

# **Investigation of Farm Management Practices Among Small and Medium Size Farms in Kentucky**

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## **Abstract**

Successful farm managers in the twenty-first century and beyond will be using the best practices of farm management like enterprise and whole farm budgeting, farm accounting techniques, investment analysis, economic principles, risk and uncertainty management, and agricultural marketing. This study describes the extent to which Kentucky small and medium-sized farms apply the best practices and the effect they have on farm profitability. Data was collected in 2017 through a survey mailed to 850 owners of small and medium-sized farms. Results indicate that the majority of the farms indicated to be very good at production. Few of the farms have a complete set of skills necessary to apply the best practices. Furthermore, the study shows that farm financial position (based on balance sheet) and profitability (based on income statements) are significantly strong among farms that apply the best practices. Finally, the study indicates that farm profitability is positively correlated with farm characteristics such size, location, revenue, form (sole, partnership, corporation), enterprise types (crop, animal, fresh produce) and owner's characteristics (age, education, experience, and gender). These findings are relevant, useful, and beneficial to owners of small and med-sized farms and to Extension agents and policy makers for their efforts to assist farmers.

## **Key words**

Farm management, small and medium farms, Kentucky, agriculture producers

## **Introduction**

Successful farm managers in the twenty-first century and beyond will be using economic principles, whole farm budgeting, farm accounting techniques, investment analysis, human resources, and other management principles to make their farms more profitable (Kay, et al., 2016). Farm management is a process that requires farmers to have a set of technical knowledge and a strategic agribusiness plan, organization, coordination, and control. In Kentucky, the extent to which the small (whose annual farm sales are less than \$250,000) and medium-sized farms (whose annual sales are between \$250,000 and \$500,000) apply the best practices of farm management is still unclear. As agriculture production grows, small and medium-sized farms will be pushed out of the equation if they lack strong managerial skills.

## **Problem Statement**

One of the reasons that small- and medium-sized farms sell out is because of their lack of farm management skills. The best practices for farm management are intended to aid farmers in operating a profitable agribusiness now and in the future. In Kentucky, however, it is still unknown to what extent the best practice for farm management is utilized. Research studies in this area are very limited.

## **Objectives**

The main objective this research project seeks to accomplish is to investigate how the best farm management practices are applied among small- and medium-sized farms in Kentucky

and the effect they have on farm profitability. Specifically, this project will do four things. First, it will determine the extent to which small and medium size farms in Kentucky apply the best practices for farm management. Second, compare farm financial position (based on balance sheet) and profitability (based on income statements) between farms that apply best practices for farm management and those who do not. Third, analyze the effects the use of best practices for farm management has on farm financial position and profitability. Fourth, explain relationships between farm profitability and farm characteristics such size, location, revenue, form (sole, partnership, corporation), enterprise types (crop, animal, fresh produce) and owner's characteristics (age, education, experience, gender, and the like).

### **Methodology**

We collected data through mailed and online anonymous surveys. Contact information was obtained from the public Kentucky Department of Agriculture directory. 850 surveys were mailed to participants in 2017. Respondents either mailed in the paper survey or responded online via an anonymous survey link. Also, there was a chance to win one of five \$50 Visa gift cards. We received 129 completed surveys. To achieve the objectives, descriptive statistics and OLS regression and logistic/probit regression models were used.

### **Results**

According to the survey responses, only a low number of small- and medium-sized farms in Kentucky apply the best practices for farm management. Participants in the survey span a wide assortment of farms, from traditional row crop and livestock farms to honey bee and fruit farms. We are finding that 2.33% operate their farm for less than one year, 24.03% for one to five years, 17.05% for 5-10 years, 23.26% for 10-20 years, and 33.33% for 20 or more years. Of

these farmers, 32.56% are full-time farmers, and 67.44% are part-time farmers. 97.67% of the farms are family farms, and only 2.33% have partners or shareholders outside the family. For farm operations, 17.48% grow row crops, 38.35% raise animals, 24.76% grow vegetables and/or fruits, and 19.42% select other and specify in a space provided. Some of the specifications include honey bee farming, aquaculture, etc. The gender of the respondents is predominately male at 62.50% and only 37.50% are females. For education, 29.51% only have their high school diploma, 18.55% hold a 2-year college degree, 31.97% hold a 4-year college, and 19.67% hold a graduate college degree. 74.59% of the farmers are married, and 25.41% are single or unmarried.

When asking about their farm financial position (assets, liabilities, and owner's equity as present in their balance sheet), 14.17% feel very strong, 37.80% feel moderately strong, 30.17% feel fair, 11.02% feel moderately weak, and 6.30% feel very weak. For profitability, 6.25% of farms are very profitable, 54.69% are somewhat profitable, 24.22% break even, 8.59% are somewhat unprofitable, and 6.29% are very unprofitable.

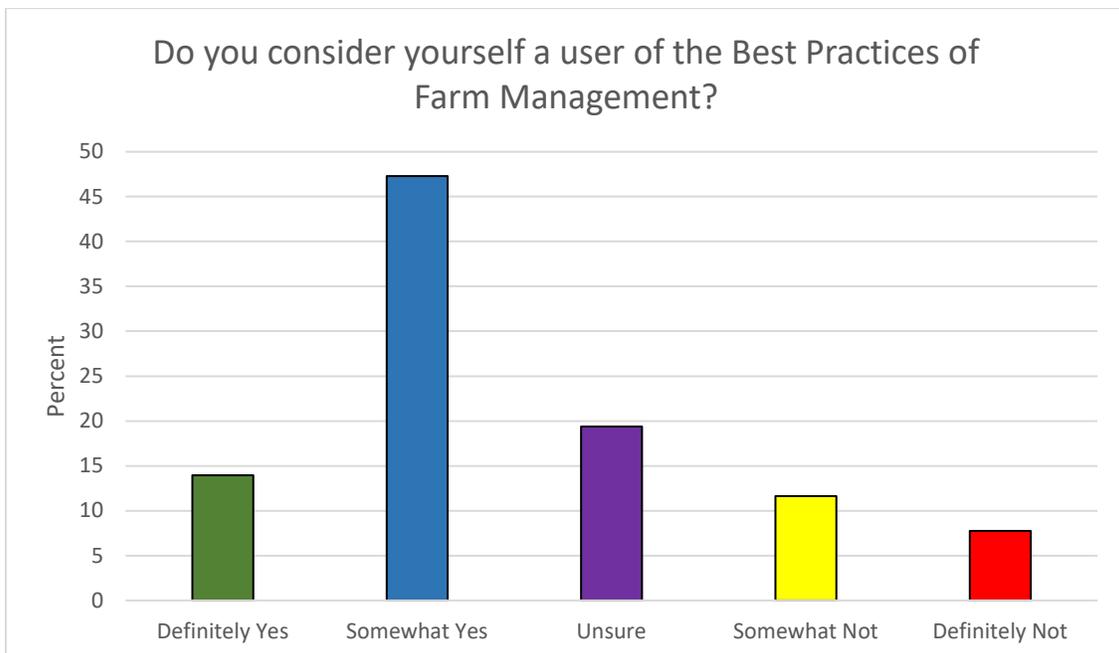
#### Knowledge of the Best Practices of Farm Management

One important aspect of farm management is to have a strategic plan; only 18.60% of respondents have a written strategic, long-term, plan for their farm, and 81.40% have no plan.

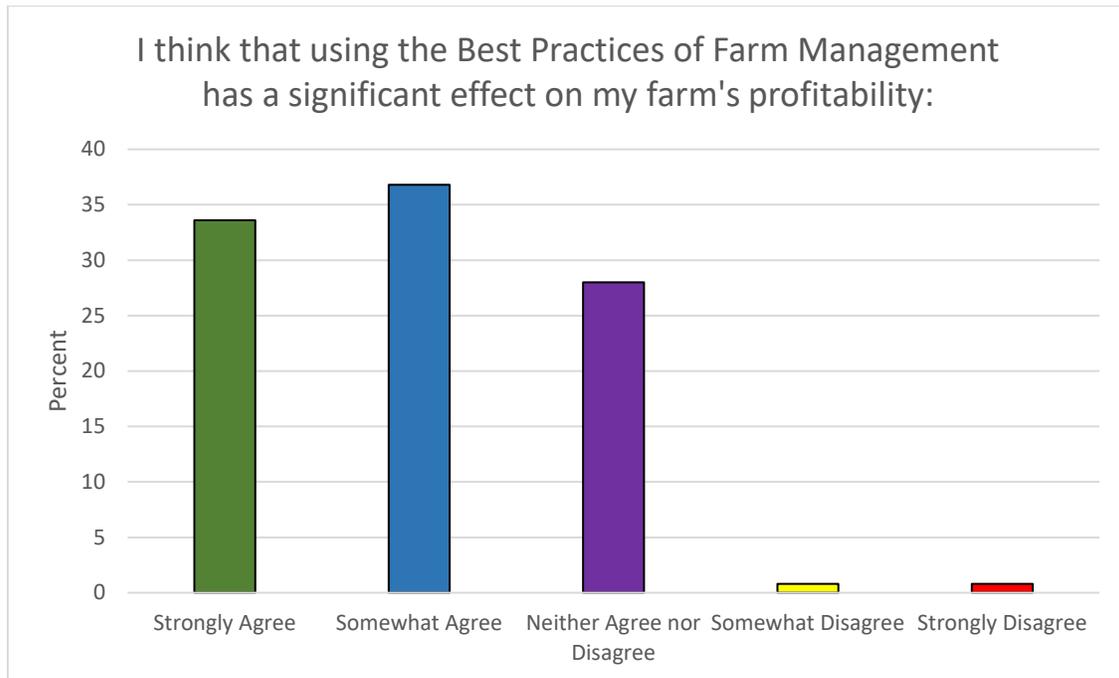


When asking if they are knowledgeable of the Best Practices of Farm Management, 7.75% are extremely knowledgeable, 21.71% are very knowledgeable, 46.51% are fairly knowledgeable, 10.85% are slightly knowledgeable, and 13.18% are not at all knowledgeable.

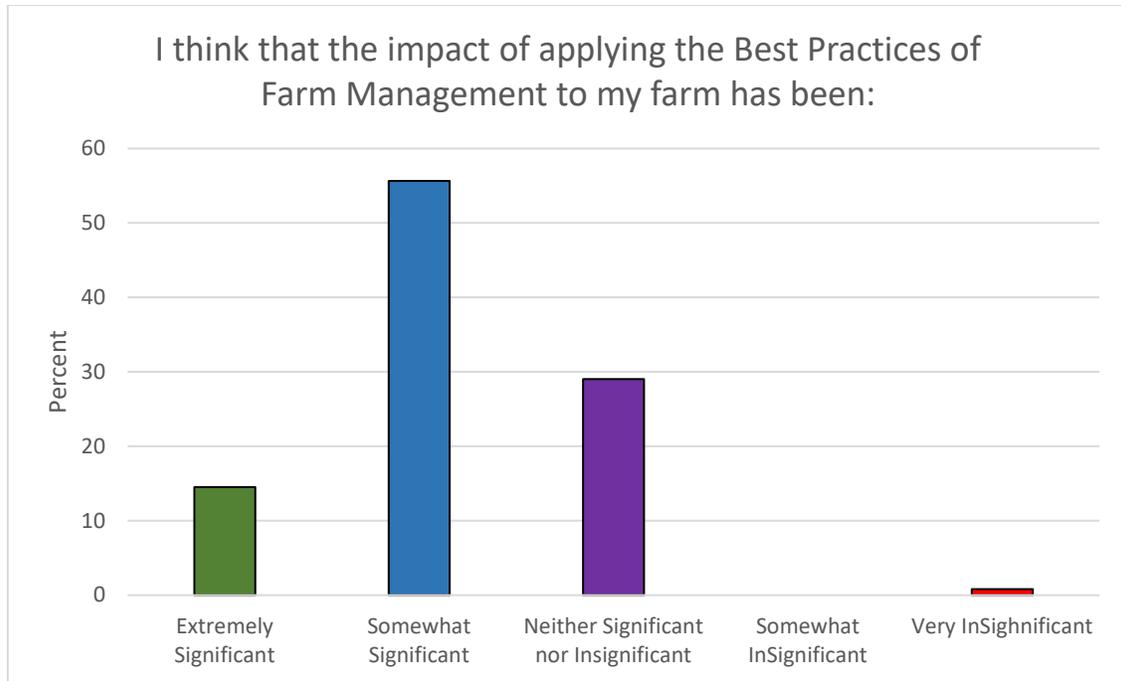
### Use of Best Practices of Farm Management



Farmers are then asked if they consider themselves users of the Best Practices of Farm Management. 13.95% say definitely yes, 47.29% somewhat yes, 19.38% are unsure, 11.63% say somewhat not, and 7.75% say they are definitely not a user.



Next, farmers are asked if they think using the Best Practices of Farm Management has a significant effect of their farm's profitability. 33.60% strongly agreed that it has a significant impact, 36.80% somewhat agreed, 28.00% neither agreed nor disagreed, 0.80% somewhat disagreed, and 0.80% strongly disagreed.



Lastly, farmers are asked what significant impact that applying the Best Practices of Farm Management has on the operation of their farm. 14.52% say extremely significant, 55.65% say somewhat significant, 29.03% respond neither significant nor insignificant, 0.00% say somewhat insignificant, and only 0.81% think it is very insignificant.

### Conclusion

As agricultural production grows, small- and medium-sized farms will be pushed out of the equation if they lack strong managerial skills. Many farmers have not heard of the best practices of farm management. Farmers need to be educated on how to utilize the best practices for farm management so that they will have the skills they need to improve their farm's profitability and financial position. An educational program aiming at training farmers on how to utilize the best practices of farm management is recommended.

## Literature Cited

<sup>1</sup>Kay, Edwards, and Duffy, 2016. *Farm Management*. 8<sup>th</sup> Edition, McGraw-Hill Education.  
ISBN 978-0-07-340094-5