



CONJOINT ANALYSIS

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What is Conjoint Analysis?

Conjoint analysis is a quantitative marketing research method that uses consumer preferences to determine the value of features through trade-offs. The objective of conjoint analysis is to gain a better understanding of how much consumers value different features.

Conjoint is frequently utilized in determining the of choosing a phone plan (an example we will be focusing on throughout this paper). Any product feature, good or service can be converted into a numerical attribute, such as “number of GB of data” or “base price.” Within each attribute, there are different levels that consumers choose from via a survey-based technique. Thinking about a phone plan, an attribute is the amount of “talk time,” and the levels could be 100 minutes, 1000 minutes, or unlimited talking time.



Conjoint analysis is useful when determining how consumers will react to a new product entering a competitive market or a change on an existing product, such as helping to see which new phone plan is most appealing.

Some Conjoint Analysis History 101

Conjoint analysis is a concept that has been used since the 1970s. Big companies such as EZ-Pass and Marriott’s Courtyard Hotels have utilized conjoint analysis to develop their product design (Toubia, 2018). Conjoint analysis has evolved into a space where companies such as Yahoo! use conjoint analysis as a tactic to understand users’ preferences. By analyzing click-through streams of specific populations, Yahoo! gained more information about user intention. The user preferences provide a springboard to predict how new users will respond to the website. Additionally, through a scalable conjoint analysis, Yahoo! has tactful insight into content management and user targeting (Chu et al., 2009). The findings from Yahoo!’s research refines the types of news articles on the landing page and increases click-through rates.



Conjoint analysis focuses on questions that market researchers are constantly trying to solve. Why choose company A over company B? What features should be included in a new release? What will the market be willing to pay? Will expansion generate overall revenue or cause the company to suffer? Having a methodology to attempt to answer these questions appeals to market research practitioners, thus turning conjoint analysis into a commonly used market research method for analyzing trade-offs. Air travel, financial services, health care, real estate and electronics are all industries that have utilized conjoint analysis (Toubia, 2018). Within one company, conjoint analysis can serve a purpose for product development, competitive positioning, pricing, product line analysis, segmentation and resource allocation.

So, exactly how does conjoint analysis work?

Conjoint analysis does not take a straightforward approach to finding out the consumers preferences. Rather than directly ask consumers the amount they would value each attribute, conjoint analysis has consumers examine profiles such as “\$35 plan with 2GB of data and unlimited calls and texts per month” compared to a “\$75 plan with 8 GB of data and unlimited calls and texts per month.” Consumers must decide which plan is preferred based on what is important to them once recognizing that there are pros and cons to both. During conjoint analysis, questions are asked intentionally to force participants to make trade-offs among the features (Katz & Corbett, 2018). The responses from participants provide a better understanding of both the intent to purchase as well as the consumer preferences discussed earlier.

How is conjoint analysis administered?

There are multiple different variations of conjoint analysis that can be used to develop market research. Determining the specific type of conjoint analysis to use is crucial to maximize efficiency of the results.

Once the type of conjoint analysis has been established, it is important to decide each attribute. The attributes should be relevant, understandable and relatable to the participant’s real-life. Similarly, the levels of attributes should be clear and useful. This provides a strong foundation to develop questionnaires that center around specific components that influence consumers. Furthermore, by phrasing the question carefully, researchers can distinguish not what the consumer wants, but what the consumer prefers. Statistical tests can determine the value of each level compared to the others to determine which attribute has the greatest impact. It is within the information gathered from a conjoint analysis that windows of opportunity are provided to create actionable results to improve.

Collecting data with conjoint analysis is both simple and routinized. Since it has expanded into many fields, researchers have developed numerous methodologies regarding conjoint analysis. Here are some of the most commonly utilized conjoint analysis options discussed by Bakken and Frazier (2006):

- **Two Attribute Tradeoff Analysis:** This model involves having participants rank their preferences for different combinations of attribute levels explicitly in numerical form from 1 to however many. This method can be overwhelming for the participant by having them rank tradeoffs. It may be easy to rank the highest or lowest preferences but ranking the middle options can be challenging. It is also tedious for the participant, especially since real-life scenarios will never have evaluations two at a time.
- **Adaptive Conjoint Analysis:** The choices displayed vary during this pairwise, ratings-based type of conjoint analysis based on participant preferences. Adaptive conjoint analysis is used in

Which streaming subscription is more appealing to you?	
Option 1 Movies for 6 months for \$10.99 <input checked="" type="radio"/>	Option 2 Movies for 4 months for \$2.99 <input type="radio"/>
Which streaming subscription is more appealing to you?	
Option 1 Movies for 6 months for \$10.99 <input type="radio"/>	Option 2 Romantic Comedies for 5 months for \$4.99 <input checked="" type="radio"/>
Which streaming subscription is more appealing to you?	
Option 1 Romantic Comedies for 5 months for \$4.99 <input checked="" type="radio"/>	Option 2 Music for 4 months for \$1.99 <input type="radio"/>

Figure 1
Example of Adaptive Conjoint Analysis

situations where the number of attributes exceed what can be utilized in a more traditional conjoint analysis. It is helpful to have the design developed by the feature levels deemed most important. Since the stimuli displayed is more competitive and decreases the survey time, it keeps the participant engaged.

- **Choice-Based Conjoint/ Discrete-Choice Conjoint Analysis:** The respondents are to choose preferred full-profile concepts, and the choice is made from sets of 3-5 full profile concepts. The participant can select one or none of the choices, which develop preferences to then be analyzed. This methodology is meant to mimic an actual buying experience to estimate the importance of the features.
- **Menu-based Conjoint Analysis:** Respondents are shown a list of features and levels. From that list, respondents create an ideal product rather than selecting pre-determined profiles. The downside of this method is that during statistical analysis, percentages and count totals are used rather than regressions.
- **Full-Profile Conjoint Analysis:** This method displays complete product profiles, typically paired with a preference scale regarding the likelihood to purchase.
- **Hierarchical Bayes (HB) Analysis:** HB looks at attribute level utilities from choice data of highly variable attributes. This allows a higher number of attributes and levels to be estimated with a smaller number of responses from the participant.
- **Max-Diff:** Essentially, participants make comparative judgment to decide best/most preferred and the worst/least preferred scenarios. Max-Diff provides scores for multiple items, unlike conjoint analysis that focuses on a singular item. This analysis is great when trying to evaluate product choice, brand images, brand preferences and advertising claims, especially because it represents the sets of items evenly. If you are interested in more information regarding Max-Diff, we have an additional post that shares the ins and outs of how we utilize it.

Learning what's important

The breakdown of a product, good or service during conjoint analysis gives a strong understanding of the trade-offs that consumers make among features. Having the agency to choose the trade-off during conjoint analysis really supports discovering the underlying priorities of a consumer. Developing these utilities allows the questions of the research to be further analyzed, thus giving a more educational prediction into how the components, such as features, pricing or competition, will affect a company. Practical applications and academic contributions of conjoint analysis continues to help advance multiple types of research questions.

Which of the following breakfast bar boxes would you buy?

- A) 4 Cinnamon Raisin Baked Bars (100 calories per bar) for \$5.00
- B) 10 Apple Strudel Bar (150 calories per bar) for \$8.00
- C) 6 Peanut Butter Granola Bars (110 calories per bar) at \$4.50
- D) None of these

Figure 2

Choice-Based/Discrete-Choice Conjoint Analysis

Please indicate which of the following is the MOST/LEAST important when owning a dog.

Most		Least
<input type="radio"/>	Size	<input checked="" type="radio"/>
<input type="radio"/>	Active	<input type="radio"/>
<input checked="" type="radio"/>	Trainability	<input type="radio"/>
<input type="radio"/>	Sociable	<input type="radio"/>

Figure 3

Max-Diff Analysis Example

By utilizing the right tools for the right questions, HCD Research can apply conjoint analysis to improve effectiveness and efficiency within market research.

IF YOU WOULD LIKE CONJOINT ANALYSIS TO BE AN INTEGRAL TOOL TO BETTER UNDERSTAND YOUR RESEARCH QUESTIONS, **PLEASE CONTACT INFO@HCDI.NET OR CALL 908.788.9393.**

CITATIONS

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