111 EAAE-IAAE Seminar 'Small Farms: decline or persistence'

University of Kent, Canterbury, UK

26th-27th June 2009

Positional Advantage within Small Farms: Evidence from Illinois

Authors

Eric T. Micheels
Graduate Research Assistant
Department of Agricultural and Consumer Economics
University of Illinois at Urbana-Champaign
326 Mumford Hall, MC-710
1301 W. Gregory Drive
Urbana, IL 61801
micheels@illinois.edu

Hamish R. Gow
Associate Professor, International Agribusiness and Food Marketing
Director, Partnerships for Food Industry Development - Fruits and Vegetables
Michigan State University
409 Agricultural Hall
East Lansing, MI 48824
Tel: +1 517 432 2214
hgow@msu.edu

Copyright 2009 by **[Micheels and Gow].** All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.

Abstract

As the economic viability of small farms continues to be an issue facing policy makers and economists alike, a market orientation may be a valuable resource producers can develop as they compete in a marketplace dominated by larger firms. Marketing and strategy scholars have long established the importance of a market orientation in determining firm performance. More recently, scholars have studied the effect of these concepts in agriculture. Extending the literature of market orientation in agriculture, this study examines the concept of a positional advantage and its effect on performance using a sample of small farms in Illinois. Using a sample of 347 Illinois beef producers, we empirically measure and test the construct of positional advantage and test the relationship between positional advantage and subjective performance. Our results indicate that market orientation, entrepreneurship, innovation and learning are first-order indicators of positional advantage and that the positional advantage of a firm is positively related to firm performance.

Keywords: *Agriculture, innovation, market orientation, positional advantage*
JEL Codes: *L11, L25, L26*

1 INTRODUCTION

According to the 2007 U.S. Census of Agriculture, over 80% of the farms involved in cattle production have herd sizes under 100 head (USDA). Short (2001) demonstrates that economies of scale is not present in small operations, hence commentators argue that small farms will need to increasingly focus on their customers as well as competitors to ensure their continued existence within today's increasingly segmented food marketplace (Spiller et al, 2007). Research has indicated firms which have an appropriate market orientation and leverage this through a positional advantage can achieve superior performance vis-à-vis competitors (Hult and Ketchen, 2001). If this result also holds for small farms, then they may be able to not only survive, but thrive in an increasingly segmented and ever-changing marketplace which has historically been dominated by large firms striving to achieve economies of scale. The ability of these small firms to flourish may lead to an increase in the economic and socio-economic benefits attributed to small farms including increasing rural employment and the stemming of rural emigration (Hazell, 2005).

For small operations, a differentiation strategy may be more attainable than a low-cost strategy given the main driver of the low-cost strategy is scale economies. Furthermore, the historically mediocre performance of the cow-calf sector (Jones, 2000) may be attributed to the imitation of strategy choice by the industry as a whole (Teece, Pisano, and Shuen, 1997). The development of a market orientation may help small farmers decide on how to most effectively differentiate their production based on their current capabilities. During the past two decades there has been a vibrant discussion surrounding the performance implications of becoming market oriented and more recently, how a firm could develop a market orientation (Narver, Slater and Tietje, 1998). These benefits include, but are not limited to, improved performance as well as increased success of new product development.

A market orientation is a culture within the firm centered on the creation of customer value (Narver, Slater and Tietje, 1998). Therefore, the development of a market orientation is begins with the firm's culture of learning and is further built upon the firm's capability to discover the products and services which are valued by the market. Firms who are able to discover the unmet needs of the market and develop products to meet these needs may see price premiums, increased sales, or both. As a result of this awareness, studies have shown market oriented firms to have superior performance in a variety of industries and cultures (Narver and Slater, 1990 Deshpande, Farley and Webster, 1994; Tregear, 2003).

Conceptually, a positional advantage is defined as the superior advantage in relation to the competition through the provision of either a low-cost or differentiated product (Porter, 1991). A market orientation would allow firms to determine through the customer and competitor focus where value could be created within competitive landscapes. More recently, however, it has been shown that a market orientation is not solely responsible for improved performance. In their study of 181 multi-national corporations, Hult and Ketchen (2001) found that the market orientation of a firm was

only one component of the overall positional advantage of the firm, which also includes entrepreneurship, innovation, and organizational learning. They argue that it is the combination of these four distinct capabilities which provide the firm with the sustainable resource which is used to create value for the customer. Pelham (2000) has argued that the interaction of these capabilities (especially a market orientation) within small firms may be a reliable source of competitive advantage. The source of this advantage lies in the fact that small firms are more flexible, are able to exploit market niches, and exhibit a faster response to market intelligence compared to their larger counterparts.

The objective of this study is to determine if the concept of positional advantage as defined by Hult and Ketchen (2001) is relevant in an agricultural setting. Several authors have examined the importance of market orientation, innovation, entrepreneurship and organizational learning individually in an agricultural setting. Grunert *et al* (2005) found several performance implications of becoming market oriented in several agricultural value chains while not objectively measuring the level of market orientation. Along with the importance of a market orientation, Micheels and Gow (2008) found innovation, entrepreneurship and learning to be important drivers of firm performance in the Illinois beef industry. Recently, Ross and Westgren (2006) examined the role of entrepreneurship within agriculture and found entrepreneurship to be an important resource in the search for rents using a simulation of hog producers. An important extension of work in both the marketing and agricultural literatures is this paper combines these components into a single latent factor, and examines the effect of a positional advantage on performance within small firms.

Rural sociologists and agricultural economists are equally interested in the characteristics and performance of small farms. However, there is some ambiguity as to what exactly constitutes a small farm? The USDA defines a small farm as one that generates less than $250,000 in annual sales (ERS/USDA, 2005). A more general definition describes a small farm *as one where the farmer or farm family participates in the day-to-day labor and management of the farm, and owns or leases its productive assets those firms that are managed by the owner/farmer* (WSDA, 2008). Still more definitions could be found based on the size of the farm in acres or by the number of livestock raised on the farm. For the purposes of this paper, we will use the definition based on management and control.

2 THEORETICAL FRAMEWORK

It has been shown that the components of Hult and Ketchen's (2001) concept of positional advantage are important drivers of firm performance in agriculture (see Ross and Westgren, 2006). Micheels and Gow (2008) found that a firm's market orientation directly affected firm performance and was moderated through the innovativeness of the firm. However, there has been no examination of the importance or the consequences of a positional advantage in agriculture. It may be, as Hult and Ketchen argue, that the whole is more valuable that the individual component contributions, as the inter-relationships between the components and firm performance may not be linear. If this is the case, the positional advantage of a firm may allow for more rapid discovery of

'opportunity gaps' where firms can provide valuable products to markets where there is unmet demand. Gow, Oliver, and Gow (2003) found that awareness of opportunity gaps was a source of improved performance in pork production systems.

A positional advantage, modeled as the interaction of four important resources, may enable the firm to develop a strategy which allows them to earn profits, or more correctly, rents, from the development of superior products. As Mahoney and Pandian (1992) point out, resources and competencies are fundamental components of the resource based view (RBV). Whereas Hunt and Morgan (1995) have argued that a market orientation is a valuable resource capable of providing sustainable competitive advantages, there may be other resources which contribute to the effectiveness of a market orientation.

2.1 Small Farms

In the past several decades, the number of small farms in the U.S. has declined tremendously[1] (Steele 1997). More recently, it has been reported that small farms (less than $10,000 in sales) have increased in number, at the expense of farms with sales from $10,000 to $250,000 (Hoppe et al 2007). In an industry such as agriculture characterized by homogeneous price takers employing a low-cost strategy based in part on economies of scale, small farms may find it difficult to compete directly with their larger counterparts. In the case of beef farms, Short (2001) indicated that economies of scale exist for farms over 250 head. Unfortunately, according to the 2007 Census of Agriculture (USDA) only 3% of beef farms have herd sizes above this threshold.[2] Further clouding the discussion, Jones (2000) found low-cost firms in all size classes in his study of the U.S. beef industry.

As noted, achieving economies of scale may be difficult for small farms; therefore these smaller farms may choose to pursue a differentiation strategy leveraging their flexibility to operate in niche markets (Steele 1997). This has been increasingly important as innovative beef producers have turned to direct marketing as a means of increasing the value of their production (Gale, 1997). Also, some producers have established production alliances where they can pool resources and cattle to leverage both customer linkages as well as economies of scale in processing. Producers who utilize direct marketing or production via alliances may be able to leverage these relationships by using the more fine grained information to develop new products or services and to improve production practices.

2.2 Market Orientation and Positional Advantage

Small farms may benefit from by moving away from traditional marketing channels where communication is limited to channels characterized by more direct linkages with the final consumer. This framework enables the small farmer to take

[1] Steele (1997) defined a small farm as one with less than $20,000 in sales.
[2] Percentage based on number of farms with beef cows greater than 200 head divided by total number of farms. Therefore, this estimate is likely the upper bound.

advantage of their strategic flexibility and responsiveness. The flexibility of smaller firms may be their most important asset. Based on market intelligence gathered by the producer or other sources, innovative producers may be able to transition to a new strategy more rapidly than their larger counterparts.

What is ultimately important, however, is the firm must understand the value chain from the buyer's perspective. What attributes are being sought by the market? Does the small firm have a comparative advantage in providing these attributes? Building off of Narver and Slater's (1990) definition of a market orientation being comprised of a customer focus and competitor orientation, market oriented firms can take advantage of new information to develop a strategy where there are few direct competitors. Therefore, how this information is leveraged is an essential component of the value creation process.

Hult and Ketchen (2001) argued that firm performance may be driven by more than market orientation alone. They argue that the positional advantage of the firm, comprised of the inter-relationships of market orientation, entrepreneurship, innovation, and organizational learning, may be a more important driver of firm performance. Verhees and Meulenberg (2004) found that market orientation, entrepreneurship, and innovativeness contributed to firm performance in a study of rose producers in the Netherlands. What these findings show is that no matter what industry the firm operates in, market intelligence is a valuable resource producers can use to determine methods to provide superior value to their customers.

At their most elementary level, one could argue that all components of Hult and Ketchen's (2001) model of positional advantage (i.e. market orientation, innovation, entrepreneurship) are built upon market awareness and knowledge of customer demands. This commonality allows for the combination of the constructs to form something more valuable than their individual sums. A market oriented firm may be aware of customer needs, but they also need to be entrepreneurial and innovative to capitalize on this market knowledge. Internalizing this information into a strategy formulation or strategy implementation approach (i.e. Homburg, Krohmer and Workman, 2004) may allow small firms to develop a positional advantage relative to rival firms which allows them to not only survive in these competitive markets, but to thrive in them.

2.3 Testable Hypotheses

A market orientation has been shown to positively affect firm performance through the provision of superior value for customers (Narver and Slater, 1990). Day (1994) argues the source of value creation, and ultimately the performance benefits, is the capability of the market oriented firm to accurately sense the changes in the market. The value of this capability is obvious in dynamic industries, but can the same be said for commodity products common to agricultural production? The answer appears to be yes. Grunert *et al* (2005) studied several different value chains from a variety of countries and found that the overall market orientation of the channel was an important driver of channel performance. What a market orientation allows firms to do is to discover points

of differentiation from the commodity product so they may exit the commodity channel and receive some benefits for providing a differentiated product. The growth of branded beef offerings (National Meat Case Study, 2007) and the increasing level of beef produced through alliances points to a segmenting of the beef industry into differentiated and non-differentiated production channels (Drovers, 2008). As such, the following hypothesis is examined:

H1: A market orientation is a positive indicator of the positional advantage of a firm.

According to Naman and Slevin (1993), the entrepreneurial firm is characterized by the ability to innovate and react to changing environments. In an agricultural setting, Ross and Westgren (2006) demonstrate using a simulation model that entrepreneurial firms can achieve higher returns compared to less entrepreneurial firms. The entrepreneurial concept, being focused on opportunities to earn premiums based on the miscalculation of the value a resource can provide is similar to a market orientation. The combination of entrepreneurship and the other constructs could provide firms with a positional advantage from which the firm can seek means to create value for customers; therefore, we examine the following hypothesis:

H2: The level of firm entrepreneurship is a positive indicator of the positional advantage of the firm.

Nelson and Winter (1982) define innovation as merely a change in routine. Technological innovations have been widespread in agriculture and have enabled firms to increase production while decreasing the level of inputs used in the production process. In the beef industry, marketing innovations have become more common as an increasing number of firms have moved from the commodity channel to an alliance-based production system (Drovers, 2008). These innovations have allowed firms, with the help of channel captains, to provide value for both downstream partners in the value chain and the ultimate consumer through differentiated products. As such, the following hypothesis is examined:

H3: The level of firm innovation is a positive indicator of the positional advantage of the firm.

What may be ultimately the core resource that provides value for the firm is its ability to learn faster than its competitors (Slater and Narver, 1995). A culture which encourages learning will enable firms to discover opportunity gaps and to capitalize on them through technological or marketing innovations. Baker and Sinkula (1999) show that a learning orientation, combined with a market orientation leads to an increase in relative market share. Market share may not be important for individual producers, but for alliances with valuable brands (Certified Angus Beef, for example), increasing market share may be an important goal for the alliance.

H4: The level of organizational learning is a positive indicator of the positional advantage of the firm.

It is necessary to clarify that these four constructs do not *cause* a firm to have a positional advantage over their competition, but rather the opportunities each firm sees for possible areas of competition determine the effort put into developing a market orientation, a learning orientation, an entrepreneurial focus, and innovativeness. As noted by Hult and Ketchen (2001) other variables could contribute to the positional advantage of a firm, but we focus on the four developed by Hult and Ketchen in order to replicate their model in an agricultural setting.

Similar to Homburg, Krohmer, and Workman (2004), a positional advantage may allow firms to develop capabilities in order to implement certain strategies, or conversely to implement strategies which are congruent with their current capabilities. As several authors have shown a market orientation, innovation, entrepreneurship and learning to have performance implications, we hypothesize that a positional advantage would as well. The interaction of market knowledge with the entrepreneurial focus of the firm could lead to changes in products or simply how the product is marketed. It is assumed all changes would be based on market information which is centered on the creation of customer value. Assuming superior products should garner premium prices, we hypothesize the following:

H5: The positional advantage of a firm is positively related to firm performance.

3 METHODOLOGY

3.1 Data

The data for this study was obtained from a survey of Illinois beef producers who were members of the Illinois Beef Association in 2007. This list was used to comprise the population for the study. The mailing list was examined for accuracy and obvious commercial businesses were purged from the population. From a list of the remaining 1568 beef producers 347 usable responses were returned over 2 waves of mailings yielding a response rate of 22.1%. While not explicitly asked in the survey, it is assumed that all of these respondents would fit the definition of small farm based on the criteria of management decisions made by the owner of the firm (WSDA). These producers were active in both the cow-calf and feedlot segments of the production channel with an average of 77 calves raised and 495 head of cattle fed out in each respective group.[3] Survey respondents had, on average, 32 years of experience in the cattle business.

Non-response bias was checked using the procedures outlined in Armstrong and Overton (1977). This was conducted as late respondents have been shown to be similar to non-respondents. Non-response bias was examined between early and late respondents

[3] Some producers operate in both segments. Averages were taken from firms who feed out at least 50 head of cattle and who raise at least 20 calves.

in each wave. Furthermore, differences in sample means and variances were examined between the first wave and the second wave of the survey. No significant differences were found between early and late responders, or between first and second waves of the survey, so the study proceeded using all returned surveys.

3.2 Measurement Scales

To examine the higher-order latent factor positional advantage, previously developed measurement scales were used. Slight modifications to the wording were made to all scales as the previous intended audience consisted of executives and division managers of large, multi-national corporations, not agricultural producers. Following the modifications, face validity was checked by University of Illinois extension specialists to ensure question clarity and scale relevance. Following initial modifications, a small sample of Farm Business Farm Management Association (FBFM) farm cooperators were sent the survey to test the survey instrument for comprehension. Cooperators were mailed surveys and were then asked to read through the questions and provide comments relating to both clarity and content. Final versions of the scale measures were then drafted per the suggestions of the extension specialists and the sample of FBFM cooperators.

In the survey, respondents were asked to rate their level of agreement with each item using a 6-point likert scale anchored with strongly disagree and strongly agree. A neutral choice was omitted in order to force respondents to either agree/disagree with the statement in question. Previous studies have shown 6-point scales to be of similar quality to 5-point and 7-point scales (Green and Rao, 1970; Chiang, 1994). However, when using likert scale measures, non-normality is often an issue. This poses somewhat of a problem as multivariate normality is assumed when using a structural equation model (SEM). The data failed to meet this assumption, so bootstrapping procedures were employed when testing to provide unbiased estimates.

3.2.1 Independent Variables

The market orientation scale was developed by Narver and Slater (1990) and has been used in subsequent studies (Slater and Narver, 1995; Im and Workman, Jr. 2004). The scale focuses on customer orientation, competitor orientation and coordination within the firm in translating market knowledge into business strategy. The level of innovation was also examined using a 5-item scale first developed by Hurley and Hult (1998). The entrepreneurial nature of the producer was measured using a 5-item scale developed by Naman and Slevin (1993). Organizational learning was measured using an 11-item scale were from a previous study by Farrell and Oczkowski (2002).

3.2.2 Dependent Variables

A scale consisting of seven subjective performance items were included in this study to measure both the producers' satisfaction with their individual performance as well as performance relative to their peers. Subjective performance was used as our

sample was comprised of privately held beef operations where managers may be unwilling to report confidential performance information. While an objective measure of performance would be preferred, Dess and Robinson (1984) showed a strong correlation between subjective and objective measures of performance.

3.3 Construct Reliability

As these scale measures and survey questions were all previously studied and tested, a full exploratory factor analysis was not conducted. However, questions were modified so testing of internal consistency and discriminant validity was performed. Internal consistency was tested through factor analysis with varimax rotation in SPSS. Indicators that were not loading heavily onto the extracted component were removed from further study. Factor loadings can be thought of as regression coefficients. That is, the amount by which the indicator variable will change for a one unit change in the underlying latent variable. As outlined in Worthington and Whittaker (2006), items that did not have factor loadings greater than 0.32 were removed. Item-to-total correlations less than 0.2 were removed in accordance to Streiner and Norman (1995) as they are likely to be measuring a different construct from the other items in the scale.

The purified scales were then retested for factor loadings and reliability with the results shown in Table 1. The lowest factor loading reported is 0.576 for the fourth question in the customer focus scale. Also, all item-to-total correlations are well above the 0.20 threshold. Cronbach (1951) alphas are all shown to be in the desired range of 0.70 to 0.90 (Nunnally, 1978). Variance extracted for each scale is also shown to be above 50% for all latent constructs. As the extracted variances are above 50%, this demonstrates the variance accounted for by the scale is larger than the variance due to measurement error (Fornell and Larcker, 1981).

3.3.1 Discriminant Validity

Discriminant validity was also checked to ensure observed variables were measuring only one factor, and thus were not highly correlated with other latent variables. Discriminant validity is observed when the, diagonal entries which display the square roots of the extracted variance from each latent variable are all larger than the correlation between latent variables, as shown in Table 2. The results of this test reveal that measurement scales used in this study exhibit discriminant validity.

4 RESULTS

The relationships between the latent constructs were modeled in a structural equation model (SEM) using Amos 15.0, a statistical software package. The confirmatory factor analysis of the higher-order factor model of positional advantage was first analyzed to determine if our data fit the model first hypothesized by Hult and Ketchen (2001). Model fit was analyzed using the goodness of fit index (GFI), the incremental fit index (IFI), and the Tucker-Lewis index (TLI) along with the root mean squared error of approximation (RMSEA) and the Chi-Square index (χ^2) divided by

degrees of freedom (df). The data seem to fit the model reasonably well as the GFI = 0.895, IFI = 0.931, TLI = 0.93, RMSEA = 0.051, and χ^2/df = 1.916, all indicating an acceptable fit.

Following the testing of the measurement model, the path model shown in Figure 1 was tested. Again, the data seem to fit the model well as the GFI = 0.872, IFI = 0.919, TLI = 0.91, RMSEA = 0.049, and χ^2/df = 1.833. As shown in Table 3, market orientation, entrepreneurship, innovation and organizational learning are all positive indicators of a higher-order factor, positional advantage. These results confirm H1-H4. It is also shown that the positional advantage of a firm is positively related to firm performance, confirming H5. These are all latent constructs, so one must be careful when interpreting these results. The estimate of 0.710 for the relationship between positional advantage and performance means that for every one-unit increase in a firm's positional advantage, their level of subjective performance will increase by 0.71 units. Other results can be interpreted similarly.

4.1 The effect of firm size on the importance of positional advantage

While the entire sample of Illinois beef producers could potentially fall within the definition of a small firm as outlined through ownership and control, we are also interested in the relative importance of a positional advantage for smaller firms compared to larger firms. To examine the effect of size on the importance of positional advantage, we split the sample into two groups of producers on the basis of herd size. Based on our limited sample, the demarcation point was 100 head. We chose to use only cow-calf producers for this test due to the limited number of cattle feedlots in our study.

The differences between the two groups were examined using the assumption that the structural model is the same between the two groups (i.e. Figure 1 is the appropriate model for both groups). Further testing is conducted to determine if the factor loadings between the two groups are equal (H_Γ) and if the path coefficients between latent variables are equal (H_B). Differences between the two groups are examined using a chi-square difference test, where significant differences between the models would allow us to reject the respective hypothesis of equality and assume that the measures for large and small farms are not equal. Results of the group analysis are presented in Table 4.

The first pair-wise comparison was between the original model and one where the measurement weights, or factor loadings, were constrained to be equal. Using a chi-square difference test, we observe the change in χ^2 to be 38.918 with a change in 25 degrees of freedom. The critical value for 25 degrees of freedom is 37.65 at the 5% level. The critical value at the 1% level of significance is 44.31. Therefore, support is found for inequality of measurement weights between large firms (greater than 100 head) and small firms (less than 100 head) in our sample. The second pair-wise comparison was conducted assuming the measurement weights to be equal. This has found to not be the case, so it can be assumed that these groups are not invariant in either their measurement or structural weights.

The results of the group analysis demonstrate that the measurement weights were found to be different across groups signifying that the factor loadings (similar to those depicted in Table 1for the pooled sample) are different for firms with large herds compared to firms with small herds (Table 5). This result leads us to the conclusion that the importance of a positional advantage is different across size classes of Illinois beef farms.

5 DISCUSSION

The concept of the positional advantage of a firm was introduced by Hult and Ketchen (2001) as a higher-order factor consisting of the market orientation, entrepreneurial focus, innovativeness, and learning orientation of a firm. Using a sample of Illinois beef producers, this study replicated the model of Hult and Ketchen (2001) to examine the importance of positional advantage in an agricultural setting. Building upon the growing literature (see Ross and Westgren, 2006; Micheels and Gow, 2008) which examines the effects of entrepreneurship and market orientation on firm profitability in agriculture, this study examines the inter-relationships between these similar, yet singular latent constructs. Using a sample of Illinois beef producers, this study found that a positional advantage is an important driver of firm performance in small farms.

Firm innovation, broadly defined by Nelson and Winter (1982) to be a change in routines, and measured in the construct developed by Hurley and Hult (1998), is found to be the most important capability a firm uses to leverage its positional advantage. This result is understandable as it is only through innovations, however slight, that the ideas of value creation developed through the market orientation and entrepreneurial proclivity of the firm can be commercialized.

The level of entrepreneurship was found to be the least likely avenue for opportunities to create value through a positional advantage. This result, however, does not lessen the overall importance of entrepreneurship in the search for value in agriculture. In order to develop a market orientation, firms must be entrepreneurial as they are inherently taking a risk by allocating resources to the search for customer needs rather than the traditional search for efficiency. To that end, Micheels and Gow (2008) found that the entrepreneurial focus of a firm is a significant driver of market orientation of Illinois cattlemen.

The culture of learning was also found to be an important component of a firm's positional advantage. Firms that value learning continually question their own routines and search for opportunities to provide value through both traditional and non-traditional means. A firm with a learning culture may have improved performance as they are continually able to determine sources of value and are able to leverage their current capabilities into providing this value. As stated by Slater and Narver (2000) the ability of the firm to learn faster than their rivals may be a source of sustainable competitive advantage.

When examining the relationship between positional advantage and firm performance across firm size within the sample of Illinois beef farms, some interesting findings are discovered. Small firms may be more flexible in their strategy compared to their larger counterparts, and results of this study indicate that the importance of a positional advantage on firm performance is more important for smaller farms. Further examination of this result is warranted as conceptually, all of the producers in our sample were 'small' producers with similar flexibility and responsiveness. Further, it was found that we cannot assume equality of measurement weights. Essentially this means that, for instance, a farmer with a small herd size may answer a survey question differently than a farmer with a large herd size for a given level of competitor focus. Behaviorally this indicates that firms with a larger herd size place a different level of importance on determining competitor goals and actions than a farmer with a smaller herd size.

5.1 Managerial Implications

This study extends the work of Hult and Ketchen (2001) to small farms operating within one industry. This study further confirms the hypothesis of Pelham (2000) that small firms may see comparative advantages and performance implications stemming from their ability to react to new market intelligence. Increasing the market orientation, and the positional advantage, of the firm is an important goal if producers are going to continue to develop value-added products and services. In order to adequately provide value, firms must communicate with consumers and down-stream channel members to accurately determine the potential sources for value creation.

In order to develop a positional advantage, both a necessary and sufficient condition is access to pertinent market information. Where applicable, small farmers need to establish linkages with downstream consumers of their production to begin to gather information which they can then use to formulate or implement a strategy based on their current capabilities. Once producers have the required market information, they can leverage their flexibility relative to larger firms to react to specific opportunities that arise. Some of the low-hanging fruit could be increased preconditioning of cattle in commodity systems which increase efficiency for feedlots. Also, depending on the population demographics of the surrounding area, some producers could benefit from direct marketing a value-added product through farmers markets. Along with the value of the relationship with the grower, some producers may benefit from the growing 'local food' movement where food miles are becoming an increasingly important and valuable attribute of agricultural products.

5.2 Policy Implications

In order to develop a positional advantage, it is important that firms have access to reliable market information. This is especially for firms who have little contact with downstream channel partners and are therefore reliant on public sources of market information. This is important in both developed and developing countries. In the case of Africa, Hazell (2005) and Ozowa (1995) argue that for small farms to survive, they need access to accurate and reliable market information regarding public and private

standards for their production. In developed countries where there is a trend towards the consolidation and industrialization of agriculture, policy makers may find benefits, such as improved community welfare, from improved performance of small farms (Welsh, 2009). Community welfare may increase if small farms are able to establish valuable linkages with consumers through farmers markets or other marketing arrangements, as posited through the Goldschmidt Hypothesis, which states that welfare of the surrounding community is negatively correlated to farm scale (Goldschmidt, 1946).

Policy which increases the dissemination of public/government/university sponsored information relating to changing market structures or customer linkages may improve performance on small farms while also improving community welfare. Small farmers, having limited resources to devote to the generation of their own market intelligence, often rely on government sources or trade publications for these sources of information. Therefore, in developing countries, it is important that some resources be deployed to research on developing market linkages for small farmers, especially in developing countries. Furthermore, as Ozowa (1995) points out, this information must be accessible to the farmer in a usable form. While public information may limit the ability for the small firm to be the 'first mover' the decreased chance of failure and a smoother transition into the new market for 'second movers' may alleviate some of these concerns.

6 CONCLUSIONS

In summary, this study provides an extension of the marketing and strategy literature to production agriculture. Similar to the arguments of Homburg, Krohmer and Workman (2004) a firm may strive to develop a positional advantage as a means of implementing a specific strategy. By becoming more aware of market conditions through a learning orientation and a market orientation, firms can better determine if there are valuable opportunities available based on their current capabilities and competitor strategies. Using a positional advantage, firms may decide that a move away from the traditional commodity market provides greater opportunities to create value by augmenting the traditional commodity product through a differentiation strategy.

For small firms, a positional advantage vis-à-vis their rivals may be an important resource ensuring long-term survival. Small firms may have an advantage relative to their larger counterparts in terms of strategic flexibility and response time. These advantages may allow for a firm to quickly react to market information signaling an opportunity to provide superior value to a specific market or customer based on a specific attribute.

Finally, this research gives credence to the argument that in order to improve performance, managers must allocate some effort to the analysis of opportunities to provide value for customers along with striving to increase efficiency. It must be noted, however, that value must continually be seen through the eyes of the consumer. Increased efficiency may be the source for value creation for some markets while augmented products may be the valuable attributes in others. Our study adds to the literature as we were able to find that customer awareness and methods to provide

demanded attributes can be a source of value and thus increase firm performance, even in a traditionally commodity-based market. Future research in this area could examine the effects of a positional advantage over a longer time frame and in a variety of agricultural markets.

References

Armstrong, J.S and T.S. Overton. 1977. Estimating Nonresponse Bias in Mail Surveys. *Journal of Marketing Research.* 16 (3): 369-402.

Baker, W.E. and J.M. Sinkula. 1999. The Synergistic Effect of Market Orientation and Learning Orientation on Organizational Performance. *Journal of the Academy of Marketing Science.* 27 (4): 411-427.

Chang, L. 1994. A Psychometric Evaluation of 4-Point and 6-Point Likert-Type Scales in Relation to Reliability and Validity. *Applied Psychological Measurement.* 18 (3): 205-215.

Cronbach, L. J. (1951). Coefficient Alpha and the Internal Structure of Tests. *Psychometrika* (16): 297-334.

Deshpande, R., J.U. Farley and F.E. Webster, Jr. 1993. Corporate Culture, Customer Orientation, and Innovativeness in Japanese Firms: A Quadrad Analysis. *Journal of Marketing*. 57 (1): 23-37.

Dess, G.G. and R.B. Robinson, Jr. 1984. Measuring Organizational Performance in the Absence of Objective Measures: The Case of the Privately-Held Firm and Conglomerate Business Unit. *Strategic Management Journal.* 5 (3): 265-273.

Drovers. 2008. "2008 Alliances."

Economic Research Service. United States Department of Agriculture. 2005. http://www.ers.usda.gov/Briefing/FarmStructure/glossary.htm

Farrell, M.A. and E. Oczkowski. 2002. Are Market Orientation and Learning Orientation Necessary for Superior Organizational Performance? *Journal of Market Focused Management.* 5 (1) 197-217.

Fornell, C. and D.F. Larcker. 1981. Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *J. Mark. Res.*18: 39-50.

Day, G. 1994. The Capabilities of Market-Driven Organizations. *Journal of Marketing.* 58 (4): 37-52.

Gale, F. 1997. Direct Farm Marketing as a Rural Development Tool. *Rural Development Perspectives.* 12 (2): 19-25.

Goldschmidt, W. 1946. Small Business and the Community. Report of the Smaller War Plants Corporation to the Special Committee to Study Problems of American Small Business. Washington, DC: U.S. Government Printing Office.

Gow, H.R., L.D. Oliver, and N.G. Gow. 2003. Value Creation in Farmer-Driven Marketing Channels: The Case of Murrellen Pork. *Journal of Food Distribution Research*. 34 (1) 86-91.

Green, P.E. and V.R. Rao. 1970. Rating Scales and Information Recovery – How Many Scales and Response Categories to Use? *Journal of Marketing.* 34 (3): 33-39.

Hazell, P.B.R. 2005. Is there a future for small farms? In: Colman, D., Vink, N. (Eds.), Reshaping Agriculture's Contributions to Society, Proceedings of the 25th International Conference of Agricultural Economists, 16–22 August 2003, Durban, South Africa. Blackwell Publishing, Oxford. 93–101.

K.G. Grunert, L.F. Jeppesen, K.R. Jespersen, A.M. Sonne, K. Hansen, T. Trondsen, J.A. Young. 2005. Market orientation of value chains: A conceptual framework based on four case studies from the food industry. *European Journal of Marketing.* 39 (5/6): 428-455.

Homburg, C., H. Krohmer, and J.P. Workman, Jr. 2004. A Strategy Implementation Perspective of Market Orientation. *Journal of Business Research.* 57 (12): 1331-1340.

Hoppe, R.A., P. Korb, E.J. O'Donoghue, and D.E. Banker. 2007. Structure and Finances of U.S. Farms. USDA-ERS Economic Information Bulletin 24.

Hult, G.T.M. and D.J. Ketchen, Jr. 2001. Does Market Orientation Matter?: A Test of the Relationship Between Positional Advantage and Performance. *Strategic Management Journal*. 22 (9): 899-906.

Hunt, Shelby D. and Robert M. Morgan. (1995). The Comparative Advantage Theory of Competition. *Journal of Marketing.* 59 (1): 1-15.

Hurley, R.F. and G.T.M. Hult. 1998. Innovation, Market Orientation, and Organizational Learning: An Integration and Empirical Examination. *Journal of Marketing*. 62 (3): 42-54.

Im, S. and J.P. Workman, Jr. 2004. Market Orientation, Creativity, and new Product Performance in High-Technology Firms. *Journal of Marketing.* 68 (2): 114-132.

Jones, R. 2000. Costs, Distribution of Costs, and Factors Influencing Profitability in Cow-Calf Production. Research Bulletin 3-2000. Research Institute on Livestock Pricing, Agricultural and Applied Economics, Virginia Tech.

Kohli, A.K. and B.J. Jaworski. 1990. Market Orientation: The Construct, Research Propositions, and Managerial Implications. *Journal of Marketing.* 54 (2): 1-18.

Mahoney, Joseph T. and Rajendran Pandian. (1992). The Resource-Based View Within the Conversation of Strategic Management. *Strategic Management Journal.* 13 (5): 363-380.

Micheels, Eric T. and Hamish R. Gow. (2008). Market Orientation, Innovation and Entrepreneurship: An Empirical Examination of the Illinois Beef Industry. *International Food and Agribusiness Management Review.* 11 (3): 31-56.

Naman, J.L. and D.P. Slevin. 1993. Entrepreneurship and the Concept of Fit: A Model and Empirical Tests. *Strategic Management Journal.* 14 (2) 137-153.

Narver, J.C. and S.F. Slater. 1990. The Effect of a Market Orientation on Business Profitabiltiy. *Journal of Marketing*. 54 (4): 20-35.

Narver, J.C., S.F. Slater and D.L. MacLachlan. 2004. Responsive and Proactive Market Orientation and New-Product Success. *Journal of Product Innovation Management*. 21 (5): 334-347.

Narver, J.C., S.F. Slater and B. Tietje. 1998. Creating a Market Orientation. *Journal of Market Focused Management*. 2 (1): 241-255.

National Meat Case Study. 2007. Available online at http://www.beefretail.org/uDocs/nmcs_execsum11408.pdf

Nelson, R.R. and S.G. Winter. 1982. *An Evolutionary Theory of Economic Change.* Harvard University Press, Boston, MA.

Nunnally, J.C. 1978. Psychometric Theory, 2nd Ed. New York: McGraw Hill, Inc.

Ozowa, V.N. 1995. Information Needs of Small Scale Farmers in Africa: The Nigerian Example. *Quarterly Bulletin of the International Association of Agricultural Information Specialists.* 40 (1): 15-20.

Pelham, A.M. 2000. Market Orientation and Other Potential Influences on Performance in Small and Medium-Sized Manufacturing Firms. *Journal of Small Business Management.* 38 (1): 48-67.

Ross, R.B. and R.E. Westgren. 2006. Economic Returns to Entrepreneurial Behavior. *Journal of Agricultural and Applied Economics.* 38 (2): 403-419.

Short, S.D. 2001. Characteristics and Production Costs of U.S. Cow-Calf Operations. USDA-ERS Statistical Bulletin Number 974-3.

Slater, S.F. and J.C. Narver. 2000. Intelligence Generation and Superior Customer Value. *Journal of the Academy of Marketing Science.* 28 (1): 120-127.

----------. 1995. Market Orientation and the Learning Organization. *Journal of Marketing*. 59 (3): 63-74.

Spiller, Achim, Anke Zühlsdorf and Matthias Mellin. 2007. Farmer-to-Consumer Direct Marketing: The Role of Customer Satisfaction Measurement for Service Innovations. Paper prepared for presentation at the 1st International European Forum on Innovation and System Dynamics in Food Networks. Officially endorsed by the European Association of Agricultural Economists (EAAE). Innsbruck-Igls, Austria February 15-17, 2007.

Steele, C.J. 1997. Why U.S. Agriculture and Rural Areas Have a Stake in Small Farms. *Rural Development Perspectives.* 12 (2): 26-31.

Streiner D.L. and G.R. Norman. 1995. Health Measurement Scales: A Practical Guide to their Development and Use. Oxford University Press, New York.

Teece, D.J., G. Pisano, and A. Shuen. 1997. Dynamic Capabilities in Strategic Management. *Strategic Management Journal.* 18 (7): 509-533.

Tregear, A. 2003. Market Orientation and the Craftperson. *European Journal of Marketing.* 37 (11/12) 1621-1635.

United States Department of Agriculture. 2007 Census of Agriculture. Last modified 2/3/2009. Available online at http://www.agcensus.usda.gov/Publications/2007/Full_Report/Volume_1,_Chapter_1_US/index.asp

Verhees, F.H.M. and M.T.G. Meulenberg. 2004. Market Orientation, Innovativeness, Product Innovation, and Performance in Small Firms. *Journal of Small Business Management.* 42 (2): 134-154.

Washington State Department of Agriculture. 2008. http://agr.wa.gov/Marketing/SmallFarm/smallfarmdefinition.aspx

Welsh, R. 2009. Farm and Market Structure, Industrial Regulation and Rural Community Welfare: Conceptual and Methodological Issues. *Agricultural and Human Values.* 26 (1): 21-28.

Worthington R.R. and T.A. Whittaker. 2006. Scale Development Research: A Content Analysis and Recommendations for Best Practices. *The Counseling Psychologist.* 34 (6) 308-338.

ANNEX: Tables and Figures

Figure 1. The hypothesized model of positional advantage and firm performance

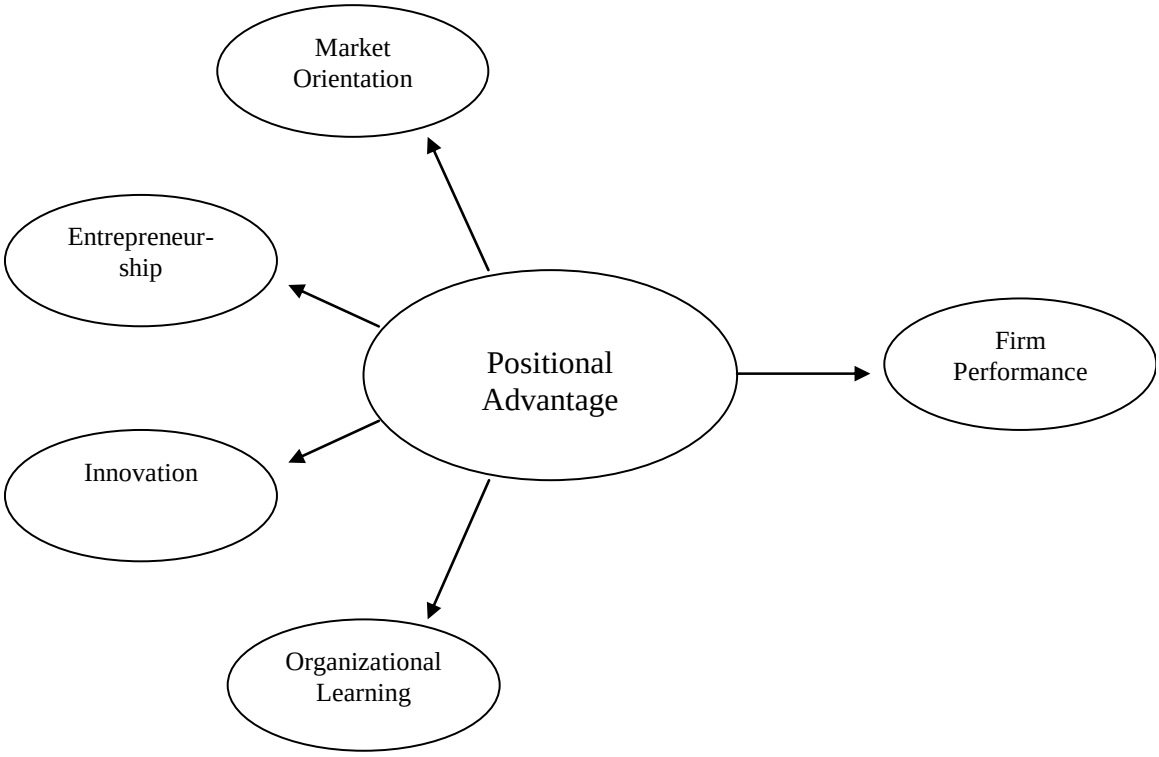

Table 1. *Reliability analysis of the measurement scales (Pooled Sample).*

Scale	Items	Mean	Std Dev	Corrected Item-to-Total Correlation	Factor Loadings	Variance Extracted	Alpha
Customer Focus	Cust1	3.93	1.168	0.647	0.844	0.5950	0.762
	Cust2	3.77	1.102	0.624	0.826		
	Cust4	3.91	1.238	0.381	0.576		
	Cust5	3.73	1.267	0.616	0.809		
Coordination	Coord1	3.38	1.418	0.523	0.730	0.5858	0.757
	Coord2	3.94	1.304	0.524	0.733		
	Coord3	3.87	1.216	0.619	0.814		
	Coord4	4.17	1.184	0.574	0.781		
Competitor Focus	Comp1	3.76	1.378	0.548	0.601	0.5504	0.861
	Comp3	3.74	1.256	0.587	0.669		
	Comp4	4.14	1.240	0.526	0.615		
	Comp5	3.15	1.344	0.670	0.835		
	Comp6	3.00	1.266	0.712	0.807		
	Comp8	3.90	1.250	0.648	0.768		
	Comp9	3.78	1.283	0.725	0.847		
Learning	Learn2	4.80	0.904	0.620	0.805	0.6308	0.794
	Learn3	4.92	0.929	0.703	0.869		
	Learn4	4.91	0.961	0.685	0.851		
	Learn5	4.33	1.045	0.438	0.627		
Entrepreneurship	Ent2R	3.24	1.069	0.500	0.791	0.6144	0.683
	Ent4R	3.21	1.127	0.567	0.836		
	Ent5R	3.71	1.153	0.428	0.720		
Innovation	Innov1	4.52	1.018	0.578	0.803	0.5706	0.740
	Innov2R	4.66	1.173	0.550	0.758		
	Innov3	4.54	0.941	0.595	0.807		
	Innov5R	4.85	1.105	0.430	0.642		
Performance	Perf2	4.09	1.176	0.689	0.844	0.6975	0.784
	Perf3	4.07	1.104	0.718	0.822		
	Perf4R	3.85	1.353	0.422	0.854		
	Perf5	4.02	1.027	0.620	0.642		
	Perf6	3.73	1.125	0.290	0.943		
	Perf7	3.63	0.996	0.529	0.705		

Table 2. *Discriminant Validity*

	Customer Focus	Coordination	Competitor Focus	Learning	Entrepreneurship	Innovation	Performance
Customer Focus	0.77						
Coordination	.540**	0.77					
Competitor Focus	.542**	.615**	0.74				
Learning	.260**	.336**	.235**	0.79			
Entrepreneurship	.167**	.206**	.139**	.191**	0.78		
Innovation	.278**	.317**	.200**	.483**	.326**	0.76	
Performance	.230**	.228**	.205**	.238**	.182**	.253**	0.84

Note: Items along the diagonal are the square root of the extracted variance for each latent variable. Off-diagonal entries display correlations.

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 3. *Results of the path model (Pooled Sample).*

Dependent Variables		Independent Variables	Estimate	Standard Error	p-value[a]
Performance	<----------	Positional Advantage	0.710	0.197	***
Competitor Focus	<----------	Market Orientation	1.116	0.124	***
Customer Focus[b]	<----------	Market Orientation	1.000		
Coordination	<----------	Market Orientation	1.096	0.124	***
Market Orientation[b]	<----------	Positional Advantage	1.000		
Entrepreneurship	<----------	Positional Advantage	0.664	0.174	***
Innovation	<----------	Positional Advantage	1.822	0.328	***
Organizational Learning	<----------	Positional Advantage	0.998	0.201	***

[a] *** Indicates p-value is less than 0.001

[b] Indicates the parameter loading was fixed to 1 in order to ensure identification of the model.

Table 4. *Test for the effect of firm size on positional advantage*

Model	df	χ^2 Difference	p-value	Hypothesis	Support
Meaurement weights equal (H_Γ)	25	38.918	0.038	H_Γ	Yes
Structural weights equal (H_B)	31	42.206	0.086	H_B	No

Table 5. *Estimates from Group Analysis*

			Farms < 100 Head		Farms > 100 Head	
Path to..		Path from..	Estimate	S.E.	Estimate	S.E.
Structural Weights						
MKTOR	<-------	Positional Advantage	1		1	
Performance	<-------	Positional Advantage	0.93	0.302	0.261	0.244
Competitor Focus	<-------	MKTOR	1.055	0.142	1.257	0.358
Customer Focus	<-------	MKTOR	1		1	
Coordination	<-------	MKTOR	1.208	0.156	1.009	0.301
Entrepreneurship	<-------	Positional Advantage	0.625	0.229	0.63	0.316
Innovation	<-------	Positional Advantage	1.965	0.495	1.411	0.428
Learning	<-------	Positional Advantage	0.989	0.274	0.692	0.277
Measurement Weights						
Comp9	<-------	Competitor Focus	1		1	
Comp8	<-------	Competitor Focus	0.933	0.066	0.672	0.088
Comp6	<-------	Competitor Focus	0.937	0.109	0.958	0.142
Comp5	<-------	Competitor Focus	1	0.114	0.725	0.17
Comp4	<-------	Competitor Focus	1.038	0.108	0.422	0.145
Comp3	<-------	Competitor Focus	1.025	0.107	0.622	0.15
Comp1	<-------	Competitor Focus	1.074	0.119	0.851	0.154
Cust5	<-------	Customer Focus	1		1	
Cust4	<-------	Customer Focus	0.564	0.09	0.57	0.274
Cust2	<-------	Customer Focus	0.907	0.082	1.151	0.283
Cust1	<-------	Customer Focus	1.051	0.089	0.869	0.253
Coord4	<-------	Coordination	1		1	
Coord3	<-------	Coordination	1.086	0.099	1.489	0.293
Coord2	<-------	Coordination	0.882	0.1	0.51	0.306
Coord1	<-------	Coordination	1.105	0.115	1.242	0.363
Ent5R	<-------	Entrepreneurship	1		1	
Ent4R	<-------	Entrepreneurship	1.551	0.274	1.248	0.445
Ent2R	<-------	Entrepreneurship	1.024	0.165	0.881	0.323
Innov3	<-------	Innovation	1		1	
Innov2R	<-------	Innovation	1.038	0.127	0.854	0.227
Innov1	<-------	Innovation	0.83	0.123	0.919	0.184
Learn5	<-------	Learning	1		1	
Learn4	<-------	Learning	1.65	0.239	1.861	0.493
Learn3	<-------	Learning	1.538	0.208	1.474	0.395
Learn2	<-------	Learning	1.495	0.215	1.332	0.435
Perf1R	<-------	Performance	1		1	
Perf2	<-------	Performance	1.144	0.109	1.353	0.293
Perf3	<-------	Performance	1.131	0.105	1.341	0.29
Perf4R	<-------	Performance	0.824	0.088	0.733	0.171
Perf5	<-------	Performance	0.859	0.095	0.701	0.204
Perf6	<-------	Performance	0.275	0.092	0.548	0.207
Perf7	<-------	Performance	0.594	0.085	0.656	0.197