BUMK742: Advanced Marketing Analytics

Project 5

New Product Development for Philips Coffee Marker

Group Number: #4

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Honor Pledge:
We pledge on our honor that we have not given or received any unauthorized assistance on this assignment.

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Executive Summary

The objective of this project is to help Philips design a new coffee maker that satisfies consumers' expectations and increases its market share. To analyze consumer preferences, we used a Mixture Multinomial Logit Model to analyze data from conjoint analysis. We then found two consumer segments who prefer different types of coffee makers. Segment1 consumers consist of 75% of the market and the ideal product is a 15-cup capacity coffee maker priced at $59, with an auto-grinder, but no water filter. Segment 2 consumers contain 25% of the market and they prefer a 5-cup coffee maker priced at $79, without an auto-grinder. Philips should replace the existing coffee machine with the new design, which has a 15-cup capacity, still lacks a water filter but adds an auto-grinder, for segment1 because of larger market size and higher brand preference among consumers. With this new product Philips could increase its market share to 51.8%. However, if Philips has enough budget, they should target both segments and introduce two products to maximize the market share (Table 3). With these new products, Philips could increase its overall market share to 62.7%.

Introduction and Background

The growing popularity of instant non-alcoholic beverages such as coffee is propelling the growth of the coffee machine market, and Phillips is one of the top manufacturers of coffee machines in the current scenario. Due to the increasing demand, coffee machine manufacturers are continually investing in innovating new product designs and incorporating appropriate features more preferred to consumers. Phillips currently has an existing coffee machine brand in the market and wants to expand its market share by developing a new product that would cater better to the segment's needs. They are especially interested in figuring out whether adding a water filter and/or auto-grinder would increase their market share. The aspect of new product development is quite risky, with a 90% failure rate of new products launched, so Phillips wants us to come up with a structured solution containing specific segment characteristics and feature recommendations for the new product development project that would maximize its market share and mitigate the risk of failure.

Data and Methodology

Data for this product was collected in a study wherein respondents were asked to make choice decisions among a given set of products. Five product attributes were used in the study– Brand, Carafe Capacity, Price, Water Filter, and Auto-Grinder. (Table 1) Using the five product attributes and their levels, 16 product profiles were constructed based on a fractional factorial design. These profiles were divided into eight blocks, each of which consisted of three alternatives. Respondents were divided into two groups, and each group received different choice sets based on the same 16 product profiles. There are 185 respondents in the data, and each of them made choice decisions in eight choice sets, resulting in a total of 1480 observations in the data.

In this project, our goal is to analyze consumer preference and then design a new product. A mixture Multinomial Logit (MNL) can be estimated to interpret distinct market segments and the utilities of each feature to those segments. Therefore, we used Glimmix software to execute a mixture MNL Model to identify different consumer segments with different attribute choices. The model provided the probability of each consumer belonging to a certain segment. The segments were then evaluated based on the consumer preferences, opportunity in terms of segment size, competitors, etc in order to design the optimal product. We used Bayesian Information Criterion (BIC) to determine the number of segments. To interpret the data more efficiently, we used the Effect coding method, which indicates the coefficient of an attribute level represents the difference between the attribute level and the average of all attribute levels. Excel was used to calculate the market share and evaluate the impact on other existing products in the marketplace.

Key Findings

Selection of Optimal Number of Segments: We ran a Mixture Multinomial Model in the Glimmix. The numeric values of the models with varied segments can be observed from the statistics tab of the Glimmix software Statistics of 2 to 4 Segments. An optimum number of 2 segments was selected based on the lowest Bayesian Information Criterion (BIC Plot: Pic 1).

Importance of Products' Attributes: Based on the Mixture Multinomial Model, we found two segments with various preferences (Pic 2 & Table 2). Segment 1 is almost three times the size of segment 2. For segment 1, they value characteristics like Philip brand name, capacity, price, water filter and auto-grinder, which are statistically significant (p-value<0.05). On the other hand, segment 2 values only capacity, price and auto-grinder, which shows statistically significant (p-value<0.05). Brand names and water filters, which are not statistically significant, do not affect segment 2 customers to choose coffee makers. Therefore, segments' preference reveals as following:

- **Segment 1 Preference:** The part-worth of choosing Philips (0.178) is higher than choosing the average level of brand.The part-worth of choosing a coffee maker with a 15-cups capacity (0.495) is higher than the average cup capacity level. Segment 1 consumers are price sensitive and part-worth (0.19) indicates they are more likely to purchase a coffee maker with $59 than the average price level. Furthermore, the part-worth (1.119) is higher in choosing coffee makers with an auto-grinder than ones without an auto-grinder, and these consumers prefer coffee makers without water filters, whose part-worth (0.855) is higher than ones with water filters.(Table 2 & Pic 2)
- **Segment 2 Preference:** The part-worth 0.414 indicates that these consumers are more likely to choose a coffee maker with 5 cups capacity over the average level of cup capacity. They don't care much about the coffee maker's brand, but they are more likely to choose a coffee maker with $79 over the average level of price (part-worth 0.571). They do not require an auto-grinder.(Table 2 & Pic 2)

After understanding segments' preferences, we know optimal products for each segment. Both segments do not need a water filter as the requirement of coffee makers. An auto-grinder is needed for segment 1, but is unwanted for segment 2. As customers do not care

about certain features, Philp should produce products with minimum cost by excluding those features. Thus, for Philps, below is the optimal product for each segment (Table 3):

- **Segment 1's Optimal Product is** a coffee maker priced $59, has the capacity of 15 cups, without water filter and with an auto-grinder.
- **Segment 2's Optimal Product is** A coffee maker priced $79, has the capacity of 5 cups, without water filter and auto-grinder.

In order to come up with the optimal product strategy , we also take a look at the current market.

Overview of the current coffee maker market: Competitor brands are Krups & Cuisinart. Each of these brands has two different products in the market. (Table 4). Philps has one existing product, which captures only nearly 6% of segment 1 and 33% of segment 2. The overall market share of around 13%. One of its competitors, Krups performs well in segment 2 and overall market share is 23%. Cuisinart, on the other hand, captures most of segment1 market, and 64% of total market share.

Conclusions and Recommendations

When it comes to optimal feature choice for Philips's new product, we evaluated the options of adding a filter and/or an auto-grinder. Our findings indicate that adding just an auto grinder will increase the brands' market share to 51.8% (Table 5); however, adding just a water filter with no grinder will decrease the brand market share to 6.8%. If we add both filter and an auto-grinder to the product, the brands' market share will be 22.2% (Table 5). Therefore, to maximize the benefits, it is more worthwhile for Philips to develop a coffee maker with an auto-grinder alone. This is also beneficial for Phillips to decrease manufacturing expenses as less features means lesser costs.

On the basis of the key findings, we have several recommendations for Phillips. Depending on available resources and management prioritization, Phillips can choose from the following three strategic scenarios with different combination of one existing product and two new designed products (Table 3):

- **Scenario 1: Replacing the existing product (P5)[1] with the new product (P6) designed for Segment 1**

Segment 1 is 3 times larger than Segment 2 (75% vs. 25%), and Philips is the most preferred brand among Segment 1 consumers (Table 2). So, Phillips can replace the existing product with the new one specifically designed for Segment 1. In this case, the overall market share will increase from 13.2% to 51.8%. (Table 4 & Table 6 &Table 10). This option will be optimal if Phillips prefers to keep only one product on the market due to resource restrictions.

- **Scenario 2: Keeping the existing product (P5) and introducing the new product (P6) [2] designed for Segment 1**

This choice will be most favorable if Philips can afford to keep an extended brand portfolio of two products. As we have seen, Phillips's existing product P5 (Table 4) already has an impressive market share in Segment 2 compared to the competitors. Also, as Segment 2 prefers a higher price, withdrawing the existing product might result in losing grasp of that segment and hurt Phillips's revenue. So Phillips can keep P5 and introduce P6 to grab market share from Segment 1. It would be a better choice because it will significantly increase the overall brand market share from 13.2% to 60.5%. (Table 7&10)

- **Scenario 3: Introducing two new products (P6 & P7[3]) and withdrawing the existing product (P5)**

If Philips wants to dominate both segments and aims to achieve the highest overall market share, it should introduce two new products modified individually for each of the segments. The product designed for segment 1 (P6) will capture 68.9% of the brand market share among segment 1, and the product designed for segment 2 (P7) will gain 36.1% of the market share among segment 2, both of which gain the most market share in each segment. (Table 8) The overall brand market share in this scenario will be 62.7% (Table 8 & Table 10).

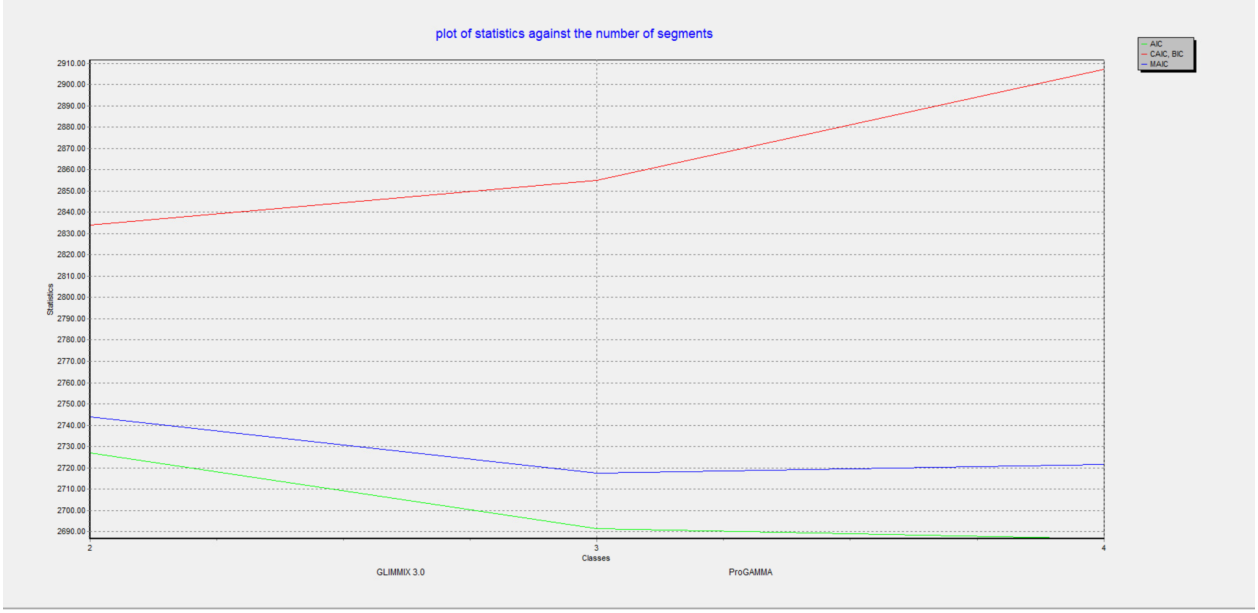
In each of these 3 scenarios, Phillips's competitors' total market share drastically decreased from the original scenario. But comparing scenario 2 & scenario 3, there is no significant difference in Phillips's competitors' market share(Table 10). Also there is very little difference in gain of market share for Phillips too for these 2 scenarios (60.5% vs. 62.7%). Depending on the cost, profitability & competitor advantage scenario 2 might be the optimum choice for Phillips. But scenario 3 might serve Phillips to dominate both segments in the long run rather than capture the majority share from only one segment. If the budget is limited, scenario 1 would be optimal as it still yields a good market share.

Limitations: As we do not know what is the cost of designing and manufacturing of a new coffee maker, the budget of Philips and each of the segments profitability, we cannot estimate the profitability of each product. Also with different scenarios, competitors of Phillips might come up with similar products, the market share will change accordingly. Future study should consider these elements to make a more comprehensive product introduction plan.

[1] P5 = existing product: $79, capacity of 10 cups, without water filter and without auto-grinder
[2] P6 = designed for segment : $59, capacity of 15 cups, without water filter and with auto-grinder
[3] P7 = designed for Segment 2: $79, capacity of 5 cups, without water filter and auto-grinder.

Appendices: Tables, Exhibits, Figure

Pic1: BIC plot of 2 segments to 4 segments



Pic 2: Statistics of two segment

```
#classes: 2 current: 1 startnr: 1
Independent    Coefficient estimates        STD.ERR             T-value
 Philips-1                  0.178418             0.075674            2.357716
 Krups-1                   -0.194193             0.099540           -1.950903
 Capacity5-1               -0.172817             0.066074           -2.615514
 Capacity10-1              -0.321638             0.082271           -3.909497
 Price59-1                  0.190007             0.086380            2.199668
 Price79-1                 -0.276621             0.102369           -2.702195
 Filter-1                  -0.854574             0.126140           -6.774796
 Grinder-1                  1.119127             0.103317           10.831929

CLASS SIZE FOR SEGMENT  1 =    0.740553

#classes: 2 current: 2 startnr: 1
Independent    Coefficient estimates        STD.ERR             T-value
 Philips-1                  0.126955             0.152528            0.832342
 Krups-1                    0.031675             0.151554            0.208999
 Capacity5-1                0.413567             0.136356            3.032996
 Capacity10-1               0.270608             0.126544            2.138448
 Price59-1                  0.212705             0.114474            1.858103
 Price79-1                  0.571491             0.238900            2.392179
 Filter-1                   0.106753             0.238748            0.447138
 Grinder-1                 -0.697827             0.143305           -4.869538

CLASS SIZE FOR SEGMENT  2 =    0.259447
```

Table1: Product attributes and levels

Attribute Level	*Brand*	*Carafe Capacity*	*Price ($)*	*Water Filter*	*Auto-Grinder*
1	Philips	5 cups	59	Yes	Yes
2	Krups	10 cups	79	No	No
3	Cuisinart	15 cups	99		

Table 2: Preference of 2 segment

2-Segment Mixture Multinomial Logit Model Results

SEGMENT 1

VARIABLE	Estimate	exp(b)	Std. Error	T-Value	P-Value
Philips-1	**0.178**	1.195	0.076	2.358	0.019
Krups-1	**-0.194**	0.823	0.100	-1.951	0.051
Capacity5-1	**-0.173**	0.841	0.066	-2.615	0.009
Capacity10-1	**-0.322**	0.725	0.082	-3.909	0.000
Price59-1	**0.190**	1.209	0.086	2.200	0.028
Price79-1	**-0.277**	0.758	0.102	-2.702	0.007
Filter-1	**-0.855**	0.425	0.126	-6.775	0.000
Grinder-1	**1.119**	3.062	0.103	10.832	0.000
Segment Size	0.741				

SEGMENT 2

VARIABLE	Estimate	exp(b)	Std. Error	T-Value	P-Value
Philips-1	0.127	1.135	0.153	0.832	0.405
Krups-1	0.032	1.032	0.152	0.209	0.834
Capacity5-1	**0.414**	1.512	0.136	3.033	0.002
Capacity10-1	**0.271**	1.311	0.127	2.138	0.033
Price59-1	0.213	1.237	0.114	1.858	0.063
Price79-1	**0.571**	1.771	0.239	2.392	0.017
Filter-1	0.107	1.113	0.239	0.447	0.655
Grinder-1	**-0.698**	0.498	0.143	-4.870	0.000
Segment Size	0.259				

Table 3: Characteristics of the coffee maker

Coffee maker characteristics	
Original coffee make (product 5)	priced $79, capacity of 10 cups, without water filter and without auto-grinder
coffee maker for segment 1 (product 6)	priced $59, capacity of 15 cups, without water filter and with auto-grinder
coffee maker for segment 2 (product 7)	priced $79, capacity of 5 cups, without water filter and auto-grinder.

Table 4: Overview of Current Market

SEGMENT 1	Product 1 (Krups)		Product 2 (Krups)		Product 3 (Cuisinart)		Product 4 (Cuisinart)		Product 5 (Philips)	
VARIABLE	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X
Philips-1	0	0.000	0	0.000	-1	-0.178	-1	-0.178	1	0.178
Krups-1	1	-0.194	1	-0.194	-1	0.194	-1	0.194	0	0.000
Capacity5-1	1	-0.173	0	0.000	0	0.000	-1	0.173	0	0.000
Capacity10-1	0	0.000	1	-0.322	1	-0.322	-1	0.322	1	-0.322
Price59-1	1	0.190	0	0.000	-1	-0.190	0	0.000	0	0.000
Price79-1	0	0.000	1	-0.277	-1	0.277	1	-0.277	1	-0.277
Filter-1	-1	0.855	-1	0.855	-1	0.855	-1	0.855	-1	0.855
Grinder-1	-1	-1.119	-1	-1.119	1	1.119	-1	-1.119	-1	-1.119
exp(b*X)		0.643		0.347		5.780		0.970		0.504
Probability/Market Share		0.078		0.042		0.701		0.118		0.061

SEGMENT 2	Product 1 (Krups)		Product 2 (Krups)		Product 3 (Cuisinart)		Product 4 (Cuisinart)		Product 5 (Philips)	
VARIABLE	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X
Philips-1	0	0.000	0	0.000	-1	-0.127	-1	-0.127	1	0.127
Krups-1	1	0.032	1	0.032	-1	-0.032	-1	-0.032	0	0.000
Capacity5-1	1	0.414	0	0.000	0	0.000	-1	-0.414	0	0.000
Capacity10-1	0	0.000	1	0.271	1	0.271	-1	-0.271	1	0.271
Price59-1	1	0.213	0	0.000	-1	-0.213	0	0.000	0	0.000
Price79-1	0	0.000	1	0.571	-1	-0.571	1	0.571	1	0.571
Filter-1	-1	-0.107	-1	-0.107	-1	-0.107	-1	-0.107	-1	-0.107
Grinder-1	-1	0.698	-1	0.698	1	-0.698	-1	0.698	-1	0.698
exp(b*X)		3.487		4.327		0.228		1.377		4.759
Probability/Market Share		0.246		0.305		0.016		0.097		0.336
Overall Probability/Share		0.122		0.110		0.523		0.112		0.132

Table 5: Market Share with different combination of features (water filter and/or auto-grinder)

Product	Krups p1	Krups p2	Cuisinart p3	Cuisinart p4	Philips p5
Segment 1	70.0%	40.0%	70.0%	11.0%	6.0%
Segment 2	24.0%	30.0%	1.0%	9.0%	33.0%
Total product market share	12.2%	11.0%	52.3%	11.2%	13.2%
Total brand market share	23.2%		63.5%		13.2%
	Krups p1	Krups p2	Cuisinart p3	Cuisinart p4	Phillips with filter/ no auto-grinder
Segment 1	8.0%	4.3%	71.6%	12.0%	4.1%
Segment 2	31.7%	39.3%	2.1%	12.5%	14.4%
Total product market share	14.1%	13.4%	53.6%	12.1%	6.8%
Total market share	27.5%		65.7%		6.8%
	Krups p1	Krups p2	Cuisinart p3	Cuisinart p4	Phillips with auto-grinder/no filter
Segment 1	2.6%	1.4%	23.3%	3.9%	68.8%
Segment 2	35.8%	44.4%	2.3%	14.1%	3.3%
Total market share	11.2%	12.6%	17.9%	6.6%	51.8%
Total brand market share	23.8%		24.5%		51.8%
	Krups p1	Krups p2	Cuisinart p3	Cuisinart p4	Phillips with filter and auto-grinder

Segment 1	5.9%	3.2%	53.4%	9.0%	28.5%
Segment 2	35.5%	44.1%	2.3%	14.0%	4.0%
Total market share	13.6%	13.6%	40.1%	10.3%	22.2%
Total brand market share	27.2%		50.4%		22.2%

Table 6: Replace the existing product with optimal product for segment 1

SEGMENT 1	Product 1 (Krups)		Product 2 (Krups)		Product 3 (Cuisinart)		Product 4 (Cuisinart)		Product 6 (Philips)	
VARIABLE	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X
Philips-1	0	0.000	0	0.000	-1	-0.178	-1	-0.178	1	0.178
Krups-1	1	-0.194	1	-0.194	-1	0.194	-1	0.194	0	0.000
Capacity5-1	1	-0.173	0	0.000	0	0.000	-1	0.173	-1	0.173
Capacity10-1	0	0.000	1	-0.322	1	-0.322	-1	0.322	-1	0.322
Price59-1	1	0.190	0	0.000	-1	-0.190	0	0.000	1	0.190
Price79-1	0	0.000	1	-0.277	-1	0.277	1	-0.277	0	0.000
Filter-1	-1	0.855	-1	0.855	-1	0.855	-1	0.855	-1	0.855
Grinder-1	-1	-1.119	-1	-1.119	1	1.119	-1	-1.119	1	1.119
exp(b*X)		0.643		0.347		5.780		0.970		17.057
Probability/Market Share		0.026		0.014		0.233		0.039		0.688

SEGMENT 2	Product 1 (Krups)		Product 2 (Krups)		Product 3 (Cuisinart)		Product 4 (Cuisinart)		Product (Philips)	
VARIABLE	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X
Philips-1	0	0.000	0	0.000	-1	-0.127	-1	-0.127	1	0.127
Krups-1	1	0.032	1	0.032	-1	-0.032	-1	-0.032	0	0.000
Capacity5-1	1	0.414	0	0.000	0	0.000	-1	-0.414	-1	-0.414
Capacity10-1	0	0.000	1	0.271	1	0.271	-1	-0.271	-1	-0.271
Price59-1	1	0.213	0	0.000	-1	-0.213	0	0.000	1	0.213
Price79-1	0	0.000	1	0.571	-1	-0.571	1	0.571	0	0.000
Filter-1	-1	-0.107	-1	-0.107	-1	-0.107	-1	-0.107	-1	-0.107
Grinder-1	-1	0.698	-1	0.698	1	-0.698	-1	0.698	1	-0.698
exp(b*X)		3.487		4.327		0.228		1.377		0.317
Probability/Market Share		0.358		0.444		0.023		0.141		0.033
Overall Probability/Share		0.112		0.126		0.179		0.066		0.518

➔ Product 6 : Philips, 15 cups capacity, $59, no filter, with auto- grinder (optimal product for segment 1)

Table 7: Keep the existing coffee maker and introduce new coffee maker designed for segment 1

SEGMENT 1	Product 1 (Krups)		Product 2 (Krups)		Product 3 (Cuisinart)		Product 4 (Cuisinart)		Product 5 (Philips)		Product 6 (Philips)	
VARIABLE	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X
Philips-1	0	0.000	0	0.000	-1	-0.178	-1	-0.178	1	0.178	1	0.178
Krups-1	1	-0.194	1	-0.194	-1	0.194	-1	0.194	0	0.000	0	0.000
Capacity5-1	1	-0.173	0	0.000	0	0.000	-1	0.173	0	0.000	-1	0.173
Capacity10-1	0	0.000	1	-0.322	1	-0.322	-1	0.322	1	-0.322	-1	0.322
Price59-1	1	0.190	0	0.000	-1	-0.190	0	0.000	0	0.000	1	0.190
Price79-1	0	0.000	1	-0.277	-1	0.277	1	-0.277	1	-0.277	0	0.000
Filter-1	-1	0.855	-1	0.855	-1	0.855	-1	0.855	-1	0.855	-1	0.855
Grinder-1	-1	-1.119	-1	-1.119	1	1.119	-1	-1.119	-1	-1.119	1	1.119
exp(b*X)		0.643		0.347		5.780		0.970		0.504		17.057
Probability/Market Share		0.025		0.014		0.228		0.038		0.020		0.674

SEGMENT 2	Product 1 (Krups)		Product 2 (Krups)		Product 3 (Cuisinart)		Product 4 (Cuisinart)		Product 5 (Philips)		Product 6 (Philips)	
VARIABLE	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X
Philips-1	0	0.000	0	0.000	-1	-0.127	-1	-0.127	1	0.127	1	0.127
Krups-1	1	0.032	1	0.032	-1	-0.032	-1	-0.032	0	0.000	0	0.000
Capacity5-1	1	0.414	0	0.000	0	0.000	-1	-0.414	0	0.000	-1	-0.414
Capacity10-1	0	0.000	1	0.271	1	0.271	-1	-0.271	1	0.271	-1	-0.271
Price59-1	1	0.213	0	0.000	-1	-0.213	0	0.000	0	0.000	1	0.213
Price79-1	0	0.000	1	0.571	-1	-0.571	1	0.571	1	0.571	0	0.000
Filter-1	-1	-0.107	-1	-0.107	-1	-0.107	-1	-0.107	-1	-0.107	-1	-0.107
Grinder-1	-1	0.698	-1	0.698	1	-0.698	-1	0.698	-1	0.698	1	-0.698
exp(b*X)		3.487		4.327		0.228		1.377		4.759		0.317
Probability/Market Share		0.241		0.299		0.016		0.095		0.328		0.022
Overall Probability/Share		0.081		0.088		0.173		0.053		0.100		0.505

- ➔ Product 5: Philips:, 10 cups capacity, $79, without water filter and without auto-grinder
- ➔ Product 6 : Philips, 15 cups capacity, $59, no filter, with auto- grinder (optimal product for segment 1)

Table 8: Introduce two new coffee makers and get rid of the existing coffee maker

SEGMENT 1	Product 1 (Krups)		Product 2 (Krups)		Product 3 (Cuisinart)		Product 4 (Cuisinart)		Product 6 (Philips)		Product 7 (Philips)	
VARIABLE	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X
Philips-1	0	0.000	0	0.000	-1	-0.178	-1	-0.178	1	0.178	1	0.178
Krups-1	1	-0.194	1	-0.194	-1	0.194	-1	0.194	0	0.000	0	0.000
Capacity5-1	1	-0.173	0	0.000	0	0.000	-1	0.173	-1	0.173	1	-0.173
Capacity10-1	0	0.000	1	-0.322	1	-0.322	-1	0.322	-1	0.322	0	0.000
Price59-1	1	0.190	0	0.000	-1	-0.190	0	0.000	1	0.190	0	0.000
Price79-1	0	0.000	1	-0.277	-1	0.277	1	-0.277	0	0.000	1	-0.277
Filter-1	-1	0.855	-1	0.855	-1	0.855	-1	0.855	-1	0.855	-1	0.855
Grinder-1	-1	-1.119	-1	-1.119	1	1.119	-1	-1.119	1	1.119	-1	-1.119
exp(b*X)		0.643		0.347		5.780		0.970		17.057		0.585
Probability/Market Share		0.025		0.014		0.228		0.038		0.689		0.023

SEGMENT 2	Product 1 (Krups)		Product 2 (Krups)		Product 3 (Cuisinart)		Product 4 (Cuisinart)		Product 6 (Philips)		Product 7(Philips)	
VARIABLE	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X
Philips-1	0	0.000	0	0.000	-1	-0.127	-1	-0.127	1	0.127	1	0.127
Krups-1	1	0.032	1	0.032	-1	-0.032	-1	-0.032	0	0.000	0	0.000
Capacity5-1	1	0.414	0	0.000	0	0.000	-1	-0.414	-1	-0.414	1	0.414
Capacity10-1	0	0.000	1	0.271	1	0.271	-1	-0.271	-1	-0.271	0	0.000
Price59-1	1	0.213	0	0.000	-1	-0.213	0	0.000	1	0.213	0	0.000
Price79-1	0	0.000	1	0.571	-1	-0.571	1	0.571	0	0.000	1	0.571
Filter-1	-1	-0.107	-1	-0.107	-1	-0.107	-1	-0.107	-1	-0.107	-1	-0.107
Grinder-1	-1	0.698	-1	0.698	1	-0.698	-1	0.698	1	-0.698	-1	0.698
exp(b*X)		3.487		4.327		0.228		1.377		0.317		5.491
Probability/Market Share		0.229		0.284		0.015		0.090		0.021		0.361
Overall Probability/Share		0.078		0.084		0.173		0.052		0.516		0.111

- ➔ Product 6 : Philips, 15 cups capacity, $59, no filter, with auto- grinder (optimal product for segment 1)
- ➔ Product 7 : Philips, 5 cups capacity, $79, no filter and auto- grinder (optimal product for segment 2)

Table 9: Philips, Krups and Cuisinart launch same new product

SEGMENT 1	Product 1 (Krups)		Product 2 (Krups)		Product 3 (Cuisinart)		Product 4 (Cuisinart)		Product 5 (Philips)	
VARIABLE	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X
Philips-1	0	0.000	0	0.000	-1	-0.178	-1	-0.178	1	0.178
Krups-1	1	-0.194	1	-0.194	-1	0.194	-1	0.194	0	0.000
Capacity5-1	1	-0.173	-1	0.173	0	0.000	-1	0.173	-1	0.173
Capacity10-1	0	0.000	-1	0.322	1	-0.322	-1	0.322	-1	0.322
Price59-1	1	0.190	1	0.190	-1	-0.190	1	0.190	1	0.190
Price79-1	0	0.000	0	0.000	-1	0.277	0	0.000	0	0.000
Filter-1	-1	0.855	-1	0.855	-1	0.855	-1	0.855	-1	0.855
Grinder-1	-1	-1.119	1	1.119	1	1.119	1	1.119	1	1.119
exp(b*X)		0.643		11.751		5.780		14.497		17.057
Probability/Market Share		0.013		0.236		0.116		0.292		0.343

SEGMENT 2	Product 1 (Krups)		Product 2 (Krups)		Product 3 (Cuisinart)		Product 4 (Cuisinart)		Product 5 (Philips)	
VARIABLE	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X	X-VALUES	b*X
Philips-1	0	0.000	0	0.000	-1	-0.127	-1	-0.127	1	0.127
Krups-1	1	0.032	1	0.032	-1	-0.032	-1	-0.032	0	0.000
Capacity5-1	1	0.414	-1	-0.414	0	0.000	-1	-0.414	-1	-0.414
Capacity10-1	0	0.000	-1	-0.271	1	0.271	-1	-0.271	-1	-0.271
Price59-1	1	0.213	1	0.213	-1	-0.213	1	0.213	1	0.213
Price79-1	0	0.000	0	0.000	-1	-0.571	0	0.000	0	0.000
Filter-1	-1	-0.107	-1	-0.107	-1	-0.107	-1	-0.107	-1	-0.107
Grinder-1	-1	0.698	1	-0.698	1	-0.698	1	-0.698	1	-0.698
exp(b*X)		3.487		0.288		0.228		0.238		0.317
Probability/Market Share		0.765		0.063		0.050		0.052		0.070
Overall Probability/Share		0.208		0.191		0.099		0.229		0.272

➔ Product 5 : Philips, 15 cups capacity, $59, no filter, with auto- grinder (optimal product for segment 1)

Table 10: Market Share with different combination of scenarios

Original	Product	Krups p1	Krups p2	Cuisinart p3	Cuisinart p4	Phillips p5	
	Segment 1	7	4	70	11	6	-
	Segment 2	24	30	1	9	33	-
	Total product market share	12.2	11	52.3	11.2	13.2	0
	Total brand market share	23.2		63.5		13.2	
		Krups p1	Krups p2	Cuisinart p3	Cuisinart p4	Phillips p5	Phillips p6
Scenario 2(Keeping the existing one)	Segment 1	2.5	1.4	22.8	3.8	2	67.4
	Segment 2	24.1	29.9	1.6	9.5	32.8	2.2
	Total product market share	8.1	8.8	17.3	5.3	10	50.5
	Total market share	16.9		22.6		60.5	
		Krups p1	Krups p2	Cuisinart p3	Cuisinart p4		Phillips p6
Scenario 1 (Replace existing one)	Segment 1	2.6	1.4	23.3	3.9	-	68.8
	Segment 2	35.8	44.4	2.3	14.1	-	3.3
	Total market share	11.2	12.6	17.9	6.6	0	51.8
	Total brand market share	23.8		24.5		51.8	
		Krups p1	Krups p2	Cuisinart p3	Cuisinart p4	Phillips p6	Phillips p7
Scenario 3 (2 new)	Segment 1	2.5	1.4	22.8	3.8	68.9	2.3
	Segment 2	22.9	28.4	1.5	9	2.1	36.1
	Total market share	7.8	8.4	17.3	5.2	51.6	11.1
	Total brand market share	16.2		22.5		62.7	