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## Highlights

- Model consumers' decision-making processes.
  - Measure the value consumers place on individual attributes or features.
  - Develop market simulation models.
  - Predict the response to proposed actions.
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# IBM SPSS Conjoint

*Uncover what drives purchasing decisions*

In the real world, buyers do not make decisions based on a single attribute, such as price or brand name. Instead, they examine a range of products, all with different combinations of features and attributes, and perform a complex series of trade-offs before reaching a decision.

Conjoint analysis is the research tool used to model the consumer's decision-making process. Using IBM® SPSS® Conjoint can increase your understanding of consumer preferences, enabling you to more effectively design, price, and market successful products.

Conjoint analysis enables you to measure the value consumers place on individual attributes or features that define products and services. Armed with this knowledge, your company can design products that include the features most important to your target market, set prices based on the value the market assigns to the product's attributes, and focus messages on the points most likely to appeal to target buyers.

Even as competitors, products, and pricing change over time in the market, you can continue to use the results from SPSS Conjoint to develop market simulation models that incorporate changes, along with your proposed responses. This enables you to predict the response to your proposed actions before spending valuable resources on product development and marketing programs.



SPSS Conjoint provides answers to critical questions such as:

- Which features or attributes of a product or service drive the purchase decision?
- Which feature combinations will have the most success?
- What market segment is most interested in the product?
- What marketing messages will most appeal to that segment?
- What feature upgrades will most affect consumer preference and increase sales?
- What is the optimal price to charge consumers for a product or service?
- Can the price be increased without a significant loss in sales?
- Are product levels too close together?

### All the tools you need

The three procedures in SPSS Conjoint enable you to plan, implement, and efficiently analyze results from conjoint studies. Following is a summary of these procedures.

- Generate designs easily—Orthoplan produces an orthogonal array of product attribute combinations, which dramatically reduces the number of questions you must ask while ensuring that you have enough information to perform a full analysis.

- Print “cards” to elicit respondents’ preferences—Plancards quickly generates cards that respondents can use to easily sort and rank product attribute combinations.
- Get informative results—The conjoint procedure performs a specially tailored version of regression on your response rankings. You’ll receive results you can act on, such as which product attributes are important and at what levels consumers most prefer them. You can also perform simulations to determine the market share of preference for any combination of attributes.

### Gain greater value with collaboration

To share and efficiently distribute assets, protect them in ways that meet internal and external compliance requirements and publish results so that a greater number of business users can view and interact with them, consider augmenting SPSS Statistics Conjoint with IBM SPSS Collaboration and Deployment services. More information about its valuable capabilities can be found at [ibm.com/spss/cds](http://ibm.com/spss/cds).

SPSS Conjoint is available for installation as client-only software but, for greater performance and scalability, a server-based version is also available.

## Options consumers prefer: A real-life study

A software company planned to develop training programs that differed from its traditional instructor-led training. Since many options were available, the company decided to perform a conjoint study to evaluate the proposed product.

The company believed six key attributes would influence consumer preference: method of delivery, video content, example types, certification test, method of asking questions remotely, and price. Four of these attributes had two levels, while two others had three. The resulting full factorial design would have had 144 alternative product bundles (2x2x2x2x3x3), making for an unfeasibly large study.

Using orthoplan, the research department reduced the number of hypothetical product bundles (such as those shown in Figure 1) to 16, while ensuring that the department received all the information needed to perform a complete analysis. A researcher then printed the 16 product bundles using placards and gave them to a sample of target users who ranked them in order of preference.

	method	video	question	price	test	example	status	cost
1	Local Mac	Video	No Support	\$300	Test	Generic	Design	1
2	Internet	No Video	Instant Me	\$300	No Test	Generic	Design	2
3	Local Mac	Video	Instant Me	\$500	No Test	Industry S.	Design	3
4	Local Mac	No Video	Instant Me	\$500	Test	Generic	Design	4
5	Internet	No Video	Instant Me	\$300	No Test	Industry S.	Design	5
6	Internet	Video	Email	\$400	No Test	Generic	Design	6
7	Internet	Video	Instant Me	\$300	Test	Industry S.	Design	7
8	Local Mac	Video	Instant Me	\$400	No Test	Generic	Design	8
9	Local Mac	No Video	Instant Me	\$400	Test	Industry S.	Design	9
10	Internet	Video	No Support	\$500	No Test	Industry S.	Design	10
11	Internet	No Video	No Support	\$400	Test	Industry S.	Design	11
12	Local Mac	Video	Email	\$300	Test	Industry S.	Design	12
13	Local Mac	No Video	Email	\$300	No Test	Industry S.	Design	13
14	Internet	No Video	Email	\$500	Test	Generic	Design	14
15	Local Mac	No Video	No Support	\$300	No Test	Generic	Design	15
16	Internet	Video	Instant Me	\$300	Test	Generic	Design	16
17	Internet	No Video	Email	\$300	No Test	Industry S.	Holdout	17
18	Local Mac	No Video	No Support	\$300	Test	Generic	Holdout	18
19	Internet	Video	Email	\$400	Test	Industry S.	Holdout	19
20	Local Mac	Video	Email	\$400	No Test	Generic	Holdout	20

Figure 1: Save time and money with SPSS Conjoint by using orthoplan to present a fraction of all possible product bundles. Here, orthoplan generates a 16-run orthogonal array instead of all 144 possible combinations.

A researcher analyzed the preference rankings with SPSS Conjoint, and the results are shown in Figure 2. Two attributes stand out as very important—inclusion of video and price—while test and example types are relatively unimportant.

The Utility Estimate and Standard Error columns in Figure 2 show the relative preference for each level of each attribute. Within question, Instant Message is the most preferred attribute level and No Support is the least preferred.

**Subject 1: Academic**

**Utilities**

		Utility estimate	Standard error
method	Internet	1.180	.169
	Local Machine	-1.180	.169
video	video	2.176	.169
	No video	-2.176	.169
question	Instant message 9-5)	.922	.225
	Email (<1 day wait)	.911	.264
	No support	-1.833	.264
price	\$300	3.392	.225
	\$400	-.192	.264
	\$500	-3.200	.264
test	Test	.227	.169
	No test	-.277	.169
example	Industry specific	.354	.169
	generic	-.354	.169
(Constant)		7.422	.187

**Importance values**

method	13.700
video	25.268
question	16.001
price	38.281
test	2.641
example	4.108

Figure 2: Easily identify the attributes a group of consumers prefers.

## Features

### Orthoplan

- Generate orthogonal main effects fractional factorial designs; orthoplan is not limited to two-level factors
- Specify variable list, optional variable labels, a list of values for each variable, and optional value labels
- Specify the desired number of cards for the plan; orthoplan will try to generate a plan in the desired minimum number of runs
- Generate holdout cards to test the fitted conjoint model
- Mix the training and holdout cards or stack the holdout cards after the training cards
- Save the plan file as a system file
- Display output in pivot tables

### Plancards

- Use this utility procedure to produce printed cards for a conjoint experiment; the printed cards are used as stimuli to be sorted, ranked, or rated by the subjects
- Specify the variables to be used as factors and the order in which their labels are to appear in the output

- Choose a format
  - Listing-file format: Differentiate holdout cards from experimental cards, and then list simulation cards
  - Card format: Holdout cards are not differentiated and simulation cards are not produced
- Write the cards to an external file or the listing file
- Specify optional title and footer
- Specify pagination so that each new card in single-card format begins on a new page
- Display output in pivot tables.

### Conjoint

- Perform an ordinary least-squares analysis of preference or rating data with this procedure
- Work with the plan file generated by plancards, or a plan file input by the user using a data list
- Work with individual level rank or rating data
- Provide individual level and aggregate results

- Treat the factors in any of a number of ways; conjoint indicates reversals
  - Discrete: Factor levels are categorical
  - Linear: Scores or ranks are linearly related to the factor
  - Ideal: A quadratic relationship is expected between the scores or ranks and the factor; this method assumes that there is an ideal level for the factor, and that distance from the ideal point in either direction is associated with decreasing preference
  - Antideal: A quadratic relationship is expected between the scores or ranks and the factor; this method assumes that there is a worst level for the factor, and that distance from this point in either direction is associated with increasing preference
- Work with experimental cards that have one of three scenarios
  - Training
  - Holdout
  - Simulation
- Select from three conjoint simulation methods
  - Max utility
  - Bradley-Terry-Luce (BTL)
  - Logit
- Print controls
  - Print only the results of the experimental (training and holdout) data analysis
  - Print only the results of the conjoint simulation
  - Print results of both the experimental data analysis and the conjoint simulation
- Write utilities to an external file
- Show print results with:
  - Attribute importance
  - Utility (part-worth) and standard error
  - Graphical indication of most to least preferred levels of each attribute
  - Counts of reversals and reversal summary
  - Pearson R for training and holdout data
  - Kendall's Tau for training and holdout data
  - Simulation results and simulation summary
- Display output in pivot tables

### System requirements

Requirements vary according to platform. For details, see [ibm.com/spss/requirements](https://www.ibm.com/spss/requirements).

## About IBM Business Analytics

IBM Business Analytics software delivers actionable insights decision-makers need to achieve better business performance. IBM offers a comprehensive, unified portfolio of business intelligence, predictive and advanced analytics, financial performance and strategy management, governance, risk and compliance and analytic applications.

With IBM software, companies can spot trends, patterns and anomalies, compare “what if” scenarios, predict potential threats and opportunities, identify and manage key business risks and plan, budget and forecast resources. With these deep analytic capabilities our customers around the world can better understand, anticipate and shape business outcomes.

### For more information

For further information please visit [ibm.com/business-analytics](https://ibm.com/business-analytics).

### Request a call

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