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HONOR PLEDGE

WE PLEDGE ON OUR HONOR THAT WE HAVE NOT GIVEN OR RECEIVED ANY UNAUTHORIZED ASSISTANCE ON THIE ASSIGNMENT

ROBERT H. SMITH SCHOOL OF BUSINESS

Executive Summary

Whole Foods hired our team to identify market segments based on store image drivers (service, atmosphere, and price) & propose an ideal marketing strategy to enter the European market. To accomplish this, we examined a large-scale study on retail store image where each household was asked to determine its primary food retail outlet & rate overall store image. We used a mixture regression model in Glimmix with these store image drivers to understand the number & type of regional segments. Next, we identified 2 segments: 1st-price conscious & 2nd- service oriented. We concluded that segment 2 would be the ideal target segment, with a predicted store image value of 6.23 which we calculated after assuming service, atmosphere & price values. Finally, we suggest they enter the European market with the initial focus on the parts of Germany, France, Netherlands & followed by Belgium, Italy, Portugal & Spain.

Introduction and Background

Conventionally, marketers focus on geographic, political, economic, and even cultural factors when segmenting international markets, while ignoring within-country factors. Consumer groups from different countries are believed to possess more similarities than those from nearby geographical locations. One of the most significant challenges for today's marketers is identifying international market segments and reaching them with products and marketing programs that address their common needs. This challenge is currently faced by Whole Foods.

Although, Whole Foods has a strong foothold in the US market, they want to now enter and expand in the European market. To achieve this, they hired us to identify the market segments based on store image drivers (service, atmosphere, and price) and select a marketing strategy for them to make a presence in the given set of the 7 European countries (France, Spain, Belgium, Italy, Portugal, Netherlands and parts of Germany). We have conducted extensive research into which regional segments Whole Foods can target & how they can position themselves.

Data Methodology

Our team was given a database containing 1669 respondents in 105 regions classified by the NUTS2 code spread across the 7 European countries; Belgium, France, Germany, Italy, the Netherlands, Portugal, & Spain. Data was derived from a large-scale study on retail store image wherein each household was asked to identify its primary food retail outlet, defined as its most frequently visited food store, & then rate the overall store image as well as 3 key store image drivers- service, atmosphere, & price on a 1–7 point Likert scale. A higher score indicated a more favorable rating. Also, the data had an identification number for the region & respondent.

Since customers across neighboring countries have some similarity than within a country, we used Glimmix software to estimate the number & the type of regional segments in the data using mixture regression analysis (Appendix 1). The best fit model for mixture regression analysis is indicated by the BIC (criterion for model selection). The lower the BIC, the better the fit of the model(Appendix 2). We ran the model with different numbers of segments (1-5) & discovered that the BIC is lowest with 2 segments: 1st, price-conscious, & 2nd, service-oriented.

The chosen model has 0.7 entropy indicating a 70% separation between the 2 segments (Appendix 3). Furthermore, for each region a posterior probability was calculated indicating the likelihood of belonging to either one of the two segments. The larger the probability the more likely the region belonging to that segment. We assumed service, atmosphere & price values to calculate in Excel the predicted store image of the 2 groups in relation to Whole Foods (Appendix 6) and plotted these regions using Tableau.

Key Findings-

We ran a mixture regression model(Appendix 1) with service, atmosphere, & price as independent variables & store image as dependent variables. This resulted in two segments- Segment 1: 30.5% of the regions & Segment 2: 69.5% of regions (Appendix 4). We assumed an average rating (X-value) of 6.5, 5.9 & 6 for Service, Atmosphere & price for Whole Foods (Appendix 5). Through these perceived values & model estimates, we calculated a predicted store image score of 6.18 for segment 1 & 6.23 for segment 2.

For segment 1, a unit increase in price rating increases the overall store image rating by 1.78. A unit increase in service & atmosphere rating causes a 1.74 and 0.92 increase in store image rating, respectively. Hence, Segment 1(price conscious) values price the most followed by service & atmosphere. Whereas, in Segment 2, a unit increase in service rating has an additive effect of 2.3 on the store image rating. However, a unit increase in atmosphere & price rating will only raise the store image rating by 1.78 & 1.43 respectively. Therefore, Segment 2 values service the most, followed by atmosphere and price (Appendix 4).

All the store image variables are statistically significant. It's also worth noting that the intercept of this segment (1.72) is higher than that of segment 2 (0.69), revealing that people in segment 1 have a positive perception of existing nearby stores, making it a difficult market to break into (Appendix 4). According to this analysis, Segment 2 would be the ideal target market for Whole Foods because this segment values quality service to customers, is not price sensitive, and is currently dissatisfied with nearby grocery stores. Based on the region's likelihood to belong to segment 1 or 2, we computed the predicted store image for each of the 105 regions. We found that it is best to target regions with a 95% or higher likelihood of belonging to segment 2 highlighted on the map (Appendix 7A). Thus, Whole Foods should start with regions numbers in (Appendix 6) belonging mostly to Germany, France and Netherlands for a smooth entry in the European Market.

Conclusion & Recommendations

Based on our findings, it is evident that Segment 2 is the ideal target segment which greatly values service. We can further increase the perceived service value through well structured stores with ample amount of self checkout stations/cashier counters so that customers can easily be in and out of the store. They should also offer curbside groceries pickup, efficient store staff for faster service, which would increase the average service rating, hence increasing the predicted store image value.

We recommend doing market research on stores that are doing well and evaluate their service to understand what are the key drivers of it for European customers. This will also be helpful to understand what Whole Foods' competitors are doing and how Whole Foods can become the number 1 choice of consumers.

Finally, our team advises Whole Foods to enter the European market progressively with the initial focus on Thuringen, Stuttgart, Unterfranken, Freiburg which are a part of Germany and Alsace in France as they have a predicted store image of 6.23. These places are centrally located which would make it easier to penetrate deeper into Germany, France and the Netherlands. Later on, Whole Foods can slowly expand into the other identified target regions in Italy, Spain and Belgium. (Figure 7B)

Appendices: Tables, Exhibits & Figures

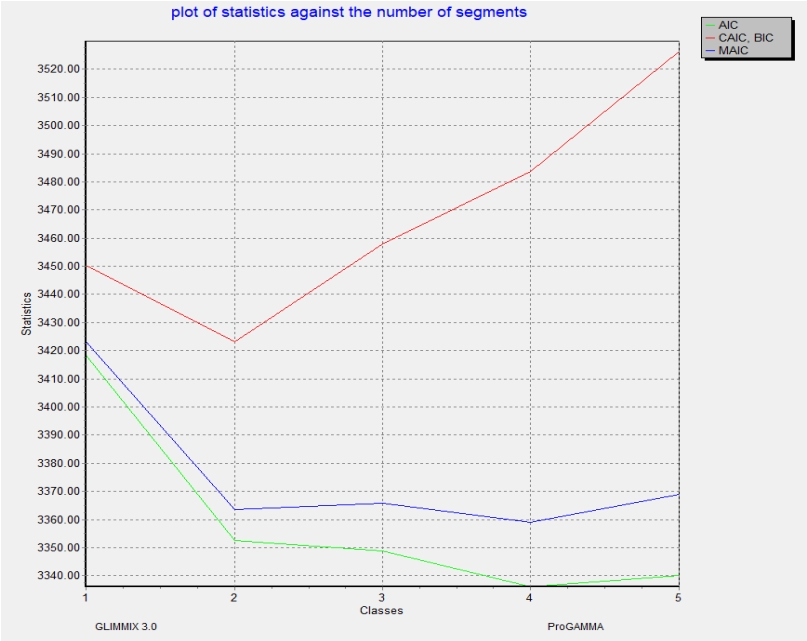
Appendix 1: Model

Dependent variable= store image
Independent variables= service, atmosphere and price

Mixture Regression Model: **store_image = a + b1*service + b2*atmosphere +b3*price**

Appendix 2: Statistics Versus Number of segments

The graph indicates different statistics like AIC, BIC, MAIC versus the number of segments. From the graph we clearly see that BIC is the lowest when there are 2 segments.



Appendix 3: Descriptive Statistics of 2nd segment model

We ran a number of cycles for the 2 segments analysis, and found the best fit model with highest R-square and lowest BIC value.

Log Likelihood	-1664.529
AIC	3351.057

CAIC	3421.677
MAIC	3362.057
BIC	3410.677
Entropy	0.716
DF	11
R-Square	0.672

Appendix 4:Estimation Results for 2nd segment models.

All independent variables are significant as p-value is very small.
All the variables - service, atmosphere , and price- are rated on 1-7 scale and hence are comparable.
Price has the highest estimate in segment 1 and service has the highest estimate in segment 2.

Table A

SEGMENT 1:				
VARIABLE	**Estimate**	**Std. Error**	**T-Value**	**P-Value**
Service	0.269	0.025	10.538	0.0000
Atmosphere	0.157	0.025	6.209	0.0000
Price	0.297	0.021	14.205	0.0000
intercept	1.725	0.127	13.573	0.0000
Segment Size	**0.305**			

Table B

SEGMENT 2:				
VARIABLE	**Estimate**	**Std. Error**	**T-value**	**P-Value**
Service	0.355	0.021	17.256	0.0000
Atmosphere	0.303	0.021	14.705	0.0000
Price	0.240	0.015	16.492	0.0000
intercept	0.696	0.093	7.459	0.0000
Segment Size	**0.695**			

Appendix 5: Predicted Brand Value based on Model Estimates

X-Value: They are the perceived values by respective segment
B: Estimate calculated by the model
Note: Predicted brand value for segment 2 is almost double of segment 1

SEGMENT 1:		
VARIABLE	**X-VALUES**	**b*X**
Service	6.5	1.746
Atmosphere	5.9	0.927
Price	6	1.781
intercept	1	1.725
Predicted Brand Value		6.179

SEGMENT 2:		
VARIABLE	**X-VALUES**	**b*X**
Service	6.5	2.306

Atmosphere	5.9	1.787
Price	6	1.437
intercept	1	0.696
Predicted Brand Value		6.227

Overall Prediction= Segment1_Size*Segment1_PredictedBrandValue + Segment2_Size*Segment2_PredictedBrandValue
= 0.305*6.179 +0.695*6.227 = 6.212

Appendix 6: Region Prediction

Below are the number of regions, in each country, with probability of belonging to the target segment (Segment 2) greater than 95%.

Country	No of regions
Portugal	3
Italy	8
Netherlands	9
France	12
Spain	7
Germany	25
Belgium	5

$P(Y_t) = \sum_{s=1}^{S} \pi_s P(Y_t \mid s)$ = Pr(Seg1)*Seg1_PredictedStoreImage+Pr(Seg2)*Seg2_PredictedStoreImage

Using the given formula, we calculated the predicted brand value of all 105 regions.
The probability of each region belonging to segment 1 or 2 is already known.

The regions of NUTS2 (EU Nomenclature des Unities Territoriales Statistique classification at level 2) listed down are the ones with highest predicted store image for Whole Foods or in its neighborhood with Segment2_Membership probability> 0.95

Region	Country	Region Name	Posterior Membership Probability: Segment 1	Posterior Membership Probability: Segment 2	Predicted Store Image
91	Italia	Friuli-VeneziaGiulia	0.000	1.000	6.226
59	Espana	Galicia	0.001	1.000	6.226
116	Portugal	Alentejo	0.001	0.999	6.226
52	Espana	Asturias	0.001	0.999	6.226
65	France	Alsace	0.001	0.999	6.226
104	Nederland	Drenthe	0.002	0.998	6.226
3	BRDeutschland	Brandenburg	0.034	0.966	6.225
120	Portugal	Norte	0.007	0.993	6.226
107	Nederland	Gelderland	0.008	0.992	6.226
95	Italia	Marche	0.009	0.991	6.226
20	BRDeutschland	Cologne	0.001	1.000	6.226
64	Espana	La Rioja	0.019	0.981	6.226
46	Belgique-Belgie	Prov. Luxembourg (BE)	0.021	0.979	6.225
111	Nederland	Noord-Holland	0.033	0.967	6.225
109	Nederland	LimburgNL	0.036	0.964	6.225

79	France	Midi-Pyrenees	0.042	0.958	6.225
94	Italia	Lombardia	0.042	0.958	6.225
43	Belgique-Belgie	Hainaut	0.045	0.955	6.224
117	Portugal	Algarve	0.049	0.951	6.224
11	BRDeutschland	Düsseldorf	0.016	0.984	6.226
12	BRDeutschland	Freiburg	0.017	0.983	6.226
14	BRDeutschland	Halle	0.046	0.954	6.224
15	BRDeutschland	Hamburg	0.001	0.999	6.226
22	BRDeutschland	Luneburg	0.011	0.989	6.226
35	BRDeutschland	Stuttgart	0.018	0.982	6.226
36	BRDeutschland	Thüringen	0.010	0.990	6.226
39	BRDeutschland	Unterfranken	0.007	0.993	6.226

Appendix 7: Map of target regions

Regions highlighted in **Green** have predicted store image > 6.224 and probability of the region belonging to segment 2 > 0.95.

Figure 7A

The regions with probability of belonging to segment 2 equal to or greater than 95%. Whole Foods should primarily focus on these regions.

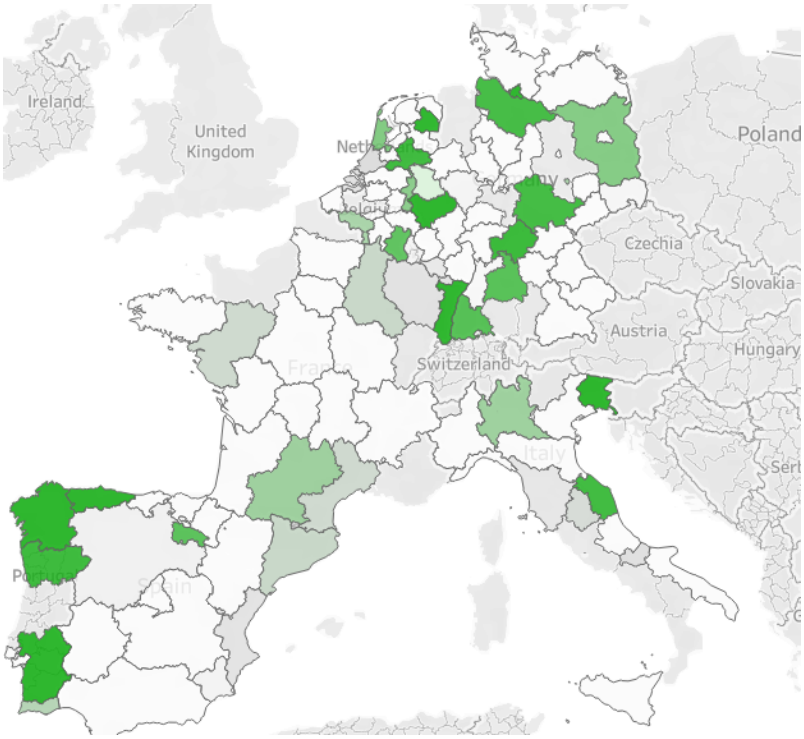


Figure 7B

In the next phase highlighted green regions is where Whole Foods would attract maximum customers as it has likelihood of belonging to Segment 2 greater than 70%.