dun & bradstreet

Market Insight

Base Advanced Module

Training Manual v3.1

D&B Market Insight

Base Advanced Module

Manual Version: 3.1

Software Version: 2019 Q1

System: Training (UK & Europe)

Contents

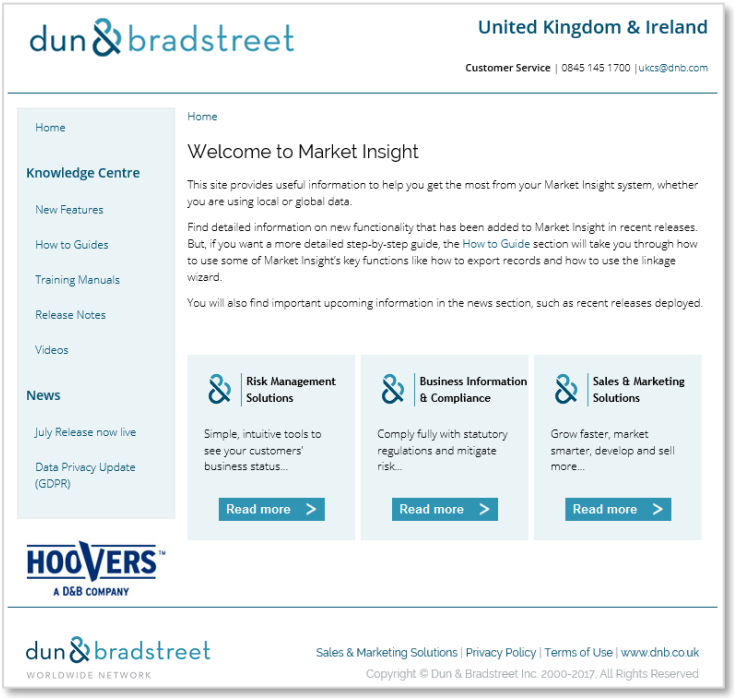
Introduction

Market Insight provides powerful and interactive marketing analysis of customer data overlaid on a D&B data universe. The system is web based with a truly easy to use Windows interface. Using a consistent and intuitive "drag and drop" approach throughout, every action automatically results in a query that can be saved and reused with ease. With a wide range of descriptive and predictive analytical tools, Market Insight's analysis options are virtually unlimited as any technique can be applied to any results in any order. Market Insight provides a unique combination of speed, power and accessibility for data exploration and understanding.

Market Insight holds your data overlaid on a D&B universe. This enables you to accurately measure your customer data in proportion to the opportunities in the market place. Hence the product's name: it enables insight of your activities in comparison to the market place rather than just within your business.

The D&B data universe in your Market Insight system will be adjusted to suit your licensing and measurement requirements. Your customer data is loaded from extract file(s) you provide and although this process allows for some cleaning and manipulation of the data, what you see within Market Insight is a reflection of the data you provide.

The Market Insight view of the data is a snapshot at the time that the data was loaded. Market Insight is an analytical system able to provide insight and understanding but it can also provide data feeds to your operational marketing systems to implement your targeting decisions.



Market Insight Splash Screen – D&B Website

N.B. The counts and figures in this manual may differ to those seen when you use this system as the data changes over time. Not all the functionality shown in this manual may be available in the system you are using.

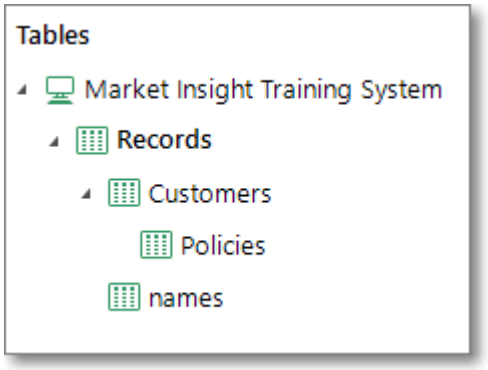
N.B. Where suitable variables are not available in the Market Insight Training system, the data of a holiday company has been used to provide the examples.

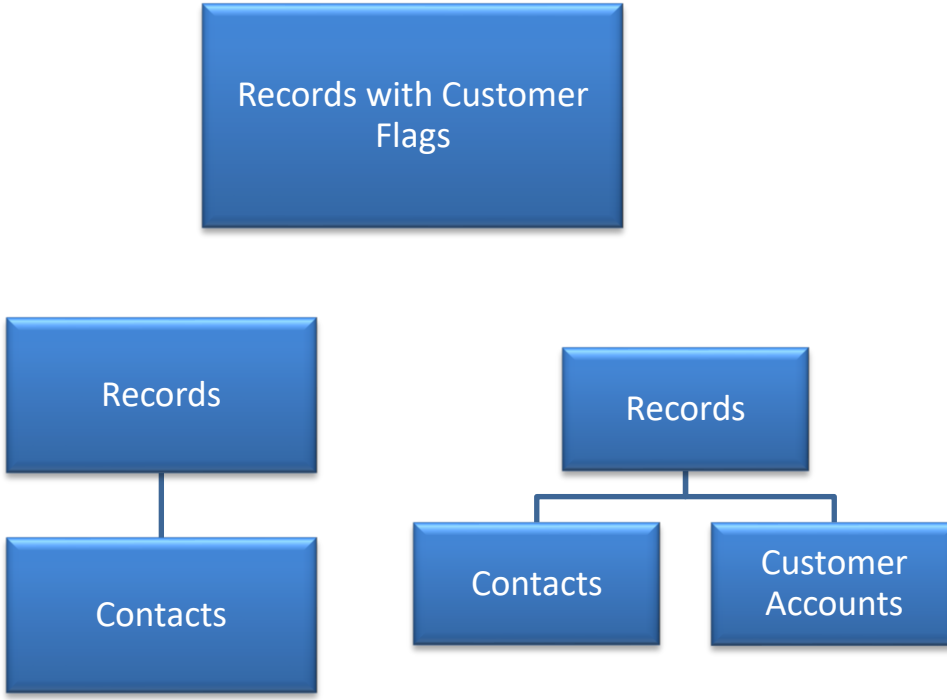
Data Structure

The structure of your Market Insight system can vary. The elements shown here are typical – each Record may simply be flagged with Customer data or can have many related Names. A Record may also have many matched Customer Accounts. The data loaded for each matched Customer Account is configurable – for example you may have multiple Transactions or Divisional Summaries or Product Summaries etc.

The detail present on each table of data depends on the Market Insight administrator. The data is arranged into folders to assist the user to navigate and find data items.

The Training System, illustrated in this manual, uses a simple structure that has Records (organisations) with Names (contacts at the organisation). A subset of the Records, called Customers (the User's customers), is also held, together with a related table, called Policies (activity of the User's customers).





Accessing Market Insight

The Market Insight software is downloaded automatically to your PC when you click a link to launch the system. Once the software has been downloaded, it will automatically update from the server whenever necessary. You will normally receive a welcome email with details of this process.

To access Market Insight you need:

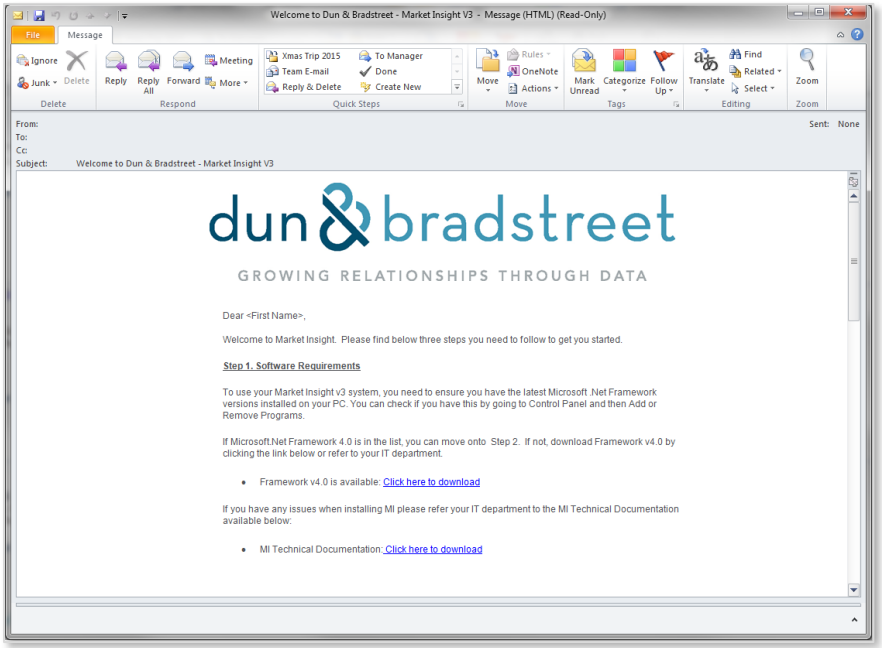
- Windows PC – Market Insight is a Windows.NET application that combines the best of the Windows interface with web based systems. Market Insight is not available on Mac or UNIX computers
- The latest Windows.NET framework version installed. This can be obtained by visiting www.windowsupdate.com or from your IT team

To launch your Market Insight system, use a browser to view:

https://www.dnbmi.com/disco_systems/v3/new/milauncher.msi

Alternatively use the links within your welcome email.

N.B. The “https” prefix establishes a secure connection between your browser and the D&B Server.



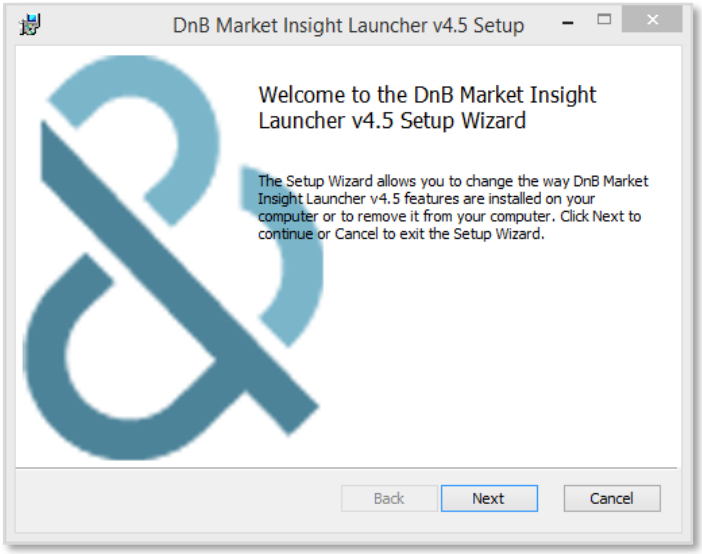
Welcome to D&B – Market Insight V3 Email

- Navigate to where you saved the downloaded file and double click it. Agree to run when prompted, and then follow the on screen instructions

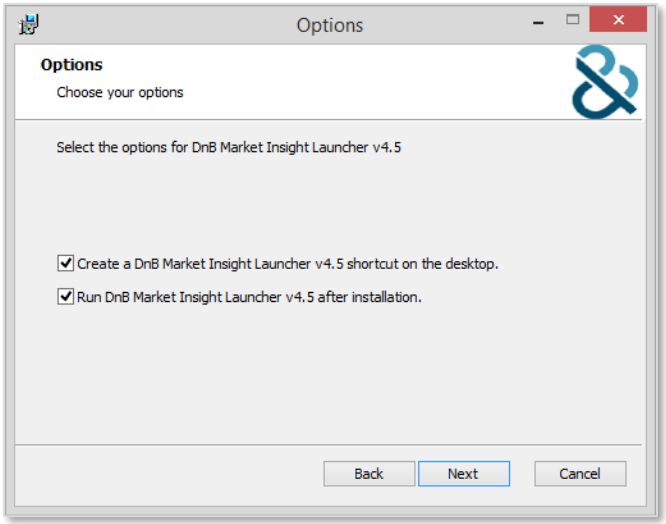
- The installation process will result in an icon on your desktop and in a D&B Start Menu folder

- On subsequent uses of Market Insight, you can simply double click this icon. The software will automatically update from the D&B server whenever new releases are made available

- You can install Market Insight on as many computers as you wish – it is your user id that controls your access. This means, for example, you can use Market Insight when working from home



Launcher Setup Wizard



Options

How to Login

To use Market Insight, you need to have an Internet connection.

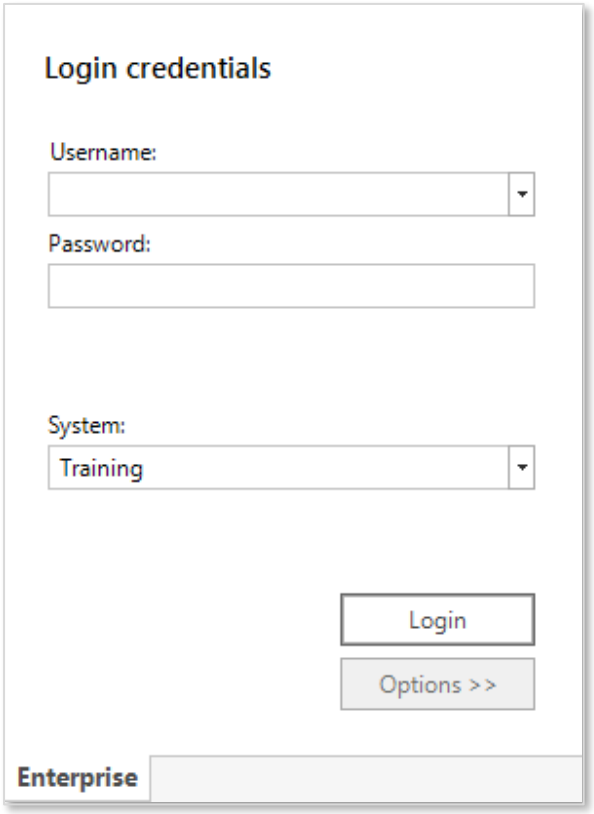
Start Market Insight by:

- Clicking on the **Market Insight** icon on your desktop, or by navigating to the program using Windows Explorer

In the upper left hand corner of the screen you will see a Login window that gives you the opportunity to connect to a Market Insight system containing data available to you for analysis.

Enterprise Tab

Your Market Insight system operates on a secure and resilient web connected server enabling you to access the system from any location with an Internet connection. A number of users may access the system at the same time, each of whom is authorised by a user account and password. Your Market Insight Administrator will provide you with a Username and Password.



Login Window

Selection: Create and Save

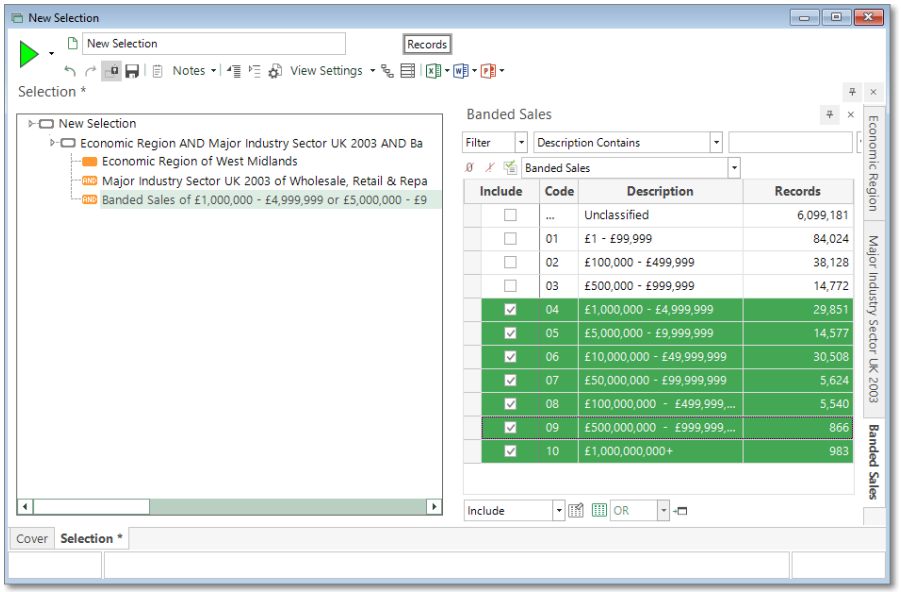
Having worked through the Base Standard manual or as part of your work activities you will be familiar with the creation of selection queries. The following example will be one we can use throughout this course.

- Display a new selection window set to the **Records** table level
- Within the **System Explorer** search for the following variables and add them to the selection window as shown opposite:
  - **Economic Region** – West Midlands
  - **Major Industry Sector UK 2003** – Wholesale, Retail and Repair
  - **Banded Sales** – Select all ranges from £1,000,000-4,999,999 to £1,000,000,000+
- Click the **Build** button to count the result

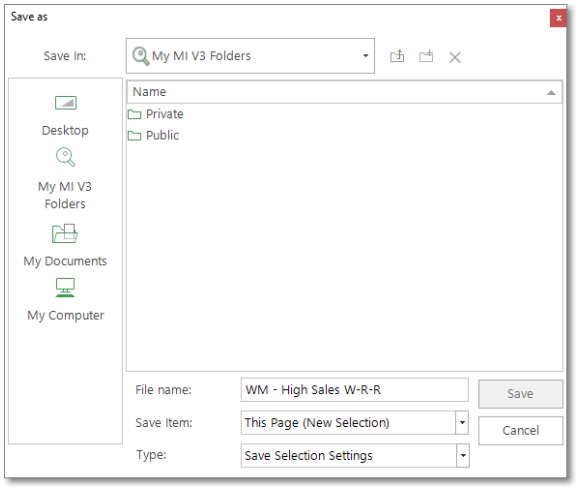
To use this example as the basis for a number of activities in this manual it will be useful to have it saved.

- Rename the selection as **WM – High Sales W-R-R**
- Click the **Save** button and navigate to the **Private** folder to set it as the save destination
- Click the **Save** button

This selection query can now be found under the Private folder of the My Market Insight Folders within the Files explorer window.



Selection of target Records



Save Selection Window

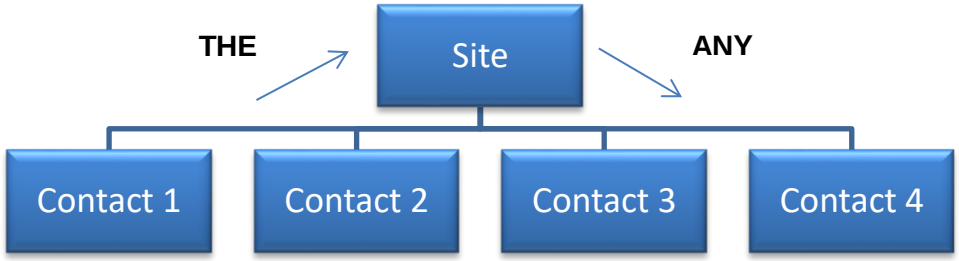
Selection Logic Between Tables

The Structure

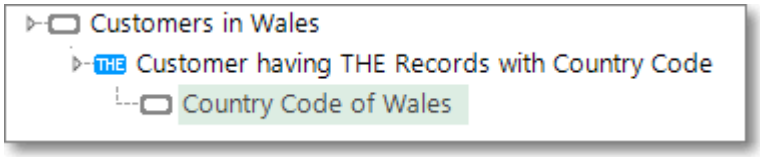
You will already be familiar with the logic operators **AND** & **OR** which are used between variables when building a selection query.

Remember, each selection query has a **Resolve Table** – the query is resolved to select a set of rows from this table.

However, you will have noticed that when you use a variable from a different table to the one set for the window a **THE** or **ANY** precedes the variable. The word used indicates the direction in which the query has to travel, up or down, the table structure.

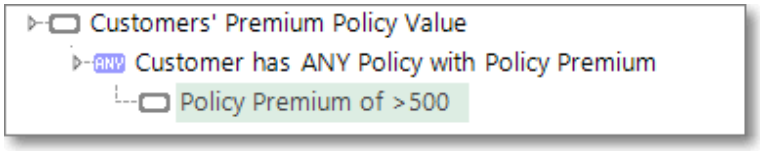


- Open a Selection window set to the **Customer** table
- Drag on the **Country Code** variable, select **Wales**



You will notice in this example a THE indicator is used. This is because we are moving up the table structure selecting Customers where THE Country they relate to is Wales.

- Open a Selection window set to the **Customer** table
- Drag on the **Policy Premium** variable, enter **>500**



You will notice in this example an ANY indicator is used. This is because we are moving down the table structure, selecting Customers that have ANY Policy Premium over £500.

Selection Options

In the examples above you made your selections with a normal left mouse drag. However, if you make a right mouse drag you will be presented with more options than the default logic join of an **AND**.

- Open a Selection set to the **Names** table, then drag on the **Gender** variable and select **Male**

- Right drag the **Job** variable beneath **Gender**

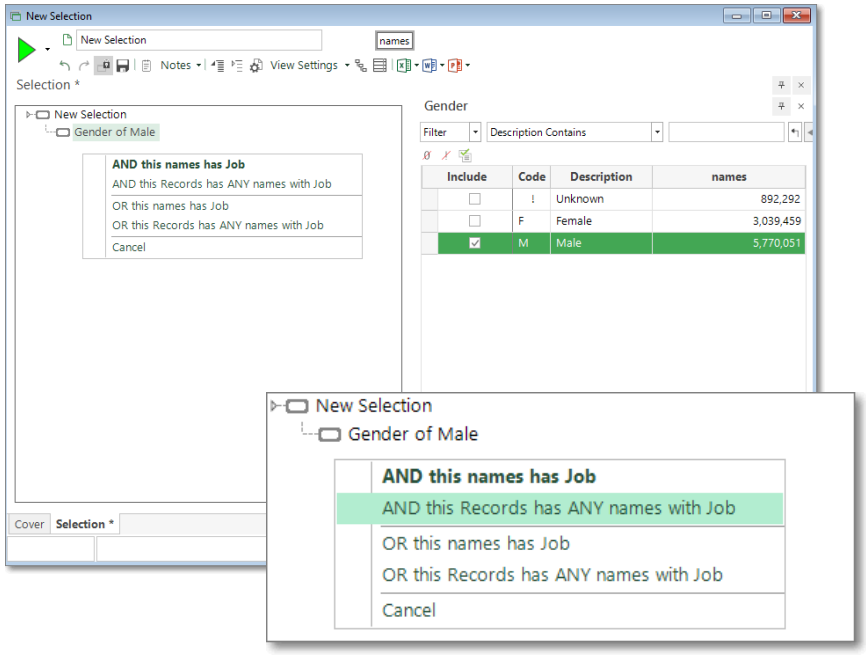
The popup menu now presents you with all the possible options based around the logic operators and any tables above and including the one you are counting at. We will select **Director**:

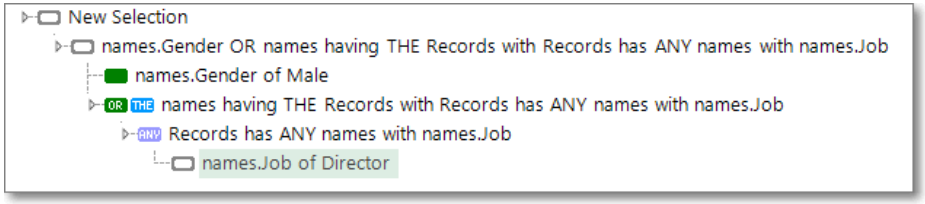
Option 1 – AND this names has Job (Default)
This will select all Names with a Male Gender **AND** who have a Job of Director.

Option 2 – AND this Records has ANY names with Job
This will select all Names who are Male **AND** are associated with a Record where someone has a Job of Director. The same Name could meet both these criteria and satisfy the query.

Option 3 - OR this names has Job
This will select all Names with a Male Gender **OR** any Name with a Job of Director.

Option 4 – OR this Records has ANY names with Job
This will select all Names with a Male Gender **OR** all those associated with a Record where someone has a Job of Director.





Option 4 - OR this Records has ANY names with Job

Variable Position

It is important to be aware of the effect that the positioning of a variable will have on the final selection.

- Open a new selection window set to the **Records** table
- Drag on the **Gender** variable and select **Female**
- Drag on the **Primary Job Function** variable and drop it underneath the **Gender** variable. Select **Owner**
- Click the **Build** button

In this example the Gender and Job variable are closely associated. The query will therefore return all Records that have a contact that meets both criteria i.e. a Female CEO.

Let's see what happens when you reposition one of the variables.

- Click and drag the **Primary Job Function** variable above the row that contains the **ANY**
- When the black line appears extend it to the left and let go of the mouse button
- Click the **Build** button

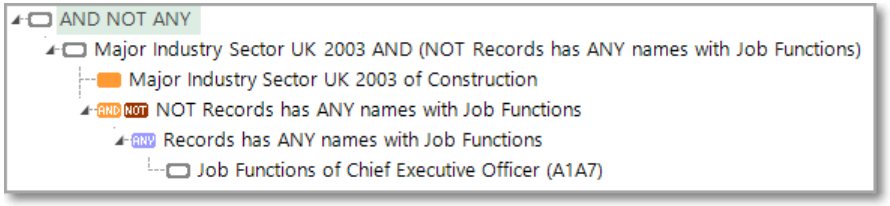
This new example has a looser association between the Gender and Job variables. The query will therefore return all Records where there is at least one Female and at least one Owner, but they no longer need to be the same contact.

NOT Operator Position

It is important to understand that where you place your NOT operator in the logic structure can affect the question asked and subsequently the results given.

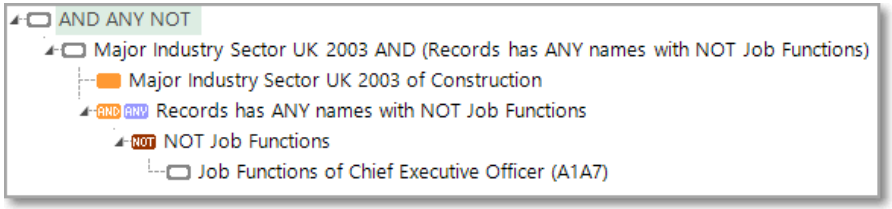
- Create a selection of **Major Industry Sector UK 2003** of **Construction** and **Job Functions** of **Chief Executive Officer**
- Right click on the line with the **AND** operator and select **NOT**
- Click the **Build** button

With the combination of the **AND NOT ANY** this selection will return construction Records (organisations) that do not have any CEO Names (contacts).

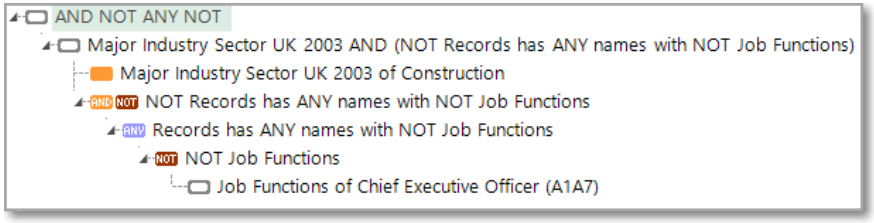


- Recreate the selection of **Major Industry Sector UK 2003** of **Construction** and **Job** of **Chief Executive Officer**
- Right click on the line **Jobs of Chief Executive Officer** and select **NOT**
- Click the **Build** button

With the combination of the **AND ANY NOT** this selection will return Records for construction organisations that have Names <u>other than</u> a CEO. Some of these Records may also have CEO Names.

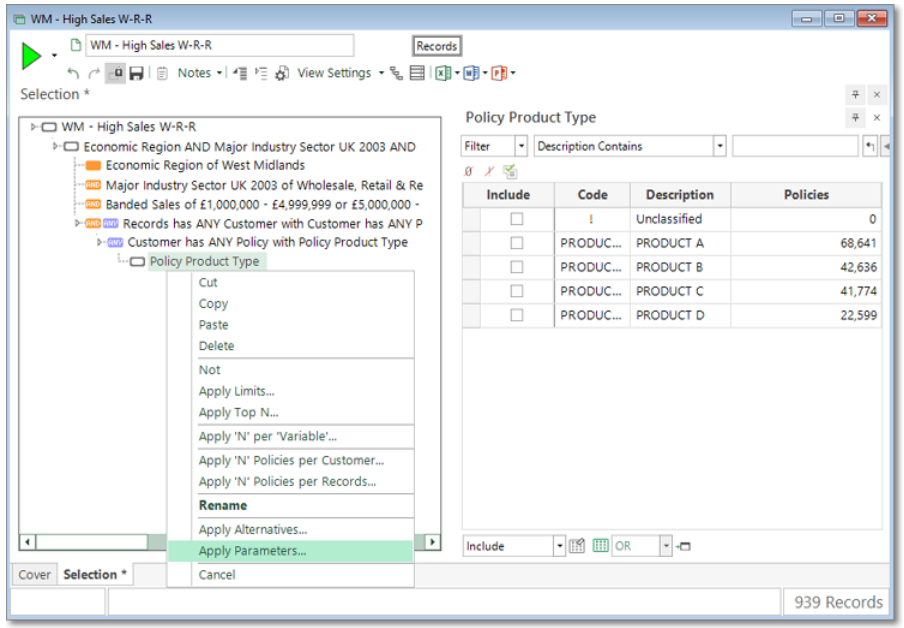


If you place a **NOT** on both the lines mentioned above, this will return a count of construction Records where there is <u>only</u> a CEO Name!



Parameterised Selections

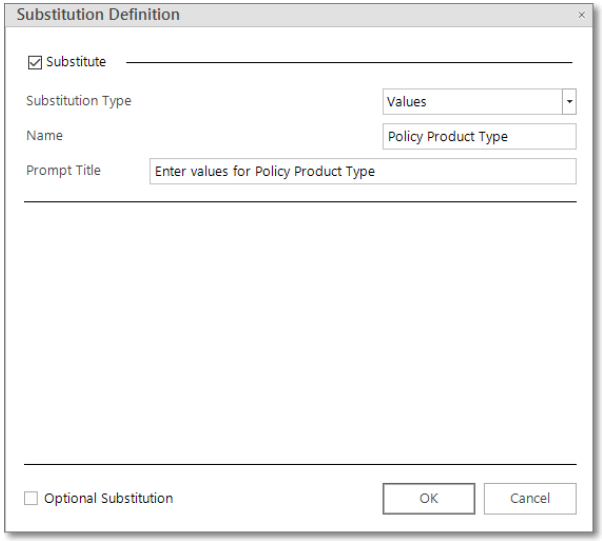
When creating a selection you may wish to mark certain parts of it that allow for User input. This could involve creating a complex selection with one or more elements that give the User the chance to determine the values used. For example, a complex selection to determine a group of sites might be further examined by their total employees. The User would then be prompted to choose the employee range without being concerned with the rest of the pre created selection. In the example opposite, the selection of **WM – High Sales W-R-R** will have the **Policy Product Type** element parameterised to allow other users to determine which range(s) they want to apply to this selection.



- Display the saved selection **WM – High Sales W-R-R** and add the **Policy Product Type** variable

- Right click on the variable to be parameterised **(Policy Product Type)** and click on the option **Apply Parameters...** from the popup menu

The **Substitution Definition** window allows you to firstly select the **Substitution Type** which could be to choose new **Values** or a new **Variable & Values**. The other options are:



Name	This will be the description that the User will see. This can be amended here.
Prompt	This will be the prompt description the User will see. This can be amended here.
Optional Substitution	Ticking this box will activate the Remove from the selection tick box on the Substitution Values window. This allows the User to ignore the parameterised part of the selection query.

In this example the default options will be used.

- Click **OK**. Now run the selection by clicking on the **Build** button. Select the required Policy Product Type(s) and then **OK**

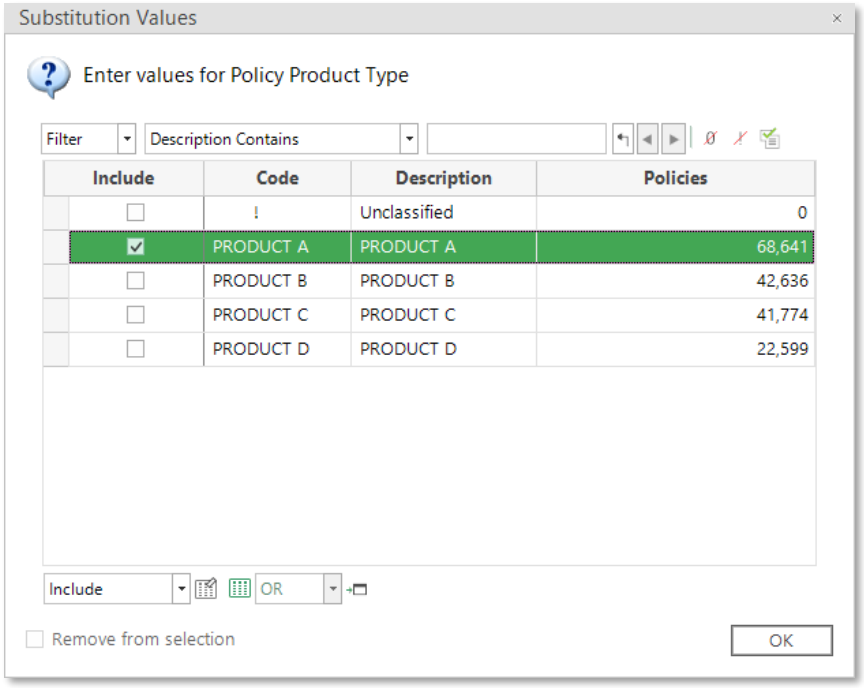
- From the **Cover** page click on the **Substitutions** tab

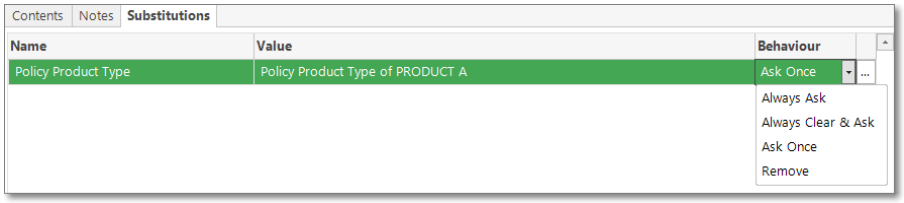
If this selection is to be saved and used again you may want to set the **Behaviour** of how the Users interact with the selection.

Always Ask	Every time the selection is used the User will be prompted to see if a parameter needs to be changed.
Always Clear & Ask	As above but with any existing parameter cleared.
Ask Once	After the first prompt to set or change the parameter that choice will be set as the default.
Remove	This option will ignore the parameterised part of the selection.

- To change the **Policy Product Type** category for the selection, click on the ... button. This will redisplay the **Substitution Values** window

- Change the values and click **OK** followed by the **Build** button to see the new result





N.B. Because some of the parameterised settings are held on the cover page of the Selection window, you must save your Parameterised Selection as a **Whole Book** by dragging the book icon into a Files folder.

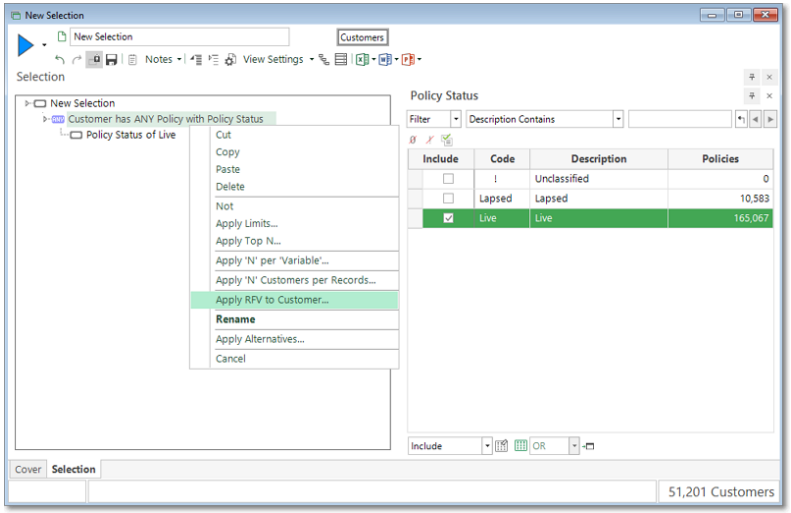
You might also consider using a read only folder to ensure multiple users can access the selection but without altering its set up.

Recency Frequency Value

In some situations it is not sufficient to select only on the presence or absence of data. This may be the case when you wish to select on the number of times that a particular type of data appears, or to perform averages across data records. In this situation, you will need to use the MI RFV selection mode.

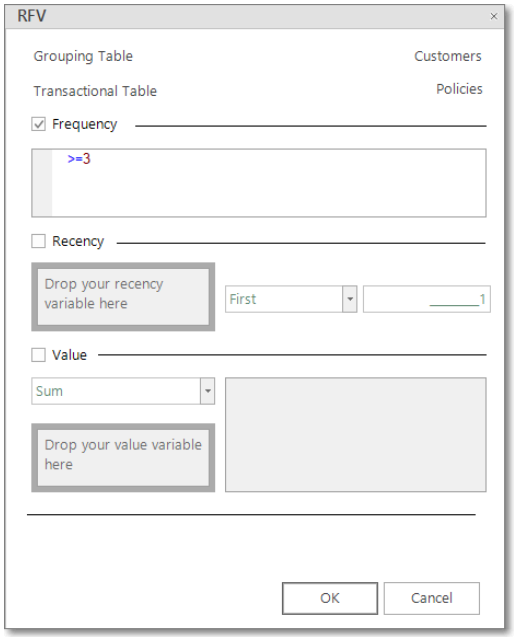
In this example we will start by finding the Customers who have 3 or more Live Policies.

- Open a new selection window set to the **Customers** level
- Drag and drop the **Policy Status** variable onto the selection, select **Live** and click the **Build** button, noting the count



The MI RFV mode can be applied to a blank selection or where there is an ANY node.

- Right click on the **ANY** row and select **Apply RFV to Customer …**
- Select the check-box next to **Frequency** and enter **>=3**
- Click **OK**. Then click **Build** to count the selection



The result is a count of the number of Customers with 3 or more Live Policies associated with them.

We can further refine our results by using the Recency and Value elements of this tool. By using date and numeric/currency variables we can select and test records against certain criteria.

- Right click on the **RFV** node within the selection
- Click on the **Modify RFV…** option from the pop up menu
- Select the check-box next to **Recency** and then drag the **Policy Renewal Date** variable onto the drop-zone
- Amend the settings to show **Last 2**

This will identify the 2 most recent Live Policy transactions for Customers who have 3 or more Live policies.

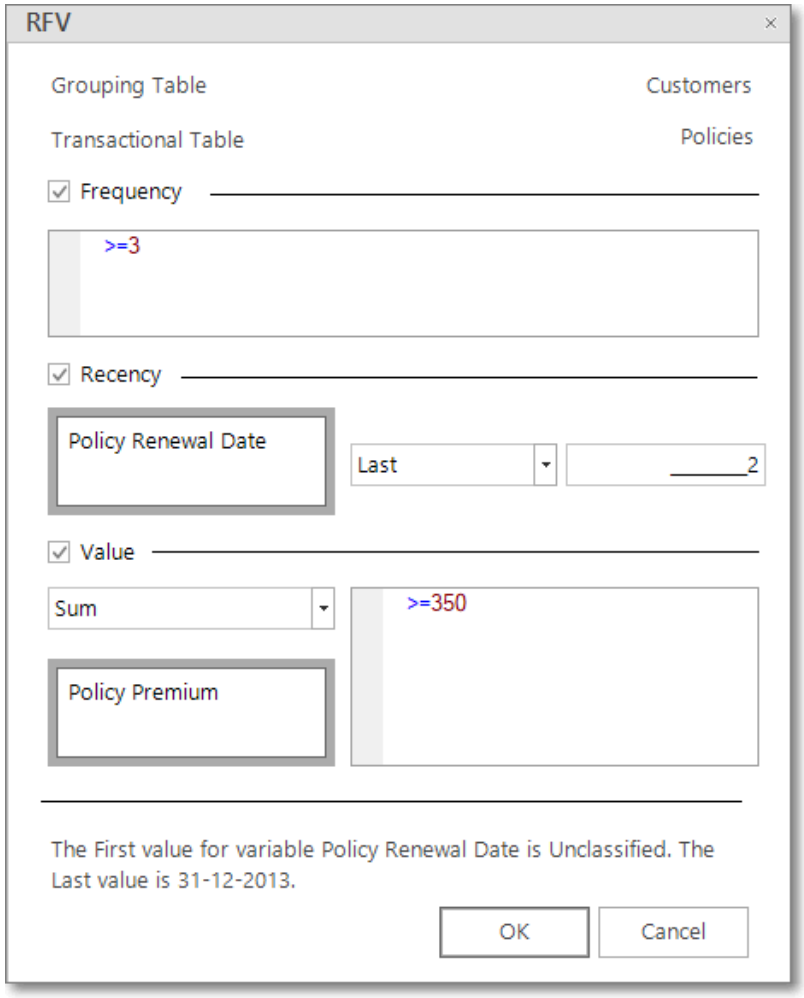
- Check the box against **Value** and then drag the currency variable **Policy Premium** onto the drop-zone
- Leave the default measure as **Sum** and enter the value of **>=350**

Based on these settings, where a Customer has at least 3 live policies (determined via Frequency), the system will take the sum of the Policy Premiums (determined via Value) for the last 2 Policy Renewal records (determined via Recency) and, if the value is greater than or equal to £350, that Customer will form part of the final count.

- Click **OK** and then click **Build** to count the selection
- **Save** the selection as **Frequent High Value Live Policy Holders** for the next section

N.B. The Recency element will only apply to your selection if it is used in conjunction with the Value element.

The RFV function can also be used in conjunction with the Count Wizards. An explanation of these and the other Virtual Variable options are described in a later section.



Data Grids

Column Aggregation

Data Grids have the ability to aggregate results from child tables. This feature has a number of marketing analysis applications including selecting latest transactional details, calculating total and average transaction values, selecting contacts at companies and exploring transactional trends.

By creating a Data Grid (on a Customer table selection) with a mixture of Records, Customer and Policies table information the resolve table will automatically set itself to the lowest table level. This will then display all Policies for the Customers identified in the selection with Customer information repeated against each record.

The Column Aggregation within the Data Grid can be seen as the middle option between showing all or none of the transaction information. It allows you to sequence the transactional data to show just one set of transactional information against one higher level record e.g. sum of employees at all sites.

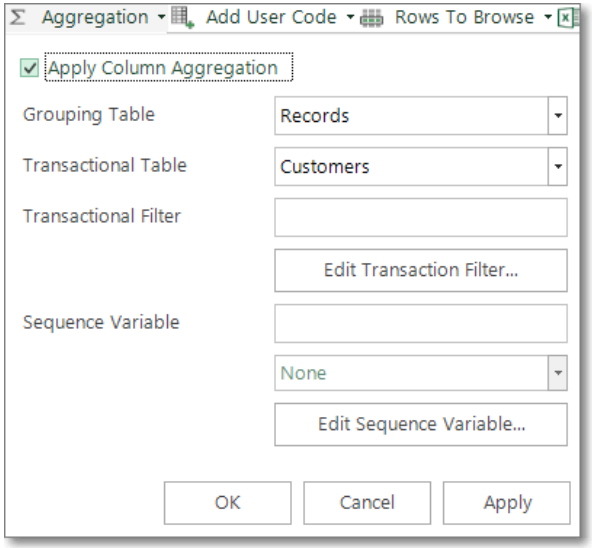
- Open the Selection **Frequent High Value Live Policy Holders** and drop a data grid on top. Drag on to the Data Grid the variables **Business Name**, **DUNS, Policy Channel**, **Policy Status** and **Policy Premium**. Click the **Build** button

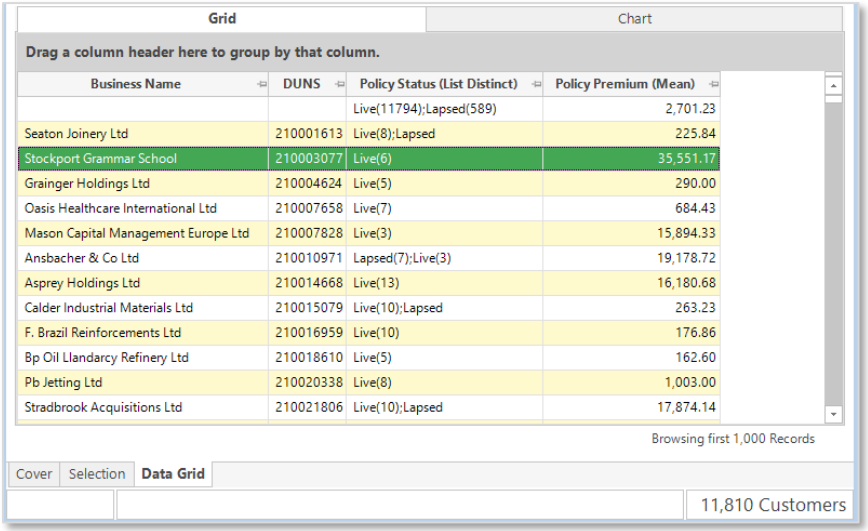
- Click on the **Cell Aggregation** icon, tick the **Apply Column Aggregation** box, chose the settings in the screenshot and click **OK**.

Note that the table level auto-sets to the Records level.

- Click the **Build** button

The default aggregation option will be shown in the description heading for the two lower level variables.

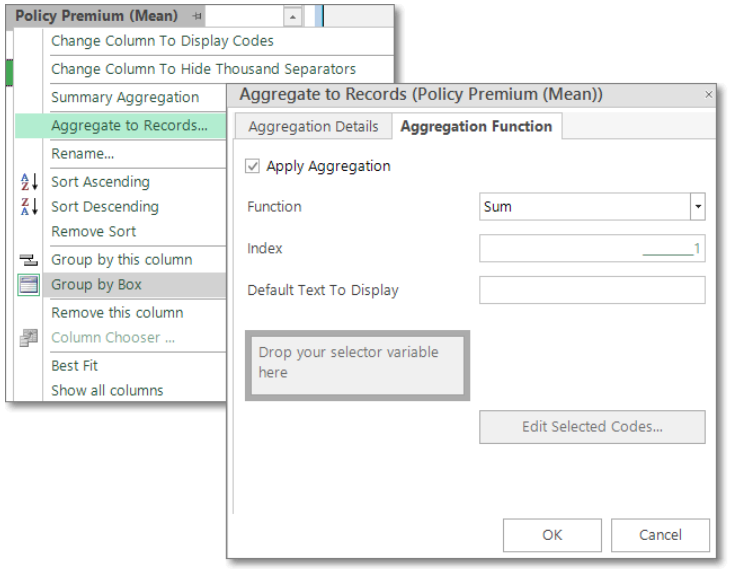




Refer to the Help file for a full list of the aggregation options available for the different types of variable displayed.

To display the sum **Policy Premium** at all the sites associated with a Record:

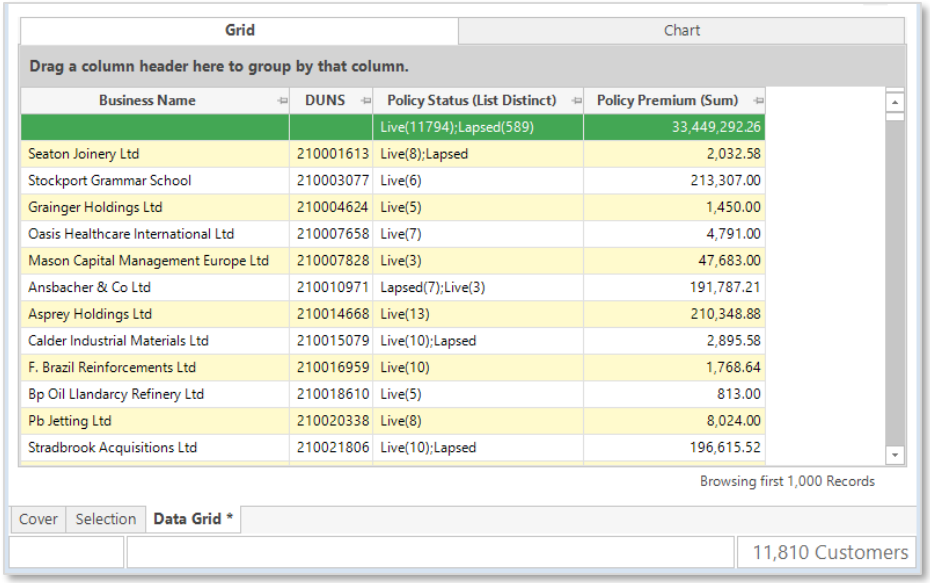
- Right click on the **Policy Premium** column heading and select **Aggregate to Records**
- Change the **Function** from **Mean** to **Sum**
- Click **OK** and then the **Build** button to see the results



N.B. The main Column Aggregation window gives a further option to filter the results and use a sequencing variable to establish an order.

Transactional Filter – create a selection that will restrict who will be displayed in the Data Grid.

Sequence Variable – this could be a purchase date that would then allow you to filter the records by last transaction or first transaction etc.



Summary Aggregation

Within a Data Grid it is possible to aggregate the information in a column based upon the variable type being displayed. For example a Currency/Numeric variable may be summarised in terms of the sum or mean of values.

- Right click on the heading **Policy Premium(Sum)** and select **Summary Aggregation**
- Click on the **Median** option

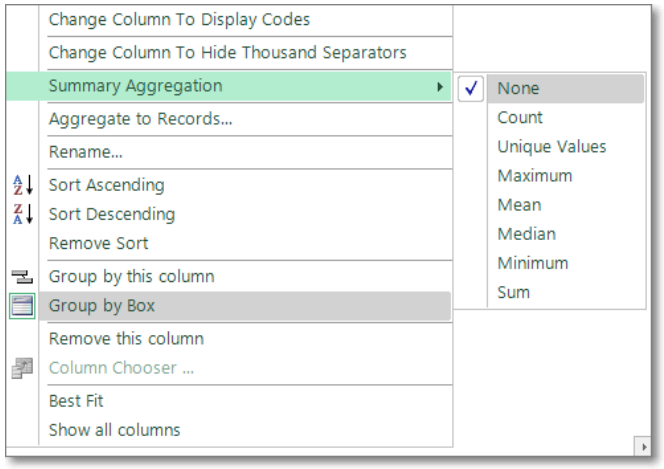
N.B. The result can now be seen at the bottom of the column and is calculated only on the information displayed in that column.

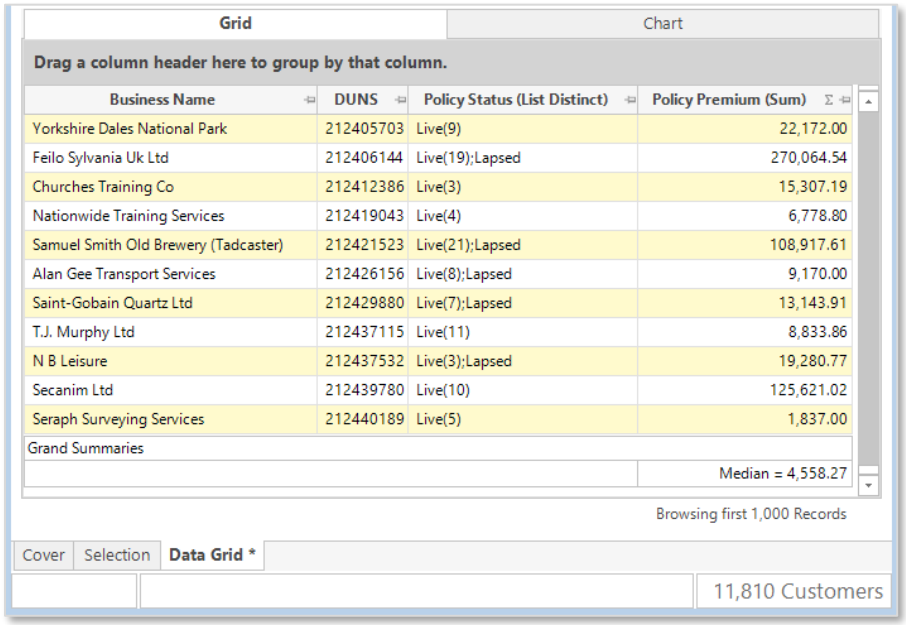
Another example - this time using a selector variable with text:

- Right click on the heading **Policy Channel** and select **Summary Aggregation**
- Click on the **Unique Values** option

Once more the results can be seen at the bottom of the column. In this example it displays a count of the number of unique Channels found in this column of data.

Refer to the online Help files for a full list of the Summary Aggregation options available for the different types of variable displayed.





Cubes

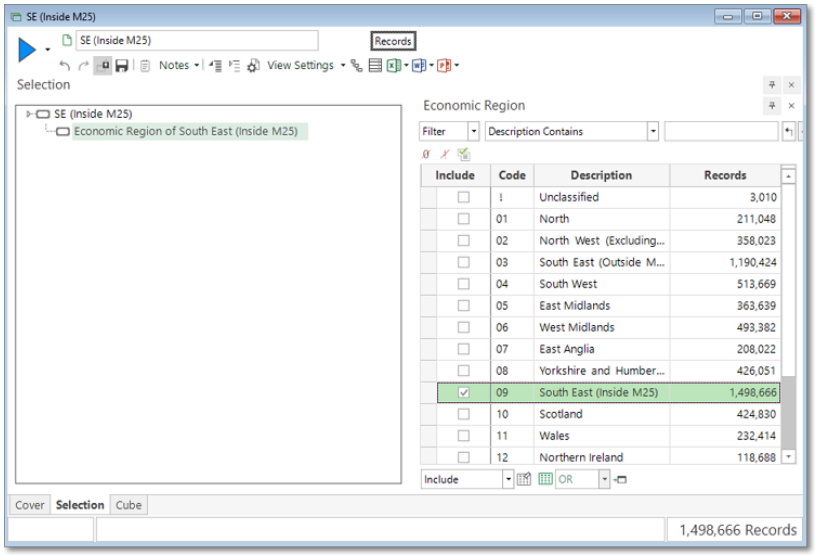
Cubes and Tables

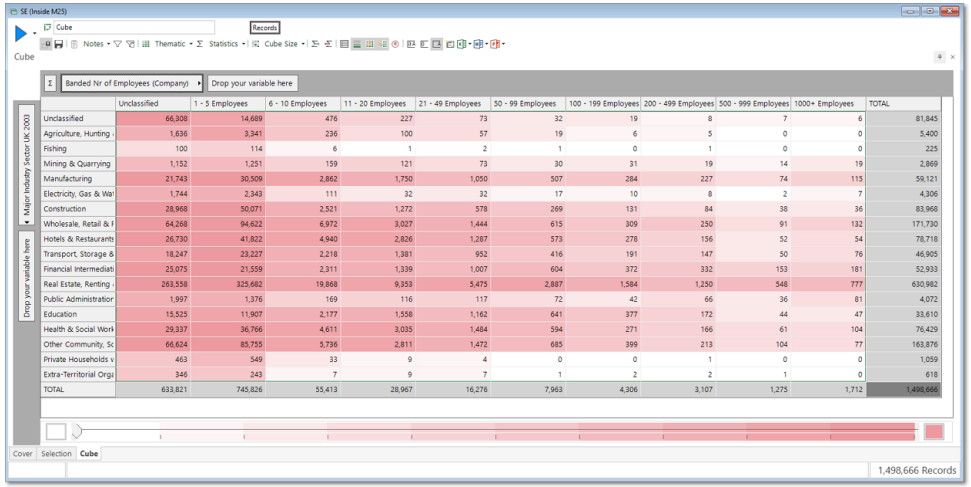
The Cube tool enables you to take a selection and break it down by one or more variables on each dimension of the table. As such, a Cube can be 1, 2, 3 - or more - dimensional.

Whilst most of your work with Cubes may be done at the selection resolve table level, Cube analysis can be resolved to and carried out using any available table level, independent of the selection's resolve table. You can change the Cube table level by right-clicking on the box at the top of the window, in the same way as you do for a selection.

A Cube will also process data from multiple tables if either the dimensions or the measures (the statistics in the central body of the cube) are derived from multiple tables. However, in all cases, the Cube tool will only process data that relates back to its underlying Selection.

- Use the **Economic Region** variable to create a selection of **Records** from **South East (Inside M25)**
- Drop on a **Cube** and display by **Banded Nr of Employees (Company)** on the horizontal axis and **Major Industry Sector UK 2003** on the vertical axis
- Click the **Build** button to create the cube





To see the results of this breakdown by another table, drag the appropriate table from the system Tables window.

- Drag the **Policies** table onto the middle of the **Cube** and press the **Build** button

To hide or delete a statistic once it has been added to a Cube:

- Click on the **Statistics** button and then uncheck the **Display** mark box against the item to hide, e.g. Records, or click **Delete…** to delete the column from your Cube

N.B. By moving the Σ button from the horizontal dimension to the vertical dimension, figures shown in separate columns can be displayed in the same cell.

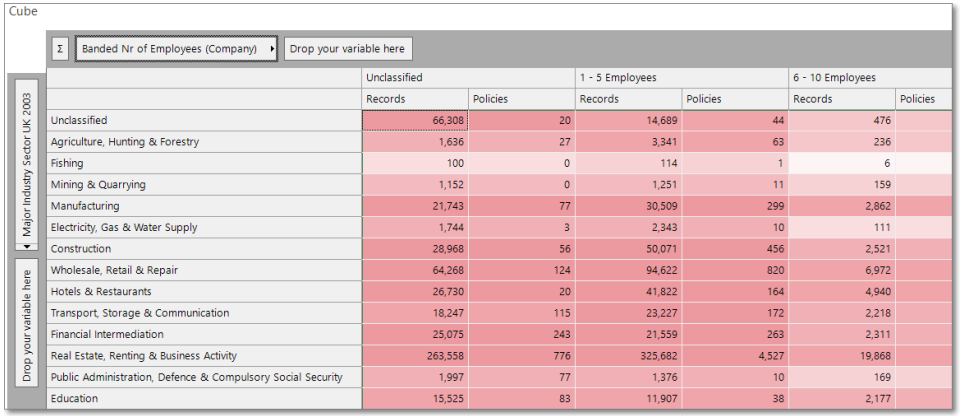
N.B. By default, the first figure in each cell will be whatever is set as the resolve table. The order can be updated within the Statistics dialog window by left-dragging the measures into the required order within the grid.

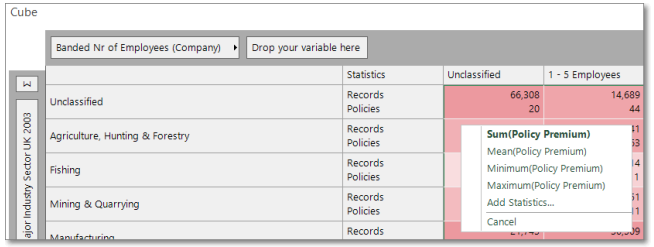
To apply a calculated statistic using a Numeric or Currency variable:

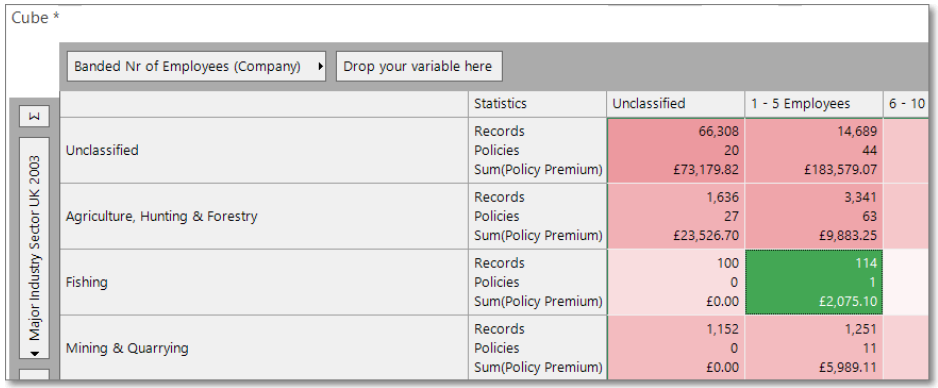
- Right drag and drop the **Policy Premium** variable into the middle of the Cube and select **Sum(Policy Premium)** from the pop-up menu

E.g. The highlighted cell in the screenshot opposite indicates that for the SE (Inside M25) region, of the 114 Fishing Records with 1-5 Employees, one Policy has been purchased at a total cost of £2,075.10.

When you right-drag a numeric variable onto a Cube, the most commonly used statistics are displayed. Select Add Statistics to access and display further figures within each cell.







Cube Table Filter

It is possible to apply a Table filter to your Cube that allows you to restrict the records in the breakdown.

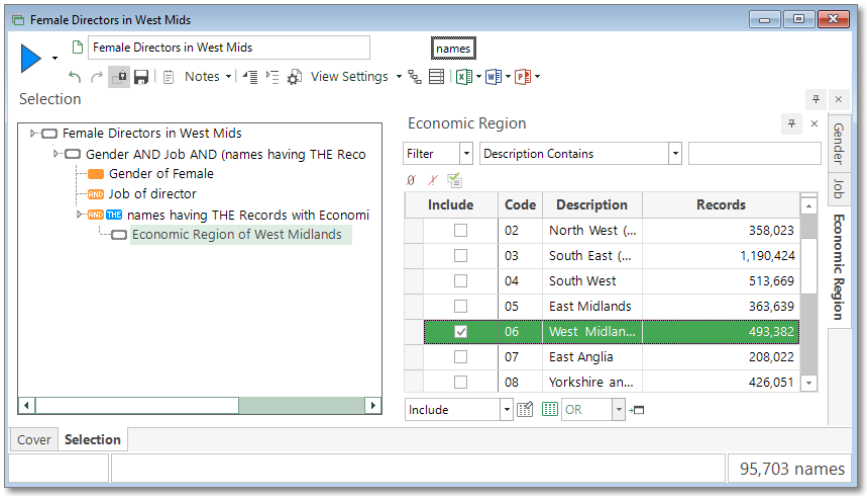
- Create a **Cube** of **records** and display by **Banded Nr of Employees (Company)** on the horizontal axis and **Major Industry Sector UK 2003** on the vertical axis
- Change the Table level to **Names**
- Drag the **Records** table onto the middle of the **Cube**
- Click the **Build** button

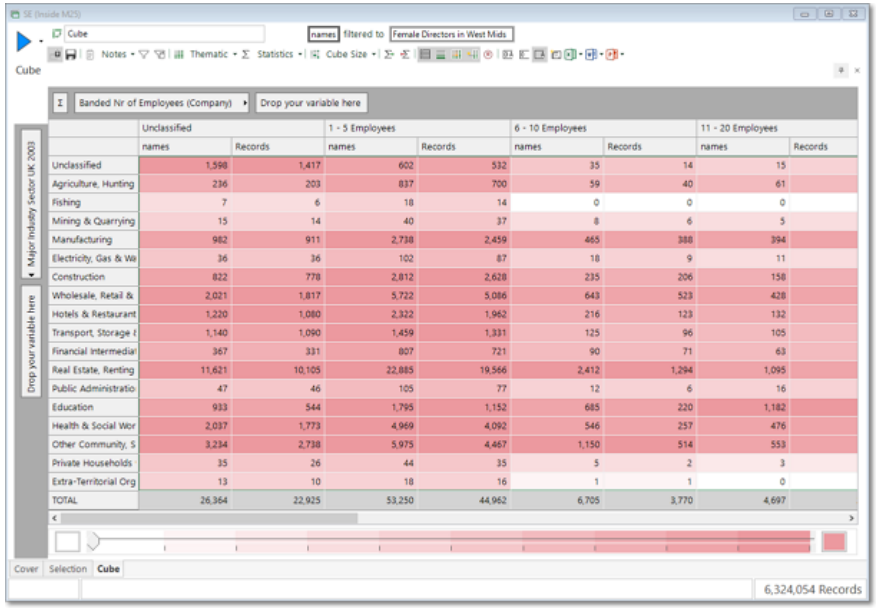
N.B. Alongside the Table box at the top of the window a new drop zone has appeared with the words Return all Customers.

- Create a new selection of **Names** identifying **Gender** of **Female, Primary Job Function** of **Owner** and **Economic Region** of **West Midlands**
- Rename the selection **Female Owners in West Mids**
- Drag the **Female Owners in West Mids** selection onto the **Return all Names** drop zone
- Click **Build**

The display will now be restricted to show only the number of Names who are Female Owners in the West Midlands.

N.B. Remember you can additionally filter which categories are displayed in each dimension by using the pop-up menu on the variable. You can turn this filter on or off using the filter toggle button .





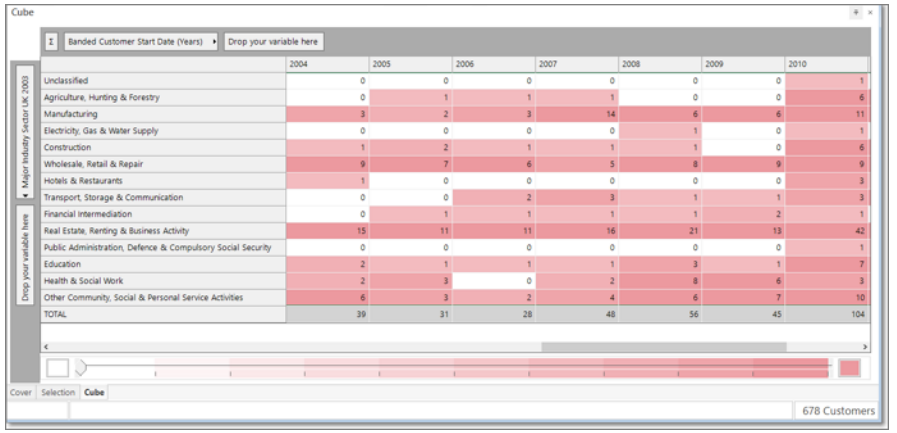
Date and Numeric Variables

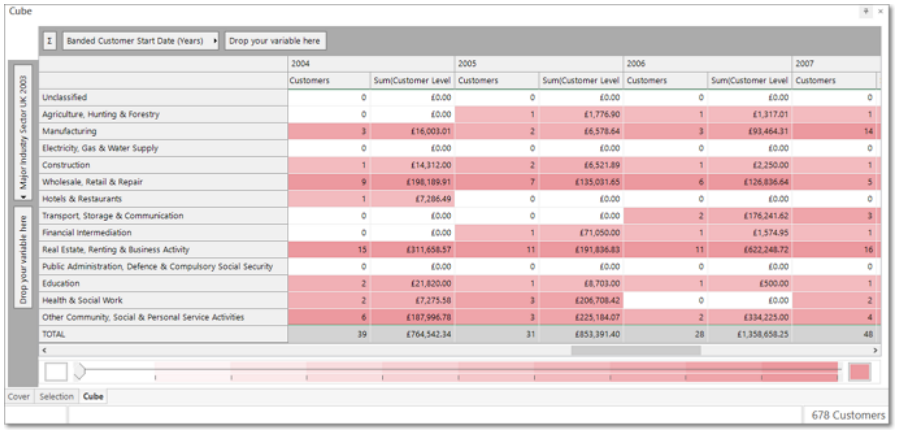
The use of Date and Numeric variables on a Cube can give you some extra display options.

- Open the **Female Owners in West Mids** selection and set the table level to **Customers**
- Drop a cube on the selection and drag the **Major Industry Sector UK 2003** variable onto the vertical dimension
- Right drag the **Customer Start Date** variable onto the drop box on the horizontal dimension and select **Years**
- Click the **Build** button

Right dragging the date variable gives you the ability to display the figures in a number of date divisions including the Full Date which is the default and equivalent to left dragging the variable across.

- Right drag the **Customer Level Revenue** variable into the middle of the **Cube**
- From the popup menu select **Sum(Customer Level Revenue)** and click the **Build** button





To use a numeric variable as a Cube dimension:

- Right drag the **Nr of Employees (Company)** variable onto the Cube dimension drop panel

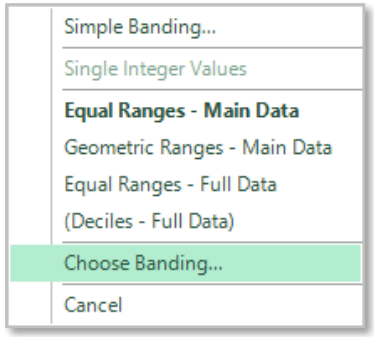
This allows you to choose from various standard bandings of the data in the variable or use the banding tool to create any other banding.

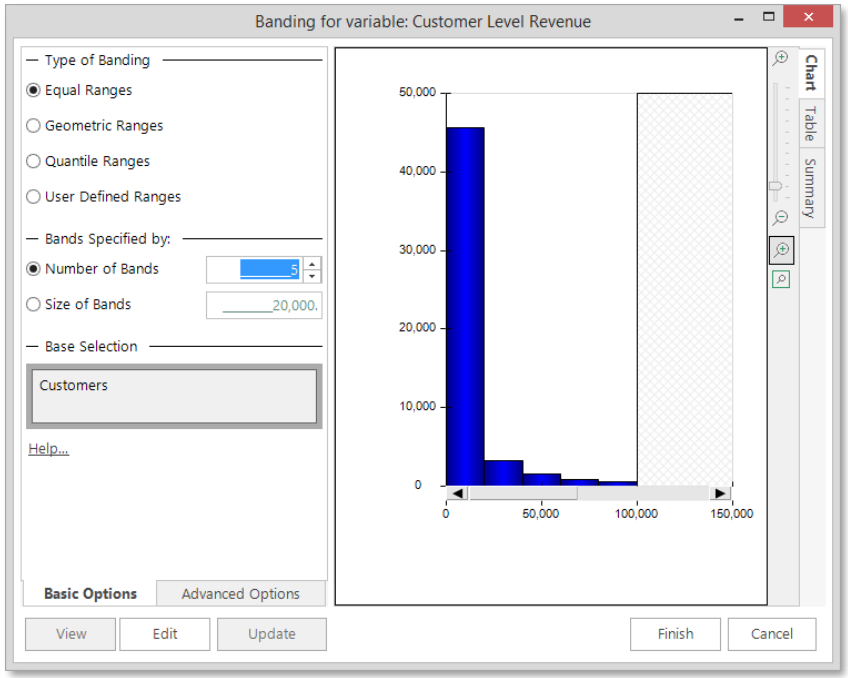
N.B. The brackets in the pop-up menu show which banding options need calculating. Once a banding option is calculated it is shown without brackets.

- The "Choose Banding…" option allows use of the numeric distribution tool to analyse and generate a wide range of different banding types including quantiles (quartiles, deciles, centiles, etc.) and specific treatment of outlying values

- Once a banding is defined, you can amend it by right-clicking on the dimension and choosing **Edit**. This will display the banding tool

- The tabs to the right of the banding graph of statistical information relate to the banding or variable as a whole





RFV & Cube Dimensions

The functionality of RFV can be used to set the dimensions on a Cube.

For example Frequency can be added on a dimension by right dragging a transaction table onto a Cube dimension.

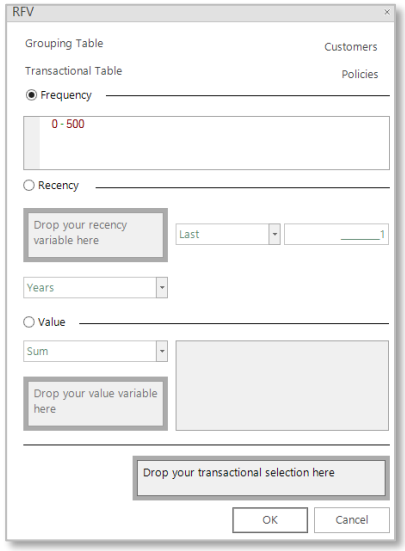
- Open a blank Cube set to **Customers**
- Right drag the **Policies** table onto the vertical cube dimension and select **Add RFV Frequency dimension**
- Amend the bandings as required and click **OK**

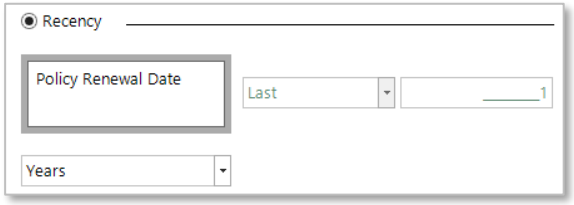
To use the Recency function, right drag a date variable onto a Cube dimension.

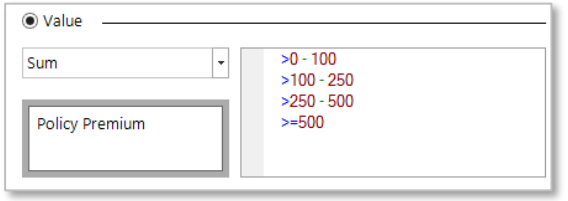
- Open a blank Cube set to **Customers**
- Right drag the **Policy Renewal Date** variable onto the vertical cube dimension and select **Add RFV Recency dimension**
- Select the date period to band as required and click **OK**

To use the Value function, right drag a numeric or currency variable onto a Cube dimension.

- Open a blank Cube set to **Records**
- Right drag the **Policy Premium** variable onto the vertical cube dimension and select **Add RFV Value dimension**
- Amend the bandings as required and click **OK**







Queries as a Cube Dimension

In addition to using variables as cube dimensions, you can use one or more queries as a dimension. This is appropriate if you wish to analyse by a characteristic that is not directly presented as a variable (for example, analyse by “Bought in the last year”).

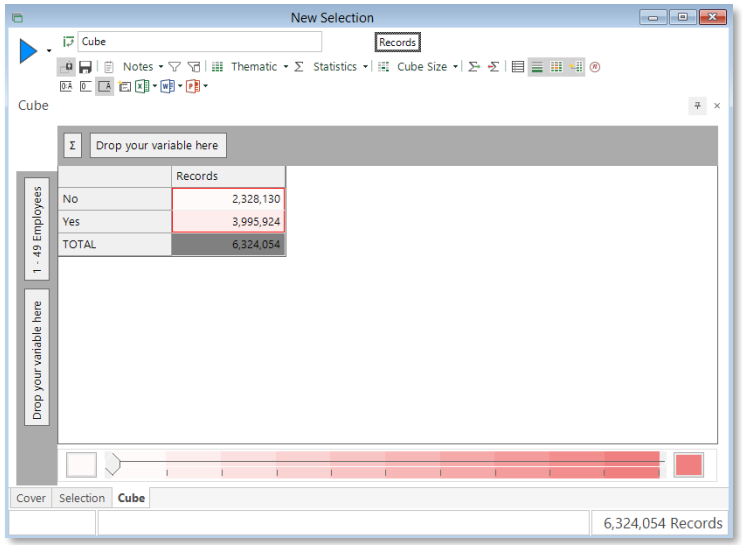
- Define a query in a new selection window
- Drag and drop it onto the cube dimension drop zone

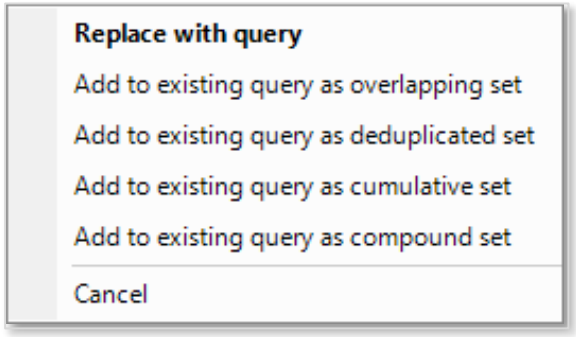
The query will produce two categories, Yes and No and behaves exactly as a variable from the table it is resolved to.

N.B. You can drag the query back off the cube dimension, but if you change it, you will need to drag the amended version back on again. The cube holds a copy of your query; it does not reference any changes you may make in the original definition window.

A single dimension can also have multiple queries added to it. Because in general two selections can both select the same records, you can choose whether you want to see the selections overlap each other (providing results that would look similar to a flag array selector variable) or whether the selections should be "de-duplicated". De-duplicating selections means that if a record is selected by one selection, then it will not be counted in the figures for all subsequent selections.

- Define two additional queries
- Right-drag one of these and drop it on the first query within the cube dimension area. You will see a popup menu as shown opposite





The options for multiple selections on a dimension are:

Overlapped
Where a cell shows every record that meets the criteria for that selection.

Deduplicated
Where a cell shows the count of that selection with any duplicated records from the previous cell(s) having been removed.

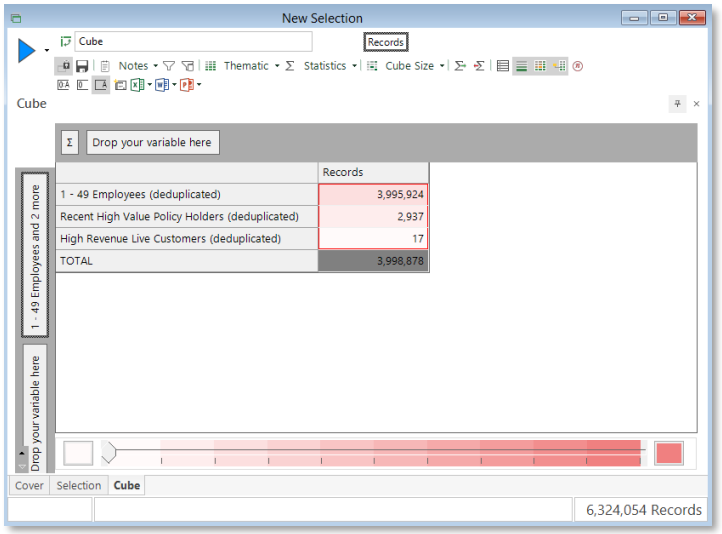
Cumulative
Where a cell adds any new records with those from the previous cell(s).

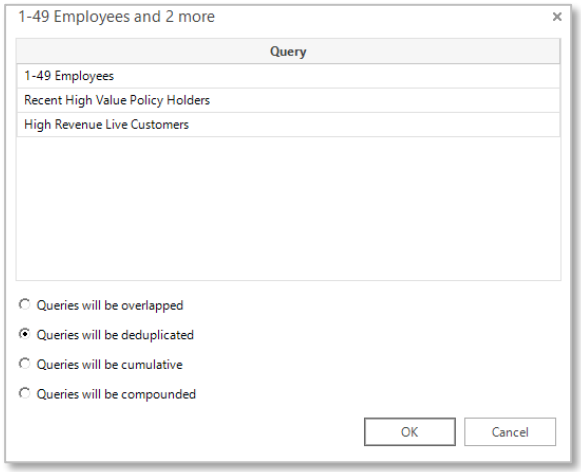
Compounded
Where a cell only shows records where the record meets the condition from the previous cell(s).

- Drag your next selection on to the same dimension drop box and click on the **Build** button

Once you have created your multi selection display, the order of the selections can be altered by using the Edit option.

- Right click on the dimension contains the dragged on selections and choose **Edit**
- Right click on the queries to move them up or down to change the order in which they are applied
- Click **OK**, and then click on the **Build** button





Cube Calculated Measures

This feature allows you to perform simple calculations in and between cells on a Cube or Tree tool.

For example you may wish to display the average Policies per Customer broken down by Major Industry Sector.

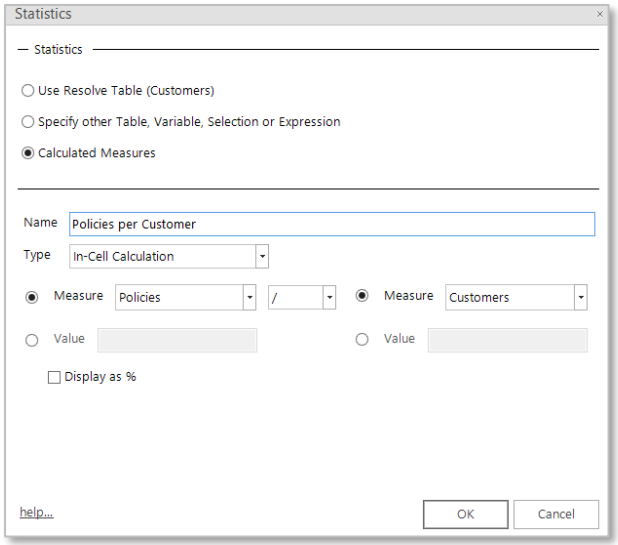
- Display a Cube on a blank selection at the **Customers** table level, with **Major Industry Sector** on the vertical dimension
- Drag the **Policies** table onto the center of the Cube
- Click on the **Statistics** button followed by **Add Statistics…**
- Click on the radio button called **Calculated Measures** and complete as opposite

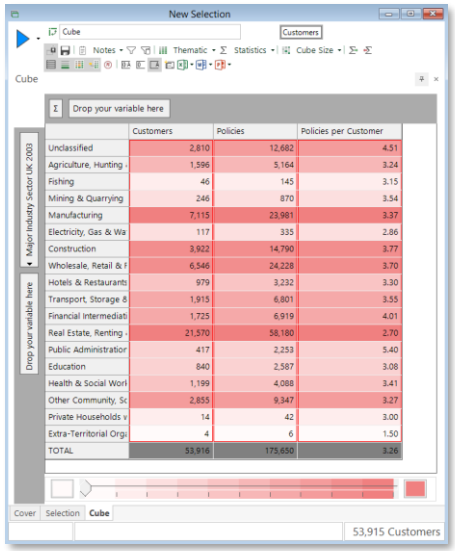
  Name: Policies per Customer

  Type: In-Cell Calculation

  Measure: Policies/Customers
- Click **OK**

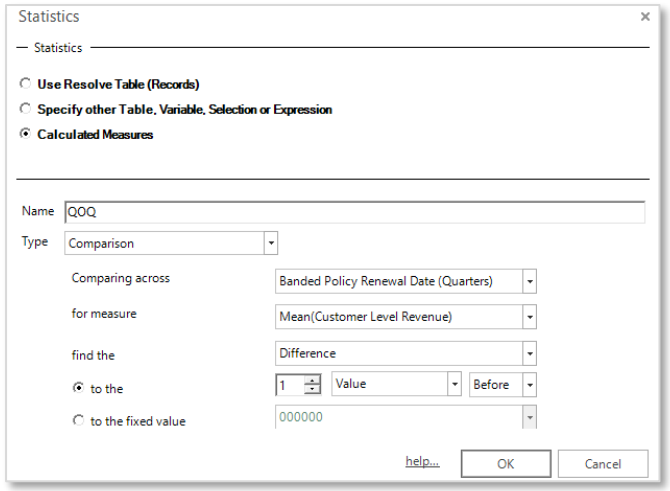
The results of the calculation are displayed immediately on the Cube without the need to click the build button.





Another example of a Calculated Measure would be to compare cells, perhaps to show the difference in mean profit between quarters

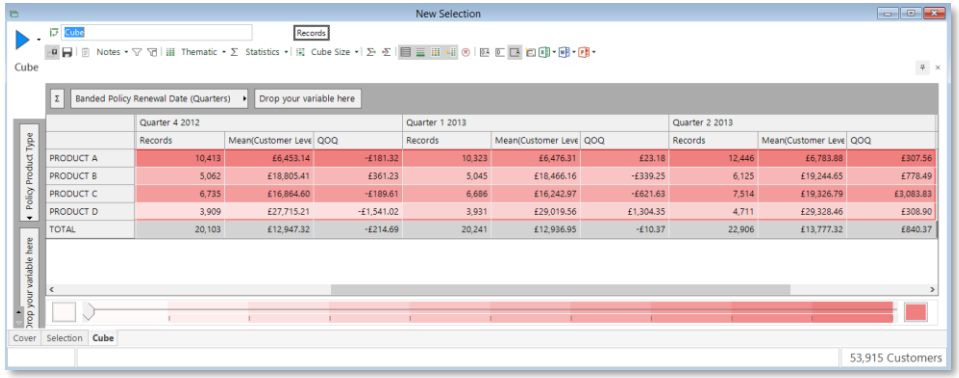
- Display a Cube on a blank selection at the **Records** table level
- Right drag the **Policy Renewal Date** variable onto the horizontal dimension and select **Quarters**
- On the vertical dimension add **Policy Product Type**
- Right drag **Customer Level Revenue** into the middle of the cube and select **Mean**
- Click on the **Statistics** button followed by **Add Statistics…**
- Click on the radio button called **Calculated Measures** and complete as opposite
- Click **OK**



The results of the calculation are displayed immediately on the Cube without the need to click the build button.

N.B. The Cell contains a list of actions which will be restricted if you use a non-sequential variable:

This	Use the cells in the currently selected measure
Total	Use the total cell of the dimension
First	Use the first cell of the dimension
Previous	Use the previous cell to the one already indicated
Next	Use the next cell to the one already indicated
Last	Use the last cell of the dimension



Segmentation

All businesses would like to know more about their customers and their transactional behaviour. If we understand our customers better we can produce more effective campaigns and ultimately improve our response rates and return on investment. For outbound marketing we can make our message personal to the individual. For analytical purposes however it is much more common to place our customers into a manageable number of groups that share common characteristics. This grouping is commonly referred to as segmentation – a grouping of people that is meaningful to your business and marketing processes.

Our customers are not static; they are on a journey with our business. Some of our customers will undoubtedly be loyal steady customers, but the majority will be continually moving between our defined segments. Some will be defecting to the competition, some will be on their way towards becoming our loyal customers; others will be on a journey away from being a customer. Knowledge of the characteristics of these groups, how they are changing and the journeys they are making is extremely valuable in trying to maximise our return from our customers.

The following pages will demonstrate how you can use FastStats Discoverer and its Segmentation tool to examine both your customers at a point in time and how they move between segments over a period of time.

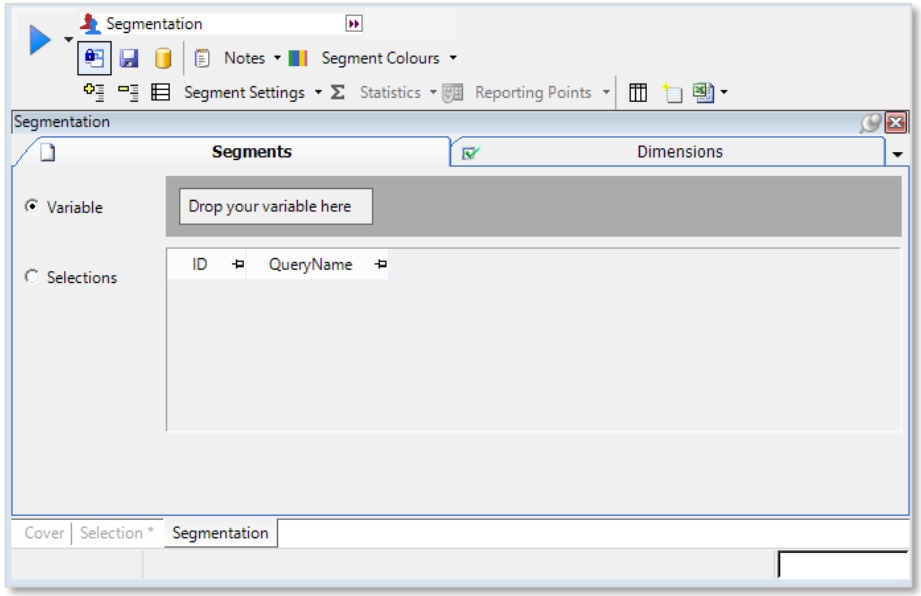
The Segmentation Window

The Segmentation Window can be opened from the analysis section of the toolbox ribbon bar. At the bottom of the segmentation window there are 3 tabs:

Cover gives you a headline view of the segmentation.

Selection allows you to view, or create, an underlying selection for your segmentation in the same way as other tools within Discoverer.

Segmentation opens up two further tabs at the top of the screen that in turn allow us to add the variables or selections we will use to build the segmentation.



Building the Segmentation

Segments

Drag on to this area the variable, or selections, you wish to use to segment your data. Changing the radio button enables you to segment the data by a variable or alternatively by query selections.

Dimensions

This tab is used to define which variables the segmentation will be broken down by and once the segmentation is built will display the results.

Segmenting a variable

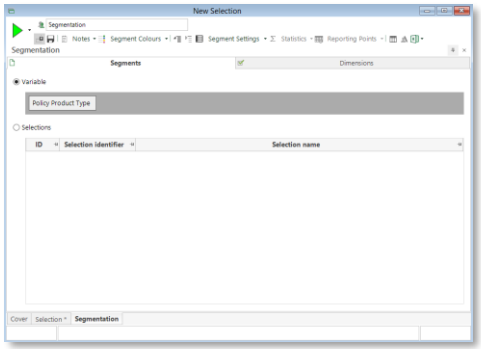
The following example will use the region that a customer lives in to segment the entire database. This will allow us to examine the behaviour of the customers in each region segment.

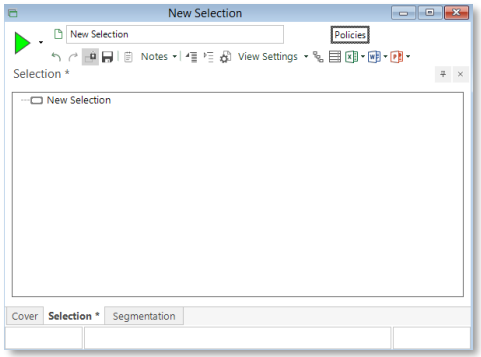
- Ensure the **Segments** tab is uppermost

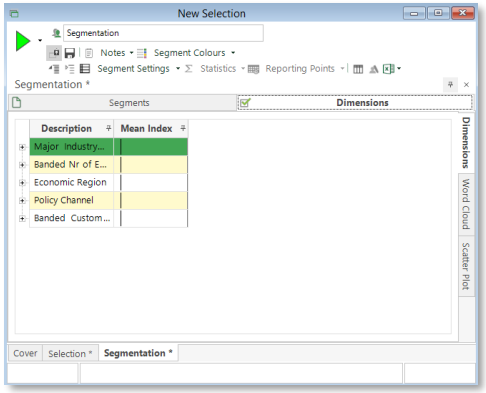
Now we can chose the variable we want to use to segment the data.

- Drag and drop the **Policy Product Type** variable, from the households folder, in your system explorer onto the box labelled **Drop your Variable here**

Having chosen the variable we want to use to segment the data we will now chose which variables the segmentation will be broken down by. The variables must come from the same table level or above that at which your segments are to be created.







- As we will use a variable from the **Policies** table level change the **table level** of the underlying **selection** to **Policies**

- Click on the **Dimensions** tab so it is uppermost

- From the System Explorer **drag** the following variables on to the **Dimensions** tab. **Major Industry Sector, Banded Nr of Employees, Economic Region, Policy Channel, Customer Level Revenue**

Reviewing the Segmentation Report when Segmenting by Variable

- With the **Dimension** tab still uppermost click the **Build** button to create the Segmentation report

The visualisation displays a summary line for each variable. It is possible to drill down and see the results for each category in any particular variable by clicking on the plus to the left of the variable description.

The initial visualisation is a summary view detailing the relative importance of each Variable in defining the segments. The **Mean Index** gives the average index for the categories in each variable and the higher the index the greater significance that variable has in informing the segment. Clicking on the column header allows you to sort the column.

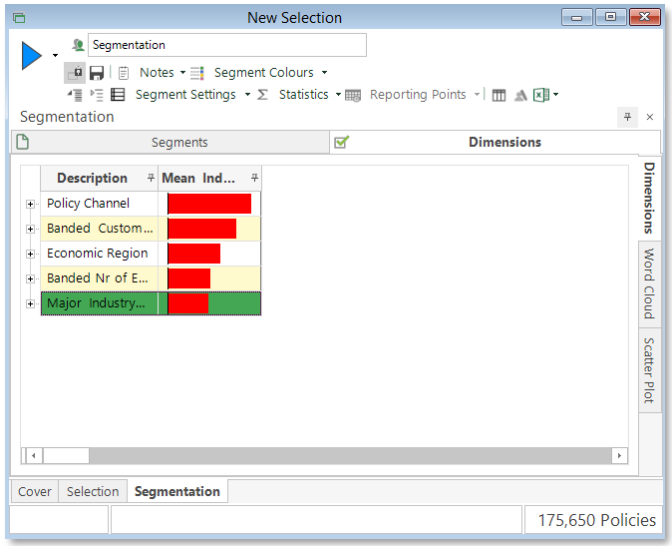
- Click the heading **Mean Index** until it displays the results highest to lowest

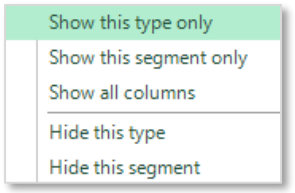
- Click the **+** next to **Major Industry Sector** to see the breakdown of data by that variable

This report presents a lot of information that you can sort and view in a variety of ways. Right clicking on a column header brings up a box containing the relevant options.

Show/Hide this type will select or hide all of the columns which contain the same information as the column header you clicked on.

Show/Hide this segment will select or hide all the columns relevant to the particular segment you clicked on.





- Right click on a column heading **Product D** and select **Show this segment only**

As you study the report you will want to examine all of the segments and columns. Viewing one segment only will allow us to examine the different types of columns and the information each gives us. The following column descriptions would also include the name of the segment e.g. London as in the screen shots opposite.

Description displays the name assigned to that particular variable category.

Penetration displays a histogram with an index value centred on 100. Histogram bars to the right of the centre line show the segment is over represented in that category. Histogram bars to the left of the centre line show under representation.

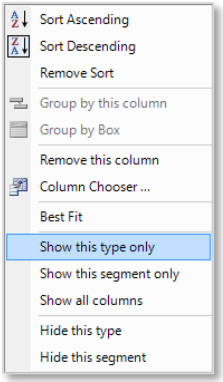
Segment is the number of records in the segment in that category.

Index is the ratio of the segment N and Base figures multiplied by 100. The higher the number the higher the proportion of records from the segment, that belong in that category, in relation to the number of base records.

Z-Score displays a figure which shows how confident we can be in the result. It is a standardised measure to show if the result is a true characteristic of the data and not a quirk of the data sample used. The further a result is away from the average (0) the less chance the result is a quirk of the data.

Histogram is a graphical representation of the number of records from that segment in each category.

Segment: Base compares the number of records from the segment to the number of base records in each category.



Description	PRODUCT D Penetration	PRODUCT D	PRODUCT D Index	PRODUCT D Z-Score	PRODUCT D Histogram	PRODUCT D : Base
Mining		123	101.97	0.23		
Wholesale		1,330	121.35	7.57		
Transport, Com...		1,414	119.14	7.06		
Manufacturing		5,142	141.76	26.93		
Retail		1,554	102.17	0.91		
Finance, Insuran...		2,683	77.20	-14.39		
Construction		2,631	124.12	11.89		
Services		7,071	82.15	-17.73		
Public Administr...		715	180.68	17.18		
Agriculture, For...		712	94.88	-1.50		
Unclassified		1,108	70.02	-12.77		
TOTAL		24,483	-	-		

Z-Score	Confidence
> +/- 3.29	> 99.9%
> +/- 2.576	> 99%
> +/- 1.96	> 95%
> +/- 1.65	> 90%
<= +/- 1.65	<=90%

Z-Score values and the confidence they represent

See **Appendix 1** for details as to how a Z-Score is derived

Toward the bottom left corner of the report are 3 tabs, the Dimensions tab and two others. The two other tabs give visualisations which allow you to change the way the segment report data is viewed.

- Click on the **Word Cloud** tab

This option shows the most influential categories from the variables used in terms of breaking down the segment. The user can chose the segment to be viewed, the measure to use and the number of categories to be displayed.

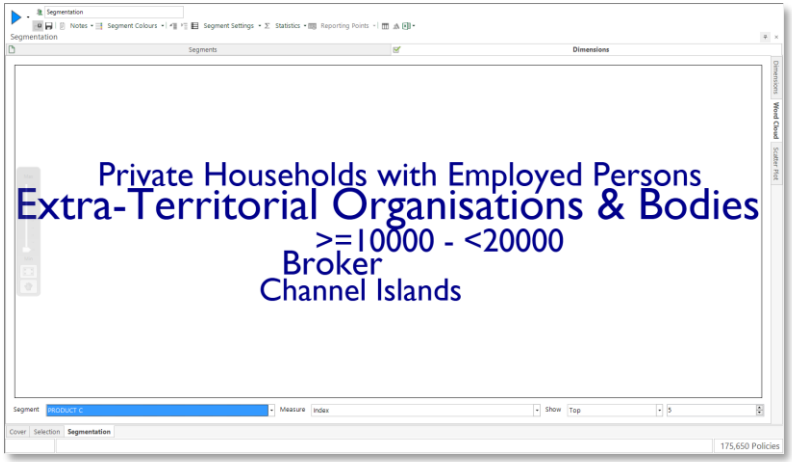
The default is the 'Index' measure which gives a variable-independent measure of how over or under-represented that category is in the segment being viewed. It is possible to switch from Index to Count which will then display the categories selected by the total number of records from the segment.

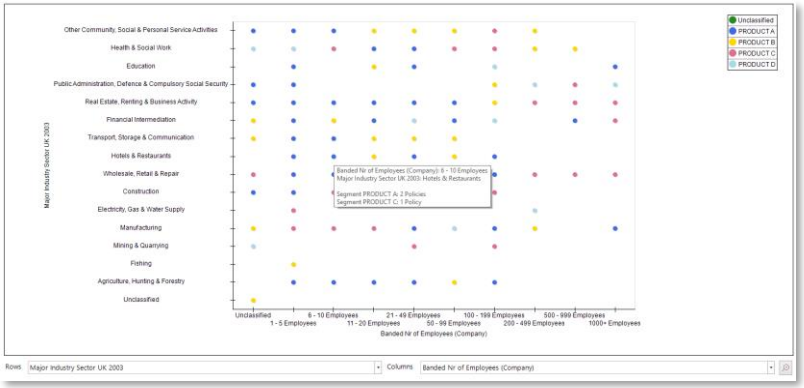
By default you will see the top 10 categories for the segment. It is possible to change the number of categories viewed and to select the 'Top' or 'Bottom'.

- Click on the **Scatter Plot** tab

The chart uses a stratified sample of 1000 records and assigns a colour for each category so you can see how the segments are distributed across the categories. The Rows and Columns options allow you to choose which of the variables used to create the segments you wish to display. A tool tip box shows a breakdown of the records behind each point if you hover the mouser pointer over the point.

It should be noted that as we are viewing a sample of 1000 records the results may not be indicative of the entire database. The scatter graph may give useful insight but it is important to use the Dimensions tab to develop/confirm any conclusions.





Segmenting Selections to show changes over time

This functionality allows us to look at trends over time.

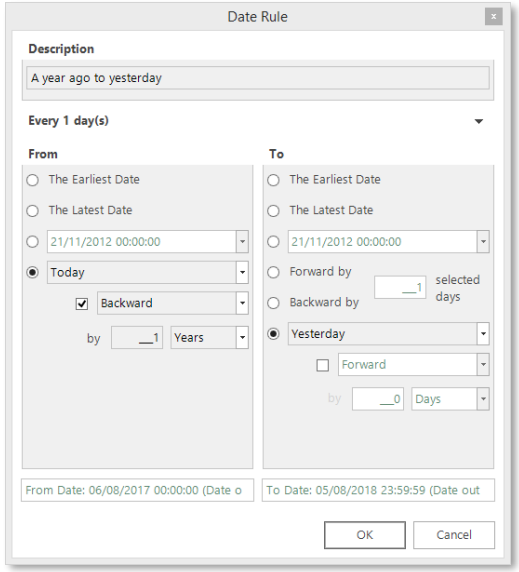
The selections used with this function will require a date element that will give the potential for the result to change over time. Therefore a date variable needs to be used within the selection. It is possible to view the dates returned by a date rule at the bottom of the date rule window.

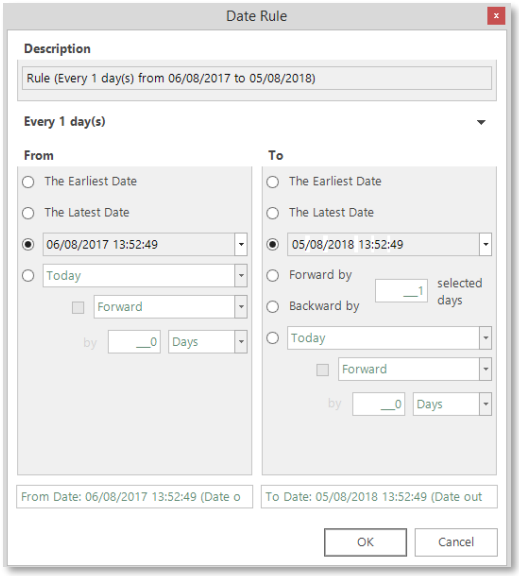
e.g. the date rule in the first screen shot returns dates a year ago up to yesterday, this allows the potential for the result to change as time progresses.

Whereas …

…the date rule in the second screen shot has fixed start and end points, this does not allow the potential for the result to change and therefore should not be used when exploring segment change over time.

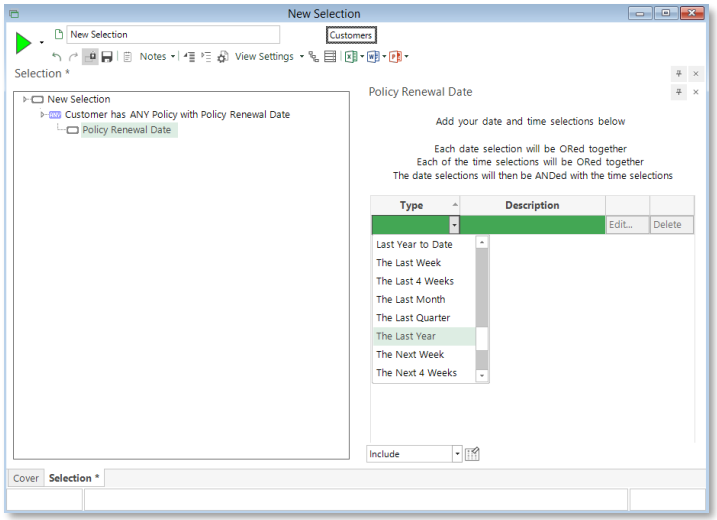
To illustrate this we will examine the changes over time between 5 selections of customers who have made holiday bookings. The selections will identify the frequency with which customers have booked holidays as well as the cost of those Holidays. Those renewing the most often and higher cost policies will be identified as High Frequency High Value (HFHV) customers and those renewing the least often and taking lower cost policies will be identified as Low Frequency Low Value (LFLV) Customers. High Frequency Low Value (HFLV) and Low Frequency High Value (LFHV) will fall in between.

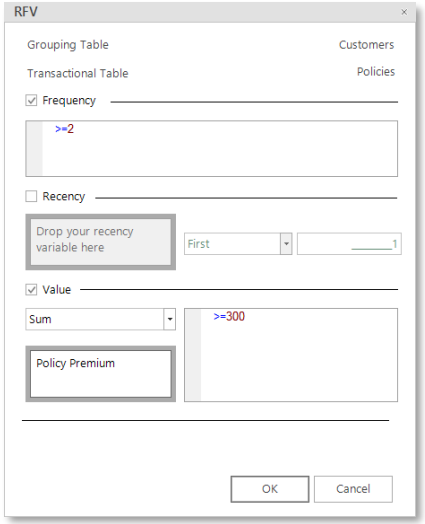




To create the HFHV selection

- Open a **Customer level** selection
- Drag on the **Policy Renewal Date** variable
- Click on the drop down arrow in the **Type** column
- Select **Last Year** from the drop down menu
- Right click on the **ANY** node and select **Apply RFV to Customer…**
- Apply the **Frequency** and **Value** as shown in the screenshot
- **Name** the selection **1** - **HFHV** and **Save** in the **private folder**





N.B. If you are on the Base Advanced course the remaining selections have been saved in the public folder. Otherwise create the following:

2 - LFHV – **Policy Renewal Date** variable set to **The Last Year**. Apply **RFV** to show **frequency** as <2 and **value** to show Sum **Cost** to be >=300.

3 - HFLV - **Policy Renewal Date** variable set to **The Last Year**. Apply **RFV** to show **frequency** as >=2 and **value** to show Sum **Cost** to be <300.

4 - LFLV - **Policy Renewal Date** variable set to **The Last Year**. Apply **RFV** to show **frequency** as <2 and **value** to show Sum **Cost** to be <300.

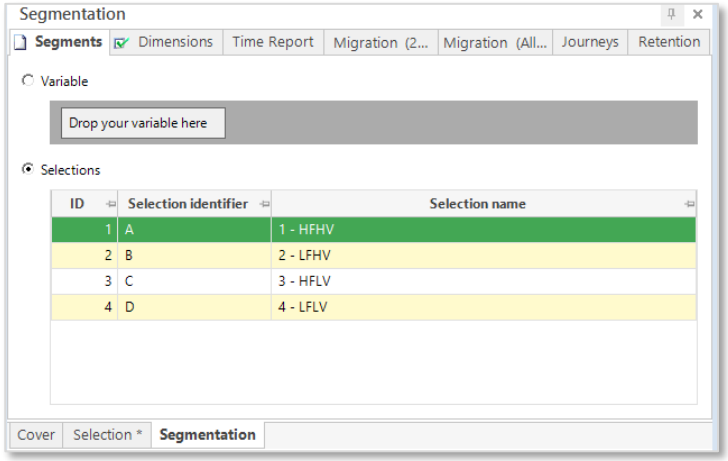
5 - No Transactions - Policy Renewal Date variable set to **The Last Year**. Apply **RFV** to show **frequency** as 0.

N.B. The no bookings variable makes no distinction between previous purchasers and new customers.

- Display a new **Segmentation** window and set the underlying selection to the **Customer** table level

- Ensure the **Segment** tab is uppermost and the radio button by **Selections** is checked

- Drag **1 - HFHV**, **2 – LFHV, 3 - HFLV** and **4 - LFLV** onto the segmentation window



As you do this you will notice 3 additional tabs become available at the top of the window.

Before viewing the 3 report tabs set the **Reporting Points** via the drop down at the top of the window. By default the display will be set with 4 reporting points ranging from today to the start of the year 3 years ago.

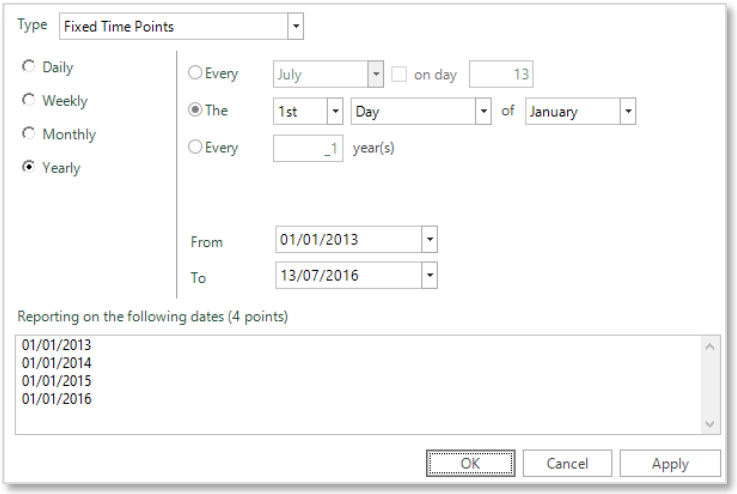
Clicking on the drop down by the dates will allow you to alter the years the report covers.

Changing the radio button that is currently against Yearly allows you to report at different intervals.

The final section of this window allows you to choose which point of the time period selected the movements between the selections will be shown at.

By changing these options it is possible to increase the number of reporting points but **PLEASE NOTE** the more reporting points you set the longer the processing time to see the results.

- Set the **Reporting Points** as in the screenshot



Reviewing the Segmentation Report when viewing Time Reports

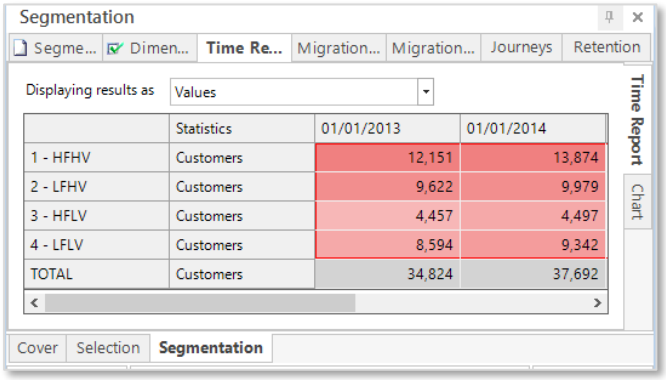
There are 3 tabs related to this type of segmentation each of which gives different insight.

Time Report – Produces a cube displaying the number of records for each segment at each reporting point.

Migration (2 points) – Produces a report showing the migration between segments across two specific points in time.

Migration (All Points) – Produces a cube showing migration between all of the segments at every reporting point.

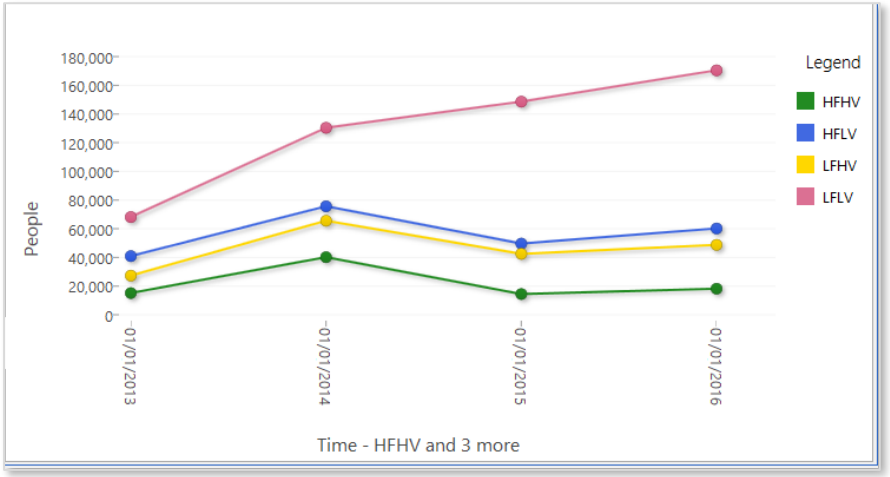
Each report will be built separately by clicking on the **Build** button with the relevant tab uppermost. When the report displays a cube it is possible to drag off cells to produce a selection.



Time Report

- Open the **Time Report** tab and click the **Build** button

By default you can see the **Values** in each segment at each reporting point. For example on 01/01/2013 there were 12,151 HFHV customers. By clicking on the **Displaying results as** box you can change the results displayed from **Values** to **Percentage of Segment**. Choosing this option allows us to see that those 12,151 HFHV customers represent 34.89% of all customers on 01/01/2013.

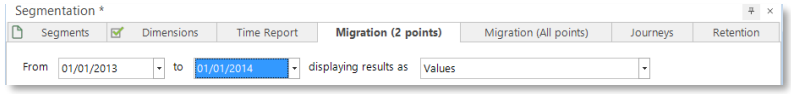


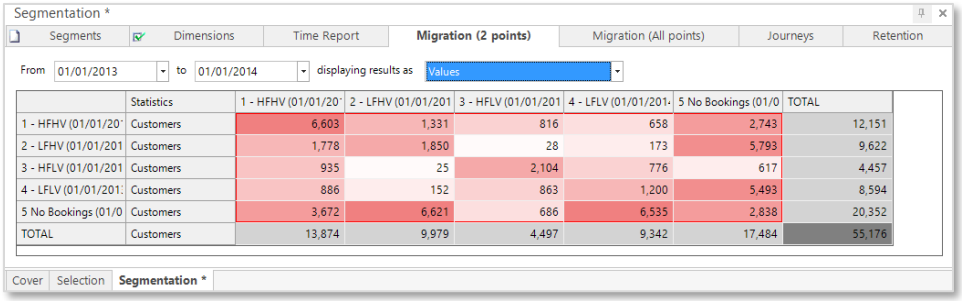
- Click on the **Chart** tab to the left of the window

The chart is a visual display of the trends over time.

Migration (2 points)

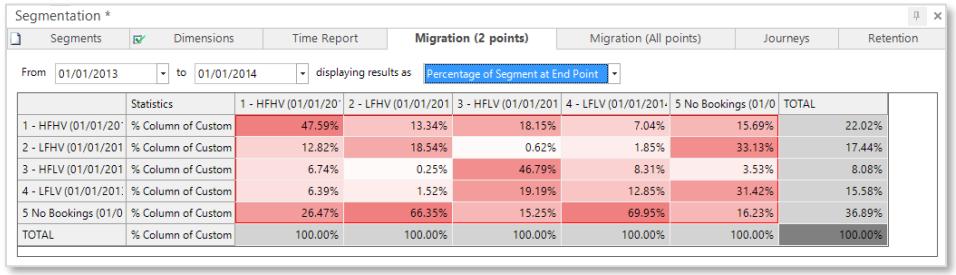
- Drag the **5 - No Bookings** selection into the **Segments tab**
- Open the **Migration (2 points)** tab
- Chose the time periods you wish to report on using the **From** and **To** boxes. We will select from 01/01/2013 to 01/01/2014 (the period identified in the Time Report as showing a particular downward trend)
- Click the **Build** button





We can view this information in 3 further ways by clicking on the **Displaying results as** box.

Percentage of Segment at Start Point gives the percentage row of people. In this case of those who were in a particular Segment in 2013 what percentage are in each of the segments in 2014.



Percentage of all Segment Movements shows what percentage of all movements each particular cell accounts for.

Migration (All Points)

- Open the **Migration (All points)** tab click the **Build** button

We can now see the movements between segments at each reporting point. It is possible to look for patterns such as movements from our best customer group to worst or more positively the worst customer groups to the best.

Dragging these two cells off would create a selection that we could utilise within Discoverer to identify the records in an attempt to re-engage them, and/or understand their characteristics, so we can intervene with those who have similar characteristics.

	Statistics	01/01/2013 - 01/	01/01/2014 - 01/	01/01/2015 - 01/	TOTAL
HFHV -> HFHV	People	241	82	488	-
HFHV -> HFLV	People	205	195	905	-
HFHV -> LFHV	People	697	207	652	-
HFHV -> LFLV	People	775	425	1,398	-
HFHV -> No Bookings	People	13,256	39,261	11,022	-
HFLV -> HFHV	People	447	91	939	-
HFLV -> HFLV	People	655	333	5,480	-
HFLV -> LFHV	People	1,178	253	1,409	-
HFLV -> LFLV	People	2,318	805	7,027	-
HFLV -> No Bookings	People	36,341	74,184	34,811	-
LFHV -> HFHV	People	236	307	941	-
LFHV -> HFLV	People	249	630	1,806	-
LFHV -> LFHV	People	1,735	1,009	2,646	-
LFHV -> LFLV	People	1,244	1,999	5,215	-
LFHV -> No Bookings	People	23,858	61,621	31,878	-
LFLV -> HFHV	People	588	439	1,650	-
LFLV -> HFLV	People	783	1,529	7,778	-
LFLV -> LFHV	People	2,212	1,148	5,113	-
LFLV -> LFLV	People	4,488	4,119	25,155	-
LFLV -> No Bookings	People	60,099	123,138	108,905	-
No Bookings -> HFHV	People	38,658	13,546	14,190	-
No Bookings -> HFLV	People	73,774	46,979	44,226	-
No Bookings -> LFHV	People	59,744	39,869	38,941	-
No Bookings -> LFLV	People	121,548	141,253	131,668	-
No Bookings -> No Bookings	People	711,224	603,131	672,310	-
TOTAL	People	1,156,553	1,156,553	1,156,553	-

It is sensible to display the results as a **Percentage of Segment at Starting point** in order to see the relative size of changes across each row.

This allows us to identify where the highest proportion of movements occur as opposed to just the numbers who moved. From this we can discern between which segments the greatest proportion of movement has taken place.

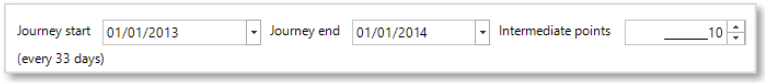
Displaying results as: Percentage of Segment at Start Point

	Statistics	01/01/2013 - 01/	01/01/2014 - 01/	01/01/2015 - 01/
HFHV -> HFHV	% Segment of People	1.59%	0.20%	3.37%
HFHV -> HFLV	% Segment of People	1.35%	0.49%	6.26%
HFHV -> LFHV	% Segment of People	4.59%	0.52%	4.51%
HFHV -> LFLV	% Segment of People	5.11%	1.06%	9.66%
HFHV -> No Bookings	% Segment of People	87.36%	97.74%	76.20%

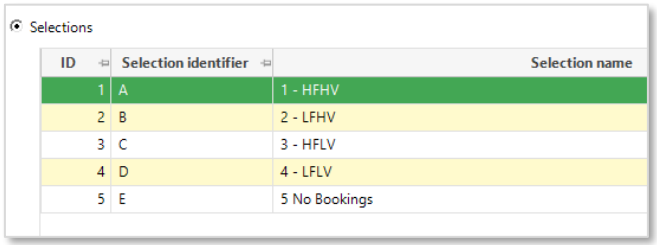
Journeys

The Journeys report takes our analysis a step further. Previous segmentation tools have identified the segment a record is in at the start and end points of a period. The journeys report uses intermediate sampling points which allow us to see the journeys records take between those two points.

- Set the **Journey start**, **Journey end** and **Intermediate points** as shown in the screenshot and click the **Build** button



Any journey starting A and ending E corresponds to a journey moving from HFHV to No Bookings. The **Selection identifiers** can be seen by clicking on the S**egments** tab.



ID	Selection identifier	Selection name
1	A	1 - HFHV
2	B	2 - LFHV
3	C	3 - HFLV
4	D	4 - LFLV
5	E	5 No Bookings

- On the Journeys report right click on the column heading **TOTAL** and sort descending

We can see 21,011 records who moved directly from A-E but more helpfully we can see 11,382 who moved A-B-E 5,113 who moved A-D-E and 1,421 who moved A-C-E. If we identify records, therefore, that have moved from A to B or C they may be at risk of continuing the journey to E and hence we would lose them as customers. Having found the cells corresponding to A-D, A-C and A-B we could drag them to create a selection. This could be used with the Data Grid, to mail to them, or the Best Next Offer wizard (available via modelling) to identify an offer that may encourage them to book again.

	Statistics	TOTAL
E	People	602,814
ED	People	141,383
DE	People	123,108
BE	People	61,626
CE	People	42,404
EB	People	39,956
EC	People	28,241
CDE	People	26,069
AE	People	21,011
EDC	People	16,393
ABE	People	11,382
EA	People	7,239
ADE	People	5,113
CBE	People	4,113
EBA	People	3,772
EDA	People	2,033
EBC	People	1,939
DCD	People	1,868
DED	People	1,662
ACE	People	1,421
CAE	People	1,272
DC	People	936
BED	People	928

N.B. Clicking on Segment Settings allows you to choose raw journey results which will show you each intermediate point and, therefore, when the movements occurred.

Retention

The Retentions report allows us to identify how long a record has been in a segment at a particular point in time. This enables us to identify those who have been our best customers, for a long period of time, or those who have stopped making bookings for a short period of time who we may wish to re-engage.

- Set the **Retention at** point as 01/01/2014. This is the point we will look back from to identify how long a record has been in the segment

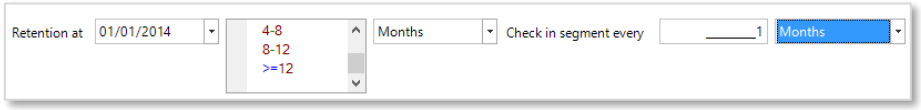
- Enter the **ranges**

  0-2
  2-4
  4-8
  8-12
  >=12

  These ranges are the divisions separating how long a record has been in the segment

- **Check in Segment** every 1 **Month**. This ensures that to fall in a segment for a particular range a record must have been present in the previous range for every month it covers.

- Click the **Build** button



	Statistics	Unclassified	0-2 Months	2-4 Months	4-8 Months	8-12 Months	>12 Months	TOTAL
1 - HFHV (01/01/	People	0	1,946	2,637	5,824	4,038	51	14,496
2 - LFHV (01/01/2	People	0	5,028	6,949	15,046	15,451	104	42,578
3 - HFLV (01/01/2	People	0	7,222	8,320	18,413	15,608	183	49,746
4 - LFLV (01/01/2	People	0	17,579	22,503	56,315	51,873	474	148,744
5 - No Bookings ((	People	0	13,530	39,139	157,926	87,580	602,814	900,989
TOTAL	People	0	45,305	79,548	253,524	174,550	603,626	1,156,553

The resulting cube identifies 51 Records who have been HFHV for over 12 months, our best customers. It also identifies 13,530 records who have fallen in to the No Bookings segment recently who we may wish to intervene with to ensure they do not continue in that segment for a longer period of time.

Reviewing the Segmentation Report - Elapsed Time Reports

So far we have examined how many records are in each segment at specific, fixed points in time. This is useful, for example, for identifying recently lapsed customers or current 'best' customers. However, as all our customers start their journeys with us at different points in time, there may be occasions when we want to examine journeys from the date that a first interaction with us occurs. This enables us to identify overall patterns from start points.

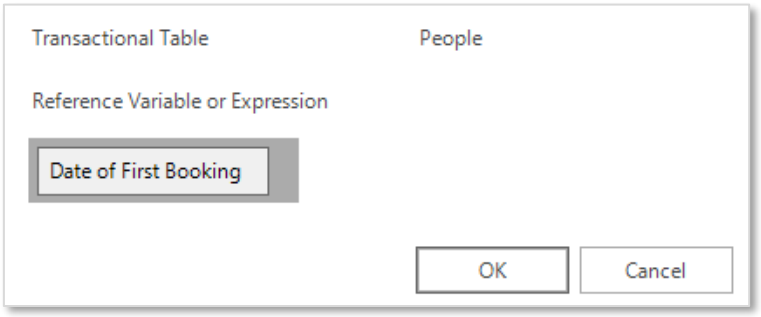
Elapsed Time Reports can be interpreted in a similar fashion to Fixed Time Reports. As an example, we will consider how to set up an Elapsed Time Report and how to interpret the Time Report.

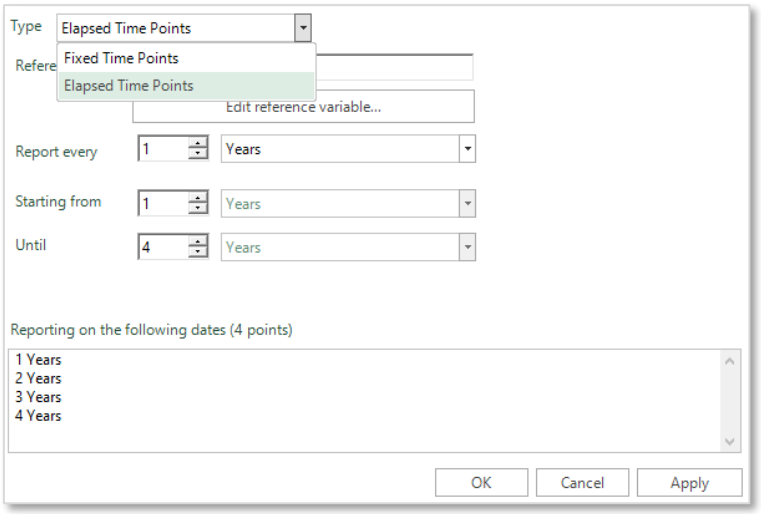
- Choose Elapsed Time Points from the drop down

We will set a reference date related to a customer's first interaction with us. This could be first transaction or first communication, for example. In each case the reference date will be individual for each record.

- Within the Reporting Points dialog click on Edit reference variable…
- From the System Explorer – use a variable that will identify the first interaction with the Customer
- Complete the settings as per the screenshot opposite and click OK

Now we can build and interpret any of the reports, as we have done previously, but considering time as elapsing from a reference date that is individual for each person.





Virtual Variables & Wizards

Virtual Variables are a way of adding to the information that you can analyse within D&B Market Insight. An initial set of variables are created when the system is built and these cannot be changed without rebuilding the system (which can take a long time and will require your administrator to perform the task). Virtual Variables can be used to import additional information into your system or to derive new data by summarizing or aggregating existing information into new forms.

Virtual Variables are treated in the same way as "normal" variables by the system and can be used in all the same ways. They will appear in the System Explorer and can be dragged onto all the same places as a normal variable.

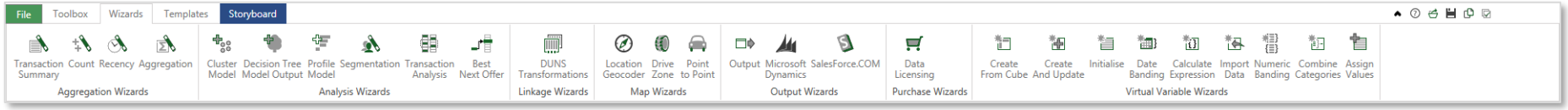
Unlike normal variables, Virtual Variables can also be updated once they have been created. Virtual Variables can also be deleted if they are no longer needed (whereas normal variables can only be removed by rebuilding the system).

The creation of a Virtual Variable is managed through a step by step Wizard process. A full description of most Virtual Variable Wizard is described in **Appendix 1**. A few examples are shown in this manual.

However, Virtual Variables are automatically invalidated when the system is refreshed (for example when fresh D&B data is loaded). The variables will remain in the system explorer, but will be grayed out until they are refreshed (see below).

N.B. Creating virtual variables uses disk space on the D&B Market Insight servers. This space usage is monitored automatically for each user. Large virtual variables will be archived or referred back to users to delete to ensure disk space usage remains within sensible quotas.

N.B. A fully worked example for each Wizard can be found on the software Help menu. The Wizards displayed on your system may differ to those shown here and are dependent upon individual configuration.



Manage Virtual Variables

The Manage Virtual Variable dialog allows the user to recreate Virtual Variables that are no longer available due to the Market Insight system being rebuilt. The user can also permanently remove Virtual Variables (or old virtual variable definitions) that are no longer needed.

Most Virtual Variables will be created not by the administrator in FastStats Designer but by end users in Market Insight. When the Market Insight system is rebuilt using Designer it won't necessarily include the definitions for recreating the Virtual Variables and they will become unavailable to the user. These variables can then be recreated using the Manage Virtual Variables dialog available from the Tools menu.

Refreshing a Virtual Variable "By Rule"

Whenever an action is performed on a Virtual Variable, such as creating it or modifying it the definition of the change is saved. These constitute a set of "rules" that are used to put the variable in its current state. When refreshing the Virtual Variable these rules can be rerun to recreate the Virtual Variable. However, most of the rules used to recreate a variable will use selections on other variables. When the Market Insight system is reloaded the data in the system will change and the selections may now select different records. For example, one code of a selector Virtual Variable can be set to a selection of people that bought a certain product. When the Market Insight system is refreshed more purchases will have been added into the system and so more people will have bought the product in question. Therefore if the Virtual Variable is recreated "By Rule" the count for the particular code will go up as the selection now has more people in it.

Refreshing a Virtual Variable "From URN Snapshot"

If you create a Virtual Variable and want it to remain exactly the same after a rebuild of the Market Insight system then you can optionally create a "URN Snapshot" of the variable. This takes the variable and records the value for each record against the Unique Reference Number (URN) for the table that the variable is on. Then when the variable is recreated from this snapshot it has exactly the same values as before.

This could be useful if the same PWE Model is created on a set of data after each rebuild of the Market Insight system and you want to be able to compare how the model has changed between builds. When you create the PWE variable you are given the option to take a URN Snapshot of the variable. This can then be used to recreate the variable after the system rebuild.

A URN Snapshot can also be taken for any virtual variable at any time by right clicking on the variable in the System Explorer and selecting the "Create URN Snapshot" option.

Permanently Deleting Variable

Variables can also be permanently deleted using the Delete button. If the variable is not currently available in the system (indicated by a faded icon to the left of the description) then the information required to refresh the variable will be removed from the server. This will mean that the variable will no longer appear in the list of variables to be refreshed and it will never be able to be recreated.

If the variable is available in the system (indicated by a color variable icon), then the variable will be deleted from the system and also permanently removed from the server.

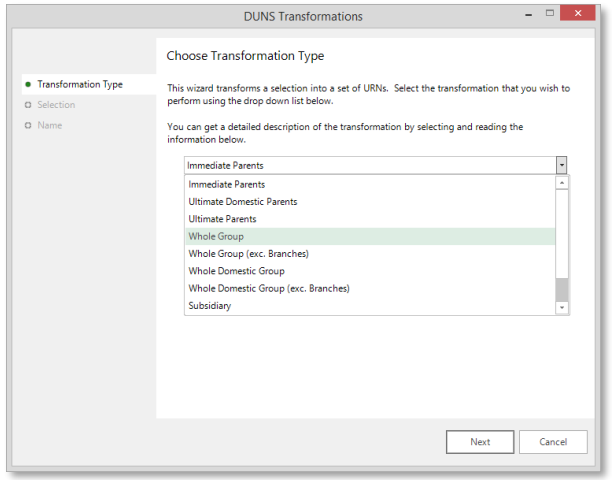
Wizard Example – DUNs Transformations

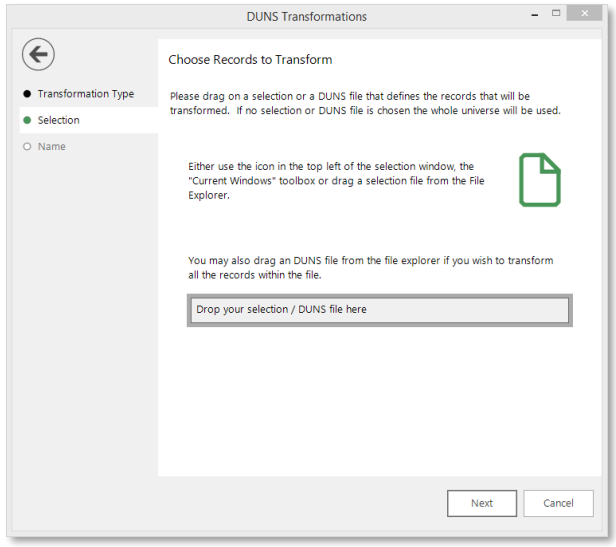
One of the wizards available to you is the Duns Transformation wizard which allows you to transform a selection of company sites into a list of related sites according to the corporate structure. The list is shown as a set of DUNS numbers. You can choose whether the immediate parent companies, ultimate parent companies, subsidiaries, or every company within the whole group, for example, are included in the list.

- Click on the **Duns Transformations** link in the Wizards window
- **Transformation Type** - From the drop down menu select the grouping you want to make based on the Duns numbers determined in the next step. Click **Next**
- **Selection** - Drag onto the drop zone a selection or DUNs file to identify the sites used to obtain the relationship set in step 1. Click **Next**
- **Name** - Click on the **Browse...** button to determine where you want to save your file
- Enter the name you want to save the file as
- Click **Finish**

The example opposite will find the DUNs of the Full Corporate Family associated with the DUNs you identified the selection step of the wizard.

You can use this selection for further analysis in Market Insight or drop it straight onto the Data Purchase wizard (see the Help files for further details).



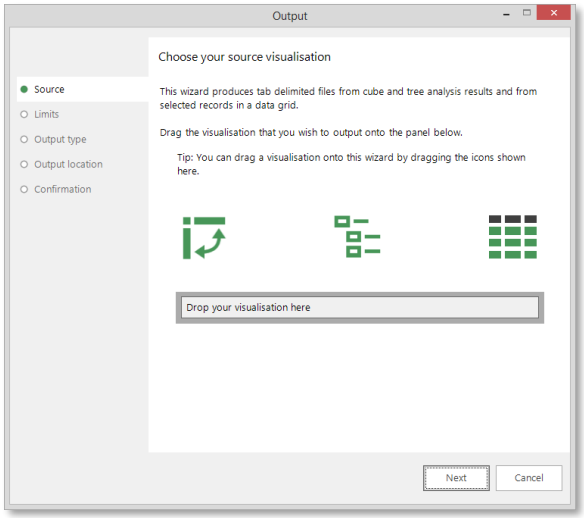


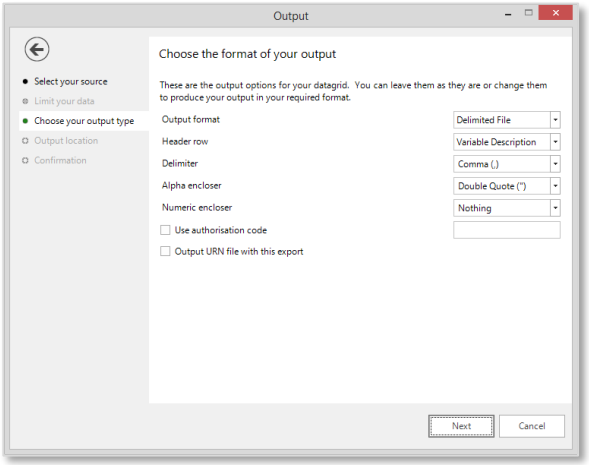
Output Wizard

This wizard allows you to quickly and simply output the records from a Cube, Tree or Data Grid. You may use this method as an alternative export process.

- Click on the **Output** wizard link
- **Select your source** – Drag the **Data Grid** onto the drop zone box. Click **Next**
- **Limit your data** – This step relates to a Cube/Tree tool if selected at on the previous step. The options on this step restrict the cells selected by size. Click **Next**
- **Choose your output type** – Select the output options for the records in the Data Grid. Click **Next**
- **Output location** – Enter the name for the file. Use the **Browse…** button to select the location for the file. Click **Next**
- **Confirmation** – This step will state the number of records that have been output. Click **Finish**

N.B. Both the Cube and Tree tool will follow the above steps and will be output as a text file.





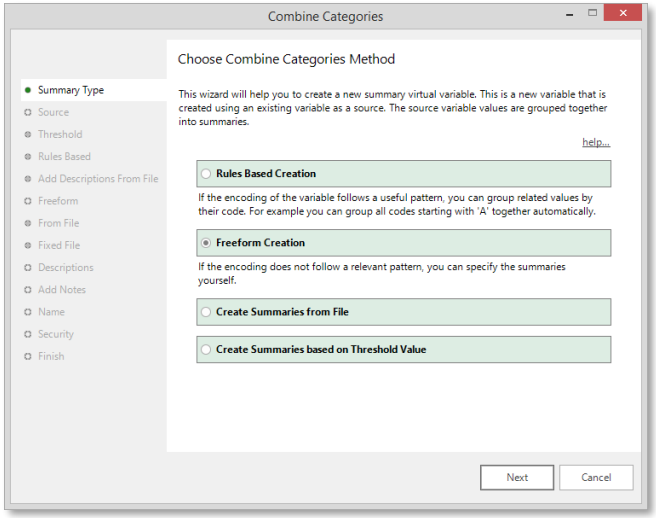
Combine Categories Wizard

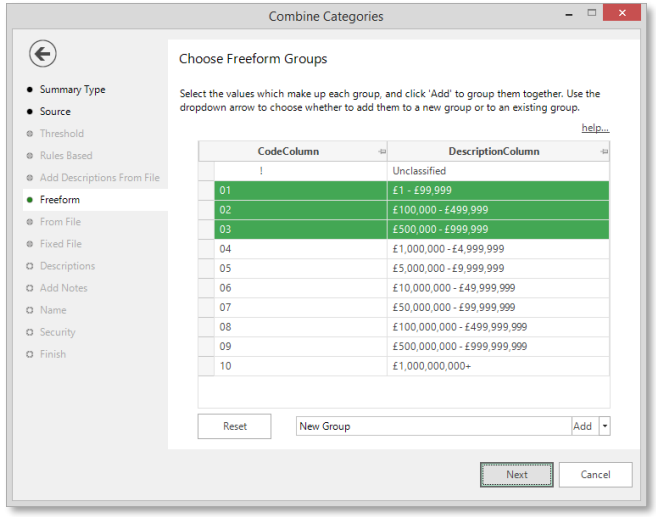
The Combine Categories Wizard allows you to create a virtual variable based upon an existing variable where the values are grouped together into summaries.

Example

The existing variable Banded Sales breaks down this information into over 10 bands. You may wish to make this simpler with just 4 categories of <£1,000,000, £1,000,000-<£10,000,000, £10,000,000-<£100,000,000, >=£100,000,000.

- Click on the **Combine Categories** wizard link
- **Summary Type** – Choose the appropriate method required for your source data. Select the **Freeform Creation** radio button. The other two options are described in the Help. Click **Next**
- **Source** – Drag on the **Banded Sales** variable. Click **Next**.
- **Threshold** – If you chose threshold as a summary type enter the threshold details and click **Next**
- **Rules Based** – If you chose **Rules Based Creation** as a summary type you now have the opportunity to define how the codes are grouped. Click **Next**
- **From File** – If you ticked **Create Summaries From File** you can drag the file on at this step. Click **Next**
- **Freeform** – Highlight the first group of categories you wish to summarise. Click **Add** (See screen shot opposite)





- Select the other categories you require (all values must belong to a group) and click **Add**. Click **Next**

- **Descriptions** – Enter the descriptions as in the screenshot and Click **Next**

- **Add notes** - You may enter optional notes in this window. Click **Next**

- **Name** - Enter the **Description** – **Sales Ranges**. Click **Next**

  If you have an existing Virtual Variable which will be superseded by this one it can be dragged onto the box **Drop the variable to overwrite here** to overwrite it.

  Tick the URN Snapshot if you wish to recreate this Virtual Variable after a refresh of the data with the exact same records.

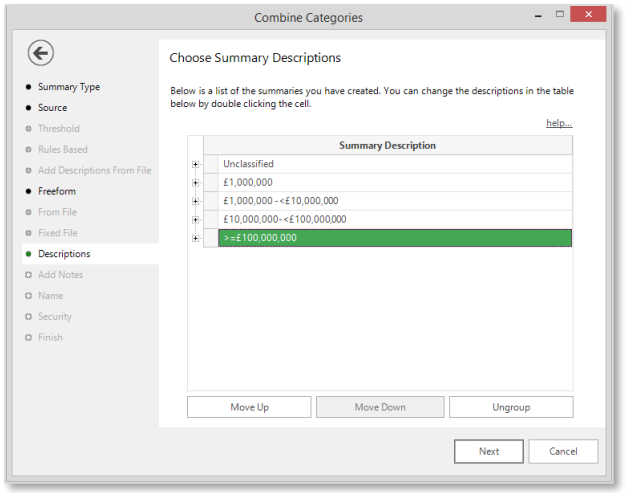
  To **Modify Security Attributes** tick this box and you will go to **Security Step**. Click **Next**

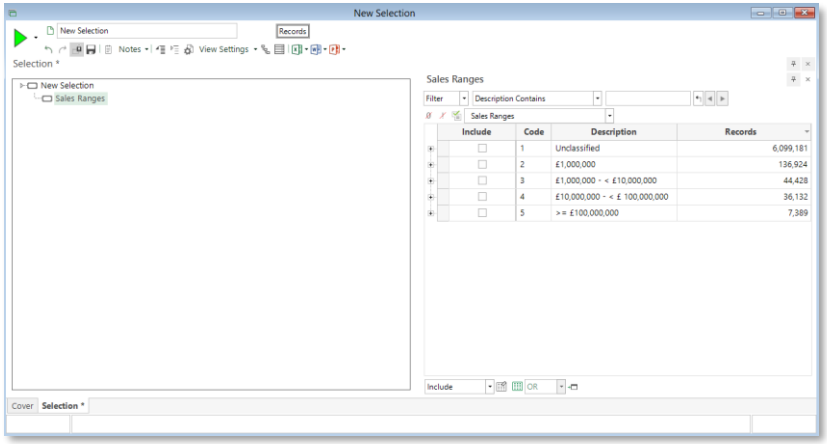
- **Security** – This step is only visible if you are running an Enterprise system and you have ticked the **Modify Security Attributes** box in the previous step.

- **Dependants** – This step will allow you to see if any variables are dependent upon a variable that is being updated

- **Finish** – Tick the **Show new variable as a selection** box. Click **Finish**

The virtual variable now displays as a 5 category selector.





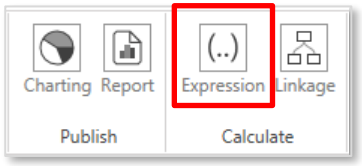
Expressions

D&B Market Insight supports expressions as a method to calculate numeric results. Expressions can use constants, mathematical, logical and date functions, Market Insight variables and Market Insight Queries as elements of an expression. Use of expressions significantly enhances the power of Market Insight.

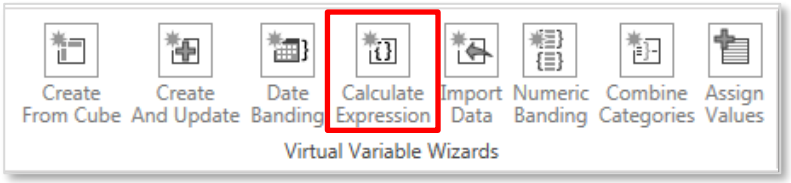
Expressions are currently used in three places in D&B Market Insight:

- In the 'Calculate Expression' wizard to populate a new variable according to a mathematical expression or logical rule
- Dragged from the Expression tool onto a Cube as a cube statistic
- Dragged from the Expression tool onto a Data Grid as an output column

Expressions may be saved and edited independently and are automatically saved within the tools they are used on.



Toolbox Ribbon



Wizard Ribbon

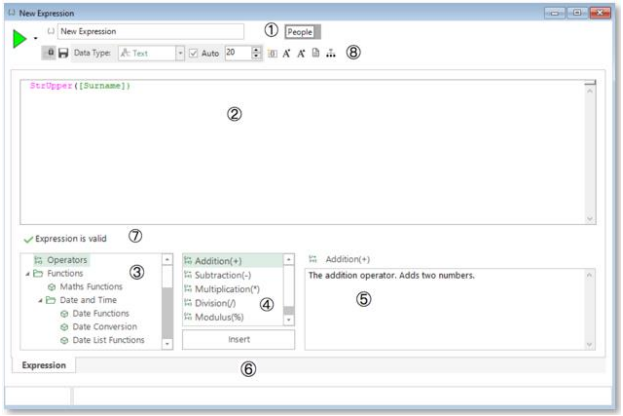
The Expression Window

The Expression tool can be found under the heading Calculate in the Toolbox window. The components of this window are as described below:

1. Set the table level and data type relating to your expression e.g. The variable Last Name is used as a text variable at the Contacts table
2. The expression builder area where the expression is created
3. The section containing the different groups of functions
4. The section containing a list of functions for a selected group
5. The section containing a brief description of the function selected
6. The button that will insert the function selected into the expression builder window
7. The button which allows you to preview an expression on a selection
8. The button that allows a user to create 'on the fly' aggregations

The example opposite has used a string function called StrUpper that converts a string of text to uppercase. By placing the variable you want to convert in closed brackets after the function you can then display the results by dragging onto a Data Grid.

The Data Grid screen shot opposite shows a selection of records with the original Last Name variable displayed alongside the expression altered view.



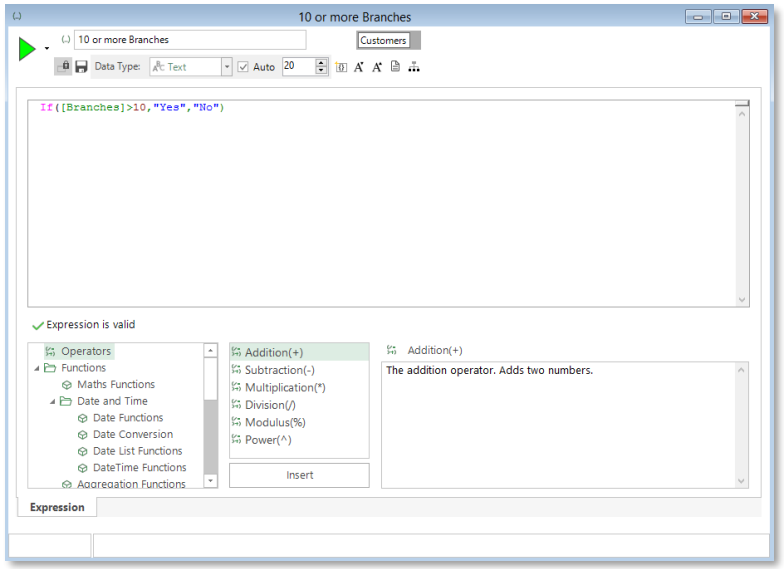
Duns Number	Last Name	Upper Case Last Name
078759715	Daniels	DANIELS
078759715	Gerson	GERSON
078759715	White	WHITE
078759715	Peterson	PETERSON
078759715	Shurtleff	SHURTLEFF
078759715	Spurling	SPURLING
078759715	Radler	RADLER
078759715	Duff	DUFF

Components of an Expression

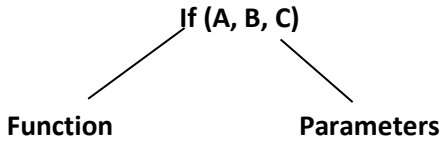
As an example take the If logic function to explore the makeup of an expression.

- Drag the **Expression** tool from the **Toolbox** onto the workspace

This window allows you to build an Expression as shown in the screen shot opposite.



The breakdown of this Expression is as follows:



You could read this as:

If (A [condition]

then B [outcome if condition met]

else C [outcome if condition not met])

Here a Condition is the test between two values. Those values can result from a Field, Numeric, String, Date or another Expression.

The example opposite has used a test on a Field (Branches is greater than 1000) and if that test is met display the word Yes otherwise display the word No. This can be seen when used on a Data Grid.

Creating an Expression

- Select the **If** statement from the **Logical Functions** option in the **Functions** folder and then click the **Insert** button

- Next to the open black bracket type a left hand square bracket. This will display the available variables that can be used with this function

- Double click on the **Emp Here** variable. Alternatively you could have typed the variable name within square brackets to obtain the same result

The next part of the Expression is to create a test to find values greater than 1000, therefore you need to insert an Inequality Function.

- From the **Functions** button select **Inequality Functions** and the **> Greater Than** option. Click **Insert**. You may find it quicker to type the symbol directly after the variable

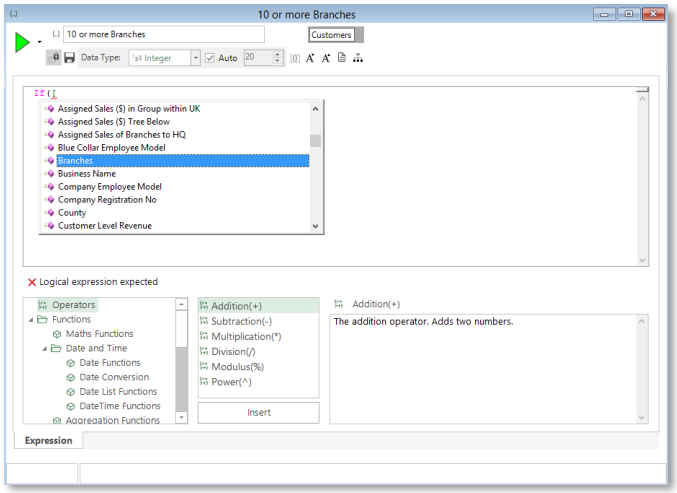
- Type **10** followed by a comma

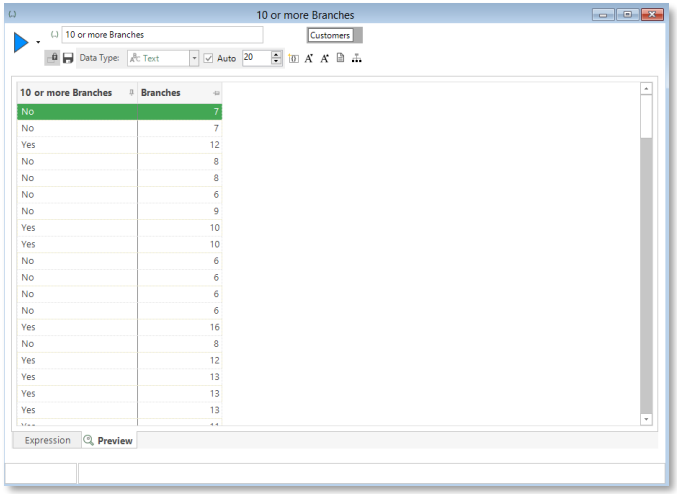
The next part of the Expression is to determine the output when the condition is met and when it is not met. As this example is outputting a word (String) in each case you need to ensure they are enclosed in double quotes.

- Type **"Yes","No"** followed by a closing bracket **)**

- Name the Expression window **Many Branches**

An expression can be previewed by clicking the **Build** button or it can be applied to a tool.

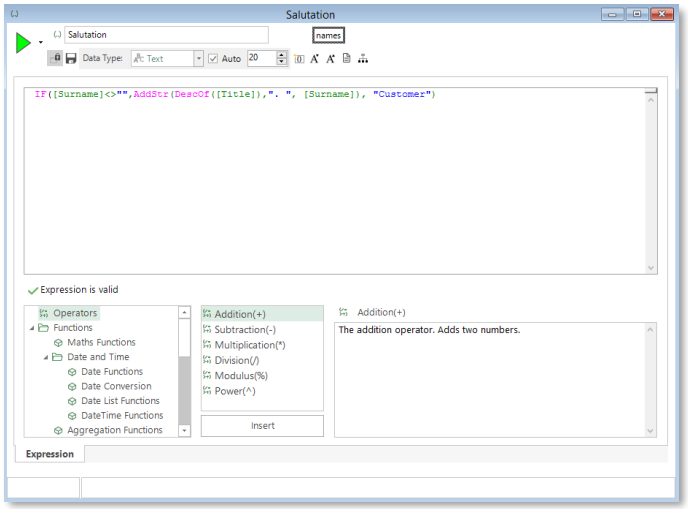


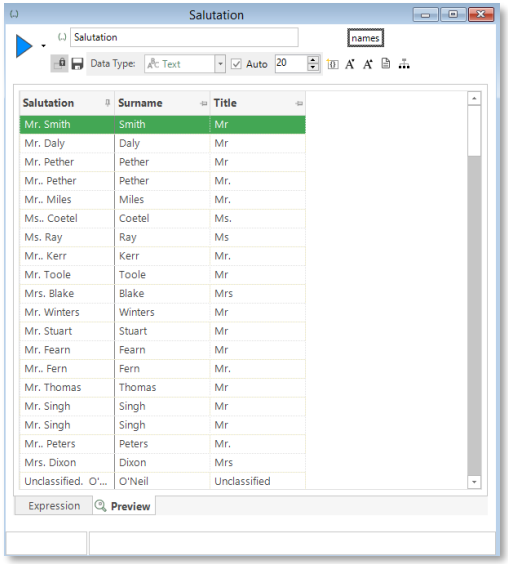


Creating a Salutation Expression

Building upon the previous example you will now see how you can use variable data as part of the output and also combine the results in the display.

Here you will test to see if your records hold a customer's name in preparation for a mail shot. If a record does hold a name the letter will start *Dear* [Title]. [Surname] e.g. Mr. Smith. Otherwise the letter will start *Dear* Customer.





- Open an **Expression** window and select the **If(** function, as in the last example
- Change the **Data Type** to **Text** and the table level to **Names**
- Drag the **Surname** variable on after the bracket and then type **<> "",** to test if there is a text value
- From the **Strings Function Category** of the **Function** window select **AddStr(**
- Insert after the bracket from the **Selector Functions**
- **DescOf([Prefix]),". ",[Surname])** which will display e.g. Mr. Smith if a name is present
- Type a **,** after the bracket and then **"Customer")**. This will then display the word Customer if no name is present
- Click the **Build** button to see a **Preview**

Expressions and Cubes

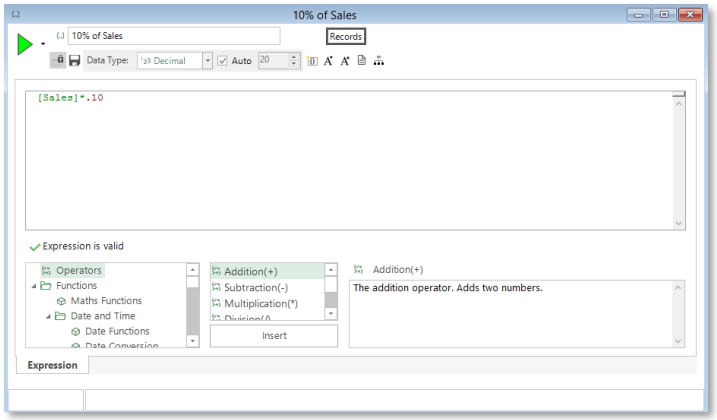
In this example an Expression will be used as a statistic on a Cube display. The Expression itself will calculate 10% of total sales volume for sites in Florida broken down by Major Industry Category.

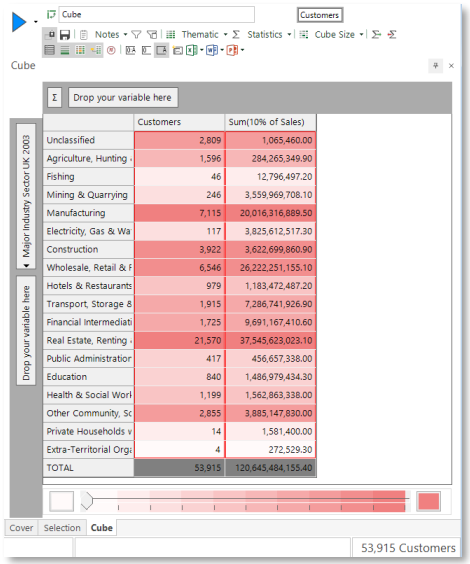
- Open an **Expression** window
- Ensure the **Table** is set to **Records**
- Drag on the **Sales** variable
- Type ***0.10** which will multiply the sales volume by 0.10 to calculate 10%

To use this expression to help find 10% of total Sales Volume in Wales:

- Drag out the **Economic Region** variable and select **Wales**. Ensure the **Table** is set to **Records**
- Drag a **Cube** on to the selection and set the vertical dimension to **Major Industry Sector**
- Drag your **10% of Sales Expression** onto the center of the **Cube**
- Press the **Build** button

The display now shows the number of Sites in each Major Industry Sectors in the Wales. Also it shows 10% of Sales Volume for all those Records in Wales.





Calculated Expression on a Data Grid

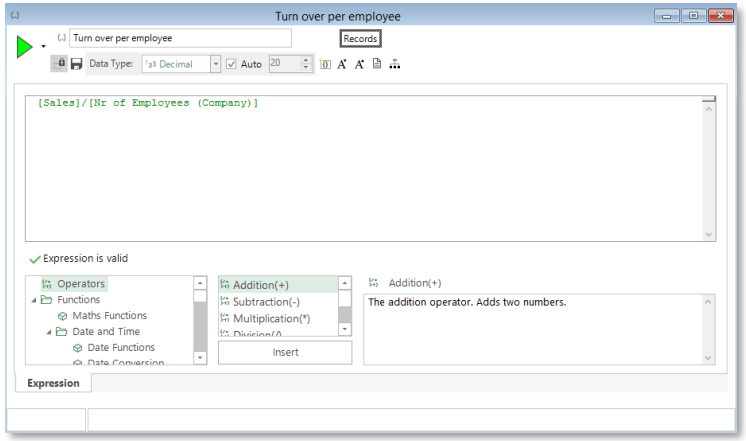
In this example an Expression will be used as a statistic on a Data Grid display. The Expression itself will calculate turnover by employee for Sites in California.

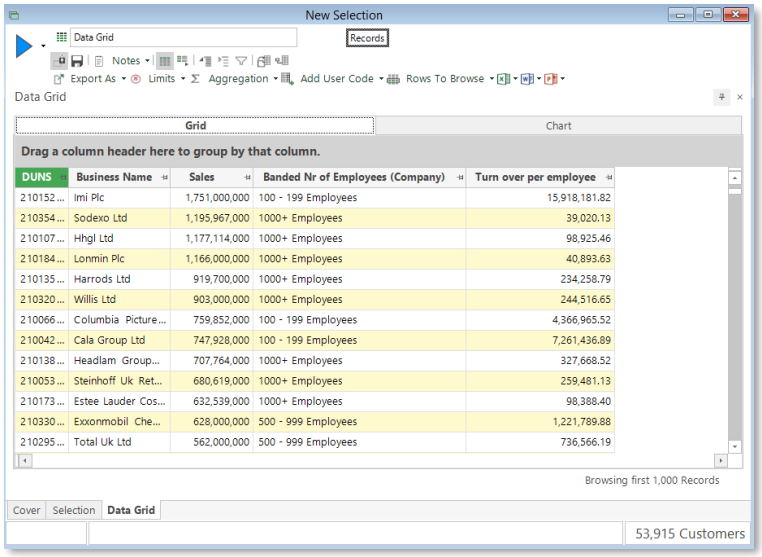
- Open an **Expression** window
- Drag on the **Sales** variable
- Type **/** and then drag on the **Nr of Employees (Company)** variable

To use this expression to display the turnover per employee of businesses in the West Midlands:

- Drag out the **Economic Regions** variable and select **West Midlands**.
- Drag on a **Data Grid** and add the variables **Business Name**, **Sales** and **Nr of Employees (Company)**
- Drag your **Turnover per Employee** expression onto the Data Grid alongside the other variables
- Press the **Build** button

The display now shows a row for each site in the West Midlands with the relevant information.



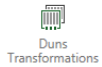
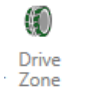
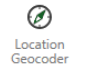
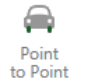


Appendix 1 – Wizards & Virtual Variables

Not all of the following wizards may be available to you and will be dependent upon your system configuration.

 Transaction Summary	This wizard will help you create a new virtual variable grouping transactional records up to a higher level.
 Count	This wizard will help you create a new virtual variable using the records selected from a RFV analysis, based upon the Frequency option.
 Recency	This wizard will help you create a new virtual variable at a higher table using the RFV Recency option when a lower level variable is used. The results can be displayed in terms of another lower level variable.
 Aggregation	This wizard will help you create a new virtual variable at a higher table using the RFV Value option when a lower level numeric variable is used. The results can be displayed in terms of bands or individual values.
 Best Next Offer	This wizard will help you create a table (Tree) that analysis's the pattern of transactions within a time frame. The results will show the number of times a pattern occurs.
 Basket Analysis	This wizard will help you create a table (Tree) that analysis the pattern of transactions. The results will show the number of times a pattern occurs.
 Best Fit Prospects	This wizard provides a simple way to create a model of how one selection of records (the Analysis selection) "fits" to another selection.

	This wizard provides a way of capturing the model from the Decision Tree in the form of a Virtual Variable where the categories correspond to the selection rules associated with the nodes of the Decision Tree.
	This wizard provides a way of accessing the PWE scores generated in Profiler in the form of a Virtual Variable. This could be as a series of banded categories or as a numeric variable.

	This wizard allows you to perform corporate family tree processes for groups of records. For example, you can find the ultimate parent companies of a group of selected records.
	This wizard allows you to create a categorical variable that will display travel time or as the crow flies bandings from a geographical location. The end point is defined by a geographical selector.
	This wizard allows you to create two virtual variables to identify the Latitude and Longitude of a given set of records.
	This wizard allows you to create a numeric variable that will calculate the travel time, road distance or as the crow flies value from a geographical location. The end point can be defined by a geographical selector.
	This wizard allows you to output records selected through various tools. Currently this wizard supports the Cube, Data Grid and Tree tools.
	This wizard allows you to upload targeted data directly into SalesForce.com so that prospects identified in the system can be seamlessly integrated into CRM sales activities.

 Data Licensing	The wizard is used in systems where not all data is available to users straight away. This wizard can then be used to select what records (and what fields within those records) should be purchased.
 Retrieve Previous Orders	This wizard allows you to go back to orders that have been made in the past and then generate a URN file containing all the URNs from a collection of 1 or more orders.

 Initialise	This wizard will help you create a framework for a new virtual variable, where you define the table level and number of categories to be included.
 Assign Values	This wizard will help you define your virtual variable by assigning Descriptions and a Selection to your categories.
 Date Banding	This wizard will help you create a banding based upon a date variable. You are able to define a time period and the number of periods you wish to select upon.
 Numeric Banding	This wizard will help you create a banding based upon a numeric variable. Select from 4 banding options to determine the selection display.
 Calculate Expression	This wizard will help you to create a new numerical virtual variable from a mathematical expression.
 Import Data	This wizard will help you import data into a variable using a key code, which can then be completed by using the Assign Values wizard to add descriptions if necessary.

	This wizard will help you create a variable by combining the categories within an existing variable.
	This wizard allows you to create a Selector or Flag Array variable based upon selections made within your Market Insight system. This method of variable creation also allows you to edit the variable at a later stage. To create a Numeric or Text variable you will still need to use the Initialise and Assign values wizards, however you will not be able to edit these variables.
	This Wizard allows you to create a selector Virtual Variable from the results of a cube or a tree. Only Sparse 1 dimensional cubes or trees, with a text dimension and no overlap can be used.