

The Relationship Between Strategic Management and Success in Farming

A Literature Review

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Executive Summary

The objective of this paper is to provide evidence on causality between strategic management and success in primary agriculture: are farms that follow strategic management processes more successful?

In some ways the whole concept of finding causality between strategic management and success is daunting. Glancing at the list of practices defined as part of strategic management shows the complexity of the managerial environment. Add to that the fact that agriculture is subject to uncertainty from weather, markets and jarring changes in government policy, the task of unravelling what causes what and how to define success presents a challenge, but also an opportunity for further exploration.

The term “Strategic Management” is used because it has a specific definition in management literature. Strategic Management is defined as:

“The planned use of a business’ resources to reach company goals and objectives. Strategic management requires ongoing evaluation of the processes and procedures within an organization and external factors that may impact how the company functions.”

Paraphrasing this definition, strategic management has three characteristics:

1. It starts with measurable goals and objectives,
2. It uses continuous monitoring and evaluation of internal performance data and of external environmental data against the capacity to reach goals and objectives, and
3. It adjusts internal processes, when appropriate, in response to changes in internal or external factors.

The processes commonly included in strategic management are complex, but are summarized as having and using a written plan that incorporates:

- The management of people
- The management of operations
- The management of markets and marketing
- The management of finances, and
- Using appropriate measures in decision making and risk taking.

One important aspect of this paper is the definition of “success”. Academic and management literature focuses on success defined by profit, which makes sense because accounting systems can measure profit. In reality however, farmers have many goals other than pure profit, such as maximizing production (yield and quality), work/life balance, positive family relationships, positive mental health, and contributions to the community and environment.

Furthermore, it makes sense that personal or non-economic goals are likely more easily achieved when a business is not under continuous pressure to service high debt loads or operating on the edge of financial insolvency. So, while profit maximization is not likely the only goal for most operations, more profit is likely better than less and, at least to some degree, increasing profit is correlated with achievement of non-economic goals.

The review of literature leads to three (3) main conclusions.

Conclusion 1: Improved Strategic Management Improves Profitability

All of the literature studied found a positive correlation between management and profits, which holds true whether farms are categorized by type of enterprise, location or size of operation.

Conclusion 2: Strategic Managers Tend to Be More Profitable Over Time

The vast majority of farm operations remain in the same area of the profit distribution most years, and those with higher profits apply strategic management.

Conclusion 3: Acquiring and Using Strategic Management Skills Can Lead to 100% Returns

While not many of the studies reviewed went beyond determining whether there is a causal relationship between management processes and profits, a few actually quantified the payoff. Not only can strategic management skills lead to 100% returns in profitability, they also lead to 100% return in terms of operational and personal goals that define personal success.

A modest investment to improve managerial skills can have a significant impact on economic and personal performance in an increasingly competitive and consistently tight-margin agricultural industry.

1.0 Introduction

Outside of agriculture, most businesses see the value of business management skills and practices, leading many to require business degrees and often constant upgrading as a prerequisite for managerial employment. In primary agriculture, no specific skills are required for entry into the industry. Many farm operators did not get into farming to be business managers and therefore have no or very little business training. The result is a wide array of attitudes and knowledge about business management and its benefits. Many farmers celebrate deep knowledge about production and technology, taking pride when their yields are high and quality is good, but struggle to understand the factors influencing profitability and farm success.

Farm Management Canada encourages and helps farmers improve their business management practices. Despite having access to and promoting empirical and anecdotal evidence of the positive impact and value of these practices, the vast majority of Canada's farmers are not implementing business practices within their farm operations. Farm Management Canada has commissioned this literature review to gather further evidence and insights it can use to stimulate a Canadian agricultural industry that prioritizes farm business excellence to increase the adoption of business management practices on Canada's farms.

One aspect of the conversation around farm business management practices and their benefits is that it tends to be vague: what does a person mean when they talk about "best management practices," "improved business management," etc.? And does the listener receive a different message than the speaker is sending because the terms used don't have the same meaning for both? The language traditionally used to inform farmers about why they should gain business skills and knowledge may not be the right language.

The term "strategic management" is widely used in the professional management world, and there is general agreement on its definition. A representative definition from Indeed's Career Guide is (underlines are for emphasis):

"Strategic management is the planned use of a business' resources to reach company goals and objectives. Strategic management requires ongoing evaluation of the processes and procedures within an organization and external factors that may impact how the company functions."

This definition means first that measurable goals and objectives are planned and established. Then, management continuously evaluates the business' performance against its goals as well as evaluating information on changes in its external environment. It has a plan, but planning is not a single event. Rather, it is a process that is part of the ongoing evaluation that may lead to effective change. It means that plans may change when either internal or external circumstances change. In the recent past, the latter concept has become well-known as "pivoting" - many businesses, both inside and outside agriculture, have survived, or even thrived, during unforeseen circumstances because they learned to pivot as a result of measuring and understanding changes in their external or internal environments.

Strategic management is further explored in Section 2.0.

With the forgoing background, the objective of this paper is to:

Provide evidence on causality between strategic management and success in primary agriculture: are farms that follow strategic management processes more successful?

To fulfill the objective requires a definition of success. It is easy and tempting to use profitability as the measure of success. However, economic literature as well as any prolonged exposure to a group of farmers clearly reveals that measuring profits is not enough. People have additional goals such as business growth and expansion, maintaining good mental health, work/life balance and contributing to the environment. These are frequently traded off against profits and are explored in Section 3.0.

In section 4.0, the frameworks developed in sections 2.0 and 3.0 are used to organize a review of studies that show the relationship between aspects of contemporary business management and success in primary agriculture. Each study's conclusions and implications are described and discussed.

In section 5.0, we integrate the individual study conclusions into overall implications of the relationship between management and success.

2.0 Strategic Management

To paraphrase the definition of strategic management given above, it has three elements:

1. It starts with measurable goals and objectives,
2. It uses continuous monitoring and evaluation of internal performance data and of external environmental data against the capacity to reach goals and objectives, and
3. It adjusts internal processes, when appropriate, in response to changes in internal or external factors.

It is not rocket science, but it is certainly not easy. It requires management to constantly remain on top of and to understand the interactions of all subsystems of the business such as production, marketing, human resources, and finance. It also requires that the business has timely measures of performance on internal key performance indicators and important external factors.

To illustrate using a 2021 external environment example, interest rates were at an all-time low, but have seen a dramatic rise. Farms and other businesses that understood how this could directly affect their capital performance and, indirectly, their operational performance have proactively pursued opportunities to restructure their debt.

Evaluating and adjusting requires a clear understanding and measurement of how strategic components of a farm business can add value for its customers and therefore profits for themselves. This is not limited to agriculture, as illustrated by Harvard's Michael Porter, who identified five direct and four indirect components through which any business can add value. His "Value Chain" model is shown in Appendix A.

Porter's model provides a taxonomy that reflects the ways a business adds value, i.e., marketing and sales provides revenue, logistics and production results in products with more value than their components and moving things to where they are needed gives them value to their end users. The difference between revenue and cost is the business' margin or the value it adds. It clearly implies that there are two sources of competitive advantage: lower cost and higher revenue. All value chain activities are focused on achieving one or both of these. It is also comprehensive: every imaginable activity fits into one of the categories. Of course, every business doesn't necessarily have activities in every category. For example, many commodity producers have no reason for significant after-sales service.

The value chain model fits nicely into the three parts of strategic management. In planning and on-going evaluation, the value chain provides a convenient framework for internal analysis to identify key factors that affect value adding and therefore the key performance indicators (KPIs) that need to be measured.

When things go awry or new opportunities are presented, this also leads to quick identification of what needs to be changed to get performance back on track.

Combining this with potential changes in the external environment such as:

- Government policy and regulations
- Technology
- Socio-economic factors
- Input markets and competitors
- Product markets and customers

provides a comprehensive framework for both planning and on-going evaluation in a strategic management framework.

Using a Strategic Management framework means that terms such as Best Management Practices (BMPs) often refer to processes. For example, monitoring and tracking performance within defined management areas consistent with plan objectives is the BMP. Applying fungicides on grain crops or locking in long term interest rates are not: they are potential actions taken in response to the monitoring process.

In this regard, various authors (e.g., Kohl, Wittman, and Betker) have developed lists of processes that implement Strategic Management. Wittman, for example, uses a taxonomy that addresses five components within a written business plan:

- The management of people
- The management of operations
- The management of markets and marketing
- The management of finances, and
- Using appropriate measures in decision making and risk taking.

Dick Wittman's list of strategic management factors for farm businesses is detailed in Appendix B.

3.0 Defining and Measuring Success

In section 2.0, we explored the meaning of "strategic management," the practice of which is expected to help managers achieve greater success. We need, therefore, to define success. It is tempting to use the "Adam Smith" definition – i.e., profits to measure success. With this definition, success is simple and the expected relationship between strategic management is that it will lead to higher profits.

A brief conversation with any farmer quickly reveals they aren't just profit motivated. They have psychological needs, recognize that there are tradeoffs between profits and environmental or social outcomes, and sometimes don't have full information about all the alternatives and consequences of their actions. Not surprisingly, these ideas found their way into economics, prominently through the work of Herbert Simon, Nobel Laureate in economics (Simon, 1979).

In Simon's view, "rational" profit-seeking behaviour is limited by lack of perfect information on all alternatives and/or by competing objectives (Simon, 1956). This leads to decision-making characterized by "satisficing," i. e., a decision-making strategy that entails searching through the available alternatives until an acceptable profit threshold is met (Simon, 1957). In the current context, we interpret this to mean

that people will do what is necessary to earn profits sufficient for their goals, but will not necessarily try to maximize profits. It may result from uncertainty (how much fungicide to use when it hasn't rained?) or from other considerations (how much time do I need to give up with my family to expand the business? Or, how much time should I give up to volunteer to support the community?).

Satisficing behaviour clearly occurs in farm management; farmers and their families want work/life balance, to make contributions to their community, to maintain positive mental health and/or relationships, etc.

To a degree, some of these non-economic goals are correlated with profits: e. g. it is difficult to contribute to your community if your farm business is not profitable; and mental health is often most threatened by not having enough income to service debt and not knowing what to do about it.

The foregoing has at least two implications. First, while one should not expect "profit maximizing" behaviour, one should expect that people will attempt to achieve an acceptable level of profit. Therefore, to some extent, if strategic management improves profitability, there should be correlation between learning about and practicing strategic management and profits, at least to the point where "acceptable" is achieved. More is preferred to less, and some positive amount of profit is preferred to none or losses. Similarly, given that there is often correlation between profits and non-economic objectives, achieving the latter can be an outcome of improved management. So, attempting in research literature to find a relationship between management practices and profits is a necessary condition.

The second implication is that there clearly are non-economic objectives that are important, as alluded to above. Therefore, it is important to determine whether they are improved with strategic management. Therefore, in the literature review in the next section, the ways these objectives are examined and measured becomes an important part of the review, though it will become clear that very few research studies have focused on these objectives.

4.0 The Literature

The author interviewed a number of people with expertise in management for this paper. Dr. Michael Langemeier of Purdue University pointed out that every database on farm accounts shows that there is much more variation in performance within any group of similar farms than there is between groups. In other words, average farm profitability may be similar between mid-sized grain farms in Manitoba and mid-sized hog farms in Quebec, but both groups have huge variation within them. Langemeier cited his experience with Kansas, Indiana, and Minnesota data bases, indicating they all had the same result. Discussions with others such as Dr. Gary Schnitkey at the University of Illinois revealed that that State's farm record database has the same result.

4.1 A Fundamental Fact: Analysis Shows that Financial Performance Varies Much More Within than Between Groups of Similar Farms

Canadian data provides no exception to this rule. Studies by Mussell and his colleagues using tax filer data to calculate operating profits clearly show that operating profits were very similar over time for different types, sizes, and locations of Canadian farms. However, within each similar group there was tremendous variation, with operating earnings ranging from highly positive to highly negative for farms of similar type (e.g., dairy, hogs, grain), size (e.g., \$250,000 - \$500,000 in annual sales), and in the same region (Manitoba, Alberta, or Quebec).

More recently, Martin and Jansen found a similar structure when analyzing standardized farm accounting data from a national accounting firm. To illustrate this, Table 4.1 is replicated from that study.

This data show that, expressed as a percentage of revenue, there is significant variation in performance among farms within the same industry and province. For Manitoba’s 1176 farm records, just examining two of the measures – Operating Profit and Net Profit, tells the story. Operating profit (what’s left after paying all annual operating expenses) averages \$493,100 for the most profitable quartile of farms. For the least profitable, it is \$185,800. On annual revenue of a million dollars this shows a range of 49.3% vs 18.6%, a difference of more than \$300,000 on \$1 million in revenue. After then deducting capital and interest costs, the range is from \$315,590 to a loss of \$160,900, or 31.6% to - 16.1%, in the same industry, in the same province, over the same period of time.

The Manitoba results are not random. Ontario shows the same pattern: assuming a million dollars of revenue for 816 farm records, operating income is 44.7% for the most profitable farms vs. 9.53% for the least, while net profit for the most profitable is 22.7% of revenue and net losses of -30% for the least profitable.

**Table 4.1: Financial Performance of Farms in Manitoba and Ontario
Grain and Oilseed Industry (\$ Per Million \$ of Sales) 2016 – 2019**

	Manitoba Grain/Oilseed		Ontario Grain/Oilseed	
# of Farm Records	1176		816	
Indicator	25% Least Profitable	25% Most Profitable	25% Least Profitable	25% Most Profitable
Gross Margin	\$557,600	\$700,200	\$595,800	\$715,200
Contribution Margin	259,200	529,300	197,600	506,700
Operating Income (EBITDA)	185,800	493,100	95,300	447,100
Earnings Before Interest	120,100	320,640	247,000	255,100
Net Profit	160,900	315,590	299,900	226,700

(Numbers in red mean losses.)

Some readers may argue that the two provinces are geographically large and there can be large differences in weather even within the regions that could explain much of the variation.

That argument has some merit, but it is harder to make with the data in Table 4.2, which has similar information for dairy and poultry farms, and beef feedlots in Ontario. Operating income for the most profitable dairy and poultry farms are 44.9% and 39.3%, vs. 14.7% and 16% for the least profitable. These ranges are quite similar to what we saw above for grain and oilseed farms. The range is similar, but lower for beef feed lots, with the lowest quartile in a negative position.

Interestingly, when capital and interest costs are deducted, the lowest quartile of dairy and poultry farms have net loss ranges similar to grains.

We conclude that weather and soil aren't the sole, or even major, cause for differences in financial performance. What else could it be?

Table 4.2: Financial Performance of Ontario Dairy, Beef Feedlot and Broiler Farms (\$ Per Million \$ of Sales) 2016 – 2019

	Ontario Dairy # of Farm Records 992		Ontario Beef Feedlots 112		Ontario Broilers 243	
Indicator	25% Least Profitable	25% Most Profitable	25% Least Profitable	25% Most Profitable	25% Least Profitable	25% Most Profitable
Gross Margin	\$618,600	\$758,100	\$229,100	\$455,200	\$449,400	\$511,500
Contribution Margin	238,000	496,000	45,100	336,600	214,800	393,200
Operating Margin (EBITDA)	147,300	444,900	68,000	307,400	160,200	369,100
Earnings Before Interest	64,900	317,500	154,600	232,900	19,300	284,000
Net Profit	149,600	269,800	188,500	206,200	103,800	250,900

(Numbers in red mean losses.)

Acknowledging that this variation exists, Langemeier offers two logical questions: over time, do the same farms appear in the same parts of the distribution? And, why does this variation occur? Unfortunately, the Canadian studies cited above did not have data available in a format that allowed analysis of these two questions. However, there are two sets of studies in the US that at least partially address Langemeier's questions.

Zwilling, in an analysis of the Illinois farm database, examined the differences between the top and bottom one-third of farms in terms of profitability from 2011 - 2020 and for 2020 alone. The data were divided into four geographic regions, thereby removing some of the effect of weather and soil. Zwilling's report had a number of interesting results:

- Grain yields were higher for all regions and both time periods for the more profitable farms. This may be a function of management, or weather, or luck. But significantly, the more profitable farms had higher revenue per acre, and they were higher by more than the yield difference. For example, in Central Illinois, corn and soybean yields were 12 and 4 bu. higher on average for the period while revenue was \$106/acre higher. Given average prices over this period, it would imply that the higher profit farmers also achieved higher product prices during much of the 10 years and/or they were able to generate other sources of income. These results are representative across the regions and both time periods.

- The most profitable farms also managed crop costs better, with an average of \$32 - \$41/acre lower crop costs (fertilizer, seed, and pesticides), despite higher yields.
- Similarly, they had \$34 - \$43/acre lower power and equipment (fuel, repairs, machine hire, lease expense, and economic depreciation) costs than their lower profit competitors.

Adding higher returns together with lower costs, Zwilling finds that the upper third enjoyed from \$233 - \$256 per acre more “Management Returns” than the lower third.

While Zwilling did not analyze whether the same farmers were in the same parts of the distribution over time in this study, Schnitkey, Paulson and Lattz did so, using the same data base in earlier years. They used data from one county with highly productive soil to minimize the effect of soil and weather. They conducted two tests, one statistical, the other a comparison of margins over time. They calculated the most profitable, average, and least profitable farms’ margins in 2009-2011 and tracked those same farms in 2012-2015. They found that all three groups consistently ranked 1, 2, and 3 in the subsequent years - i.e., the most profitable in 2009 stayed the most profitable in each of the other years, and the least profitable stayed the least profitable.

The same three authors using the same data in a subsequent article, examined the financials of the various groups of farms and found, similar to Zwilling, that the most profitable farms had management strategies that resulted in higher revenues and lower costs. This is the expected outcome from using strategic management.

4.2 What Happens When You Take Steps to Improve Management Performance?

Viewing the results of the studies above, one is reminded of the adage, if you continue to do the same thing over and over again, don’t expect to get different results. This is often cited as the definition of insanity, but in fact it often defines the human condition: we continue to do what we’ve always done, even when it’s not working, until we are either forced or choose to change.

This leads to a study that explicitly asks the question, what happens if managers make a conscious decision to be better than the average? Morris, et.al. used 453 grain farms from the Kansas farm record data base to address this question from 2005—2014. Like the other studies, the data base shows significant variation in performance: e.g., net crop income per acre on the sample farms averaged \$70/acre with a coefficient variation of 1.73. This means that two thirds of the net income observations were within 173% of the \$70 average, a range of \$-27.30 to \$167.30/acre.

Morris, et. al identified a number of variables that could explain differences in net income, then analyzed them in an econometric model. They calculated the variables using differences – i.e., do the differences from the average in price received or cost of machine operation, etc. explain the difference in net income from the average?

Their results found that several variables, consistent with strategic management practices, were statistically significant in explaining variations from the average, and useful in pinpointing the consistency of performance. In regard to the latter:

- 23% of the farms had consistently above average profits per acre.
- 11% were consistently able to achieve higher prices for their products.
- 19% consistently had higher yields.
- 24% consistently had lower input costs.
- 26% consistently had lower machinery costs.

Conversely, it was found that:

- 21% of the farms had consistently below average profits.
- 13% had consistently below average prices.
- 20% had consistently below average yields.
- 34% had consistently above average input costs per acre.
- 40% had consistently above average machinery costs.

For each category, the difference between the consistent top and bottom performers are those who were consistently average. They vary from 33% - 76% of the sample.

So, based on this data, we can say that roughly 25% of farms perform consistently above average, roughly 25% perform consistently below average, and roughly 50% are consistently average over time.

What is it worth to be consistently above average? The analysis of Morris et. al. provides an answer. Summing the effects of various factors that we associate with strategic management, results in additional crop profits of \$70.47/acre. Recall that the average profit/acre for the entire sample was \$70. So, being an above average manager appears to potentially provide a 100% increase in profits for this sample of grain farms.

4.3 The Value of Training Aimed at Helping Farmers Improve Strategic Management

Martin and Broughton (2018) undertook an evaluation of their company's Canadian Total Excellence in Agricultural Management (CTEAM) program, which is a mini-MBA designed for farmers. It is designed to teach and helps farmers apply the concepts discussed above in the description of Strategic Management. Martin and Broughton wanted to learn from graduates, whether the program was delivering what was promised, the value and impact for the graduates, and ways to improve the program. Their specific objectives were:

- Determine what lasting management skills CTEAM provided its graduates.
- Determine what effects CTEAM had on graduates' farm business management processes.
- Estimate the value of CTEAM to graduates in terms of their return on investment resulting from the program.

In obtaining self-assessments of their return on investment resulting from the program, Martin and Broughton divided the potential return into three categories: the financial performance of their business; improvements in business operations; and personal gain, following the methodology for training programs proposed by Phillips and Phillips.

One unanticipated issue that arose from the project resulted from the way graduates were asked about their return on investment. The program cost is unique to each participant because it includes the tuition of the course, transportation and hotel costs, time away from their business and, in some cases, childcare expenses. Nonetheless, participants were asked to estimate their return above costs in one of the categories shown in Table 4.3. For all three categories, the last return category (>100%) has the most responses. The issue is, since the last category is >100%, there is no way of knowing whether respondents mean 105%, 500%, or 1000%! Because of this issue, it is not possible to calculate an average return for the group.

Table 4.3: Distribution of Self-Assessed Return on Investment in CTEAM by Its Graduates

Estimated ROI	<5%	5-10%	10-20%	20-30%	30-50%	50-100%	>100%
Financial Performance	3.70%	0.00%	7.41%	14.81%	14.81%	25.93%	33.33%
Business Operations	3.70%	0.00%	7.41%	11.11%	11.11%	22.22%	44.44%
Personal	7.41%	0.00%	11.11%	7.41%	14.81%	11.11%	48.15%

Even with this problem, any averaging procedure gives an extraordinary return for agriculture, where returns on assets are normally in a range of negative to 10 or 12%, with an average around 3-5%. Calculating a weighted average using the mid-points of the 10-20 to 50-100% categories as well as 5% and 100% for the extreme categories, gives a 63% return for Financial Performance and over 70% for both Business Operations and Personal Gain. Obviously, the averages could be considerably higher if the >100% option was specified further.

This study also asked graduates what skills they learned that they have implemented to achieve the results (See Appendix C for a full list of responses). This was an open-ended question and many focused on similar outcomes. Note that many items on the list are consistent with the strategic management activities discussed in section 2.0 and Appendix B.

An interesting aspect of this analysis is many high responses under the “personal” category. Respondents listed items such as increased confidence, improved family dynamics, improved mental health and improved work/life balance as results they gained from the CTEAM program. Given that respondents estimated a very high return on investment from the program, these “personal” responses support the argument that having and applying good management practices not only has a positive effect on the farm business, but also on aspects of personal life. It stands to reason that if finances are improved, the business is running smoother, relationships are improved and there are fewer issues in managing people, then there are fewer personal stresses. At a time when mental health of the agricultural community is a major topic of conversation, this is a significant result.

A related Canadian study was carried out in 2015 by IPSOS Agriculture and Animal Health, commissioned by Farm Management Canada and the Agri-Food Management Institute. This study obtained financial performance data and management practices of 604 farms across Canada. They conducted statistical analysis between financial performance and management practices. Financial performance was measured as a combination of return on assets, gross margin ratio and asset turnover. Then an “impact score” was calculated between financial performance and practices.

18 practices were found to have positive impacts on financial performance. Those with scores above .65 are particularly significant. The most significant were:

- Actively seeking new knowledge and skills development.
- Having and using up-to-date, detailed information from accounting systems for business decisions.
- Using business advisors.

The second tier of significant practices were:

- Having a formal business plan that is reviewed and updated at least once per year.
- Using cost of production for benchmarking, monitoring and decision-making
- Having a formal risk management plan and procedures in place to assess and manage risk
- Having a financial plan with budget objectives and monitoring performance

It is immediately obvious that this list closely parallels the practices cited in the strategic management discussion of Appendix B and results achieved by CTEAM graduates.

4.4. Related Literature

The studies cited above are most directly related to the central question of this study – i.e., do strategic management practices lead to greater success? But there is a wealth of studies that address this question partially, many of which were reviewed by Stiefelmeyer and Rajcan (2012). Highlights of that literature pertaining to the current question are presented below.

Victoria (2004) found a positive and statistically significant relationship between farm revenue and business planning, transition management, customer management, and family relationship management.

Describing what we call farms with strategic management as “modern” farms in England, Wilson, et. al. (2011) found that they had greater farm incomes.

Duffy and Nantou (2002) found that more successful farmers spend more time on marketing than their less successful counterparts, and that the more successful group relied more heavily on technology and used marketing services as their source of information, whereas, less successful farmers relied on their neighbours as their most frequent source of information.

Patterson et al. (1997) focused only on the impact of human resource management (HRM) practices in manufacturing firms. They found:

- the more satisfied employees are with their jobs and committed to the organization, the better the company is likely to perform
- a clear relationship between organizational culture and company performance, with concern for employee welfare as a significant predictor of improved labour productivity
- high quality employee management provides firms a competitive advantage because it is difficult to replicate.

The authors examine whether HRM practices can explain variation in a company’s profit and productivity. The results clearly demonstrate a link between people management and the profit and productivity of firms. Specifically, practices that focus on acquisition of employees and the development of their skills had the strongest relationship.

Bloom et al. (2007) also found that companies that apply HRM practices effectively perform significantly better than companies that do not. The analysis estimates that a “single point improvement in management practice score gave the same increase in output that would occur if the labour force increased by 25%, or the company increased their investment in capital by 65%.”

5.0 Summary and Conclusions

The objective of this paper was to provide evidence on causality between strategic management and success in primary agriculture: are farms that follow strategic management processes more successful?

Of course, this begs the question: how do we define “success?”

Most of the academic literature focuses on success defined by profits, which makes sense because accounting systems can measure profit. In reality, farmers have many goals other than pure profit such as work/life balance, improved family relationships, positive mental health and contributions to the community and environment.

At the same time, it makes sense that personal goals are likely more easily achieved when a business is not under continuous pressure to service high debt loads or operating on the edge of financial insolvency. So, while profit maximization is not likely the only goal for most operations, more profit is likely better than less and, at least to some degree, increasing profit is correlated with achievement of non-economic goals.

While most of the literature reviewed only addressed one or a subset of all that is included in strategic management, perhaps the most significant conclusion that can be drawn is:

Conclusion 1: Improved Strategic Management Improves Profitability

All of the research studied found a positive correlation between management and profits. Does this mean good management or management training ensures profits? Of course not - one can be the best manager in the world and still lose money if drought kills your crop, or BSE kills your market. Similarly, one can have a Harvard MBA, but not profit from it if the skills are not applied. But what the combined studies show is that over time, space, and different enterprises, management skills pay when strategic management is practiced.

Much of the approach taken in this literature review was animated by Dr. Michael Langemeier pointing out what we already knew, but weren't thinking about, which is that there is significant variation in economic performance within any group of similar farm businesses, whether they are categorized by type of enterprise, location, or size of operation. His two questions are key: are the same farms in the same general areas of the distribution of profits over time? and, if so, do they exhibit differences in management practices?

Based on the available research:

Conclusion 2: Strategic Managers Tend to Be More Profitable Over Time

The work of Schnitkey, et al, Zwilling and Morris, et. al. all clearly support this conclusion, showing that many operations are in the same general area of the distribution, and those with higher profits apply strategic management. In some ways it is surprising that more research has not been done on the subject, and probably more needs to be done to confirm the conclusion more fully. On the other hand, since most people who work in this area see anecdotal evidence every day that good management is profitable, it doesn't occur to them that additional research needs to be done. It is self-evident that strategic management practices pay.

This leads to a final conclusion from the review:

Conclusion 3: Acquiring and Using Strategic Management Skills Can Lead to 100% Returns

Not many of the studies reviewed went beyond determining whether there is a causal relationship between management processes and profits, but a few actually quantified the payoff. Morris, et. al., and Zwilling show that applying strategic management can lead to 100% returns. Martin and Broughton show

that returns on investment in management skills can be 100% or more, and can lead to satisfaction of non-economic goals that define personal success.

It is not often in agriculture, or any industry, that an investment earns its own value and doubles it. Skeptics may scoff at a number of that magnitude, but a little reflection suggests that it is modest. As pointed out by Morris, et. al. the average profit of grain farms in their Kansas sample was \$70 per acre. 100% increase in that number would only take it to \$140, a level that was achieved by many in the sample.

Further support stems from the work of Martin and Jansen. Averaging all the information from the five types of farms in two Canadian regions, yields net profit of 4.68%, or \$46,800 on a million dollars in sales. Therefore, 100% increase in profit from better management would take that to \$97,600 annually. This is a modest improvement since the average profit for the 25% most profitable farms is 25.39%, a multiple of roughly five times the average.

It is also another way to gauge the potential payoff from obtaining management training: this modest improvement of \$46,800 per year from the average can pay for a lot of training.

As a final comment, this review leads to the observation that a modest investment to improve managerial skills can have a large impact on economic and personal performance in an increasingly competitive, tight-margin industry. For those, like the author, who see the impacts on a daily basis, this is a no-brainer. As one farmer said recently in response to another's comment that obtaining training is expensive. "You'll invest \$300,000 - \$400,000 in a new combine that likely has a negative return on investment, but you won't spend a few thousand to improve your own skills? Give your head a shake!"

The results of this study are more modest than the results we see routinely.

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Appendix A

Porter's Value Chain Model

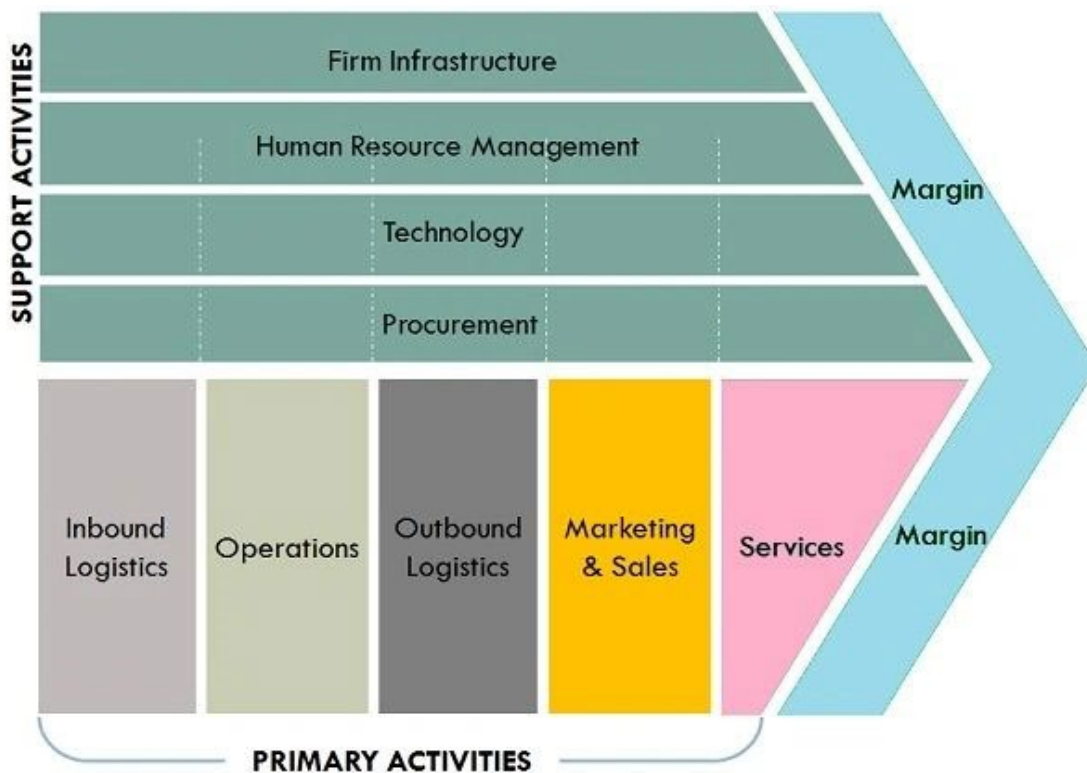
The five boxes along the bottom are the direct ways a business can add value. They do so through:

- The logistics used to move inputs (seed, fertilizer, feed, etc.) to the farm
- The processes used to convert those inputs into the products it sells (producing crops, livestock, and services)
- The logistics used to move those products and services from the farm to its customers
- The processes and methods used to market and sell those products to customers
- Any after-market services provided to customers (e. g. quality guarantees.)

The four boxes along the vertical are indirect processes used by the business to make the direct components as efficient and effective as possible:

- Procurement policies affect the cost and quality of inputs
- Human resources affect the efficiency and cost of labour used in production and other processes
- Technology management determines what equipment, machinery and processes are used in production and, therefore, affect production and labour costs
- Firm infrastructure is a substantial category that can include collecting, analyzing and using information in making decisions, planning, managing risk, its approach to succession, and others.

Porter's Value Chain Model



Appendix B

Dick Wittman's List of Strategic Management Factors for Farm Businesses

Planning – A Written Strategic and Operating Plan Exists for the Farm and is Followed

- Opportunities, Threats, Strengths and Weaknesses identified and addressed in the plan
- Vision, Mission or Strategic Intent, Core values are defined
- Measurable Goals (long range) and Objectives (short range) are defined
- Incorporating advice from business advisors, bankers, etc.

Managing Operations and Markets

- Written Operating Plan addresses production methods, marketing, sales, financing, capital purchases
- Written Standard Operating Procedures (SOPs) are followed
- Record keeping systems set up and records are kept up to date
- Measures defined to track performance consistent with plan objectives
- Meetings/Communication
 - Daily - staff
 - Weekly – management
 - Quarterly/Annually – board, shareholders
- Technical tools and expertise in place for access to management information – computers, smart phones, internet, software, etc.
- Critical agreements are documented, available, and reviewed – strategic plan, SOPs, wills, partnership agreements, shareholders' agreements, etc.

Managing People

- Job descriptions written and up to date
- Policy and Procedures manual is written and read
- Recruiting process is defined and followed
- On-boarding process is defined and followed
- Salary and Bonus policies are defined in writing
- Performance appraisals are conducted regularly, used in compensation and promotion, as well as in professional development

Financial Management and Decision Making

- Budgets are prepared based on plan
- Financial reports (accrual income statement, balance sheet and others) are completed monthly or quarterly and shared as progress against goals - by enterprise or product line
- Audit process is defined and followed
- Enterprise profitability and cost tracking is in place to compare against plan and budget
- Cashflow statement is prepared and compared to forecast
- Capital investment analysis process and decision criteria are defined and used
- Partial budgeting tools are used
- Financial ratios are calculated and compared to the budget and past performance
- Insurance, hedging and other risk management plans are defined and followed

Appendix C

Management Skills Gained to Improve Performance as Cited by CTEAM Graduates

More detailed financial planning
Better financial understanding to make decisions
Treating our farm more as a business with targets and goals
Written plans, formal meetings, strategic visioning
Succession planning – a continuous process
Strategic planning – simplified
HR – communications
Improved communication based on personality types
Follow strategic plan to stay focused on goals
Improved use of ratios to see areas for improvement
Human resource management
Hire what you're not good at
Ask for money when you don't need it
Bookkeeping is now a monthly activity
Capital purchases must fit the strategic plan
Doing crop budgets
Segregation of assets and operations from family
Analyze before decision making
Better overall business concepts and perspectives
Financial analysis
Networking
Public participation
Linking flock production records with farm financial records to produce key performance indicators for analysis
Annual review of Strategic Plan
Clearer human resource management i.e. concise set of standard operating procedures
Consideration of needs of others in the family
Work towards better record keeping
Following budget incorporated into management decisions
Financial ratios
Better understanding of succession
Advisory board
Managing personnel
Attention to numbers
Follow-up on projects
It is hard to qualify, but simply put, I take a much more "professional" approach to the business than I did before
Being better able to analyze the business' performance
There has been a lot of value to the visioning/strategic planning skills learned during CTEAM
Structure
Importance of meetings
Attention to succession planning