Project #4: International Market Segmentation for Whole Foods

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Executive Summary

This memo summarizes our insights and recommendations regarding the market segmentation for Whole Foods' expansion into Europe. Our team applied mixture regression models to data from a study on retail store image conducted in 105 regions across 7 countries. We determined that the optimal number of segments for the region sample was 2, and that regions in segment 2 are a better choice. Consumers in regions likely to be segment 2 are less satisfied with their current food retailers, less price sensitive, and value service and atmosphere more than those from segment 1 - all qualities that are advantageous for Whole Foods.

Introduction and Background

Whole Foods Market, an American supermarket chain that specializes in selling healthy foods at premium prices, tasked us with identifying region segments for the rollout strategy of their expansion into Europe. International expansion is a common growth tactic for large food retailers in Europe. For Americans, joining Europe's $750 billion food retailing industry is an attractive option to supplement current revenue streams.

Identifying suitable regions is the first step in this effort. If markets are not vetted thoroughly, expanding brands risk establishing themselves in a region where they will likely lose their investment. To minimize this risk, we examined the within-country heterogeneity of 7 countries selected as potential markets, such as the level of competition across their domestic regions and whether the preferences of each region's residents aligned with the brand's strengths.

Data and Methodology

To identify the most opportune regions for Whole Foods, we initially analyzed data from a 2007 study that surveyed 1,669 residents from the 105 regions that made up the 7 selected countries (France, Italy, Germany, Belgium, the Netherlands, Spain, and Portugal). The study measured residents' satisfaction with their primary food retailer by ranking the quality of their service, atmosphere, and price in a 1-7 scale where a higher number was a better rating.[1] We used the software Glimmix to fit a mixture regression model to the data. This enabled us to determine the optimal number of segments for the region sample, the sizes of the segments, and the value that each segment gave to the store image drivers.

We supplemented the model results with contextual information. We researched population growth and discretionary income for each region to ensure it would be a successful match for Whole Foods. We then used Tableau to map income and population growth by region to help determine where Whole Foods could efficiently and effectively serve the area. The Tableau maps signal revenue and profitability, with preference given to growing areas with higher incomes, given Whole Foods' upper-end price points. Additionally, we integrated metrics of market potential to inform target prioritization by country. First, the global competitiveness ranking accounts for infrastructure, macroeconomic factors, technological readiness, business sophistication, market efficiency and related metrics. Economic freedom indexes government intervention, monetary policy, regulation, wages, and other similar measures to characterize the

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[1] See appendix 1 for information about the dataset.

economic environment. Third, the corruption index is an indicator of national public sector corruption. Lower rankings are preferred. Finally, a comparison of communication styles between the United States and each market was conducted.

Key Findings

Using Glimmix to analyze various segmentation schemes, we found that the two-segment model had the lowest BIC (a criterion for model selection for which the lowest score is preferred), and therefore 2 is the optimal number of segments for our sample.[2] All of the parameter coefficients are statistically significant, which means that the effects of service, atmosphere and price on store image, as well as the model's intercept (the default store image per region) would be replicated in other samples measuring the same variables. Consumers living in segment 2 regions have a lower predicted store image compared to those of segment 1, with intercept coefficients of 1.73 for segment 1 and 0.696 for segment 2. This suggests that Whole Foods has higher chances of succeeding if they prioritize segment 2 regions, as those living within them are less satisfied with their current food retailers. Characteristics Whole Foods already prides themselves on, service and atmosphere, are the most important features for regions within segment 2. Parameter estimates also reveal that service and atmosphere are more important (i.e., higher) for segment 2 compared to segment 1. Price is the most important image driver for segment 1, which would be problematic for a high-end retailer to target. Finally, 70% of the entire market belongs to segment 2 and segment 1's size is nominal by comparison.

Geographic and demographic criteria helped us identify target markets. Segment 2 is concentrated, whereas regions likely to be segment 1 are largely spread out. Regions with higher probabilities of being in segment 2 are areas where we are most confident that consumers will find Whole Foods' service-oriented positioning appealing. We established a threshold to flag regions we could confidently classify as segment 2. We identified four broad areas where a cluster of bordering regions had membership probabilities of at least 90%. By broadening our focus to these larger areas, we attempted to mitigate the operational challenges of entering new markets. Therefore, the target markets are: Central Netherlands/Western Germany, Southern Germany, Eastern France, Southern France/Eastern Spain. For instance, there is a 97% chance that Noord-Holland belongs to segment 2, and neighboring Zuid-Holland has a 94% chance (i.e., nearly certain). The Netherlands and Germany are particularly strong candidates given their growing populations, higher incomes, and rankings on global competitiveness, economic freedom index, and corruption. The Germanic countries also are more similar to the United States in terms of communication styles. Communication among Germans and Americans is explicit in nature, whereas Italians and Spaniards rely heavily on contextual information.[3]

Conclusions and Recommendations

We recommend prioritizing the target regions so that Whole Foods can adapt strategies to local nuances as they expand across Western Europe. Central Netherlands (including

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[2] See appendix 2 for model statistics.
[3] See appendix 3 for Tableau maps and other criteria.

Amsterdam) and Germany represent immediate opportunities. Not only are these consumers likely to value service and be willing to pay more for quality groceries, but business operations are likely to run relatively smoothly. Southern France and the Spanish coast line (e.g., Barcelona) are rapidly growing and we expect this larger consumer base to make up for the lower income levels, in terms of overall revenue potential. Later expansion should proceed to regions which rank lower on these metrics, have lower discretionary spending and declining populations, and are less likely to belong to segment 2. For these reasons, eastern France (e.g., Strasbourg) should be considered in the longer-term. Italy's weak performance across these rankings, its declining population, and moderate income levels indicate limited potential (appendix 3).

Communication styles and consumer preferences are critical cultural factors that can drive long-term success. The Germanic countries' similar style should help facilitate business activities in the initial target markets, and expansion into Spain, a high-context market, should include local experts to facilitate meetings. Further, market preferences for organic food should be evaluated. Since Whole Foods specializes in organic and non-genetically modified foods, regions that place a high importance on the cultivation methods behind their produce may be more favorable. Specifically, Germany and its neighboring countries have adopted measures to prohibit the cultivation of genetically modified produce.

Competitive analysis and an evaluation of market strengths and weakness further corroborate recommendations to focus on selected German, Dutch, and Belgian regions. Beyond these characteristics, legal, and regulatory conditions (e.g., import tariffs) should be evaluated for each target market. It is also important to note that each target province may have additional challenges for entry. These details are beyond the scope of our analysis but should be considered.

Appendices: Tables, Exhibits, Figures

Appendix 1: Data set

Variable	Description
region	ID number for each NUTS2 region
respondent	ID number for respondent within each region
store_image	Overall store image rating for primary food retail outlet (1-7 scale)
service	Service quality perception for primary food retail outlet (1-7 scale)
atmosphere	Store atmosphere perception for primary food retail outlet (1-7 scale)
price	Price perception for primary food retail outlet (1-7 scale)

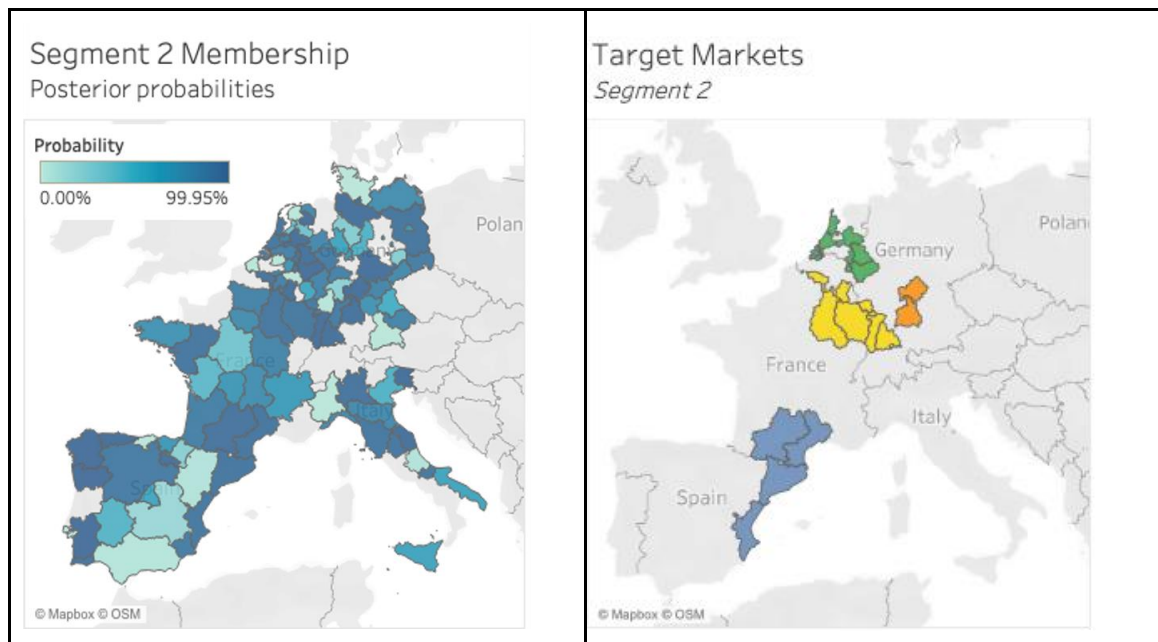## Appendix 2: Best-fitting model statistics

2 segment model

Log likelihood	-1664.53
AIC	3351.06
CAIC	3421.68
MAIC	3362.06
BIC	3410.68
Entropy	0.72
R-Square	0.67

Estimation result

Segment 1			Segment 2		
Size: 31%			Size: 69%		
Variable	Estimate	P-Value	Variable	Estimate	P-Value
Service	0.27	<.001	Service	0.35	<.001
Atmosphere	0.16	<.001	Atmosphere	0.30	<.001
Price	0.30	<.001	Price	0.24	<.001
intercept	1.72	<.001	intercept	0.70	<.001

Appendix 3: Criteria for identifying target markets.

Color	Region	Major City	Regions
Green	Central NL; Western DE	Amsterdam	Noord-Holland, Zuid-Holland, Zeeland, Gelderland, Limburg, Dusseldorf, Koln
Orange	Southern DE	Stuttgart	Stuttgart, Unterfranken
Blue	Southern FR; Eastern ES	Barcelona	Comunidad Valenciana, Cataluña, Languedoc-Roussillon, Midi-Pyrenees
Yellow	Eastern FR	Strasbourg	Hainaut, Luxembourg(B), Champagne-Ardenne, Lorraine, Saarland, Alsace, Freiburg

Population Growth
% Change (2014-2019)

Growth
-5.09% 6.52%

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Discretionary Income per Capita
Euros (2017)

Income
€11,900 €25,800

© Mapbox © OSM
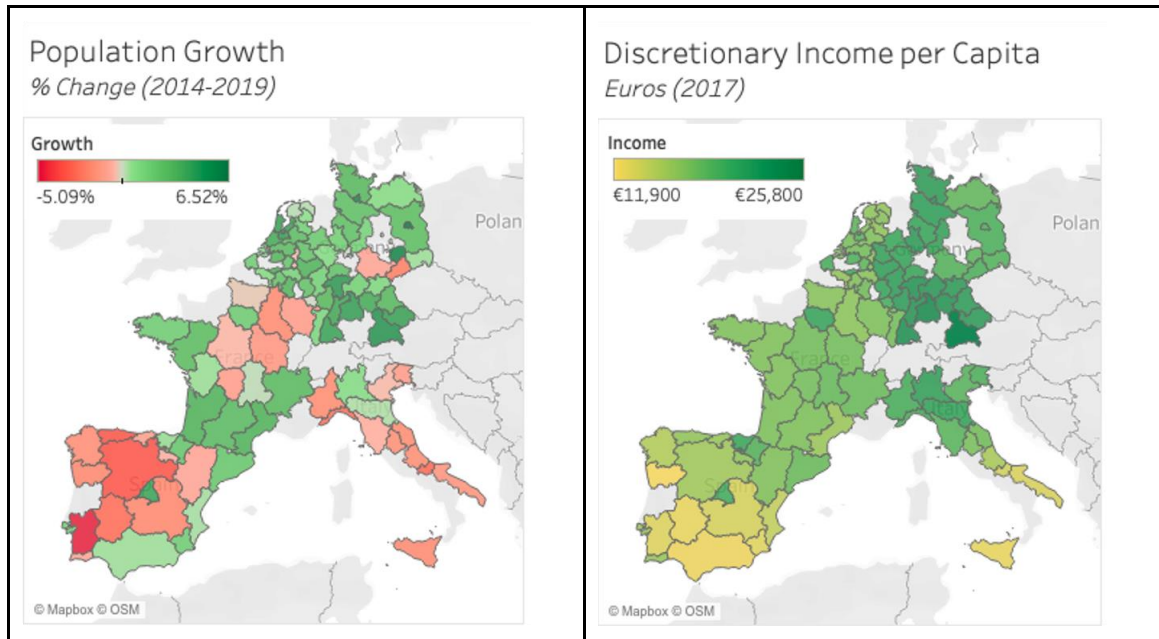
	Global Competitiveness	Economic Freedom	Corruption	Communication	Selected Competitors	Selected Strength (+) and Weakness (-)
Belgium	22	48	17	Low context	Colryut	+ Specialized organic stores are growing in popularity + Consumers are used to paying a premium for grocery
France	15	64	23	Low context	Carrefore	+ Consumers seek new healthy foods - Domestic and intra-EU suppliers dominate
Germany	7	27	9	Low context	Edeka/Lidl	+ Large, high-income market open to high-end offerings + Well developed food industries equipped to serve growing customer base
Italy	30	74	51	High context	Conad	+ High rate of food consumption - Increasing popularity of quick, local foods
Netherlands	4	14	8	Low context	Albert Heijn	+ Affluent market willing to pay for premium foods + Local traders and suppliers think favorably of American products' quality
Portugal	34	56	30 (tie)	High context	Continente	- Low awareness of American brands - Local hypermarkets already meeting demand
Spain	23	58	30 (tie)	High context	Mercadona	- Low awareness of American brands - Strong competition from European brands

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