knowledge statements	% sampled small agricultural entrepreneurs (SAEs)				
	Strongly Agree	Moderately Agree	Agree	Moderately Disagree	Strongly Disagree
Entrepreneurship is the same as management.	5%	16%	12%	**58%**	9%
One can be trained to be an entrepreneur.	10%	24%	**38%**	26%	2%
Government policies can affect the supply of Entrepreneurship.	21%	31%	**40%**	7%	0%
The focus of Entrepreneurs is to develop businesses.	12%	**40%**	33%	16%	0%
The focus of Entrepreneurs is to develop businesses.	12%	**40%**	33%	16%	0%
Entrepreneurs are innovative.	**37%**	26%	35%	2%	0%
Entrepreneurs take calculated risk in tasks they undertake	**36%**	33%	31%	0%	0%
Entrepreneurs are motivated and passionate in their operation	**37%**	28%	33%	2%	0%
Entrepreneurship involves economic and non-economic aspects.	**35%**	33%	30%	2%	0%
Ability to network with similar businesses is useful for growth and survival of business operations.	**35%**	30%	28%	7%	0%
Small farmers, most of who work off farm, face a tradeoff between off-farm work constraints and potential new sources of on-farm income.	**42%**	23%	33%	2%	0%

Note: Bold percentages indicate the highest agreement level response on that statement. Thus, our study attempted to address these aspects by examining firsthand knowledge assessment and responses from SAEs

(67%), and 51% consider themselves to be self-employed. In the last five years, more than half of the sampled SAEs established 1 to 3 new operations in their farm or related business, with a few SAEs establishing up to 6 new enterprises. However, they find their operation has some level of current or future survival risk. Only 18% have indicated "not risky" and the remaining have some level of risk concern about future survival. They are challenged mainly by the shortage of skilled and reliable labor, difficulty in financing and receiving loans, and global competition. Facilitating the availability of farm labor, including the preparedness of skilled agricultural managers could be an important policy-level support to mitigate labor issues. Additionally, nurturing the new generation's interest in agriculture could help to develop skilled managers and entrepreneurs in farm business and to identify farm business successors. Note that the principal operators (owners) of most SAEs are aged above 50 years. It is important to attract new generations to farming businesses by offering financial support, using innovative technologies, and advocating for supportive policies. We also found that financing and financial management is one of the important challenges for SAEs. Sources of funds for most of the SAEs dominantly come from self-generated funds. Government support and facilitation to ease the application and approval of agricultural loans would help to enhance SAE's access to and use of loans. Extension and outreach programs enhancing financial and fund management skills could improve SAE's ability to access and use loans and enhance financial literacy. Education and entrepreneurship knowledge are important components of farm businesses. Based on our ten standard entrepreneurship knowledge questions, we found that SAEs have some level of knowledge and understanding of entrepreneurship, but the extent of knowledge is heterogeneous. On average, they self-rated themselves as having 'little' entrepreneurship knowledge. Finally, our study suggests that the SAEs would benefit from training and capacity building on financial and risk management. These financial and risk management training courses could include a variety of hands-on tools to combat production risks, marketing, and price risks. The SAE's awareness of the types of risks throughout the supply chains and business processes could help them remain viable. While the use of the internet, social media, digital platforms, and applications are important tools in the changing context, the adoption of these as part of the SAE's management and business practices would support their business plan and operations to foster progress.

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