Marketing Analytics II

Chapter 7A: Product Analytics: Conjoint

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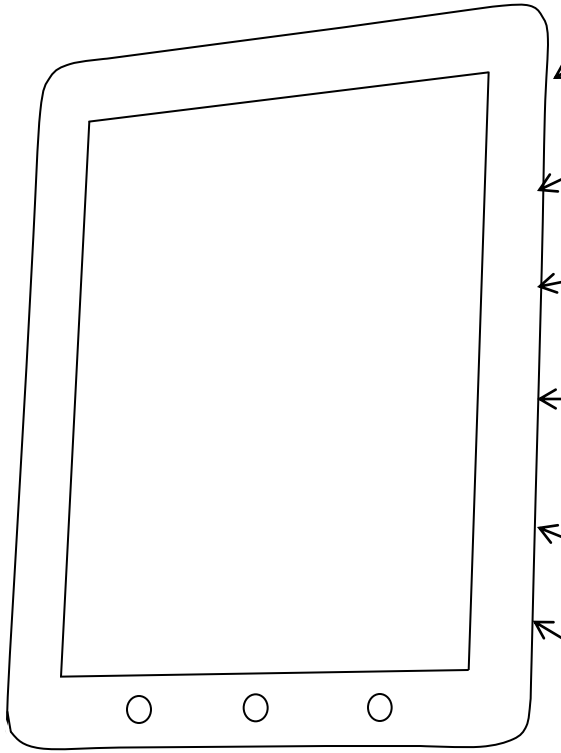
Outline/ Learning Objectives

Topic	Description
Terminology	Reviewing basic terminology around conjoint
Process	Understanding the process of conjoint analysis
Applications	Seeing some of the applications of conjoint analysis

Conjoint Analysis

Conjoint Analysis for Tablet Device



Attributes
- Operating system, screen size, battery life

Attribute Levels
- Screen Size: 5 inch, 7 inch, 10 inch

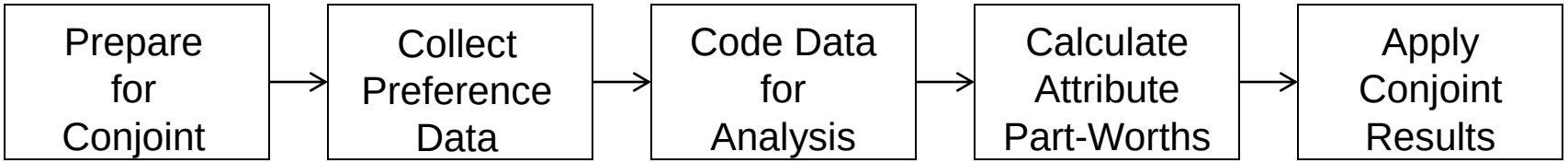
Bundles
- Different combinations of attributes

Conjoint Analysis
- Technique to examine trade-offs consumers make to understand their preferences

Part-Worths
- Values placed on particular attributes

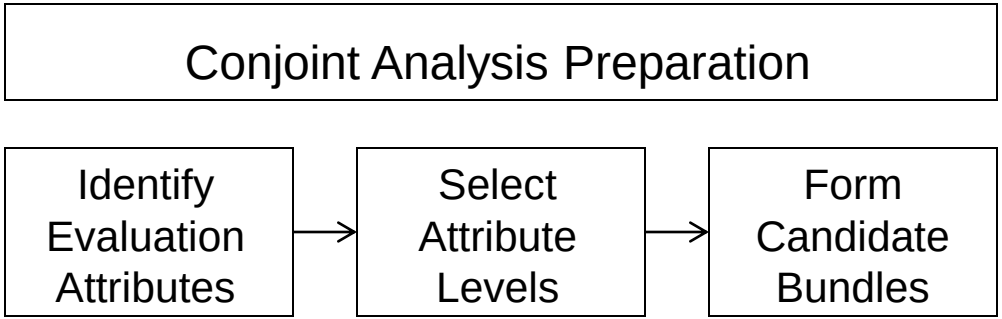
Profiles
- Specific bundles preferred by segments

Conjoint Analysis: Process



Step	Description
Prepare for Conjoint	Identify evaluation attributes Select levels for each attribute Form bundles (candidate “products”)
Get Preference Data	Survey consumers for their preferences
Code Data	Prepare data for analysis by coding it
Calculate Part-Worths	Calculate preference for each attribute
Apply Results	Interpret to assess market size and segmentation

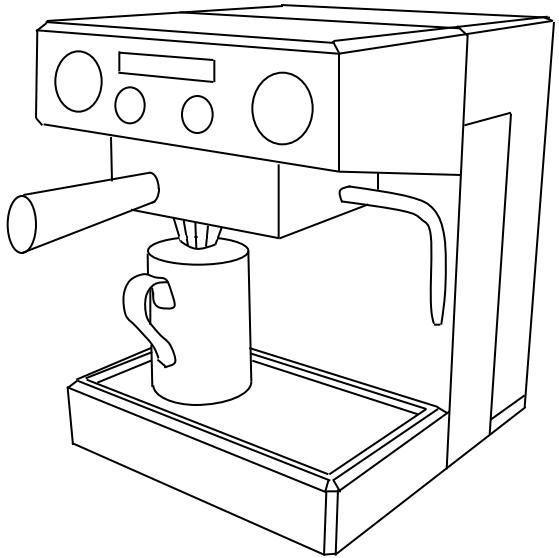
Conjoint Analysis: Process



Topic	Description
Identify Evaluation Attributes	Review available consumer evaluation sources General sources: Amazon.com, Epinions.com, etc. Specialty sources: CoffeeGeek, Home-Barista Conduct survey of top attributes (next slide)
Select Attribute Levels	Apply knowledge gained from study of category
Form Candidate Bundles	Combine various attribute levels to form bundles

Conjoint Analysis: Process

Evaluation Attributes	Not Important	Somewhat Important	Neutral	Important	Very Important
Speed					X
Capacity				X	
Price				X	
Cord length	X				



Example: Acme Espresso Machines

Conjoint Analysis: Process

Attribute	Level 1	Level 2
Speed	Speed1 (S1): Fast 1 minute or less	Speed2 (S2): Slow Greater than 1 minute
Capacity	Capacity1 (C1): Small 1 cup or less	Capacity2 (C2): Large Greater than 1 cup
Price	Price1 (P1): Budget $300 or less	Price2 (P2): Premium Greater than $300

Acme Espresso Machine Attribute Levels

Attribute	Level 1	Level 2	Level 3
Color	1: Red	2: Blue	3. Green

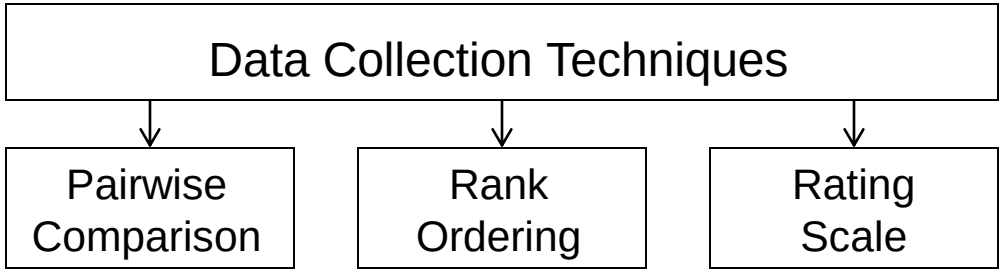
Attribute Levels for Non-Numeric Values

Conjoint Analysis: Process

Card	Speed	Capacity	Price
1	1	1	1
2	1	1	2
3	1	2	1
4	1	2	2
5	2	1	1
6	2	1	2
7	2	2	1
8	2	2	2

Candidate Bundles, also known as “Cards”

Conjoint Analysis: Process



Topic	Description
Pairwise Comparison	Respondents compare pairs of options Advantage: Respondents find easy to evaluate Disadvantage: Requires many comparisons
Rank Ordering	Respondents place options in rank order: 1 – 100 Advantages: Fast Disadvantages: Respondents find it difficult
Rating Scale	Respondents rate each option independently Advantages: Works well with Excel Disadvantages: Must provide rating scale

Conjoint Analysis: Process

Prefer Left Card	Indifferent	Prefer Right Card
Preference: __X__.	Preference: _____.	Preference: _____.
Card #1 (S1 – C1 – P1) Speed: 1 minute Capacity: 1 cup Price: Under $300		Card # 7 (S2 – C2 – P1) Speed: 2 minutes Capacity: 2 cups Price: Under $300

Pairwise Comparison

Conjoint Analysis: Process

Pairwise Comparison	Result	Interpretation
Card 1 vs. Card 2	Card 2	Card 2 preferred over Card 1
Card 2 vs. Card 3	Card 2	Card 2 preferred over Card 3
Card 1 vs. Card 3	Card 3	Among the remaining cards (Card 1 & Card 3), Card 3 is preferred, so Card 3 is the #2 choice and Card 1 is #3; Resulting Ranking: Card 2, 3, 1

Pairwise Comparison

Conjoint Analysis: Process

Rating	Assessment	Characteristics
1	Poor	Unacceptable in multiple areas, such as quality, design, and function. Definitely would not make it on consideration list.
2	Fair	Flawed in one or more important areas. Highly unlikely to make it on a final consideration list.
3	Neutral	Unit is neither particularly good nor bad. Only somewhat likely to make it on a final consideration list.
4	Good	Represents a good quality unit. Would be one of several units to be considered for purchase.
5	Outstanding	Represents the best available. Definitely would consider buying.

Rating Scale

Conjoint Analysis: Process

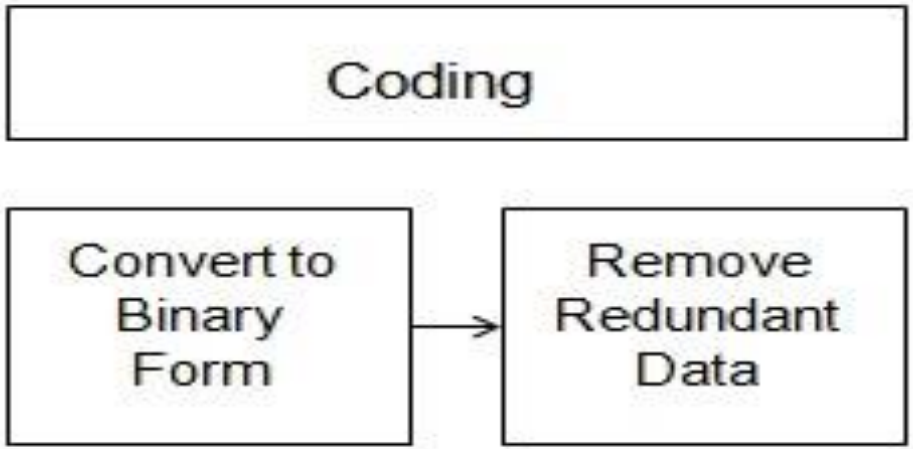
Card	Speed	Capacity	Price	Preference
1	1	1	1	4
2	1	1	2	3
3	1	2	1	5
4	1	2	2	4
5	2	1	1	3
6	2	1	2	1
7	2	2	1	3
8	2	2	2	2

Sample Respondent Preference Results

Segmentation Type	Question	Response
Demographic	Gender	Female
Geographic	ZIP Code	94111
Behavioral	Anticipated usage	For use at work
Psychographic	Favorite sport	Snowboarding

Sample Respondent Segmentation Identification Results

Conjoint Analysis: Process



Coding Process

Conjoint Analysis: Process

Card	Speed 1	Speed 2	Cap. 1	Cap. 2	Price 1	Price 2	Preference
1	1	0	1	0	1	0	4
2	1	0	1	0	0	1	3
3	1	0	0	1	1	0	5
4	1	0	0	1	0	1	4
5	0	1	1	0	1	0	3
6	0	1	1	0	0	1	1
7	0	1	0	1	1	0	3
8	0	1	0	1	0	1	2

Sample Respondent Results, Coded into Binary for Easier Machine Computation

Card	Red	Blue	Green
Card A	1	0	0
Card B	0	1	0
Card C	0	0	1

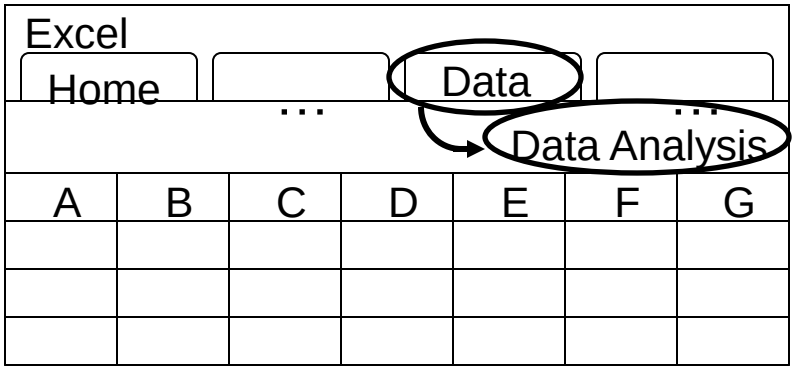
Binary Coding with Three Levels

Conjoint Analysis: Process

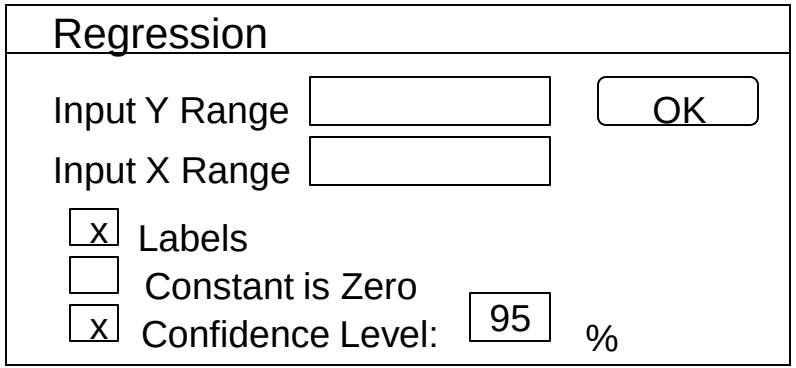
Card	Speed 1	Cap. 1	Price 1	Preference
1	1	1	1	4
2	1	1	0	3
3	1	0	1	5
4	1	0	0	4
5	0	1	1	3
6	0	1	0	1
7	0	0	1	3
8	0	0	0	2

Sample Respondent Results, with Redundancies Removed
Remove redundancies to prevent linear dependency problems

Conjoint Analysis: Process



Launching Data Analysis in Excel



Entering Data in Regression Dialog Box

Conjoint Analysis: Process

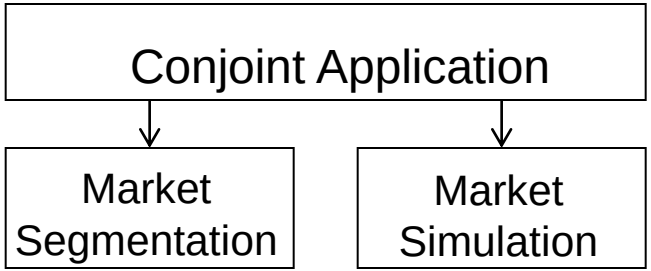
Parameter	Coefficient
Intercept	2
Speed1	1.75
Capacity1	-0.75
Price1	1.25

Microsoft Excel Regression Results

Preference = Constant + A1 * Speed 1 + A2 * Capacity 1 + A3 * Price 1

Preference = 2.0 + 1.75 * Speed 1 - 0.75 * Capacity 1 + 1.25 * Price 1

Conjoint Analysis: Process



Topic	Description
Market Segmentation	Correlate conjoint data with segmentation data (Demographic, Geographic, Behavioral, Psychographic) High part worth utility for speed → “Used at work”
Market Simulation	Collective voice of hundreds of potential customers Simulate market reception to new machine First choice rule: Respondents choose 1 product Market share: % of respondents with high utility

Check Your Understanding

Topic	Description
Terminology	Reviewing basic terminology around conjoint
Process	Understanding the process of conjoint analysis
Applications	Seeing some of the applications of conjoint analysis