

BIA 672

Assignment 2

1. 1-Using the Excel file (“HW02_conjoint_xls”) in the “HW_Exam” Module perform the following analysis.1. Tradeoff between price and memory

Conjoint Analysis

Attribute	Label	Utility
Brand	HP	-1
	DELL	0
	MAC	1
Screen	14 inch	-0.25
	15.6 inch	0.25
Memory	2 GB	-1.0833
	4 GB	-0.4167
	6 GB	0.4167
	8 GB	1.0833
Price	\$400	1.25
	\$450	0
	\$500	-1.25

Price v/s Memory

Product 1

Dell	15.6 inch	4 GB	\$500	Total
0	0.25	-0.4167	-1.25	-1.4167

Adjusting on Price to have same Utility

Difference between Utility P2-P1

1.5

Product 2

Dell	15.6 inch	8 GB	\$500	Total
0	0.25	1.0833	-1.25	0.0833

Adding price to product P1

Remaining Utility to be increased = $1.25 + 0.25$

$400 + (0.25 / 1.25 - 0) * 50$

\$410.00

Product 1

Dell	15.6 inch	4 GB	\$500	Total
0	0.25	-0.4167	-1.25	-1.4167

Adjusting on Memory to have same Utility

Difference between Utility P2-P1 1.5

Product 2

Dell	15.6 inch	8 GB	\$500	Total
0	0.25	1.0833	-1.25	0.0833

Adding Memory to product P1
Remaining Utility to be increased = 1.25 + 0.25

$4 + ((0.25 / (0.4167 + 0.4167)) * 2)$ **4.60**
or 6 GB

Thus, there is a trade off between price and memory.

2. Market share forecast for each brand.

Let us consider various product combinations as below:

Products Combinations

HP	14 INCH	2 GB	\$400	Total
-1	-0.25	-1.0833	1.25	-1.0833
DEL	14 INCH	2 GB	\$400	Total
0	-0.25	-1.0833	1.25	-0.0833
MAC	14 INCH	2 GB	\$400	Total
1	-0.25	-1.0833	1.25	0.9167

$e^{(total)}$

$e^{(utility)} / (\text{SUM of all attributes } e^{(utility)})$

0.338477

0.090030573

0.920075

0.244728471

2.501023

0.665240956

Products Combinations

HP	15.6 INCH	4 GB	\$500	Total
-1	0.25	-0.4167	-1.25	-2.4167
DEL	15.6 INCH	4 GB	\$500	Total
0	0.25	-0.4167	-1.25	-1.4167
MAC	15.6 INCH	4 GB	\$500	Total
1	0.25	-0.4167	-1.25	-0.4167

$e^{(total)}$

$e^{(utility)} / (\text{SUM of all attributes } e^{(utility)})$

0.089216

0.090030573

0.242513

0.244728471

0.659219

0.665240956

Products Combinations					e^(total)	e^(utility)/(SUM of all attributes e^(utility))
HP	15.6 INCH	8 GB	\$450	Total		
-1	0.25	1.0833	0	0.3333	1.395566	0.090030573
DEL	15.6 INCH	8 GB	\$450	Total		
0	0.25	1.0833	0	1.3333	3.793541	0.244728471
MAC	15.6 INCH	8 GB	\$450	Total		
1	0.25	1.0833	0	2.3333	10.31191	0.665240956

In all the 3 combinations of the product and specifications, market share of HP=9%, DELL= 24.5%, MAC = 66.5%

3. Attribute importance

Importance of Attribute X = $\frac{\text{Max (Utility X)} - \text{Min (Utility X)}}{\sum (\text{Max(Utility)} - \text{Min(Utility)})}$ for all attributes

	Max(Utility)-Min(Utility)	ΣMax(Utility)- Min(Utility)	Importance
Brand	1+1	(1+1)+(0.25+0.25)+(1.0833+1.0833)+(1.25+1.25)	
		2	7.1666
Screen	0.25+0.25	(1+1)+(0.25+0.25)+(1.0833+1.0833)+(1.25+1.25)	
		0.5	7.1666
Memory		(1+1)+(0.25+0.25)+(1.0833+1.0833)+(1.25+1.25)	
		2.1666	7.1666
Price	1.25+1.25	(1+1)+(0.25+0.25)+(1.0833+1.0833)+(1.25+1.25)	
		2.5	7.1666
			0.279072363
			0.069768091
			0.302319091
			0.348840454