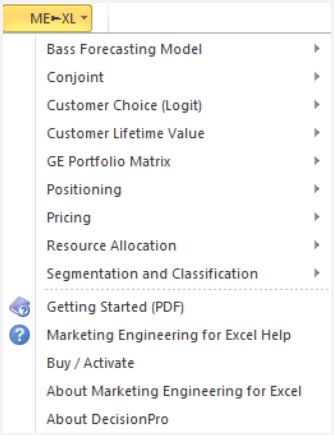
Tutorial

Conjoint

Marketing Engineering for Excel is a *Microsoft Excel* add-in. The software runs from within Microsoft Excel and only with data contained in an Excel spreadsheet.

After installing the software, open *Microsoft Excel*. A new menu appears, called "*ME ▸ XL.*" This tutorial refers to the "*ME ▸ XL/Conjoint*" submenu.



Overview

Conjoint analysis is an approach for measuring customers' preferences; it is particularly useful for analyzing and predicting customers' responses to new products and new features of existing products. With conjoint analysis, companies can decompose customers' preferences for products and services (provided as descriptions, visual images, or product samples) into the "partworth" utilities associated with each option of each attribute or feature of the product category. By recombining these partworths, companies can predict customers' preferences for any combination of attribute options, determine the optimal product concept, and identify market segments that value a particular product concept highly.

Conjoint analysis also helps firms answer such questions as:

- ✓ How much are our customers willing to pay for an extended warranty?
- ✓ What factors drive customers' choices?
- ✓ If we must choose between two different features to introduce in the next generation of products, which one would have the most impact on customers' choices?
- ✓ In our market, how many customers are price sensitive? How many are quality-driven in their purchase decisions?

Getting Started

Many *Marketing Engineering for Excel* models allow you to use an interactive assistant, which prompts you for the parameters required by the model and builds a template spreadsheet into which you can to enter the required data. This generated template includes pre-selected cell ranges that correspond to the parameters you enter. These recommended *Marketing Engineering for Excel* templates facilitate subsequent analyses.

Expert users who are familiar with *Marketing Engineering for Excel* models and data requirements may prefer to input data directly in an unformatted spreadsheet. Such users should begin with the interactive assistant to become familiar with the data format that *Marketing Engineering for Excel* expects.

The next section explains how to create an easy-to-use template to collect and enter your own data.

If you want to run a conjoint analysis immediately, open the example file "*OfficeStar Data (Conjoint, Part 1).xls*" and jump to "Step 4: Estimating Preference Part Worths" (p.8). By default, the example files install in "*My Documents/My Marketing Engineering/.*"

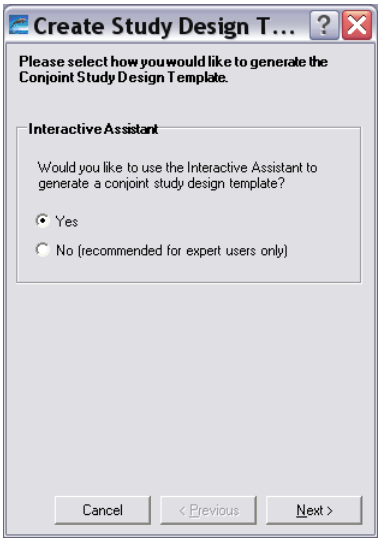
If you want to see conjoint analysis in action, open the example file "OfficeStar Data (Conjoint, Part 2) and jump to "Step 7: Running analyses" (p. 15). You should not change the analysis parameters manually (they were established in Step 5) but you will see how a conjoint process works.

Step 1 Creating a study design template

A conjoint study involves a complex, multi-step analysis. The first step requires designing the study itself: By which features and characteristics are the products under study described?

In Excel, if you click on ME ▸ XL → CONJOINT → CREATE STUDY DESIGN TEMPLATE, a dialog box appears. The first dialog box prompts you to use an interactive assistant.

Unless you are already familiar with the methodology, you should select "yes."

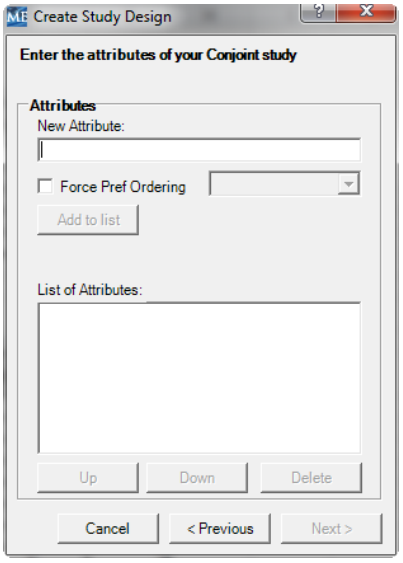


Using the interactive assistant

The first step of the study design template generation process requires you to label and list the attributes you want to use.

An **attribute** is a general property or characteristic of a product category that you can use to build and describe alternative products or services. ”Color,” “price,” or “quality” are examples of attributes. The attributes listed in the dialog box below come from the *OfficeStar* example.

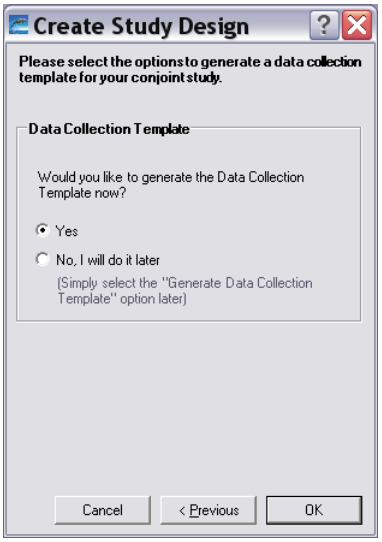
For some attributes, customers may have a natural order of preference. For example, most people will prefer higher quality to lower quality or lower price to higher price. For such attributes, you can choose to impose a preference order (increasing or decreasing) by checking the **Force Pref Order** option**.**



After you have described the attributes, you must enter levels for each in the next step. Whereas an **attribute** represents a characteristic such as color, price, or warranty, the **levels** are the particular values that an attribute can take, such as red, $20, or 1-year warranty. Each attribute requires at least two levels.

Some attributes may have a **preference** order. For example, an attribute such as price or distance may have an order preference. If a respondent will not purchase an item at $2.00, we can assume they will also not purchase the same item at $3.00. For each attribute you specify you may use the check box to include a column which will allow you to specify the order preference. When the check box is not used, all attributes are treated as being unordered in terms of respondent preferences.

After entering the attributes and levels for each attribute, you will be prompted with the following dialog box:



If you click "no", a generated conjoint study design appears in a new Excel workbook, as shown below. Clicking "yes" is equivalent to selecting ME ▸ XL → CONJOINT → CREATE DATA COLLECTION TEMPLATE in the Excel menu.

Conjoint Study Design

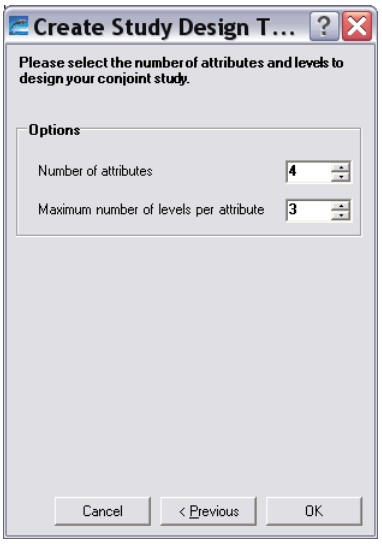
Attributes and attribute levels of the Conjoint study.

Attributes / Levels	Level 1	Level 2	Level 3	Ordering
Location	Less than 2 miles	Within 2-5 miles	Within 5-10 miles	Decreasing
Office supplies	Very large assortment	Large assortment	Limited Assortment	Unordered
Furniture	Office Furniture	No Furniture		Unordered
Computers	No computers	Software only	Software and computers	Unordered

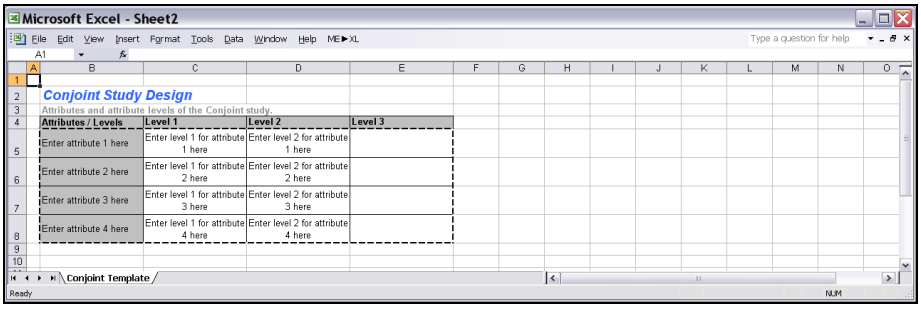
Not using the interactive assistant

If you decide not to use the interactive assistant, the following dialog box will appear, asking you to specify the:

- **Number of attributes**. The *OfficeStar* example uses four attributes to describe a store: location, assortment of office supplies, whether it sells furniture, and whether it offers computer supplies and software packages.
- **Maximum number of levels**. The *OfficeStar* example uses two to three levels per attribute, so the maximum number of levels is 3.



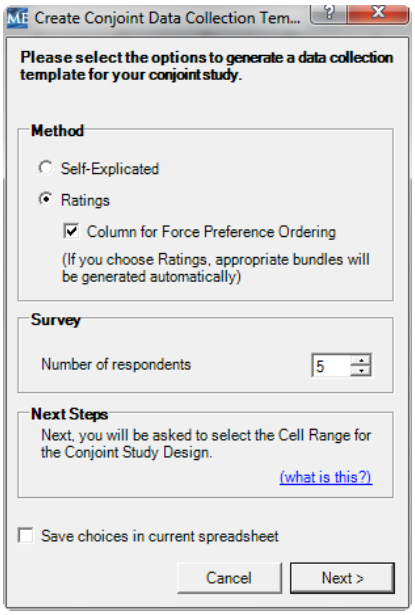
Click OK to generate a new blank spreadsheet. You must then enter all attributes and levels manually in the spreadsheet.



Step 2 Creating a data collection template

The first step, generating the study design, is necessary to describe the attributes and levels used in your conjoint study. After you have developed this basic study structure, you must generate a template to collect or enter customer data. To create a data collection template, select ME ▸ XL → CONJOINT → CREATE DATA COLLECTION TEMPLATE in the Excel menu. Alternatively, after creating the study design template using the interactive assistant, you may confirm that you want the data collection template generated.

The following dialog box appears:



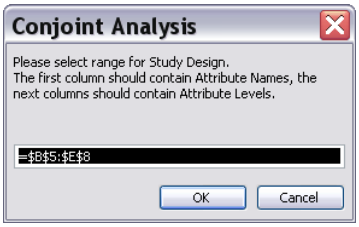
Many techniques can elicit customers' preferences for products, including choice-based conjoint, partial profile ratings, full profile ratings, and adaptive conjoint. *Marketing Engineering for Excel* offers two methods to elicit customers' preferences:

- **Self-explicated** is the most straightforward. Respondents distribute 100 points among the different attributes (more points represent more important attributes in the choice process) and rank the different levels for each attribute in their order of preference. For example, a respondent might allocate 8 points out of 100 to the attribute "color" (color is not a very important factor in his or her choice), and then assign ranks of 1 to the color "blue" and 2 to the color "red" (prefers blue to red).
- **Ratings** require a more involved and complex but usually more reliable method to elicit respondents' preferences. The ratings method creates a list of hypothetical products (or **bundles** of attributes) and asks respondents to assign a score (say, between 0 and 100) to each bundle, such that more points represent higher preferences. *Marketing Engineering for Excel* can infer from these ratings which attributes (and levels) drive consumer preferences, and hence customers' choices.

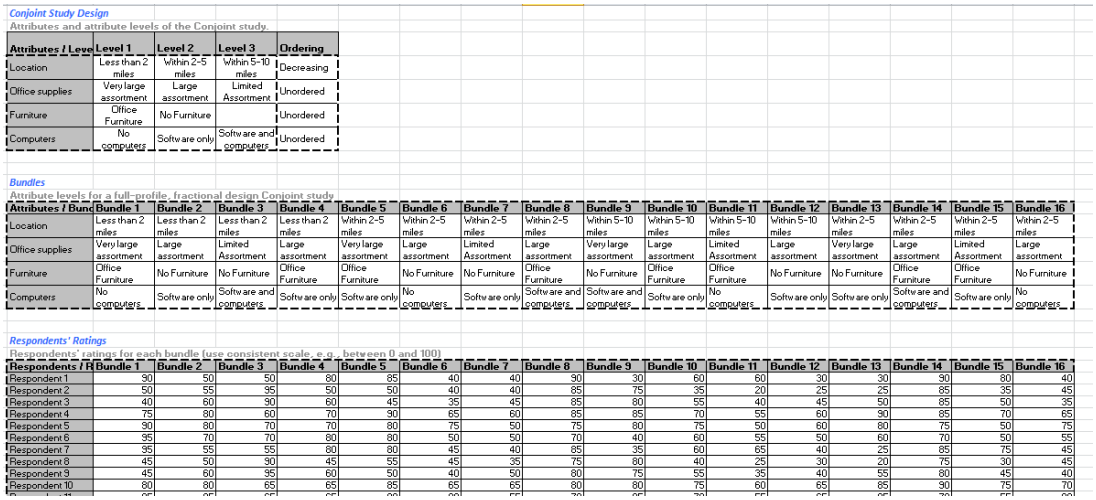
The check box "**Column for Force Preference Ordering**" should be checked if any of the included attributes have an order preference. This check box will affect the number of bundles generated by Conjoint.

The dialog box also asks you to specify the **number of respondents** for whom you want to create a data collection template.

When you click Next, the software will ask you to select the range of cells for the study design.



If you have selected **Ratings**, the software automatically generates a list of "product bundles" for your respondents to rate. The exact number of bundles depends on the complexity of your study design. The more attributes and levels you have, the more bundles your respondents will need to rate to provide an estimate of their preferences.



Conjoint Study Design

Attributes and attribute levels of the Conjoint study.

Attributes / Level	Level 1	Level 2	Level 3	Ordering
Location	Less than 2 miles	Within 2-5 miles	Within 5-10 miles	Decreasing
Office supplies	Very large assortment	Large assortment	Limited Assortment	Unordered
Furniture	Office Furniture	No Furniture		Unordered
Computers	No computers	Software only	Software and computers	Unordered

Bundles

Attribute levels for a full-profile, fractional design Conjoint study

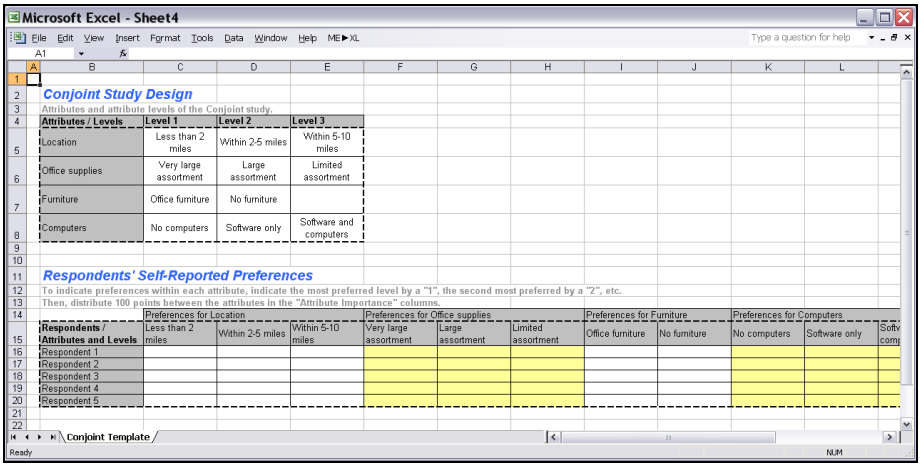
Attributes / Bundles	Bundle 1	Bundle 2	Bundle 3	Bundle 4	Bundle 5	Bundle 6	Bundle 7	Bundle 8	Bundle 9	Bundle 10	Bundle 11	Bundle 12	Bundle 13	Bundle 14	Bundle 15	Bundle 16
Location	Less than 2 miles	Less than 2 miles	Less than 2 miles	Less than 2 miles	Within 2-5 miles	Within 2-5 miles	Within 2-5 miles	Within 2-5 miles	Within 5-10 miles	Within 5-10 miles	Within 5-10 miles	Within 5-10 miles	Within 2-5 miles	Within 2-5 miles	Within 2-5 miles	Within 2-5 miles
Office supplies	Very large assortment	Large assortment	Limited Assortment	Large assortment	Very large assortment	Large assortment	Limited Assortment	Large assortment	Very large assortment	Large assortment	Limited Assortment	Large assortment	Very large assortment	Large assortment	Limited Assortment	Large assortment
Furniture	Office Furniture	No Furniture	No Furniture	Office Furniture	Office Furniture	No Furniture	No Furniture	Office Furniture	No Furniture	Office Furniture	Office Furniture	No Furniture	No Furniture	Office Furniture	Office Furniture	No Furniture
Computers	No computers	Software only	Software and computers	Software only	Software only	No computers	Software only	Software and computers	Software and computers	Software only	No computers	Software only	Software only	Software and computers	Software only	No computers

Respondents' Ratings

Respondents' ratings for each bundle (use consistent scale, e.g., between 0 and 100)

Respondents / Bundles	Bundle 1	Bundle 2	Bundle 3	Bundle 4	Bundle 5	Bundle 6	Bundle 7	Bundle 8	Bundle 9	Bundle 10	Bundle 11	Bundle 12	Bundle 13	Bundle 14	Bundle 15	Bundle 16
Respondent 1	30	50	50	80	85	40	40	90	30	60	60	30	30	90	80	40
Respondent 2	50	55	95	50	50	40	40	85	75	35	20	25	25	85	35	45
Respondent 3	40	60	90	60	45	35	45	85	80	55	40	45	50	85	50	35
Respondent 4	75	80	60	70	90	65	60	85	85	70	55	60	90	85	70	65
Respondent 5	90	80	70	70	80	75	50	75	80	75	50	60	80	75	50	75
Respondent 6	95	70	70	80	80	50	50	70	40	60	55	50	60	70	50	55
Respondent 7	95	55	55	80	80	45	40	85	35	60	65	40	25	85	75	45
Respondent 8	45	50	90	45	55	45	35	75	80	40	25	30	20	75	30	45
Respondent 9	45	60	95	60	50	50	40	50	80	75	55	35	40	55	80	40
Respondent 10	80	80	65	85	65	65	80	80	75	60	65	85	90	75	70	

If you select **Self-explicated**, the software generates the template below, in which the first columns refer to ranking of the levels and the last columns indicate the distribution of points to the different attributes.



Step 3 Entering your data

In this tutorial, we use the example file "*OfficeStar (Conjoint Data, Part 1).xls,*" which uses the ratings method. In the default condition, that file appears in "*My Documents/My Marketing Engineering/.*"

To view a proper data format, open that spreadsheet in Excel. A snapshot is reproduced below.

Bundles

Attribute levels for a full-profile, fractional design Conjoint study

Attributes / Bund	Bundle 1	Bundle 2	Bundle 3	Bundle 4	Bundle 5	Bundle 6	Bundle 7	Bundle 8	Bundle 9	Bundle 10	Bundle 11	Bundle 12	Bundle 13	Bundle 14	Bundle 15	Bundle 16
Location	Less than 2 miles	Less than 2 miles	Less than 2 miles	Less than 2 miles	Within 2-5 miles	Within 2-5 miles	Within 2-5 miles	Within 2-5 miles	Within 5-10 miles	Within 5-10 miles	Within 5-10 miles	Within 5-10 miles	Within 2-5 miles	Within 2-5 miles	Within 2-5 miles	Within 2-5 miles
Office supplies	Very large assortment	Large assortment	Limited Assortment	Large assortment	Very large assortment	Large assortment	Limited Assortment	Large assortment	Very large assortment	Large assortment	Limited Assortment	Large assortment	Very large assortment	Large assortment	Limited Assortment	Large assortment
Furniture	Office Furniture	No Furniture	No Furniture	Office Furniture	Office Furniture	No Furniture	No Furniture	Office Furniture	No Furniture	Office Furniture	Office Furniture	No Furniture	No Furniture	Office Furniture	Office Furniture	No Furniture
Computers	No computers	Software only	Software and computers	Software only	Software only	No computers	Software only	Software and computers	Software and computers	Software only	No computers	Software only	Software only	Software and computers	Software only	No computers

Respondents' Ratings

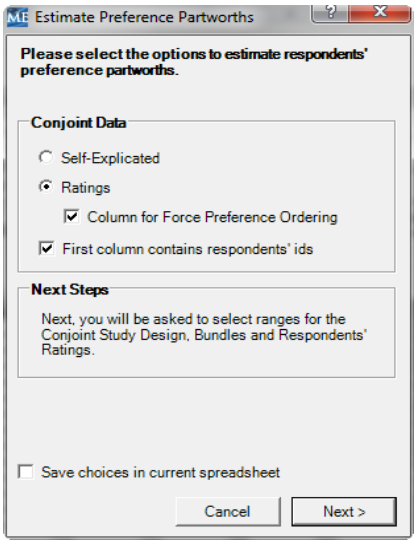
Respondents' ratings for each bundle (use consistent scale, e.g., between 0 and 100)

Respondents / B	Bundle 1	Bundle 2	Bundle 3	Bundle 4	Bundle 5	Bundle 6	Bundle 7	Bundle 8	Bundle 9	Bundle 10	Bundle 11	Bundle 12	Bundle 13	Bundle 14	Bundle 15	Bundle 16
Respondent 1	90	50	50	80	85	40	40	90	30	60	60	30	30	90	80	40
Respondent 2	50	55	95	50	50	40	40	85	75	35	20	25	25	85	35	45
Respondent 3	40	60	90	60	45	35	45	85	80	55	40	45	50	85	50	35
Respondent 4	75	80	60	70	90	65	60	85	85	70	55	60	90	85	70	65
Respondent 5	90	80	70	70	80	75	50	75	80	75	50	60	80	75	50	75
Respondent 6	95	70	70	80	80	50	50	70	40	60	55	50	60	70	50	55
Respondent 7	95	55	55	80	80	45	40	85	35	60	65	40	25	85	75	45
Respondent 8	45	50	90	45	55	45	35	75	80	40	25	30	20	75	30	45
Respondent 9	45	60	95	60	50	40	50	80	75	55	35	40	55	80	45	40
Respondent 10	80	80	65	65	85	65	65	80	80	75	60	65	85	90	75	70

Step 4 Estimating preference partworths

When you have entered your respondents' answers (ratings or self-explicated data), you can proceed to the next step of conjoint analysis: estimating your respondents' preferences for each attribute and level, i.e., their preference partworths.

To estimate preference partworths from a set of ratings (note that the same logic applies to self-explicated data), select ME ▸ XL → CONJOINT → ESTIMATE PREFERENCE PARTWORTHS in the Excel menu. The following dialog box appears:

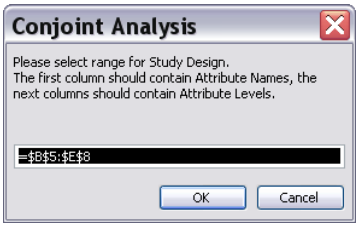


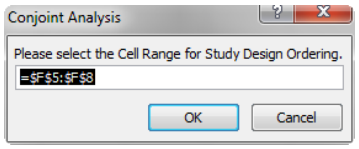
You must specify (1) what type of method (self-explicated or ratings) you used to collect data and (2) whether your data contain identifiers for each respondent that need to be carried into the next steps of the analysis.

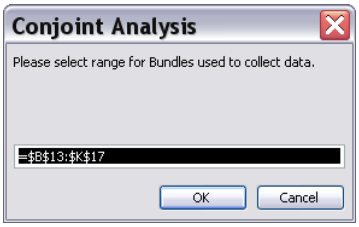
If you used *Marketing Engineering for Excel* to generate the data collection template, these options already will be populated with the correct choices, and you should not change them.

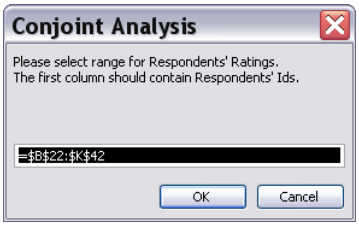
You then must select various cell ranges in the Excel workbook, namely:

- **Study design template** (attributes and levels).
- **Bundles** used to collect data.
- **Ratings** entered by your respondents.









The newly generated spreadsheet contains respondents' estimated preference partworths.

Respondents' Preference Partworths

Respondents' preference partworths. The most preferred profiles sum up to 100, the least preferred to 0.

Respondents / Attributes and Levels	Less than 2 miles	Within 2-5 miles	Within 5-10 miles	Very large assortment	Large assortment	Limited Assortment	Office Furniture	No Furniture	No computers	Software only	Software and computers
Respondent 1	31	23	0	2	3	0	55	0	1	0	11
Respondent 2	31	16	0	3	7	0	2	0	0	1	61
Respondent 3	14	0	0	0	6	4	4	0	0	22	76
Respondent 4	17	17	0	47	22	0	9	0	0	17	27
Respondent 5	24	8	0	59	39	0	0	1	9	0	15
Respondent 6	49	17	0	22	12	0	26	0	2	0	0
Respondent 7	31	15	0	0	5	0	52	0	8	0	12
Respondent 8	22	6	0	8	9	0	0	1	3	0	68
Respondent 9	24	7	0	0	1	0	0	1	0	21	74
Respondent 10	18	18	0	43	20	0	12	0	0	15	27
Respondent 11	15	10	0	50	32	0	0	13	22	0	4
Respondent 12	50	3	0	21	17	0	22	0	7	0	1
Respondent 13	27	19	0	4	5	0	55	0	0	1	13
Respondent 14	29	12	0	9	13	0	1	0	4	0	58
Respondent 15	17	3	0	0	1	13	0	9	0	11	61
Respondent 16	16	16	0	51	24	0	2	0	0	21	32
Respondent 17	23	0	0	48	31	0	0	12	0	4	17
Respondent 18	45	12	0	33	22	0	18	0	4	4	0
Respondent 19	35	13	0	22	25	0	17	0	0	6	22
Respondent 20	29	15	0	29	32	0	18	0	3	0	21

To interpret the results, note that

- As a convention, the least preferred level of each attribute gets set to 0 for all respondents.
- As another convention, if you take the most preferred levels of all attributes and sum them, the total will equal 100. This rule ensures the uniformity of respondents' preference scales.
- The importance of an attribute equals the value of the most preferred level for that attribute. The first respondent in the *OfficeStar* example considers a store within two miles worth 31 points and a store that offers office furniture worth 55 points. Therefore, for this respondent, office furniture is significantly more important than store location.

A very important application of conjoint analysis is based on a *segmentation analysis* of customers' needs and preferences. The resulting segment structure can be used to identify new products that appeal to specific customer segments. You can use the estimated preference partworths to identify segments of customers who share similar likes and dislikes and value certain attributes to approximately the same extent.

To run a segmentation analysis, refer to the *segmentation/targeting* software of the *Marketing Engineering for Excel* suite and apply the segmentation software to respondents' preference partworths.

Step 5 Creating analysis template

If you want to skip this section and run a conjoint analysis immediately, open "*OfficeStar (Conjoint Data, Part 2).xls*". In the default condition, that file appears in "*My Documents/My Marketing Engineering/.*"

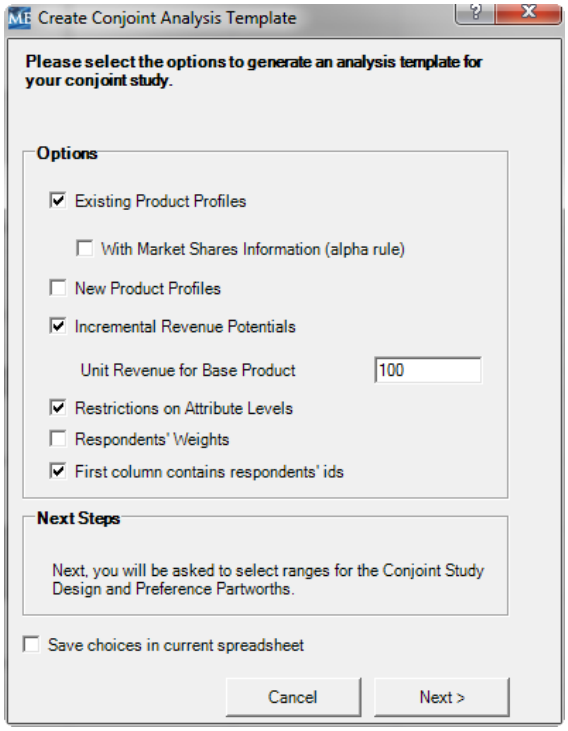
This file contains respondents' preference partworths, as well as an analysis template already filled in.

Respondents' preference partworths can be interesting to analyze in and of themselves: What are the most important attributes (or features), what are the most preferred levels (or options), and so forth?

To exploit the potential of conjoint analysis fully for applications such as market simulations, new product design optimization, or full-blown trade-off analyses, you need to create a template in which you specify the type of analysis you plan to run, as well as the data needed to run it.

You can create many different analysis templates for the same data, and save them under different names. For example, one template could be for market share analysis with a fixed set of new products that a company is considering for introduction into the market. Another template could be for finding the best new product from all possible new products for maximizing revenue potential.

Select ME ▸ XL → CONJOINT → CREATE ANALYSIS TEMPLATE in the Excel menu. The following dialog box appears:



- **Existing Product Profiles** (or existing bundles). Some options currently exist in the market, such as products or services offered by competitors or your own company. You must describe these existing products if you plan to study the market potential of new offerings, which are gauged with reference to what already exists in the market, or to analyze cannibalization effects of your new product on your company's existing products in the market.
- **...With Market Share Information**. If you know the current market shares of existing products, you can infer a more precise relationship between preferences (preference partworths) and choices (market shares), which enhances the predictive value of your simulations. Of course, you must also know exactly what alternatives already exist.
- **New Product Profiles** (or new bundles). Check this option if you have a predefined list of potential candidate products that you contemplate introducing in the market. If you have candidate products, the software will test all possible combinations and identify those with the highest market share potentials.
- **Incremental Revenue Potentials**. Check this option only if you can allocate a specific incremental per unit revenue (or incremental unit contribution) to each level of each attribute, which will enable you to run simulations based on *contribution* or *revenue* rather than based on *market share.* In typical conjoint simulations, the focus is on identifying product(s) that maximize market share. However, products that deliver high market shares need not necessarily result in high profitability for the company because market share computations do not take into account the costs of manufacturing each product bundle.

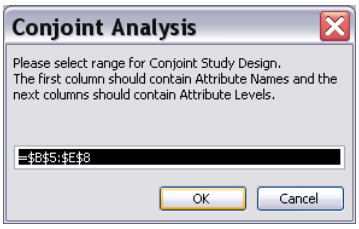
  If you check this option, you will later be asked to specify three pieces of information: (1) specify a base product (i.e., using one base level for each attribute) whose incremental revenue (or contribution) is set to 0; (2) provide information about incremental revenue or contribution (which can be positive or negative) for each attribute level as compared to its level in the base product. If the incremental revenue or contribution is 0 for more than one product, the software will use the level that is the first one starting from left in the table of Revenue Potentials. Ideally, you should select as the base product one that has the highest market share and whose contribution margin (or price) is known; (3) the unit revenue (or contribution) associated with the base product.

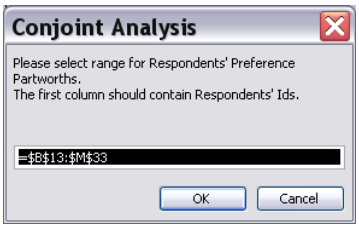
  When using incremental revenue potential, you may want to include additional fixed costs associated with each product as compared to that of the base product. Also, note our calculations ignore price potential (i.e., what the market might be willing to pay) for all product bundles, except the base product. These considerations reinforce the need for selecting the base product carefully, and interpreting the revenue index in a manner consistent with the aforementioned assumptions.

- **Restrictions on Attribute Levels**
  You may want to restrict certain attribute levels in your study. Checking this option will allow you to exclude certain attribute levels during the next step of analysis.
- **Respondents' Weights**. Some categories of customers might be overrepresented in your sample. Check this option if you have enough data to correct for these biases by weighting some respondents more heavily. For instance, if 50% of the market consists of men but your sample is only 33% men, you can give a weight of 2.0 to all the men and a

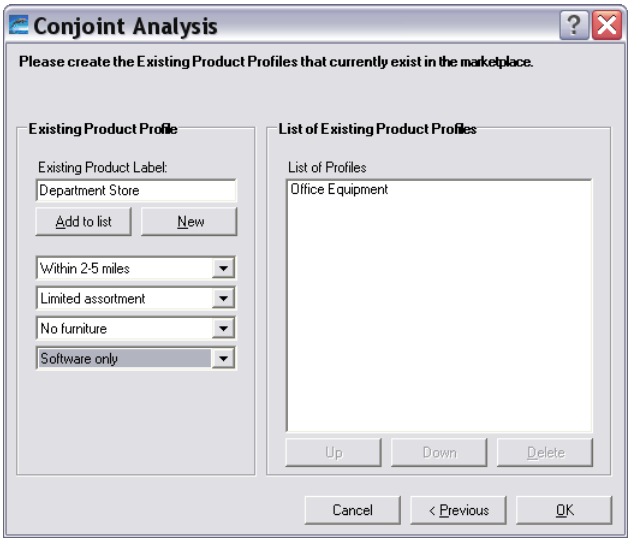
default weight of 1.0 to all women. That is, men in the sample count twice as much as women in the simulation, which better balances the sample. If in doubt, do not check this option; the software then gives a weight of 1.0 to all respondents in your sample.

Click Next, then select the various cell ranges in the Excel workbook.





If you checked the "Existing Product Profiles" option, you now need to create those profiles using the following dialog box. If you checked the "New Product Profiles" option, the same procedure will apply subsequently.



These steps lead to the generation of a workbook similar to the following (in this example, only the "Existing Product Profiles" and "Incremental Revenue Potentials" were checked):

Conjoint Study Design

Attributes and attribute levels of the Conjoint study.

Attributes / Leve	Level 1	Level 2	Level 3
Location	Less than 2 miles	Within 2-5 miles	Within 5-10 miles
Office supplies	Very large assortment	Large assortment	Limited assortment
Furniture	Office furniture	No furniture	
Computers	No computers	Software only	Software and computers

Level Constraints

Constraints for levels for market shares with optimal products.
A value of "1" means that the level will be included in optimal products.
A value of "0" means that the level will be ignored in optimal products.

	Level 1	Level 2	Level 3
Location	1	1	1
Office supplies	1	1	1
Furniture	1	1	
Computers	1	1	1

Revenue Potentials

Incremental revenue potentials (possibly negative) for each attribute level, compared to the base product.
The template's base product revenue is set to 100.
The base level of each attribute (the first level by default) is indicated by a zero.

Attributes / Leve	Level 1	Level 2	Level 3
Location	0	10	30
Office supplies	0	5	15

Respondents' preference partworths. The most preferred profiles sum up to 100, the least preferred to 0.

Respondents / Attributes and Levels	Less than 2 miles	Within 2-5 miles	Within 5-10 miles	Very large assortment	Large assortment	Limited Assortment	Office Furniture	No Furn
Respondent 1	31	23	0	2	3	0	55	
Respondent 2	31	16	0	3	7	0	2	
Respondent 3	14	0	0	0	6	4	4	
Respondent 4	17	17	0	47	22	0	9	
Respondent 5	24	8	0	59	39	0	0	
Respondent 6	49	17	0	22	12	0	26	
Respondent 7	31	15	0	0	5	0	52	
Respondent 8	22	6	0	8	9	0	0	
Respondent 9	24	7	0	0	1	0	0	
Respondent 10	18	18	0	43	20	0	12	
Respondent 11	15	10	0	50	32	0	0	
Respondent 12	50	3	0	21	17	0	22	
Respondent 13	27	19	0	4	5	0	55	
Respondent 14	29	12	0	9	13	0	1	
Respondent 15	17	3	0	0	1	13	0	
Respondent 16	16	16	0	51	24	0	2	
Respondent 17	23	0	0	48	31	0	0	
Respondent 18	45	12	0	33	22	0	18	
Respondent 19	35	13	0	22	25	0	17	
Respondent 20	29	15	0	29	32	0	18	

Existing Product Profiles

Labels and attribute levels for each existing product profile that already exists in the market.

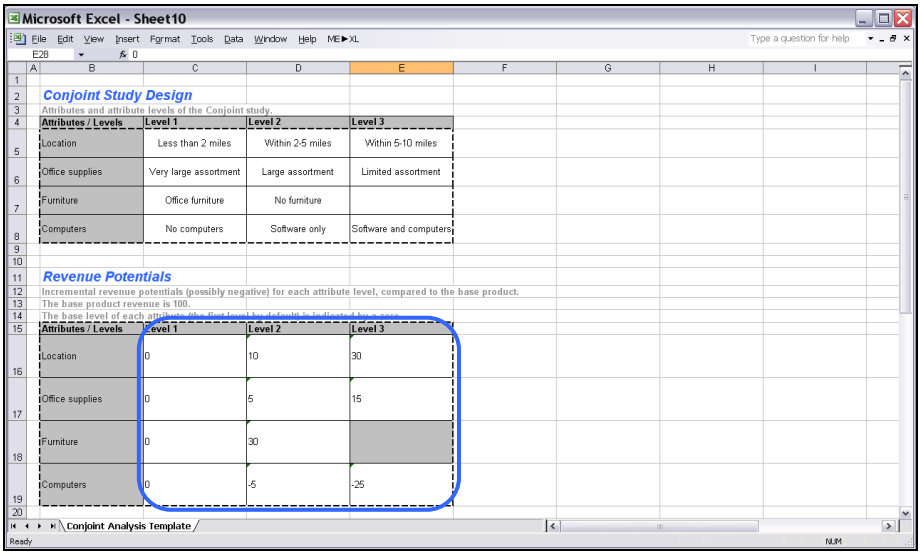
Attributes / Existing Product Profiles	Office Equipment	Department Store
Location	Within 2-5 miles	Within 2-5 miles
Office supplies	Large assortment	Limited assortment

Step 6 Entering analysis data

Some cells in the data analysis template need to be filled in before proceeding, including:

- **Market Share Information** about existing product profiles.
- **Level Constraints** specifying whether a level should be excluded from analysis.

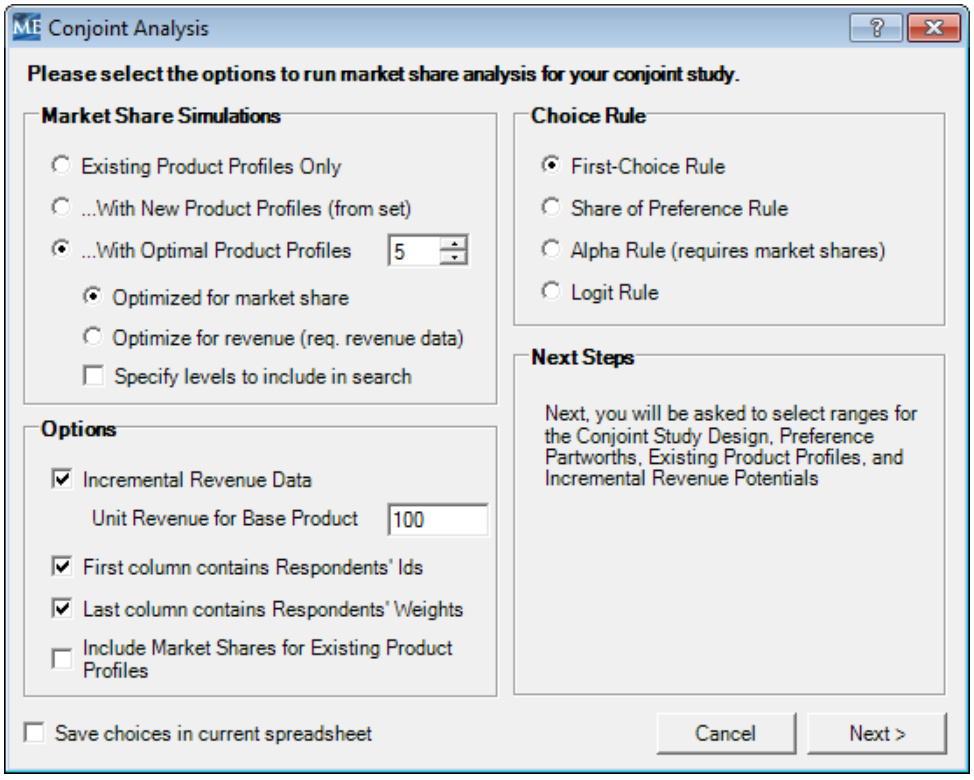
- **Incremental Revenue Potentials** of all levels.
- **Respondents' Weights**.



In the preceding example, moving the store 5–10 miles away would increase revenues by +30% (compared with a base level of a store within 2 miles, perhaps due to higher rent costs); offering software and computers in the store would decrease revenues by –25% (due to higher operational costs, maintenance, and stock obsolescence). Although customers clearly prefer a closer store to a distant one, conjoint analysis indicates—on the basis of a preference analysis, market share simulations, and revenue potential—whether building a new store within two miles is worth the extra cost.

Step 7 Running analyses

After you enter your data in the Excel spreadsheet using the appropriate format, click on ME ▸ XL → CONJOINT → RUN ANALYSIS. The dialog box that appears indicates the next steps required to perform a conjoint analysis of your data.



Existing product profiles

In this area, specify whether you want to perform market share simulations:

- On **existing product profiles** only, which simulates performance of the existing set of competing products, assuming customers are familiar with all the products and the products are equally widely available for customer purchase.
- **...With new product profiles** you have defined. In this case, the simulation introduces one new product at a time into the market along with all existing products in order to compute the market shares of all products, including the new product.
- **...With optimal product profiles**, which tests all possible combinations of new products and keeps those that lead to the highest market shares (or highest revenues, if you have checked that option), after taking into account existing product profiles in the current market. This analysis helps you identify new opportunities, or "holes," in the market.

  In this section you may optionally specify whether you prefer to optimize the analysis to maximize market share or revenue. Note: the "optimize by revenue" option requires incremental revenue data. This option will only be enabled if the "Incremental Revenue Data" check box in the Options

area is checked. If this option is selected, you will be prompted for this data during the cell selection step.

You may further choose to specify which levels should be used for the optimization. Again, if selected, you will be prompted for which levels to include during the cell selection step.

Options

These options reflect and confirm the choices you made when you created the data analysis template. Please refer to the previous section for explanations. For purposes of conducting simulations, you can alter the Base Product Revenue originally specified when creating the analysis template. However, if you check the Save choices in current spreadsheet menu option, then the revised values will be stored with the spreadsheet.

Choice rule

You can use several methods to translate preferences into choices, depending on the product category and information available.

- **First choice rule**: Each respondent selects the product that provides the highest utility among competing products and a specific new product concept being evaluated. If customers buy products in the product category infrequently and/or are highly involved in the purchase decision (e.g., house, car, expensive computer), the maximum utility rule is the preferred option.
- **Share of preference rule**: Each respondent's share of purchases of a particular product is a function of his or her preference for that product, compared with the total preference for all products in the competitive set. This analysis option is most suitable for products that customers buy frequently and/or for which they are less involved in the purchase decision (e.g., beer, toothpaste, restaurant).
- **Logit choice rule**: The share of each product for each respondent is a function of the weighted utility for that product, compared with the total weighed utility for all products in the competitive set. The weighting uses an exponential function. This analysis option provides an alternative to the share of utility model.
- **Alpha rule**: A weighted combination of the maximum utility rule and the share of utility rule, this method chooses a weight (alpha) that ensures the market shares computed in the simulation are as close as possible to the actual market shares of the existing products in the market. This option is available only if you can to provide information about the market shares of existing products in the segment to which you are targeting the new product.

Next steps

When you click Next, you are prompted to select data ranges to run the conjoint analysis. If you followed the previous steps, all your data should be contained in the last workbook generated by *Marketing Engineering for Excel*, and all cell ranges should be properly pre-selected, depending on the options you selected.

The new generated workbook offers the results of your conjoint analysis.

Step 8 Interpreting the results

For illustration, the following spreadsheets were generated using these options:

- Five optimal product profiles.
- Incremental revenue potentials.
- Logit choice rule.

Main results

The first sheet of the newly generated workbook reports the results of the conjoint analysis, including the market share simulations:

- With the **existing product profiles** only.
- By simulating the introduction of the generated **new product profiles**, one at a time (optional).
- By simulating the introduction of as many **optimal product profiles** as requested, one at a time, beginning with the one that leads to the highest market shares or revenues (optional).

Conjoint Study Design

Attributes and attribute levels of the Conjoint study.

Attributes / Levels	Level 1	Level 2	Level 3
Location	Less than 2 miles	Within 2-5 miles	Within 5-10 miles
Office supplies	Very large assortment	Large assortment	Limited assortment
Furniture	Office furniture	No furniture	
Computers	No computers	Software only	Software and computers

Market Share and Revenue Simulations

Market share and revenue simulations for different scenarios, using the Logit Rule.

Scenario / Product profiles	Office Equipment	Department Store	Market Share of Optimal Product	Revenue per Unit of Optimal	Revenue Weighted by
Predicted market shares	73%	27%	n/a	n/a	n/a
...with Optimal Product 1	39%	14%	47%	130	61
...with Optimal Product 2	41%	15%	43%	135	59
...with Optimal Product 3	47%	17%	36%	155	56
...with Optimal Product 4	46%	17%	37%	150	56
...with Optimal Product 5	45%	16%	39%	140	55

Existing Product Profiles

Labels and attribute levels for each existing product profile that already exists in the market.

Attributes / Existing Product Profiles	Office Equipment	Department Store
Location	Within 2-5 miles	Within 2-5 miles
Office supplies	Large assortment	Limited assortment
Furniture	Office furniture	No furniture
Computers	Software and computers	Software only

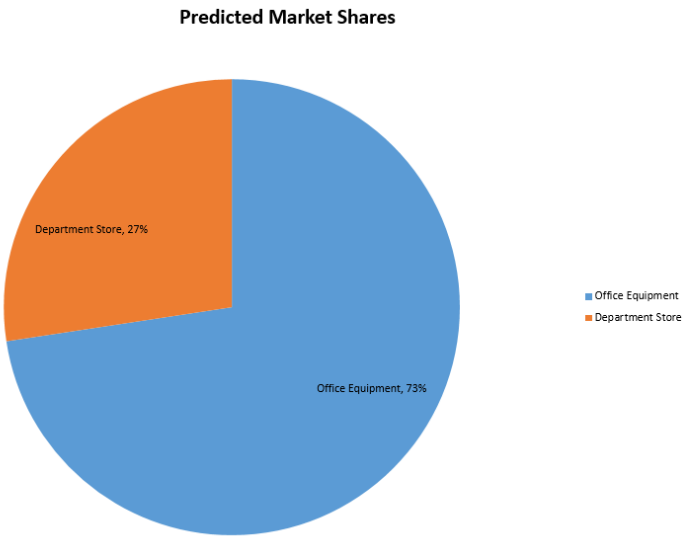
Optimal Product Profiles

Labels and attribute levels for each optimal product profile that the software recommends you introduce in this market

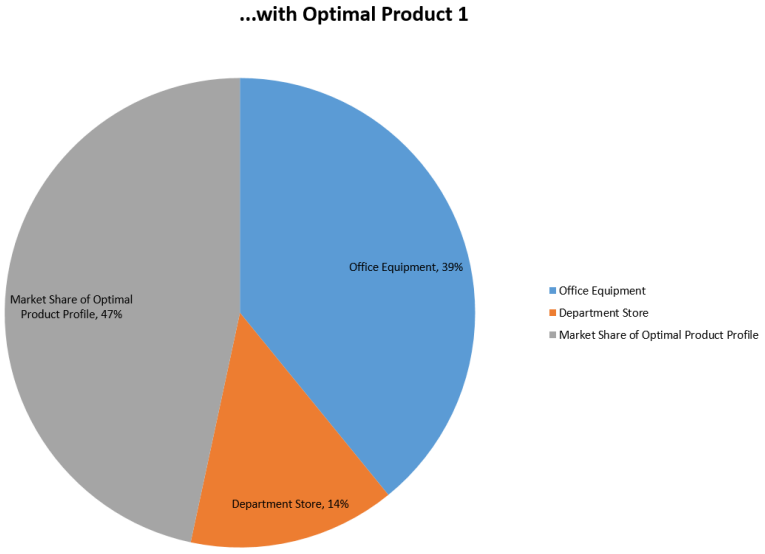
Attributes / Optimal Product Profiles	Optimal Product 1	Optimal Product 2	Optimal Product 3	Optimal Product 4	Optimal Product 5
Location	Less than 2 miles	Less than 2 miles	Less than 2 miles	Less than 2 miles	Within 2-5 miles
Office supplies	Very large assortment	Large assortment	Very large assortment	Very large assortment	Very large assortment
Furniture	No furniture	No furniture	No furniture	No furniture	No furniture
Computers	Software and computers	Software and computers	No computers	Software only	Software and computers

The above example repsents OfficeStar optimized for Revenue.

In the following chart, notwithstanding new product introductions, conjoint analysis predicts that *Office Equipment* captures 73% of the market (according to the logit rule).



The introduction of a new product (optimized for revenue) (see the description of "Optimal Product 1" in the first sheet) could capture 47% of the market, and *Office Equipment*'s market shares would drop from 73% to 39%.



Optimizing for Revenue vs Market Share

The above example utilizes the Office Star data set optimized for Revenue. One might decide to optimize for Market Share (depending on the company objectives). The example below shows the same data set, but Optimized for Market Share.

The predicted market share for Optimal Product 1 coincidentally remains at 53%, but the Attributes for the Optimal Product have changed. Specifically, when optimizing for Revenue the Furniture attribute is No Furniture, but when optimized for Market Share the Furniture attribute is Office Furniture.

This illustrates the importance of the optimization decision.

Conjoint Study Design

Attributes and attribute levels of the Conjoint study.

Attributes / Levels	Level 1	Level 2	Level 3
Location	Less than 2 miles	Within 2-5 miles	Within 5-10 miles
Office supplies	Very large assortment	Large assortment	Limited assortment
Furniture	Office furniture	No furniture	
Computers	No computers	Software only	Software and computers

Market Share Simulations

Market share predictions for different scenarios, using the Logit Rule.

Scenario / Product profiles	Office Equipment	Department Store	Market share of Optimal Product Profile
Predicted market shares	73%	27%	n/a
...with Optimal Product 1	34%	13%	53%
...with Optimal Product 2	36%	14%	50%
...with Optimal Product 3	33%	14%	47%
...with Optimal Product 4	40%	15%	45%
...with Optimal Product 5	41%	15%	43%

Existing Product Profiles

Labels and attribute levels for each existing product profile that already exists in the market.

Attributes / Existing Product Profiles	Office Equipment	Department Store
Location	Within 2-5 miles	Within 2-5 miles
Office supplies	Large assortment	Limited assortment
Furniture	Office furniture	No furniture
Computers	Software and computers	Software only

Optimal Product Profiles

Labels and attribute levels for each optimal product profile that the software recommends you introduce in this market

Attributes / Optimal Product Profiles	Optimal Product 1	Optimal Product 2	Optimal Product 3	Optimal Product 4	Optimal Product 5
Location	Less than 2 miles	Less than 2 miles	Less than 2 miles	Within 2-5 miles	Less than 2 miles
Office supplies	Very large assortment	Large assortment	Very large assortment	Very large assortment	Large assortment
Furniture	Office furniture	Office furniture	No furniture	Office furniture	No furniture
Computers	Software and computers	Software and computers	Software and computers	Software and computers	Software and computers

The above chart represents OfficeStar optimized for Market Share.