The NLSCY Variance Estimation System - NLSCY_VES

This is an overview of the system set up for estimating variance via bootstrap in NLSCY. The system consists of the bootstrap weights and five SAS macros for computing the variance of estimators like totals, averages, ratios, and regression parameters for logistic and linear regression.

The five macros are listed below together with the corresponding inputs and outputs. As a general rule, each macro requires a dataset, variable names, and the number of bootstrap weights to be used.

The input dataset consists of the variables for analysis merged with the bootstrap weights. The estimator for which the variance is calculated is indicated by the name of the macro, and the roles of the input variables are indicated by the name of the input.

In order to use the macros the users have to execute the statement `%include` '<path>\NLSCY_VES.sas'; at the beginning of their program.

The macro `%partition` allows for doing the variance estimation by domains. The domains have to be indicated by a variable, which is the input to the macro. If the analysis by domains is desired, the call of the `%partition` macro has to precede the call of the macro for bootstrap estimation. There are no other external dependencies.

```
%partition(domains=); *no partition if no variable name
provided;

%total(dataset=,variable=,nb_weights=);
COLLECT OUTPUT FROM DATASET: totals

%ratio(dataset=,numerator=,denominator=,nb_weights=);
COLLECT OUTPUT FROM DATASET: ratios

%ratio_difference(dataset=,numerator1=,denominator1=,
     numerator2=,denominator2=,nb_weights=);
COLLECT OUTPUT FROM DATASET: diffrat

%regression (dataset=,dependent=,independent=,nb_weights=);
COLLECT OUTPUT FROM DATASET: bs_reg

%logistic_reg (dataset=,dependent=,independent=,nb_weights=);
COLLECT OUTPUT FROM DATASET: bs_reglg
```

NOTE: unless explicitly deleted, the datasets mentioned above will keep accumulating the results of successive macro calls