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Market Orientation, Innovativeness, and Performance of Food Companies

Aaron J. Johnson, Clay C. Dibrell, and Eric Hansen

Food processors have seen escalating levels of competition over the past three decades. An underlying objective of this research is to gain a greater understanding of how food companies thrive in the face of this increased competition. This study incorporates market orientation theory (competitor orientation, customer orientation, and interfunctional coordination) and firm innovativeness to explain differences in firm financial performance. A national survey of food processors was conducted and structural equation modeling was used to test the hypotheses. The results show that the more successful firms are more internally focused (interfunctional coordination and innovativeness) than externally focused (competitor and customer orientation).

Key Words: firm performance, food industry, innovativeness, market orientation, structural equation modeling

Agribusinesses, especially food companies, have seen escalating levels of competition over the past three decades (van Duren et al., 2003), creating significant challenges to maintaining economic viability. An even greater challenge than survivability is the development of the means by which the agribusiness firm can thrive in the face of this increased competition.

Previous studies have examined the performance of agribusinesses. For example, van Duren et al. (2003) found that specific managerial factors were considered by managers to influence profitability. Other studies (e.g., Schumacher and Boland, 2005; Pendell and Boland, 2005) report that firm factors (i.e., firm resources) are dominant in explaining performance. Despite the usefulness of studies like these, they do not exhaust the issue. Van Duren et al. employed a case study approach, interviewing only five firms. The small number of observations limits the study in offering generalizations to the food industry, let alone other agribusiness industries. The Boland studies applied regression analysis to a larger data set to identify the source of variance in return on assets. However, the data sets were comprised of secondary data, and neither of the Boland studies looked at the specific resources

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or functions undertaken by the firms to obtain higher performance. While these studies note the importance of firm factors, additional analysis is needed to understand specific actions.

More can be learned about creating a competitive advantage in a highly competitive market environment like that of the food industry. Additional theory and tools from the management and marketing sciences offer an opportunity to gain greater insights into the functions of agribusiness firms that influence firm performance. Accordingly, we borrow from these disciplines through application of market orientation theory linked with a firm's innovation practices (i.e., innovativeness) to more aptly explain the path to greater firm performance in the food industry.

Market orientation has been mentioned in qualitative studies (van Duren et al., 2003) in the agribusiness field, but few studies have directly tested hypothesized relationships in a quantitative manner. In addition, no earlier studies have focused on the U.S. market. Our study is based on a U.S. national survey of food processors, ranging from small to large, to determine what impact market orientation and innovativeness have on firm performance.

A brief review of the theory and related literature is provided, followed by the development of testable hypotheses. The survey method employed and the chosen statistical approach, structural equation model estimation, are explained in some detail. The results are discussed and implications are drawn for management in food firms. Finally, the study's limitations are discussed along with ideas for further research.

Theoretical Background

Market Orientation

Kohli and Jaworski (1990) and Narver and Slater (1990) were early pioneers in investigating market orientation. According to Narver and Slater, market orientation consists of a focus on customers (customer orientation), an intimate understanding of competitors (competitor orientation), and integration of all functions within the company to create superior customer value (interfunctional coordination). Providing superior customer value is key for maximizing long-term profit (Narver and Slater) and sustainable competitive advantage (Kumar, Subramanian, and Yauger, 1998). Active integration of functional groups within the company to create superior value results in a behavioral culture that guides the way employees think and act (Dobni and Luffman, 2003).

Market orientation has seen extensive consideration in the literature during the past two decades. Much of the work focuses on the impact of market orientation on firm performance. For example, of 36 studies investigated by Dawes (2000), a total of 33 found some positive connection between market orientation and firm performance. Growing evidence of a positive market orientation-performance link has generated increasing interest, and researchers have worked to better understand

the role of other phenomena in conjunction with the market orientation-performance relationship. Sufficient work with varying results has been conducted that Ellis (2006) performed a meta-analysis on previous work in an effort to sort out relationships among variables. Ellis' relevant findings include evidence to classify market orientation as a generic determinant of firm performance. However, the study found that (*a*) effects were stronger in large, mature markets; (*b*) Kohli, Jaworski, and Kumar's (1993) MARKOR scale showed stronger effects than other scales; and (*c*) the managerial value of market orientation is affected by cultural and economic characteristics of the host country.

Despite the collective research, market orientation has seen limited attention in the natural resources fields (Hansen, Dibrell, and Down, 2006; Hansen et al., 2006; Narver and Slater, 1990), and surprisingly little work has been conducted specific to agriculture (Martino and Tregear, 2001; Micheels and Gow, 2008a, b). Of the studies identified in our literature search, none investigated food firms in the United States. Both studies by Micheels and Gow examined the agricultural production sector. Martino and Tregear, and Mavondo and Farrell both investigated the food sector, but their focus was on Chile and Zimbabwe, respectively. Whereas Martino and Tregear (2001) had a small number of responses which prohibited their ability to test the market orientation-performance connection, Mavondo and Farrell found no connections between market orientation and performance with respect to 176 food manufacturing businesses in Zimbabwe.

Several qualitative/exploratory studies have been conducted. Kyriakopoulos, Meulenberg, and Nilsson (2004) considered the structure of Dutch cooperatives on market orientation and performance, but did not specifically evaluate the link between market orientation and performance. Lewis, Pick, and Vickerstaff (2001) studied three UK food and drink companies. They found the companies viewed "marketing" rather negatively, yet concluded they were market oriented since they recognized customer concerns. Ottesen and Grønhaug (2005) investigated market orientation understanding and practice within the Norwegian seafood industry, but did not consider performance issues. Finally, van Duren et al. (2003) concluded that aspects of customer orientation interact with other management characteristics to help firms achieve success. However, their study was based on in-depth interviews with only five Canadian food companies.

Market Orientation and Innovativeness

Recent research has examined linkages of such topics as innovation (Han, Kim, and Srivastava, 1998; Hult, Hurley, and Knight, 2004), entrepreneurship (Hurley and Hult, 1998; Matsuno, Mentzer, and Özsomer, 2002), and the learning organization (Hurley and Hult, 1998; Slater and Narver, 1995) with market orientation. Specifically, our research will test the connection between market orientation and innovativeness. In its most basic definition, innovation is considered the adoption of something new (Rogers, 2003). Hansen et al. (2006) define innovation as creation and/or adoption of new ideas, processes, products, or services that are intended

to increase value to the customer and contribute to the performance or effectiveness of the firm. Innovativeness is slightly different from innovation because it is a characteristic of an individual or organization. The literature generally refers to new products, processes, or business systems as general categories of innovation and/or innovativeness (Boer and During, 2001; Hovgaard and Hansen, 2004; North and Smallbone, 2000).

According to Narver and Slater (1990), market-oriented firms tend to be more innovative, thus resulting in improved financial performance. For example, market-oriented firms are able to better adapt to changes in the environment, allowing for incremental innovation (Baker and Sinkula, 2002). A customer-centric culture resulting from a market orientation creates opportunities for innovation via customer ideas and expressed needs. Similarly, closely following competitor moves also facilitates innovation as the market-oriented company meets innovation adopted by the competition. Finally, interfunctional coordination allows ideas to flow across the organization, bolstering its ability to bring new product and service concepts to fruition. The Hult, Hurley, and Knight (2004) study affirms this last connection, and it is supported by Woodside (2005).

As outlined above, it is not surprising that market orientation is claimed to be an antecedent to firm innovativeness (Han, Kim, and Srivastava, 1998; Jaworski and Kohli, 1993: Narver and Slater, 1990). Han, Kim, and Srivastava were the first to explicitly test this relationship. Their work showed innovativeness to be a mediator in the market orientation-performance relationship. Specific to agribusiness firms, Mavondo and Farrell (2003) show that market orientation positively impacts product innovation, and product innovation positively impacts financial performance, thus inferring mediation by product innovation.

Hypotheses

Slater and Narver (1999) state that theory and empirical evidence suggest higher levels of market orientation lead to enhanced performance, while other researchers are even stronger in their support of this notion (Kumar, Subramanian, and Strandholm, 2002). Still, Harris (2001) questions this conclusion after finding a limited market orientation-performance relationship when utilizing an objective method for measuring performance. Little work has been done in testing this relationship with respect to U.S.-based food firms. Given the predominant research finding is a positive relationship between market orientation and firm performance, the first hypothesis is written with that expectation:

- H1. *Market orientation positively impacts food company performance.*

Innovativeness, the propensity to create and/or adopt new products, processes, or business systems, positions a company well for developing new value for its customers. For example, a new product can better meet a customer need, thereby providing greater value. More efficient processing can lower manufacturer costs and subsequently result in a lower price for customers, again providing greater

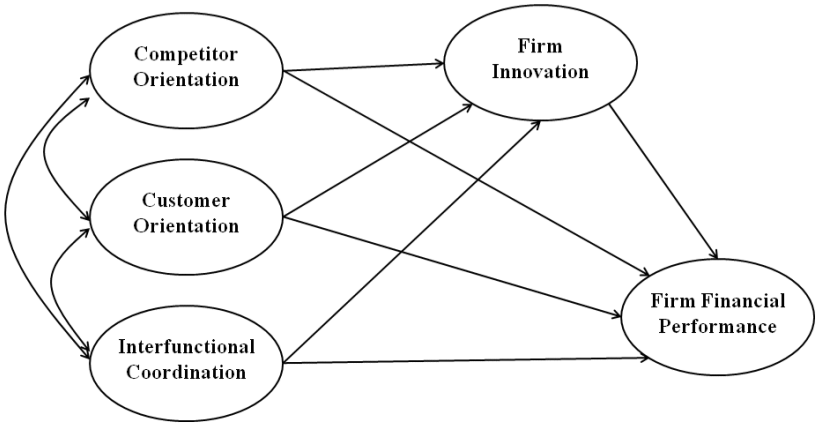

Figure 1. Conceptual model

value. In either event, enhanced product offerings or lower costs can help create a competitive advantage and result in increased firm performance. Thus, we formed the second hypothesis:

- H2. *Innovativeness positively impacts food company performance.*

A market orientation facilitates the harvesting of new ideas from customers and competitors, as well as the sharing of these ideas through effective interfunctional coordination. Effectively implementing all three components of market orientation should result in higher levels of innovativeness. Thus,

- H3. *Innovativeness partially mediates the market orientation-to-food company performance relationship.*

These hypothesized relationships are depicted graphically in figure 1.

Methods

Sample

This study incorporated a mail questionnaire survey sent to a list of 4,341 potential respondent firms in food processing industries. The company names and contact information were acquired from Dun and Bradstreet, Inc. (2004). In conducting the study, the Salant and Dillman (1994) recommended approach for data collection by mail surveys was implemented through two waves of questionnaire mailings. To be included in the study, firms first had to meet the initial criteria of being larger than micro-enterprises (employees > 9) with an identified respondent in a knowledgeable management position (Floyd and Wooldridge, 1994). Micro-enterprises were not included in the sample as these firms often lack the critical

mass of managerial capabilities necessary to implement market orientation and innovation strategies (Swan and Newell, 1995).

After applying the aforementioned restrictions and removing 461 respondents due to reasons such as an incorrect address, request by the respondent to be removed from our mailing list owing to company policy, or the respondent did not meet the top management team position criterion, we received 358 usable surveys for a response rate of 9.2%. Of those, 259 respondents completed all the questions. Our response rate is comparable to "10 to 12 percent typical for mailed surveys to top executives…" (Hambrick, Geletkanycz, and Fredrickson, 1993, p. 407), and is on par with other food industry-oriented surveys (Kinsey, Kaynts, and Ghosh, 2007).

The effects of nonresponse sample bias were tested by comparing a random subsample of 50 firms from the early respondents (survey wave 1) versus a random subsample of 50 firms from the late respondents (survey wave 2). Late respondents often possess firm characteristics which are similar to those of non-respondents (Armstrong and Overton, 1977). No statistically significant differences of the studied constructs were found between the two subsamples.

Since a survey design was used to gather the data, the data were examined for the presence of common method bias. Following Harman's (1967) recommendation, a principal components factor analysis was utilized in which common method bias could be indicated if only one factor, or one factor that accounted for an extensive amount of the variance in the unrotated factor structure, were to be produced. The factor analysis produced five factors reflective of the constructs being studied with Eigenvalues greater than one. The first factor accounted for 27% out of a total of 60% of the explained variance, suggesting that the presence and effects of common method bias were insignificant on the outcome of the study.

Questionnaire Development and Measures

Measurement scales employed for this study are well-established in the strategic management and marketing extant literatures. For the market orientation and innovativeness scales, interval scales with anchors ranging from 1–5 (with 1 = "not at all" and 5 = "to an extreme extent") were used (see the appendix for survey instrument excerpts).

Market Orientation

Given the fewer items in MKTOR and its superior statistical reliability over MARKOR (Pelham and Wilson, 1996), Narver and Slater's (1990) scale for market orientation was selected as the basis for this study. Modifications based on additional work by Lukas and Ferrell (2000) were made to the scale and an 11-item, three-dimension scale was employed to capture the extent of respondents' firm orientation toward their markets. For all statistical tests, market orientation was organized into the following three factors as suggested by Narver and Slater: competitor orientation, customer orientation, and interfunctional coordination.

Innovativeness

To assess firm emphasis on innovation, a scale was adapted from Dess and Davis (1984) and Davis, Dibrell, and Janz (2002). This scale was selected as it focuses on a firm's overall strategic emphasis on innovation and does not delineate between product and process innovations. The intention is to develop a more encompassing understanding of firm innovativeness and how it is related to other business processes.

Firm Performance

Publicly available performance data did not exist for the firms surveyed. Given the lack of archival or secondary forms of financial performance data, the approach recommended by Dess and Robinson (1984) and other scholars in this area (e.g., Davis, Dibrell, and Janz, 2002; Matsuno and Mentzer, 2000) was executed. These authors suggest the use of self-reported measures of firm financial performance in relation to competitors in the industry provided by respondents. For instance, respondents were given five choices on an interval scale including whether the firm was in the bottom 20% of firm financial performance in its industry to the top 20% of firm performance in the industry.

A criticism of this approach is that respondents may be tempted to inflate financial performance responses. However, Dess and Robinson (1984), in their study of self-reported responses compared to archival sources of financial results, found little difference between the two sets. They suggest that the use of self-reported firm financial performance is appropriate for studies of firms for which archival sources of financial data are unavailable. All scale items are provided in table 1.

Analysis

Like other research questions in management (e.g., Hansen and Morrow, 2003), the relationships in figure 1 lend themselves to being tested through structural equation modeling to test the theoretical paths among the different dimensions and measurement issues. Structural equation modeling is based upon the analysis of correlation or covariance structures and is used in causal modeling (Bollen, 1989). Likewise, it allows for both the structural model and measurement model to be analyzed simultaneously. The structural model can be expressed as:

$$\boldsymbol{\eta} = \mathbf{B}\boldsymbol{\eta} + \boldsymbol{\Gamma}\boldsymbol{\xi} + \boldsymbol{\zeta}, \tag{1}$$

where $\boldsymbol{\eta}$ represents the latent endogenous variables, $\boldsymbol{\xi}$ denotes the latent exogenous variables, and $\boldsymbol{\zeta}$ represents the latent errors in the equations. $\mathbf{B}$ is the coefficient matrix for latent endogenous variables, and $\boldsymbol{\Gamma}$ is the coefficient matrix for latent exogenous variables (Bollen, 1989). The measurement model is represented by the following equation:

Table 1. Measurement Items Used for Study Scales

Market Orientation:	
Competitor Orientation	■ We rapidly respond to competitive actions that threaten us. ■ Our salespeople regularly share information within our organization concerning competitors' strategies. ■ Top management regularly discusses competitors' strengths and strategies.
Customer Orientation	■ We give close attention to after-sales service. ■ We constantly monitor our level of commitment and orientation to serving customers' needs. ■ Our business objectives are driven primarily by customer satisfaction. ■ We measure customer satisfaction systematically and frequently.
Interfunctional Coordination	■ Our managers understand how everyone in our business can contribute to creating customer value. ■ All of our business functions (e.g., marketing/sales, manufacturing, etc.) are integrated in serving the needs of our target markets. ■ All the departments in our company are responsive to one another's needs and requests. ■ Our top managers from across the company regularly visit our current and prospective customers.
Firm Innovativeness:	
	■ Developing new products ■ Upgrading existing products' appearance and performance ■ Producing specialty products ■ Maintaining low levels of inventory ■ Innovation in production processes ■ Innovation in marketing techniques
Firm Performance:	
	■ Total Market Share Growth ■ Total Sales Growth ■ Return on Sales ■ Return on Assets

(2) $$\mathbf{x} = \mathbf{\Lambda}_{\mathbf{x}}\boldsymbol{\xi} + \boldsymbol{\delta},$$
$$\mathbf{y} = \mathbf{\Lambda}_{\mathbf{y}}\boldsymbol{\eta} + \boldsymbol{\varepsilon},$$

where $\mathbf{x}$ is the symbol for the observed indicators of $\boldsymbol{\xi}$, and $\mathbf{y}$ is the symbol for the observed indicators of $\boldsymbol{\eta}$; $\mathbf{\Lambda}_{\mathbf{x}}$ denotes the coefficients relating $\mathbf{x}$ to $\boldsymbol{\xi}$, and $\mathbf{\Lambda}_{\mathbf{y}}$ the coefficients relating $\mathbf{y}$ to $\boldsymbol{\eta}$. The measurement errors for $\mathbf{x}$ and $\mathbf{y}$ are defined by $\boldsymbol{\delta}$ and $\boldsymbol{\varepsilon}$, respectively (Bollen).

Additionally, this method allows for testing of direct and indirect effects among the dimensions (Kline, 2005). Moreover, using structural equation modeling provides the following three advantages over other statistical techniques such as multiple regression (Miller and Dröge, 1986, p. 548):

> First, it models hypothetical constructs—known as latent variables—by specifying the error-in-variables measurement structure (Jöreskog, 1969; Jöreskog, 1970). Second, … [the structural equation modeling statistical technique] simultaneously estimates a system of structural equations that reflects the relationships—with errors in equations—between underlying latent dependent and independent constructs (Jöreskog, 1978; Jöreskog and Sörbom, 1984; Jöreskog and Sörbom, 1982), subsuming classical simultaneous-equation and path-analysis models. Third, because it avoids the confounding of measurement and structural parameters and errors, … [the structural equation modeling statistical technique] is particularly suitable for the analysis of nonexperimental data.

Structural equation modeling demonstrates a robust and powerful statistical technique for the examination of the proposed model. The graphic representation of the statistical analysis of this study is provided in figure 2, which offers more detail than the conceptual model displayed in figure 1.

For structural equation modeling in this study, the covariance structure generated from the collected data was used, as it is considered to be more robust than the correlation matrix (Kline, 2005). LISREL 8.52 was employed for the confirmatory factor analysis (i.e., testing for invariance of the measurement model) and for hypothesis testing. To calculate descriptive statistics, correlations, and inter-item reliability, SPSS 14.0 was utilized.

Results and Discussion

Before the model results are presented, we offer a brief description of the responses obtained from the survey. A majority of respondent firms were 30-plus years old (46.5%) with only a small minority of firms being younger than three years (3.5%). Table 2 shows how the 259 usable responses were distributed across firm size as determined by number of employees and how these firms break down with respect to being family-owned. As expected, the number of responses is larger for smaller firm size and the largest category of firm size had the lowest percentage of family ownership. The size of sample firms was predominantly 10–49 employees (55.6% of respondent firms), with only 9.7% of firms having more than 500 employees. Approximately 87% of respondents in our sample identified themselves as either the owner or CEO of the firm. The remaining respondents classified themselves as a vice-president (3.4%), general manager (7.3%), or operations manager (2.2%).

These companies represent a smattering of product types and serve a variety of sales channels. Figure 3 identifies the number of responses in different product categories (when possible, these were classified along NAICS codes). Frozen food

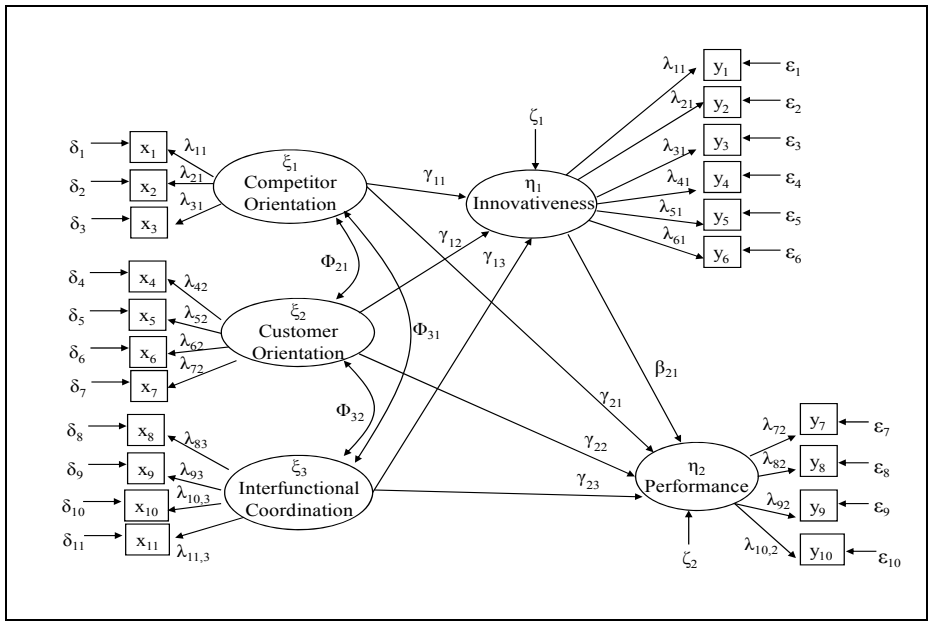

Figure 2. Estimated hypothesized model

Table 2. Responses by Company Size (number of employees) and Percentage Familial

No. of Employees	Frequency	% Family
10–49	144	71
50–99	44	64
100–499	46	70
> 500	25	32
Total	**259**	**66**

manufacturing was the largest product category, followed closely by traditional food-preserving methods such as canning and drying. The primary market channels these companies serve are as varied. Figure 4 breaks down the responses by primary market channels served and by product category.

As reported in table 3, the studied constructs exhibit statistically significant ($p < 0.05$) relationships with other constructs in the correlation matrix which warranted further investigation. Additionally, there is no evidence of multicollinearity among the constructs. Inter-item validity was indicated for the respective constructs with the reported coefficient alphas ranging from 0.69 to 0.79, which are within the acceptable range outlined by Nunnally (1978).

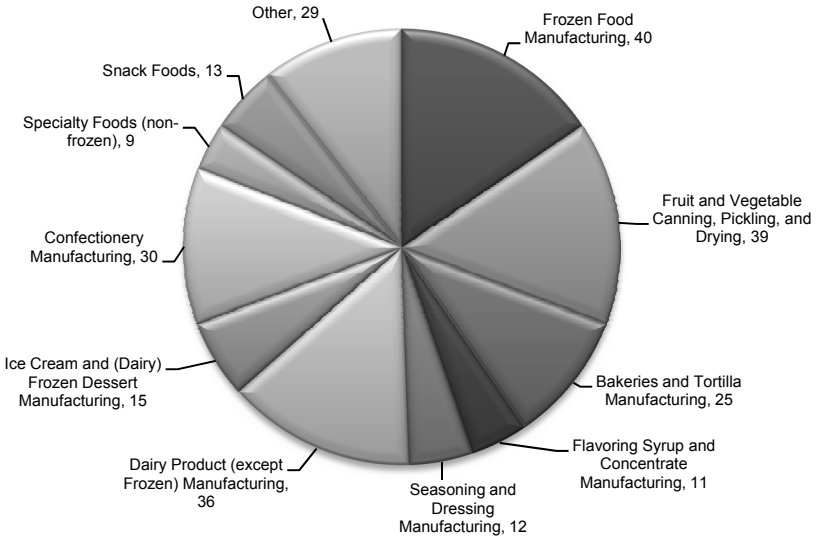

Figure 3. Number of responses by product category

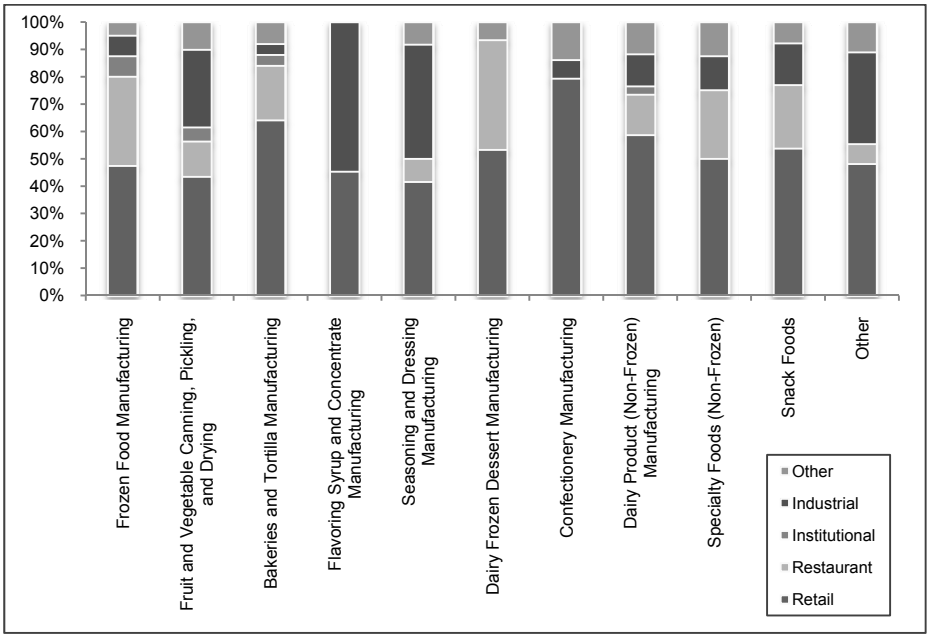

Figure 4. Largest sales channels by product category

Table 3. Descriptive Statistics, Coefficient Alphas, and Correlation Matrix (n = 229)

Studied Scales	Mean [a] (Std. Dev.)	Alpha	1	2	3	4
1. Competitor Orientation	3.58 (0.78)	0.69				
2. Customer Orientation	3.72 (0.72)	0.76	0.52**			
3. Interfunctional Coordination	3.58 (0.65)	0.70	0.58**	0.67**		
4. Innovativeness	3.13 (0.75)	0.77	0.25**	0.31**	0.34**	
5. Firm Performance	2.63 (0.76)	0.79	0.19**	0.18**	0.29**	0.35**

Notes: Single and double asterisks (*,**) denote statistical significance at $p < 0.05$ and $p < 0.01$, respectively (two-tailed). Of the 259 responses that fit the > 9 employees criterion, 30 cases are omitted here due to missing responses for at least one key question, leaving n = 229.

[a] The measures were summed and then divided by the number of items for each respective measure.

Before proceeding to the hypothesis testing, tests for convergent and discriminant validities were conducted through a two-phase confirmatory factor analysis approach (Anderson and Gerbing, 1988). In the first phase, the reflective measures were tested with the standardized factor loadings being statistically significant, and all items loaded above 0.40 on the respective factors. For the second phase, a series of models were examined including the null model, a constrained five-factor model, and an unconstrained five-factor model with the resulting χ^2 statistics for each model compared. For our model fit statistics, we employed the comparative fit index (CFI) (Bentler, 1990), Delta2 (Bollen, 1989), and relative noncentrality index (RNI) (McDonald and Marsh, 1990). These different fit statistics were chosen due to their stability in relation to sample size and number of indicators (Gerbing and Anderson, 1992). The unconstrained five-factor model demonstrated the best overall model fit of the three different models and was statistically significant ($p < 0.05$), as indicated through a χ^2 difference test (see table 4), suggesting convergent and discriminant validities for the hypothesized model.

With the measurements indicating sufficient rigor, we proceeded to hypothesis testing. The hypothesized model indicated a very strong statistical fit with the data. As observed in table 5, our overall model fit statistics are above the 0.90 threshold for all models (CFI = 0.97; Delta2 = 0.97, and RNI = 0.97) (Bentler, 1990). Following the recommendation of other scholars (e.g., Hu and Bentler, 1999), additional model fit indices are included and reported in table 5 [χ^2, root mean squared error of approximation (RMSEA), and nonnormed fit index (NNFI)] for comparison. The recommended fit threshold for RMSEA is less than 0.05, while the NNFI fit index score should be greater than 0.90 (Kline, 2005). With the strong model fit indices, we proceeded to the hypothesis testing in the structural part of our model.

Table 4. Confirmatory Factor Analysis Fit Indices for Studied Constructs

Model	χ^2 (d.f.)	Δ in χ^2	CFI	Delta2	RNI
Constrained 1-factor model (null model)	1,169.51 (189)	—	0.73	0.73	0.71
Constrained 5-factor model (competitor orientation, customer orientation, inter-functional coordination, firm innovativeness, firm performance)	810.48 (189)	359.03*	0.83	0.83	0.81
Unconstrained 5-factor model (competitor orientation, customer orientation, inter-functional coordination, firm innovativeness, firm performance)	490.84 (179)	319.64*	0.91	0.91	0.91

Note: An asterisk (*) denotes statistical significance at $p < 0.05$.

Market Orientation and Performance (H1)

Hypothesis 1 suggested that market orientation is a direct and positive driver of firm performance. From table 5, results show that for this sample of food businesses, none of the three components of market orientation has a direct, significant impact on firm performance. Competitor orientation ($\beta = 0.05$; $p > 0.05$), customer orientation ($\beta = -0.40$; $p > 0.05$), and interfunctional coordination ($\beta = 0.49$; $p > 0.05$) did not drive firm performance, resulting in rejection of hypothesis 1.

It would be tempting to reject this result by dismissing the measurements as ineffective in measuring the intended constructs. However, the different dimensions of market orientation do behave as theorized with the different measures of competitor orientation, customer orientation, and interfunctional coordination significantly associated with one another (see table 5). Therefore, the measurements are sound, and this conclusion demands a functional explanation of the finding.

The result of an insignificant relationship between competitor orientation and firm performance was corroborated by Ottesen and Grønhaug (2005), who found that seafood companies in Norway spent little effort in understanding the actions of their individual competitors, but rather concentrating on aggregate trends. Although not tested in this research, if the sampled firms behaved in the same manner as those seafood companies, this could explain why the competitor focus element of market orientation did not significantly impact firm performance.

As for customer orientation, it can be argued that the relatively easy access to market information about trends, especially consumer habits and buying behaviors, levels the information field with respect to customer orientation. Van Duren et al. (2003) found that food firms rated customer service as highly important to their success, further supporting the idea of parity among companies in customer orientation. One conclusion from this finding could be that market orientation is

Table 5. Structural Model Parameter Estimates and Goodness-of-Fit Statistics for Hypothesized Model

Estimates and Fit Statistics	Completely Standardized Estimate	*t*-Value
PHI Parameters [a]		
■ Competitor Orientation ↔ Customer Orientation	0.68	11.21
■ Competitor Orientation ↔ Interfunctional Coordination	0.71	11.81
■ Customer Orientation ↔ Interfunctional Coordination	0.89	22.45
GAMMA Parameters		
■ Competitor Orientation → Innovativeness	0.05	0.35
■ Customer Orientation → Innovativeness	−0.27	−0.81
■ Interfunctional Coordination → Innovativeness	0.73	2.04*
■ Competitor Orientation → Performance	0.05	0.36
■ Customer Orientation → Performance	−0.40	−1.22
■ Interfunctional Coordination → Performance	0.49	1.36
BETA Parameters		
■ Innovativeness → Performance	0.40	3.35*
Theta-Delta Parameters [a]		
■ We give close attention to after-sales service ↔ Our top managers from across the company regularly visit our current and prospective customers	0.26	4.65*
■ Our salespeople regularly share information within our organization concerning competitors' strategies ↔ All the departments in our company are responsive to one another's needs and requests	0.21	4.18*
Theta-Epsilon Parameters [b]		
■ Return on Assets ↔ Return on Sales	0.59	8.67*
■ Developing new products ↔ Upgrading existing products' appearance and performance	0.14	2.75*
■ Developing new products ↔ Producing specialty products	0.28	4.82*
Model Fit Statistics: $\chi^2 = 266.61$ (d.f. = 174, $p = 0.0$); CFI = 0.97; Delta2 = 0.97 RNI = 0.97; RMSEA = 0.048; NNFI = 0.97		

Note: An asterisk (*) denotes statistical significance at $p < 0.05$.

[a] Narver and Slater (1990) and other market orientation scholars (e.g., Hansen, Dibrell, and Down, 2006) contend that these three factors should be allowed to correlate with one another, as they are theoretically associated through the market orientation construct. Thus, these three factors of market orientation were allowed to correlate in the analysis.

[b] These items were allowed to correlate to improve overall model fit.

not necessary for firm success, but summary statistics from the survey indicate otherwise (table 3). The means of the measurements were relatively high, each being greater than 3.5 on a five-point scale, and the standard deviations were small. These numbers, in conjunction with the results, suggest market orientation may be a minimal management capability for competitiveness.

Another possible explanation is that small firms believe they are market oriented, but in reality are not or they may simply lack the capacity to execute to the degree necessary to create a competitive advantage through market orientation, whereas larger firms do. Even if this is the case, these firms are at least cognizant of the concepts, and arguably are executing market orientation techniques to some extent. Consequently, the more likely explanation is that market orientation is a necessary but not sufficient condition for greater than average performance.

It is also possible to explain the lack of significance in the relationship between market orientation and firm performance by the nature of relationships within the food supply chain. Food manufacturers often sell their product to wholesalers and retailers who in turn sell to the end consumer. James Lugg of FreshDirect (2008) noted that his company's representatives find out more about consumer preferences by talking directly to consumers rather than their retail customers. He also stated that the retail customers are relatively consistent about what they want with respect to customer service. In this light, it seems the items in the customer-orientation scale focus on the wrong supply channel position. The focus should be on the end consumer rather than the "customer."

Innovativeness–Performance (H2)

While we found no evidence of direct impacts on performance via market orientation, our results do reveal a positive influence on performance through innovativeness ($\beta = 0.40$; $p < 0.05$), supporting hypothesis 2. The importance of innovativeness is not surprising in this highly competitive, ever-changing, niche-type market place. A fast-changing market and need for innovation are evidenced in new food and beverage product introductions, which were on pace to top 18,000 in the United States for 2005 (American Institute of Food Distribution, Inc., 2005).

Market Orientation–Innovativeness–Performance (H3)

Hypothesis 3 posited that innovativeness would partially mediate the market orientation-to-firm performance relationship. Even though measurements of competitor orientation ($\beta = 0.05$; $p > 0.05$) and customer orientation ($\beta = -0.27$; $p > 0.05$) did not have a significant relationship with firm innovativeness, this hypothesis was partially supported since interfunctional coordination ($\beta = 0.73$; $p < 0.05$) did have a strong and significant relationship. As reported earlier, firm innovativeness was positively associated with firm performance ($\beta = 0.40$; $p < 0.05$). Creativity oftentimes is enhanced in brainstorming and sharing ideas with others. Therefore, it is understandable that interfunctional coordination interplays with innovativeness to positively impact firm performance in this study. As for customer orientation and competitor orientation, the same logic presented for H1 applies. Customer orientation appears to be a minimal management capability, and competitor orientation (as supported by Ottesen and Grønhaug, 2005) is less important than a focus on general industry and market trends.

As these results indicate, how a U.S. agribusiness food firm operates internally is more important than a focus on external factors such as competitors and customers in relation to innovation. The firm that is able to marshal all its resources through coordination and communication and bring them to bear on innovation will perform better than a firm focused solely on innovation.

Managerial Implications

Although the results of this study raise some questions, our findings do offer two strong and direct implications for managers seeking to improve firm performance. First, firms would do well to develop interfunctional coordination capabilities, which will support the competitive behavior of innovativeness. This combination will help the firm be truly effective in developing greater performance in a highly competitive market place. Therefore, management should develop structures and procedures to promote connections—for example, a "no walls" concept—throughout the organization with an eye to innovation. This is consistent with Johnson and Peterson (2007) who observed a company that intentionally modeled "no walls" in its firm culture. The firm is highly successful with sustained annual sales growth in excess of 20%.

This offers a valuable opportunity for smaller food companies to compete effectively with the larger market players, as smaller firms should be able to execute this model due to the lower degree of managerial and communication complexities. The notion that it is easier to promote communication, coordination, and performance in smaller groups is supported by popular business thinking like Malcolm Gladwell's *Tipping Point* (2000) and in the academic press (e.g., Galbraith and Lawler, 1993, pp. 300–312).

The second managerial implication for food manufacturers is that market orientation cannot be ignored. The three dimensions of market orientation—competitor orientation, customer orientation, and interfunctional communication—did not prove to be competitive differentiators. However, as argued previously, the combination of these elements likely represents a minimal managerial capability required for even average performance. Hence, they are ignored at the peril of the firm.

Limitations and Further Research

The current study yields two substantial managerial implications for small- to medium-sized food manufacturers. The study's focus was limited to the food industry, and the results are different from those of similar studies in other natural resource industries (e.g., Hansen, Dibrell, and Down, 2006; Hansen et al., 2006; Narver and Slater, 1990). Although the food industry shares many similarities with other natural resource industries, it is distinctly different. Therefore, the findings reported here are considered industry-specific. Replication of this study in other industries would be necessary for generalization of results, and it would

be imperative to control for industry type. Acknowledging this limitation, the managerial implications do warrant consideration by any industry that in large part mirrors the food industry—highly competitive, dynamic markets with market concentration in distribution channels.

In addition, when this study's results are viewed in light of industry practice, it is important that future work examine the focus of market orientation scales. In industries where manufacturers sell through retailers but maintain a significant presence with end consumers, the scales that measure market orientation may need to be adjusted to reflect more of an end-consumer focus.

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Appendix: Survey Instrument Excerpts

The following scales were the basis of the variables used in this study.

INNOVATIVENESS

Please indicate the extent your business emphasizes these activities as part of your *competitive strategy.*	**Not at All**		**To a Moderate Extent**		**To an Extreme Extent**
Developing new products	1	2	3	4	5
Upgrading existing products' appearance and performance	1	2	3	4	5
Producing specialty products	1	2	3	4	5
Investing in new R&D facilities to gain a competitive advantage	1	2	3	4	5
Innovation in marketing techniques	1	2	3	4	5
Innovation in production processes	1	2	3	4	5

MARKET ORIENTATION

Please evaluate each of the following statements with the following phrase in mind: *In our operations . . .*	**Not at All**		**To a Moderate Extent**		**To an Extreme Extent**
We constantly monitor our level of commitment and orientation to serving customers' needs.	1	2	3	4	5
We rapidly respond to competitive actions that threaten us.	1	2	3	4	5
All of our business functions (e.g., marketing/sales, manufacturing, etc.) are integrated in serving the needs of our target markets.	1	2	3	4	5
Our business objectives are driven primarily by customer satisfaction.	1	2	3	4	5
Our salespeople regularly share information within our organization concerning competitors' strategies.	1	2	3	4	5
All the departments in our business are responsive to one another's needs and requests.	1	2	3	4	5
Our strategy for competitive advantage is based on our understanding of customer needs.	1	2	3	4	5
Top management regularly discusses competitors' strengths and strategies.	1	2	3	4	5
Our top managers from across the business regularly visit our current and prospective customers.	1	2	3	4	5
Our business strategies are driven by our beliefs about how we can create a greater value for customers.	1	2	3	4	5
We target customers where we have an opportunity for competitive advantage.	1	2	3	4	5
We freely communicate information about our successful and unsuccessful customer experiences across our business.	1	2	3	4	5
We measure customer satisfaction systematically and frequently.	1	2	3	4	5
Our managers understand how everyone in our business can contribute to creating customer value.	1	2	3	4	5
We give close attention to after-sales service.	1	2	3	4	5

(continued . . .)

PERFORMANCE INDICATORS

Please indicate the category that in your opinion best approximates how your business compares with other competitors in your industry over the most recent year.	**Bottom 20%**	**Next Lowest 20%**	**Middle 20%**	**Next Highest 20%**	**Top 20%**
Total sales growth	1	2	3	4	5
R&D as a percentage of sales	1	2	3	4	5
Total market share growth	1	2	3	4	5
After-tax return on total sales	1	2	3	4	5
After-tax return on total assets	1	2	3	4	5
Total book value of all assets	1	2	3	4	5
Number of employees	1	2	3	4	5

DEMOGRAPHICS

How many full-time employees does your business employ?

[ ] < 5 [ ] 6–9 [ ] 10–49 [ ] 50–99 [ ] 100–499 [ ] > 500

How many years has your business been in operation?

[ ] < 3 years [ ] 3–4 years [ ] 5–8 years [ ] 9–15 years [ ] 15–29 years [ ] > 30 years

Indicate which of the following NAICS categories best fits the PRIMARY industry that your business is involved in. (Select only one.)

[ ] Frozen Fruit, Juice, & Vegetable Mfg.
[ ] Frozen Specialty Food Mfg.
[ ] Frozen Cakes, Pies, & Other Pastries Mfg.
[ ] Fruit & Vegetable Canning
[ ] Specialty Canning
[ ] Dried & Dehydrated Food Mfg.
[ ] Tortilla Mfg.
[ ] Flavoring Syrup & Concentrate Mfg.
[ ] Seasoning & Dressing Mfg.
[ ] Breakfast Cereal Mfg.
[ ] Fluid Milk Mfg.
[ ] Creamery Butter Mfg.
[ ] Cheese Mfg.
[ ] Dry, Condensed, & Evap. Dairy Product Mfg.
[ ] Ice Cream & Frozen Dessert Mfg.
[ ] Cookie, Cracker, & Pasta Mfg.
[ ] Confectionery Mfg. from Purchased Chocolate
[ ] Nonchocolate Confectionery Mfg.
[ ] Other: _____
_____