

# Journal of Rural and Community Development

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**Authors:** Sarah S. Beach & László J. Kulcsár

**Citation:**

Beach, S. S., & Kulcsár, L. J. (2015). It often takes two income earners to raise a farm: On-farm and off-farm employment in Kansas. *The Journal of Rural and Community Development*, 10(4), 54-74.



**BRANDON  
UNIVERSITY**  
Founded 1899

**Publisher:** Rural Development Institute, Brandon University.

**Editor:** Dr. Doug Ramsey



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# **It Often Takes Two Income Earners to Raise a Farm: On-farm and Off-farm Employment in Kansas**

**Sarah S. Beach**

Abraham Baldwin Agricultural College  
Tifton, Georgia, United States  
[sbeach@abac.edu](mailto:sbeach@abac.edu)

**László J. Kulcsár**

Kansas State University  
Manhattan, Kansas, United States  
[kulcsar@ksu.edu](mailto:kulcsar@ksu.edu)

## **Abstract**

Despite media depictions of U.S. family farms with the entire family engaged in household chores and farming, the reality is that income is often generated from multiple sources. For many farm families, working both on-farm and off-farm is important. Focusing on Kansas, where the majority of farms are family owned, survey and interview data are used to examine if households with off-farm employment differ from those without it. The results suggest that if a farm operation has sales of less than \$100,000 annually and it is smaller than 100 acres, or the farmer is younger, more educated or started farming more recently, the chances that they have a household member working off-farm are greater. In addition, numerous challenges to being successful in farming were identified by farmers, and we discuss the implications for farm families.

Keywords: farming; off-farm employment; farm households; United States; Kansas; off-farm income

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## **1.0 Introduction**

In 1900 there were 5.7 million farms in the United States, with an average of 147 acres per farm, and about 33 percent of the population working on farms (U.S. Census Bureau, 1952). In 2012 there were 2.1 million farms, with a 434 acre per farm average, and less than 2 percent of the population engaged in farm work (U.S. Department of Agriculture [USDA], 2014). Despite the decline in the number of farms and the decrease in the reliance on farming as an occupation, agrarian ideology which idealizes small town rural life and family farming still prevails in U.S. society (see Lichter & Brown, 2011; Salamon, 2003; Struthers & Bokemeier, 2000). Media depictions of family farms, consisting of a farmhouse, barn, a variety of crops, animals grazing on the pasture, and the entire family engaged in farming and household chores, do not reflect the reality of most family farms today. Whether by choice or out of necessity, members in an increasing number of farm households have been participating in employment off of the farm (Buttel, Larson, & Gillespie, Jr., 1990; Coughenour & Swanson, 1983; Rosenfeld, 1985; Struthers & Bokemeier, 2000). Off-farm earnings have become more of the share of their income (Buttel et al., 1990; Kenney, Lobao, Curry, & Goe, 1989; Lobao & Meyer, 2001; Mooney, 1983; Rosenfeld, 1985). This revenue assists families in

continuing their farm operations (Lichter & Brown, 2011) and, for many, their agrarian lifestyles (Barlett, 1986; Bonanno, 1987; Coughenour & Swanson, 1983; Reinhardt & Barlett, 1989). Do households with off-farm employment differ from those without it? What do the changes in the structure and social context of agriculture mean for farm families and the future of farming?

Recent research on farm households, which include discussions of off-farm employment, have focused on diverse farming operations at the rural-urban interface (Clark & Munroe, 2013; Inwood, Clark, & Bean, 2013; Inwood & Sharp, 2012), farm women and gender relations in a variety of settings (Alston & Whittenbury, 2013; Beach, 2013; Bennett, 2004; Brandth, 2002; Brasier, Sachs, Kiernan, Trauger, & Barbercheck, 2014; Kelly & Shortall, 2002; Little & Panelli, 2003; Peter, Bell, Jarnagin, & Bauer, 2000; Shortall, 2006), and broad examinations of commodity production in sociology (Lichter & Brown, 2011; Lobao & Meyer, 2001) and agricultural economics (Ahearn, El-Osta, & Dewbre, 2006; Ahearn, Yee, & Korb, 2005; Alasia, Weersink, Bollman, & Cranfield, 2009; Gillespie & Mishra, 2011; Howley, Dillon, & Hennessy, 2014; Key & Roberts, 2009; Mishra & Chang, 2012). While Struthers & Bokemeier (2000) focus on a rural Michigan county and family life, what is largely missing are examinations of the specific experiences of U.S. farm households in one state who are engaged in commodity crop production and off-farm employment, and this is our focus.<sup>1</sup>

Table 1. *Farm and Operator Characteristics, 2002 and 2012*

	<b>United States</b>	<b>Kansas</b>
Number of farms, 2002	2,128,982	64,414
Number of farms, 2012	2,109,303	61,773
Family or individual owned, 2002 (%)	90	89
Family or individual owned, 2012 (%)	87	86
Average age principal operator, 2002	55.3	56.0
Average age principal operator, 2012	58.3	58.2
Primary occupation farming, 2002 (%)	58	63
Primary occupation farming, 2012 (%)	48	48
Worked 200 or more days off-farm, 2002 (%)	39	38
Worked 200 or more days off-farm, 2012 (%)	40	42

Source: U.S. Department of Agriculture, 2014.

<sup>1</sup> The data used in this paper were collected for another purpose. The intention of using this data was to draw attention to the issue of off-farm employment and to conduct an exploratory analysis of the major themes to help future research in the area.

As part of the Great Plains, Kansas is an example of a state with a high percentage of family-owned farms and many principal operators work off-farm (see Table 1). In 2012 compared to 87 percent of U.S. farms, 86 percent of Kansas farms were owned by either an individual or a family and 42 percent of the principal operators reported they worked 200 or more days off-farm (USDA, 2014). Kansas has 34 farming dependent counties, which is about a third of all counties and 38 percent of non-metropolitan counties.<sup>2</sup> Agricultural dependence is important to the long term sustainability of the community, as profitable farming may correspond with long term population decline, as farm mechanization and consolidation displace labor while at the same time allowing production to increase (Johnson & Rathge, 2006). However, the concept of agricultural dependence may label counties based on a one dimensional measure related to farm income and employment, whereas many families that operate farms have diversified their economic activities. The study of off-farm employment has not been at the forefront of the scholarship on agricultural transformation, despite this it can reveal micro level strategies and add important insights to the social and economic dynamics of farming communities.

With the above attributes Kansas is a relevant case in which to explore the off-farm employment status of farming households, and this paper focuses on farming in Kansas where agriculture has a dominant place in economic and social discourses. The website of the Kansas Department of Agriculture states: “Agriculture clearly is a part of Kansas’ past, and it is a key economic driver in our present, but it also holds great potential for our future” (n.d.). In 2012, the net farm income for Kansas was \$3.0 billion, and the state’s agricultural exports were over \$4.9 billion (USDA, 2014b). Historically, livestock, wheat, corn, soybeans, and sorghum production have been predominant. Also in 2012, the average size Kansas farm was 747 acres, while the median was 200 acres (USDA, 2014). In 2012 the top five commodities produced were cattle and calves, which accounted for 49 percent of the state’s total farm receipts, which was followed by wheat (15 percent), corn (15 percent), soybeans (7 percent), and hogs (4 percent) (USDA, 2014b).

We utilize survey and interview data collected in 2011, as part of a large-scale research project focused on Kansas farmers’ land use decisions, to address the following questions: Are there differences between the characteristics of farm operators and farm operations in households with a family member working off-farm compared to those who do not have off-farm employment? If so, how do they differ?

While Buttel (1982) and others refer to part-time farming, some, including Fuller (1990), conceptualize the on-farm and off-farm work of household members as multiple job holding. Fuller states: “In effect, they are really multiple job holders and their farm operations could be anything but part-time farms” (1990, p. 362). While Fuller (1990) prefers the concept ‘pluriactivity,’ we do not use it because we are not analyzing the potential impact of activities, such as informal labor exchanges, on farm households. Instead, to be more inclusive of the work of all household members (Buttel, 1982; Coughenour & Swanson, 1983; Friedmann, 1978; Fuller, 1990; Lobao & Meyer, 1995; Marsden, Munton, Whatmore, & Little, 1986; Pfeffer

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<sup>2</sup> The definition of a farming dependent county is if 15 percent or more of average annual labor and proprietors’ earnings derived from farming during 1998-2000 or 15 percent or more of employed residents worked in farm occupations in 2000. The most recent dependency definitions by the USDA ERS are from 2004.

& Gilbert, 1991; Rosenfeld, 1985; Sachs, 1996; Whatmore, 1988) we use the conceptualization of multiple job holding

Next we discuss changes in the structure and socio-cultural context of U.S. agriculture. Then we examine the literature on off-farm employment. Lastly, we detail our data and methods before turning to a discussion of the results and our conclusions.

## **2.0 Structural and Socio-cultural Changes in U.S. Agriculture**

Numerous influences contribute to changing the structure and socio-cultural context of U.S. agriculture. The rise and spread of modern agriculture with its extensive replacement of manual labor by mechanization and technological improvements, which vastly increased the volume of production, (Newby, 1978) has had lasting impacts. Agricultural policies and programs (Newby, 1978) and general economic conditions in the broader U.S. economy also impact farm households and communities (Kenney et al., 1989).

Citing Cochrane (1979), Buttel et al. (1990) discuss that before the late 1960s the dominant changes occurring in the structure of U.S. agriculture were toward concentration and differentiation where the tendency was larger farms were growing in size while small farms were failing. For example, during the Great Depression of the 1930s, of those who remained on farms, an increasing number of families turned to off-farm work for survival (Barlett, 1986; Buttel et al., 1990). This, in part, led researchers to view off-farm employment as a transitional stage into or out of full-time farming. However, after the Depression and into the 1970s, while numerous families exited farming others stayed and many continued to work on and off-farm (Barlett, 1986; Buttel et al., 1990). Discussing the political economy of agriculture in developed countries in the 1970s, Buttel (1982) explained that the movement of industrial jobs into rural areas provided more opportunities for members of farm households to acquire off-farm work. In addition, some urbanites moved to farms while maintaining their non-farm jobs (Buttel, 1982). Some were choosing to combine on-farm and off-farm work not only to diversify their income sources to reduce risk; but also for the lifestyle, such as for a hobby or for a rural residence, and the desire for profits was not the main goal (Barlett, 1986; Coughenour & Swanson, 1983). As is the case in other developed countries, part-time farming became viewed as a persistent aspect of the structure and culture of agriculture (Barlett, 1986; Buttel, 1982; Buttel et al., 1990; Fuller, 1990; Gasson, 1986; Rosenfeld, 1985; Sachs, 1996). Since the early 1970s the structure has reflected more of a “dualistic pattern” where the tendency is large farms are getting larger, and the number of small farms is increasing as households are often able to maintain their operations by also working off-farm (Buttel et al., 1990, p. 108).

Beginning in the mid to late 1970s, a number of social scientists confronted Marxist political economy theories and returned to the question of how family farms were able to persist (see Bonanno, 1987; Buttel et al., 1990; Newby, 1978, 1983; Reinhardt and Barlett, 1989). Examples of the debates include Mann and Dickinson’s (1978) structural argument that gaps in production time and turnover time, due to the naturalness of agriculture (e.g., seasonality and the time it takes plants to grow) made it, as an enterprise, less attractive to capitalists and the rigidity of capitalism. While focusing on wheat production, Friedmann (1978) argued simple commodity production had its own advantages over capitalist production; because households could alter their labor input and product output, even to the point of self-

exploitation, thus they potentially have the ability to be competitive. Citing Ruth Gasson (1966, 1969), Newby (1978) provides another more agentic argument in that small farms continue to exist because these farmers are willing to accept a lower level of income if it means they can maintain their autonomy, and they will add off-farm employment to subsidize their farms. In addition, they may alter their practices toward producing niche products to sell at markets when they believe they cannot compete with the larger, more productive farms (Newby, 1978).

While small farms persist, large farms are growing in size. From 1982 to 2002, the number of very small farms (0-49 acres) increased by nearly 17 percent, the quantity of midsized farms (150-499 and 500-999 acres) decreased by roughly 17 percent, and the number of large farms (1,000 acres or more) increased by 14 percent (Key & Roberts, 2007). Regarding sales, large-scale farms—including large family farms (gross sales of \$250,000 to \$499,999) and very large family farms (gross sales of \$500,000 or more)—and nonfamily farms (sales of any amount) account for 84 percent of the value of production, while small family farms (gross farm sales less than \$250,000 annually) account for only 16 percent (Hoppe & Banker, 2010). However, these small farms do control approximately 64 percent of farm assets, which includes owning 63 percent of the land held by farms (Hoppe & Banker, 2010). Additionally, they account for a substantial amount of the value of production for some commodities, including 22 percent for beef, 51 percent for hay, and 23 percent for cash grains and soybeans (Hoppe & Banker, 2010).

These changes suggest a continuation of the movement toward a dualistic structure of agriculture where mid-size family farms, in terms of size and sales, are decreasing in number, while the number of smaller and larger farms is increasing (Buttel et al., 1990), which has been referred to as the disappearing middle (see Buttel & LaRamee, 1991) or a disappearing agriculture of the middle (see Lyson, Stevenson, & Welsch, 2008). Lobao & Meyer (2001:103) characterized this transition as an exodus from farming, and the abandonment of it as a livelihood strategy. While this is supported by data on employment, it is just as significant as ‘farm households’ have diversified their income strategies. This was partly a response to the farm crisis in the 1980s when commodity prices declined and debt increased. By 1995, on average, 89 percent of a farm household’s income was derived from off-farm sources, with 53 percent derived from wages and salaries earned at off-farm jobs (Sommer, Hoppe, Green, & Korb, 1998).

As Buttel et al., (1990) argued, Kirschenmann Stevenson, Buttel, Lyson, & Duffy (2008) point out that many of the farms in the middle of this dualistic market structure are not big enough to compete in the commodity markets; and they are not able to supply direct markets, because they are not producing the niche products, such as fruits and vegetables, that are in demand. With the structural transformation of U.S. farming operations following the farm crisis in the 1980s, food production has been increasingly concentrated in a relatively small number of farms, while the vast majority of farms can no longer provide sufficient income for the entire family (Brown & Schafft, 2011). In fact off farm income has become “the key to remaining on the farm” (Brown & Schafft, 2011:178). This is particularly true for small farms, but even for medium sized farms where farming is the principal occupation, farm income was less than half of total household income (Brown & Schafft, 2011). Kirschenmann et al. (2008) argue that the “polarizing forces” of the market are a threat to the sustainability of many rural areas because of the decrease in agricultural activities and how that affects “agribusiness viability, job creation, and the

maintenance of the local tax bases” (p. 4). In alignment with Goldschmidt’s (1978) hypothesis that family-operated farms are more likely to promote community sustainability while large-scale farms are less likely to do so (see Lichter & Brown, 2011; Lobao & Meyer, 2001; Lobao, Schulman, & Swanson, 1993), Kirschenmann et al. (2008) assert that the loss of generationally sustained, independent family farmers could have negative environmental and social consequences due to the loss of “land stewardship and community social capital” (p. 5).

Farm household labor characteristics have also been changing with the aging of the farm population, the decrease in the percent of principal operators reporting farming as their primary occupation, the increase in those working off-farm, and the rise in the number of dual-earner households. Estimates show that in 1949, 38.8 percent of operators reported they worked off-farm compared to 54.3 percent in 1969, 56.9 percent in 1987, and 61.0 percent in 2012, which was down from 64.7 percent in 2007 (USDA, 2014). In 2012, 40 percent of U.S. principal farm operators worked 200 days or more off-farm (USDA, 2014), which is up from 26 percent in 1964 (USDA, 1999). Moreover, in 2007, 67 percent of farming households had either the operator or the spouse employed off-farm, and in 33 percent of these households they both worked off-farm (Hoppe & Banker, 2010).

### **3.0 Findings from Research on Off-farm Employment in the United States**

In the United States in the 1980s when numerous studies of off-farm employment were carried out, results suggested that associations between the farm operator, usually a man, and employment off-farm was more impactful on the farm’s operations in terms of size and sales than was off-farm employment by the spouse (Barlett, 1986; Buttel & Gillespie, 1984; Coughenour & Swanson, 1983). Operators working off-farm have been found to have higher educational attainment than other operators (Barlett, 1986; Heffernan, Green, Lasley, & Nolan, 1981; Mishra & Chang, 2012). Higher income has also been associated with off-farm employment (Barlett, 1986; Heffernan et al., 1981). Non-linear relationships with age and off-farm employment status have been linked to operators younger and older than 39 years old (Gillespie & Mishra, 2011) and both operators and spouses (Mishra & Chang, 2012).

In terms of operator and farm operation characteristics, citing studies from the 1980s and 1990s, Inwood et al. (2013) argue that farm families’ life cycle status affects their management approach, their farm operations in general, and younger farmers with children more actively work to generate income. Focusing on farmers at the rural-urban interface, Inwood et al. found operators in the “young” category (56 years old or younger) rated economic concerns as more important than those in the “old” category (57 or older), which they argue “reflect[s] the pressure to build a more viable operation earlier in the life cycle” (2013, p. 358). They report that many first-generation farmers or their spouses work off-farm. Similarly, Mishra and Chang’s (2012) results suggest that operators who have fewer years of farming experience are more likely to work off-farm.

Ahearn et al. (2006) explain that off-farm employment is important to examine in terms of agricultural policies, because it has served not only as the main source of income for most farm households, but it has also aided in providing stability in terms of the number of farms. Findings suggest that the higher the amount of governmental

payments received is related to less off-farm work (Ahearn et al., 2006; Gillespie & Mishra, 2011; Mishra & Chang, 2012).

Mishra and Chang's (2012) results suggest that operators who live in places where the percent of the population living in urban areas is higher are more likely to work off-farm. However, while examining the probability of Canadian farm operators working off-farm, Alasia et al. (2009) explain their findings suggest that urban labor markets are not necessarily the chosen destination of operators who work off-farm, and they suggest that for operators working off-farm "the main linkages are with the rural labour market itself" (p. 23).

#### **4.0 Data and Methods**

In 2011 as part of a multi-year, collaborative study focused on Kansas farmers' land-use decisions, a statewide survey was administered and face-to-face interviews with farmers across the state were conducted. In the spring of 2011 a sample of 10,000 farmers was drawn by the Kansas Agricultural Statistics service, and the farmers were contacted by mail to complete the survey. The questions covered a variety of topics, including farming operations, goals in farming, land-use decisions, biofuels, risk, and policy views. The study had a particular focus on assessing the degree to which farmers are interested in producing crops for biofuels. Therefore, for a farmer to be included in the sample 50 acres or more had to be in crop production, and they had to generate more than \$10,000 in annual sales. The overall response rate was 25 percent, and after coding and cleaning the working sample size was 2,317. The average total number of acres in an operation was 1049, while the median was 560 acres. Survey responses indicated that 27.0 percent of the farmers utilize a corn-soybean rotation, 13.2 percent have a wheat-corn-fallow rotation, and 12.9 percent have a continuous sorghum rotation. Just over half, 51 percent, of the farmers also raised beef cattle. On the survey, farmers were asked to respond yes or no to the following question: 'Are you or any member of your immediate family that is living with you employed off the farm?' The responses to this question served as the filter variable for this study.

Members of the research team conducted interviews with a sample of the farmers who completed the survey. By returning an information card with their surveys, roughly 650 respondents indicated they could be contacted again about the project. Two random samples were drawn from the 650, with 200 drawn initially and 100 drawn later in the process. Throughout the summer of 2011, a seven member multidisciplinary, social science team of professors and graduate students conducted 151 semi-structured interviews. Participants were asked around 85 questions, including follow-up questions on topics covered in the survey and extensive questions about their families and communities. Consistent with the survey, we inquired if household members currently worked off-farm and if respondents said yes, then we asked who was involved in off-farm work and what type(s) of off-farm employment they hold. Additionally, off-farm employment was often discussed when considering the economics of farming, farm living, and family. The interviews ranged from 45 minutes to 6 hours. Of the 151 interviews 138 were audio recorded and transcribed verbatim. The remainder were documented with extensive field notes. The qualitative analysis software NVivo was used as an organizational tool and as an apparatus for coding and analyzing the 138 transcripts.

Keeping in mind economic and sociocultural considerations, and following the literature as outlined previously, we set up a number of hypotheses regarding farm



households and current off-farm employment. Following the life cycle argument by Inwood et al. (2013) and others that younger operators' households may seek off-farm employment as an additional income support as they work to get established, we expected to find that operators who are younger are more likely to have a household member working off-farm. In addition, we expected operators who have higher educational attainment (Heffernan et al. 1981; Barlett 1986; Gillespie & Mishra 2011; Mishra & Chang 2012), less years of farming experience (Mishra & Chang 2012), a lower percentage of their income from government payments (Ahearn et al. 2006; Gillespie & Mishra 2011; Mishra & Chang 2012), and smaller farms (Buttel & Gillespie 1984; Barlett 1986) to be more likely to have a household member engaged in off-farm employment. Following Barlett (1986), we hypothesized that those who are more likely to respond they farm to enjoy the lifestyle, to leave something to their children, or that they farm as a hobby or as a retirement activity would be more likely to have a household member working off-farm.

Accordingly, the independent variables in the model included operator characteristics: age and educational attainment; small farming operation (i.e., defined by two variables: less than \$100,000 sales in 2010 and farm size under 100 acres); whether the farm operation had a net loss in 2010; the decade when the operator began farming; whether the respondent said that he/she considers farming as a hobby or retirement activity; and a binary variable about the farm not receiving government payments in 2010.<sup>3</sup>

## 5.0 Results

### 5.1 *Quantitative Analysis*

Descriptive statistics for the quantitative analysis reveal several interesting characteristics of the group of farm operators with family members working off-farm (54.8 percent of the survey respondents) (see Table 2). Their mean age is about 10 years younger than those farming families who do not have a member working off-farm (56 and 66 years respectively). The percent with at least some college education was higher in this group (64 percent compared to 53 percent), which is related to the finding that this group is younger. Compared to those with no family member working off-farm, their farm operation is smaller in scale: a higher percentage operate farms smaller than 100 acres, reported sales under \$100,000, and reported a net loss in 2010. There was no difference however in the percentage indicating they farm as a hobby or retirement activity, which was a somewhat unexpected finding. This may have to do with how one defines retirement and hobbies. It is possible that even if income from farming is just one of several sources a farm operator may still consider farming their primary status and may be reluctant to label it as a hobby. The questionnaire included several other items prompting for the reasons why people farm, such as 'to leave something to their children,' and the only significant difference between those with a family member working off-farm and those without was in the reason 'to enjoy the rural lifestyle.' Those with an off-farm worker were more likely to strongly agree with that statement (57.5% compared to 50.2%).

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<sup>3</sup>We did not use race or sex, because the sample was quite homogeneous in both respects (i.e., the sample mostly consisted of white respondents (97 percent) and men (95 percent)).

Table 2. *Descriptive Statistics*

<b>Variable</b>	<b>No family member employed off-farm</b>	<b>Has family member employed off-farm</b>	<b>Significance</b>
Mean age	65.9 (n=982)	56.4 (n=1,193)	.000
Some college education (%)	52.5 (n=991)	63.7 (n=1,202)	.000
Sales under \$100,000 (%)	35.7 (n=1,001)	42.8 (n=1,215)	.001
Reported loss in 2010 (%)	30.7 (n=1,001)	36.0 (n=1,215)	.004
Farming as a hobby (%)	23.6 (n=1,001)	23.8 (n=1,215)	.474
Farm size under 100 acres (%)	8.1 (n=1,001)	15.4 (n=1,215)	.000
No government payment (%)	25.9 (n=1,001)	23.5 (n=1,215)	.111

Table 3 shows there is a lower percentage of operators who started farming before the 1970s that have a household member employed off-farm compared to those who started during and after the 1970s. This is consistent with the general changes in agricultural production since the late 1960s. Before the large-scale farm consolidation, agriculture was more labor intensive and more likely provided work for the whole family lessening the need for alternative employment outside the farm. Up until the farm crisis in the early 1980s, the global food demand not only created seemingly endless opportunities to expand farming, mostly via mechanization (Brown & Schafft, 2011), but also provided a relatively stable income for farm households, which is no longer the case. In addition, farm populations lived in more scattered places with fewer off-farm employment opportunities. During the 1970s, manufacturing and other opportunities opened up in rural areas, and it is possible that for those who started farming at that time (which is the bulk of those farm families where somebody is currently working off-farm) such a dual employment structure was a general household income strategy even if it differed from the culture of farming a generation before. For the operators that began during the 1970s and after, there is a higher percentage with a household member working off-farm than those who do not have off-farm employment. This is consistent with the finding that operators who are older are less likely to have a household member employed off-farm. According to the structural transformation argument above, those that began farming in the 1960s and 1970s may be more likely to think of farming as an exclusive occupation and less willing to explore other income sources even when revenues decline. It is also possible that these people had established operations by the time the need for a more diverse farm income strategy emerged. Age may also have the cohort effect on off-farm employment. Older farm operators are at the stage in their life course when any employment is less likely. In addition, they may have

a particular household composition, empty nest or similar age spouse, which further lessens the likelihood of somebody in the family being employed off-farm.

Table 3. *Household Off-farm Employment by Decade Operator Started Farming (%)*

Decade when farming started	Whether there is a household member with off-farm employment	
	No (%)	Yes (%)
		<i>N</i> = 2,150
1950s	82.5	17.5
1960s	57.8	42.2
1970s	37.9	62.1
1980s	32.7	67.3
1990s	27.0	73.0
2000s	31.7	68.3

The final step in the quantitative analysis was a logistic regression model using the presence of a family member working off-farm as a dependent variable and adding several predictors developed from the literature. Due to item non-responses, the sample size for the regression was 2,099. The beta values and significance levels are in Table 4. The Nagelkerke R Square for the regression was .251.

Three of our predictors turned out not to be significant: whether the farm operation reported a loss in 2010, whether the respondent agreed or strongly agreed that he/she is farming as a hobby or retirement activity, and whether the farm received any government payments in 2010. Five of the predictors were significant, and all were in the directions indicated in the literature, however age has worked in a somewhat surprising way.

Consistent with our previous findings, an increase in the farm operator's age diminishes the likelihood of having a family member working off-farm. In a trial model we used age as a continuous variable, which was a significant predictor. However, consistent with the previous discussion, we also experimented with various cutoff numbers for age. The best fit came from the model which used the age cutoff at 65. Supplemental analysis using age as a continuous variable, filtered whether it was below or above 65, as the sole predictor has shown that age has no effect on off-farm employment among those farm operators that are younger than 65. At the same time, among those 65 and older, there was a strong age effect. We decided to keep the binary variable as a predictor in the final model, and it was the strongest predictor. Those above 65 are much less likely to have a household member employed off-farm for a number of potential reasons. This includes being technically in 'retirement age' (i.e., eligible for Social Security and Medicare), which diminishes the overall chance of paid employment, and being less likely to live with family (particularly young adult children) who themselves are more likely to work off-farm. This strong cohort effect is clearly an important part of the explanation. It will be interesting to see whether the passage of the Affordable Care Act will have any impact on households in different age categories opting for off-farm employment. Right now, it is too early to tell, but future research may reveal potential changes. However, since health care benefits are only one of the reasons

why a household may choose this strategy, the Affordable Care Act is unlikely to have a large impact in this respect.

Table 4. *Logistic Regression Results*

<b>Independent variable</b>	<b>Significance</b>	<b>B</b>	<b>Exp(B)</b>
Age (being 65 or older)	.000	-1.479	.228
Education	.000	.144	1.154
Sales under \$100,000	.000	.485	1.624
Reported loss in 2010	.489	.075	1.077
Decade of start	.000	.196	1.216
Hobby farm	.371	.111	1.118
Farm size under 100 acres	.001	.594	1.810
No government payment	.570	-.066	.936

Nagelkerke R Square: .251

The issue of age is connected to the decade the operator began farming, which provides results in the same direction. This is another major explanatory factor behind the above mentioned results regarding the age of the farm operator. At the same time, the starting decade has an independent effect as well. The higher the decade number (i.e. the later the operator started farming) the more likely there is at least one family member working off-farm. This probably refers to the changing structural conditions of farming since the 1970s.

Education works in the expected direction as well. The higher the educational attainment of the respondent, the more likely it is that a household member works off-farm. A large part of the explanation is age, as subsequent generations of farmers have higher educational attainments, although these two have independent effects as well. An exploratory logistic regression analysis confirmed these independent effects, with education being the stronger one of the two. Adding the variable denoting the decade when one started farming lessened the odds for both, but has not changed the directions or rendered those non-significant. When having all three predictors in the model, decade was the strongest one, lending support to the aforementioned changes in structural conditions over time. It is also possible that the respondent's higher educational level may correspond with the education of others in the family, and better education may mean more extensive employment opportunities.

The remaining two predictors, farm sales under \$100,000 and farm size under 100 acres, referred to the scale of the farming operation. Apart from the binary age variable, these were the two strongest predictors, working in the same direction and confirming the argument of the literature. Operators of smaller farms are more likely

to have household members working off-farm. The causal mechanism may cover multiple explanations for this. Larger farms are more complex and can offer more job opportunities that may technically be farm jobs but could cover a range of activities from accounting to marketing. Families operating smaller farms may need to find additional income opportunities outside of agriculture. This of course could work the other direction as well: such off-farm job opportunities may have been present already when the farming operation started.

## 5.2 Qualitative Illustrations

Insights from the interviews provides more detailed information on farm households and off-farm employment, particularly in relation to the importance many farmers place on the contributions of off-farm employment to farm households. Table 5 (below) provides information on the Kansas farmers quoted in this section. While 55 percent of the survey respondents indicated having a household member employed off-farm, 48 percent of the interviewees responded accordingly. However, when focusing on the 128 interviews for which we have complete survey information, 55 percent said a household member was employed off-farm. Consistent with the survey findings, the average age of the interviewees with a household member working off-farm is 55 years old, while the median is 57, and 77 percent reported having at least some college education. The average decade they began farming was the 1980s. In comparison, those not reporting off-farm employment have an average age of 63, the median age is 68, and 69 percent have at least some college education. The 1970s was the average decade they started farming.

Table 5: *Responses and Characteristics of Interviewees' and Their Farm Operations*

<b>Pseudonym</b>	<b>Age</b>	<b>Operator or spouse work off-farm</b>	<b>Total acres</b>	<b>Sales (midpoint of category)</b>	<b>Hobby or retirement activity</b>
Nathan	56	Spouse	872	\$325,000	Disagree
Harry	58	Spouse	250	\$75,000	Strongly Agree
Otis	42	Operator	240	\$75,000	Disagree
Marvin	60	Both	284	\$75,000	Strongly Agree
Evan	74	Operator	160	\$37,500	Strongly Disagree
Fred	58	Spouse	460	\$175,000	Disagree
Marty	73	Neither	2,124	\$225,000	Neutral
Sam	73	Neither	2,405	\$1,125,000	Disagree

In some cases just the operator or the spouse work off-farm, but in others it is both. Some of the jobs held by farm operators, who are mostly men, include the following: physician, real estate appraiser, high school teacher, school bus driver, crop

consultant, seed dealer, farm machinery mechanic, feed mill truck driver, and part-time Wal-Mart employee. The following are some of the off-farm jobs held by farm women: USDA employee, Farm Service Agency (FSA) employee, photo studio owner, bookkeeper, real estate appraiser, nurse, teacher, microbiologist, feed store office manager, school bus driver, and school cook. As we can see, some of the off-farm jobs are actually connected to agricultural production in a broader sense, so it is evident how integrated many of them are in agricultural communities.

Comments from a variety of the farmers, though not from a representative sample, illustrate the importance of off-farm employment to farm households. The concerns mentioned by farmers include farm and household expenses, health care costs and retirement, the increased costs of farming, and the challenges of maintaining a small farm and/or being a beginning farmer. When we inquired, many farmers expressed having to choose between household and farming needs. Nathan explained:

Oh that's the way life works... we needed the cash flow... I mean she's done everything she can think of to cut costs. ... she buys generic brands... She works, goes to garage sales for clothes. You know that kind of stuff ... rather than buy new, just to try to finance the farm.

When asked about his farm's economic situation, Harry said he and his wife work off-farm, and she is an FSA employee. Harry stated:

Oh, I don't know. ... Couldn't make it without the off-farm income, I know that. ... I don't think you're ever gonna get rich quick. An old gentleman told me, the only year he made money was the year he retired. And that's 'cause he sold everything, and he had the crop.... I think the real reason, when it comes down to it again, why I sent her off the farm was for health insurance....

While we asked interviewees if they had retirement plans, we did not specifically inquire about their views on governmental retirement benefits. Therefore, we cannot conclude that once they reach the full retirement age of 65 or older they retire from their off-farm work or that they can solely rely on retirement benefits once they are eligible to receive them. Regarding retirement plans, of the 70 interviewees with a household member working off-farm 4 specifically discussed having IRAs and/or 401Ks in the household. Otis was likely referring to governmental programs when he said, "there will definitely be benefits to retiring at age 62 or 65..." and 6 specifically mentioned governmental retirement benefits. Of the six, five spoke favorably of the benefits they will receive. For example, Marvin stated: "I wanna wait till I'm 62 so I can draw my social security to pay for my doggone health insurance. ..." However, one 68 year old farmer felt having only Social Security benefits without also having a savings is not a good situation to be in.

A number of farmers expressed their amazement and concern with the increased costs associated with farming and how challenging it is to have a small operation or to start a new one, particularly when the person does not begin working with the family farm, does not have considerable financial backing, and/or does not have significant off-farm employment income. When asked about the farm's economic situation Evan, who indicated he began farming in 1950, but purchased his farm in 2006 after retiring from his job with the government, said they do not rely on the farm for their income. In addition to retirement earnings they have other diversified

sources of income. Evan explained: “To farm 160 acres that we do, it’s almost impossible to just break even. You’ve got to farm many, many more acres to make it profitable. That’s why we have the commercial farmers today.” He further expressed, “I have concerns for all Kansas farms, not just ours but all of them. They’re all being consumed by commercial corporate farmers. Family farms [are] a thing of the past.”

Fred, who used to work off-farm and whose spouse still does, discussed the difficulties facing young people interested in farming. He expressed, “And it’s getting harder, it’s getting harder, for instance there was some ground just sold [n]orth of town here, ... \$3,000 an acre, dryland, and for a-, for a young kid, trying to start out... I wouldn’t even think of trying to buy it.” Fred recently figured out what would be needed for his son to take over their operation. Fred explained that even if he gave his son all of his land, machinery, and cattle that he would still probably have to try to borrow \$100,000 for operating costs, including fertilizer, chemicals, and potential repair costs. Fred said, “that’s the problem with trying to start out farming, and I don’t know how they’re gonna do it.”

A few of the farmers who are over 70 years old inherited some or all of their 1000+ acres of farmland. They spoke of how, while they are not rich, they are comfortable in their economic situation, and they think it would be hard to be a beginning farmer today. Marty explained that competition is one of the challenging things about farming:

...competition from moneyed people, doctors, lawyers, oil people that have a little excess money and they come out here as an investment, which it’s a free country, that’s great. I’m glad we have it. By the same token, it makes it very, very hard, about impossible for young people to start.... I think quite a few farmers, the younger farmers are either in debt clear up to their neck, or their wives work, or maybe both. Cause no one out here is probably going to give it to them on a platter. I don’t suppose...

Sam remarked: “Most... probably most people you talk to, they work off-farm.”

From the perspectives of these farmers one can see how agriculture and the experiences of farm households have been changing. Not only is there anxiety about keeping up with household and farm expenses, but some are concerned about the future of their farms and farming in general. In addition, the farm population is aging. Once these families exit their off-farm jobs and farming what will happen to the land and the communities? If farm consolidation continues and young and beginning farmers cannot compete, will agricultural communities be able to maintain or will we continue to see communities experience outmigration and deterioration?

## **6.0 Conclusion**

As the national and state data show, off-farm work is an important and widespread phenomenon in American agriculture. The literature indicates two major reasons for this. One is the financial pressure on farm families to seek additional income, and the other is the increasing influx of non-traditional farmers. Our purpose in this paper was to examine what farm and farm operator characteristics may predict the presence of a household member working off-farm by using a large survey and in-depth interviews conducted among Kansas farmers.

Similar to the national trends, more than half of the farms in the sample had family members employed off-farm. Some of our findings about the dynamics of off-farm work in Kansas support what the literature argues. There is a greater chance for off-farm employment among younger and more educated farmers, among those who started farming more recently and those who have smaller farms. These findings suggest that from a household income strategy perspective farming has become more complex. This has not only been caused by the broad structural changes in agricultural production but also by the changing cultural practices of farming. For the latest generation of farm operators, farming may no longer be the traditional household occupation where all members of the family are directly connected to the land. Some may be employed in auxiliary occupations while others leave farming entirely.

The findings do not show associations with other characteristics the literature indicates as important predictors of the off-farm employment status of households. Farming as a hobby or retirement activity or receiving government payments had no explanatory power over the presence of a household member working off-farm. The lack of connection between off-farm work and hobby farming in Kansas may be explained by the fact that the sample did not include farms with less than 50 acres in crop production and annual sales that were below \$10,000. These tend to be specialty crop producers, including urban farmers who are more likely to farm as a hobby and/or for a supplementary source of income. In addition, urban farmers are very likely to have a primary occupation connected to other sectors of the urban economy.

Comments in the interviews about the decline of traditional family farms have important implications for how one interprets off-farm employment working. The increasing professionalization of farming may lead to two different outcomes in this respect. One is the increasing average size of farms which has been occurring since the start of farm consolidation in the 1960s. Large farms are less likely to have family members working off-farm either because their operation can provide more employment for various members of the household or because they are more established operations with less financial pressure. The final piece of this picture is the widespread opinion we heard in the interviews about the financial difficulties of starting a new farm operation. Risk-averse household income strategies may lead to work diversification. While at the same time, greater individual agency in the household members' own career choices also contributes to the growing presence of off-farm employment.

The broader question is what does this mean for the future of farming, particularly farm transition? If off-farm employment becomes more prevalent, as the data seems to suggest, it is important to understand how such an option is seen by farmers and what actual opportunities exist for it. The considerations about government policy or local development actions should be different if off-farm employment is a financial need, regardless of what non-agricultural jobs are available, compared to situations when such employment is a matter of preference.

The current structure of U.S. agriculture reflects the general duality and the increasing diversity of farming. On the one hand, large agribusinesses produce most of the commodities for the global food market. On the other hand, an increasing number of small farming operations continue to survive and sometimes even thrive. However, these smaller farms are no longer the traditional yeoman operations, built on the image of self-reliant families. Off-farm work today is an integral part of the



income for small operators, often accounting for more than half of the household earnings. Policy considerations should pay attention to this diversity of incomes and be flexible enough to help small farms that would never become self-sufficient on food production alone. Such considerations must focus on both ends of the farming life course: helping beginning farmers to set up operations and assisting those that need help in farm succession planning. The latter may involve facilitating fundamental changes in the farming operation, opening it up to a more diverse income structure with both its economic and socio-cultural impacts.

For our purposes, a limitation of the survey question on off-farm employment was that it did not ask respondents to detail who in the household worked off-farm, how that working arrangement started, and if it is part-time or full-time employment. This makes it impossible to track the emergence of off-farm employment and tie it to either financial need or a pre-existing intention in the household for a more diversified income strategy. However, data from the interviews reveals that there are a variety of reasons why household members engage in outside employment. In many households members work off-farm due to financial need, which in some instances includes a steady source of income and benefits, such as health insurance. Others added farming after already having a non-farm job or jobs, and a few others said they enjoy working off-farm. The number and variety of agriculturally related jobs and locale-based jobs held by farming household members suggests it will remain important to continue to analyze the connections between family-owned farms, off-farm employment, and community well-being. This is particularly important in the context of the availability of non-farm jobs in and near small, farming communities. In addition, it is important to study how farming operations are embedded into communities. Labels like ‘the corn belt’ or ‘the breadbasket of the nation’ imply a certain identity created and preserved around farming. However, rural communities have become a lot more diverse in the past decades, even in those parts of the country where farming has been the traditional focus of community identity. How does a diversifying income structure change these identities, and how does it contribute to the economic and demographic sustainability of these communities? Future research could also assess why farming household members do or do not work off-farm, and if they do, then how and why did those arrangements begin and why do they continue.

## **Acknowledgements**

This paper is based upon research supported by the National Science Foundation (NSF) under Award No. EPS-0903806 and matching support from the State of Kansas through the Kansas Board of Regents. We thank the editor and the anonymous reviewers for their insightful feedback. We are also thankful to the research team on the Kansas NSF Experimental Program to Stimulate Competitive Research, Biofuels and Climate Change: Farmers’ Land Use Decisions (KS NSF EPSCoR BACC: FLUD) project. The analysis and conclusions are the authors, and they are not meant to represent the views of the funding agencies or the rest of the research team.

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