

## Farm Generations and Net Farm Income

*Gregg Ibendahl, Terry Griffin, Aleksan Shanoyan, and Elizabeth Yeager*

### Introduction

Generational analysis seems to be common practice today. Voting preferences, house buying, church attendance, etc., all have been examined through the lens of generation effects. However, there have been fewer studies on the generational effects on farming. This may be because less data are available on a farm level about each operator on a farm. In “The KFMA Operator Database: A short note on age and experience of Kansas farmers”, we start to examine some of the generational differences of Kansas farmers (<https://www.agmanager.info/kfma/research-articles/kfma-operator-database-short-note-age-and-experience-kansas-farmers>). This dataset from the Kansas Farm Management Association (KFMA) does have information about the individual operators on a farm. In this paper, we examine net farm income by standard generational groups to determine if certain generations have been more profitable than other generations.

The commonly used generational categories are the Silent Generation (born 1925-1945), Baby Boomers (born 1946-1964), Generation X (born 1965-1980), and Millennials (born 1981-1997). There are also generations before and after the four generations listed here but there are currently almost no KFMA farm operators that fit into these very old and very young generations.

### Data

We examine data from the Kansas Farm Management Association (KFMA). The KFMA has been helping farmers since the 1930's and has computerized farm records back to the early 1970's. There are currently around 2,500 farms in the KFMA system and in any given year about 1,500 of those farms will have records that are useable for research, teaching, and Extension analysis. This is one of the best systems in the country and the data provided by the KFMA can help answer

those questions of farmer profitability.

Since 2012, the KFMA has also been keeping detailed records about the respective farm operators. This data includes the year of birth of each operator, the year started farming, the number of family members, and the age of the oldest child.

## **Methods and Analysis**

For this analysis, each operator on a farm was put into a generational category based on the standard year ranges discussed earlier. Next, a farm was marked if it had an operator from each of the generational categories plus any cross generational groups. There are 4 single generational groups, 6 dual generational groups, 4 triple generational groups, and 1 quadruple generational group. Farms could be marked in more than one generation group if there were operators from multiple generations. For example, a farm marked with the dual generational group of Baby Boomer x Silent, would also be marked as a Baby Boomer farm and a Silent farm. For 2018, 58% of the farms had at least one Baby Boomer operator, 19% had at least one Millennial operator, 17% had at least one Generation X operator, and 20% had at least one Silent generation operator. The total exceeds more than 100 percent because of farms having multiple generations of operators.

The Venn diagram in Figure 1 shows the number of farms in each generation and where the overlap of generations occurs. For example, there are 584 farms with a Baby Boomer operator. Of these farms, 486 have only Baby Boomer operations—83% (these 486 farms are not necessarily single operator farms as a farm could have multiple operators that were all Baby Boomers). The remaining 17% of the Baby Boomer operators are on farms with operators from other generations. The biggest overlap of generations is between the Baby Boomer generation and the Millennial generation with 55 farms—5.5% of total KFMA farms.

Table 1 lists the number of farms for each generation and for each cross generation and is intended to help interpret the Venn diagram. The second column (count with overlap) is the number of farms that have at least that particular generation or generation cross while the third column (no overlap)

lists the number of farms that match the description in the first column exactly. Thus, for the first row, there are 584 farms that have a Baby Boomer as an operator. This 584 farm number includes farms that have other generations as operators as well. The last column of the Baby Boomer row shows that of these 584 farms, 486 farms have Baby Boomers as the sole generation of operators (there could be multiple operators in this number if all the operators were from the Baby Boom generation). Thus, subtracting the two numbers shows there were 98 farmers with a Baby Boomer operator plus an operator from another generation. Because column 2 includes overlaps of the row groups, this column can't be totaled. However, because each number in column 3 is unique, this column can be totaled and shows there were 1005 farms in 2018 with useable generation information. Column three will match up with the individual numbers from the Venn diagram.

The next part of the analysis examined whether there were net farm income differences between generational groups. For this analysis, farms were classified into a single classification. Farms were first labeled as a multi-generational farm if it had operators from two or more generations. If a farm only had operators from a single generation, that generation was used as the label.

Figure 2 shows the net farm income deviation by generational group from the overall mean net farm income for a particular year. As is clearly evident, multi-generational farms had the best net farm income for each year. As this initial study only examined net farm income, no attempt was made to control for farm size difference. It is likely these multi-generation farms were bigger as they all had two or more operators. However, some of the single generation farms had multiple operators as well as long as they were all from the same generation.

The Silent generation consistently had the lowest net farm income each year while the other generations varied somewhat in their ranking from year to year. The Silent generation, being the oldest and possibly the least risk averse, may have had management goals that contributed to lower net farm income.

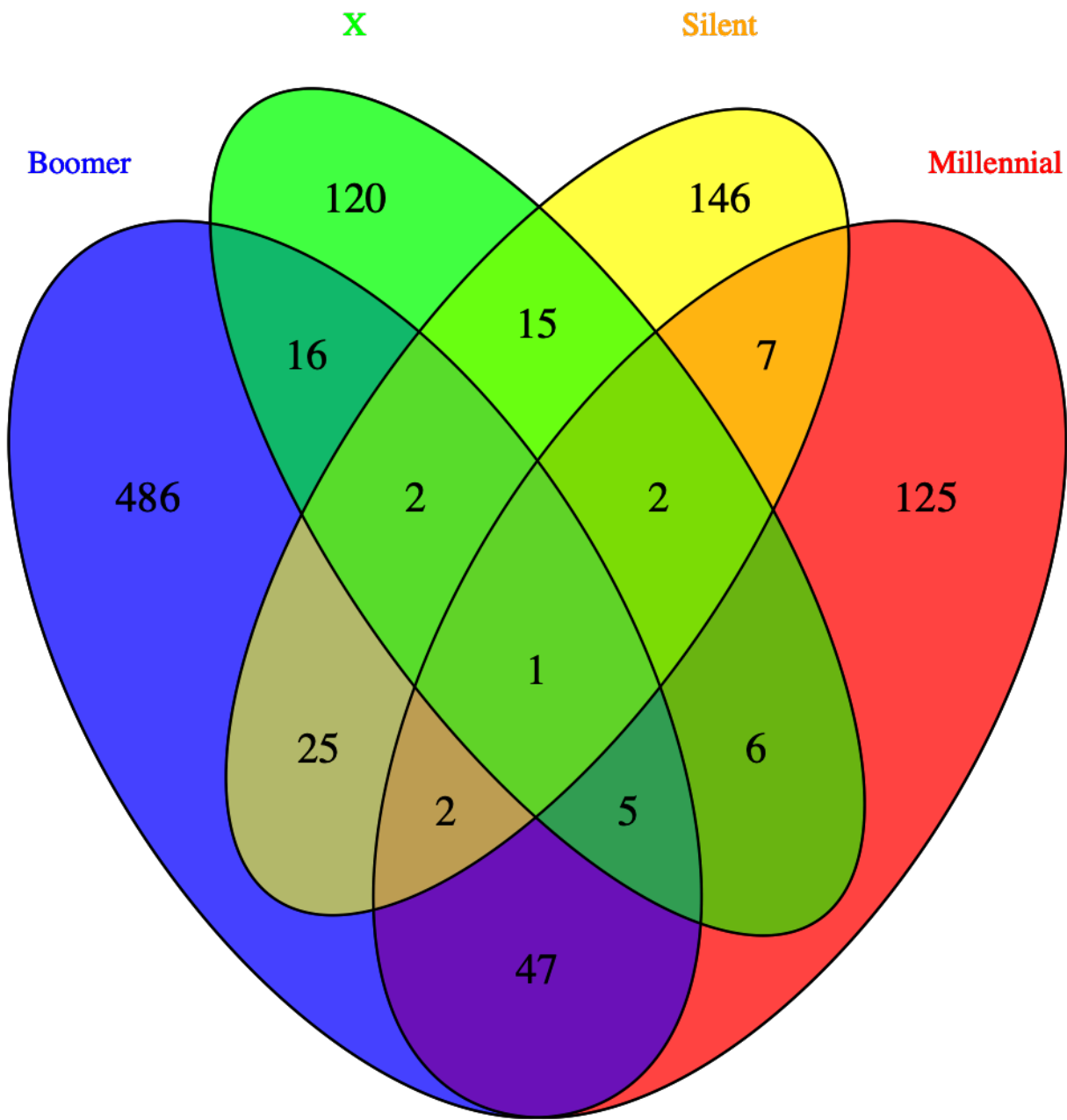
The final part of the analysis examined single operator farms vs multiple operator farms. Here, generations were combined together. As expected multioperator farms consistently had the best net farm income. In 2015, the two

groups had essentially the same net farm income. However, in 2015, net farm income was nearly zero and very few farms were profitable.

## **Discussion**

The KFMA data set is well represented from the 4 major generational groups that are actively farming. With the average farmer age in the upper fifties, it is probably no surprise that Baby Boomers make up the majority of farmers. What may be surprising is the profitability of farms by generations. Baby Boomers are slightly below average for net farm income in nearly every year. Generation X farmers have outperformed Baby Boomers in every year but one when they had equal net farm income. Even Millennials have earned higher net farm income compared to Baby Boomers in more years than they have earned less.

The results of multi-generation farms earning the most while the Silent generation earned the least was as expected. It is the better performance of Generation X and the Millennials compared to Baby Boomers that was unexpected.



**Figure 1.** Venn Diagram of the Number of KFMA Farms with Operators by Generation

**Table 1.** Count of Farms by Generation (with and without overlapping generations)

<b>Farms with these Generations</b>	<b>Count</b>	
	<b>with overlap</b>	<b>no overlap</b>
Baby Boomers	584	486
X generation	167	120
Silent generation	200	146
Millennial generation	195	125
Boomer x X	24	16
X x Silent	20	15
Silent x Millennial	12	7
Boomer x Silent	30	25
Boomer x Millennial	55	47
X x Millennial	14	6
Boomer x X x Silent	3	2
Boomer x X x Millennial	6	5
Boomer x Silent x Millennial	3	2
X x Silent x Millennial	3	2
Boomer x X x Silent x Millennial	1	1
<b>Total</b>		<b>1005</b>

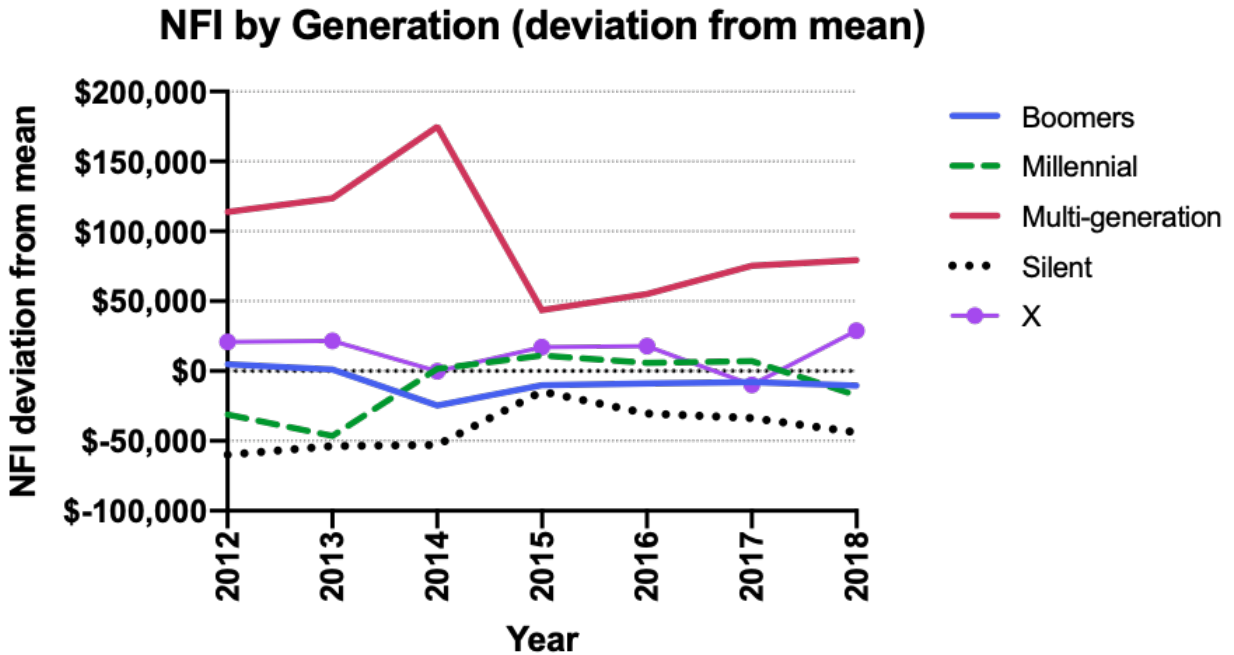


Figure 2. Deviation from Net Farm Income by Generation Farm Classification

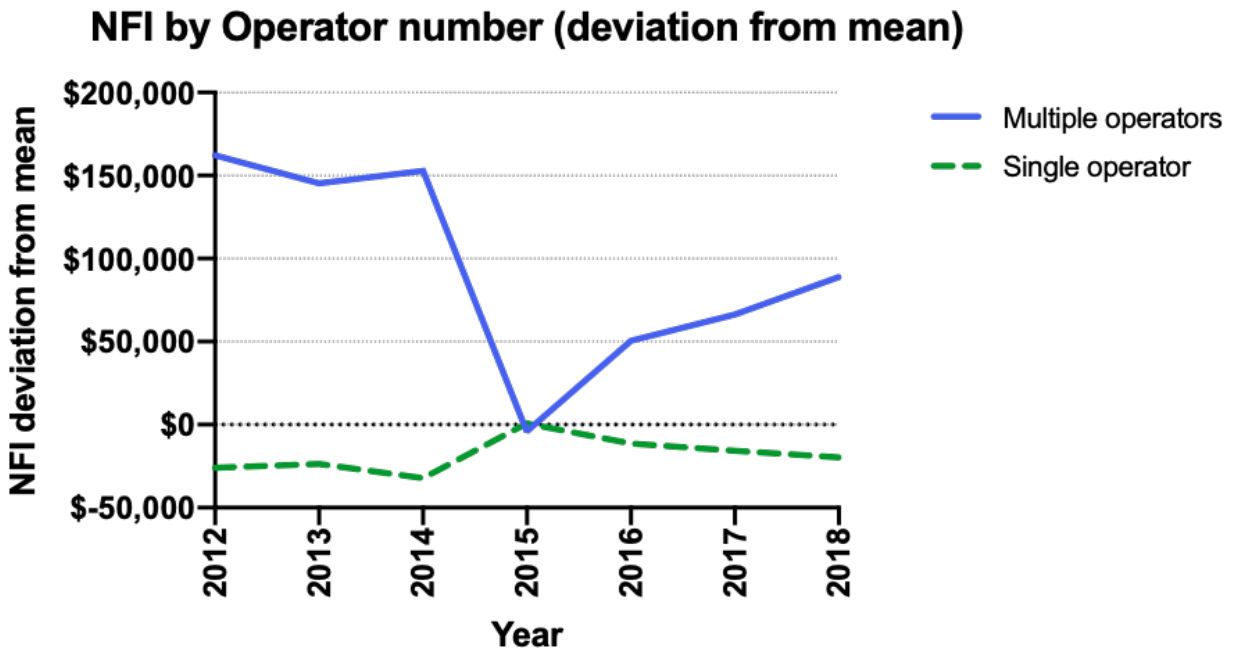


Figure 3. Deviation from Net Farm Income by Farms with Multiple Operators vs Single Operator

Gregg Ibendahl  
Terry Griffin  
Aleksan Shanoyan  
Elizabeth Yeager

email: [ibendahl@ksu.edu](mailto:ibendahl@ksu.edu)  
email: [twgriffin@ksu.edu](mailto:twgriffin@ksu.edu)  
email: [shanoyan@ksu.edu](mailto:shanoyan@ksu.edu)  
email: [eyeager@ksu.edu](mailto:eyeager@ksu.edu)

twitter: [@Ibendahl](https://twitter.com/Ibendahl)  
twitter: [@SpacePlowboy](https://twitter.com/SpacePlowboy)