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Analyzing Sourcing Networks for a Coffee Retailer
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Analyzing Sourcing Networks for a Coffee Retailer

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Summary: The purpose of this thesis is to understand the rationale behind current supplier selection for non-company operated stores in order to help uncover opportunities and areas for improvement by launching a survey and using the odds ratio analysis. This study can then be used as a basis for the company to maximize procurement leverage. In addition, it seeks to explore logistics solutions that can enhance either responsiveness or efficiency in the coffee retailer's supply chain.

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KEY INSIGHTS

1. Franchisees and licensees are more willing to receive Food & Beverage products from a central source when their goods are distributed from an area close to the destination market

2. The distribution of Dairy Products and Savory Food require a very responsive supply chain with fast delivery times in order to be successful

3. Communication practices are key for franchisee/licensee satisfaction, and can vary internally

Introduction

Entering international markets is often challenging, requires planning, and entails an evaluation of market entry options that are used for businesses to increase their odds of success upon entering such markets. Two of these market entry options, licensing and franchising, are used by multinational foodservice chains across the world to expand their business presence and grow quickly.

This study focuses on a multinational coffee retailer that continues to use licensing and franchising to expand rapidly in the EMEA Region, yet by doing so,

is facing a supply chain challenge rooted in their sourcing practices. The coffee retailer allows partner entities (the franchisees and licensees) to source certain goods outside of the coffee retailer's network, yet also offers goods directly to these non-company operated stores from their distribution centers in Holland and the United Kingdom. However, the current situation is such that the products ordered directly from the coffee retailer are not uniform across the EMEA Region, thus leaving the company seeking to understand the rationale behind why certain partners order products locally (on their own) versus regionally (from the coffee retailer).

To better understand this rationale, this study identifies the rationale behind current supplier selection in order to provide an analysis that can be used as a basis for the company to maximize procurement leverage and eventually lower their cost to serve and cost of goods sold (COGS). We identified that the category with the highest impact to COGS for this corporation is the Food & Beverage category, which in turn serves as the focus category for this thesis.

Current research shows that the key advantage to a franchise business is to obtain economies of scale when purchasing from their suppliers, yet this can be difficult for the franchisor to implement when markets are geographically dispersed (Pardo-del-Val, Martínez-Fuentes et al., 2014), enticing franchisees

to source goods locally. To better understand the benefits and shortcomings of sourcing locally, researchers launch surveys to obtain primary information, and also perform statistical analyses like the odds ratio analysis to determine if a buyer is more likely to make a purchase locally (Sharma, Moon et al., 2014).

Hence, our approach for identifying this rationale is to conduct exploratory and cognitive interviews and use the feedback from the interviews to launch a survey to the partner entities. The objective is for the partner entities to respond to various questions regarding how the coffee retailer is performing in the supply and distribution of Food & Beverage products, at which point we then qualitatively analyze these results. We also perform a statistical analysis of shipment data from the distribution centers to the partners by using the odds ratio analysis, which permit us to quantitatively determine which regions are more prone to ordering certain Food & Beverage products.

This approach allows us to not only study the opinion of the non-company operated stores' decision to either opt in or out of the coffee retailer's regional sourcing network, but also analyze concrete data provided directly by the coffee retailer. Pursuing this further, these analyses are then used to provide the respondents' rationale for sourcing decisions, and also to provide logistics-related recommendations for the coffee retailer.

Determining Supplier Selection Rationale

To determine the rationale behind current supplier selection, we obtained information from the coffee retailer regarding the differences between different Food & Beverage products. The fundamental differences in the nature of the products within the category suggest us to utilize a list of subcategories, which were given by the coffee retailer as follows: Beverage Components, Dairy Products, Food Components, Packaged Beverages, Packaged Food, Savory Food and Sweet Food.

These subcategories allowed us to both segment the questions of the survey and create subsets of categorical data to analyze the shipment data.

Survey Model

Regarding the development of the survey, we followed a very well-known model for survey development presented by Perez-Franco (2012), which consists of the following steps:
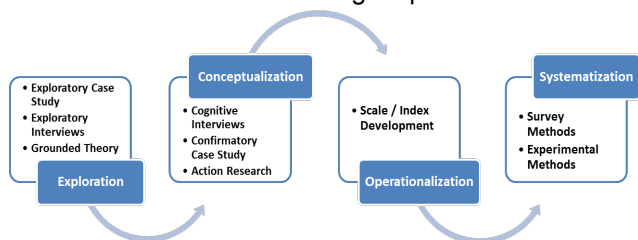
In order to design and deploy the survey, questions were first developed with stakeholders at the coffee retailer during the exploration and conceptualization phases, in which we determined that the following factors were important when sourcing Food & Beverage products:

- Product Pricing
- Lead Time
- Shelf Life
- Minimum Order Quantity
- Product Availability
- Local/Cultural Flavors
- Excessive Regulation
- Purchasing Leverage
- Communication when Dealing with the Coffee Retailer

To make the survey operable, we implement the use of the Likert scale , a psychometric scale used frequently to measure survey responses. The survey was then deployed via SurveyMonkey to the respondents in order to receive their feedback.

Use of Odds-Ratio Analysis

We created subsets of categorical data with the aim of grouping purchasing behavior into geographic regions, and performed descriptive statistics to understand the relationships between two different variables. One of the most common methods to analyze categorical data is the odds ratio analysis used in our research.

Using the defined subcategories, the odds ratio analysis is used to determine the likelihood of a certain subcategory being purchased while taking into account different variables, which in the scope of this analysis are the geographic regions.

In order to perform this analysis, we use the shipment data provided by the coffee retailer, as it provides order information for all stores during fiscal year 2015 and includes the country location and subcategory of each line item. With these two variables, we are able to run the odds ratio analysis, and obtain the likelihood of a certain subcategory's purchase frequency by region-pairs.

Survey Analysis and Discussion

Our first step in this analysis was to check the response rate among the respondents of the questions of the survey. For instance, the first seven questions of the survey resulted in a response rate of 35 (N=35), questions eight to ten resulted in a response rate of 30 (N=30), and questions eleven through twenty-three resulted in a response rate of 29 (N=29). We moved to verify the validity of our varying response rates and found that respondents do not usually respond to all questions in a survey (Sharma, Moon et al., 2014).

Analyzing the survey data enabled us to determine how each subcategory performed amongst the factors that the respondents deemed most important to them, while also taking into account any unusual trends in the distribution of the frequency of responses received. These trends allow us to provide some key findings by subcategory.

- **Beverage Components**: We measured the non-equity partners' perception of this subcategory, and the only area where they mentioned that improvement was needed is product availability. This is not only the most important factor for the non-equity partners, but also the factor where the coffee retailer has the most opportunity for improvement. Regarding other factors like shelf life, the coffee retailer is perceived to be doing well. It is important to mention that the non-equity partners feel that this is one of the products that is core for the brand, and hence, they tend to source these products at a regional level.

- **Dairy Products and Food Components:** regarding Dairy Products, the rationale of the non-equity partners for choosing the local supplier is mainly shelf life . Furthermore, the regional supplier offers long lead times compared to local suppliers. This fact reduces the coffee retailer's ability to compete with local suppliers due to the importance of freshness in this kind of products. Another important fact is that the Food Components subcategory suggests signs of a relationship with the Savory Food subcategory. For instance, one non-equity partner mentions that they make fresh food themselves, hence they prepare or source Food Components (as a complement of fresh food) locally.

- **Packaged Beverages:** There is a common trend for Licensees in Sweden, Denmark, Norway and Finland to source Packaged Beverage products from local suppliers instead of the regional supplier. The main reason mentioned in their feedback is their preference to source products that are recognized by their audience, have a local taste, and have the reputation of the most well-known local brands. We also found that some of the brands that are sourced locally are also available at the regional level. This means that there is an opportunity for the coffee retailer to take advantage of some of the suppliers being used by the Licensees in order to find opportunities for leveraging spend by grouping countries in sub regions. Moreover, this will allow the coffee retailer to comply with the requirements of using products known by their audience.

- **Packaged Food:** The survey results for Packaged Food products are indicative of several aspects that can be considered. For example, the disparity in respondents' opinion regarding product availability of Packaged Food products suggests that some non-company operated stores have better access to these items than others. Moreover, the substantial differences between how communication is perceived among the different partner entities when sourcing goods suggests that the coffee retailer has different rates of success in terms of communication on an internal level.

- **Savory Food:** the input given regarding the need of more local/cultural flavors, the general impracticality to import Savory Food, and the willingness to have fresh goods reveal that the demand for Savory Food is strongly related to the availability of a fresh product that is available quickly and suitable to consumers' tastes.

- **Sweet Food:** the respondents indicated that they are using major food distribution brands when procuring Sweet Food (e.g., CSM Bakemark), suggesting that third party regional players are taking away some of the business that the coffee retailer could have. Some respondents did mention that product quality was an issue, and while this could be a factor for the loss of business, outreach to business partners suggesting a prospective improvement of Sweet Food distribution could help the coffee retailer's bottom line.
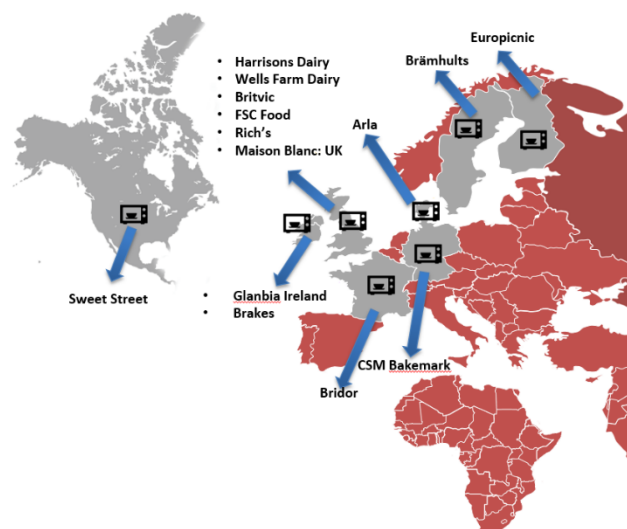
Supplier Network Map of Non-equity Stores

Odds Ratio Analysis and Results

The first step taken to perform the odds ratio analysis was to define how the comparison was set up. As odds ratio analyses are in a 2x2 format, we had to ensure that we had a comparison that would function given this guideline (Field, 2009). In this analysis, the 2x2 format compares two categorical variables, one representing regions (row) and the other representing a subcategory (column). Final results of the comparison among between regions by subcategory can be seen in the table below:

Zone	Beverage Component	Dairy	Food Component	Packaged Beverage	Packaged Food	Savory Food	Sweet Food
Eastern / Southern	0,776	-	-	8,170	1,010	-	4,864
Eastern / Northern	9,431	-	-	0,473	1,017	-	0,019
Eastern / Western	5,299	-	-	0,741	1,142	-	0,020
Northern / Southern	0,082	-	-	17,279	0,993	-	-
Northern / Western	0,562	1,663	-	1,567	1,122	1,422	1,035
Southern / Western	6,831	-	-	0,091	1,131	-	0,004

The shipment data shows that Beverage Components, a subcategory that includes products deemed to be strategic, makes up over 75% of Eastern and Southern European countries' overall purchases, but never more than 37% of Northern and Western European countries' overall purchases. Additionally, for the other categories there is a consistent pattern that shows that Northern and Western regions have higher frequency of purchases compared to Eastern and Southern

countries. Furthermore, Eastern European and Southern European markets do not buy any goods of either subcategory Dairy and Food Components products.

Conclusions

In this work, we identify the rationale for current supplier rationale when sourcing Food & Beverage products at stores operated by the coffee retailer's partner entities. We find that the survey analysis sheds light on the importance of the occasional unavailability of certain beverage components, the importance of shelf life for dairy products, the perception of corporate communication between different ownership models, and the significance of local/cultural flavors when selling certain food products. Moreover, the odds ratio analysis also indicates how there is a similarity in purchasing patterns between the Northern and Western European regions as well as the Southern and Eastern European regions.

The findings obtained from these results are then used to provide recommendations to the coffee retailer, which are as follows:

(1) The coffee retailer should select providers that are able to cover products in one or more sub regions (e.g., Nordic countries) in order to leverage spend and lower cost of goods sold.
(2) Dedicating resources (e.g., distribution center) to one specific sub region or country by using a center of gravity model can help improve responsiveness
(3) We suggest the coffee retailer to standardize communication practices so that they can improve coordination within their supply chain

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