

THE HOMA FILES

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Conjoint Measurement

Proprietary Material

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Research Techniques

- Semantic Scaling
- Multidimensional Scaling
- **Conjoint Measurement**

Conjoint Measurement

- Pairs of tightly defined alternatives

Reduced attribute set

Specific attribute values

'Orthogonal arrays'

	A	B
Design	7	8
Max Freq	36	28
Power	56	72
Price	392	475

Conjoint Measurement

- Pairs of tightly defined alternatives

Reduced attribute set

Specific attribute values

'Orthogonal arrays'

- Computed 'utility' weights

Based on pairwise preferences

If added, reflect original preferences

Basis for inferences re: attribute importance weights

CONJOINT ANALYSIS - UTILITIES - SEGMENT SINGLES			1	2	3	4
Design	Level	Index	6	7	8	9
	Utility	[0, 1]	0.71	0.50	0.35	0.25
Max Freq	Level	KHz	20	28	36	44
	Utility	[0, 1]	0.14	1.00	0.67	0
Power	Level	W	40	56	72	88
	Utility	[0, 1]	0.48	0.47	0.42	0.45
Price	Level	\$	226	309	392	475
	Utility	[0, 1]	0.16	0.63	0.72	0.30

Conjoint Analysis

MARKSTRAT Example

CONJOINT ANALYSIS - UTILITIES - SEGMENT SINGLES			1	2	3	4
Design	Level	Index	6	7	8	9
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Illustrative Only
(from practice industry)

Utility Indices

Unique to each specific study

(not projectable to other studies)

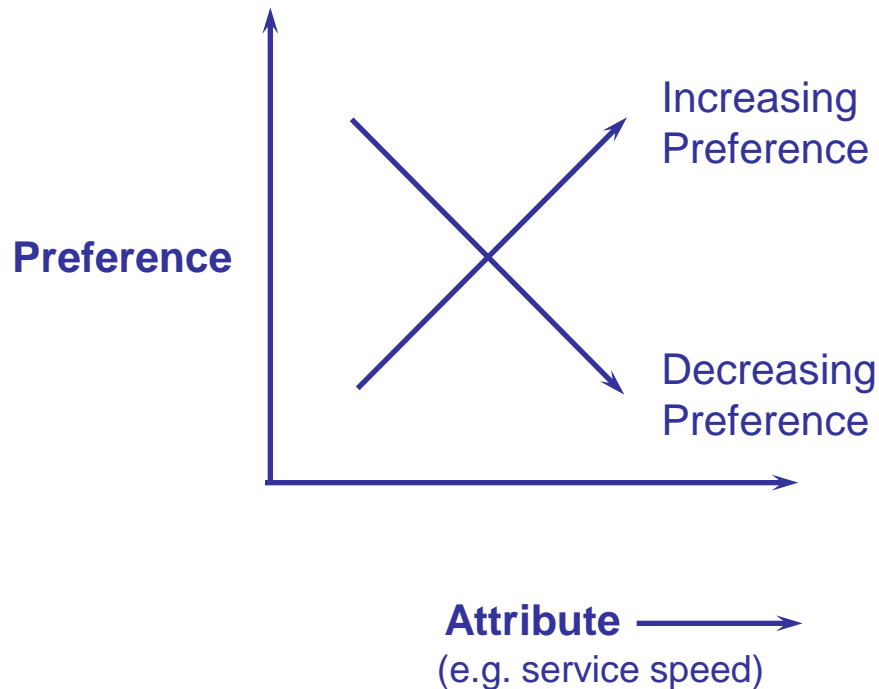
Pattern reflects ideal 'function'

Sum indicates relative preference
(best fit reconstruction of original input)

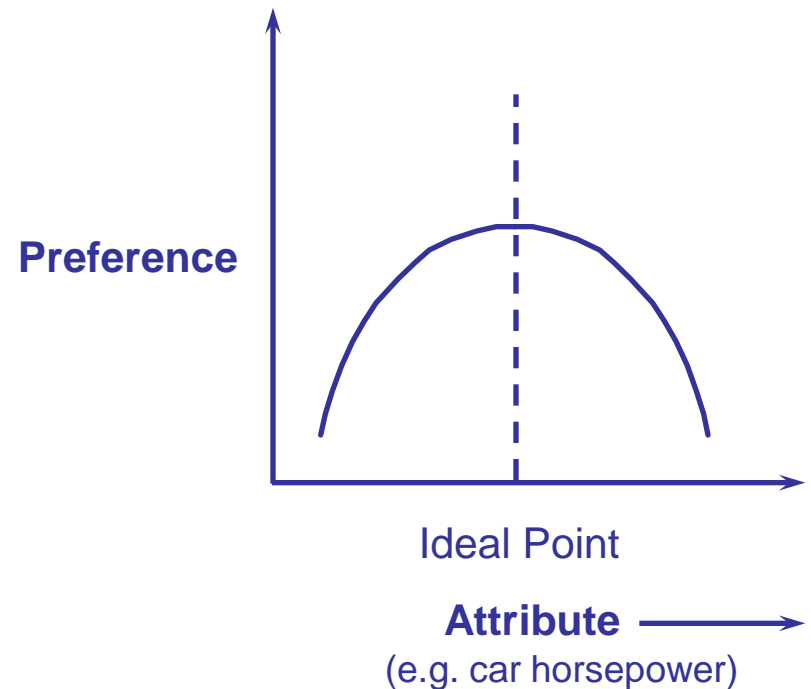
Range reflects importance wgt.

Ideal Points: ***Different Shapes***

Vector Preference



Point Preference



Ideal Points: ***Idiosyncratic, Contextual & Dynamic***

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Ideal: point or vector?

MANTIC SCALES - ESTIMATE OF IDEAL CHARACTERISTICS

Practice Industry

	Weight (Kg)	Design (Index)	Volume (Dm3)	Max Freq (KHz)	Power (W)	Price (\$)
Estimated ideal characteristics						
Buffs	15	7	49	39	76	432
Singles	18	8	75	35	65	266
Pros	14	5	52	41	80	544
HiEarners	16	8	73	27	57	484
Others	17	7	88	25	33	216

CONJOINT ANALYSIS - UTILITIES - SEGMENT SINGLES

		Unit	1	2	3	4
Design	Level	Index	7	8	9	10
	Utility	[0,1]	0.51	0.52	0.49	0.44
Max Freq	Level	KHz	24	32	40	48
	Utility	[0,1]	0.52	0.44	0.51	0.50
Power	Level	W	43	59	75	91
	Utility	[0,1]	0.14	1.00	0.70	0.12
Price	Level	\$	139	225	311	397
	Utility	[0,1]	0.12	0.90	0.94	0.00

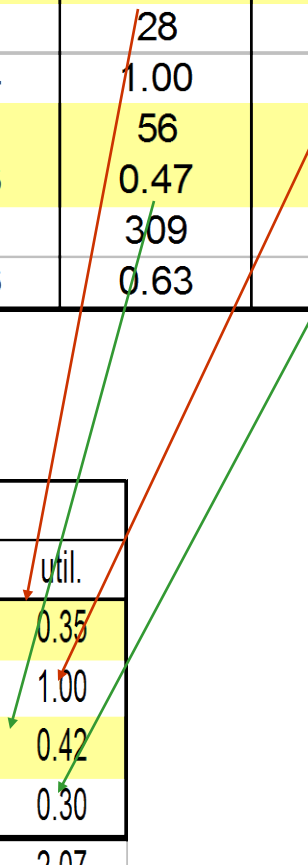
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	A	B
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Which preferred (by singles)?

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	A		B	
	value	util.	value	util.
Design	7	0.50	8	0.35
Max Freq	36	0.67	28	1.00
Power	56	0.47	72	0.42
Price	392	0.72	475	0.30
		2.36		2.07



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	A		B	
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Design	7	0.50	8	
Max Freq	36	0.67	28	
Power	56	0.47	72	
Price	392	0.72	475	
		2.36		

What values? Which preferred?

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		2.36		2.07

Compensatory Model

What's the highest price at which customers are indifferent?

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Price	392	0.72	?	?

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Design	7	0.50	8	0.35
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Power	56	0.47	72	0.42
Price	392	0.72	?	?
		2.36		1.77
			0.59	

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Power	56	0.47	72	0.42
Price	392	0.72	?	?
		2.36		1.77
			0.59	

\$309	0.63
\$302	0.59
\$226	0.16

\$475	0.30
\$417	0.59
\$392	0.72

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	Utility	[0,1]	0.71	0.50	0.35	0.25
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Design	7	0.50	8	0.35
Max Freq	36	0.67	28	1.00
Power	56	0.47	72	0.42
Price	392	0.72	?	?
		2.36		1.77
			0.59	

\$309	0.63
\$302	0.59
\$226	0.16

\$475	0.30
\$417	0.59
\$392	0.72

Calculating importance weights ...

CONJOINT ANALYSIS - UTILITIES - SEGMENT SINGLES			1	2	3	4
Design	Level	Index	6	7	8	9
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Power	Level	W	40	56	72	88
	Utility	[0, 1]	0.48	0.47	0.42	0.45
Price	Level	\$	226	309	392	475
	Utility	[0, 1]	0.16	0.63	0.72	0.30

CONJOINT ANALYSIS - UTILITIES - SEGMENT SINGLES							
			1	2	3	4	High
Design	Level	Index	6	7	8	9	
	Utility	[0,1]	0.71	0.50	0.35	0.25	0.71
Max Freq	Level	KHz	20	28	36	44	
	Utility	[0,1]	0.14	1.00	0.67	0	1.00
Power	Level	W	40	56	72	88	
	Utility	[0,1]	0.48	0.47	0.42	0.45	0.48
Price	Level	\$	226	309	392	475	
	Utility	[0,1]	0.16	0.63	0.72	0.30	0.72

CONJOINT ANALYSIS - UTILITIES - SEGMENT SINGLES							Utilities	
			1	2	3	4	High	Low
Design	Level	Index	6	7	8	9		
	Utility	[0,1]	0.71	0.50	0.35	0.25	0.71	0.25
Max Freq	Level	KHz	20	28	36	44		
	Utility	[0,1]	0.14	1.00	0.67	0	1.00	0.00
Power	Level	W	40	56	72	88		
	Utility	[0,1]	0.48	0.47	0.42	0.45	0.48	0.42
Price	Level	\$	226	309	392	475		
	Utility	[0,1]	0.16	0.63	0.72	0.30	0.72	0.16

CONJOINT ANALYSIS - UTILITIES - SEGMENT SINGLES							Utilities		
			1	2	3	4	High	Low	Range
Design	Level	Index	6	7	8	9			
	Utility	[0, 1]	0.71	0.50	0.35	0.25	0.71	0.25	0.46
Max Freq	Level	KHz	20	28	36	44			
	Utility	[0, 1]	0.14	1.00	0.67	0	1.00	0.00	1.00
Power	Level	W	40	56	72	88			
	Utility	[0, 1]	0.48	0.47	0.42	0.45	0.48	0.42	0.06
Price	Level	\$	226	309	392	475			
	Utility	[0, 1]	0.16	0.63	0.72	0.30	0.72	0.16	0.56

CONJOINT ANALYSIS - UTILITIES - SEGMENT SINGLES							Utilities		
			1	2	3	4	High	Low	Range
Design	Level	Index	6	7	8	9			
	Utility	[0, 1]	0.71	0.50	0.35	0.25	0.71	0.25	0.46
Max Freq	Level	KHz	20	28	36	44			
	Utility	[0, 1]	0.14	1.00	0.67	0	1.00	0.00	1.00
Power	Level	W	40	56	72	88			
	Utility	[0, 1]	0.48	0.47	0.42	0.45	0.48	0.42	0.06
Price	Level	\$	226	309	392	475			
	Utility	[0, 1]	0.16	0.63	0.72	0.30	0.72	0.16	0.56
							Sum of ranges		2.08

CONJOINT ANALYSIS - UTILITIES - SEGMENT SINGLES							Utilities			Import.
			1	2	3	4	High	Low	Range	Weight*
Design	Level	Index	6	7	8	9				
	Utility	[0,1]	0.71	0.50	0.35	0.25	0.71	0.25	0.46	22%
Max Freq	Level	KHz	20	28	36	44				
	Utility	[0,1]	0.14	1.00	0.67	0	1.00	0.00	1.00	48%
Power	Level	W	40	56	72	88				
	Utility	[0,1]	0.48	0.47	0.42	0.45	0.48	0.42	0.06	3%
Price	Level	\$	226	309	392	475				
	Utility	[0,1]	0.16	0.63	0.72	0.30	0.72	0.16	0.56	27%
							Sum of ranges		2.08	
							* = Range / Sum of Ranges			

CONJOINT ANALYSIS - UTILITIES - SEGMENT SINGLES							Utilities			Import.
			1	2	3	4	High	Low	Range	Weight*
Design	Level	Index	6	7	8	9				
	Utility	[0, 1]	0.71	0.50	0.35	0.25	0.71	0.25	0.46	22%
Max Freq	Level	KHz	20	28	36	44				
	Utility	[0, 1]	0.14	1.00	0.67	0	1.00	0.00	1.00	48%
Power	Level	W	40	56	72	88				
	Utility	[0, 1]	0.48	0.47	0.42	0.45	0.48	0.42	0.06	3%
Price	Level	\$	226	309	392	475				
	Utility	[0, 1]	0.16	0.63	0.72	0.30	0.72	0.16	0.56	27%

Sum of ranges 2.08

* = Range / Sum of Ranges

CONJOINT ANALYSIS - RELATIVE IMPORTANCE OF CHARACTERISTICS						
Segment		Design	Max Freq	Power	Price	Total
Bufs		7%	53%	4%	36%	100%
Singles		22%	48%	3%	27%	100%
Pros		10%	52%	7%	31%	100%
HiEarners		14%	48%	7%	31%	100%
Others		20%	46%	8%	26%	100%

Importance Weights

Illustrative Only
(from practice industry)

CONJOINT ANALYSIS - RELATIVE IMPORTANCE OF CHARACTERISTICS

Segment	Design	Max Freq	Power	Price	Total
Buffs	7.2%	51.2%	5.2%	36.4%	100.0%
Singles	18.8%	53.4%	2.1%	25.7%	100.0%
Pros	15.2%	51.7%	4.5%	28.6%	100.0%
HiEarners	19.7%	55.0%	3.5%	21.7%	100.0%
Others	23.8%	44.6%	5.9%	25.7%	100.0%

Importance Weights

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(from practice industry)

CONJOINT ANALYSIS - RELATIVE IMPORTANCE OF CHARACTERISTICS

Segment	Design	Max Freq	Power	Price	Total
Bufs	7.2%	51.2%	5.2%	36.4%	100.0%
Singles	18.8%	53.4%	2.1%	25.7%	100.0%
Pros	15.2%	51.7%	4.5%	28.6%	100.0%
HiEarners	19.7%	55.0%	3.5%	21.7%	100.0%
Others	23.8%	44.6%	5.9%	25.7%	100.0%

SEMANTIC SCALES - IDEAL VALUES (1 TO 7)

Segment	Weight	Design	Volume	Max Freq	Power	Price
Bufs	2.37	4.24	1.85	6.23	6.48	3.86
Singles	5.65	4.63	6.01	4.99	4.85	4.47
Pros	4.57	5.00	5.09	4.80	2.26	4.35
HiEarners	5.27	4.24	5.15	5.26	2.80	5.90
Others	6.37	1.95	6.18	2.21	5.31	3.38
Importance of characteristic (1)	4	2	4	10	4	7

(1) On a scale from 1 to 10 - 1 = Not important - 10 = Very important

In summary ...

Conjoint Measurement

- **Smaller samples (than semantic scaling)**
Very high cost methodology
- **Requires extensive interpretation**
Highly complex, hardly intuitive
- **Basis for strong empirical insights
re: choices, importance weights**
Potentially dangerous if used literally

Semantic – MDS Summary

- Semantic starts with attributes and aggregates to overall brand perceptions
- MDS starts with overall brand perceptions and disaggregates into relevant attributes
- In theory, semantic and MDS methods should converge on equivalent answers

Research Methods

Semantic Scaling

Multidimensional Scaling

Conjoint Measurement

Critical Outputs

Brand perceptions

Attribute importance

Ideal Points

Market Selection

Product Design

Brand Positioning