

Choice Modeling

The Science of Marketing Optimization



Why Choice Modeling?

Consumers can usually tell us what they will buy and what they will *not* buy.

But rarely can they tell us the roles that price, brand image, package color, brand name, promotional offers, and media advertising play in their purchase decisions. With choice modeling experiments, however, we can implicitly measure the influence of these marketing variables.



Choice Modeling Applications

“Choice Modeling” refers to a family of statistical techniques used to optimize marketing decisions.

Common applications are:

- Pricing Optimization
- Product Design Optimization
- Product-Line Planning
- Market Segmentation
- Brand Strategy Optimization
- Package Design Optimization
- Advertising Optimization
- New Product Concept Optimization
- Promotion Offer Optimization

Discrete Choice Modeling

Discrete choice modeling is ideal when only one purchase is made over a long period of time (for example, automobiles, durable goods, credit cards, or mobile phones). Consumers are asked which one product they would buy, given a realistic scenario that includes most of the products or services that compete with one another. Respondents are presented with a different set of marketing stimuli in each scenario.

Volumetric Choice Modeling

Volumetric choice modeling is used when multiple products are purchased over short periods of time and repeat purchase volume is significant. Consumers are asked how many of each product they would buy, given realistic scenarios. The types of decisions that respondents make in each scenario simulates reality, where multiple brands might be purchased in varying quantities. Volumetric measures include units purchased, dollars spent, etc. The goal is to create scenarios that represent consumers’ actual buying behaviors.

Conjoint Analysis

Conjoint analysis (or trade-off analysis) is a technique used to determine the relative importance of different attributes or product features. It is often used to optimize new product designs.



Choice Modeling Can Often Replace Marketing Mix Modeling

Choice modeling can address many of the same questions that marketing mix modeling attempts to answer.

Marketing mix modeling takes years of painstaking efforts to build a pristine database of sales results by geographic area and product line, along with marketing inputs. Marketing mix modeling can cost millions of dollars and take a long time to deliver actionable results. However, with choice modeling the same types of marketing issues can be resolved quickly, economically, and more accurately (because all variables can be carefully controlled in choice models).



MaxDiff Analysis

A MaxDiff analysis produces a full ranking of attributes and is a simpler and more focused task for respondents than are other methods. In the survey task respondents select the most important attribute and the least important attribute, or the one most liked and the one least liked, from subsets of attributes.



Advantages of MaxDiff analysis:

- **Avoids rating scale biases.** MaxDiff is ideal for multicountry studies to eliminate language and cultural differences.
- **Provides a simpler and more focused task for the respondent.** The most-least survey task is easy for the respondent, but it still produces a full ranking of all attributes for each respondent.

MaxDiff is used to evaluate a variety of attributes, features, ideas, claims, benefits, etc.

Pricing Optimization

Within choice modeling experiments, the prices of the different brands are continuously varied from scenario to scenario. Price-demand curves are derived implicitly for each brand. These price-demand curves feed into a DecisionSimulator™ so that an optimal pricing strategy can be determined and, in the future if competitors change their prices, the simulator enables the user to quickly calculate a revised pricing strategy.

Logician® 3D Shopping Simulation

The more realistic the experimental stimuli, the more accurate the results. Logician® 3D (three dimensional) shopping simulations of the buying experience create shopping environments that take consumers on a realistic visit to a retail store, expose them to advertising and promotional stimuli, and allow them to purchase products with the click of a mouse. These models can be created for lawn mowers, mobile phones, etc., and the models allow consumers to see a product from many visual perspectives.

DecisionSimulator™

The results of the choice model derived from experimental data are translated into an interactive DecisionSimulator™ that has a simple point-and-click interface that allows “what if” scenarios to be explored. By changing inputs (pricing, promotion, product features, competitive variables, etc.), a full range of marketing decisions and competitive responses can be explored.

R Language Choice Modeling

ChoiceModelR™, One of the world’s most sophisticated choice modeling programs, is designed, written, and maintained by Decision Analyst’s programmers. Written in the R language, ChoiceModelR™ is ideal for large data sets with complex variables. It handles discrete variables (nominal or ordinal) and share or probabilistic variables. Multiple constraints may be imposed on model parameters. The number of choice observations per respondent may vary, and the number of choice alternatives per observation is flexible.

ChoiceModelR™ is freely shared with anyone who wants a copy. ChoiceModelR™ may be downloaded from Decision Analyst’s website: www.decisionanalyst.com/download/.

Why Decision Analyst?

Decision Analyst is a global marketing research and analytical consulting firm with more than four decades of experience in state-of-the-art modeling and simulation. Decision Analyst has many years of experience applying choice modeling to CPG, retail, restaurant, automotive, technology, hospitality, and other industries. If you would like to discuss potential uses of choice modeling techniques, please give us a call.



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