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*International Food and Agribusiness Management Review*  
Volume 16, Issue 2, 2013

## **Diversification Decisions in Agriculture: The Case of Agritourism in Kansas**

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### **Abstract**

The thesis of this paper is that diversification decisions may be described by a three-stage sequential framework. The framework begins with the choice between on-farm and off-farm investments and ends with the selection of activities that decision-makers believe would be more effective in addressing their needs. The paper tests this thesis using data collected from participants in an agritourism workshop in Kansas. The test begins at the framework's second stage, where decision-makers decide between intensifying current operations to take advantage of scale and/or size economies, and diversifying to deploy slack resources in other businesses. The third stage involves the selection of alternative enterprises to meet decision-makers' desired objectives. It is hypothesized that the second stage decision choice is defined by decision-makers' demographic characteristics and their motivational factors. Demographic characteristics, such as age and education, also serve as proxies for decision-makers' embedded capabilities. The results show that for this case study, all demographic characteristics but gender are statistically significant, with education exhibiting the highest positive impact on the decision to diversify at the second stage. Economics was also determined to be a positive motivating factor in the intention to choose marketing, tourism and fishing and hunting enterprises at the third stage. However, personal satisfaction was a positive motivating factor for all enterprises except fishing and hunting. The impact of community as a motivation for any of these enterprises was split. It was negative for marketing and positive for accommodation and food service and statistically insignificant for tourism and fishing and hunting. The study provides an empirical foundation for exploring the diversification decision process and choices among smallholder producers as well as challenging policymakers to carefully determine how these decisions and choices actually get made given people's situations and characteristics. .

**Keywords:** diversification, agritourism, value-added agriculture, agricultural entrepreneurship

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## Introduction

The 2007 Census of Agriculture (NASS/USDA, 2010) indicated that while 54.4 percent of agricultural producers in the U.S. considered farming/ranching as their primary occupation in 1987, only 45.1 percent do so three decades later. The share of farm income emanating from farm operations has also been declining. For instance, it averaged 41.6 percent between 1960 and 1969 and only 10.8 percent between 2000 and 2009 (Economic Research Service/USD, 2011). Another interesting observation is that although average farm household incomes increased through the decades, they did so at a decreasing rate; from 142 percent between the average in the 1960s and 1970s to 58.57 percent between 1990s and the 2000s in nominal terms.

Some producers have responded to the prevailing income challenges by expanding their operations to gain scale and/or size economies while others have sought off-farm employment. Unfortunately, other producers are unable, for one reason or another, to do either. For them, policymakers have tried to encourage them to diversify their operations into on-farm ventures (Morehardt et al. 2004). These ventures encompass value addition, farmers' market, agritourism and other similar ventures. Bernardo et al. (2004) note that the attractiveness of agritourism to producers rests on its potential to increase farm incomes and enhance utilization of farm resources. Agritourism has also been found to have the potential to enhance local communities when visitors purchase goods and services beyond those they find on the destination farm (Hamzah et al., 2012). Compared to Europe, however, agritourism is still a fringe activity in the U.S. For example, while it contributes to the incomes of nearly a third of British farmers and even higher in France and Italy (Bernardo, 2004), only about 2.5 percent of U.S. farmers receive income from agritourism activities (Brown and Reader, 2007). The offerings of these farms are defined to a large extent by their location. For example, farms offering recreation agritourism tend to be located closer to cities in order to leverage the large human population while those offering hunting and similar products tend to be in rural areas.

The agritourism participation rate in Kansas is lower than the national average, estimated at about 1.4 percent in 2007 (NASS, 2010). However, the proportion of farms receiving \$5,000 or more from agritourism activities increased from 9 percent in 2002 to 21 percent by 2007. What is more remarkable is the change in the distribution of total revenue from agritourism activities. Total revenue from agritourism activities in Kansas was about \$2.9 million in 2002 and farms receiving less than \$5,000 from these activities accounted for about 40.6 percent of this amount. By 2007, the total revenue from agritourism in Kansas had increased to about \$8.1 million and the share of those receiving less than \$5,000 had declined to about 12.2 percent. Thus, while relative participation may be declining, the contribution to agritourism to the incomes of participating farms is increasing.

It is hypothesized that producers choosing to adopt agritourism and other on-farm ventures exhibit certain characteristics, and these characteristics influence their diversification decisions. This research develops a framework and tests this hypothesis using a target group of Kansas producers with particular interest in agritourism. The size and localized nature of the sample suggests that the results must be interpreted as insights that could contribute to the development of the appropriate strategies to help producers and policymakers considering agritourism as vehicles for addressing smallholder producers' income challenges in regions resembling Kansas.

## Literature Review

The results from studies on diversification generally point to improved performance when firms diversify into related businesses and decreased performance when firms diversify into unrelated businesses (Stern and Henderson 2004; Bowman and Helfat 2001). For small businesses, the rationale for diversification may be more nuanced than strict profitability. It may be a decision-maker's last ditch effort to ensure survival or maintain a particular way of life. This is particularly true in small agricultural businesses where the business contributes significantly to its owner's economic and social identities.

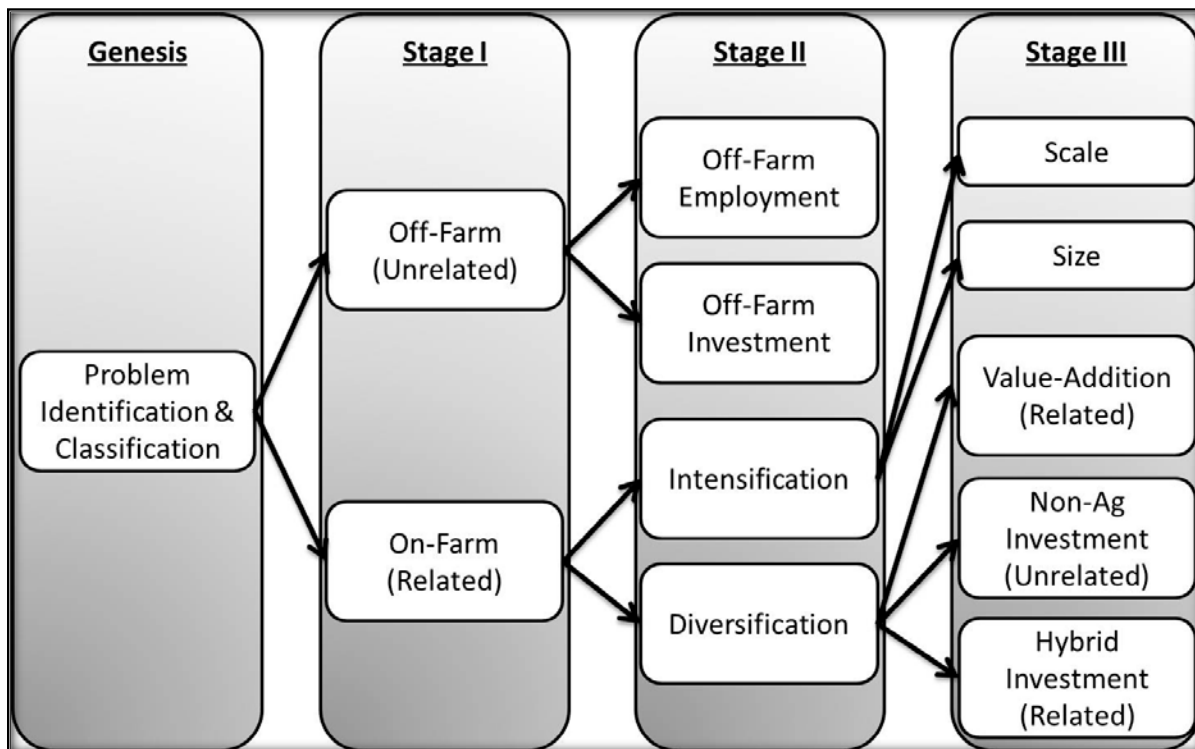
Agritourism has been seen as one opportunity offering producers a significant opportunity to differentiate themselves, and in so doing, build and sustain a competitive advantage in their chosen markets (Colton and Bissix 2005). Various public policies, including grants and education programs, have contributed to a boom in agritourism and other diversification initiatives in Europe (Walford 2003; Morgan et al. 2010), North America (Nickerson et al. 2001; McGehee 2007; Leroux 2001), and Australia (Ollenburg and Buckley 2007). There are also signs of an emergence of agritourism initiatives in Africa (van der Merwe 2012) and Asia (Kumbhar, 2011). Additionally, value-added initiatives are emerging as alternative business opportunities for small producers in both developed and developing countries. For example, Lawal et al. (2011) report that Nigerian cashew producers who processed their cashews into juice had incomes that were significantly higher than those who did not. Likewise, Biarari et al. (2006) show higher economic value for turmeric producers in India who produced consumer-ready products. These initiatives are seen as not only helping the farm families involved in them but also contributing towards local and regional economic development (Brenes et al. 2011).

While the decision to embark on value addition is often straight-forward, i.e., increasing the value producers get from their production, the decision to pursue agritourism is often more complex. As a result, factors motivating agritourism ventures have dominated the literature (Nickerson et al. 2001; Mace 2004; McGehee and Kim 2004; Ollenburg and Buckley 2007). Nickerson et al. for example, identify three motivating factors for agritourism ventures in Montana: economic; social; and external. Economic factors included income generation and minimization of income variability while social factors encompassed meeting new people and building new relationships. External factors were defined to include concerns about loss of government subsidies to agriculture and a desire to educate consumers about agriculture. The study showed that economic factors were the primary motivators for Montana producers to diversify into agritourism and social factors were secondary. Contrarily, Ollenburg and Buckley (2007) show that social factors were marginally more important than economic factors in Australia. Their results on Australian producers were similar to those of McGehee and Kim (2004) who replicated the Montana study by Nickerson and his colleagues in Virginia. McGehee and Kim conclude that diversification decisions are hardly motivated by a single factor and that any attempt to categorize motivating factors into one or another category is not only inaccurate in context but also in fact.

### Conceptual Framework

A producer’s decision to diversify, like all human actions, is triggered by the recognition of an untenable situation (von Mises 1966). The diversification decision may be structured into a number of distinct steps, as described by the human action literature (von Mises 1966). First, the producer must be able to conceive of at least one alternative solution that is believed to have the potential to address the current untenable situation. Second, the producer must have access to or control over resources that are required to implement the preferred alternative solution. Finally, the producer must believe in his capability to create the preferred situation by using available resources. The foregoing process has been discussed extensively in the literature (von Mises 1966).

Suppose now that a producer’s household income is decreasing and suppose the producer decides to do something about this observation. Figure 1 illustrates the alternative decision paths that may be pursued by the producer after this recognition. The first decision (Stage I) involves a consideration of on-farm versus off-farm solutions. It is assumed from here on that the producer has both tangible and intangible resources – such as labor, land, equipment, knowledge and creativity—which may be deployed in any chosen enterprise. Choosing the off-farm solution path directs the producer towards securing off-farm employment and deploying at least some of current labor away from the farm, as seen in the 54 percent of producers who have off-farm employment as their primary occupation (Economic Research Service 2011). An on-farm solution will be based on an expectation that deploying labor and other resources on-farm would provide higher benefits given the producer’s realities and other constraints.



**Figure 1.** Conceptual Framework of Decision Paths to Diversification Investments

Selecting an on-farm solution engenders a dichotomous decision rule in the second stage of the decision-making process: diversification or intensification solution. Under intensification, the producer would choose to intensify resource utilization in current activities, hoping to increase efficiency through scale and/or size economies. Under diversification, the decision-maker chooses instead to invest available slack resources in farm-related or non-farm-related enterprises with an expectation for higher monetary and/or non-monetary benefits. Stage III involves that selection of specific activities or enterprises to invest in to achieve the desired results.

Assuming resources as given and capabilities as embedded in an individual's characteristics (Wagle 2009), a producer's path selection process is modeled as a function of his demographic characteristics and motivational factors. Demographic characteristics include age, education, family situation, and income. Berglann et al. (2011), in exploring the origins of entrepreneurial action in Norway, showed that gender, income, children and education all mattered. Similarly, Nga and Shamuganathan (2010) report the importance of demographic factors in influencing entrepreneurs' start-up intentions. These variables have also been found to be true in agricultural diversification decisions (McElwee and Bosworth 2010).

Motivational factors are often invisible external and internal antecedents defining intent and action (Deci 2000; Locke and Latham 2004; Carsrud and Brannback 2011). Motivation for entrepreneurial action may exhibit social embeddedness and the search for personal satisfaction that may be stronger than economic motivations, such as income (Langevang et al. 2012). Nickerson et al. (2001) and McGehee (2007) as well as a few others have explored the role of motivation in starting new non-traditional agricultural ventures, such as agritourism. These studies show that motivation variables do influence decisions and economic motivations are not always the primary drivers (McGehee and Kim 2004).

## **Data and Methods**

The early 2000s were one of the toughest periods in U.S. production agriculture in recent memory. It prompted various government agencies and land grant universities to embark on finding innovative approaches to help producers deal with declining incomes. Kansas Department of Commerce collaborated with the Ag Innovation Center at Kansas State University to offer business development education workshops and one-on-one consulting services to Kansas producers interested in diversifying their operations. The data for the research were collected using a structured questionnaire at one of these workshops in 2004. The questionnaire had been tested for reliability and validity at two earlier workshops. Workshop participants received a survey questionnaire in their registration packet and were instructed to complete the questionnaire and return it to the registration desk before the end of the conference. A total of 120 out of the 187 distributed questionnaires were turned in, implying a response rate of 64.2 percent. Eight questionnaires were discarded for incompleteness, leaving 112 for analysis.

It is important to acknowledge the limited nature of the data because all participants were Kansas producers. Additionally, by choosing to attend an agritourism workshop, these respondents had revealed their bias towards a diversification strategy. As a result, the ensuing results must be interpreted carefully as a special case study of Kansas agricultural producers with specific

interest in agritourism. Applications of these results must be within the context of providing insights into the role and effects of the explanatory variables in determining choices and the importance of evaluating local conditions to ensure accuracy.

The study was designed to test the conceptual process underlying the diversification decision model presented in Figure 1. Because the respondents had chosen to attend a business development workshop, their implicit recognition of the untenable situation in which they find themselves may be assumed. Furthermore, because the workshop was advertised as an agritourism workshop, it is fair to assume participants' interest in exploring on-farm diversification opportunities, such as agritourism. The analyses, therefore, begin at Stage II of the model.

Any respondent's Stage II decision is treated as a binary choice,  $D_i$ , with diversification as the outcome of interest. Hence, the probability,  $p_i$ , that a decision-maker chooses to diversify may be defined as a function of the decision-maker's demographic characteristics,  $X_i$ , with coefficient estimates  $\beta$ , presented as follows:

$$(1) \quad p_i = \Pr(D_i = 1) = F(x_i'\beta) = \frac{e^{x_i'\beta}}{1 + e^{x_i'\beta}}$$

The demographic characteristics included here are gender, family income, number of children in the household, adults in the household, respondent's age and education level attained and the extent to which the respondent considers him or herself an entrepreneur. All the variables, with the exception of age and education level, are categorical.

Stage III decision choices have been studied extensively (Brandth, 2010; Barbieri and Mshenga, 2008; Bowen et al. 1991). In this research, Stage III analyses focused on determining the effect of demographic and motivation variables on the probability that a decision-maker would select a particular enterprise type as a diversification solution. The choice problem is modeled as a binomial logistic problem for each of the identified enterprises emanating from the survey.

The relevant summary statistics are presented in Table 1. It shows that about 63.4 percent of respondents were male and respondents' average age was about 49.4 years. Not all respondents identified agricultural production as their primary occupation because only 73.2 percent identified themselves as producers. Also, while 33.9 percent indicated they were currently operating an agritourism venture, 61.6 percent of respondents indicated an intention to embark on an agritourism venture. The average contribution of agritourism to the household income of those currently operating agritourism ventures was 17.7 percent. However, the average expected contribution of agritourism to household income of those intending to operate an agritourism venture was 26.62 percent. That those intending to diversify expect higher contributions to income than incumbents' realized is consistent with earlier findings that show entrepreneurs' expectations consistently exceed realized performance (Lowe and Ziedonis 2006).

The average years of formal education was approximately 13.7 years, with a standard deviation of about 3.2 years. This implied that the average education was a year or so above high school, suggesting some college. About 33.9 percent had one or more children younger than 18 years in

the household. Contrarily, 64.3 percent of respondents indicated having two adults in their household, including themselves while only about 8.9 percent indicated having three or more adults in the household. This implied that about 26.8 percent of respondents had only one adult in the household. The average household income – includes off-farm incomes – was \$74,828. The annual household income of about 22 percent of respondents was \$35,000 or less even though 77.7 percent of respondents had incomes in excess of \$35,000. These income characteristics of the sample suggest that the majority of respondents were essentially small producers. Respondents' entrepreneurial bend was determined using their response to the question: "How strongly do you agree with the statement 'I see myself as an entrepreneur?'" on a scale of 1 (strongly disagree) to 5 (strongly agree). The distribution of the responses led to developing entrepreneurial bend in a binary variable, with about 81.25 percent of respondents suggesting they lean entrepreneurial.

**Table 1.** Summary Demographic Statistics

Variable	N	Mean	Std. Dev.	Min	Max
Producer	112	0.732	0.445	0	1
Gender (1 = Male)	112	0.634	0.484	0	1
Intention to Diversify	112	0.616	0.489	0	1
Current Agritourism Operator	112	0.339	0.476	0	1
Operating Duration	37	8.482	7.329	0.67	32.00
Agritourism contribution to household Income	37	0.177	0.154	0	0.55
Expected contribution of Agritourism to Household Income	92	0.266	0.169	0	1
Education (Years)	112	13.696	3.424	6	18
Income (0 = \$35,000 max; 1 = More than \$35,000)	112	0.777	0.418	0	1
Children (0 = None ; 1 = At least one child)	112	0.339	0.476	0	1
Adults (Reference = 1)					
2 Adults	112	0.643	0.481	0	1
3+ Adults	112	0.089	0.286	0	1
Age (Years)	112	49.402	9.738	23.0	73.0
Entrepreneurial Bend (0 = No; 1 = Yes)	112	0.813	0.392	0	1
Marketing	112	0.384	0.489	0	1
Accommodation	112	0.473	0.502	0	1
Tourism	112	0.563	0.498	0	1
Food Service	112	0.205	0.406	0	1
Fishing & Hunting	112	0.196	0.399	0	1

To arrive at respondents' enterprise intentions, the survey asked them to identify the specific enterprises they were considering. Their responses were organized into the five enterprise groups presented in Table 1. Marketing enterprise covers activities selling farm produce or value-added products on farm, in road-side stalls and/or at farmers' markets while the accommodation enterprise encompasses the provision of on-farm accommodation, such as bed and breakfast inns or campgrounds. On-farm tourism involves providing experience, entertainment and/or education for visitors to the farm property, including visitors participating in farming and ranching activities, hay rides, horseback riding, petting zoo, or corn mazes. Food service involves the preparation and serving of food for consumption in a restaurant-style format on the farm property while fishing and hunting activities provides guests with access to the farm



property to fish and hunt in natural and/or created environments. The results show that about 38.4 percent indicated an intention to embark on marketing enterprises compared with 56.3 percent who indicated an intention to invest in on-farm tourism activities. While 47.3 percent indicated an intention to pursue an accommodation enterprise, food service and fishing and hunting enterprises were the intentions of about one-fifth each of respondents. That the sum of these distributions exceeds unity implies that respondents selected more than one enterprise as their intentions in some cases.

## Stage II Results and Discussion

The probability of choosing to diversify ( $D = 1$ ) in the Stage II of the conceptual framework is modeled thus:

$$(2) \quad \Pr(D = 1) = \Pr(\beta_0 + \beta_g Gen + \beta_i Inc + \beta_c Chd + \beta_a Adult + \beta_{ed} Ed + \beta_{ag} Age + \beta_{ent} Ent + \varepsilon)$$

where *Gen*, *Inc*, *Chd*, *Adult*, *Ed*, *Age* and *Ent* represent a respondent's gender, household income, number of children under 18 years in the household, number of adults in the household, respondent's age, and the respondent's self-described entrepreneurial bend. The regression error term is defined by  $\varepsilon$ . The logit regression routines in STATA/IC 12 were used to determine the estimates, conduct related tests and calculate the marginal effects of the covariates.

The dependent variable of Equation (2) defines those intending to diversify their operations as  $D = 1$  and those who do not intend to diversify as  $D = 0$ .<sup>1</sup> It is hypothesized that the likelihood of males diversifying will be no different from that of females because the challenges facing farm household are not differentiated by gender. On the other hand, higher income earners are hypothesized to be more likely to consider diversification because of their presumptions about their capabilities. The likelihood of diversification is hypothesized to decline with an increasing number of adults in the household because of the potential for adults to earn off-farm income to supplement farm income. Contrarily, the presence of children in the household may be considered another chore that needs to be undertaken, making the likelihood of diversifying less likely. Finally, it is hypothesized that education, age and entrepreneurial bend would all increase the likelihood of diversification.

Table 2 presents the binary logit model regression results, reporting the odds ratio of the covariates on the probability of choosing to diversify. The estimated overall model described in Equation (2) is significant at the 1 percent level ( $F(8, 103) = 48.79$ ,  $\text{Prob} > F = 0.000$ ). Its Pearson goodness-of-fit test was significant at the 1 percent level ( $F(9, 102) = 151.77$ ) while its Wald test of overall significance of included variables was also significant at the 1 percent level ( $F(8, 110) = 52.11$ ,  $\text{Prob} > F = 0.000$ ), suggesting that none of the variables needed to be excluded. This is supported by the model's mean variance inflation factor (VIF) was 1.29 and its

<sup>1</sup> Respondents who are currently operating an agritourism enterprise but indicated an intention to diversify their operations are included in  $D = 1$ . However, those who did not indicate an intention to diversify were not.

condition number was 24.03. The rules of thumb are that VIF of less than 10 and condition numbers of less than 30 indicate the non-existence of multicollinearity problems.

Table 2 shows that all variables are statistically significant at the 1 percent level except entrepreneurial bend, which was significant at the 5 percent level, and gender, which was not significant. This implies that respondents intending to diversify were significantly different from those who were not intending to diversify in all situations except with respect to gender. This result is in line with the expected result hypothesized above. The point estimates in the table show that the odds ratio of households with income in excess of \$35,000 choosing to diversify is about 1.68 times higher than that of households with no more than \$35,000. Similarly, the odds of diversifying for respondents who indicated they were entrepreneurial are about 1.41 times higher than that of those who indicated that they were not entrepreneurial. For every year's increase in a respondent's age, the odds ratio of diversification increases by about 9 percent while every year's increase in a respondent's education increases the odds ratio of diversification by 23.48 percent. Thus, as hypothesized, these demographic characteristics, which also capture respondents' embedded capabilities, increase the probability of diversifying. With respect to adults in the household, the results indicate that the odds of diversifying when there are two adults is 2.32 times higher than when there is only one adult in the household. However, the odds of diversifying when there is only one adult in the household 2.09 times higher than when there are three or more adults in the household. This again confirms the hypothesis that increasing number of adults in the household reduced the probability of diversification. Likewise, the hypothesis that having children in the household would adversely affect the probability to diversify was confirmed because the odds of diversification when there were no children in the household was about 1.35 times higher than the odds of having children. In other words, households without children are more likely to diversify than those with children, an outcome that is statistically significant at the 5 percent level.

**Table 2.** Logit Results for the Intention to Diversify into Agritourism (N = 112)

<b>Variables</b>	<b>Odds Ratio</b>	<b>Linearized Std. Err.</b>	<b>t</b>	<b>P&gt;t</b>
Gender (1 = Female)	1.036	0.12	z	0.76
Income (0 = \$35,000 max; 1 = More than \$35,000)	1.685***	0.22	3.94	0.00
Children (0 = None ; 1 = At least one child)	0.742**	0.09	-2.36	0.02
Adults (Reference = 1)				
2 Adults	2.327***	0.30	6.57	0.00
3+ Adults	0.479***	0.11	-3.14	0.00
Education (Years)	1.235***	0.02	11.18	0.00
Age (Years)	1.091***	0.01	13.96	0.00
Entrepreneurial Bend (0 = No; 1 = Yes)	1.412**	0.21	2.35	0.02
Intercept	0.000***	0.00	-16.75	0.00

**Note.** \*\*\* = 1 percent level of significance; \*\* = 5 percent level of significance.

## Stage III Results and Discussion

It was argued from Figure 1 that after Stage II (when producers choose between diversification and intensification), producers proceed to select enterprises from available alternatives. It has hitherto been argued that the enterprise choices available in a producer's opportunity scope are determined by their demographic characteristics and their motivating factors. Because motivations tend to be invisible, a Likert approach was used to elicit them from respondents using the extent to which they agreed with 12 statements about their reasons for diversifying on a scale of 1 (totally disagree) to 5 (totally agree). These 12 indicators of motivating factors for agritourism were reduced to three factors using principal component analysis by setting the maximum Eigenvalue for inclusion as unity. A summary of the variables and the factor loadings generating orthogonality are presented in Table 3. These three components had an orthogonal Varimax rho of 0.685, implying that they explained about 68.8 percent of the variance in the 12 variables. The overall scale reliability coefficient was 0.883 and the overall Kaiser-Meyer-Olkin measure of sampling adequacy was 0.849, described as "meritorious" by STATA (2009, 309).

**Table 3.** Principal Component Loadings after Varimax Rotation for Components with Minimum Eigenvalues = 1

Statement	Mean	S.E.	Component Factors		
			Community	Economics	Personal Satisfaction
1 Contribute to community survival	4.02	0.10	<b><u>0.51</u></b> *	-0.01	-0.20
2 Preserve my culture	3.88	0.09	<b><u>0.37</u></b>	-0.05	0.12
3 Ensure own economic survival	3.24	0.10	-0.15	<b><u>0.56</u></b>	0.06
4 Generate new income	3.55	0.11	0.02	<b><u>0.58</u></b>	-0.09
5 Help community prosper	3.86	0.09	<b><u>0.44</u></b>	-0.16	0.01
6 Preserve agriculture	4.21	0.09	<b><u>0.37</u></b>	0.06	0.08
7 Personal satisfaction	3.62	0.09	0.00	-0.05	<b><u>0.60</u></b>
8 Not enough agricultural income	3.99	0.10	0.25	<b><u>0.39</u></b>	-0.15
9 Work at home instead	3.74	0.10	0.05	<b><u>0.38</u></b>	0.16
10 Get more family time	3.90	0.09	0.15	0.15	<b><u>0.33</u></b>
11 Meet new people	3.57	0.09	-0.05	0.00	<b><u>0.63</u></b>
12 Exploit an opportunity	4.15	0.09	<b><u>0.39</u></b>	0.01	0.12

**Note.\*** Bold and underlined loadings indicate the statements that are loading specific component variables.

Setting the absolute principal component loadings threshold at 0.30, the 12 variables were used to classify the components as follows: Community Survival, Personal Economic Well-Being, and Personal Satisfaction. Table 3 shows that Community loaded Statements 1, 2, 5, 6 and 12 while Personal Economic Well-Being loaded Statements 3, 4, 8 and 9. Finally, Personal Satisfaction loaded 7, 10 and 11. These three components defined the motivation variables used as predictors of enterprise choices in Stage III.

The third stage of the diversification framework involves the selection of enterprises that are expected to satisfy the decision-maker's objective. Recall that the survey revealed five major enterprise groups: Marketing; Accommodation; On-farm Tourism; Food Service; and Fishing

and Hunting. Marketing enterprises, accommodation enterprises and On-farm tourism may all be executed with resources that are already available as slack resources on the farm given its current production activities. This commonality allows the modeling of these three enterprises with the same right-hand side variables. To operate a food service venture, on the other hand, requires investment in kitchen equipment that are often unavailable in a domestic kitchen and the procurement of license that ensures specified food safety protocols are followed. These potential costs suggest that decision-makers are likely to consider the potential contribution of these ventures explicitly in their choice to embark on a food service venture. Thus, the food service venture choice is modeled with expected contribution to household income from the venture instead of income as an explanatory variable. Finally, the hunting and fishing enterprise differs from all the others because it is the only one that has to be completely outdoors and unrelated to the primary functions of the farm. Thus, while tourism may be outdoors, it always involves the normal operations of the farm – planting corn mazes, providing horseback riding, petting farm animals, etc. Preliminary analysis of the data revealed the special role gender played in the selection of fishing and hunting enterprise and this is recognized in the modeling process.

Enterprise choice in each case is modeled as a dichotomized decision. Missing responses to these options were treated as 0 on the assumption that the decision-maker would have selected it if the choice had been attractive. Table 4 shows the results for Marketing, Accommodation and On-Farm Tourism enterprises. Among this study's participants, the results show that the odds ratio of a male choosing any of these enterprises is lower than a female choosing them. For example, the odds ratio of females choosing to embark on a marketing venture is only about 1.52 times higher than the odds ratio of males doing same. Similarly, the odds ratio of females choosing a tourism venture is 1.75 times higher than the odds ratio of males choosing a tourism venture. Both estimates are statistically significant at the 1 percent level. A unit increase in the economic motivation factor increases the odds ratio of choosing to start a marketing enterprise by 1.16 times more than choosing not to start a marketing enterprise. Similarly, the odds ratio of choosing to start a tourism enterprise is 1.21 times higher than choosing not to with a unit increase in the economic motivation factor. However, the odds ratio of not choosing an accommodation venture is about 1.53 times higher than the odds of choosing it with a unit increase in the economic motivation factor. While this is statistically significant at 1 percent, the former ones are both significant only at the 5 percent level. Being in the higher income category instead of the lower one increases the odds ratio of starting a tourism enterprise by 1.84 times. However, the odds ratio of not starting an accommodation venture is about 1.81 times higher than the odds ratio of starting one when the decision-maker is in the higher income category.

Are those in the higher income category more or less likely to be motivated by economics? This question is explored by constructing an interaction variable between income and the economic motivational factor. It is driven by the hypothesis that people in the higher income category would be less likely to be motivated by economics. Thus, the coefficient on the interaction variable is expected to be less than unity. The results show that the odds ratio of this interaction is less than unity and statistically significant for both marketing and tourism and positive but not statistically significant for accommodation. This means that increasing economic motivation decreased the odds of people in the higher income category embarking on either marketing or tourism enterprises vis-à-vis not embarking on either of these enterprises. The hypothesis that

the interaction between income and economic motivation will be less than unity cannot be rejected in the case of marketing and tourism.

The odds ratio of a unit increase in the satisfaction motivation factor is positive for all three enterprises at the 1 percent level of significance. For example, its effect on selecting accommodation is about 1.35 times higher than the odds ratio of not selecting accommodation. The effect of the community motivation factor is positive and statistically significant for accommodation at the 1 percent level and negative and significant at the 5 percent level for marketing. It is positive but not statistically significant for tourism. The table also shows that having three adults in the household instead of one increases the odds of choosing to start any of these enterprises. Age has a negative effect on developing any of these businesses, even though it was not significant in the case of marketing. Also, having children in the household does not statistically alter the odds of launching any of these businesses compared to not having children. All three models fit well, with F values that are significant at the 1 percent level. Also, testing misspecification using the Linktest routine in STATA suggested that there was no misspecification in all three cases considered here.

**Table 4.** Logit Model Results for Marketing, Accommodation and Tourism Enterprises

Odds Ratio	Marketing	t-value	Accommodation	t-value	Tourism	t-value
Gender (1 = Male)	0.659***	-4.04	0.783**	-2.25	0.571***	-5.26
Economic	1.156**	2.00	0.651***	-3.34	1.206***	2.53
Income (0 = \$35,000 max; 1 = More than \$35,000)	0.937	-0.51	0.552***	-3.99	1.843***	4.85
Economic # Income	0.805***	-2.83	1.026	0.20	0.764***	-3.18
Children (0 = None ; 1 = At least one child)	0.880	-1.03	1.064	0.51	0.851	-1.30
Adults (Reference = 1)						
2 Adults	0.940	-0.48	0.977	-0.18	1.145	1.12
3+ Adults	4.548***	7.14	3.438***	6.13	7.654***	7.15
Age (Years)	0.992	-1.40	0.945***	-7.62	0.988**	-2.03
Education (Years)	1.000	-0.01	0.827***	-10.69	1.010	0.55
Satisfaction	1.141***	2.95	1.348***	6.22	1.121***	2.89
Community	0.904**	-2.48	1.224***	5.53	1.045	1.16
Intercept	1.195	0.41	317.348	10.33	1.523	0.97
F(11, 100)		9.01		20.59		10.19
P > t		0.00		0.00		0.00

**Note.** \*\*\* = 1 percent level of significance; \*\* = 5 percent level of significance.

Table 5 presents the results of the logit regression for the intention to embark on a food service enterprise. As seen in the previous results, the odds ratio of males is less than unity, implying that males are less likely than females to embark on tourism enterprises. Although the economic motivation factor has a negative effect on the intention to develop a food service enterprise, it was not significant. Likewise, while the expected contribution of the venture to household income presents a positive effect, it was not statistically significant. However, the interaction between these two variables has a negative effect on the intention to embark on a food service enterprise, and its coefficient is statistically significant at the 1 percent level. The odds ratio of

having one or more children in the household on the intention to develop a food service enterprise is more than twice higher than that of having no children in the household and significant at the 1 percent level. The odds ratio of intending to develop a food service enterprise when there one adult instead of two in the household is more than two time higher than that of not intending to develop a food service enterprise. This was significant at the 1 percent level. Contrarily, the odds ratio of having three or more adults in the household is not different from the odds of having only a single adult when deciding to start a food service business. Age and education both have negative effects on the intention to develop a food service enterprise, and are both significant at the 1 and 5 percent levels respectively. What is most revealing is that the odds ratio of both satisfaction and community motivation factors are positive and significant. This would suggest that for the survey participants with intentions to develop a food service enterprise, personal satisfaction and community are the motivating factors, not personal economic wellbeing. The overall model was significant at the 1 percent level and the Linktest routine in STATA indicated that it was not misspecified.

**Table 5.** Logit Model Results for Food Service Enterprise

Odds Ratio	Food Service	t-value
Gender (1 = Male)	0.558***	-4.46
Economic Expectation	0.980	-0.28
Economic # Expectation	1.963	1.56
Children (0 = None ; 1 = At least one child)	0.511***	-2.92
Adults (Reference = 1)	2.064***	4.67
2 Adults	0.480***	-5.00
3+ Adults	1.400	1.31
Age (Years)	0.976***	-3.3
Education (Years)	0.951**	-2.39
Satisfaction	1.354***	5.39
Community	1.155***	3.1
Intercept	2.236	1.44
F(11, 100)		16.59
P > t		0.00

**Note.** \*\*\* = 1 percent level of significance; \*\* = 5 percent level of significance.

The final enterprise considered was fishing and hunting and the results of the logit estimation of the model are presented in Table 6. The table shows that the odds ratio of the intention to develop a fishing and hunting enterprise for males is about 1.6 times higher than that of females. This estimate is significant at the 1 percent level. This enterprise is the only one for which the odds of males is higher than that of females for this sample of respondents. The results also show that the economic motivation factor and its interaction with the income are both statistically significant but income by itself is not. Thus, unlike the previous results, people in the higher income category are positively affected by economic motivation. Having at least one child in the household yields an odds ratio of the intent to develop a fishing and hunting enterprise of 1.81 times higher than having no child in the household, significant at the 1 percent level. This result is different from those obtained for the first three enterprises but similar to that for food service

enterprise. Unlike the other enterprises though, satisfaction and community are not motivating factors for the fishing and hunting enterprise. Similarly, unlike the other enterprises, age has a positive, small, 3.8 percent—but statistically significant impact on the intention to establish a fishing and hunting enterprise. The odds ratio of developing a fishing and hunting enterprise resulting from a unit increase in education years is about 91.2 percent of the odds ratio of not developing a fishing and hunting enterprise. This estimate is determined to be statistically significant at the 1 percent level. Again, the odds ratio of embarking on a fishing and hunting enterprise when there are two adults in the household is estimated to be 1.57 times higher than the odds ratio of having only one adult in the household, significant at 1 percent. However, the odds ratio of doing the same when there are three or more adults is about 1.22 times higher but not statistically significant from the odds ratio of having only a single adult. The estimated model was found to be significant at the 1 percent level and was determined not to suffer from misspecification.

**Table 6.** Results of Logit Model Estimation for Fishing and Hunting Enterprise

Odds Ratio	Odds Ratio	t-value
Gender (1 = Male)	1.600***	3.46
Economic	1.289***	2.76
Economic # Income	0.630***	-4.28
Income (0 = \$35,000 max; 1 = More than \$35,000)	0.861	-0.96
Children (0 = None ; 1 = At least one child)	1.810***	3.80
Adults (Reference = 1)		
2 Adults	1.573***	3.30
3+ Adults	1.218	0.81
Age (Years)	1.038***	5.84
Education (Years)	0.912***	-4.49
Satisfaction	0.999	-0.02
Community	0.954	-1.01
Intercept	0.062	-5.81
F(11, 100)		10.50
P > t		0.00

**Note.** \*\*\* = 0.01 level of significance

## Conclusion

The paper sought to contribute to the literature on diversification decision-making. It developed a three-stage decision framework that was assumed to be predicated on the recognition of an untenable situation by a decision-maker. That untenable situation in this paper was declining farm incomes in the United States, especially among smallholder producers. Finding themselves in this situation, the first stage decision these producers have to make is between taking off-farm employment and looking for on-farm opportunities. If they choose the on-farm option, then the second stage decision is about intensifying their traditional agricultural production to gain size and/or scale economies or diversify by investing available slack resources in non-traditional activities, such as agritourism. If they choose to diversify, then the third stage decision is selecting among alternative enterprises the ones they believe would produce the highest net benefit—both pecuniary and non-pecuniary—for them.

Using data from participants at a business development workshop on agritourism, this paper tests the factors that influence the choices that are made at the second and third stages of the diversification model presented here. It was assumed that the presence of these respondents at a workshop on agritourism in Kansas suggests they have already made their Stage I choice of considering on-farm investments to address their identified problem. However, because of this characteristic of the participants in the research and the smallness of the data, the results must be interpreted more as a case study providing insights into the effectiveness of the diversification model and a foundation for broader research to test its veracity and broader application.

The study's results indicate that with the exception of gender, Stage II decision to diversify is influenced by the demographic characteristics of the decision-maker and their perception of their entrepreneurial bend. That gender was not significant at this stage was expected because the decision to intensify or diversify was hypothesized to be independent of gender. The results, however, also suggest that having more than two adults in the household reduced the likelihood of diversifying. This is because the opportunity for off-farm income increases under this situation, reducing the odds of diversification. For this group of respondents, perceiving themselves to be entrepreneurial increases the odds ratio of diversifying.

Stage III results indicated that the factors influencing the intention to invest in specific enterprises differed across enterprises for this group of respondents. For example, while females were more likely to indicate an intention to invest in marketing, accommodation, tourism and food service enterprises, the odds of males indicating an interest in fishing and hunting enterprises was higher. Also, having three or more adults in the household positively influenced the intention to invest in marketing, accommodation and tourism ventures but not food service and fishing and hunting. Economics was a motivating factor in the intention to invest in all enterprises with the exception of food service. However, its impact on accommodation was negative. Personal satisfaction was also a motivating factor for all enterprises except fishing and hunting. Community as a motivation factor was for all enterprises except tourism and fishing and hunting. These results support previous ones in the reviewed literature. However, they also show that diversification decisions are influenced by numerous factors, internal and external to the decision-maker. As such, they provide further evidence of the complexity of the role of motivation in entrepreneurial action (Langevang et al. 2012). Thus, it is critical to carefully determine how these factors act independently and together to influence decisions and choices in specific situations and circumstances. It is crucial to appreciate how the effects change given location and available options in order to effectively develop strategies with high probabilities of success.

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