

PURDUE

AGRICULTURAL ECONOMICS REPORT

Title	Experience, Knowledge, & Collaboration: Why Good Managers Make an Effort to Improve
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Summary	Knowledge, experience, and collaboration work hand in hand with one another to improve farm output per unit of input (i.e., productivity). This article reflects on the impact these three factors have on farm productivity and describes how each relates to management strategy.

Introduction

Knowledge, experience, and collaboration work hand in hand with one another to improve farm output per unit of input (i.e., productivity). Pursuit of one of these items without the others creates a disparity between farms able to survive and those that thrive in the industry. But the question arises, why do these factors play such a critical role in farm performance?

This article reflects on the impact these three factors have on farm productivity and describes how each relates to management strategy. The article is the first in a series that will address strategic risk.

Experience

Experience accumulates through years of developing an understanding of the industry you are working in. Because of past experiences, farmers have a good idea of the time of year to plant crops, apply fertilizers, pesticides, market finished products, and how to manage unforeseen challenges that may arise. Farming becomes second nature to those with years of experience, whereas new entrants to the industry lack this sense.

One prominent benefit of experience in agriculture is that costs decline with experience. Porter (1980) states “newly started firms, with no experience, will have inherently higher costs than established firms and must bear heavy start-up losses from below- or near-cost pricing in order to gain the experience to achieve cost parity with established firms (if they ever can)”. So, while the role of experience in the farming industry, is difficult to quantify, it plays a significant role in determining farm profitability and success.

Experienced farmers operate much more independently and efficiently. A study by Rejesus et al. (2008) indicates that experience in the industry reduces reliance on farm programs, such as those offered through USDA and extension services. However, despite supplemental information not playing as crucial a role for well-established firms, they remain a good resource when questions arise.

Because survival in the agricultural industry is highly dependent on level of experience, if new entrants are to be successful, they need to gain experience rapidly and effectively. This may be done through farm work experience, internships, or participation in mentor programs to decrease impacts of the entry barriers. While we have discussed the critical role of experience, its role as a competitive advantage should not reduce a manager’s obligation to improve knowledge and collaborate with other industry professionals.

Knowledge

Knowledge and experience are deeply intertwined with one another, however for the purposes of this article, knowledge relates to the information absorbed from formal educational opportunities. These come in many forms, whether it be through courses, reading, or discussions with industry professionals, all of which expand your knowledge on up-to-date farming practices.

When it comes to risk, according to Apgar (2006) there are two general forms: learnable risks and random risks. Learnable risks possess uncertainty because we haven't learned all there is to know about the subject. These risks can be mitigated through expanding our knowledge. Random risks, on the other hand, are unpredictable and expansion of knowledge cannot reduce levels of uncertainty for these instances (Apgar, 2006).

It's in the best interest of a farm to mitigate learnable risks through accumulation of knowledge as rapidly as possible. Learning about different production strategies, technology advancements, strategies of competitors, and ways to reduce input costs are all important. However, it's also critical to consider the potential changes that are upstream and downstream of production that can influence your profitability. This includes sourcing of inputs, determinants of input prices, potential limitations to supply, and responses to each of these relative changes. Downstream considerations include gaining knowledge about consumer preferences, learning how to create products that match these preferences, potential market disruptions, and diversifying who you sell to in case one buyer has financial difficulties. As is commonly noted, it is seldom a good idea to have all your eggs in one basket.

Ability to increase knowledge rapidly and effectively regarding business opportunities is a major contributor to maintaining a prominent position in an industry. Farms able to incorporate items learned through research and expanding knowledge will maintain a definite production advantage over competitors with inferior abilities to learn and adapt.

Collaboration

Accumulation of knowledge and experience play a large role in establishing a competitive advantage in an industry. This may lead to the false premise that in order to maintain a competitive advantage in the market, new strategies and innovations should not be shared. Secrecy is likely not what's best for your operation, nor the agricultural industry as a whole. Sharing ideas allows for critiques from an outside perspective, insight into alternate innovation possibilities, and further improvements to strategies which will reap additional benefits.

Farmers aim to run a profitable entity, but also to supply food and other goods to the general population. To maximize our ability to fulfill these goals, collaboration among peers and even among competitors is often necessary. Whether that's a formal networking or cabbaging onto practices used by others through observation, dispersion of information truly is the only way to bring about progress.

Studies have indicated adoption of new technologies is highly dependent on collaboration in the agricultural industry. Adoption occurs at different rates across farmers with different characteristics, largely due to heterogeneity in learning strategies. Early adopters generally obtain and process more information independently while later adoption of technology signals a reliance on social networks for information (Chavas & Nauges, 2020). Risk preference is also a contributing factor that influences adoption of new equipment or farming strategies. Finger et al. (2022) differentiate farmers into two distinct groups based on risk preference, proactive and reactive learners. Proactive learners are innovators and early adopters, with drive to seek out new knowledge and engage across social networks. In contrast, reactive learners are described as risk averse, adopt business-as-usual models, are hesitant to adopt new technologies, and may be reluctant to engage in social networks.

Farmers with more risk averse tendencies often begin using new technologies long after others have switched. As noted by Chavas and Nauges (2020), "technology adoption in agriculture is an engine of economic growth and an important way to increase farm productivity and improve food security around

the world”. As new technologies continue to emerge, collaboration will increase in importance. Studies emphasize the importance of social networks in the farming community, whether that be through formal meetings, extension programs, or casual interactions. Encouraging frequent networking and collaboration can help prevent individuals from lagging behind industry standards and fuel more efficient agricultural production.

Impacts on Operation

Now let’s address why making an effort to increase knowledge, experience, and collaboration is beneficial for farm performance. The factors noted above (i.e., experience, knowledge, and collaboration) have been shown to be positively related to farm performance in previous studies. A review of 102 studies on *Management Practices and the Financial Performance of Farms* found that knowledge acquisition and management experience have distinct impacts on financial performance (Vanhuysse et al., 2021).

Vanhuysse et al. (2021) concluded that experience positively affects profitability and financial efficiency. They also indicated that collecting and responding to new knowledge is an essential function for financial and technical performance. The article had a lesser focus on impacts of collaboration, but indicated that particularly for smaller sized farms, collaboration is important for sustaining financial performance. In general, findings stress the importance of lifelong learning and participating in networks with industry specialists, which of course would include other farmers.

Strategies for Improving

Throughout this article, we have encouraged leaders in agriculture to cultivate curiosity and improvements in their farming practices. To maintain a competitive advantage in the agricultural sector and continue to encourage growth in the industry, farmers and ranchers need to commit to the pursuit of knowledge and collaborate with peers.

There are numerous sources of information which can be beneficial for on-farm decision making, insight into current and future market conditions, prevalent pests and how to effectively manage them, and much more. We would be remiss if we did not note that online publications and software targeting the agriculture sector are available from land grant universities. A few examples include farm management and agricultural finance information from the *farmdoc* team and Purdue’s Center for Commercial Agriculture, risk management software (Right Risk) from Colorado State, and financial analysis software from University of Minnesota’s Center for Farm Financial Management. The important point is to gather information that will provide new perspectives and industry insight, with a goal of setting your farm apart from those unwilling to make this investment.

In summary, strategic farm managers continuously gather information on new technologies, look for new business opportunities, and learn through their mistakes as well as mistakes made by others. The following points of reflection may aid you in determining how you compare to other farming professionals and identify growth opportunities.

- How do geopolitical conflicts impact my operation; what recent events in the news might influence my profitability in the coming season?
- Where are my farm inputs sourced from (seed/feed/sprays/fertilizer) and what will disrupt my ability to acquire them?
- Are substitute products available for farm inputs in case prices increase drastically or input availability becomes problematic?
- Am I collecting accurate farm data, how have we been using the farm data we collect, and what are ways in which we could use it better?

- Do we regularly assess employee performance to ensure the labor we pay for is of sufficient quality?
- What new varieties/crops would create opportunities for diversification on my farm with minimal investment in new capital?
- Would growing a different crop give me an advantageous position in an emerging market?
- What networks for farmers are available that I can join or participate in discussions? These might include grower associations, agricultural podcasts, social media groups, and attending extension meetings or conventions.
- Is there sufficient diversity in who I sell my products to?
- Can I adapt to changes in consumer demand?
- What opportunities are available in my local area for farmers seeking further education?
- What production technologies are on the cutting edge of research and development? How will this technology impact my farming operation?
- Will adopting new technology increase my farm productivity and profitability?
- How would different marketing strategies impact our profitability?
- How do my competitor's management strategies differ from my own? Is there a clear benefit to one strategy over the others? Should I change my strategies?

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