

IBM SPSS Complex Samples

- An inherent assumption of many classical statistical procedures is that the data represents a *simple random sample* drawn from the population of interest. The IBM SPSS Complex Samples module allows users to draw samples that are more complicated than simple random schemes.
- Complex Samples also allows statistical analyses to be carried out that *take account* of the complex sampling scheme used in collecting the data. An example of this would be carrying out a chi square test to see if larger households are more likely to recycle glass than smaller households. Using Complex Samples, the researchers could calculate a more appropriate test statistic based on a sample where every 3rd house was sampled from a random selection of 50 streets in a town.
- Complex Samples has two primary modes:
 - Using the *Sampling Wizard*, analysts can plan and carry out surveys by drawing samples according to complex designs and possibly analysing the sample later.
 - Using the *Analysis Preparation Wizard*, users can analyse sample data files that have already been obtained using complex sample designs.

The screenshot shows the 'Sampling Wizard' dialog box in IBM SPSS, specifically 'Stage 1: Sample Size'. The window title is 'Sampling Wizard' with a close button in the top right corner. The main text reads: 'In this panel you specify the number or proportion of units to be sampled in the current stage. The sample size can be fixed across strata or it can vary for different strata. If you specify sample sizes as proportions you can also set the minimum or maximum number of units to draw.'

On the left is a navigation tree with the following items: Welcome, Stage 1 (expanded), Design Variables, Method, Sample Size (selected), Output Variables, Summary, Stage 2 (expanded), Design Variables, Method, Sample Size, Output Variables, Summary, Add Stage 3, Draw Sample, Selection Options, and Completion.

The main area is divided into three sections:

- Variables:** A list of variables with icons: Employee Code [id], Gender [gender], Current Salary [salary], Beginning Salary [sal...], Months Since hire [i...], Previous Experience..., Date of Birth [bdate], and Employee Age [age].
- Units:** A dropdown menu set to 'Proportions'.
- Value:** A radio button is selected, with a text box containing '0.5'. A note says 'The size value applies to each stratum.'
- Unequal values for strata:** An unselected radio button with a 'Define...' button below it.
- Read values from variable:** An unselected radio button with an empty text box below it.
- Minimum Count:** An empty text box.
- Maximum Count:** An empty text box.

At the bottom are five buttons: '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'.

The image below shows an example of drawing a 'complex sample'. In this case the procedure draws the sample by selecting every second person from three randomly chosen lines.

