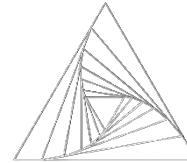


ProductSolve™



DECISION SUPPORT SCIENCES

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## Training Manual

Using the Decision Support Sciences Platform ProductSolve™  
for Product Design Decision Support



*Decision Support Sciences. Better Science. Better Solutions.*

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# Product Design Decision Support Training

The Decision Support Sciences application for a) importance, performance, expectation, and gap analysis and b) Product Design and c) Real-World Outcome (RWO) prediction and risk-mitigation is called ProductSolve™. ProductSolve™ allows strategists to “what-if” with different product and service concepts to project how the market will respond to these changes. Will a given change be enough for a prospect to switch providers? Will it be enough for a customer to deepen their relationship?

The answers to these and other issues are made possible by the relatively new field of **simulation modeling**. Simulation modeling uses surveying to capture for each respondent not only what they **believe**, but the relative importance of each feature of each product. Most importantly, those survey methods that discover how much improvement is required to get customers or prospects to actually **do** something (buy, switch, etc.) Thus, simulation modeling captures the actual buyer values of real respondents and creates virtual copies of those customers in the simulator. These virtual respondents (also called E-customers) are calibrated to respond in the same way that people do in the real world.

In sum, then, ProductSolve™ is an analysis, product design, simulation modeling and risk mitigation platform. It allows the senior strategist to do three things:

1. Identify and analyses primary marketing data (importance performance, expectation and gap data) both at the level of the whole market and by segment. (Descriptive Analysis)
2. Create new products and/or change existing products in any way.
3. Perform “What-iffing” (Real-World Outcome Simulation Modeling) in that changed marketplace.

Consequently, in this Product Solve™ training manual we will concentrate on each of these tasks. To aid in understanding, each of these tasks is sub-divided into a discussion of theory and practice.

Let’s begin!

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# ProductSolve™ Buyer Value Analysis and Simulation Model Training

## I. Who Likes What: (Descriptive Analysis)

### A. Theory

### B. Practice

1. Which Buyer Values Are Most Important Overall? (Running Whole Market Utilities)
2. Which Buyer Values Are Most Important By Segment? (Utilities by Segment)
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7. How Can I Scan for All Significant Buyer Value Differences Without Setting Up Run Groups (Automated Segment Scanning)

# ProductSolve™ Simulation Model Training

## II. Real World Outcome “What-iffing” (Simulation Modeling)

### A. Theory

1. Preference
2. Switching
3. Retention
4. Likelihood of Purchase
5. Percent Likelihood of Purchase
6. Marginal Benefit
7. Revenue Contribution

### B. Practice (Common to all simulation models)

1. Running Whole Market Simulations
2. Testing New Product Concepts
3. Running Simulations by Segment
4. Running Simulation by Segment with Significance Testing
5. Running Simulation by Logical Blocks
6. Linking to SPSS to Characterize Respondents
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# I. Who Likes What: (Descriptive Buyer Value Analysis)

## A. Theory



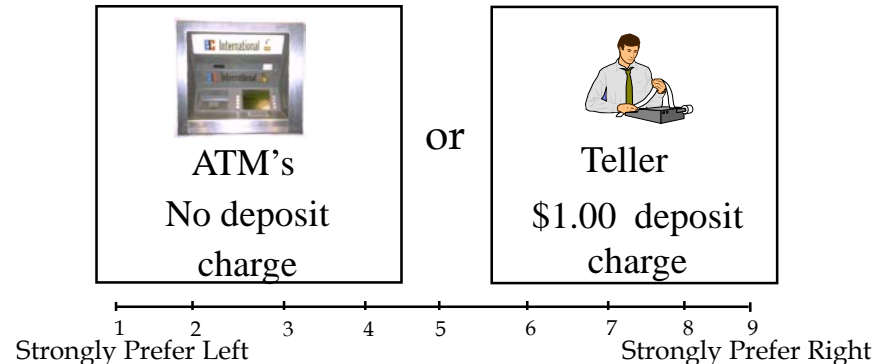
## What are Importance/Buyer Values (Utilities)?

**NOTE:** In this manual we will focus on analysis of importance/buyer value scores. The same steps apply to the analysis of performance, expectation and gap (PEG) analysis with the exception that PEG analysis does not have implementation “level” information. This distinction will be made clear in the text.

Buyer values are a measure of the relative importance of the different features or attributes of a product or service. They are also called utilities. They allow us to know which features a customer prefers and by how much. The utilities that Decision Support Sciences produces are based on the answers to a conjoint, discrete choice or maxdif-based interview. In the trade-off section of the interview, each respondent is asked three types of questions.

- 1) Rank order questions - For attributes which are not naturally ordered, each respondent gives their rank order for each level of that attribute.
- 2) Importance questions - Each respondent is asked to give an importance score to each attribute.
- 3) Trade-off questions - The respondents are presented with a set of real world decisions in which they are presented with 2 possible products or services. They are then required to indicate which they prefer and how strong their preference is for that product.

For Example:



# Buyer Values indicate the order and strength of preferences for each attribute and attribute level.

## - Importance / Utility Values Output -

- The Average Utility Model displays output in tabular form and graphical form.
- The first block of data in the output report is overall attribute importance or average attribute range values (AARV's).
- The rest of the blocks of data are ALUs (Attribute Level Utility scores). There are as many ALU blocks of data as there are attributes.

Mon Mar 22 13:30:14 1999  
 Customer Satisfaction Research  
 Checking - May 1997  
 Whole Market Utilities  
 Average Utility Analysis: Single Run Mode  
 Re-normalize Attribute Utilities: Off

Respondents:	Whole Mrk 615.00
--------------	---------------------

Average Attribute Range Values	
Monthly Fee	59.00
Transaction Errors	56.87
Minimum Balance to Waive Fee	53.13
Bank ATM fees	45.36
Quick & Efficient Transactions	40.04
Interest in Solving my Problems	39.47
Staff Knowledge	37.82
Branch Hours	37.20
Ease of Problem Resolution	34.44
Transaction Fee	34.35
Wait Time for Teller	33.34

Ease of Problem Resolution	
Talk to 1 person to res prob	64.40
Talk to 2-3 people to res prob	50.00
Talk to 4+ people to res prob	33.98

Interest in Solving my Problems	
Always inter. in solving prob	64.62
Usually inter. in solving prob	54.56
Rarely inter. in solving prob	29.15

**The First Block of Data Are Average Attribute Range Values (AARV's)**

**The Subsequent Blocks of Data are ALU's (Average Level Utilities)**

### Average Attribute Range Value Score (AARVs)

- AARV's represent the overall importance of an attribute (i.e., don't represent percentages)
- These numbers are calculated as the difference between the highest and lowest level utility values for that attribute for each respondent, averaged across all respondents.

### Average Level Utilities Score (ALUs)

- Average of level utility values across respondent group
- Values range from 0 - 100
- Interpretation Rule of Thumb
  - Values above 55 imply strong preferences
  - Values between 45 - 55 imply neutrality
  - Values below 45 imply strong dislikes

## ALU and AARV calculation

- Utility scores are calculated for each respondent's attribute level preference based on their responses to the survey questions.
- **Average Level Utilities (ALU)** represent the average of all respondent utility scores for a particular attribute level.
- **Attribute Range Value (ARV)** scores are calculated for each respondent. These ARVs represent the highest minus the lowest level utility scores for a particular attribute.
- The average of the ARVs across all respondents represents the **Average Attribute Range Value (AARV)** score for one attribute.

## ALU and AARV calculation example

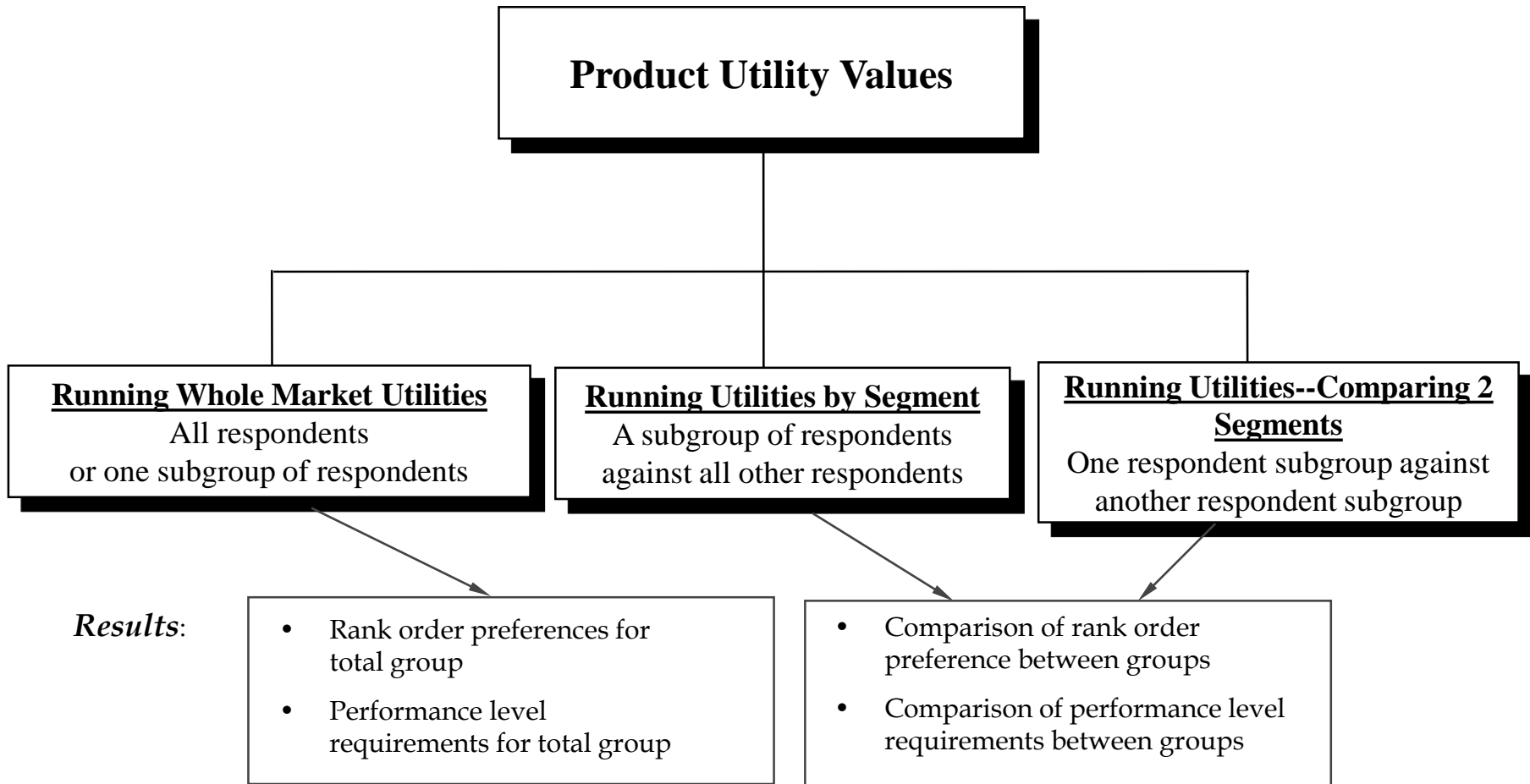
	Respondent 1 Utility Score	Respondent 2 Utility Score	Respondent 3 Utility Score	Average Level Utility Score
<b>Problem Resolution Speed</b>				
Immediately	60	90	90	80
Same day	58	60	25	48
Next day	30	50	20	33
Within Three days	30	10	20	20
<b>Attribute Range Value</b>	30	80	70	60

AARV  
SCORE

### ■ Interpretation:

- Respondent 1 likes immediate problem resolution and dislikes over three days for problem resolution. Respondent 2 strongly prefers immediate problem resolution and strongly dislikes over three days for problem resolution
- Based on the attribute range value score (80), respondent 2 is extremely sensitive to changes in problem resolution delivery. Slowing service any would irritate this respondent the most.

**Utility values should be examined and compared in multiple ways. There are three approaches to subgroup analysis.**



## **B. Practice**

- 1. Which Buyer Values Are Most Important Overall? (Running Whole Market Utilities)**
- 2. Which Buyer Values Are Most Important By Segment? (Utilities by Segment)**
- 3. Are the Buyer Values Between Two Segments Really Different? (Manually Comparing Two Segments Using Significance Testing)**
- 4. Visualizing Buyer Values Differences (Using Charts)**
- 5. Are the Buyer Values Between Three or More Segments Really Different? (Comparing Multiple Segments with Significance Testing; Manual)**
- 6. Batch Mode**
- 6. How Can I Scan for All Significant Buyer Value Differences Without Setting Up Run Groups (Automated Segment Scanning)**

## Example 1: Which Buyer Values Are Most Important Overall? (Running Whole Market Utilities)

Question:

- What are the most and least important values for checking account respondents?

Steps:

- Open Decision Support Sciences Model
- Open Preference File
- Choose Model to Analyze
- Run Utilities

Results: The Describe Utility Report which contains:

- Rank order of utility values for checking account customers
- Preference for attribute levels

**Note:** Let's assume that you are the retail product manager at a hypothetical bank called Citizens Fidelity Bank. The examples and attributes in the practice sections of this manual will refer to this bank, which will be a general guide for the conclusions drawn about the reports. In this example we will analyze the model including credit card account customers. The file the data is stored in is called bank.prf. Several different examples are given of different segments of customers to give you an idea of segments that are more useful for analysis. Interpretations and conclusions regarding the data are given as an example of how conclusions are drawn from the reports.

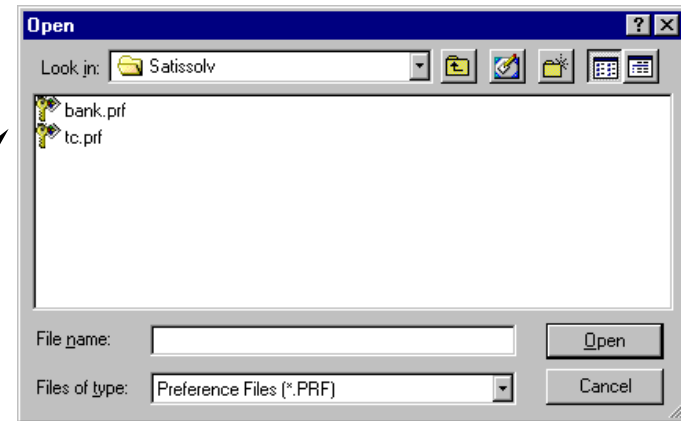
## Example 1: Which Buyer Values Are Most Important Overall? (Running Whole Market Utilities)

### ■ Open ProductSolve™

- Click on Start - Programs - Decision Support Sciences Model - ProductSolve™

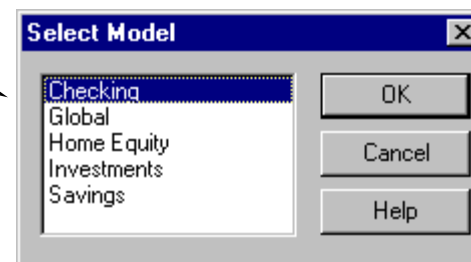
### ■ Open Preference File

- Click File, Open, Open Preference File
- Select the appropriate “.prf” file (e.g., bank.prf) under the c:\ProductSolve™ subdirectory



### ■ Choose the Business Line to Analyze (e.g. Checking)

- Select which business line to analyze (e.g. Checking) using the Select Model dialog.

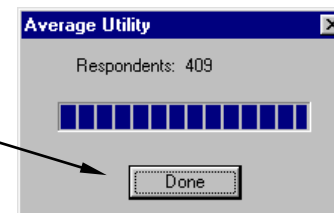
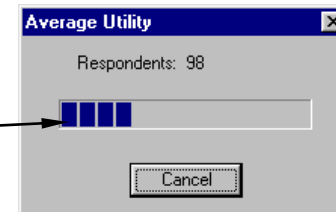
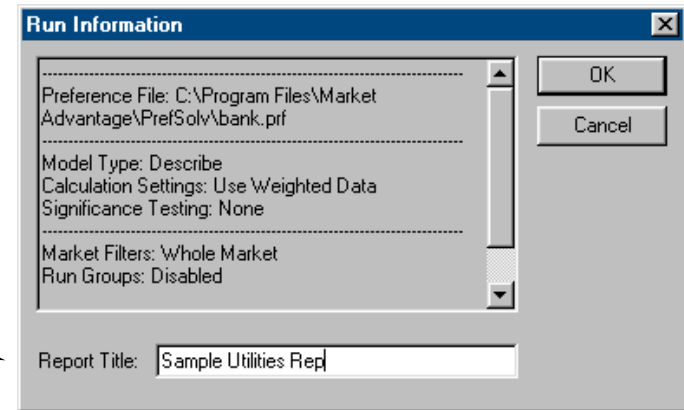




## Example 1: Which Buyer Values Are Most Important Overall? (Running Whole Market Utilities)

### ■ Run an Average Utility Calculation

- Select Describe, Execute
- (Optional) Enter a descriptive report title of the analysis in the Run Information dialog box, and check to ensure all the report settings are correct. This title will appear in the output report. Click OK. Note: See the appendix for a more detailed description of the functions of this dialog box.
- A progress indicator dialog box will appear as the individual respondent data is being read and aggregated. To stop this run, you can click on the Cancel button.
- Click the done button on the progress indicator when the run has completed.



## Example 1: Which Buyer Values Are Most Important Overall? (Running Whole Market Utilities)

– Interpreting the Utility Value Analysis Results –

Whole Market Utilities  
Average Utility Analysis: Single Run Mode  
Re-normalize Attribute Utilities: Off

Respondents:	Whole Mrk 615.00
--------------	---------------------

Average Attribute Range Values	
Monthly Fee	59.00
Transaction Errors	56.87
Minimum Balance to Waive Fee	53.13
Bank ATM fees	45.36
Quick & Efficient Transactions	40.04
Interest in Solving my Problems	39.47
Staff Knowledge	37.62
Branch Hours	37.20
Ease of Problem Resolution	34.44
Transaction Fee	34.35
Wait Time for Teller	33.34
Problem Resolution Speed	33.09
Interest Rates	30.53
Professionalism	30.43
Follow up on Problems	29.87
Account Information Speed	29.43
Staff Friendliness	29.05
Staff Communication	28.99
Customer Treatment	26.15

Proactive Bank Representative	
Monthly contact	49.02
Quarterly contact	50.07
Yearly contact	50.15
Never contacts me	48.86

Banker Understands my Needs	
Understands banking needs	55.81
Doesn't understand banking needs	43.19

### ■ Conclusions:

- Notice the high AARV's at the top of this report. From this it is evident that the checking account respondents at Citizens Fidelity place the most value on monthly fees, transaction errors, and minimum balance to waive fees when making purchase decisions.
- Respondents are less concerned with staff friendliness, and staff communication, and customer treatment.
- In the second part of the report are found the Average Level Utilities (ALU's). These are the individual operational levels for each of the AARV's. Thus the AARV "Proactive Bank Representative" has four operational levels. Respondents have the strongest preference for yearly contact with their representative, and the least preference for a representative that never contacts the customer. The range of ALU's within this attribute is small, indicating respondents will be relatively insensitive to a changes in that attribute.

## Example 2: Which Buyer Values Are Most Important By Segment? (Utilities by Segment)

### Question:

- Do the respondents of one segment differ in utility from the overall market? (e.g. Checking account customers that never use an ATM vs. all checking account customers)

### Steps:

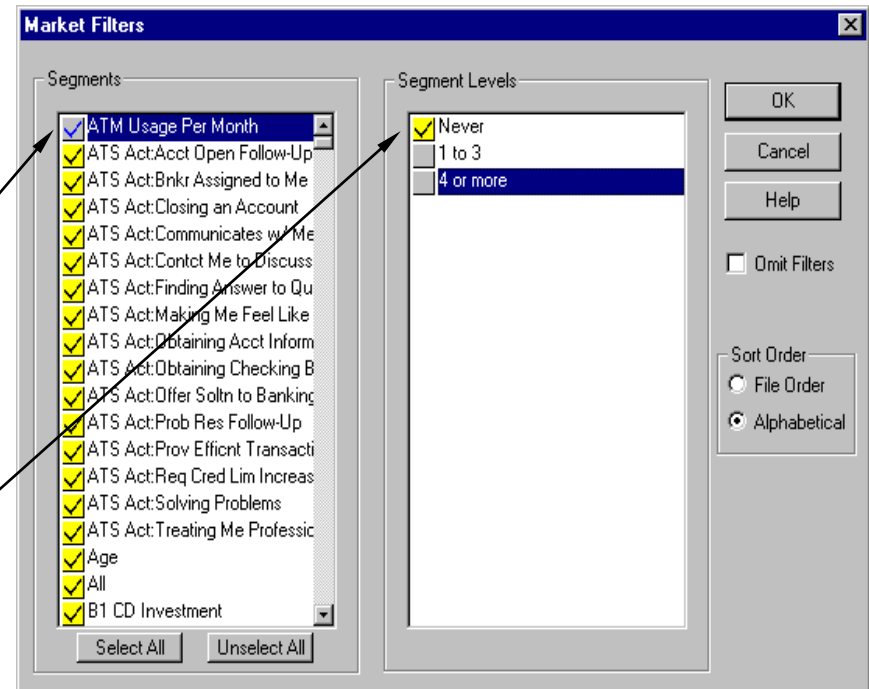
- Open ProductSolve™ (skip if it is already open)
- Open the desired Preference File
- Choose Business Line to Analyze (e.g. checking)
- Select any Market Filters desired (e.g. non-ATM users)
- Run Utilities

### Results:

- Two types of ranked utility values (attribute and level utilities) for non-ATM users only

## Example 2: Which Buyer Values Are Most Important by Segment? (Utilities by Segment)

- Open ProductSolve™ (skip if it is already open)
- Open the desired Preference File
- Choose the Business Line to Analyze
- Select Market Filters
  - Select Analysis Setup, Market Filters
  - In the Segments box, click the checkmark that is left of the defining attribute for this group. (e.g. 'ATM Usage per Month') The yellow check marks in the Segment Levels window should become empty gray boxes indicating they have been deselected.
  - Select the level that describes the desired segment under Segment Levels. (e.g. 'Never') This segment will have a blue checkmark by it, indicating only some of the levels have been selected.
  - Select OK
- Run Utilities
  - Select Describe, Execute, OK



## Example 2: Which Buyer Values Are Most Important by Segment? (Utilities by Segment)

– Utility Value Analysis Results –

Customer Satisfaction Research  
 Checking - May 1997  
 Average Utility Analysis: Single Run Mode  
 Re-normalize Attribute Utilities: Off

Whole Mrk	
Respondents:	211.32
<b>Average Attribute Range Values</b>	
Transaction Errors	60.38
Monthly Fee	57.04
Minimum Balance to Waive Fee	51.12
Quick & Efficient Transactions	43.88
Interest in Solving my Problems	40.32
Staff Knowledge	38.05
Branch Hours	37.06
Ease of Problem Resolution	36.73
Wait Time for Teller	34.57
Follow up on Problems	32.19
Professionalism	31.77
Problem Resolution Speed	31.59
Transaction Fee	31.22
Account Information Speed	31.19
Interest Rates	30.85
Staff Communication	28.72
Staff Friendliness	24.20
Customer Treatment	24.18
Bank ATM fees	24.05
Telephone Hold Time	22.98
Personal Banker Wait Time	22.60
Banker Understands my Needs	21.63
Travel Time	20.93
Follow Up after Account Opening	14.89

### ■ Conclusions:

- The label ‘Whole Mrk’ now refers to non-ATM user respondents...because we included only those respondents.
- By comparing the AARVs in this report with those of all respondents in the first example, it can be determined that Citizen Fidelity’s non-ATM user utility values are similar to those of the total market. The most important attribute has changed from monthly fee to transaction errors, and Bank ATM fees has disappeared from the top 5 attributes because that attribute would not be important to people that never used an ATM.
- It would be useful to see both the whole market and non-ATM user data in the same report. This can be done using method 2.

## Example 2: Which Buyer Values are the Most Important by Segment? (Utilities by Segment: Method 2)

### Question:

- Do the respondents of one segment differ in their preference (preference is another name for importance or utility) for any given attribute compared to other segments? (e.g. Citizens Fidelity's non-ATM user checking account customers vs. all checking account customers)

### Steps:

- Open Decision Support Sciences Model (skip if model already open)
- Open Preference File
- Choose the Business Line to Analyze
- Setup Run Groups
- Run Utilities

### Results:

- Ranked utility values for whole market and non-ATM users only

## Example 2: Which Buyer Values are the Most Important by Segment? (Utilities by Segment: Method 2)

### ■ If the application is not already open:

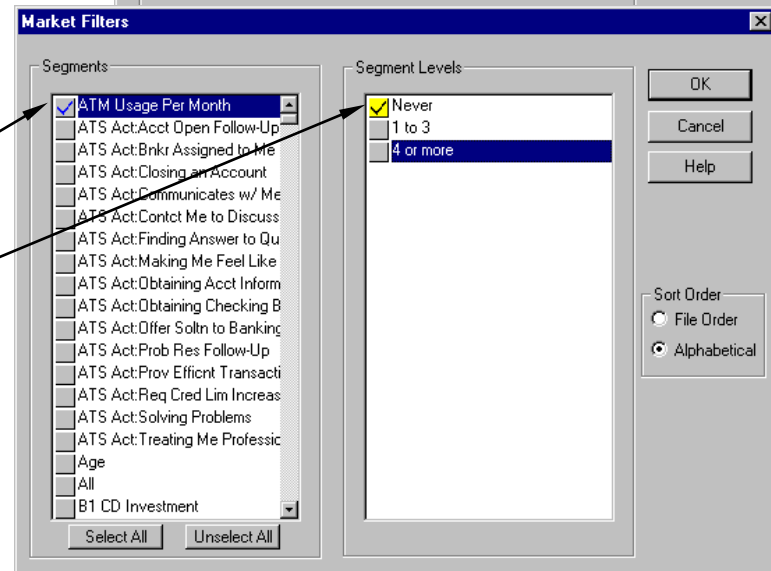
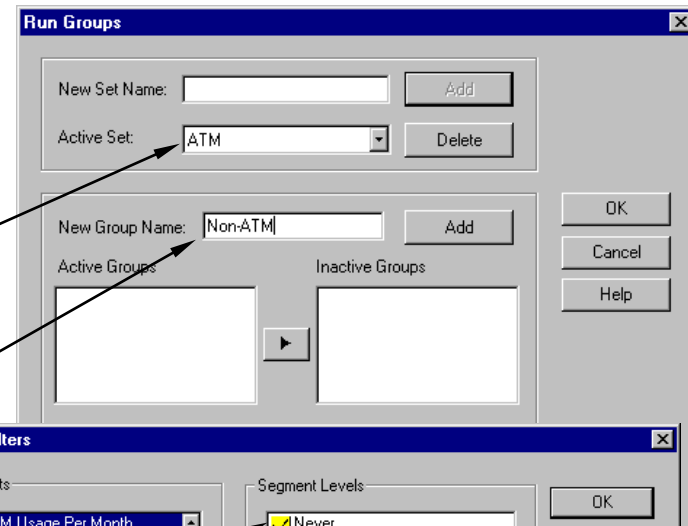
- Open ProductSolve™
- Open the desired Preference File
- Choose Business Line to Analyze

### ■ Setup Run Groups

- Select Analysis Setup, Run Groups
- Enter a new set name (e.g. ATM) and select Add, or choose an existing set.
- Specify a run group name ("Non-ATM"), then click Add.
- Market Filters dialog box appears
- Select a segment level (e.g. ATM Usage per Month) under Segments, level (e.g. Never) under Segment Levels (make sure the only checked boxes are the levels of the segment you desire to analyze)
- Select OK (twice)

### ■ Run Utilities

- Select Describe, Execute, OK



\*note: if market filters were already selected (i.e. in the previous example), this report will not run correctly unless all filters are selected or the preference file is reopened.

## Example 2: Which Buyer Values are the Most Important by Segment? (Utilities by Segment: Method 2)

– Interpreting the Utility Value Analysis Results –

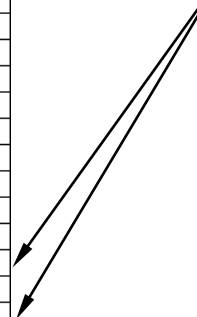
Customer Satisfaction Research  
Checking - May 1997  
Average Utility Analysis: Multiple Segment Run Mode  
Re-normalize Attribute Utilities: Off

	Whole Mrk	Non-ATM
Respondents:	615.00	211.32

Average Attribute Range Values		
Transaction Errors	56.87	60.38
Monthly Fee	59.00	57.04
Minimum Balance to Waive Fee	53.13	51.12
Quick & Efficient Transactions	40.04	43.88
Interest in Solving my Problems	39.47	40.32
Staff Knowledge	37.82	38.05
Branch Hours	37.20	37.06
Ease of Problem Resolution	34.44	36.73
Wait Time for Teller	33.34	34.57
Follow up on Problems	29.87	32.19
Professionalism	30.43	31.77
Problem Resolution Speed	33.09	31.59
Transaction Fee	34.35	31.22
Account Information Speed	29.43	31.19
Interest Rates	30.53	30.85
Staff Communication	28.99	28.72
Staff Friendliness	29.05	24.20
Customer Treatment	26.15	24.18
Bank ATM fees	45.36	24.05
Telephone Hold Time	21.97	22.98
Personal Banker Wait Time	23.55	22.60
Banker Understands my Needs	21.39	21.63
Travel Time	21.65	20.93
Follow Up after Account Opening	16.35	14.89
Assigned Bank Representative	15.97	14.58
Products Meet my Financial Needs	12.10	13.84
Telephone Hours	13.42	13.46
Proactive Bank Representative	12.24	12.15

### ■ Conclusions:

- With these columns displayed together, it is much easier to see that transaction errors, ease of problem resolution, and quick and efficient transactions are more important *for non-ATM customers than the whole market*.
- Bank ATM fees and Staff friendliness are much less important to non-ATM customers.
- In many examples in this manual, run groups are used to compare the response of different groups of respondents. When Run Groups are used instead of market filters, the implicit reason is to compare two or more segments. In analyses when you employ Market Filters...be careful! Why? Market filters are exactly what they sound like...they filter out respondents until they are turned off.





### **Example 3: Are the Buyer Values Between Two Segments Really Different? (Manually Comparing Two Segments Using Significance Testing)**

Question:

- Do the utility values for respondents who do not know any employees of their bank very well differ significantly from those respondents who do have a consistent relationship with their bank?

Steps (assumes the application is not is not open):

- Open ProductSolve™
- Open the desired Preference File
- Choose the Business Line to Analyze
- Set the Desired Calculation Settings
- Setup the Run Groups
- Run Utilities

Results:

- A rank order of the utility values for both segments of respondents
- Significantly different utilities are highlighted

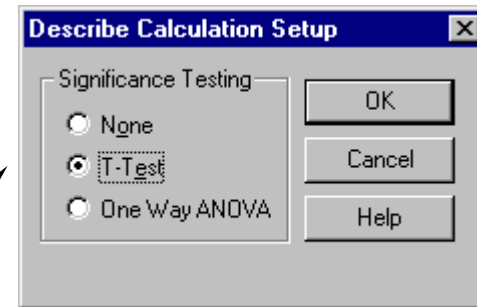
### Example 3: Are the Buyer Values Between Two Segments Really Different? (Manually Comparing Two Segments Using Significance Testing)

#### ■ If the application is not already open:

- Open ProductSolve™
- Open the desired Preference File (e.g. bank.prf)
- Choose the Business line Model to Analyze (e.g. Checking)

#### ■ Set Calculation Settings

- Select Describe, Calculation Settings, General
- Select T-test, click OK



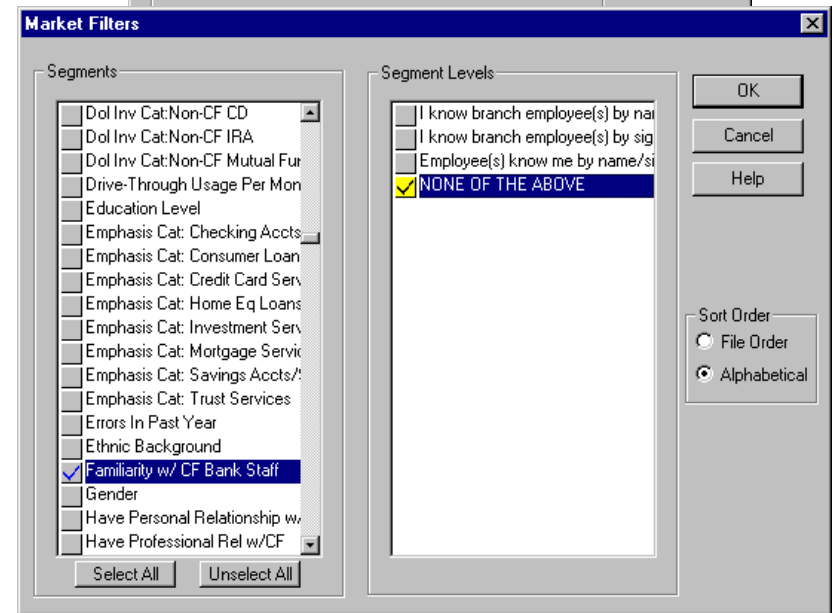
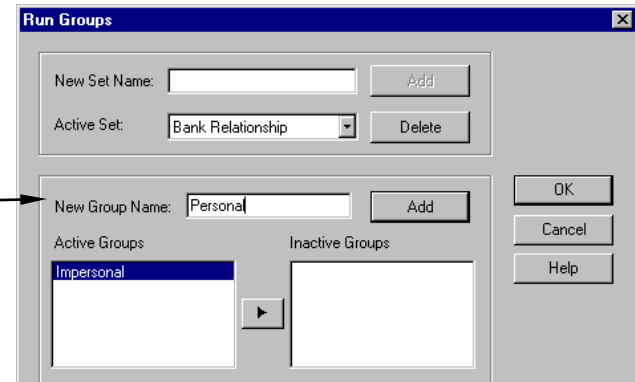
### Example 3: Are the Buyer Values Between Two Segments Really Different? (Manually Comparing Two Segments Using Significance Testing)

#### ■ Setup Run Groups

- Select Analysis Setup, Run Groups
- Enter Run Group Set name and Group name(e.g. "impersonal"), Select Add
- Select the desired characteristics (e.g. Familiarity with CF Bank Staff) under Segments, ensure that only desired options (e.g. None of the Above) are checked under Segment Levels, Select OK
- Enter Run Group name for remaining market (e.g. "relational"), Select Add
- Select the same segment as before,(e.g. Familiarity with CF Bank Staff) , then check boxes that apply to this group (e.g. all levels except None of the Above) In this example, this run group refers to customers that recognize or know the staff at their bank.
- Select OK (twice)

#### ■ Run Utilities

- Select Describe, Execute, OK



### Example 3: Are the Buyer Values Between Two Segments Really Different? (Manually Comparing Two Segments Using Significance Testing)

– Interpreting the Utility Value Analysis Results –

Average Utility Analysis: Multiple Segment Run Mode  
Re-normalize Attribute Utilities: Off  
T-Test Alpha Level: 90

	Whole Mkt	Relational	Impersonal	Deviation
Respondents:	615.00	382.61	232.39	
Monthly Fee	59.00	57.46	61.53	-4.08
Minimum Balance to Waive Fee	53.13	50.39	57.64	-7.24
Bank ATM fees	45.36	41.60	51.55	-9.95
Interest in Solving my Problems	39.47	41.43	36.24	5.19
Quick & Efficient Transactions	40.04	40.31	39.60	0.71
Staff Knowledge	37.82	37.31	38.65	-1.34
Ease of Problem Resolution	34.44	37.08	30.10	6.99
Branch Hours	37.20	36.82	37.82	-1.00
Wait Time for Teller	33.34	34.08	32.11	1.97
Problem Resolution Speed	33.09	33.84	31.86	1.99
Transaction Fee	34.35	31.92	38.36	-6.44
Professionalism	30.43	30.96	29.54	1.42
Follow up on Problems	29.87	29.28	30.85	-1.57
Account Information Speed	29.43	28.90	30.30	-1.40
Interest Rates	30.53	28.16	34.43	-6.27
Staff Communication	28.99	28.04	30.56	-2.52
Staff Friendliness	29.05	27.88	30.98	-3.10
Customer Treatment	26.15	25.09	27.91	-2.82
Personal Banker Wait Time	23.55	23.31	23.94	-0.63
Banker Understands my Needs	21.39	23.05	18.66	4.39
Telephone Hold Time	21.97	22.04	21.85	0.19
Travel Time	21.65	21.06	22.62	-1.55
Assigned Bank Representative	15.97	16.61	14.92	1.70
Follow Up after Account Opening	16.35	16.43	16.23	0.20

Ease of Problem Resolution				
Talk to 1 person to res prob	64.94	65.97	63.04	2.93
Talk to 2-3 people to res prob	49.83	49.68	50.11	-0.43
Talk to 4+ people to res prob	33.50	32.80	34.81	-2.02

Interest in Solving my Problems				
Always inter. in solving prob	64.20	65.18	62.37	2.81
Usually inter. in solving prob	54.52	54.36	54.82	-0.46
Rarely inter. in solving prob	29.68	29.09	30.76	-1.67

#### ■ Conclusions:

- Checking account customers who recognize or know the people at their bank have significantly higher ALU's for 'ease of problem resolution' and 'interest in solving my problem' than the remaining market, which indicates they are more sensitive to changes in these relational attributes.
- Non-relational customers place the highest importance on price attributes such as fees and rates and 'minimum balance to waive fees.'
- Notice also, as one would expect, 'interest in solving my problem' is significantly more important for relational customers.
- If the difference between the two groups is significantly different, the data is highlighted.



## Example 5: Are the Buyer Values Between Three or More Segments Statistically Different? (Comparing Multiple Segments with Significance Testing; Manual)

### ■ If the application is not already open:

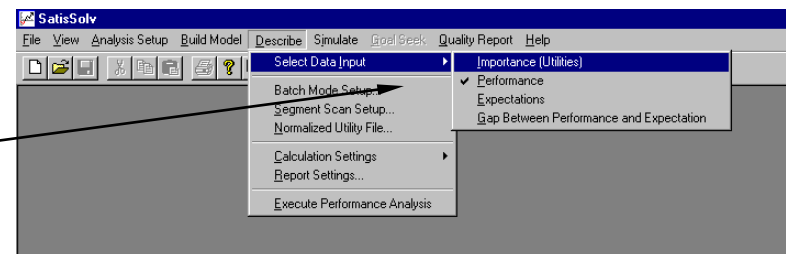
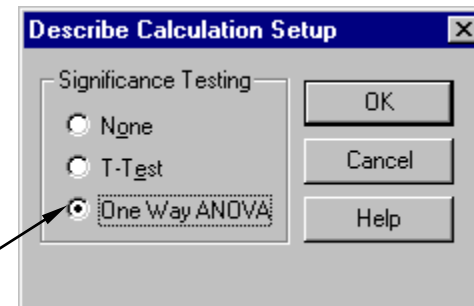
- Open ProductSolve™
- Open the desired Preference File (e.g. bank.prf)
- Choose the desired Business Line

### ■ Set the Calculation Settings

- Select Describe, Calculation Settings, General
- Select One Way ANOVA, click OK

### ■ Note: ProductSolve™ Can Report Not Just Buyer Value (Importance Data) But Performance, Expectation and Gap Data

- Under the Describe menu, choose Select Data Input, and click on the Performance option.



## Example 5: Are the Buyer Values Between Three or More Segments Really Different? (Comparing Multiple Segments with Significance Testing; Manual)

### ■ If the application is not already open:

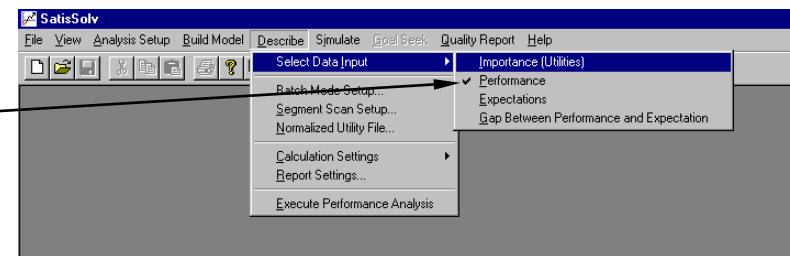
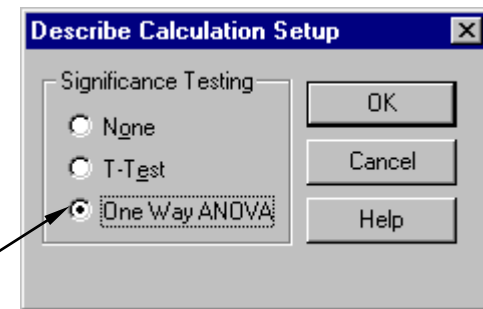
- Open ProductSolve™
- Open the desired Preference File (e.g. bank.prf)
- Choose the desired Business Line

### ■ Set the Calculation Settings

- Select Describe, Calculation Settings, General
- Select One Way ANOVA, click OK

### ■ Note: ProductSolve™ Can Report Not Just Buyer Value (Importance Data) But Performance, Expectation and Gap Data

- Under the Describe menu, choose Select Data Input, and click on the Performance option.
- Note for far more advanced capabilities related to Satisfaction (e.g. closing the gap between performance and expectation, tracking, and advanced analytics) see SatisfactionSolve.™ SatisfactionSolve™ is a superset of ProductSolve.™



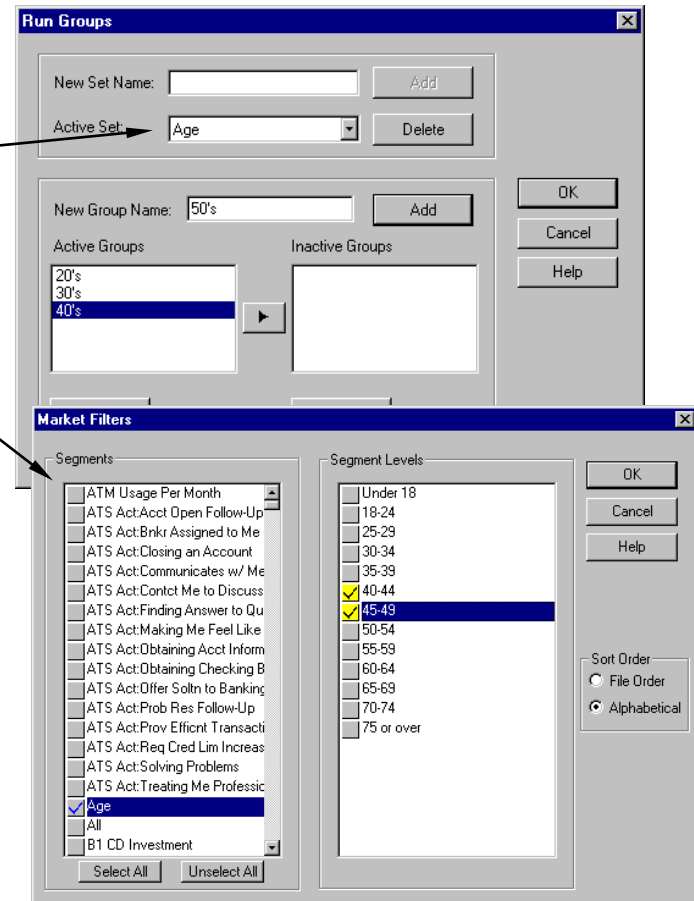
## Example 5: Are the Buyer Values Between Three or More Segments Really Different? (Comparing Multiple Segments with Significance Testing; Manual)

### ■ Setup Run Groups

- Select Analysis Setup, Run Groups
- Enter a name for the Run Group Set (e.g. "Age") and Select Add
- Create and new desired segment levels under your new run group "Age" (e.g. 20-24 and 25-29) can be selected and combined under your new title "20's". Select OK.
- Create other run groups segment levels as desired. (e.g. 30's).
- Use ANOVA analysis with three or more groups. A two group ANOVA is the same as a T-test.
- Select OK (twice)

### ■ Run the Describe Analysis

- Select Describe, Execute





## Example 5: Are the Buyer Values Between Three or More Segments Really Different? (Comparing Multiple Segments with Significance Testing; Manual)

– Interpreting the Performance Analysis Results –

Customer Satisfaction Research  
 Checking - May 1997  
 Performance Analysis: Multiple Segment Run Mode

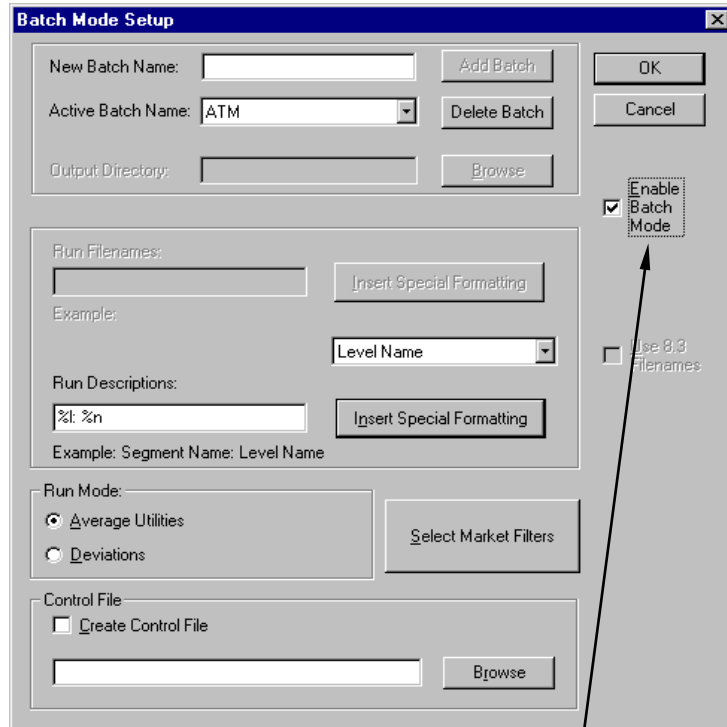
ANOVA Alpha Level: 90

	Whole Mrk	20's	30's	40's	50's	60's+	Significance
Respondents:	615.00	86.25	170.92	138.94	115.92	102.96	
<b>Performance</b>							
Products Meet my Financial Needs	53.00	63.63	48.49	53.12	49.57	55.32	0.05
Proactive Bank Representative	49.18	57.45	37.02	46.00	49.53	66.30	0.00
Branch Hours	53.07	53.65	54.72	58.90	48.81	46.75	0.02
Telephone Hold Time	47.51	53.29	51.03	47.44	46.37	38.17	0.02
Personal Banker Wait Time	44.60	48.53	43.67	44.87	46.56	40.30	0.41
Interest Rates	48.80	47.78	51.51	46.51	47.76	49.42	0.69
Follow Up after Account Opening	43.73	47.03	40.23	43.00	53.32	36.97	0.10
Customer Treatment	45.51	46.46	47.93	41.80	49.14	41.64	0.36
Follow up on Problems	40.80	45.72	41.72	39.39	42.80	34.83	0.37
Telephone Hours	51.42	45.71	54.47	48.19	53.82	52.78	0.31
Problem Resolution Speed	38.29	44.07	40.86	34.48	37.70	34.95	0.12
Assigned Bank Representative	47.93	43.32	44.41	43.62	55.85	54.55	0.11
Wait Time for Teller	45.30	43.31	45.57	48.84	47.25	39.53	0.19
Staff Friendliness	38.70	43.09	40.81	32.58	34.25	44.80	0.05
Quick & Efficient Transactions	32.35	40.22	34.87	31.43	27.97	27.75	0.04
Account Information Speed	35.70	40.14	35.47	33.53	34.76	36.37	0.71
Banker Understands my Needs	43.27	39.83	51.59	42.92	37.80	38.99	0.11
Staff Communication	39.95	39.04	49.04	34.72	36.66	36.41	0.01
Staff Knowledge	35.29	36.15	41.13	28.12	37.02	32.58	0.01
Travel Time	40.46	35.60	43.53	42.63	41.81	35.01	0.22
Ease of Problem Resolution	33.03	33.29	34.46	31.05	35.78	30.02	0.73
Transaction Fee	32.09	32.15	36.71	28.34	31.97	29.57	0.38
Professionalism	36.01	31.56	38.76	34.80	33.83	39.27	0.47
Interest in Solving my Problems	31.04	29.27	41.32	28.60	26.34	24.07	0.00
Monthly Fee	28.03	26.54	33.68	29.79	28.93	16.52	0.00
Transaction Errors	21.02	24.49	23.49	20.59	15.45	20.87	0.09
Bank ATM fees	29.55	21.02	29.84	30.91	28.17	35.93	0.08
Minimum Balance to Waive Fee	27.13	17.89	19.95	22.58	36.52	42.71	0.00

### ■ Conclusions:

- In this example, we report performance data.
- Notice there are significant differences in how customers of different ages rate Citizens Fidelity Bank's performance on *many* services.
- The last column shows the relative significance of the differences between the segments. This column ranges from 0 to 1 and reports the probability (the p value) that the significance for that attribute is occurring by chance alone. Interpretively, then, a score of 0.01 means that there is only one chance in 100 (0.01) that that difference is *not* significant.

## Example 6: Running Utilities — Using Batch Mode for Multiple Reports



- Important: Check the box to ‘Enable Batch Mode’ to create batch reports. Batch mode will be automatically disabled after one run.

### ■ Batch Mode Setup

- Use batch mode to automatically generate multiple similar Describe reports. This is especially useful if the same set of segments and levels are the repeated focus for analysis. Utilities for each segment level will be listed on a separate report, but all the reports will be generated in one batch.
- To begin, create a new batch by entering a Batch name in the text entry box at the top, and select the “Add Batch” button, in a similar manner to creating run groups.
- After a batch has been created, click on the ‘Select Market Filters’ button. Select all of the segments and levels under consideration. One report will be generated for each level that is selected.
- The ‘Run Descriptions’ edit box in the dialog determines how each report page is labeled. Use the drop-down box to select a name format, and then select the ‘Insert Special Formatting’ button. Usually, you will want at least the level name to be included in the description.

## Example 6: Running Utilities — Comparing Two Segments with Significance Testing: Using Batch Mode

– Interpreting the Analysis Results –

### ■ Conclusions:

- Checking account customers who recognize or know people at their bank have significantly higher ALU's for 'ease of problem resolution' and 'interest in solving my problem' than the remaining market, which indicates they are more sensitive to changes in these relational attributes.
- Non-relational customers place the highest importance on 'monthly fee' and 'minimum balance to waive fees' while relational owners rank those attributes second and third.
- 'Interest in solving my problems' relational customers place more importance on the bank showing concern and interest in problems, although the attributes are ranked in the same order.
- Deviations between the two groups that are statistically significant are highlighted.

Tue Jan 19 15:15:27 1999

Customer Satisfaction Research  
Checking - May 1997  
Average Utility

ATM Usage Per Month: Never

Average Utility Analysis: Batch Run Mode  
Re-normalize Attribute Utilities: Off  
T-Test Alpha Level: 90

**Batch Output**

ATM Usage Per Month: Never  
ATM Usage Per Month: 1 to 3  
ATM Usage Per Month: 4 or more  
Errors In Past Year: No errors  
Errors In Past Year: One error  
Errors In Past Year: Two or more errors  
CB Combined 3-Cluster: Not Community B  
CB Combined 3-Cluster: Errors/rates  
CB Combined 3-Cluster: Personal Service  
CB Combined 3-Cluster: Speed

	Whole Mrk	ATM Usage P	Rest	Deviation
Respondents:	615.00	211.32	403.68	
Quick & Efficient Transactions	40.04	43.88	38.04	5.84
Transaction Errors	56.87	60.38	55.03	5.35
Follow up on Problems	29.87	32.19	28.66	3.53
Ease of Problem Resolution	34.44	36.73	33.25	3.48
Account Information Speed	29.43	31.19	28.50	2.69
Products Meet my Financial Needs	12.10	13.84	11.18	2.66
Professionalism	30.43	31.77	29.72	2.05
Wait Time for Teller	33.34	34.57	32.69	1.88
Telephone Hold Time	21.97	22.98	21.44	1.55
Interest in Solving my Problems	39.47	40.32	39.02	1.29

ATM Usage Per Month: Never

---

Ease of Problem Resolution				
Talk to 1 person to res prob	64.94	65.97	63.04	2.93
Talk to 2-3 people to res prob	49.83	49.68	50.11	-0.43
Talk to 4+ people to res prob	33.50	32.80	34.81	-2.02

Interest in Solving my Problems				
Always inter. in solving prob	64.20	65.18	62.37	2.81
Usually inter. in solving prob	54.52	54.36	54.82	-0.46
Rarely inter. in solving prob	29.68	29.09	30.76	-1.67

## Example 7: How Can I Scan for All Significant Differences without Setting Up Run Groups (Automated Segment Scanning)

Example Question:

- How do I scan for all the differences (buyer values or otherwise) across all attributes and across all segments all at once?

Steps (assumes model is open):

- If the Application is Not Open:
  - Open ProductSolve™
  - Open the desired Preference File
  - Open the desired Business Line
- Select Describe-Segment Scan Setup
- Fill Out Segment Scan Dialog Box
- Execute Segment Scan Analysis

Results:

- A Segment Scan Report of all the attributes (in rows) by all the segment (in columns)
- Any statistically significant differences are highlighted.

## Example 7: How Can I Scan for All Significant Differences without Setting Up Run Groups (Automated Segment Scanning)

### ■ Select Which Attributes to Scan

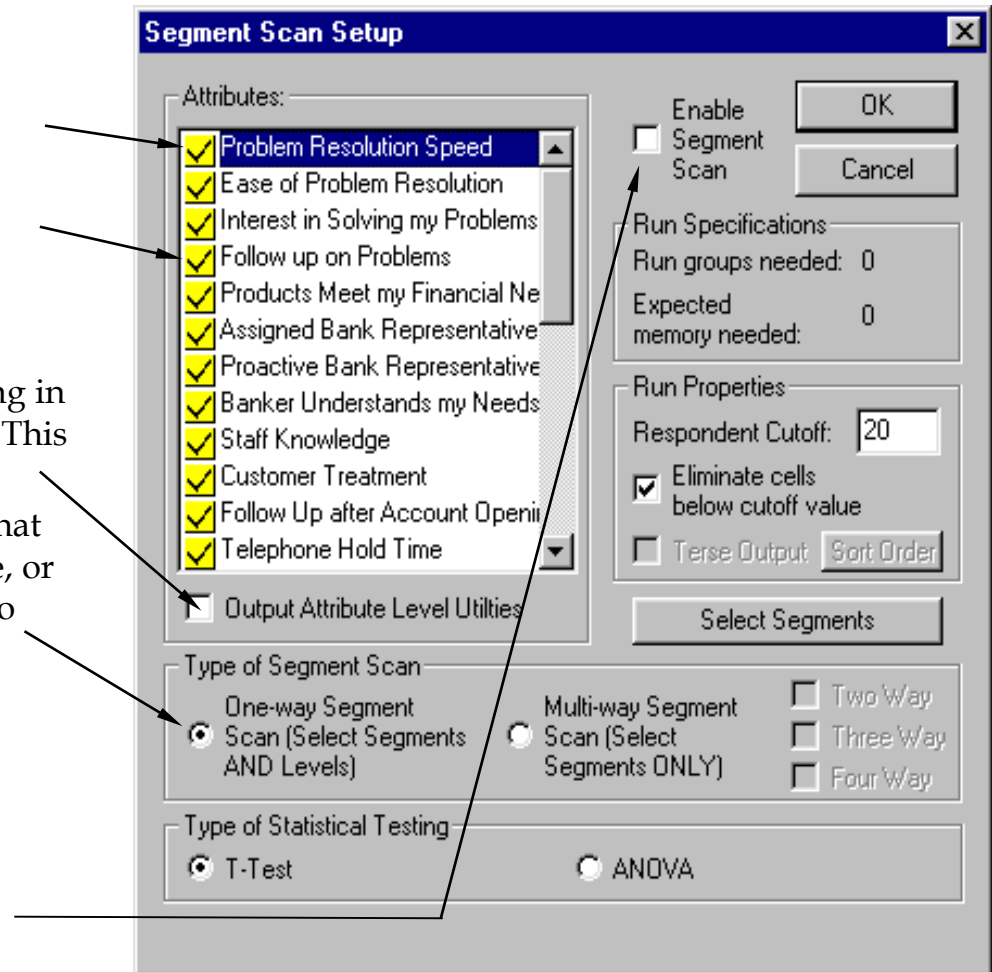
- Select individual attributes by clicking on each one.
- Select all attributes by quickly double clicking on any single attribute.

### ■ Select Other Options (Optional)

- You may select to test levels (ALU's) in addition to attributes (AARV's) by clicking in the Output Attribute Level Utilities box. This will significantly slow down the analysis.
- You may elect to set up the scanning so that the utilities are crossed by one, two, three, or four segments simultaneously. (e.g. a two way crossing example would be all the selected attributes by income by gender.) Each additional dimension exponentially increases processing time.

### ■ Click on Enable Segment Scan

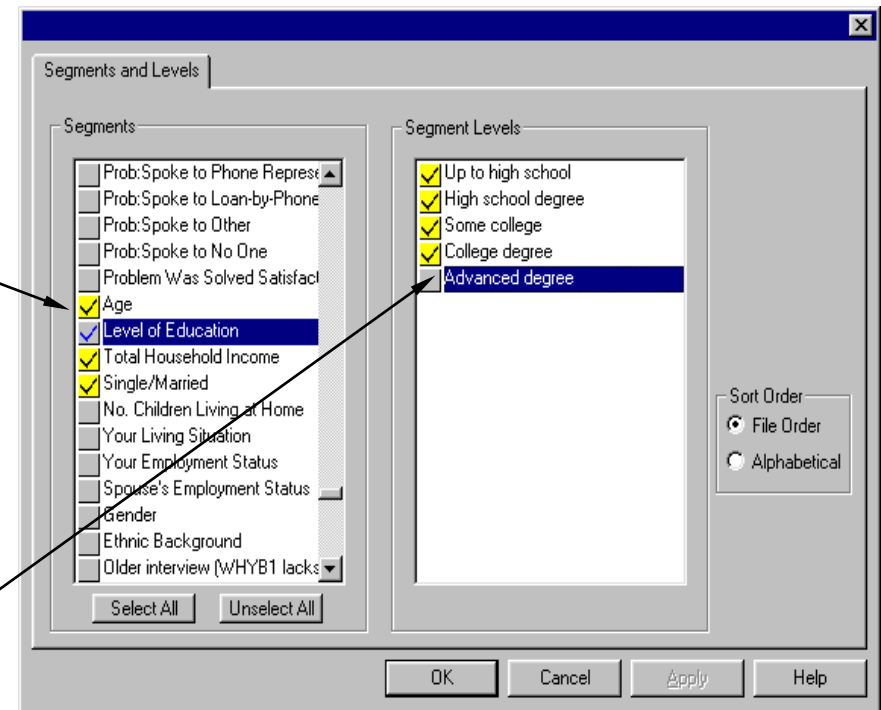
- Because of the long run times, this box is cleared after every run.



## Example 7: How Can I Scan for All Significant Differences without Setting Up Run Groups (Automated Segment Scanning)

### ■ Select Which Segments to Scan

- Click on the button entitled “Select Segments” from the Segment Scan Setup dialog on the previous page.
- The Segment sub-dialog box will appear.
- Select individual segments by clicking on each one.
- Select all segments by clicking on the “Select All” button below the Segments pane.
- Eliminate individual segment levels by clicking on the levels in the right pane.
- If you select only some of the segment levels, the segment itself in the left pane will remain checked but the color will change to a blue check mark on a grey field.



### ■ Click OK on Both Dialogs

### ■ Click Execute in the Describe Menu

## Example 7: How Can I Scan for All Significant Differences without Setting Up Run Groups (Automated Segment Scanning)

Table3

Sun Oct 10 20:55:11 1999

Customer Satisfaction Research  
Investments - May 1997  
Average Utility Analysis: Segment Scan Mode  
Re-normalize Attribute Utilities: Off

*– Segment Scan Results –*

Attributes	Age				Level of Education			
	35-39 (96)		40-44 (70)		High school degree (97)		Some college (141)	
	Difference	Significance	Difference	Significance	Difference	Significance	Difference	Significance
Assigned Bank Representative	-4.69	0.01	-0.83	0.67	-1.42	0.41	1.31	0.38
Proactive Bank Representative	1.27	0.50	0.59	0.79	0.43	0.82	1.95	0.23
Banker Understands my Needs	-7.65	0.00	6.12	0.02	2.76	0.23	-0.55	0.78
Staff Knowledge	-9.40	0.00	7.65	0.01	-4.35	0.11	-0.88	0.71
Customer Treatment	-0.41	0.89	-1.53	0.64	-0.97	0.73	7.07	0.00
Follow Up after Account Openin	-3.77	0.02	-2.70	0.13	-0.70	0.65	1.32	0.33
Telephone Hold Time	-3.61	0.15	-4.27	0.14	6.23	0.01	0.20	0.93
Quick & Efficient Transactions	-6.89	0.01	2.01	0.52	1.67	0.54	-3.97	0.09
Wait Time for Teller	-9.78	0.00	-4.62	0.20	4.22	0.18	1.17	0.67
Personal Banker Wait Time	-2.26	0.39	-3.02	0.32	3.49	0.19	3.09	0.18
Account Information Speed	-2.78	0.34	1.80	0.59	0.20	0.95	-3.69	0.14
Transaction Errors	-4.67	0.17	-0.08	0.98	2.37	0.48	-3.58	0.22
Professionalism	-4.01	0.15	0.13	0.97	-3.86	0.17	-1.52	0.53
Staff Communication	-6.30	0.02	1.58	0.61	0.96	0.72	1.61	0.49
Staff Friendliness	-1.12	0.67	4.05	0.18	-1.38	0.60	7.59	0.00
Travel Time	-3.94	0.14	4.45	0.14	-2.47	0.35	-3.22	0.16
Branch Hours	-0.20	0.87	1.14	0.40	-1.07	0.36	2.69	0.01
Telephone Hours	-2.50	0.22	-0.35	0.88	1.67	0.41	-2.19	0.21
Minimum Balance to Waive Fee	1.54	0.67	3.53	0.40	-4.95	0.17	-1.57	0.62
Monthly Fee	2.10	0.51	-4.97	0.17	-4.55	0.15	-3.33	0.22
Transaction Fee	6.34	0.02	1.27	0.69	-7.35	0.01	-2.95	0.22
Interest Rates	4.66	0.15	-4.73	0.20	-6.19	0.06	5.24	0.06
Bank ATM fees	0.56	0.87	-8.55	0.03	-13.18	0.00	-1.31	0.66

Average Utility Report

### ■ Conclusions:

- In this example, two segments are shown, Age and Level of Education. Two levels are displayed per segment. (e.g. 35-39 year olds and 40-44 year olds.)
- The number in parentheses at the top of each column is the number of respondents. Columns are suppressed if the number of respondents falls below the respondent cutoff designated in the Segment Scan Setup dialog.
- The difference column designates the deviation from the rest of the respondents not in the column.
- The cells are highlighted if the significance falls below the significance cutoff.

---

## II. Real-World Outcome “What-iffing” (Simulation Modeling)



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## II. Market Response “What-iffing” (Simulation Modeling)

### A. Theory

1. Preference
2. Switching
3. Retention
4. Likelihood of Purchase
5. Percent Likelihood of Purchase
6. Marginal Benefit
7. Revenue Contribution

## Based on the types of survey questions asked, ProductSolve™ can produce up to eight different types of outcomes.

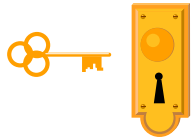
### *- Type of Model -*

- Preference Share Model
- Switching Model  
Retention Model
- Likelihood of Purchase
- Percent Likelihood of  
Purchase
- Dollar Volume Opportunity
- Marginal Benefit

### *- Question Answered -*

- Is this solution more valued than my current offering?
- Is the increased preference for my new concept enough to incent a respondent to switch from their current offering to the new offering?
- Expressed as a likelihood, how likely is it that the respondents will buy the offering?
- What percentage of respondents will purchase the offering?
- How much revenue will this new concept generate?
- Which offering is the most attractive at the least cost to implement?

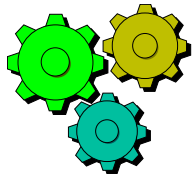
## The Preference Share Model tests the appeal of the new offering.



### What It Is

A preference share models allow us to create and test different delivery scenarios involving service, price, channel, etc., and determine the level of appeal or “preference” from a consumer perspective. It can:

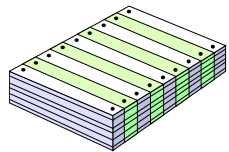
- 1) Simulate “actions” that occur in the real market (e.g., competitive entry, competitive withdrawal)
- 2) Simulate effect of a new strategy on competitors and their response.



### Methodology

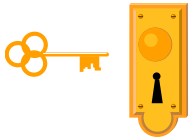
Preference models use additive conjoint simulation modeling algorithms to estimate for each respondent which product is the most attractive...and by how much. The individual preferences from each respondent are then aggregated to produce a realistic real-world market model. Preference models provides the foundation for the RWO outcome models (e.g. switching, retention, likelihood of purchase, percent likely to purchase, dollar volume opportunity, and marginal benefit models). RWO models simulate behavioral change.

“Preference Share” scores are reported for each offering. A preference share model is an attitudinal indicators only. One must discover how much added preference equates to how much behavioral change. The “how much” comes from calibration questions asked of each respondent in the survey. This subsequent calibration creates the RWO models discussed above.



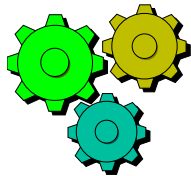
### Deliverable

The **Switching Model** calculates the percentage of the market that will switch to a new concept offering.



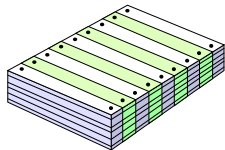
### What It Is

The switching model calculates the percentage of respondents that will switch from their current product choice to a given concept.



### Methodology

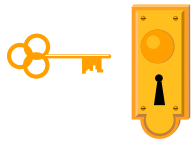
The switching model uses “switching threshold” questions from the survey to determine how much preference increase (from the preference model ) is enough to incent a customer to switch.



### Deliverable

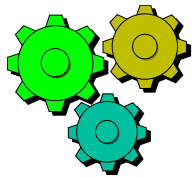
Percent of the respondents that switch to a new concept. Revenue volume changes associated with switching can be calculated from these numbers. See the revenue contribution model.)

The **Retention Model** calculates the percentage of respondents that will be retained when a product or service is changed.



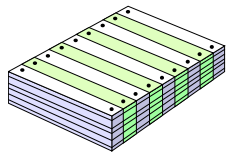
### What It Is

The retention model is a variation of the switching model. It calculates the percentage of respondents that will not switch to a new product given a set of competitors. It also produces the percentage of customers that will switch to each of the competitors.



### Methodology

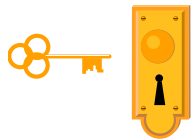
The retention model uses the “switching threshold” questions as described under the switching model.



### Deliverable

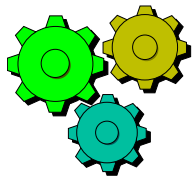
Reports include both percent of market that is retained and the percent of market that switches to a competitive concept. Volume changes associated with switching can be calculated from these numbers. In the retention model, unlike the switching model, each respondent is allowed to switch to only one concept, so that the percentages add to 100%.

## The Likelihood of Purchase Model calculates the average likelihood that a product will be purchased.



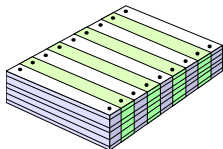
### What It Is

The likelihood of purchase (LOP) model allows you to identify the strength of purchase appeal that a product will demonstrate.



### Methodology

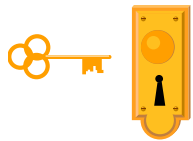
The LOP model integrates each respondent's preference for the product concept and likelihood of purchase estimates using a mathematical procedure (a respondent-level logistic regression.)



### Deliverable

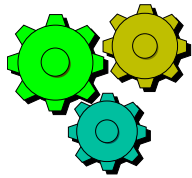
The output of the LOP model is the average percent likelihood of purchase for all product concepts.

## The Percent Likelihood of Purchase Model calculates the percentage of respondents that will most likely buy a particular product.



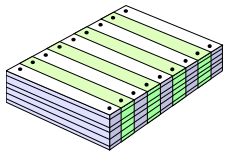
### What It Is

The percent likelihood of purchase model (pLOP) allows you to identify the percentage of respondents whose purchase likelihood for a given product offering is above a given cutoff threshold.



### Methodology

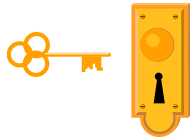
The model integrates each respondent's preference for the product concept and likelihood of purchase estimates using a mathematical procedure called a respondent-level logistic regression.



### Deliverable

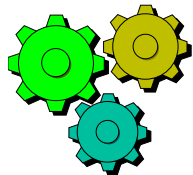
The report shows the *percent of respondents likely to purchase* the product in question. This determination is made if the likelihood is above a given cutoff LOP (Likelihood of Purchase) value (often 80-90%). Revenue estimates can also be then calculated using the Percent LOP model. This is what makes the pLOP model different than the LOP model.

The **Marginal Benefit Model** calculates the appeal of new products normalized to the cost of that product.



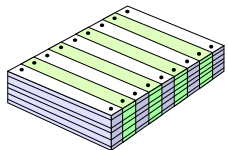
**What It Is**

The marginal benefit model integrates a standard preference share model with cost to implement (CTI) and cost to maintain (CTM) data for every level of every attribute.



**Methodology**

The marginal benefit model divides the raw aggregate preference sum for each product by the real world cost of that product. Marginal benefit models are therefore termed “bang for the buck” models.

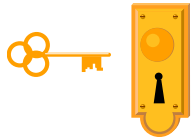


**Deliverable**

The reporting module presents Value scores, where the higher score represents the higher benefit per dollar cost.

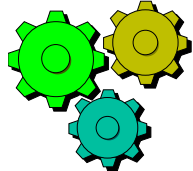


**The Revenue Contribution Model calculates the estimated revenue that a new product will produce.**



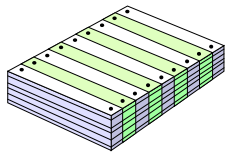
**What It Is**

The revenue contribution model allows you to determine which new concept will produce the highest amount of revenue.



**Methodology**

The model integrates each respondent's preference for the product concept with the potential revenue that this respondent will provide - that respondents individual dollar volume opportunity (DVO).



**Deliverable**

The reporting module reports the aggregate dollar volume opportunity (aDVO) for each product.

## **II. Simulation Modeling**

### **B. Practice (Common to all simulation models)**

- 1. Running Whole Market Simulations**
- 2. Testing New Product Concepts**
- 3. Running Simulations by Segment**
- 4. Running Simulation by Segment with Significance Testing**
- 5. Running Simulation by Logical Blocks**
- 6. Linking to SPSS to Characterize Respondents**
- 7. Using Sensitivity Scan to Compare Two Concepts**
- 8. Using Segment Scan**
- 9. Running Multiple Attribute Strategy Scanning (MASS)**

## Example 1: Running Whole Market Simulations

Business Question:

- What product configurations are the most or least attractive for checking account respondents?

Steps:

- If the application is not already open:
  - Open ProductSolve™
  - Open the desired Preference File
  - Choose the Business Line to Analyze
- Run the Preference Model

Results:

- Preference for each product that has been defined

## Example 1: Running Whole Market Simulations (cont'd)

### ■ If the Application is Not open:

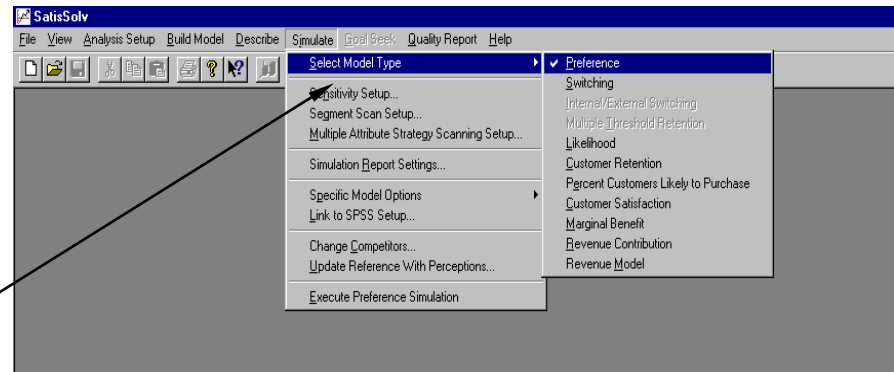
- Open ProductSolve™
- Open the desired Preference File (e.g. bank.prf)
- Choose the desired Business Line (e.g. Checking)

### ■ Choose the Simulation Model Desired

- Select Simulate, Select Model Type
- Select Preference

### ■ Run Model Simulation

- Select Simulate, Execute
- Enter Report Title, Click OK
- Click the done button on the progress indicator when the run has completed.



## Example 1: Running Whole Market Simulations (cont'd)

### – Preference Simulation Analysis Results –

Customer Satisfaction Research  
 Checking - May 1997  
 Model Type: Preference, Non-Competitive, Normalized  
 Respondents: 615.00  
 Exponent: 1.00

Product Name	PrefShar	Base Dev
Best Case Product	100.00	60.72
Concept #1	39.28	0.00
CF Baseline product	39.00	-0.28
High Performance	42.37	3.09

	Best Case Pro	Concept #1	CF Baseline pr	High Performa
<b>Problem Resolution Speed</b>	1.0000			
Immediate prob res		0.3600	0.3400	0.3400
Same day prob res		0.3000	0.2500	0.2500
Next day prob res		0.1300	0.1800	0.1800
Within 3 days prob res		0.1000	0.1400	0.1400
Within 5 days or more prob res		0.1100	0.0900	0.0900
<b>Ease of Problem Resolution</b>	1.0000			
Talk to 1 person to res prob		0.6900	0.6700	0.6700
Talk to 2-3 people to res prob		0.2700	0.3000	0.3000
Talk to 4+ people to res prob		0.0400	0.0400	0.0400
<b>Interest in Solving my Problems</b>	1.0000			
Always inter. in solving prob		0.6900	0.5900	0.5900
Usually inter. in solving prob		0.2700	0.3600	0.3600
Rarely inter. in solving prob		0.0400	0.0500	0.0500
<b>Follow up on Problems</b>	1.0000			
Always call back w/ update/answer		0.5700	0.5400	0.5400
Usually call back w/ update/answer		0.3000	0.3300	0.3300
Rarely call back w/ update/answer		0.1300	0.1400	0.1400
<b>Products Meet my Financial Needs</b>	1.0000			
All my fin needs met		0.4200	0.4100	0.4100
Most fin needs met		0.3600	0.3300	0.3300
Some fin needs met		0.2200	0.2600	0.2600
<b>Assigned Bank Representative</b>	1.0000			
A banker is assigned to me		0.2500	0.3000	0.3000

#### ■ Conclusions:

- This model determines the level of preference for all defined products and a 'best case' product which is a hypothetical combination of the most desirable attributes.
- The current product offered by Citizens Fidelity is the CF Baseline product.
- Now let's design a new concept to compare with the baseline product...

## Example 2: Testing New Product Concepts

### Question:

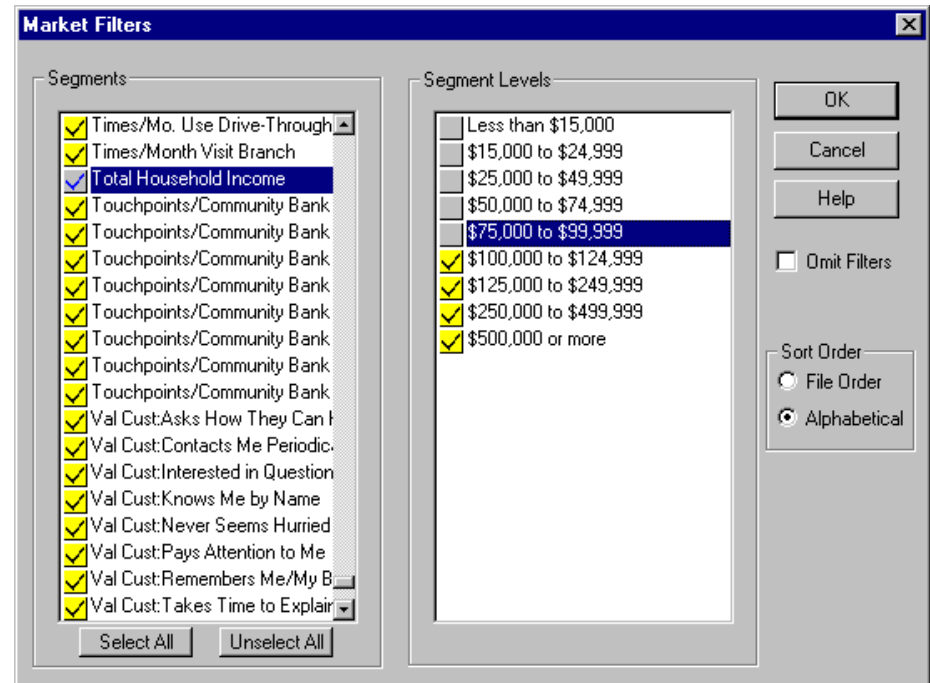
- What would a “higher rate, higher fee” concept made to appeal to the checking account high income segment look like? How do respondents rate the new concept?

### Steps:

- Identify the Top Utility Values and Performance Level Requirements for the Segment
- Develop New Product Concepts
- Enter That New Product Concept Into the Model
- Run the Preference Share Model to Determine the Relative Attractiveness of that New Concept
- Run the Switching Model to Forecast Switching Intent
- Run the LOP Model to Forecast Purchase Intent

## Example 2: Testing New Product Concepts (cont'd)

- Step 1: Identify Important Attributes (assumes the application is already open)
  - Select Describe, Run Groups
  - Create a run group set (e.g. income) and create a groups within the set (e.g. high income)
  - Select the segment and levels that pertain to the run group just as in the previous section (for this example, we will select Total Household Income under Segments, and select levels indicating income above \$100,000)
  - Select OK (twice)
  - Inspect the Utility Report
    - Select Describe, Execute, OK



## Example 2: Testing New Product Concepts (cont'd)

Customer Satisfaction Research  
 Checking - May 1997  
 Average Utility Analysis: Multiple Segment Run Mode  
 Re-normalize Attribute Utilities: Off

### - Preference Analysis Results -

	Whole Mkt	High Incom
Respondents:	615.00	89.88

Average Attribute Range Values		
Transaction Errors	56.87	60.68
Monthly Fee	59.00	51.22
Bank ATM fees	45.36	50.17
Quick & Efficient Transactions	40.04	48.33
Minimum Balance to Waive Fee	53.13	44.57
Staff Knowledge	37.82	41.68
Interest in Solving my Problems	39.47	38.95
Ease of Problem Resolution	34.44	37.36
Branch Hours	37.20	36.47
Account Information Speed	29.43	35.41
Transaction Fee	34.35	34.73
Problem Resolution Speed	33.09	33.43
Staff Communication	28.99	32.56
Interest Rates	30.53	32.51
Wait Time for Teller	33.34	30.75
Follow up on Problems	29.87	29.47
Professionalism	30.43	28.01
Staff Friendliness	29.05	27.28
Telephone Hold Time	21.97	25.25
Personal Banker Wait Time	23.55	24.60
Customer Treatment	26.15	24.04
Banker Understands my Needs	21.39	23.13
Travel Time	21.65	22.41
Follow Up after Account Opening	16.35	16.97
Assigned Bank Representative	15.97	16.14
Telephone Hours	13.42	15.36
Proactive Bank Representative	12.24	12.20
Products Meet my Financial Needs	12.10	10.63

### - Key Performance Requirements -

Products Meet my Financial Needs		
All my fin needs met	50.59	48.51
Most fin needs met	49.58	50.12
Some fin needs met	48.34	50.50

Proactive Bank Representative		
Monthly contact	49.25	49.39
Quarterly contact	50.24	50.59
Yearly contact	49.94	50.72
Never contacts me	48.49	48.30

Banker Understands my Needs		
Understands banking needs	56.26	53.54
Doesn't understand banking needs	42.66	45.80

Staff Knowledge		
Always know/can find answer	62.97	64.74
Usually know/can find answer	55.09	55.13
Rarely know/can find answer	30.30	29.13

Minimum Balance to Waive Fee		
No min bal	73.52	68.52
\$750 min bal	59.47	60.08
\$1,500 min bal	48.67	51.10
\$2,500 min bal	39.44	40.00
\$5,000 min bal	26.25	28.45

Monthly Fee		
No monthly fee	77.14	75.39
\$3 monthly fee	59.66	59.79
\$5 monthly fee	51.74	52.86
\$10 monthly fee	37.32	37.04
\$15 monthly fee	21.36	23.28

Transaction Fee		
No transaction fees	65.68	65.65
\$1 fee/transaction	49.51	48.72
\$2 fee/transaction	33.18	34.58

Interest Rates		
2% above market average	63.17	63.89
1% above market average	55.91	55.41
Same as market average	50.01	50.22
1% below market average	42.52	43.60
2% below market average	35.67	35.50

Bank ATM fees		
No ATM fees	71.39	74.53
\$1.00 ATM fee/transaction	53.63	54.58
\$1.50 ATM fee/transaction	43.13	41.33
\$2.00 ATM fee/transaction	29.78	28.28

### Conclusion:

- Notice the differences between the utility values of the high income segment and the whole market. High Income respondents place the greatest value on transaction errors, bank ATM fees, and monthly fee, which is quite different from the top attributes of the whole market. Although they do not have very high AARV's, other attributes such as account information speed and staff communication all impact the ability to provide high rate, profitable service to high income customers. These attributes should be considered when developing potential solutions.



## Example 2: Testing Those New Product Concepts (cont'd)

### ■ Step 2: Develop New Product Concepts

- Because Transaction Errors and Quick and Efficient Transactions are more important to the high income segment than to the whole market, we will improve performance on these attributes. Yet, because increased performance requires an increase in cost, we will also increase monthly fees and minimum balance to pay for this reduction in transaction errors. Will the net change be more attractive to the high income customers than their current baseline?
- Based on the utilities generated in the report in the previous step, a new product concept is developed with the following changes:

<i>Attribute Impacted</i>	<i>Current Level</i>	<i>New Product Level</i>
• Quick and Efficient Transactions	• 46% Always quick and efficient; 51% usually quick; 2% rarely quick and efficient	• 1.0 (Always quick and efficient)
• Monthly Fees	• 76% no fee; 5% \$3.00 fee; 6% \$5.00 fee; 9% \$10.00; 4% \$15.00	• 45% no fee; 25% \$3.00 fee; 17% \$5.00 fee; 9% \$10.00; 4% \$15.00
• Minimum Balance	• 52% no minimum, 22% \$750, 14% \$1,500, 1% \$2,500, 9% 5,000	• 25% no minimum, 51% \$750, 14% \$1,500, 1% \$2,500, 9% 5,000
• Transaction Errors	• 62% no errors, 30% 1-2 errors, 5% 3-4 errors, 2% 5+ errors	• 1.0 (no errors)
• Bank ATM Fees	• 76% no fee; 17% \$1.00 fee; 5% \$1.50 fee; 2% \$2.00 fee	• 1.0 (no fee)

*In the 'New Product Level' column, if only one value is listed, an attribute value has been changed. If multiple values are given, (such as for Monthly Fees), the values for each of the levels of that attribute have been changed.*

## Example 2: Testing Those New Product Concepts (cont'd)

### ■ Step 3: Enter New Product Concept Into Model

- Steps (assumes checking account model is open):
  - Select Simulate, Model Type, Preference, OK
  - Select Simulate, Change Competitors
  - Enter a new product name (e.g. High Performance) in the Add Product Box, then Click "Add"
  - Highlight an Attribute to update (e.g. Transaction Errors) (see specifications on previous page)
    - Enter new level number in the Att Value box\*, or
    - Enter level weights in Level Value box\* (numbers are entered as whole numbers - i.e., 75, not .75, for 75%)
  - Click on the next attribute to change when you finish modifying your current attribute.
  - Select OK to save the concept.

*Example of new higher rate, higher fee concept:*

**Change Competitors**

Products

- Best Case Product
- Baseline product
- Concept #1
- High Performance

Add Product:

Buttons: Add, Delete, Undelete

Attributes	Old Val	New Val	Att Value
Problem Resolution Speed	0.00	1.00	1.00
Ease of Problem Resolution	0.00		
Interest in Solving my Problem:	0.00		
Follow up on Problems	0.00		
Products Meet my Financial N:	0.00		
Assigned Bank Representative	0.00		
Proactive Bank Representative	0.00		
Banker Understands my Need	0.00		

Levels	Old Val	New Val	Level Value
1. Immediate prob res	0.37	0.00	
2. Same day prob res	0.31	0.00	
3. Next day prob res	0.13	0.00	
4. Within 3 days prob res	0.09	0.00	
5. Within 5 days or more prob	0.11	0.00	

Best Case Product: Best Case Product

Reference Product: Baseline product

Baseline Product: Baseline product

Buttons: OK, Cancel, Help

\*refer to the appendix page for this dialog box for a more detailed explanation of the Attribute Value box and the Level Value box.

## Example 2: Testing New Product Concepts (cont'd)

- Step 4: Run the Preference Share Model to Determine the Relative Attractiveness of the New Product
  - Select Analysis Set-up, Run Groups
  - Select the market segment being tested (for this example, we are marketing to the High Income segment, so we selected the Total Household Income under segments, and checked income levels above \$100,000 under segment levels)
  - Select OK
  - Select Simulate, Execute, OK

## Example 2: Testing New Product Concepts (cont'd)

### - Preference Share Model Results -

Model Type: Preference, Non-Competitive, Normalized  
Exponent: 1.00

Product Name	Whole Mrk	high incom
Respondents:	615.00	89.88
Best Case Product	97.30	100.00
Concept #1	38.22	38.67
CF Baseline product	37.94	38.29
High Performance	41.15	43.32

	Best Case Pro	Concept #1	CF Baseline pr	High Performa
<b>Quick &amp; Efficient Transactions</b>	1.0000			1.0000
Always quick and efficient		0.5200	0.4600	
Usually quick and efficient		0.4600	0.5100	
Rarely quick and efficient		0.0200	0.0200	
<b>Minimum Balance to Waive Fee</b>	1.0000			
No min bal		0.5500	0.5200	0.2500
\$750 min bal		0.2000	0.2200	0.5100
\$1,500 min bal		0.1100	0.1400	0.1400
\$2,500 min bal		0.0300	0.0100	0.0100
\$5,000 min bal		0.1100	0.0900	0.0900
<b>Monthly Fee</b>	1.0000			
No monthly fee		0.6700	0.7600	0.4500
\$3 monthly fee		0.0800	0.0500	0.2500
\$5 monthly fee		0.0700	0.0600	0.1700
\$10 monthly fee		0.1600	0.0900	0.0900
\$15 monthly fee		0.0200	0.0400	0.0400
<b>Transaction Fee</b>	1.0000			
No transaction fees		0.8200	0.8600	0.8600
\$1 fee/transaction		0.1600	0.1000	0.1000
\$2 fee/transaction		0.0600	0.0400	0.0400
<b>Bank ATM fees</b>	1.0000			1.0000
No ATM fees		0.7000	0.7600	
\$1.00 ATM fee/transaction		0.2000	0.1700	
\$1.50 ATM fee/transaction		0.0700	0.0500	
\$2.00 ATM fee/transaction		0.0300	0.0200	

#### ■ Conclusion:

- The high income respondents significantly prefer the High Performance product over the baseline product currently offered. Preference share for those consumers increased by 5.03 points.
- The lower part of the report shows the level weights of all attributes for the defined products. When attribute values were defined (such as for Quick and Efficient Transactions), only one value appears for that attribute, rather than values for all levels. For the High Performance product, attribute values were specified for three attributes and level weights were defined for two attributes.

## Example 2: Testing New Product Concepts (cont'd)

- Step 5: Run the Switching Simulator to Forecast Switching Intent
  - Set Model Options
    - Select Simulate, Select Model Type, Switching, OK
    - (Optional) Select Simulate, Specific Model Options, Switching) (**NOTE:** Do not change this value unless you confer with Decision Support Sciences)
    - Set Answer Required for Switching to the highest level (Refer to the interview for the scale and interpretation of this value.)
  - Select customers in the segment for which the concept was designed
    - Select Analysis Setup, Run Groups
    - Activate or add group (e.g. 'High Income') (highlight and move to active group; if group has already been created, filters do not need to be reselected)
    - Select Filters
    - Check boxes under segment levels of respondents under consideration(e.g. those with income greater than \$100,000), OK
  - Run the Switching Model
    - Select Simulate, Execute, Enter Report Title, OK

## Example 2: Testing New Product Concepts (cont'd)

### - Customer Switching Model Results -

Model Type: Switching, Non-Competitive, Normalized  
Exponent: 1.00

Product Name	Whole_Mrk	high_incom
Respondents:	615.00	89.88
Best Case Product	36.44	41.03
Concept #1	0.00	0.00
CF Baseline product	0.00	0.00
High Performance	2.14	5.60

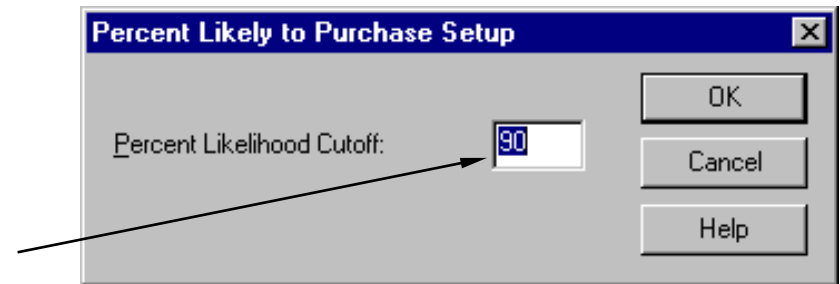
	Best Case Pro	Concept #1	CF Baseline pr	High Performa
Minimum Balance to Waive Fee	1.0000			
No min bal		0.5500	0.5200	0.2500
\$750 min bal		0.2000	0.2200	0.5100
\$1,500 min bal		0.1100	0.1400	0.1400
\$2,500 min bal		0.0300	0.0100	0.0100
\$5,000 min bal		0.1100	0.0900	0.0900
Monthly Fee	1.0000			
No monthly fee		0.6700	0.7600	0.4500
\$3 monthly fee		0.0800	0.0500	0.2500
\$5 monthly fee		0.0700	0.0600	0.1700
\$10 monthly fee		0.1600	0.0900	0.0900
\$15 monthly fee		0.0200	0.0400	0.0400
Transaction Fee	1.0000			
No transaction fees		0.8200	0.8600	0.8600
\$1 fee/transaction		0.1600	0.1000	0.1000
\$2 fee/transaction		0.0600	0.0400	0.0400
Interest Rates	1.0000			
2% above market average		0.1500	0.2000	0.2000
1% above market average		0.0900	0.0900	0.0900
Same as market average		0.6300	0.5700	0.5700
1% below market average		0.0700	0.0700	0.0700
2% below market average		0.0700	0.0700	0.0700
Bank ATM fees	1.0000			1.0000
No ATM fees		0.7000	0.7600	
\$1.00 ATM fee/transaction		0.2000	0.1700	
\$1.50 ATM fee/transaction		0.0700	0.0500	
\$2.00 ATM fee/transaction		0.0300	0.0200	

#### ■ Intermediate Findings:

- This appears to be a marketable concept. 5.6% of the high income customers currently using the baseline product would switch to this new concept if offered.
- Further economic modeling is necessary to determine the true market potential of this concept.
- Note that only 40% of high income respondents would switch to the best case product if it were offered. This signifies that these respondents are generally resistant to change, and conservative in their preference for a product. Therefore, it is not surprising that the percent that would switch to the High Performance product may seem low.
- For the switching model, the attribute levels of a product must be above a specified threshold for the respondent included in the percent that would switch to the new product. Therefore, as product specifications change, there may be large jumps in the percentage of switchers.

## Example 2: Testing New Product Concepts (cont'd)

- Step 6: Run Percent LOP Model to Forecast Purchase Intent
  - Set Model Options
    - Select Simulate, Select Model Type, Percent Customers Likely to Purchase, OK
    - (Optional) Select Simulate, Specific Model Options, Percent Likely to Purchase. (**NOTE:** Do not change this value unless you confer with Decision Support Sciences)
      - Set cutoff (default = 90), OK
  - Run Percent Likely to Purchase Model
    - Select Simulate, Execute, OK



## Example 2: Testing New Product Concepts (cont'd)

### - Purchase Intent Model Results -

Model Type: Pct Likely, Non-Competitive, Normalized, Global Threshold  
Exponent: 1.00

Product Name	Whole Mkt	high income
Respondents:	615.00	89.88
Best Case Product	87.62	84.20
Concept #1	21.25	32.39
CF Baseline product	21.13	29.40
High Performance	31.69	43.30

	Best Case Pro	Concept #1	CF Baseline pr	High Performa
<b>Problem Resolution Speed</b>	1.0000			
Immediate prob res		0.3600	0.3400	0.3400
Same day prob res		0.3000	0.2500	0.2500
Next day prob res		0.1300	0.1800	0.1800
Within 3 days prob res		0.1000	0.1400	0.1400
Within 5 days or more prob res		0.1100	0.0900	0.0900
<b>Ease of Problem Resolution</b>	1.0000			
Talk to 1 person to res prob		0.6900	0.6700	0.6700
Talk to 2-3 people to res prob		0.2700	0.3000	0.3000
Talk to 4+ people to res prob		0.0400	0.0400	0.0400
<b>Interest in Solving my Problems</b>	1.0000			
Always inter. in solving prob		0.6900	0.5900	0.5900
Usually inter. in solving prob		0.2700	0.3600	0.3600
Rarely inter. in solving prob		0.0400	0.0500	0.0500
<b>Follow up on Problems</b>	1.0000			
Always call back w/ update/answer		0.5700	0.5400	0.5400
Usually call back w/ update/answer		0.3000	0.3300	0.3300
Rarely call back w/ update/answer		0.1300	0.1400	0.1400
<b>Products Meet my Financial Needs</b>	1.0000			
All my fin needs met		0.4200	0.4100	0.4100
Most fin needs met		0.3600	0.3300	0.3300
Some fin needs met		0.2200	0.2600	0.2600

- Intermediate Findings:
  - High Income respondents appear to like the High Rate concept. Over 42% would be willing to purchase this product if offered.
  - Notice that a higher percentage of the high income respondents would purchase this product than the percentage of the whole market.



## Example 3: Running Simulations by Segment - Method 1

Business Question:

- Are respondents of one segment more likely to purchase a product than the overall market? (e.g. Citizens Fidelity's high income checking account customers vs. all checking account customers)

Steps: (Assuming the application is open.)

1. **Select Simulate, Select Model Options, Choose 'Likelihood'**
2. **Select Market Filters\***
  - Select Analysis Setup, Market Filters
  - Check the boxes indicating customers in desired segment (e.g. those with income above \$100,000)
  - Select OK (twice)
3. **Run Simulation (Select Simulation, Execute, OK)**

Results:

- Segment only likelihood of purchase values are reported for current concepts.

**\*= Run groups can also be used for this simulation run, although the output report will look slightly different. If market filters are used, any run groups that were previously created should be made inactive for this simulation.**

## Example 3: Running Simulations by Segment - Method 1 (cont'd)

### – Simulation Analysis Results –

Model Type: Likelihood, Non-Competitive, Normalized  
 Respondents: 89.88  
 Exponent: 1.00

Product Name	Likelihood	Base Dev
Best Case Product	91.56	24.40
Concept #1	67.17	0.00
CF Baseline product	66.92	-0.25
High Performance	73.69	6.52

	Best Case Pro	Concept #1	CF Baseline pr	High Performa
<b>Problem Resolution Speed</b>	1.0000			
Immediate prob res		0.3600	0.3400	0.3400
Same day prob res		0.3000	0.2500	0.2500
Next day prob res		0.1300	0.1800	0.1800
Within 3 days prob res		0.1000	0.1400	0.1400
Within 5 days or more prob res		0.1100	0.0900	0.0900
<b>Ease of Problem Resolution</b>	1.0000			
Talk to 1 person to res prob		0.6900	0.6700	0.6700
Talk to 2-3 people to res prob		0.2700	0.3000	0.3000
Talk to 4+ people to res prob		0.0400	0.0400	0.0400
<b>Interest in Solving my Problems</b>	1.0000			
Always inter. in solving prob		0.6900	0.5900	0.5900
Usually inter. in solving prob		0.2700	0.3600	0.3600
Rarely inter. in solving prob		0.0400	0.0500	0.0500
<b>Follow up on Problems</b>	1.0000			
Always call back w/ update/answer		0.5700	0.5400	0.5400
Usually call back w/ update/answer		0.3000	0.3300	0.3300
Rarely call back w/ update/answer		0.1300	0.1400	0.1400
<b>Products Meet my Financial Needs</b>	1.0000			
All my fin needs met		0.4200	0.4100	0.4100
Most fin needs met		0.3600	0.3300	0.3300
Some fin needs met		0.2200	0.2600	0.2600

#### ■ Conclusions:

- This report presents the average percent of Citizens Fidelity's high income customers that would be likely to purchase the high rate product which has been developed based on their preferences. (The score increased 6.52 points over the baseline product)
- It would be useful to see both the whole market and high income data at the same time. This can be done using method 2.

## Example 3: Running Simulations by Segment - Method 2

Question:

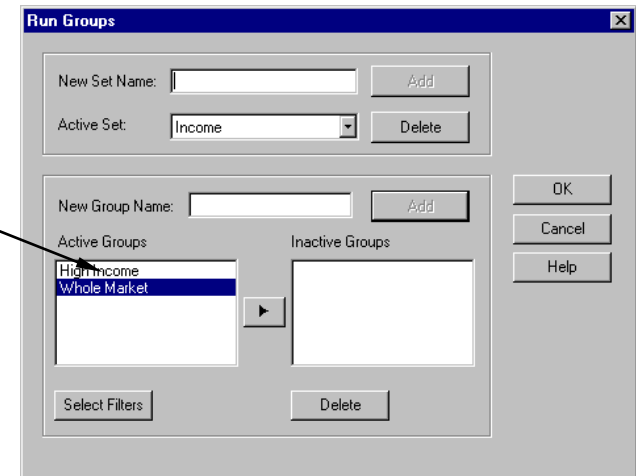
- Do the respondents of one segment differ in likelihood of purchase from the overall market? (e.g. Citizens Fidelity's high income checking account customers vs. all checking account customers)

Steps: (Assuming the Application is already Open)

- Choose the Model to Analyze (Likelihood)
- Setup Run Groups
  - Analysis Setup, Run Groups
  - Add Run Group Name
  - Choose Market Filters for High Income Customers
  - Select OK
- Run the Simulation (Select Simulation, Execute, OK)

Results:

- Whole market and segment only preference scores



## Example 3: Running Simulations by Segment - Method 2

– Average Preference for Products –

Model Type: Likelihood, Non-Competitive, Normalized  
Exponent: 1.00

Product Name	Whole Mkt	high incom
Respondents:	615.00	89.88
Best Case Product	95.04	91.56
Concept #1	66.42	67.17
CF Baseline product	65.89	66.92
High Performance	71.15	73.69

	Best Case Pro	Concept #1	CF Baseline pr	High Performa
<b>Problem Resolution Speed</b>	1.0000			
Immediate prob res		0.3600	0.3400	0.3400
Same day prob res		0.3000	0.2500	0.2500
Next day prob res		0.1300	0.1800	0.1800
Within 3 days prob res		0.1000	0.1400	0.1400
Within 5 days or more prob res		0.1100	0.0900	0.0900
<b>Ease of Problem Resolution</b>	1.0000			
Talk to 1 person to res prob		0.6900	0.6700	0.6700
Talk to 2-3 people to res prob		0.2700	0.3000	0.3000
Talk to 4+ people to res prob		0.0400	0.0400	0.0400
<b>Interest in Solving my Problems</b>	1.0000			
Always inter. in solving prob		0.6900	0.5900	0.5900
Usually inter. in solving prob		0.2700	0.3600	0.3600
Rarely inter. in solving prob		0.0400	0.0500	0.0500
<b>Follow up on Problems</b>	1.0000			
Always call back w/ update/answer		0.5700	0.5400	0.5400
Usually call back w/ update/answer		0.3000	0.3300	0.3300
Rarely call back w/ update/answer		0.1300	0.1400	0.1400
<b>Products Meet my Financial Needs</b>	1.0000			
All my fin needs met		0.4200	0.4100	0.4100
Most fin needs met		0.3600	0.3300	0.3300
Some fin needs met		0.2200	0.2600	0.2600
Assigned Bank Representative	1.0000			

### ■ Conclusions:

- This example simulates the likelihood of purchase for one segment of respondents: High Income, (over \$100,000) and the whole market.
- The High Rate product shown here is the new product created in the ‘Testing New Product Concepts’ section. has been modified based on the preferences of the high income segment for specific attributes.
- Because of the differences among the products, the High Income segment is more likely to purchase the High Rate product than the baseline product.

## Example 4: Running Simulations by Segment with Significance Testing: Manual

Business Question:

- Do the preferences of two segments of respondents differ significantly from each other?

Steps (assumes model is open):

- Choose the Model to Analyze (Preference)
- Set Report Settings
- Setup Run Groups
- Run Simulation

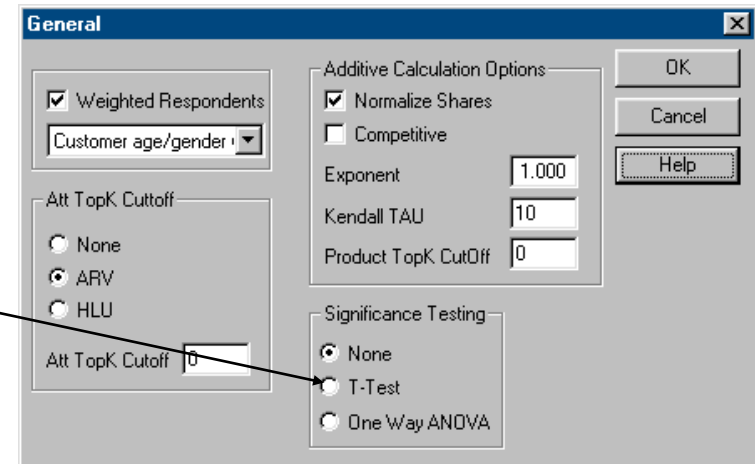
Results:

- Average preference for all segments selected
- Significance in value preferences is highlighted

## Example 4: Running Simulations by Segment with Significance Testing: Manual (cont'd)

### ■ Assuming the Application is already open:

- Set Report Settings
  - Select Specific Model Options, General
  - Under 'Significance Testing', select 'T-test', OK



### ■ Setup Run Groups

- Select Analysis Setup, Run Groups
- Select segments for the run groups that have maximally different preferences so that different products could be offered that would appeal to each of the clusters differently. In this example we will use a cluster that is sensitive to speed attributes (such as wait time, etc.) and one cluster that is sensitive to errors and rate attributes.
- Enter Run Group Set name (e.g. Clusters) and Run Group Names, Select Add
- Select Segments that pertain to cluster entered; select OK
- Enter Run Group name for remaining market (e.g. Error/Rate), Select Add
- Select OK (twice)

### ■ Run Simulation

## Example 4: Running Simulations by Segment with Significance Testing: Manual (cont'd)

### ■ Changing competitive products

- In the example below, two new products (Top Rate and Premium Service) were created to fit the preferences of the speed sensitive and service sensitive clusters respectively. The following attributes were modified – some positively, some negatively.

<i>Attribute Impacted</i>	<i>Current Level</i>	<i>Top Rate</i>	<i>Premium Service</i>
• Transaction Fees	• 86% No transaction fee; 10% \$1 fee/transaction, 4% \$2 fee/transaction	• 1 (No transaction fee)	• 82% no fee; 16% \$1 fee; 6% \$2fee
• Follow up on Problems	• 54% always call back; 33% usually; 14% rarely call back.	• 20% always call back; 50% usually; 30% rarely call back.	• 75% always call back; 20% usually; 50% rarely call back.
• Bank ATM Fees	• 76% No ATM Fees; 17% \$1.00 ATM Fee; 5% \$1.50 ATM Fee; 20% \$2.00 ATM Fee	• 60% immediate; 30% same day; 5% next day; 5% 3+ days	• 10% immediate; 30% same day; 50% next day; 10% 3+ days.
• Staff Knowledge	• 40% Always know/can answer questions; 54% Usually; 7%	• 40% no wait time; 40% 1-3 minutes; 10% 3-5 minutes; 5% 6-10 minute; 5% 10+ minutes	• 3 (3-5 minutes)
• Customer Treatment	• 51% Always makes me feel valued; 38% Usually makes me feel valued; 11% Rarely makes me feel valued	• 2 (Usually makes me feel valued)	• 75% Always makes me feel valued, 20% Usually, 5% Rarely
• Interest Rates	• 20% at 2% above market rate; 9% at 1% above market rate; 57% same as market rate; 7% at 1% below market rate; 7% at 2% below market rate	• 20% at 2% above market rate; 60% at 1% above; 15% same as market rate; 5% at 1% below; 0% at 2% below	• 5% at 2% above market rate; 10% at 1% above; 55% same as market rate; 20% at 1% below; 10% at 2% below.

# Example 4: Running Simulations by Segment with Significance Testing: Manual (cont'd)

## – Preference Model

Mon Dec 21 14:47:23 1998

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 Conjoint Simulator

Model Type: Preference, Non-Competitive, Normalized  
 Exponent: 1.00  
 T-Test Alpha Level: 90

Product Name	Whole Mrk	Rate7	Service6	Deviation
Respondents:	615.00	78.83	109.12	
Best Case Product	92.95	82.48	100.00	-17.52
Concept #1	36.51	33.91	39.69	-5.78
CF Baseline product	36.25	34.38	38.45	-4.07
High Performance	38.85	36.32	42.37	-6.05
Premium Service	35.87	32.32	40.79	-8.47
Top Rate	33.92	34.25	31.76	2.49

	Best Case	Concept #1	CF Baselin	High Perfor	Premium S	Top Rate
<b>Problem Resolution Speed</b>	1.0000					
Immediate prob res		0.3600	0.3400	0.3400	0.3600	0.3600
Same day prob res		0.3000	0.2500	0.2500	0.3000	0.3000
Next day prob res		0.1300	0.1800	0.1800	0.1300	0.1300
Within 3 days prob res		0.1000	0.1400	0.1400	0.1000	0.1000
Within 5 days or more prob res		0.1100	0.0900	0.0900	0.1100	0.1100
<b>Ease of Problem Resolution</b>	1.0000					
Talk to 1 person to res prob		0.6900	0.6700	0.6700	0.6900	0.6900
Talk to 2-3 people to res prob		0.2700	0.3000	0.3000	0.2700	0.2700
Talk to 4+ people to res prob		0.0400	0.0400	0.0400	0.0400	0.0400
<b>Interest in Solving my Problems</b>	1.0000				1.0000	
Always inter. in solving prob		0.6900	0.5900	0.5900		0.1500
Usually inter. in solving prob		0.2700	0.3600	0.3600		0.5000
Rarely inter. in solving prob		0.0400	0.0500	0.0500		0.3500
<b>Follow up on Problems</b>	1.0000					
Always call back w/ update/answer		0.5700	0.5400	0.5400	0.7500	0.2000
Usually call back w/ update/answer		0.3000	0.3300	0.3300	0.2000	0.5000
Rarely call back w/ update/answer		0.1300	0.1400	0.1400	0.5000	0.3000

### ■ Conclusions:

- Checking account customers who were classified into the service sensitive cluster are significantly more likely to purchase the product labeled 'Premium Service' than any other available product
- Rate sensitive customers are far more likely to purchase the product called Top Rate than Premium Service.
- Rows that have deviations between the two groups that are statistically significant are highlighted.



## **Example 4: Running Simulations by Segment with Significance Testing: Automatic**

- This feature operates in the same manner as in the Segment Scanning describes on pages 38 and 39.
- The only substantive difference is that the Segment Scanning is selected under the Simulate menu

## Example 5: Running Simulations by Logical Blocks

- **This is not a feature but a strategy for concept development. It involves changing attributes in blocks, and testing the sensitivity of the market against these blocks.**

## Example 6. Linking to SPSS to Characterize Respondents

Business Question:

- How can we discover which respondent segments will switch to new product configurations?

Steps:

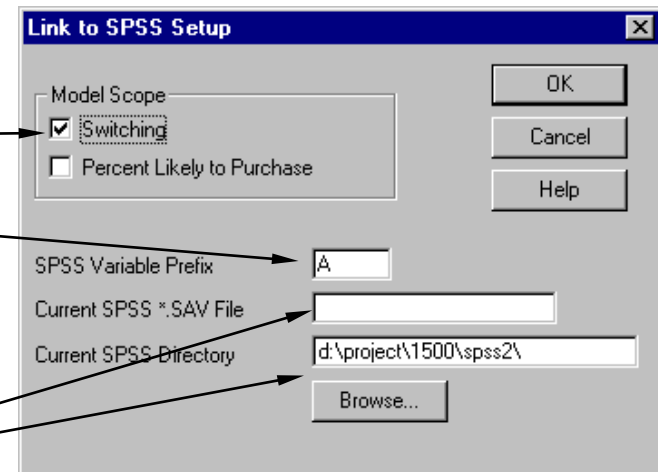
- Open ProductSolve™
- Open the desired Preference File
- Choose the Switching Model
- Setup the Link to SPSS
- Run the Switching Model
- Start SPSS and Run the Syntax File
- Run Crosstabs to Characterize the Switchers

Results:

- Variables appended to SPSS for each product indicating if respondent would switch or not
- Switchers characterized by Crosstabs

## Example 6. Linking to SPSS to Characterize Respondents (cont'd)

- Open ProductSolve™
- Open the Desired Preference File
- Choose Switching Model
  - Select Simulate, Select Model Type
  - Select Switching
- Setup the Link to SPSS
  - Select Simulate, Link to SPSS Setup
  - Check the “Switching” box under Model Scope
  - Enter an SPSS Variable Prefix  
This is a letter that will be appended to the beginning of each SPSS variable that is generated. Normally, you can use the default, ‘A’.
  - Enter the name and directory of the current SPSS file.



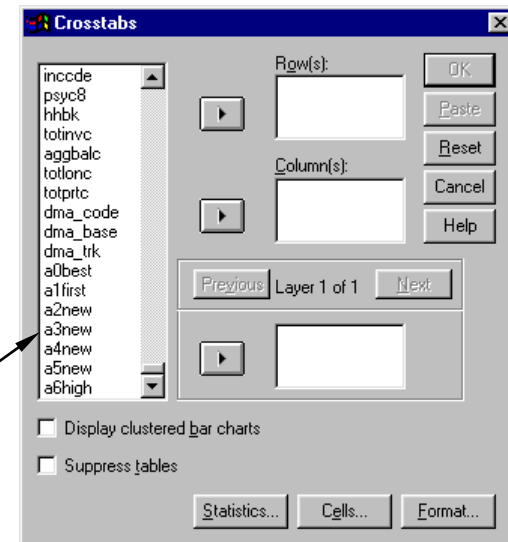
## Example 6. Linking to SPSS to Characterize Respondents (cont'd)

### ■ Start SPSS and Run the Syntax File

- Start SPSS
- Open the syntax file that was created (test.sps).
- Press Ctrl-A to select all of the text and then press Ctrl-R to run this syntax file.
- This step creates one new variable for each product which contains the switching information of each respondent for that product.

### ■ Run Crosstabs to Characterize the Switchers

- In SPSS, select Statistics, Summarize, Crosstabs.
- Note that the new variables containing the switching information all begin with the prefix letter that was entered into the Switching Model Options dialog box. They are added at the end of the variable list if the variables are sorted using file order.
- For this example, we will cross a6high (our new concept) with income.



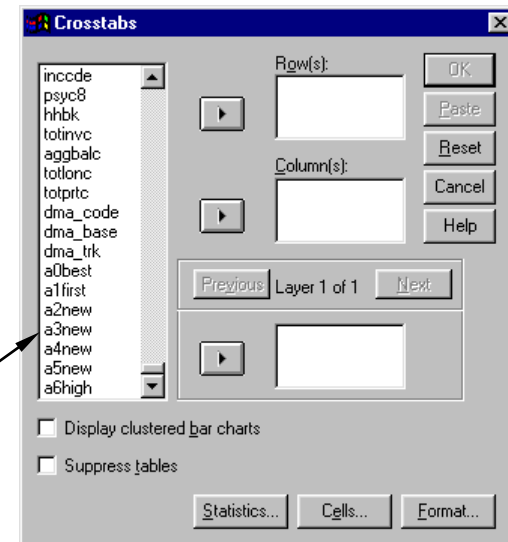
## Example 6. Linking to SPSS to Characterize Respondents (cont'd)

### ■ Start SPSS and Run the Syntax File

- Start SPSS
- Open the syntax file that was created (test.sps).
- Press Ctrl-A to select all of the text and then press Ctrl-R to run this syntax file.
- This step creates one new variable for each product which contains the switching information of each respondent for that product.

### ■ Run Crosstabs to Characterize the Switchers

- In SPSS, select Statistics, Summarize, Crosstabs.
- Note that the new variables containing the switching information all begin with the prefix letter that was entered into the Switching Model Options dialog box. They are added at the end of the variable list if the variables are sorted using file order.
- For this example, we will cross a6high (our new concept) with income.



## Example 6. Linking to SPSS to Characterize the Respondents (cont'd)

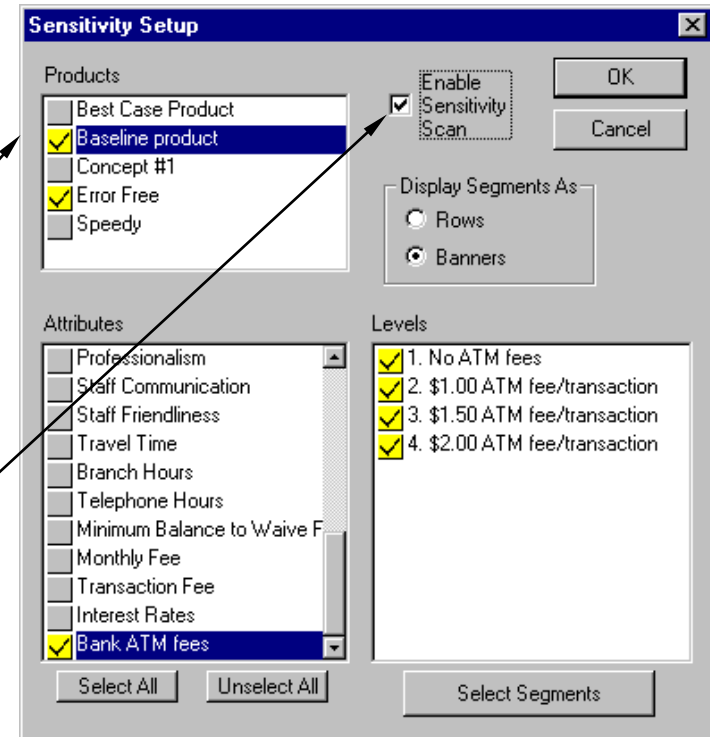
			H							T	
			T								
			L t \$	\$ \$	\$ \$	\$ \$	\$ \$	\$ t \$	\$ t \$	\$ o	
H	0	C % T I	2	3	1	9	2	1	8	1	3
			7	7	8	7	6	6	6	3	7
	1	C % T I	9	9	2	2	1	1	5	2	1
			2	2	1	2	4	3	3	6	2
T		C % T I	3	4	1	1	3	2	1	3	4
			1	1	1	1	1	1	1	1	1

0 indicates a non-switcher  
1 indicates a switcher

Notice the higher percentage of switchers among high income respondents. This is as we would expect since this concept was designed for high income customers.

## Example 7: Using Sensitivity Scan to Compare Two Concepts

- Open ProductSolve™
- Open the Preference File
- Choose the model to analyze (Checking)
- Sensitivity Setup
  - Select Simulate, Sensitivity Setup
  - Select Products to be scanned. (Products other than the Best Case and Baseline products must be created using Simulate, Change Competitors; See Example 2 in this section)
  - Check the 'Enable Sensitivity Scan' box
  - Select the attributes that will be analyzed for each product
  - By default, all levels are selected of each attribute that is checked. Deselect the levels if you do not want specific feature levels included.

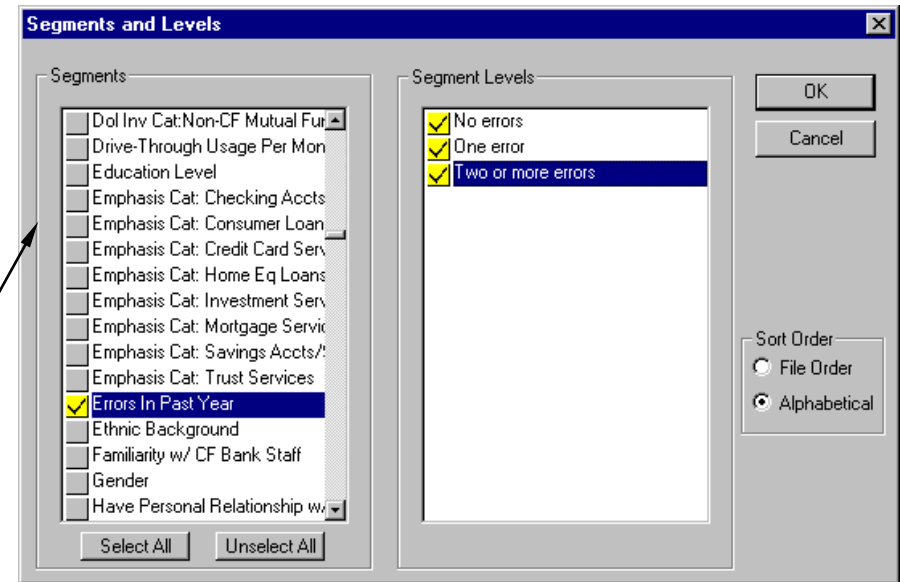


- For the 'Display Segments As' box, choose whether you want the segment levels to be column or row headings. This report will be wider than one page, so if there are more segments selected than attributes, you may want to display the segments as rows.



## Example 7: Using Sensitivity Scan to Compare Two Concepts

- By default, all levels are selected of each attribute that is checked. Deselect the levels if you do not want specific feature levels included.
- Click on the 'Select Segments' button, to select the segments and segment levels to be analyzed. The segments are the distinctions in the population of respondents that are made. For example, if only 1 segment with 3 levels is selected (as in the report on the following page), all of the respondents will be represented, but will be segmented into three groups according to the segment levels.
- Select **OK**
- When this process is completed, sensitivity scan is enabled, but a report is not automatically generated. Under the Simulate menu, select 'Execute' to generate a report.
- Check the specifications in the Run Information box; it should list that sensitivity scan has been enabled.
- After one execution of a report, sensitivity scan is disabled, but the options selected are saved until ProductSolve™ is closed down. To reactivate sensitivity scan, select Sensitivity Setup from the Simulation menu, and check the box labeled "Enable Sensitivity Scan".



## Example 7: Using Sensitivity Scan to Compare Two Concepts

- One report is generated for each **product** that was selected.
- The tabs at the bottom of the screen designate the product name and can be used to switch between reports.
- Any model type can be used with sensitivity scan, and the values produced are unique to that model. The example on this page is a preference report.
- Cells that are significant are highlighted in yellow.
- For each attribute level that is selected, the model determines what the preference score (switching, pct likely to purchase, etc.) would be for the segment level of that cell if the performance was set exactly at the attribute level for that cell.
- For example, in the first cell of this report, the model determines how the preference score for the segment of respondents that had no errors in the past year if their provider **always** called back with an update or answer to their problem.

Wed Jan 06 15:04:54 1999

Customer Satisfaction Research  
Checking - May 1997  
Conjoint Simulator

Sensitivity Scan

Model Type: Preference, Non-Competitive, Normalized  
Exponent: 1.00

Sensitivity Scan: Error Free

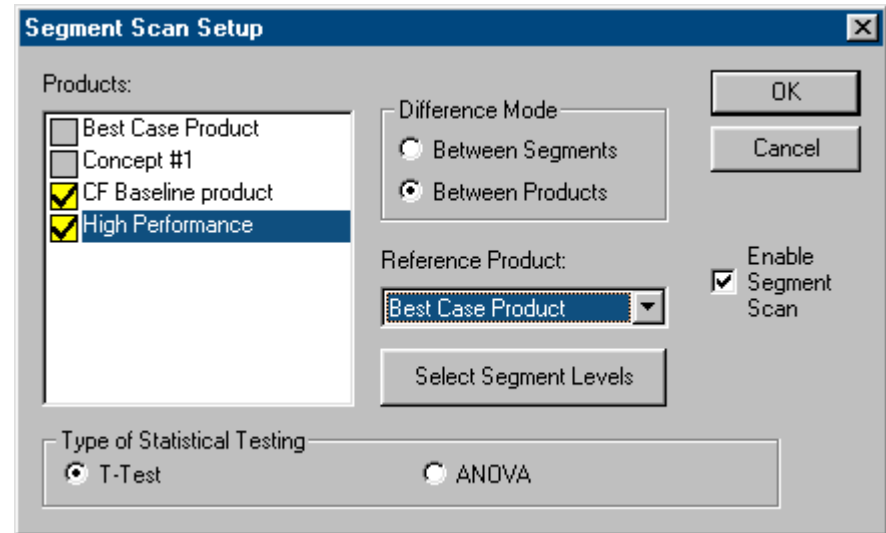
Attribute	Level	Errors In Past Year					
		No errors (355)		One error (147)		Two or more errors (114)	
		Difference	Significance	Difference	Significance	Difference	Significance
Follow up on Problems	Always call back w/ update/answer	1.47	0.02	2.05	0.12	-0.66	0.22
Follow up on Problems	Usually call back w/ update/answer	0.65	0.28	0.45	0.42	-2.62	0.65
Follow up on Problems	Rarely call back w/ update/answer	-4.02	0.00	-3.98	0.00	-6.56	0.00
Transaction Errors	0/yr trans errors	0.00	1.00	0.39	1.00	-1.99	1.00
Transaction Errors	1-2/yr trans errors	-5.22	0.00	-3.66	0.00	-6.67	0.00
Transaction Errors	3-4/yr trans errors	-8.37	0.00	-6.90	0.00	-8.61	0.00
Transaction Errors	5+/yr trans errors	-11.64	0.00	-10.01	0.00	-10.93	0.00
Bank ATM fees	No ATM fees	0.53	0.38	1.04	0.53	-1.41	0.59
Bank ATM fees	\$1.00 ATM fee/transaction	-3.25	0.00	-4.00	0.00	-5.48	0.00
Bank ATM fees	\$1.50 ATM fee/transaction	-5.37	0.00	-5.64	0.00	-7.50	0.00
Bank ATM fees	\$2.00 ATM fee/transaction	-7.66	0.00	-7.96	0.00	-10.38	0.00

Sensitivity: CF Baseline    Sensitivity: Error Free

For Help, press F1    Bankspkr.prf    Checking

## Example 8: Using Segment Scan to Quantify Preference Difference Between Multiple Products or Segments

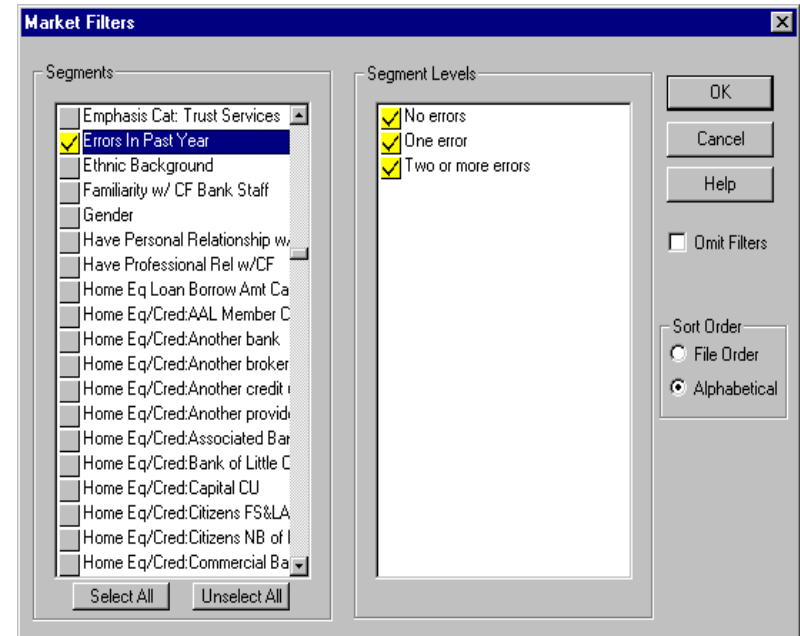
- Open ProductSolve™
- Open the Preference File
- Choose the model to analyze
- Segment Scan Setup
  - Select Simulate, Segment Scan Setup
  - Select the Products to be scanned. (Products other than the Best Case and Baseline products must be created using Simulate, Change Competitors; See Example 2 in this section)
  - Check the 'Enable Segment Scan' box
  - Select an option under "Difference Mode." If 'Between Segments' is selected, the report will show difference and significance of the preference (or switchers, pct. likely to purchase, etc.) for a product of one segment level verses all the respondents NOT in that segment level.



- If 'Between Products' was selected as the difference mode, the Reference Product box will become active, and a product must be selected. The report will present the preference difference between each concept and the reference concept across the segments selected.

## Example 8: Using Segment Scan to Quantify Preference Difference Between Multiple Products or Segments

- Click on the 'Select Segments' buttons from the Segment Scan Setup box to select the segments and segment levels to be analyzed. The segments levels are the distinctions between respondents for that segment. For example, if only one segment with three levels is selected (as in the report on the following page), all of the respondents will be represented, but will be split into three groups according to the segment membership of that respondent.
- By default, all levels are selected of each attribute that is checked. Deselect the levels if you do not want specific feature levels included.
- Select OK
- Under the Simulate menu, select 'Execute' to generate the report.
- Check the specifications in the Run Information box; it should list that segment scan has been enabled.
- After one execution of a report, Segment Scan is automatically disabled, but the options selected are saved until ProductSolve™ is closed down. To reactivate Segment Scan, select Segment Scan Setup from the Simulation menu, and check the box labeled "Enable Segment Scan'.



## Example 8: Using Segment Scan to Quantify Preference Difference Between Multiple Products or Segments

- One report is generated for each **product** that was selected.
- The tabs at the bottom of the screen designate the product name and can be used to switch between reports.
- Any model type can be used with sensitivity scan, and the values produced are unique to that model. The example on this page is a preference report.
- Significant cells are highlighted in yellow.
- For each attribute level that is selected, the model determines what the preference score (switching, pct likely to purchase, etc.) would be for the segment level of that cell if the performance was set exactly at the attribute level for that cell.
- For example, in the first cell of this report, the model determines how the preference score for the segment of respondents that had no errors in the past year if their provider **always** called back with an update or answer to their problem.

Wed Jan 06 15:04:54 1999

Customer Satisfaction Research  
Checking - May 1997  
Conjoint Simulator

Sensitivity Scan

Model Type: Preference, Non-Competitive, Normalized  
Exponent: 1.00

Sensitivity Scan: Error Free

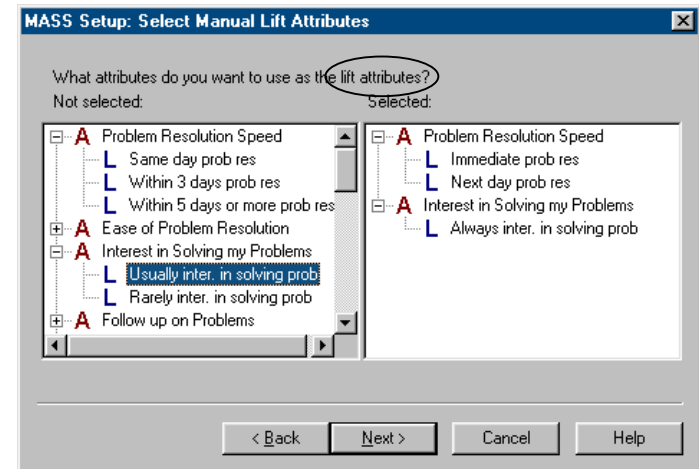
Attribute	Level	Errors In Past Year					
		No errors (355)		One error (147)		Two or more errors (114)	
		Difference	Significance	Difference	Significance	Difference	Significance
Follow up on Problems	Always call back w/ update/answer	1.47	0.02	2.05	0.12	-0.66	0.22
Follow up on Problems	Usually call back w/ update/answer	-0.65	0.28	-0.45	0.42	-2.62	0.55
Follow up on Problems	Rarely call back w/ update/answer	-4.00	0.00	-3.98	0.00	-5.55	0.00
Transaction Errors	0/yr trans errors	0.00	1.00	0.39	1.00	-1.99	1.00
Transaction Errors	1-2/yr trans errors	-5.22	0.00	-3.55	0.00	-5.67	0.00
Transaction Errors	3-4/yr trans errors	-8.57	0.00	-6.90	0.00	-8.61	0.00
Transaction Errors	5+/yr trans errors	-11.64	0.00	-10.01	0.00	-10.93	0.00
Bank ATM fees	No ATM fees	1.53	0.38	1.04	0.53	-1.41	0.59
Bank ATM fees	\$1.00 ATM fee/transaction	-2.25	0.00	-4.00	0.00	-5.48	0.00
Bank ATM fees	\$1.50 ATM fee/transaction	-5.37	0.00	-5.64	0.00	-7.59	0.00
Bank ATM fees	\$2.00 ATM fee/transaction	-7.66	0.00	-7.96	0.00	-10.38	0.00

Sensitivity: CF Baseline | Sensitivity: Error Free

For Help, press F1 | Banksper,prf | Checking

## Example 9: Running Multiple Attribute Strategy Scanning (MASS)

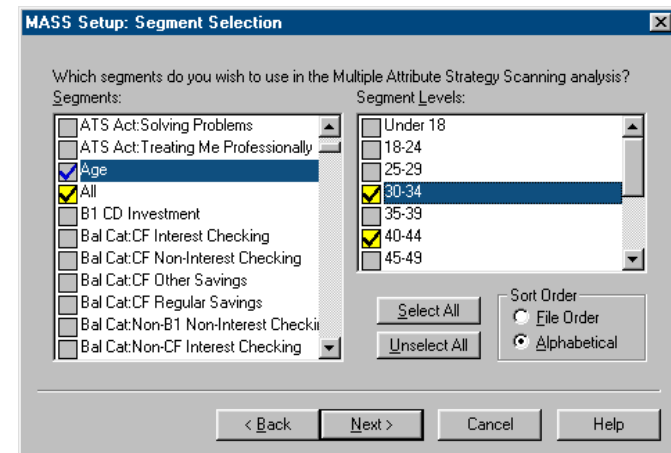
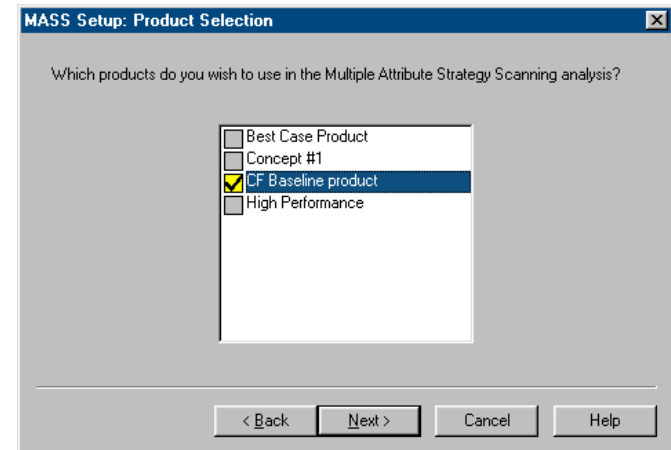
- Open ProductSolve™
- Open the desired Preference File
- Choose the model to analyze
- MASS Setup
  - MASS enables the user to run simulations for thousands of combinations of attributes simultaneously.
  - To run MASS, select 'Multiple Attribute Strategy Scanning' from the Simulation menu to start the MASS wizard that will guide you in selecting attributes, products, and segments.
  - On each screen of the wizard, select the Next button at the bottom when you are finished making your selections. You may move backwards or forwards through the wizard at any time to modify your selections.
  - The second screen of the wizard asks you to select the lift attributes for the analysis. These are attributes and levels that would cause an increase in preference from the baseline product.



- For both lift and tradeoff attributes, attribute levels that will be evaluated in the MASS analysis must be in the 'Selected' box on the right side of the dialog box. An entire attribute can be selected, or specific levels. To move an entire attribute, click on the attribute name and drag it to the Selected box. To display the levels for an attribute, double-click on the attribute name, or click on the + sign to the left of the attribute name. To select an attribute level, click on the level name and drag it to the Selected box.

## Example 9: Running Multiple Attribute Strategy Scanning (MASS)

- In the Product Selection dialog box, select the product(s) that will be the baseline product for the analysis. The selected product will be the base to which the selected attribute changes are made and the analysis is run on. If multiple products are selected, a separate report will be created for each one.
- The Segment Selection box functions the same as the market filters dialog box for selecting attributes and levels. Attributes and levels that have a checkmark to the left of the name are selected. Attributes that have blue check indicate that all of the levels have not been selected for that attribute. The levels displayed in the Segment Levels box on the right side correspond to the highlighted attribute in the Segments box on the left.
- There is no limit to the number of segments and levels that can be selected, but the report may get difficult to interpret if there are too many segments. Each selected segment level will be a column in the MASS report.
- The **Select All** and **Unselect All** buttons apply to all possible attributes, not only the visible segment levels.



## Example 9: Running Multiple Attribute Strategy Scanning (MASS)

- In the Final Criteria dialog, the number of strategies to run is determined.
- The Attribute Lift/Tradeoff Difference Constraint refers to a maximum difference between the number of lift attributes and tradeoff attributes considered simultaneously. The Difference Constraint could also be thought of as the absolute value of the number of lift attributes minus the number of tradeoff attributes in a single strategy.
- Both the minimum and maximum number of attributes combined refer to the sum of the tradeoff and lift attributes in a single strategy. The maximum value must be greater than the minimum value for any strategies to be generated.
- The value in the 'Number of Strategies That Will Be Tested' box represents the number of rows of individual strategies that will be in the MASS report. This value changes dynamically as other values in the dialog box are changed.
- **The box labeled Enable Multiple Attribute Strategy Scanning *must* be checked to run a MASS report.**

MASS Setup: Final Criteria

Finally, you must indicate how you want the attributes to be combined.

Attribute Lift/Tradeoff Difference Constraint:

Minimum Number of Attributes Combined:

Maximum Number of Attributes Combined:

Number of Strategies That Will Be Tested:

Enable Multiple Attribute Strategy Scanning

Display Output as Deviations

< Back Finish Cancel Help

- The Display Output as Deviations option can be used with any simulation model. If the deviations option is checked, the value in the report will be the difference between the output for the baseline product and the new strategy.
- Select the Finish button when all of the options have been selected. From the simulation menu, select the simulation model to be used. When all the options have been set, select Execute MASS analysis from the simulation menu.



## Example 9: Running Multiple Attribute Strategy Scanning (MASS)

- When the MASS analysis has been run, a report similar to the example on the right will be displayed. If the report is not maximized, the strategies may not be visible. The default setting is for the top pane of the report to be frozen so that the user can scroll through the strategy results and still be able to see the segment level labels at all times.
- The attribute level labels are displayed above the attribute labels. The lift attributes are displayed first, to the left of the tradeoff attributes. An X in an attribute level's column indicates that the attribute was set to that level for the strategy represented in that row. An attribute can not be set to two different levels at once, so when multiple attribute levels are combined, ProductSolve™ will automatically not include multiple levels from the same attribute.
- The segment categories are listed to the right of the attributes. Each selected attribute level will be displayed in a separate column. In this example the output is displayed as preference deviations from the base product.

Weighted  
Model Type: Preference Non-Competitive, Normalized  
Exponent: 1.00

Multiple Attribute Strategy Scan: CF Baseline product  
Total Number of Strategies Tested: 37

Lift Attributes	Tradeoff Attributes						All	All	615	Difference
	Problem Resolution Speed	Problem Resolution Speed	Problem Resolution Speed	Problem Resolution Speed	Problem Resolution Speed	Interest in Solving my Problems				
Immediate prob res							X			-5.14
Same day prob res								X		-0.99
Next day prob res									X	-0.00
Within 3 days prob res										-0.09
Within 5 days or more prob res										1.97
Always inter. in solving prob									X	-3.45
Rarely inter. in solving prob										0.93
Ease of Problem Resolution										1.97
Interest in Solving my Problems									X	1.97
Products Meet my Financial Needs									X	1.86

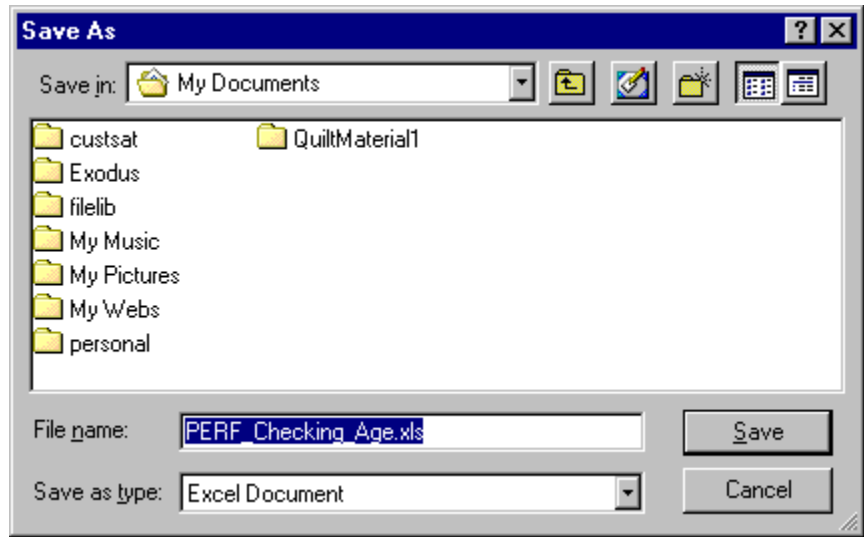
MASS: CF Baseline product  
For Help, press F1 Bank.pf

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## **IV. Appendix I: More Explanation of the Dialogs of ProductSolve™**

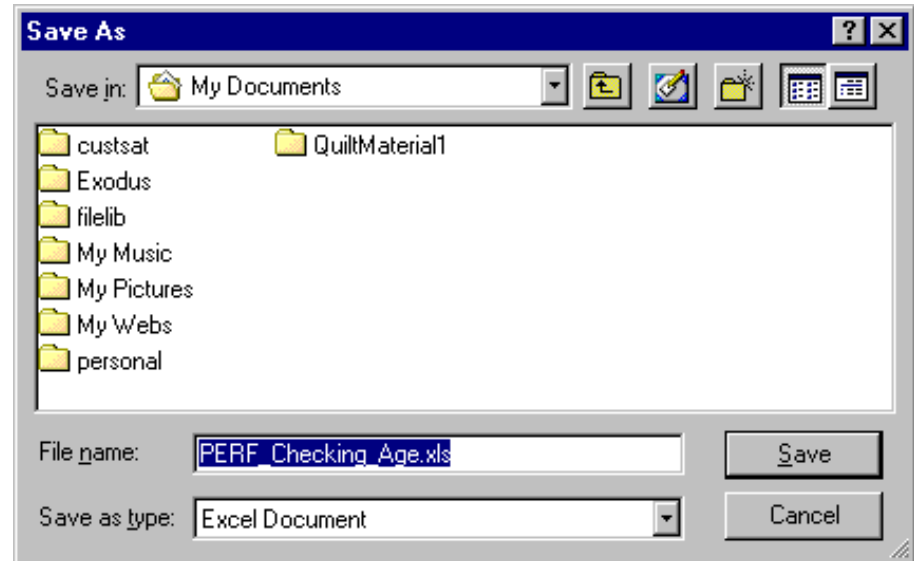
## 1. File: Save Output File

- Output files are created each time a report is run. If the option to 'output reports as charts' is deselected before running the report, the output file can be saved as a text file (\*.txt), then opened and edited in any word-processing application. By default the output files are saved in the Excel file format (\*.xls).
- Only the output file that is currently selected will be saved under this option; multiple reports cannot be saved to the same output file.
- To save an output groups file, enter a name for the file in the 'File name' box, then select Save.
- Browse through available directories using the folder button and selecting the desired directories in the same way that a file would be saved in standard Windows applications.
- If the Cancel button is selected, ProductSolve™ will exit this dialog box and cancel any changes made.



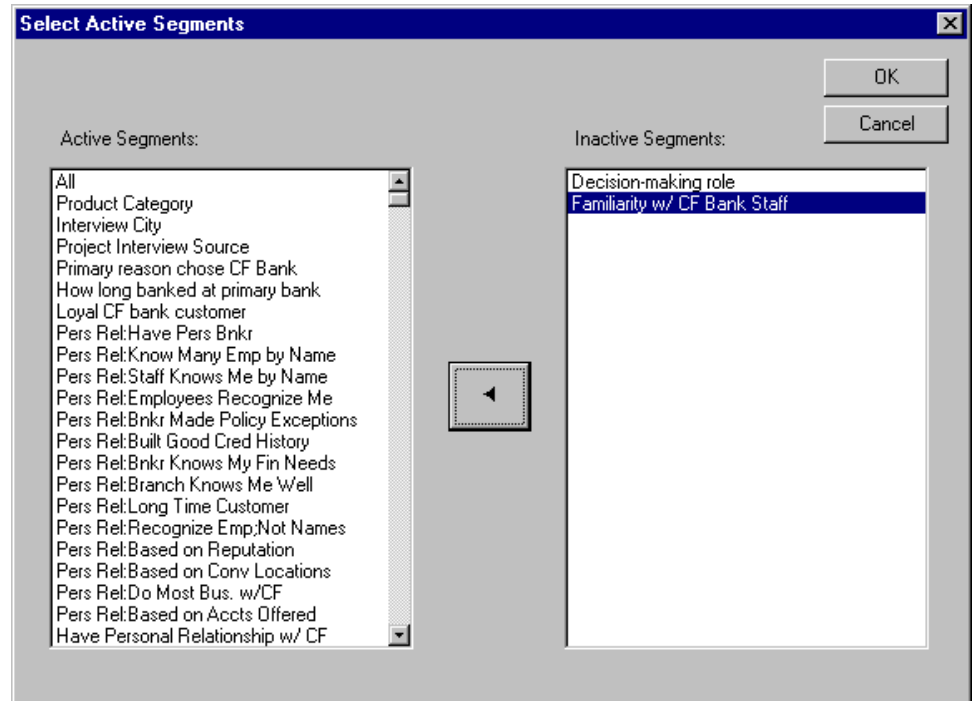
## 1. File: Save Preference File

- Products or run group sets that have been created or product specifications that have been changed can be saved for future use with this option. By saving the preference file, they can be used for analysis.
- Under Analysis Setup, choose **Save Options** to select specific options to save when the preference file is saved.
- To save a preference file, enter a filename for the file in the Save As dialog box in the 'File name' box, then select **Save**.
- Browse through available directories using the **folder** button and selecting desired directories in the same way that a file would be saved in standard Windows applications.
- If the **Cancel** button is selected, the dialog will cancel any changes made and then exit.



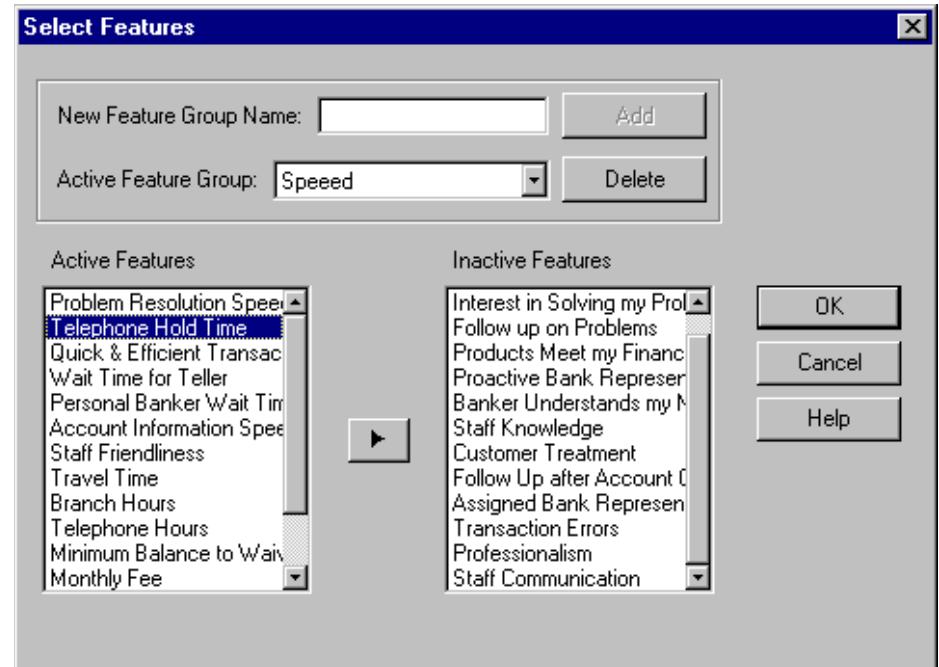
## 1. Analysis Setup: Active Segments

- This dialog box appears after first selecting Analysis Setup the Active Segments.
- The default option is for all segments to be active, but segments can be made inactive by highlighting the segment, then selecting the right arrow.
- Inactive segments will not appear as options for market filters or run groups, and will also not appear on any of the reports run after they are designated inactive.
- To make an inactive segment active, highlight the inactive segment, and select the left arrow that points to the active segments.
- By default, the active and inactive segments are saved with the preference file.
- If the **Cancel** button is selected, the dialog will cancel any changes made and then exit.



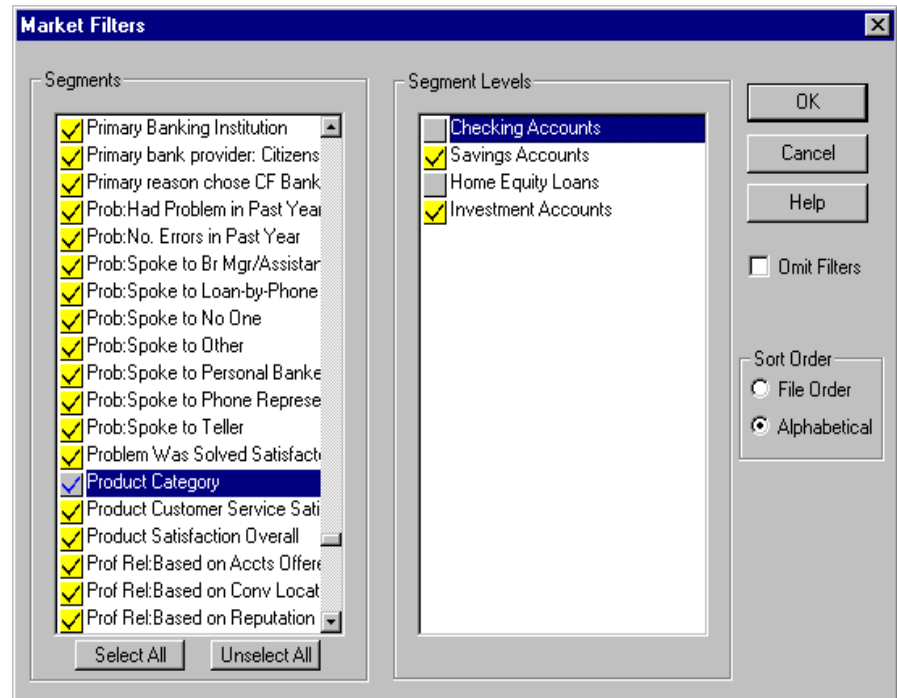
## 2. Analysis Setup: Active Features

- This dialog box appears after selecting Analysis Setup, Active Features.
- The default option is for all features to be active, but features can be made inactive by highlighting the segment, then selecting the right arrow.
- An Active Feature Group must be selected in order to select active and inactive features. If there are no feature groups available, create one by typing the name in the 'New Feature Group Name' text box.
- Inactive features will not appear on any of the reports run after they are designated inactive. They will also not appear as options when creating a concept product or executing segment scan.
- To make an inactive feature active, highlight the inactive feature, and select the left arrow that points to the active features.
- By default, the active and inactive features are saved with the preference file.
- If the **Cancel** button is selected, the dialog will cancel any changes made and then exit.



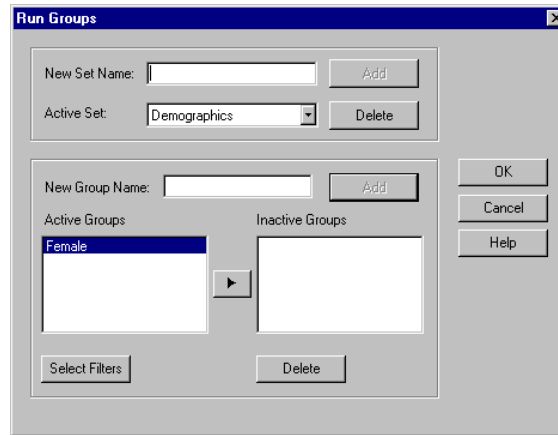
## 2. Analysis Setup: Market Filters

- This dialog box is an option under the Describe, Simulate, and Quality Report headings.
- **Segments:** The segments box lists all of the categories that classify the respondents.
- All of the respondents are included in one of the levels within every segment.
- When **OK** is selected, only the respondents in the filters that are checked will be included in any further descriptive utility analysis.
- The **Sort Order** option is helpful for finding specific attributes. If you know only the name of the attribute, selecting the **alphabetical** option may be best. If you are selecting from several similar attributes, the **File Order** option may be best. The default option is 'File Order'
- **Segment Levels:** A subset of respondents can be selected by highlighting the segment, so the segment levels appear. If a check box by the segment or segment level is not checked, those respondents will not be included in the analysis. For example, if **OK** is selected now from this box, only respondents classified as loyal CF bank customers would be included.
- If the '**Omit Filters**' box is selected, any filter selections that have been made will be disregarded. This option is presently non-functional for *quality reports*.
- If the **Cancel** button is selected, the dialog will cancel any changes made and then exit.



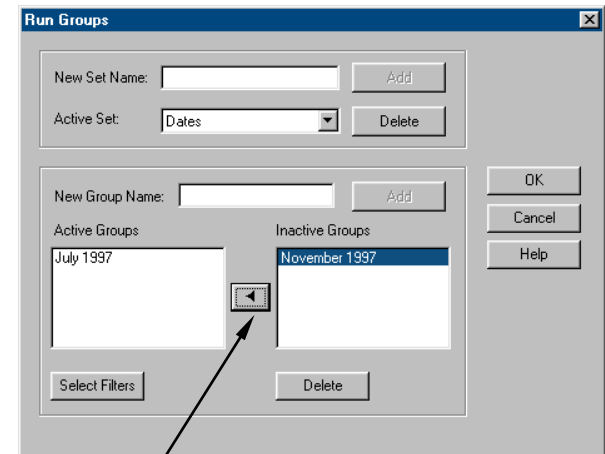
## 2. Analysis Setup: Run Groups

- Run Groups created here can be used for all types of analysis. The Run Groups option is selected to analyze multiple segments simultaneously.
- First, enter a New Set Name for a set of run groups, then select Add.
- The New Set Name then becomes the Active Set, and
- To create a run group (e.g. Product), type the group name in the box under Select Filters.



- After a run group name has been entered, selecting the **Add** button will open the Market Filters dialog box. Select the segments to put in this new group. When the OK button is clicked in the Market Filters box, the run groups name is transferred to the Active Groups box (e.g. where 'State' is in this example).
- The **Select Filters** button is only active when a run group is selected in the Active Groups box. This option allows reviewing or altering of a previously defined run group.
- **Active Groups:** The groups in the Active Groups box are the ones that will be used in the analysis. The Run Groups for Descriptive analyses, is, by design, different than in the Simulation and Quality Report Analysis Run Groups.
- **Inactive Groups:** Groups in the Inactive Groups box will not be used in the analysis, but the selected filters are maintained so that the groups can be used for future analysis.
- The **arrow** between the Active Groups and Inactive Groups boxes is used to transfer groups from Active to Inactive, and vice versa. The arrow is available whenever there are groups defined either active or inactive. The arrow will change directions depending on whether a group is selected in the Active Groups box or the Inactive Groups box. Groups can also be transferred from one box to the other by double-clicking on the group name.

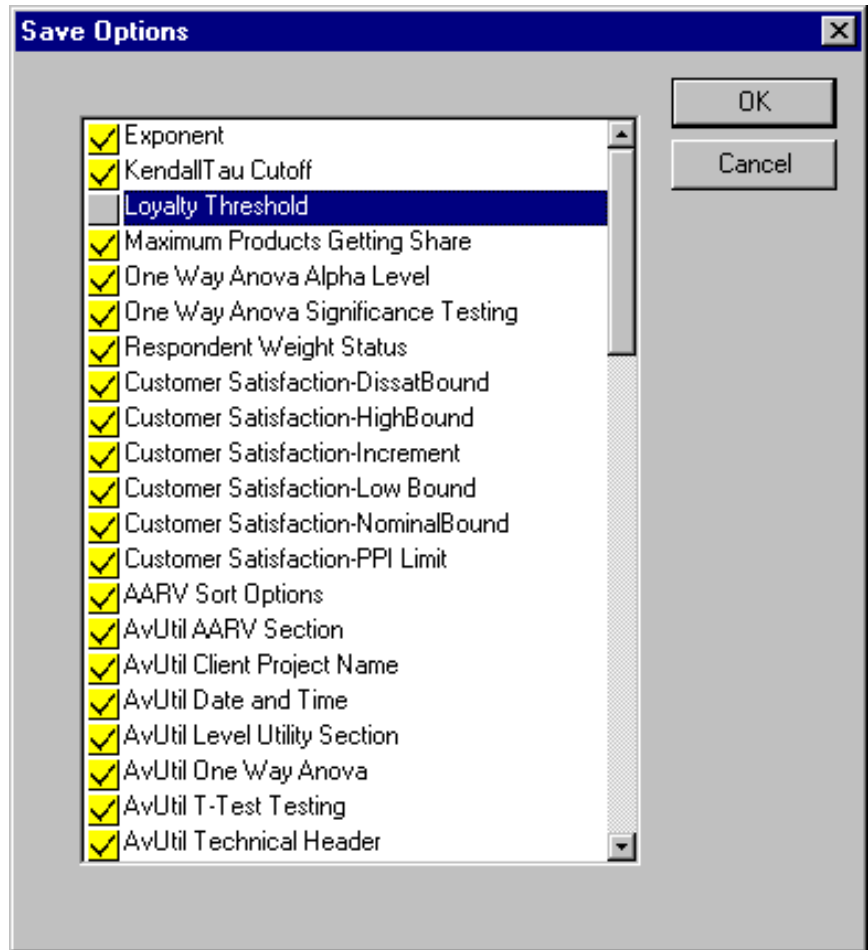
- The **OK** button saves the groups that has been formed and sets the active groups as those to be used in analysis.
- If the **Cancel** button is selected, all changes that have been made will be discarded.
- The **Delete** button will delete any groups that are highlighted in the Inactive Groups box. Active Groups must be transferred to the Inactive Groups box before they can be deleted.



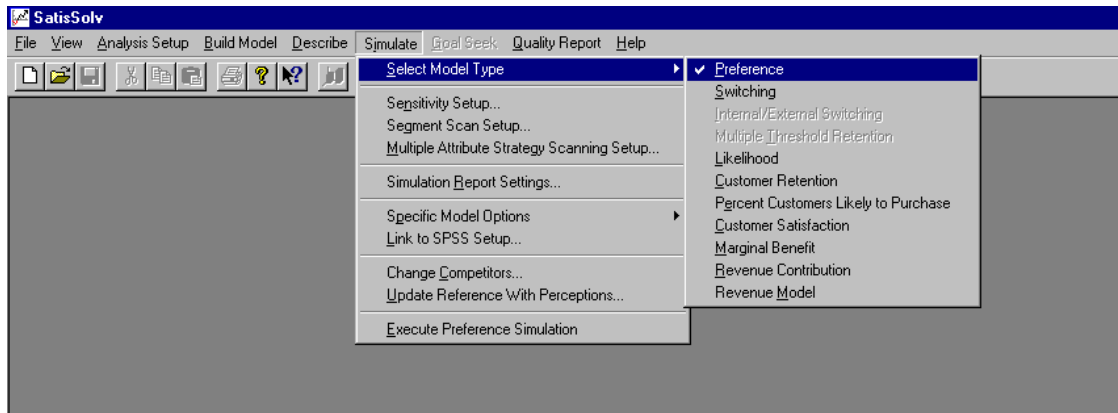


## 2. Analysis Setup: Save Options

- This dialog box is reached by selecting Analysis Setup, Save Options.
- The options listed can all be selected or deselected as options to be saved when the preference file is saved.
- Some options, such as run groups or product specifications, are always saved with the preference file.
- If the box next to an option is deselected, that option will be reset to the default setting each time the preference file is opened.
- If the **Cancel** button is selected, all changes that have been made will be discarded.

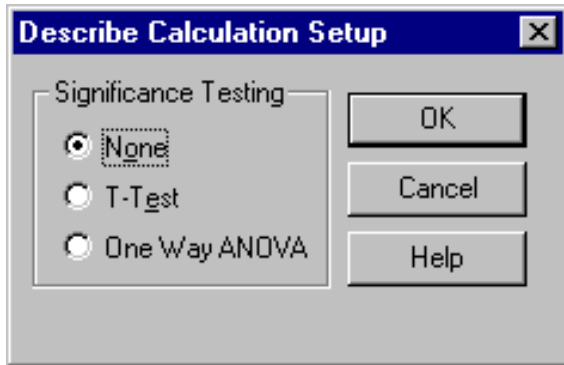


### 3. Describe: Select Data Input



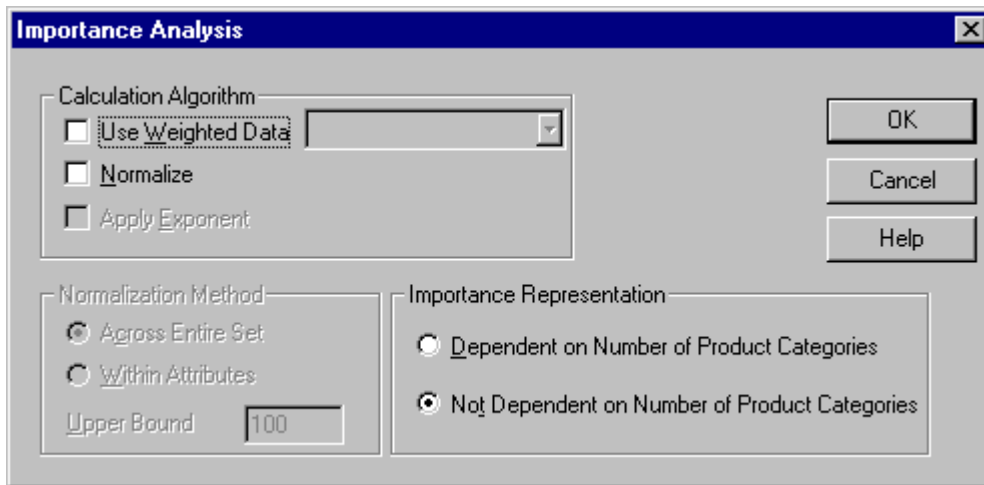
- The options in this dialog box determine the data that is used for descriptive analysis.
- Only one data set can be used at a time, but reports containing different data types can be open simultaneously.
- Note that each data type answers a different question, so reports generated appear in different forms.
- **Importance:** Importance data are found in two forms, attribute range values (ARV) and average level utilities (ALU). This information is collected in the tradeoff section of the interview and calculated using the build menu of ProductSolve™. Importance data encodes preference and not only lies at the core of the Preference Model, but is used (with other data) to produce the results all the Real World Outcome models in ProductSolve™.
- **Performance:** Performance data, usually collected on a Likert scale, is collected for each respondent on any products they own/use or products with which they are familiar.
- **Expectation:** Customers have a level of performance they expect from their provider, which may be above or below the actual level of performance. Expectation data is calculated (not asked directly) because stated expectation far overstates actual real-world expectation. Accordingly, DSS have developed a proprietary approach to calculating expectation as a function of importance and the summed utilities that tell us overall if a product meets expectation.
- **Gap:** Gap data is the gap between performance and expectation and hence it may be negative or positive. Gap analyses over the last 20 years have demonstrated that it is more beneficial to improve performance in areas where current performance is below the expected level of performance than to improve attributes that meet minimum levels of expectation.

### 3. Describe: Calculation Settings



- **General:** Under the general calculation settings, set the significance testing for any of the Describe chart types (Importance, Performance, Expectation, or Gap).
- **Significance Testing:** This option is applicable if multiple segments are being compared.
- If two run groups are active, selecting the **T-Test** option will produce an additional column with the deviation between the averages of the two groups. The model will not calculate T-tests if more than 2 run groups are active.
- One Way ANOVA is a method for determining significant differences between 2 or more segments. If only two groups are selected an ANOVA is mathematically the same as a T-Test.
- Use the mouse to select the desired option. The default is None.
- Once the significance testing option is selected, it will remain the same even if the data type is changed or other Describe chart options are modified.
- The OK button saves the settings that has been chosen and exits the dialog box.
- If the Cancel button is selected, this dialog will exit and cancel any selections made.
- The Help button is non-functional.

### 3. Describe: Calculation Settings

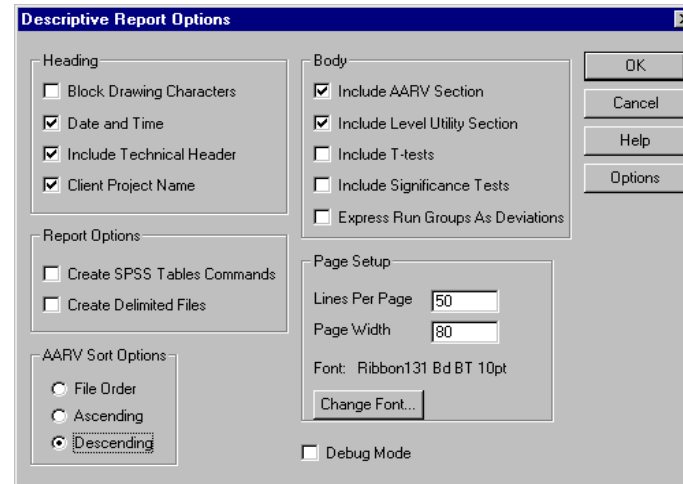


- The **OK** button saves the settings chosen and exits the dialog box. Settings are returned to the defaults when the program is exited.
- If the **Cancel** button is selected, the dialog box will exit and all changes will be cancelled.

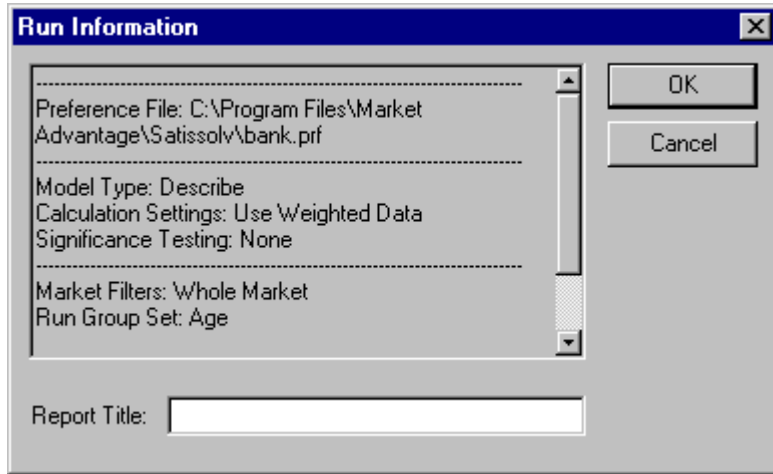
- **Calculation Algorithm:** Options under this heading affect the form of the data that is used in analysis.
- **Use Weighted Data:** This is the default setting. If the weighting option is checked, weighting variables will be available to weight data at the respondent level.
- **Normalize:** If this is selected, each respondent's attribute utilities will be renormalized with the maximum utility set to 100. By default, this option is off.
- **Importance Representation:** (These options only impact the global model.) The option that is selected determines how respondents without utilities for an attribute are handled. Most attributes are specific to only one product category. If '**Dependent on Number of Product Categories**' is selected., average utilities for attributes which occur in only one pipe will be calculated as if the respondents not in that pipe have an average utility of 0 for that attribute. This is the preferred method, because attributes that only apply to one business line will be shown more accurately to be less important in the global model than if the report was run for only one product category. If the second option is selected, the average utilities for attributes in only one business line will be calculated ignoring respondents not in that business line.

### 3. Describe: Report Settings

- **Heading:**
  - **Block Drawing Characters: Not Active**
  - **Include Technical Header: Not Active**
  - **Date and Time:** The date and time will be included in the output report.
  - **Client Project Name:** The project name (e.g. Citizens Fidelity) will be included in the header if this is selected.
- **Report Options:** None of these options are active.
- **AARV Sort Options:** These options determine which order the attributes are listed in.
  - **File Order:** Attributes will appear in the order they are listed in the file. This is useful if multiple reports are being compared, so that attributes will be in the same order.
  - **Ascending:** Attributes will be listed in ascending order of utility.
  - **Descending:** Attributes will be listed in descending order of utility. This is the default setting.
- **Body:** These options affect the output that is included in the report.
  - **Include AARV Section:** This determines whether the list of attribute utilities is included at the beginning of the report.
  - **Include Level Utility Section:** If checked this will include the ALU (average level utility) portion of the report
  - **Include T-Tests:** Select under Calculation Settings
  - **Include Significance Tests:** These option is not currently functional. Select under Calculation Settings.
  - **Express Run Groups as Deviations:** If selected, the data will be displayed as deviations from the grand mean.
- **Page Setup:** None of the options in this box are currently active.
- **Debug Mode:** This causes debug information to be put into debug.out. (For DSS use only.)
- The **OK** button saves the settings that has been chosen and exits the dialog box.
- If the **Cancel** button is selected any selections will be cancelled and the dialog will exit.
- **Options:** This button is non-functional.

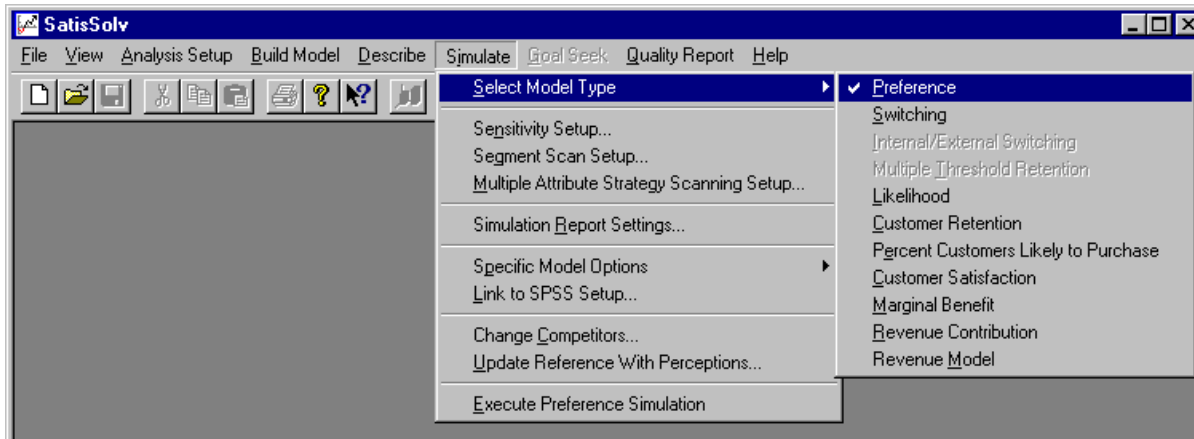


### 3. Execute Report: Run Information



- This dialog is available when Execute is selected under the Describe, Simulate, and Quality Report headings.
- A report title is not necessary for the report to be processed.
- If a report title is not going to be entered, either select **Cancel** or the 'X' in the corner.
- After a report title has been entered in the white box, select **OK**.
- This box displays the options that have been selected for the particular report that is being run. You can check here to see if Market Filters have been selected, which run groups are active, and which calculation settings or significance tests are being used.
- If there is a setting you want to change, press 'Cancel' and the run will abort.

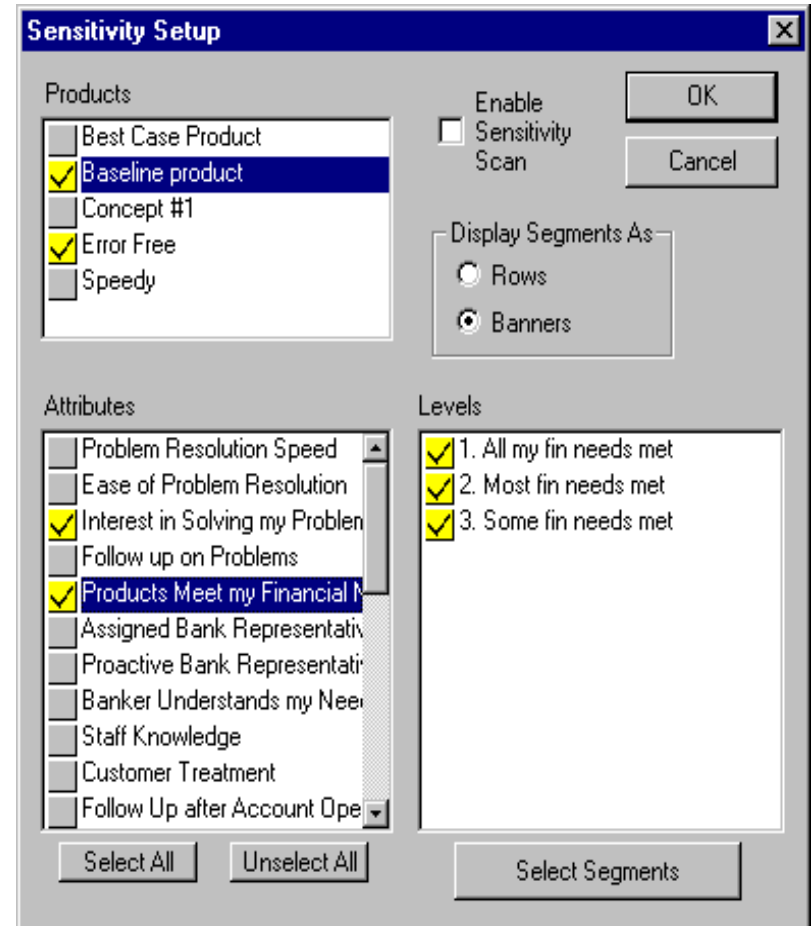
## 4. Simulate: Select Model



- The options for Select Model Type determine the model that is used for simulation analysis.
- Only one model can be used at a time.
- Each model has a distinct purpose and attempts to answer a different question, so reports generated may appear in different forms.
- **Preference:** The Preference Model produces summed consumer preferences for all defined products.
- **Switching:** The Switching Model determines the percentage of respondents that would be likely to switch from their current product to a defined product. As with all RWO models, it is based on a preference model base.
- **Likelihood:** The Likelihood of Purchase (LOP) model combines a preference model data and an individual respondent logistic regression level regression to observe average LOP in the market.
- **Customer Retention:** This model does the reverse of the Switching model, and determines which respondents will be retained when offered competitive products.
- **Percent Customers Likely to Purchase:** This model is a variant of the LOP model. The percentage LOP model (or pLOP) leverages individual respondent thresholds obtained from the survey to determine a cut point sufficient for that given respondent to purchase that product.

## 4. Simulate: Sensitivity Setup

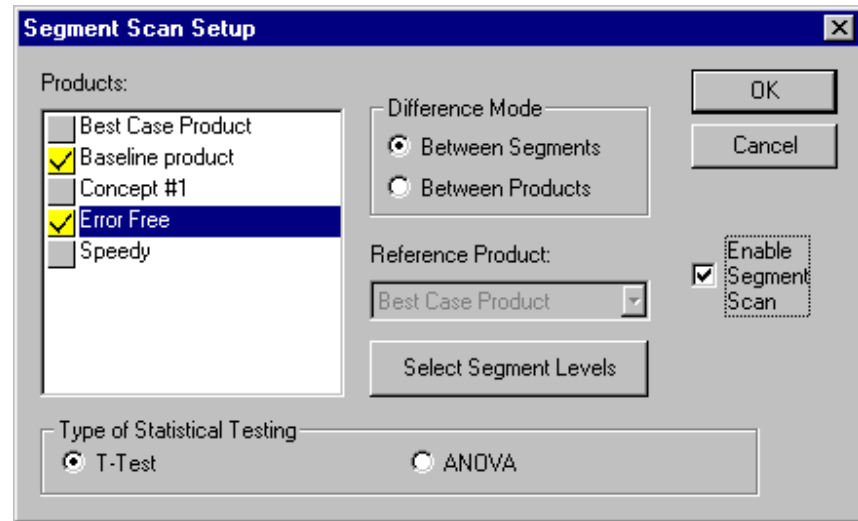
- Sensitivity Scanning is a powerful tool that searches and scans for the significant data results across all (or selected) segments and products. The output is a matrix with segments as the columns, attributes as the rows and products as the tabs in the spreadsheet. A new concept product is created that is identical to the base product selected except for one attribute level. The *sensitivity* of the market to that attribute level can then be assessed by comparing the market response to each product. Sensitivity Scan can be enabled for Preference, Likelihood, Switching, and Customer Satisfaction reports.
- To run Sensitivity Scanning:
  - Check the box labeled 'Enable Segment Scan'. Segment scan is automatically disabled after one report is produced. The selected products and segments will be saved, but this box will need to be rechecked for each run.
  - In the 'Products' box, select the product(s) you would like to scan. A separate report will be created for each product that is selected.
  - In the 'Display Segments As' box, choose whether the segments will be row or column variables.





## 4. Simulate: Segment Scan Setup

- Segment Scanning is another powerful tool that can produce reports analyzing the significant results of several segments and products. A matrix is produced showing the values for segments against each other, and also comparing products. Segment Scan can be enabled for Preference, Likelihood, and Customer Satisfaction reports.
- To run Segment Scanning:
  - Select the product(s) you would like to scan in the 'Products' box.
  - In the 'Difference Mode' box, select the variable that will be analyzed using Segment Scan. If products is selected, then the deviations and significance will be determined for each segment's response across product concepts.
  - If 'Between Products' has been selected, the Reference Product option will become active, which determines the base for computing deviations. Any product can be selected as the reference product, but usually either the Best Case or Baseline products are best.
  - Click on the 'Select Segment Levels' button to choose specific Segments and segment levels to be included in the report. At least one segment level must be selected to run a segment scan report.
  - Check the box labeled 'Enable Segment Scan'. Segment scan is automatically disabled after one report is produced. The selected products and segments will be saved, but this box will need to be rechecked for each run.



## 4.Simulate: Report Settings

### ■ Heading:

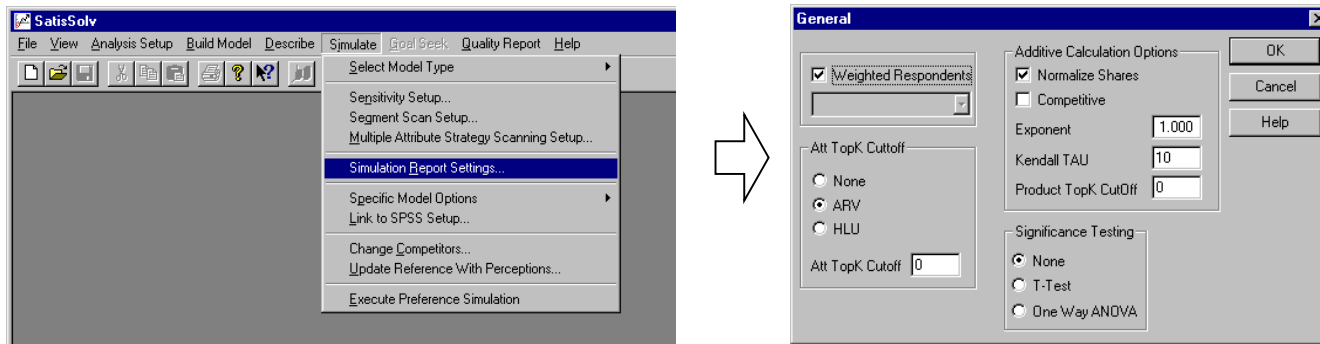
- **Date and Time:** The date and time will be included in the output report.
- **Client Project Name:** The project name (e.g. Citizens Fidelity Bank) will be included in the header if this is selected.
- **Tech Parameters:** This determines if technical parameters such as the exponent are listed in the report



### ■ Body: These options affect the output included in the report.

- **Include Product Specifications:** This determines whether the product specifications that have been defined will be included in the report. This is the default setting.
- **Express Run Groups as Deviations:** If this option is selected, deviations of the share for each run group from the whole market will be displayed instead of the raw scores.
- The **OK** button saves the settings that have been chosen and exits the dialog box.
- If the **Cancel** button is selected, the dialog box will exit and cancel any changes made.
- The **Help** button is non-functional.

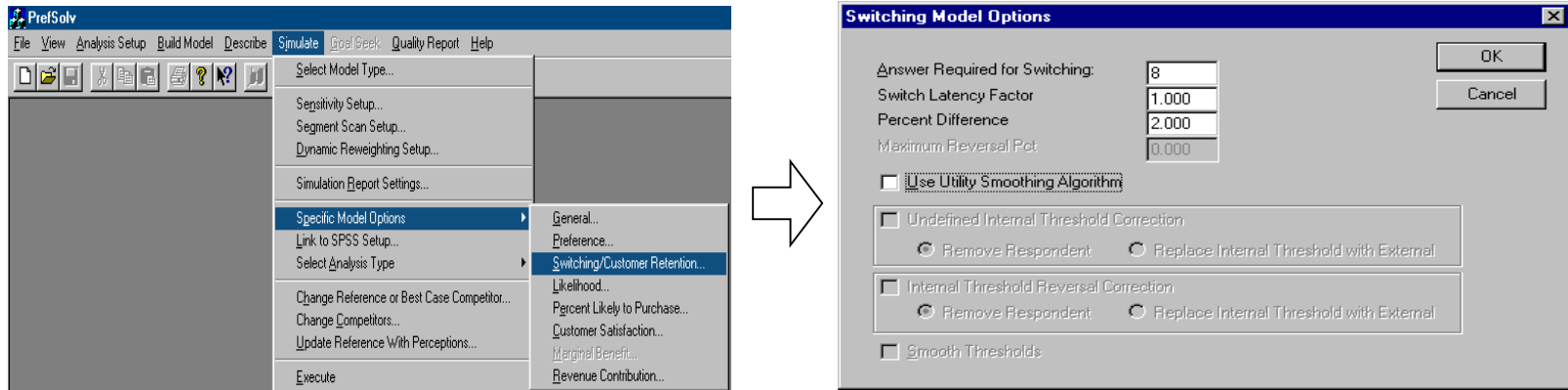
## 4. Simulate: Specific Model Options, General



This dialog box is reached by selecting Simulate, Specific Model Options, General.

- **Weighted Respondents:** If this check box is selected, individual respondent weights, if present will be used.
- **Att TopK Cutoff:** If a value is entered other than zero, this limits the number of attributes that are allowed to contribute to a product. That is, AttTopK = 15, then only the Top 15 attributes will contribute to the overall attractiveness of each product.
  - **None:** If this is selected, all attributes are active.
  - **ARV:** If this is selected, the top attributes will be determined by examining the attribute range values.
  - **HLU:** If this is selected, the top attributes will be determined by examining the highest level utility.
- **Additive Calculation Options:**
  - **Normalize Shares:** This is selected by default. If this option is not selected, the preference share scores will not be normalized, so the total preference for each product from each respondent is simply added. This should normally be checked.
  - **Competitive:** This only impacts the preference model. If selected, the preference share will be renormalized to sum to 100.
  - **Exponent:** An exponent is applied to the sum of utilities to determine the preference share.
  - **Kendall's Tau:** Kendall's tau is a measure of how well a respondent's utilities fit the calibration data. It can range from 0 to 100. If a respondent's tau value is below this cutoff, that respondent will not be included in the simulator.
  - **Product TopK Cutoff:** If the product TopK is non-zero, each respondent can contribute to at most this number of products.
- **Significance Testing:** This option is applicable if two run groups are being tested. Only the None or T-Test are active.
- The **OK** button saves the settings that have been chosen and exits the dialog box.
- If the **Cancel** button is selected, any changes made will be cancelled and the dialog box will exit.

## 4. Simulate: Specific Model Options, General

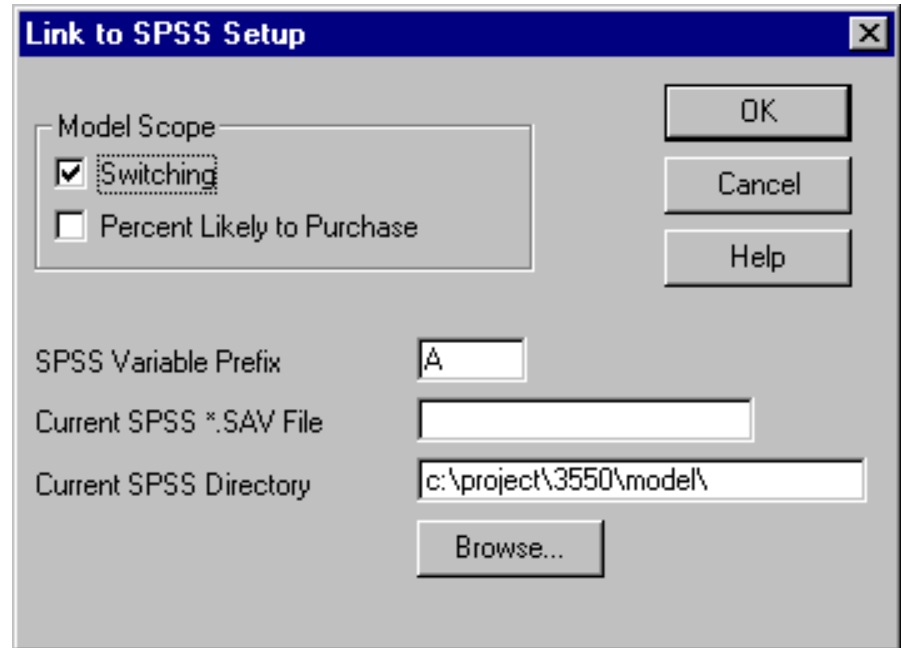


This dialog box is reached by selecting Simulate, Specific Model Options, Switching/ Customer Retention.

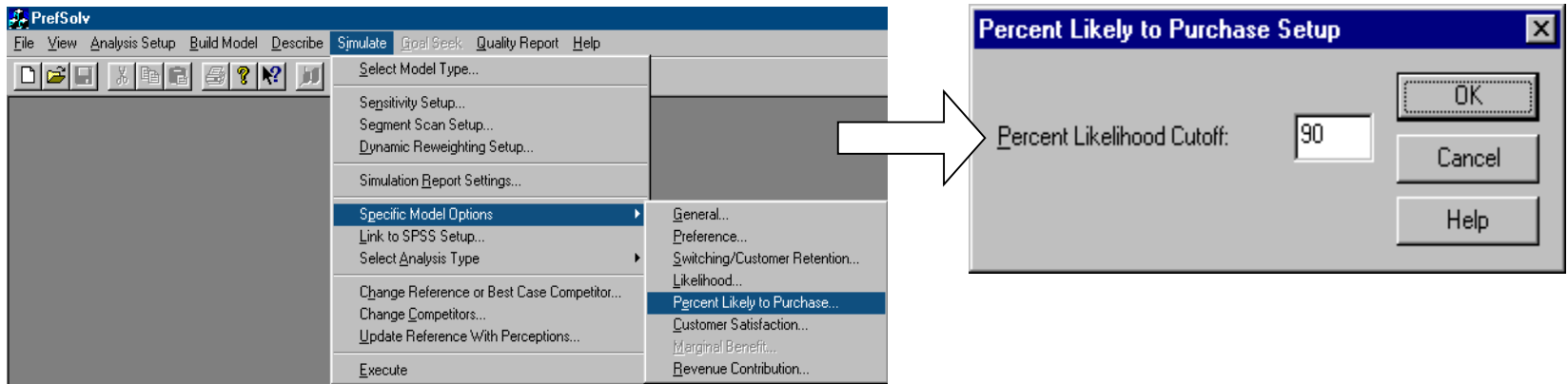
- **Answer Required for Switching:** This part of the dialog box determines the threshold levels for the switching model. Each of selections correspond to the possible answers in the switching threshold questions (Usually from 1-10) in the interview.
- **Switch Latency Factor (SLF):** This number is multiplied by the threshold determined from the switching threshold questions. A number below 1.0 makes switching easier than determined by the switching questions. A number above 1.0 makes the switching more difficult than determined by the switching questions.
- **Percent Difference (PD):** For a respondent to switch, two thresholds must be exceeded. The first is the SLF. The second is the PD. The PD defines the percent of the total sum of utilities that any given product must be *above* the reference product for switching to occur.
- The **OK** button saves the settings that have been chosen and exits the dialog box.
- If the **Cancel** button is selected, any changes made will be cancelled and the dialog box will exit.

## 4. Simulate: Link to SPSS Setup

- This dialog box is reached by selecting Simulate, Link to SPSS Setup.
- **Model Scope:** The model can be linked to SPSS with either the switching model or the Percent Likely to Purchase model. Check the box by the model you are using.
- **SPSS Variable Prefix:** A letter that will be appended to the beginning of each SPSS variable that is generated. Normally, you can use the default, 'A'.
- **Current SPSS \*.SAV File:** This box is for the name of the SPSS file where the data is stored. The .SAV extension should also be included.
- **Current SPSS Directory:** Enter here the path for the SPSS data file. The drive and all directories for the file should be included.
- **Browse:** The Browse button opens the File Open dialog box which allows you to select the current SPSS file. Then, the path and filename will automatically be entered in the appropriate boxes.
- The **OK** button saves the settings that have been chosen and exits the dialog box.
- If the **Cancel** button is selected, any changes made will be cancelled and the dialog box will exit.



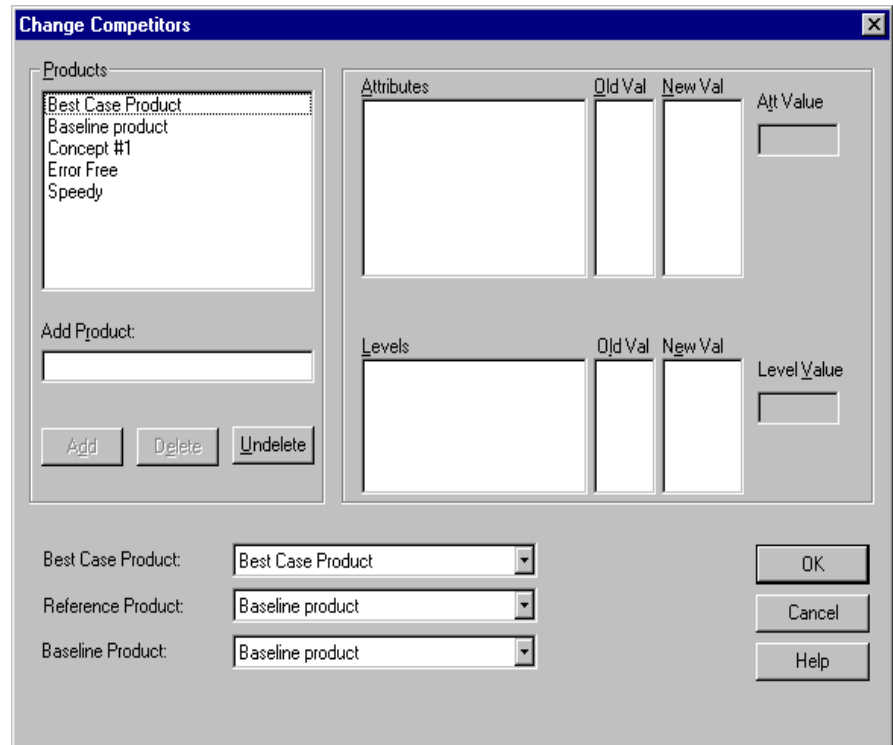
## 4. Simulate: Specific Model Options, Percent Likely to Purchase



- This dialog box is reached by selecting Simulate, Specific Model Options, Percent Likely to Purchase.
- Options in this box are only applicable if the Percent Likely to Purchase model has been selected.
- **Percent Likelihood Cutoff:** This number indicates the threshold at which the model will include respondents as those likely to purchase selected products. (e.g. if customers are not 90 percent likely to purchase, they are not represented in the output value of percent likely to purchase.)
- The **OK** button saves the settings that have been chosen and exits the dialog box.
- If the **Cancel** button is selected, any changes made will be cancelled and the dialog box will exit.

## 4. Simulate: Change Reference or Best Case Competitor

- This dialog box is used to change the products in the simulator.
- The top part of the dialog allows the individual levels of any existing or new product to be changed.
- The bottom part of the dialog allows the user to change the product that serves as the Best Case product and the Reference product in the model.
- To Change the reference product, select the circle by 'Reference Product, and then click on the arrow to see all the choices of products. Highlight and click on the product to be selected.
- To Change the best product, select the circle by 'Best Product, and then click on the arrow to see all the choices of products. Highlight and click on the product to be selected.
- The **OK** button saves the settings that have been chosen and exits the dialog box.
- If the **Cancel** button is selected, any changes made will be cancelled and the dialog box will exit.



## 4. Simulate: Change Competitors (cont'd)

- Notice that **Products** box lists of all the currently defined products. A scroll bar exists if the number of products do not fit in the box.
- To **add** a product enter the product in the 'Add Product' box (e.g. new product) and select Add. The new product will be a copy of the current reference product .
- To **delete** a product from the Products list, highlight it, and select the **delete** button. Be careful when deleting! When this dialog box is exited, the deleted products will no longer be retrievable.
- The Attributes box contains a list of all the attributes. The '**Old Val**' column contains the attribute level at which the attribute was set before any changes, and the '**New Val**' contains any changed level settings.
- To change an attribute, highlight the attribute. Its levels will appear in the lower box titled '**Levels**'. Change it either by a) entering a value in the '**Att Value**' box, double-clicking on the level desired, or specifying values for multiple levels using the 'Level Values' box.
- Values entered in the **Att Value** box do not need to be integers (e.g. setting the Interest Rate Attribute Value to 1.5 will set the Interest rate between the first two levels, to approximately 1.5% above average.)
- To make more specific changes to the attributes, use the **Level Value** box. The numbers that are entered in the Level Value box should not be entered with a decimal point. The number entered in this box will be automatically preceded by a decimal point. These values should be viewed as weights which indicate the level of performance on the attribute. Attribute Level Values must be less than 1, and ideally the sum of all levels for an attribute should equal 1.
- The **OK** button saves the settings that have been chosen and exits the dialog box.
- If the **Cancel** button is selected, any changes made will be cancelled and the dialog box will exit.

Attributes	Old Val	New Val	Att Value
Problem Resolution Speed	0.00		
Ease of Problem Resolution	0.00		
Interest in Solving my Problem:	0.00		
Follow up on Problems	0.00		
Products Meet my Financial N	0.00		
Assigned Bank Representative	0.00		
Proactive Bank Representativ	0.00		
Banker Understands my Need	0.00		

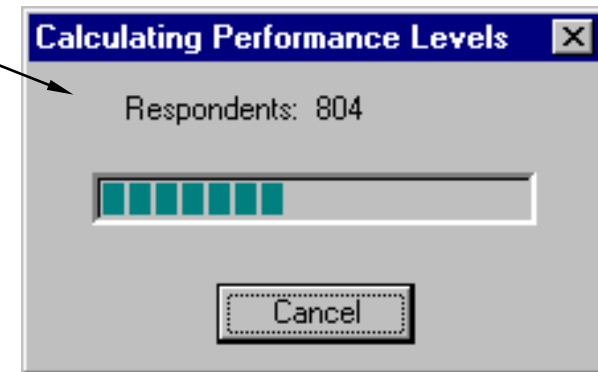
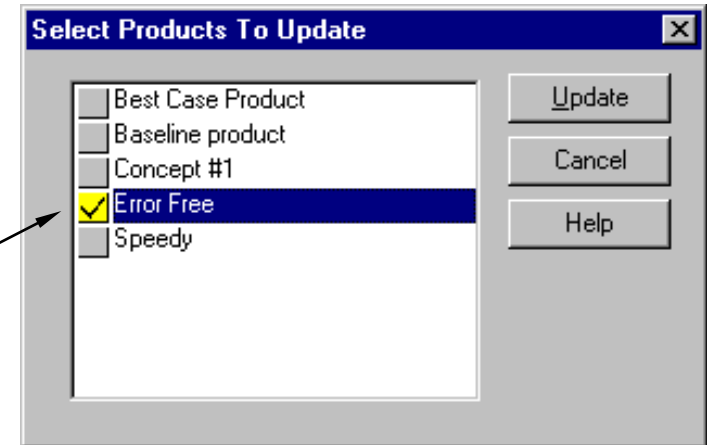
Levels	Old Val	New Val	Level Value
1. All my fin needs met	0.43		
2. Most fin needs met	0.34		
3. Some fin needs met	0.23		

**Note: When changing attribute levels, do not press 'Enter' after a level value has been entered unless you desire to exit the dialog box. Simply highlight the next level or attribute to be modified.**



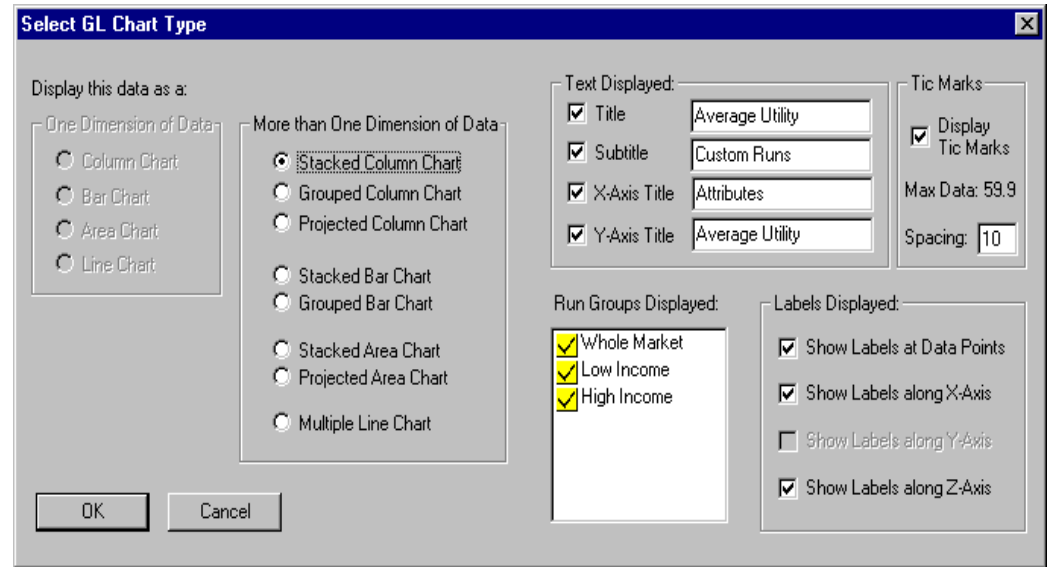
## 4. Simulate: Update a Reference Product with New Perceptions

- This dialog is used to set the attribute level weights to equal the perceptions of respondents.
- This functionality can be used to create a product based on the perceptions of all respondents or a subsegment of respondents. If a subsegment is desired, it must be selected in the Quality Report, Market Filters box.
- Click on the box next to a product to select it.
- When the **Update** button is selected, the model will run through the calculations and make changes to the attribute levels for the products selected.
- Select the 'Done' button when calculations are finished.
- The **OK** button saves the settings that have been chosen and exits the dialog box.
- If the **Cancel** button is selected, any changes made will be cancelled and the dialog box will exit.



## 5. Using Charts

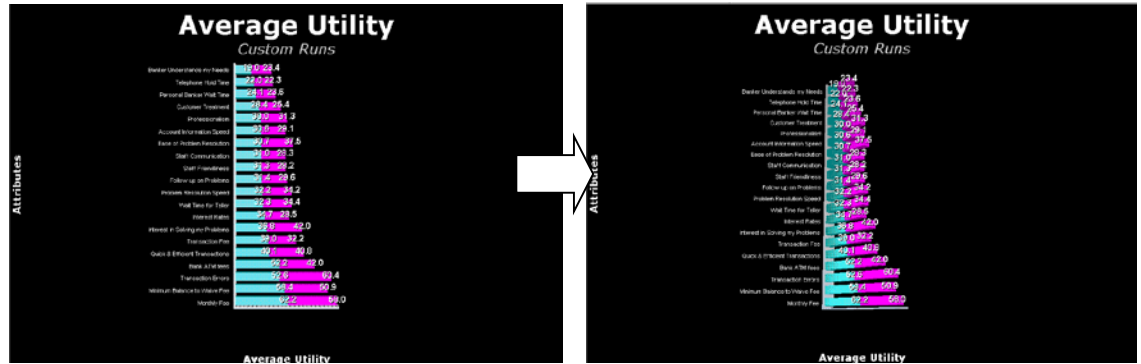
- The option to create a chart is available with most reports. If it is available, the **Chart** icon will be active on the toolbar. Click on this icon using the mouse to select the chart options. Multiple charts can be displayed for a single report, so if the type of chart or the selected run groups need to be changed, simply create a new chart. To view other reports and charts or get to the main menu functions, use the mouse to put the focus on a report window. The menu options are not accessible when a chart has the focus.



- If run groups are being used, then the options for 'More than one Dimension of Data' will be available. If run groups are not used, then the 'One Dimension of data' options will be available. If you want the differences between groups to be understood, a grouped or projected chart is best. A stacked chart is indicated if there are lots of active features for a report.
- A *Column chart* displays bars vertically, and a *Bar Chart* displays bars vertically.
- The selected run groups to be displayed on the chart can not be changed after the chart is displayed.
- In the 'Text Displayed' box, the text that will appear on the chart can be edited. If A title was entered for the report, that title will also appear on the chart, and if not title was entered, the type of the report will appear.
- In the 'Tic Marks' box, the Max Data value is the highest Average Utility value that appears on the chart. Tic Mark labels are only displayed as high as the Max Data value, so this value helps to determine the spacing. If the spacing is 10, as in this example, and the Max Data value is 62.2, there will be 6 tic marks.
- The **OK** button saves the settings that have been chosen and exits the dialog box.
- If the **Cancel** button is selected, any changes made will be cancelled and the dialog box will exit.

## 5. Using Charts: Movement

- There is powerful movement control over all charts created in ProductSolve™. Move the mouse or use the arrow keys to change the display of the chart. The labels and text will disappear while the chart is being moved, and the outline of the bars or area will give a 3-D image of how the chart will look.



- A chart can be moved to make the view appear to be from above the chart, or place prominence on features at one end of the spectrum. To move the chart the mouse is the quickest method. For making small changes or refining the position, the arrow keys give finer control.
- Movement:** Moving the mouse vertically or using the up and down arrows will rotate the chart around a horizontal axis. Likewise, moving the mouse horizontally or using the left and right arrows will rotate the chart around a vertical axis.
- Clicking on the right mouse button anywhere in the background of the chart will bring up a menu. Selecting 'Properties' will bring up the Chart Properties dialog box. The Geometry tab can be used to set precise specifications on position, and the extent of the rotation.
- The **OK** button saves the settings that have been chosen and exits the dialog box.
- If the **Cancel** button is selected, any changes made will be cancelled and the dialog box will exit.

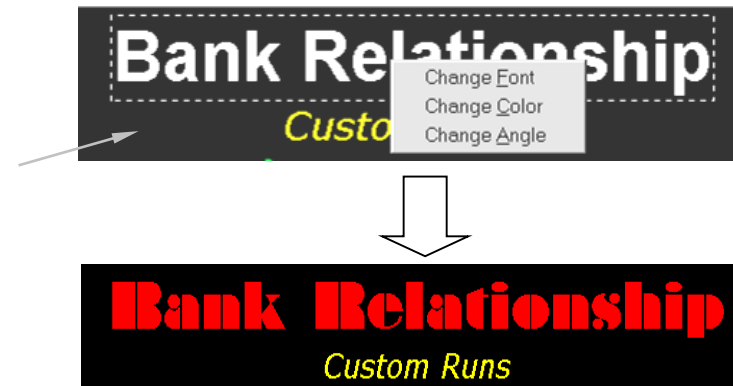
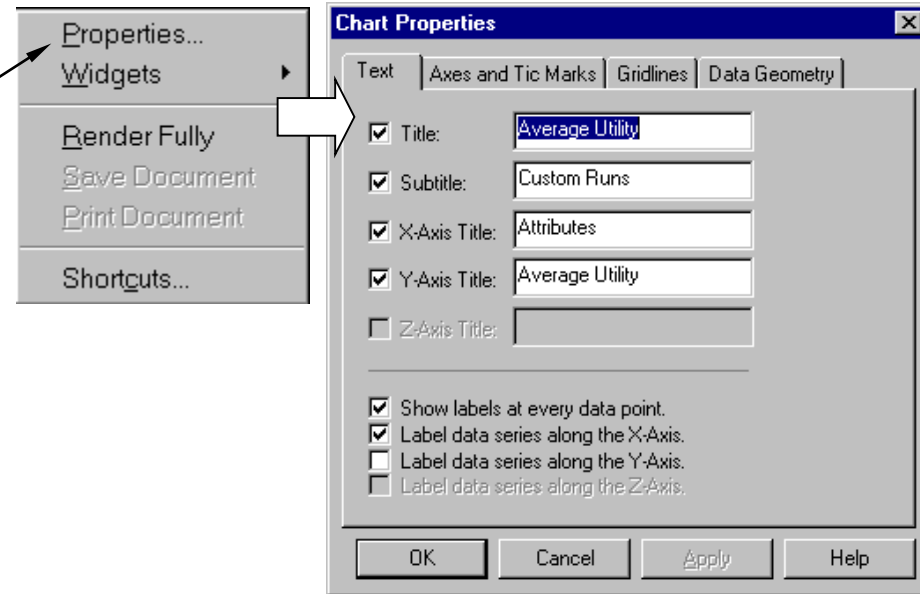
The screenshot shows the "Chart Properties" dialog box with the "Data Geometry" tab selected. The dialog box contains several settings for chart appearance:

- Element Width: 0.400
- Element Spacing: 0.200
- Element Depth: 0.400
- Group Spacing: 0.100
- X-Rotation: 10.977
- Y-Rotation: 300.000
- Eye Distance: 25.000
- Min. Value: 0.000
- Max. Value: 177.051

Buttons for "OK", "Cancel", "Apply", and "Help" are visible at the bottom of the dialog box.

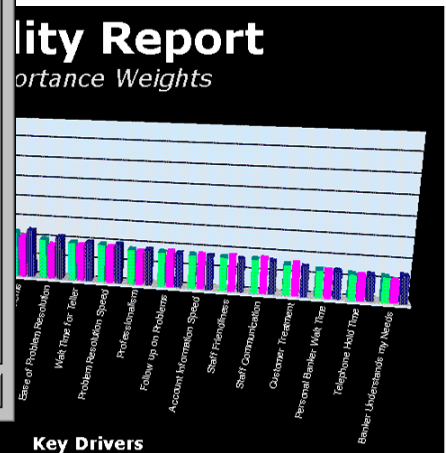
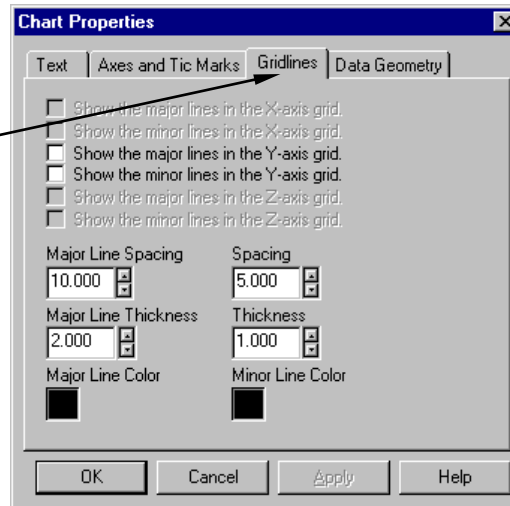
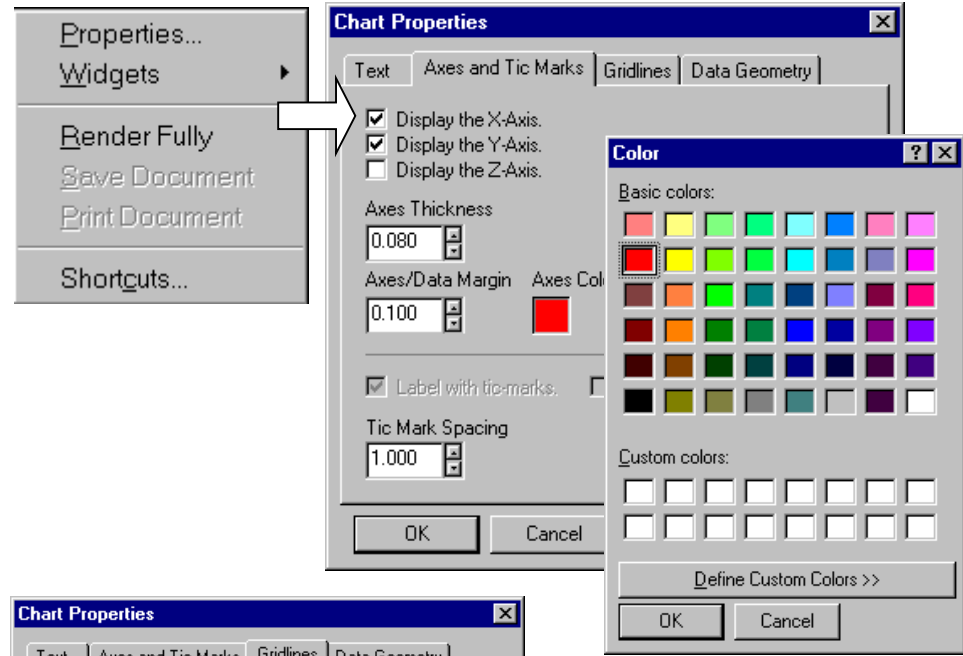
## 5. Using Charts: Text Properties

- Using the right mouse button anywhere on the chart screen will bring up the this menu.
- Selecting **Properties** will lead to a dialog box with the capability to change most of the chart properties that were determined before the chart was displayed, and some additional.
- All of the text on the chart can be changed. Use the text tab here to change the words that are displayed. The check-boxes on each line are used to elect whether that title is displayed.
- The font, color, size, and position of all titles on the chart can be modified. Select the text with the left mouse button, so that it has a dashed box around it.
- Use the right mouse button on any selected text to bring up the text menu. The font and size can be modified by the Change Font feature. The Change Angle feature is not yet supported.
- When the text is selected, the position can be changed by dragging the title to the desired location. The titles can not be moved to a different side of the chart from their original location.



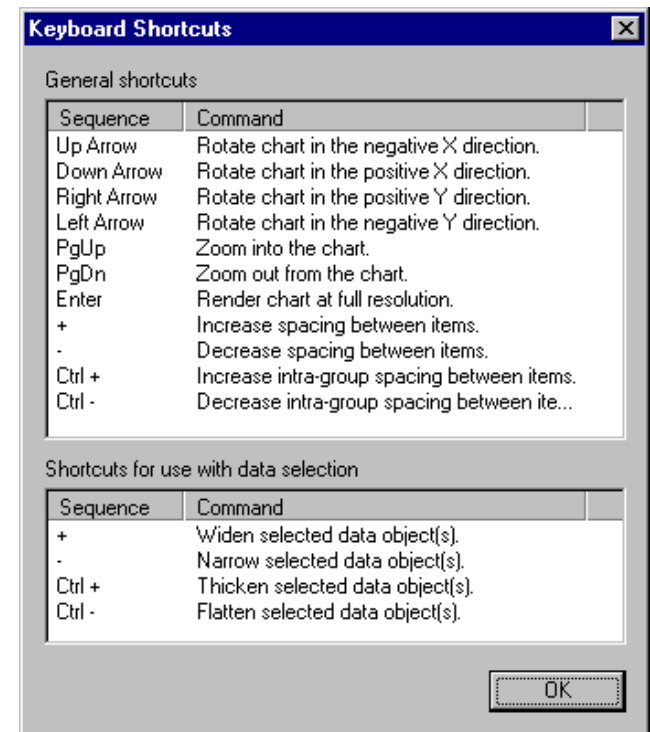
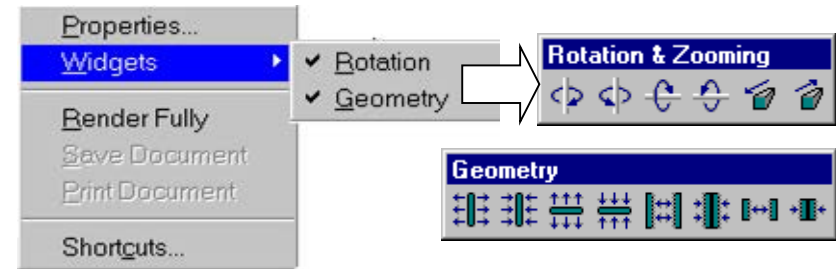
## 5. Using Charts: Properties

- Using the right mouse button anywhere on the chart screen will bring up the this menu.
- The **Axes and Tics** tab of the Chart Properties dialog box displays the properties of the axes that are able to be modified. If you do not want one of the axes to be visible, use the check boxes next to the Display axis options. The Z axis is the 'background' behind the columns in this example.
- To change the axis color, use the mouse to click on the square with the current color under 'Axis Color'. A palette will appear from which to select the new color.
- The Gridlines tab allows the user to change the thickness, spacing, and color of the gridlines. When using gridlines, use the mouse to check the boxes next to the appropriate axes.
- When using gridlines, make sure the spacing is appropriate for your chart. The default is 10.0, but in this example chart, the largest data point is 0.12, so a much better value for the spacing would be 0.01 or 0.03.



## 5. Using Charts: Widgets and Shortcuts

- Using the right mouse button anywhere on the chart screen will bring up the this menu.
- Selecting Widgets will lead to a second menu with rotation and geometry options.
- The Rotation and Zooming toolbar makes zooming and rotating the chart easier and more precise. Use the mouse to left-click on one of the buttons on the toolbar. The chart will rotate or zoom slightly for each time the button is clicked.
- The Geometry toolbar is useful for the spacing and thickness of the chart columns or bars.
- The Render Fully function from the right-click menu is no longer necessary. The program now redraws each time a change to the visual properties of the chart are changed, so the 'render fully' function is automatic.
- There are keystrokes associated with the zooming and geometry functions on these toolbars. A list of the keystrokes is accessed by selecting 'Shortcuts...' from the right-mouse click menu.
- Once you are familiar with using charts, using keystrokes is the fastest way to make changes to the appearance of the chart.
- The rotation functions can be performed by holding down the left mouse button and moving the mouse in a specific direction. See the page on chart movement for more instructions.



## Solving Business Problems: Questions and Answers

Business Problem	Keystrokes to solution
What is most important? What are the key drivers?	Open the model you are interested in (i.e. Checking); Select Describe, Execute to run a descriptive report that displays the key drivers of the whole market. Numbers in the report are <i>average utility</i> scores. Attributes are listed in descending order of importance.
How do I find group differences? Ex.: How do I find buyer value differences between high profitability and low profitability customers?	From the Analysis Setup menu, choose run groups. Set up a run group set for the groups to be tested. Create one run group for each segment to be tested (ex.: two groups for high and low profitability). From Describe, Calculation Setting, select T-tests. Select Execute from the Describe menu to run the report. There will be one column for each segment, and one column for deviations. Deviations that are significant will be highlighted. <u>The group columns contain the average utilities for each attribute for that group.</u>
How do I find <u>all</u> buyer values that differ significantly between segments of the market? (One-“segment” deep)	From the Describe menu, select Segment Scan Setup. Choose one-way segment scan and select the segments of interest. The utilities of each segment level selected will be compared against the <i>rest</i> of the respondents (those not in that group). Check the 'enable segment scan' box. Select T-tests from Describe, Calculation settings if they are not already on. Select Describe, execute. Significance: the lower the number, the more significant the finding. Difference: a <i>negative</i> difference means the utility is <i>lower</i> for that group.
How do I find all buyer values that differ significantly between segments of the market? (More than one segment deep.)	From the Describe menu, select Segment Scan Setup. Choose multi-way segment scan and select the segments of interest. This allows for more precise strategy analysis because there are more constraints placed on the groups. The utilities of each segment level selected will be compared against the <i>rest</i> of the respondents (those not in that group). Check the 'enable segment scan' box. Select T-tests from Describe, Calculation settings if they are not already on. Select Describe, execute. Significance: the lower the number, the more significant the finding. A <i>negative</i> difference means the utility is <i>lower</i> for that group.

## Solving Business Problems: Questions and Answers

Business Problem	Solution
<p>If I change a product or service in specific ways, how much will that change the overall attractiveness (preference) of the product?</p>	<p>From the Simulation menu, Select a model. Select Change Competitors to create or modify a concept product. Enter a name in the 'add product' box, or select a product to modify. Select specific attributes and modify the attribute value or the level values for specific levels. A scenario is created as you simulate the response to a unique product. From the Simulate menu, select Execute to run the report. If run groups were activated, the product preference scores can be compared across the run groups. To see deviations, run groups must be deselected, and the report run on the whole market. Once the concept products been set, the simulation model can be changed to Likelihood of Purchase, Switching, etc.</p>
<p>If I want to reduce the number of customers I'm losing, how do I do it? How do I measure the effect of improvements to products and service?</p>	<p>From the Simulation menu, select the Customer Retention model. Create a non-customer baseline by creating a run group with the non-customer segment. Run a simulation report to see the retention effect from different product concept scenarios.</p>