Differentiation Strategies in Agribusiness – A Configurational Approach
Abstract

This paper examines alternative ways for agribusiness firms specializing in high-value-added products to differentiate themselves from competitors in both the domestic and the international markets. Relying on information collected through interviews and a survey conducted with 200 agribusinesses operating in the humid tropics of Latin America, it explores the factors typical of firms that implement a generic differentiation strategy. The findings provide interesting insights for scholars and practitioners alike, illustrating the strategic initiatives those firms pursue to obtain on average higher prices than competitors.

Keywords: Strategy, Generic Strategies, Agribusiness, Emerging Markets
Introduction

A major challenge agribusiness firms are facing is creating value beyond the farm gate. Agricultural products, including some value-added goods, face wild price fluctuations over which they have no control. In view of this issue, a way for agribusiness companies to protect themselves is by adding value to their products (Food and Agriculture Organization, 2007).

This research deals with value-added agribusiness firms in 12 countries from Latin America, a region widely known for agricultural exports with innovative, competitive companies in this industry (Da Silva, Baker, Sheperd, Jenane, and Miranda-da-Cruz, 2009; Rosales and Kuwayama, 2012). According to our definition, high-value-added companies do not engage in commodity production/distribution, but rather climb up the value ladder through product sorting, cleaning and packing, industrial processing, and distribution and/or direct sales, with some even owning stores. This study builds on previous research on agribusiness firm strategies in order to provide further insights on the implementation of differentiation strategies in this industry (Brenes, Montoya, and Ciravegna, 2014).

For years, the need for low costs in order to compete has been stressed in agribusiness. This need is quite understandable because most companies engage in producing commodities, that is, products that cannot be easily differentiated, such as rice, beans, soybean, wheat, coffee, and sugar. Most companies relying on low costs as their source of competitive advantage focus on economies of scale through large volume; they improve productivity by investing in better production processes, such as automation (Hill, 1988).

Levitt (1980) argued that every product or service can be differentiated, including so-called commodities. The agribusiness sector also includes companies that compete by pursuing differentiation strategies that focus on product selection and cleaning (e.g., rice or beans), and use of sophisticated packaging (coffee or meat), together with strong promotional campaigns to support their brands. Companies able to pursue differentiation strategies can break away from the less profitable niches in the value chain, such as commodity production (Gibbon, 2001).

Differentiation strategies are not easy to pursue in this sector and can be implemented by different means, that is, nonexclusive common criteria also leading to success (Porter, 1980; Porter, 1985). This
research aims to identify factors with a positive influence on differentiation strategies of agribusiness firms, resulting in prices consistently higher than those of competitors (Porter, 1980, Porter, 1985; Thornhill and White, 2007).

For many years, academics have been working with linear relationships. Unfortunately, real-life companies do not operate that way. Thus, different companies can achieve equal results (e.g., prices higher than competitors, return on investment, growth, innovation, sales or any other) by pursuing totally different strategies (Fiss, 2007). For that reason, we engaged in exploring other mechanisms and tools in order to understand the factors behind the occurrence of differentiation strategies.

Identifying different ways agribusiness firms can differentiate themselves contributes to enriching the academic literature as well as the literature intended for practitioners, as companies pursue competitive strategies as a starting point to differentiate themselves. Companies pursuing differentiation strategies should be able to set average prices consistently higher than their competitors (Porter, 1980). This research identified this factor as the primary outcome; other factors affecting the outcome were picked from literature. Our contribution is twofold. First, we propose using fuzzy-set qualitative comparative analysis (fsQCA) to capture the large number of organizational configurations adopted by firms implementing differentiation strategies, with an eye to informing the debate on Porter’s generic strategies. This bridges a gap between the multiplicity of strategic configurations proposed by strategy scholars such as Porter (1985) and Mintzberg (1979), and the linear causality logic underlying strategy literature to a large extent. Second, we provide additional empirical evidence on positioning in agribusiness, an industry under-represented in the strategy literature.

**Theoretical background**

Brenes et al. (2014) identified a number of antecedents supporting agribusiness differentiation strategies. Building on this conceptual basis, this research used 200 companies to identify key factors accounting for differentiation in high-value-added business firms from a configurational standpoint. This approach resulted in different strategic-factor combinations used by companies to differentiate themselves from competitors. Following Brenes et al. (2014), we focus our analysis on five primary areas, namely, innovation, marketing, agribusiness scope, operational skills, and formal management.
The Schumpeterian entrepreneurship perspective points to innovation as a major source of competitive advantage (Zahra and Das, 1993; Dhamvithee, Bhavani, Jangchud, and Wuttijumnong, 2005). In this view, a firm's positive or negative performance depends on continuous, robust innovation. Entrepreneurs in Latin America face continuous risks and benefits that are not always permanent, due to organization quality and fluctuations in emerging economies, forcing entrepreneurs into continuous innovation. As a result, Latin America has turned into a global agricultural export leader (Da Silva et al., 2009; Rosales and Kuwayama, 2012).

In connection with innovation capability, we picked a factor defining company investment in R&D that must be supported by top management to foster innovation. However, Latin American companies have progressed to a broader concept of innovation, not restricted to specialized research and development centers, but encompassing other measurable factors such as the number of new processes/products versus their closest competitors (Gibson, Brenes, and Barahona, 2011).

On the other hand, less-developed countries’ potential to boost progress depends to a large extent on their ability to learn and absorb knowledge from abroad, as well as to take advantage of opportunities offered by structural change to spread new technologies (innovative products and innovative ways to produce) and knowledge, and to bring them to every corner of their economies (Inter-American Development Bank, 2010). This potential has favored the development of various methodologies to innovate products and processes, resulting in company differentiation (Quiroga, Hernández, Torrent-Sellens, and Ramírez, 2014). For instance, Grupo Britt N.V consolidated a successful business model based on a "sense of place," which allows it to offer products and services focusing on unique features of the sites where it operates (Brenes, Chattopadhyay, and Montoya, 2013).

In relation to marketing, we selected the country of origin as a marketing tool, together with the number of international certifications received and the product range vis-à-vis competitors. Marketing skills are a starting point to identify key topics such as advertising and promotion (Porter, 1985). According to some scholars, prioritizing these factors in business firms is vital (Keller, 2009). Although literature dealing with the role of marketing capabilities is limited, scholars argue marketing plays a dual role in competitive strategy by
influencing the intensity of organizational innovation as well as sustained competitive advantage (Weerawardena, 2003).

In connection with agribusiness scope, we selected a high degree of vertical integration. Empirical evidence indicates a high degree of vertical integration is necessary for companies to add value to their products and survive in typical emerging-economy contexts (Khanna and Palepu, 2013). A high degree of vertical integration involves using company-owned or third-party distribution and logistics services, as well as company-owned sales outlets (Brenes et al., 2014).

Regarding operational skills, we chose product quality in relation to competitors. Agricultural entrepreneurs in Latin America prioritize strategic-operation fields to improve product quality vis-à-vis closest competitors (Brenes et al., 2014). Studies point to the strategic role of product quality as an antecedent to gain competitive advantage and increase profitability (Jacobson and Aaker, 1987; Shah and Ward, 2003). On the other hand, other studies empirically show quality is key to commanding premium prices (Phillips, Chang, and Buzzell, 1983).

Concerning formal management, we looked into the existence of a formal board of directors. Human capital is an important antecedent for company success. Investing in training and improving managerial skills depends to a large extent on the existence of an effective board of directors ensuring preservation of competitive advantage through action taken (Becker and Gerhart, 1996). For instance, a firm's management-team quality is evident when the board contributes to identifying the company's business strategy, which must attain a high degree of acceptance chiefly in emerging economies in view of their changing conditions (Boehlje, Grey, and Detre, 2005). Studies show a clear definition of business, formal selection of directors, and mutual trust are central to boards’ ability to effectively influence the firm's strategic action (Stiles, 2001).

Each strategic area is theoretically illustrated by studies that validate a critical factor differentiating companies from competitors, which is reflected in higher relative prices. In real life, companies do not follow the same strategic pattern, but rather stress different factor combinations per strategic area. Thus, they create differentiation strategies resulting in a competitive advantage. Companies develop generic differentiation strategies in line with a configuration containing a number of different factors (e.g., product quality, a high
degree of vertical integration, and product breadth), among other combinations, to achieve a competitive advantage (Fiss, 2011, Miller 1996).

The equifinality principle results in various configurations for differentiation strategies, because it allows different factor combinations to achieve the same result of interest, not following a linear relationship (as occurs in some case studies of strategy and international business), but rather a multi-causal logic (see exhibit 1) empirically closer to reality (Ragin, 2008; Fiss, 2007).

EXHIBIT 1 HERE

To study differentiation strategies of agricultural companies with an equifinality perspective, this research follows an innovative methodological approach, namely, qualitative comparative analysis (QCA), which allows us to study multiple causal relationships. This approach will identify the combinations required to achieve a generic differentiation strategy reflected in an average price of products and/or services consistently higher than that of competitors.

Methods and Data

We collected data by surveying small and medium-size companies engaged in food production and other agricultural activities in 12 Latin American countries. Our inclusion criteria were as follows: firms specializing in agribusiness, based in the humid tropical region of Latin America (southern Mexico to northern Peru), and involved in at least some value-adding activities, that is, excluding farms producing only commodities and selling them unprocessed. For example, we excluded coffee and rice farms selling directly to mills and/or exporters or local packagers and distributors without any further processing at the farm level. Given the role of soil, sun, and climate in agriculture, and the fact that several countries in Latin America have highly diverse climatic zones, we decided to take a climatic-region approach. We focused on firms based in the same climatic region, humid tropics, which produce a very similar range of products across countries. By doing so, we avoided a sample starting from the unit of analysis “nation state”, and starting instead from the idea that in the global economy, firms in Latin America’s humid tropics compete with each other and with African and Asian firms by exporting the same range of products. They do not compete with Latin American agribusinesses based in different climatic regions. This research (Da Silva et al., 2009; Rosales and
Kuwayama, 2012; Reardon and Barrett, 2000) focuses on analyzing agricultural activities as, even though they account for a major source of business in the region, they are under-represented in international literature on strategy and international business.

The survey design resulted from focus groups on added-value firms, with 16 CEOs from archetypal companies in the agribusiness sector. The focus groups provided key inputs regarding differentiation in agribusiness, and the primary strategic areas CEOs identify, as well as helping frame questions in a business-friendly manner. Once the survey was completed, we engaged in identifying companies in the region, supported by a consulting firm specializing in agribusiness, which initially detected 900. In addition, we contacted the firms to ensure they were active. After applying these filters, we obtained a list of 350 firms. We then sent our survey questionnaire online to the 350 companies, obtaining a 68% response rate. After discarding incomplete surveys, we obtained 200 observations.

Most of the questions were rated using Likert scale, and a few of them had either dichotomous or point-value answers. Each question matched a causal antecedent falling into a strategic area previously identified within the conceptual framework (see exhibit 2).

EXHIBIT 2 HERE

The outcome of interest in this study, which we would call the dependent variable if we had used a linear logic, is differentiation strategy. We measure it using product/service price in relation to competitors. According to Porter (1980), companies that attain a differentiation strategy consistently command higher prices than their competitors. In this case, participants responded using a 7-point scale (1 = a much lower price than competitors, 7 = a much higher price than competitors; see exhibit 3), and identified value according to their own perceptions and first-hand information about their companies and competitors. Six out of nine causal antecedents were also measured using a 7-point scale, where respondents perceived a lower-to-higher level for each causal antecedent and two required dichotomous representations, that is, 1 if the company uses country of origin as marketing tool or if it has a formal board of directors, and 0, otherwise. Lastly, for R&D, we used the amount the company invests in research and development as a percentage of its
annual sales; values considered in the questionnaire for this factor were less than 1%, 2%, 5%, 8.5%, and over 10%.

EXHIBIT 3 HERE

We analyzed conditions leading to each strategic priority, using the fsQCA software, a tool to confirm empirical general propositions (Caramani, 2005). Developed by Ragin (2008), fsQCA provides comparative analysis leading to exploration of the combinations of causal antecedents that trigger a certain outcome. The advantage over linear regression methods is that it allows for the following:

a) Equifinality, that is, the possibility that multiple paths lead equally to the same outcome, which linear methods do not capture. Note that Porter’s generic strategies are equifinal by definition, and similarly to Mintzberg’s approach, firms can differentiate in specific ways, which are called “differentiation” precisely because they make them unique vis-à-vis competitors and for their customers, even though the value they add may be the same as that of other firms, which differentiate in other ways.

b) Combinatorial solutions, that is, the fact that any individual factor may not, per se, be linked to an outcome, but specific combinations, via interaction, will trigger such outcome. For example, a firm may not achieve differentiation simply by acquiring new machinery that should allow it to improve quality control, because its workers may not be adept at using it. The same firm will achieve differentiation if it also invests in human resources that will operate such equipment, improving the quality of the products. Linear methods, by focusing on relationships between each independent variable and the dependent variable, do not capture the combinatorial causality that is implicit in the generic strategies Porter defined.

For the reasons listed above, and drawing from Fiss (2011) and Misangi et al. (2017), we believe fsQCA is uniquely suited to the analysis of strategic configurations and hence the ways in which firms achieve differentiation.
The result offers a combination of causal antecedents grouped together in configurations to indicate the circumstances (presence, absence, or indifference of a causal antecedent) leading to the result of interest, in our case, a higher price in relation to competitors.

**Fuzzy-Set Qualitative Comparative Analysis (fsQCA)**

fsQCA is based on the analysis of logical techniques such as Boolean algebra, truth tables, fuzzy-set theory, and logic minimization methods. However, QCA does not identify relevant antecedents. As a result, the theoretical basis for previous studies (Brenes et al., 2014) serves as a tool to justify the antecedents used in the model. fsQCA captures equifinality, which assumes multiple paths can coexist or lead to a desired outcome (Fiss, 2007). Also, fsQCA distinguishes between necessary and sufficient conditions. Necessary conditions mean a focal result can only be achieved in the presence of the causal antecedent. On the other hand, sufficient conditions indicate a causal antecedent always leads to a focal result (Rihoux and Ragin, 2009; Kent, 2008).

fsQCA begins with a fuzzy-truth table algorithm, specifying the outcome of interest and its causal antecedents. In set theory, values vary continuously from 0 to 1, with 0 = outside a set and 1 = inside a set. However, because these are continuous membership values, the neutral value is 0.5, indicating the “maximum ambiguity point”, or that they are neither inside nor outside a set (Ragin, 2008).

fsQCA intends to use a logical combination to determine which sample cases are more within a set than others, providing within all 200 cases, the configurations for an outcome to occur under the causal antecedents previously identified. In our case, these configurations would be the patterns for some companies to achieve generic differentiation strategies resulting in prices consistently higher than those of competitors.

Because fsQCA deals with a specific outcome, in our case differentiation strategy, and antecedents with values ranging between 0 and 1, both must be calibrated using values previously identified by researchers, reflecting a membership score that consists of three limit values as mentioned above. This calibration is achieved by cumulative frequency distribution, with limits covering 95% of the data, 50% of the data, and 5% of the data, respectively (Basurto and Speer, 2012). Once the data in the matrix are processed
with the calibration, both Likert and continuous numbering values (company investment in R&D) will be turned into fuzzy values to obtain the truth table and explain which conditions set is either required or sufficient for the outcome of interest to occur. Exhibit 4 shows the membership score for the calibration and the fuzzy-set value for the outcome and for each antecedent in our model.

EXHIBIT 4 HERE

The truth table shows all possible logical combinations for causal antecedents and their outcome (Ragin, 2008). The number of configurations will be equivalent to $2^K$, with $K$ equaling the number of causal antecedents considered in the model; in our case, $K = 9$. Of all configurations, we discard those containing 0 cases of the sample with the outcome taken for granted (equal to 1) for configurations with a consistency of 0.86. We worked with a higher consistency level to ensure relevant cases were included in the result of interest. A zero value will be assigned to the remainder, in other words, to no outcome. There is no configuration where all causal antecedents trigger the outcome, and no single antecedent causes the outcome by itself, without combining with others. However, a high degree of vertical integration, product range vis-à-vis competitors, and product quality vis-à-vis competitors are necessary conditions for the outcome to occur, that is, a higher price than those of competitors.

Causal-configurations outcome

fsQCA will bring about three solutions of interest displaying alternative results. However, for the purposes of the work carried out, only the first result (complex solution) will be used, because it offers the most detailed answer. This solution assumes all configurations without cases (i.e., number = 0) would have produced an absence of the result of interest, preventing simplification of sufficient configurations as seen from counterfactual factors (Pérez, 2009). As pointed out, to achieve that result, causal antecedents in each configuration may be either present, absent, or irrelevant. The three configurations obtained from fsQCA are under parameters of consistency and raw coverage to ensure any one of them will explain the outcome of interest (Kent, 2008; Schneider and Eggert, 2014). The degree of consistency indicates the extent to which cases share a given combination of agreement conditions showing the result in question; in other words, the percentage of cases included in the solution show the result of interest. In this case, ideally, a consistency over
0.80 is expected; we used 0.86 as mentioned. On the other hand, raw coverage indicates the percentage of positive cases accounting for the configuration obtained, that is, when the result of interest takes place. Ideally, in this case, we expect it to be 0.2 - 0.6, although not strictly so. At the end, the solution coverage indicates the percentage of cases with the outcome of interest explained by the final model, and the solution consistency indicates the percentage of cases included in the final solution, with all the configurations showing the result of interest (Pérez, 2009).

Findings and Implications

We explored priority investment areas linked to the implementation of differentiation strategies. As a result of a first exploratory analysis, we came across three primary configurations (see exhibit 5). All firms have a high degree of vertical integration and claim to have more and better products than their competitors. However, all other factors explored vary across all three configurations. For example, having a formal board of directors is a prerequisite to implement a differentiation strategy only with Configurations 1 and 2. Having a high number of international certifications is a prerequisite only with Configuration 1, whereas product innovation applies to Configurations 1 and 3. Our results illustrate multiple causal paths to strategy implementation within the same industry, thus corroborating Fiss’s work (2007).

Configuration 1 is typical of firms that engage in prioritizing different areas, attempting to differentiate themselves in most of the ways we are testing, except for using country of origin as a marketing tool. Configuration 2 is different—it comprises firms that differentiate themselves not by focusing on innovation, but mostly on marketing (except for the use of international certifications) and formal management, in addition to being vertically integrated and ensuring superior product quality (as all firms in our study do). Configuration 3 includes firms that do not focus on formal management and do not invest in R&D or international certifications yet introduced new products and new processes over the last three years and use country of origin as a marketing tool.

We aim at further developing the paper to discuss the three configurations in depth and link them to theory and to previous empirical studies on how Porter’s differentiation strategies can be implemented in various contexts.
Discussion

Research findings illustrate three very different ways to attain a differentiation strategy in the context of the agribusiness industry, an industry commonly related to low-cost strategies (Hill, 1998; Campbell-Hunt, 2000). The first two configurations include firms with a formal board of directors, whereas the third accounts for firms managed more informally. This finding suggests less formal firms, which in our case included family-owned companies without a formal board and also newer companies (i.e., not yet formalized), are also capable of implementing a differentiation strategy.

The first and third configurations involve a stronger-than-average focus on product and process innovation, though this focus is not reflected in the R&D expenditure. The finding is in line with the observation that in emerging economies, innovation often occurs in a specific way, and managers tend to disqualify formal budgets in R&D programs (Sánchez, 1995). Although companies implementing Configurations 1 and 3 are not more R&D intensive than other business firms, they innovate to improve the number of products and processes they implement (Dhamvithee et al., 2005).

All of the pathways to differentiation found involve vertical integration to a significant degree. In contrast to advanced-economy contexts where specialization and strategic outsourcing allow for higher efficiency, in emerging economies, specialized high-quality inputs are hard to find (Khanna and Palepu, 2013). To differentiate themselves, business firms must ensure higher quality than competitors and, as our analysis reveals, they actually do. To do so, vertical integration backward in the value chain, for example obtaining high-quality inputs, and forward, by engaging directly in distribution, especially in the case of highly perishable goods such as meat or dairy goods, is vital (Porter, 1985; Austin, 1992). To compensate for the lack of reliable third-party systems to implement meticulous quality control, and often to compensate for the lack of trusted suppliers as well, business firms that differentiate themselves engage in integrating in-house processes and becoming producers, processors, and distributors (Khanna and Palepu, 2013). This finding is consistent with the literature on institutional gaps and the strategy of emerging-market firms (Brouthers, 2002; Claessens, Djankov, Fan, and Lang, 2003).
In terms of how they differentiate their offer in the eyes of final customers, the first configuration focuses on the number of certifications, indicating quality, sustainability, and the international credentials of a business firm. The second and third business firms do not focus on international certifications but rather use the geographical origin of their products as a marketing tool, following a well-established strategy in the food industry (Usunier, 2006). All three configurations are characterized by the fact that companies attempt to have a broad product range as opposed to specializing in a single product, which is a common feature of generic differentiation strategies (Porter, 1982).

Configuration 1 characterizes highly innovative business firms trying to offer a large number of new products, which ensures the product range remains broad vis-à-vis competitors. In addition, instead of focusing on product origin, they stress the importance of certifications. This configuration includes producers of dairy goods, such as the Costa Rican-based Cooperativa Dos Pinos R.L. In the words of its CEO, “We offer customers a broad product range. But since consumer taste keeps changing we need to keep innovating, which is why we invest significantly in product development in order to constantly ensure a large, attractive offer.” These firms also stress establishing new processes in every possible area within the company. As Cooperativa Dos Pinos’s CEO puts, “We are different from our competitors because of product number and quality. This means that reinvesting profits in technology and continuously improving our production and other area processes is key to success” (Granados, 2017). Cooperativa Dos Pinos R.L. has a large degree of vertical integration, with over 1,300 dairy producers in Costa Rica. The company is now using the same supply system to expand to other countries, and has strict quality-assurance programs over the whole supply chain and an active formal board of directors.

Configuration 2 is very different from the first. Although it also includes firms with a formal management board, it shows a different, less aggressive approach to differentiation. Business firms implementing configuration 2 do not focus on product and process development. They have a broad product range but do not invest to renew it consistently, exploiting product innovations from the past. They also enjoy a high degree of vertical integration, which is coherent with their concern with product quality, and this element is found consistently across all three configurations. Unlike business firms implementing
Configuration 1, companies implementing Configuration 2 do not have a large number of international certifications. They differentiate their offer by emphasizing the importance of geographic origin.

This configuration is typical of companies such as Juan Valdez, a Colombian coffee producer owned by the Federacafe (Federación Nacional de Cafeteros, Colombia). Juan Valdez experienced significant innovation during the 1980s and early 1990s when it launched its own brand, thus moving from commodity producer to premium, branded producer. By the late 1980s, it adopted a differentiation strategy involving considerable investment in marketing, packaging, and distribution. It managed to enter the US market and helped improve the worldwide reputation of Colombian coffee while also profiting from its rural, traditional image. This first wave of differentiation involved vertical integration of some functions it previously did not engage in, such as coffee packaging and marketing. In an attempt to diversify its offer, it launched a cafeteria chain in both the domestic and the international market. It also introduced new types of coffee, thus reaching a broad product range. As its key strategy, Juan Valdez leveraged the importance of origin in order to position its coffee as premium in the eyes of international consumers. In its domestic market, it took advantage of national pride resulting from high-quality coffee and cafeterias. However, until recently, it had not developed coffee brands with regional origin within Colombia, which proves it was not betting on innovation.

Configuration 3 is also different because it includes firms managed somewhat less formally, as a typical family-owned business or new entrepreneurial business not yet fully formally structured. Such businesses are similar to companies using Configuration 1: they invest strongly in developing new products and processes, though not via formal R&D expenditure, with a high degree of vertical integration, broad product range, and a focus on product quality. The main difference is they use origin to differentiate their products instead of having a broad range of certifications. A Guatemalan company fitting this configuration is Popoyán, characterized by process innovation and acquisition of top agricultural technology. In addition, it offers a selection of high-quality peat moss to propagate plants or to produce different crop types and a wide variety of fiber types to suit their own requirements. It has also developed a tropicalized genetic package for Central America, and it is a market leader both locally and abroad. In addition, it has a variety of popular products including peppers, tomatoes, melons, watermelons, zucchini, cucumbers, green beans, and peas.
Popoyán has characterized itself by high productivity and adaptability and exports to Europe and the United States.

In summary, this paper has shown value-added agribusiness companies can pursue differentiation strategies through different configurations to reach prices consistently higher than those of competitors.

References


Granados, G. (2017). Dos Pinos apuesta a innovación para estar “siempre con algo mejor”. La Prensa Libre


Outcome

Differentiation Strategy

a. Average price of products higher than that of competitors

Key Areas

Innovation capability

a. Number of new processes over the last three years
b. Number of new products vis-à-vis competitors
c. Company investment in R&D

Marketing

a. Number of international certifications
b. Product range vis-à-vis competitors
c. Origin as a marketing tool

Agribusiness Scope

a. High degree of vertical integration

Operational Skills

a. Product quality vis-à-vis competitors

Formal Management

a. Formal board of directors
Exhibit 3

Likert Scale Score Card

<table>
<thead>
<tr>
<th>Likert Scale Values</th>
<th>Meaning</th>
<th>Likert Scale Values</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Much lower than competitors.</td>
<td>5</td>
<td>A little higher than competitors.</td>
</tr>
<tr>
<td>2</td>
<td>Lower than competitors.</td>
<td>6</td>
<td>Higher than competitors.</td>
</tr>
<tr>
<td>3</td>
<td>A little lower than competitors.</td>
<td>7</td>
<td>Much higher than competitors.</td>
</tr>
<tr>
<td>4</td>
<td>Same as competitors.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


**Exhibit 4**

Calibration and Fuzzy-Set Score Membership

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Membership Score</th>
<th>Fuzzy-Set Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price of company products in relation to closest competitors</td>
<td>6,7</td>
<td>0.95</td>
</tr>
<tr>
<td></td>
<td>4,5</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>1,2,3</td>
<td>0.05</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Causal antecedents</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of new processes over the last three years</td>
<td>5,6,7</td>
<td>0.95</td>
</tr>
<tr>
<td></td>
<td>2,3,4</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0.05</td>
</tr>
</tbody>
</table>

| Number of new products vis-à-vis competitors                            | 5,6,7            | 0.95             |
|                                                                         | 3,4              | 0.5              |
|                                                                         | 1,2              | 0.05             |

| Company investment in R&D                                               | 0.1              | 0.95             |
|                                                                         | 0.02             | 0.5              |
|                                                                         | 0.01             | 0.05             |

| Number of international certifications                                 | 5,6,7            | 0.95             |
|                                                                         | 2,3,4            | 0.5              |
|                                                                         | 1                | 0.05             |

| Product range vis-à-vis competitors                                     | 6,7              | 0.95             |
|                                                                         | 3,4,5            | 0.5              |
|                                                                         | 1,2              | 0.05             |

| Origin as a marketing tool                                             | 1                | Dichotomized variable |
|                                                                         | 0                |                  |

| High degree of vertical integration                                    | 7                | 0.95             |
|                                                                         | 4                | 0.5              |
|                                                                         | 2                | 0.05             |

| Product quality vis-à-vis                                              | 7                | 0.95             |
| competitors | 5,6 | 0.5 |
|            | 1,2,3,4 | 0.05 |
| Formal board of directors | 1 | Dichotomized variable |
|           | 0 |     |
### Exhibit 5

**Outcome: Differentiation Strategy**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Configuration 1</th>
<th>Configuration 2</th>
<th>Configuration 3</th>
<th>Key areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of new processes over the last three years</td>
<td>P</td>
<td>NP</td>
<td>P</td>
<td>Innovation</td>
</tr>
<tr>
<td>Number of new products vis-à-vis competitors</td>
<td>P</td>
<td>NP</td>
<td>P</td>
<td>capability</td>
</tr>
<tr>
<td>Company investment in R&amp;D</td>
<td>I</td>
<td>NP</td>
<td>NP</td>
<td>capability</td>
</tr>
<tr>
<td>Number of international certifications</td>
<td>P</td>
<td>NP</td>
<td>NP</td>
<td>Marketing</td>
</tr>
<tr>
<td>Product range vis-à-vis competitors</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>Marketing</td>
</tr>
<tr>
<td>Origin as a marketing tool</td>
<td>NP</td>
<td>P</td>
<td>P</td>
<td>Marketing</td>
</tr>
<tr>
<td>High degree of vertical integration</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>Agribusiness scope</td>
</tr>
<tr>
<td>Product quality vis-à-vis</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>Operational skills</td>
</tr>
<tr>
<td>Formal board of directors</td>
<td>P</td>
<td>P</td>
<td>NP</td>
<td>Formal</td>
</tr>
</tbody>
</table>

| RAW COVERAGE | 0.053118 | 0.123941 | 0.108482 |
| CONSISTENCY  | 0.913636 | 0.887417 | 0.861490 |
| SOLUTION COVERAGE | 0.285541 |
| SOLUTION CONSISTENCY | 0.882041 |

**P: Present NP: Not present INDIF: Indifferent**