

* Encoding: UTF-8.
 * Syntax for Analysis Example Replication ASDA3 C12, Winter 2025.
 * SPSS 29 includes commands to perform missing data analysis and multiple imputation of missing data
 * but no Complex Samples commands for Step 3 of the MI process: Pooled Analysis of Imputed Data using CS
 procedures.
 * The following examples show how to create MI data sets that can be analyzed in a software
 * such as Stata, SAS, IVEware, R etc. that can perform correctly pooled estimates from design-based models.

 * Get NHANES data and examine missing data problem.
 GET
 SAS DATA='P:\ASDA3\data sets for analysis examples and stata r code\nhanes1112.sas7bdat'.
 DATASET NAME Nhanes_c12 WINDOW=FRONT.

Dataset Name

Notes

Output Created		27-FEB-2025 13:17:25
Comments		
Input	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax		DATASET NAME Nhanes_c12 WINDOW=FRONT.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.00

Warnings

The active dataset will replace the existing dataset named Nhanes_c12.

* Filter data age >=18 and (wtmec2yr ne . and wtmec2yr > 0), Adults with valid data on wtmec2yr.
 COMPUTE filter_agewt = (age >= 18 & WTMEC2YR > 0.).
 EXECUTE.
 FILTER BY FILTER_AGEWT.
 SHOW FILTER.

SHOW

Notes

Output Created		27-FEB-2025 13:17:25
Comments		
Input	Active Dataset	Nhanes_c12
	Filter	filter_agewt
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	9756
Syntax		SHOW FILTER.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.00

System Settings

Keyword	Description	Setting
FILTER	Filter variable	filter_agewt

```

* Create needed variables for models.
compute agec=age-46.36.
compute agecsq=agec*agec.
compute descodes=sdmvstra*10+sdmvpsu.
execute.

```

```

* Evaluate missing data problem for variables to be used in MI.
MVA VARIABLES=BPXDI1 agec agecsq descodes riagendr RIDRETH1 bmx bmi marcat indfmpir.

```

MVA

Notes

Output Created		27-FEB-2025 13:17:39
Comments		
Input	Active Dataset	Nhanes_c12
	Filter	filter_agewt
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5615
Syntax		MVA VARIABLES=BPXDI1 agec agecsq descodes riagendr RIDRETH1 bmx bmi marcat indfmpir.
Resources	Processor Time	00:00:00.06
	Elapsed Time	00:00:00.18

Univariate Statistics

	N	Mean	Std. Deviation	Missing		No. of Extremes ^a	
				Count	Percent	Low	High
BPXDI1	5132	70.74	12.712	483	8.6	110	90
agec	5615	.8051	18.55987	0	.0	0	0
agecsq	5615	345.0556	330.00228	0	.0	0	368
descodes	5615	960.3143	39.61359	0	.0	0	0
riagendr	5615	1.51	.500	0	.0	0	0
RIDRETH1	5615	3.30	1.167	0	.0	0	0
bmx bmi	5525	28.6177	6.92018	90	1.6	3	228
marcat	5315	1.65	.810	300	5.3	0	0
indfmpir	5128	2.3739	1.66622	487	8.7	0	0

a. Number of cases outside the range (Mean - 2*SD, Mean + 2*SD).

* Check missing data pattern using tabulation approach, note that < 1% missing is not shown.
MVA VARIABLES=BPXD11 agec agecsq descodes riagendr RIDRETH1 bmx bmi marcat indfmpir
/TPATTERN.

MVA

Notes

Output Created		27-FEB-2025 13:17:39
Comments		
Input	Active Dataset	Nhanes_c12
	Filter	filter_agewt
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5615
Syntax		MVA VARIABLES=BPXD11 agec agecsq descodes riagendr RIDRETH1 bmx bmi marcat indfmpir /TPATTERN.
Resources	Processor Time	00:00:00.20
	Elapsed Time	00:00:00.73

Univariate Statistics

	N	Mean	Std. Deviation	Missing		No. of Extremes ^a	
				Count	Percent	Low	High
BPXD11	5132	70.74	12.712	483	8.6	110	90
agec	5615	.8051	18.55987	0	.0	0	0
agecsq	5615	345.0556	330.00228	0	.0	0	368
descodes	5615	960.3143	39.61359	0	.0	0	0
riagendr	5615	1.51	.500	0	.0	0	0
RIDRETH1	5615	3.30	1.167	0	.0	0	0
bmx bmi	5525	28.6177	6.92018	90	1.6	3	228
marcat	5315	1.65	.810	300	5.3	0	0
indfmpir	5128	2.3739	1.66622	487	8.7	0	0

a. Number of cases outside the range (Mean - 2*SD, Mean + 2*SD).

Tabulated Patterns

Number of Cases	Missing Patterns ^a						
	agec	agecsq	descodes	riagendr	RIDRETH1	bmx bmi	marcat
4430							
372							
231							X
371							
60							

Tabulated Patterns

Number of Cases	Missing Patterns ^a		
	indfmpir	BPXD11	Complete if ... ^b
4430			4430
372		X	4802
231			4661
371	X		4801
60	X	X	5233

Patterns with less than 1.0% cases (56 or fewer) are not displayed.

a. Variables are sorted on missing patterns.

b. Number of complete cases if variables missing in that pattern (marked with X) are not used.

*****.
 * Section 12.3.6 Multiple Imputation of missing data on 4 variables of interest using FCS Method, WITH weight and design variables in models.

```
*Impute Missing Data Values.
DATASET DECLARE MI1_DesignVars.
MULTIPLE IMPUTATION riagendr RIDRETH1 agec agecsq descodes WTMEC2YR indfmpir BPXD11 marcat bmx bmi
  /IMPUTE METHOD=FCS MAXITER= 10 NIMPUTATIONS=5 SCALEMODEL=LINEAR INTERACTIONS=NONE SINGULAR=1E-012
  MAXPCTMISSING=NONE
  /MISSINGSUMMARIES NONE
  /IMPUTATIONSUMMARIES MODELS DESCRIPTIVES
  /OUTFILE IMPUTATIONS=MI1_DesignVars.
```

Multiple Imputation

Notes

Output Created		27-FEB-2025 13:19:30
Comments		
Input	Active Dataset	Nhanes_c12
	Filter	filter_agewt
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5615
Syntax	MULTIPLE IMPUTATION riagendr RIDRETH1 agec agecsq descodes WTMEC2YR indfmpir BPXD11 marcat bmx bmi /IMPUTE METHOD=FCS MAXITER= 10 NIMPUTATIONS=5 SCALEMODEL=LINEAR INTERACTIONS=NONE SINGULAR=1E-012 MAXPCTMISSING=NONE /MISSINGSUMMARIES NONE /IMPUTATIONSUMMARIES MODELS DESCRIPTIVES /OUTFILE IMPUTATIONS=MI1_DesignVars.	
Resources	Processor Time	00:00:07.97
	Elapsed Time	00:00:02.97
Files Saved	Imputed Values File	MI1_DesignVars

Imputation Specifications

Imputation Method	Fully Conditional Specification
Number of Imputations	5
Model for Scale Variables	Linear Regression
Interactions Included in Models	(none)
Maximum Percentage of Missing Values	100.0%
Maximum Number of Parameters in Imputation Model	100

Imputed Values

Imputation Results

Imputation Method	Fully Conditional Specification	
Fully Conditional Specification Method Iterations	10	
Dependent Variables	Imputed	indfmpir,BPXDI1,marcat,bmxbmi
	Not Imputed(Too Many Missing Values)	
	Not Imputed(No Missing Values)	riagendr,RIDRETH1,agec,agecsq,descod,W TMEC2YR
Imputation Sequence	riagendr,RIDRETH1,agec,agecsq,descod,W TMEC2YR,indfmpir,BPXDI1,marcat,bmxbmi	

Imputation Models

	Model		Missing Values	Imputed Values
	Type	Effects		
Ratio of family income to poverty	Linear Regression	riagendr,RIDRETH1,marcat,agec,agecsq,descod,W TMEC2YR,BPXDI1,bmxbmi	487	2435
Diastolic: Blood pres (1st rdg) mm Hg	Linear Regression	riagendr,RIDRETH1,marcat,agec,agecsq,descod,W TMEC2YR,indfmpir,bmxbmi	483	2415
1=married 2=prev married 3=never married	Logistic Regression	riagendr,RIDRETH1,agec,agecsq,descod,W TMEC2YR,indfmpir,BPXDI1,bmxbmi	300	1500
Body Mass Index (kg/m**2)	Linear Regression	riagendr,RIDRETH1,marcat,agec,agecsq,descod,W TMEC2YR,indfmpir,BPXDI1	90	450

Descriptive Statistics

Data	Imputation	indfmpir				
		N	Mean	Std. Deviation	Minimum	Maximum
Original Data		5128	2.3739	1.66622	.0000	5.0000
Imputed Values	1	487	2.2876	1.63069	-1.8329	7.1307
	2	487	2.2731	1.67441	-2.3944	7.8497
	3	487	2.3483	1.70589	-4.4210	7.4851
	4	487	2.5055	1.66399	-2.0581	8.8787
	5	487	2.2700	1.73100	-3.9242	8.1762
Complete Data After Imputation	1	5615	2.3664	1.66320	-1.8329	7.1307
	2	5615	2.3652	1.66702	-2.3944	7.8497
	3	5615	2.3717	1.66956	-4.4210	7.4851
	4	5615	2.3853	1.66629	-2.0581	8.8787
	5	5615	2.3649	1.67204	-3.9242	8.1762

Data	Imputation	BPXDI1				
		N	Mean	Std. Deviation	Minimum	Maximum
Original Data		5132	70.74	12.712	.00	120.00
Imputed Values	1	483	69.72	13.824	24.72	120.89
	2	483	70.76	12.681	31.70	105.24
	3	483	69.88	12.919	34.82	104.54
	4	483	69.19	12.521	37.53	100.95
	5	483	71.29	12.846	35.16	117.63
Complete Data After Imputation	1	5615	70.65	12.813	.00	120.89
	2	5615	70.74	12.708	.00	120.00
	3	5615	70.67	12.731	.00	120.00
	4	5615	70.61	12.702	.00	120.00
	5	5615	70.79	12.723	.00	120.00

marcat				
Data	Imputation	Category	N	Percent
Original Data		1	2991	56.3
		2	1183	22.3
		3	1141	21.5
Imputed Values	1	1	55	18.3
		2	6	2.0
		3	239	79.7
	2	1	73	24.3
		2	5	1.7
		3	222	74.0
	3	1	67	22.3
		2	4	1.3
		3	229	76.3
	4	1	75	25.0
		2	8	2.7
		3	217	72.3
	5	1	69	23.0
		2	10	3.3
		3	221	73.7
Complete Data After Imputation	1	1	3046	54.2
		2	1189	21.2
		3	1380	24.6
	2	1	3064	54.6
		2	1188	21.2
		3	1363	24.3
	3	1	3058	54.5
		2	1187	21.1
		3	1370	24.4
	4	1	3066	54.6
		2	1191	21.2
		3	1358	24.2
	5	1	3060	54.5
		2	1193	21.2
		3	1362	24.3

bmx bmi						
Data	Imputation	N	Mean	Std. Deviation	Minimum	Maximum
Original Data		5525	28.6177	6.92018	13.4000	82.1000
Imputed Values	1	90	28.9395	7.51674	13.1323	45.5089
	2	90	27.4590	6.71222	11.9070	42.6087
	3	90	28.4091	8.28392	3.7268	48.3859
	4	90	28.3618	6.18860	12.0667	41.8392
	5	90	28.9491	7.28907	11.0660	57.2492
Complete Data After Imputation	1	5615	28.6228	6.92954	13.1323	82.1000
	2	5615	28.5991	6.91784	11.9070	82.1000
	3	5615	28.6143	6.94332	3.7268	82.1000
	4	5615	28.6136	6.90864	12.0667	82.1000
	5	5615	28.6230	6.92569	11.0660	82.1000

```

* Activate imputed data set.
DATASET ACTIVATE mi1_designvars.
* Use CSPLAN file with weight and design variables.
CSPLAN ANALYSIS
  /PLAN FILE='P:\ASDA3\data sets for analysis examples and stata r code\nhanes.csaplan'
  /PLANVARS ANALYSISWEIGHT=WTMEC2YR
  /SRSESTIMATOR TYPE=WOR
  /PRINT PLAN
  /DESIGN STRATA=SDMVSTRA CLUSTER=SDMVPSU
  /ESTIMATOR TYPE=WR.

```

Complex Samples: Plan

Notes

Output Created	27-FEB-2025 13:20:21	
Comments		
Input	Active Dataset	MI1_DesignVars
	File Label	Imputations
	Filter	<none>
	Weight	<none>
	Split File	Imputation Number
Syntax	CSPLAN ANALYSIS /PLAN FILE='P:\ASDA3\data sets for analysis examples and stata r code\nhanes.csaplan' /PLANVARS ANALYSISWEIGHT=WTMEC2YR /SRSESTIMATOR TYPE=WOR /PRINT PLAN /DESIGN STRATA=SDMVSTRA CLUSTER=SDMVPSU /ESTIMATOR TYPE=WR.	
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.22
Files Saved	Plan File	P:\ASDA3\data sets for analysis examples and stata r code\nhanes.csaplan

[MI1_DesignVars]

Warnings

This procedure ignores split file specifications.

This procedure does not check the consistency of the working data file with the plan file. We recommend looking at the output table or the plan file to check consistency before performing selection or analysis.

Summary

			Stage 1
Design Variables	Stratification	1	Masked variance pseudo-stratum
	Cluster	1	Masked variance pseudo-PSU
Analysis Information	Estimator Assumption		Sampling with replacement

Plan File: P:\ASDA3\data sets for analysis examples and stata r code\nhanes.csaplan
 Weight Variable: Full sample 2 year MEC exam weight
 SRS Estimator: Sampling without replacement

* Descriptives with Design Variables and Weight by Imputation.
 * Note: this is not combined / pooled across imputations, not available in SPSS 29.

output comment text="##Imputation with Weight and Design Variables##".

Output Comment

Notes

Output Created		27-FEB-2025 13:20:22
Comments		
Input	Active Dataset	MI1_DesignVars
	File Label	Imputations
	Filter	<none>
	Weight	<none>
	Split File	Imputation Number
Syntax	output comment text="##Imputation with Weight and Design Variables##".	
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.02

##Imputation with Weight and Design Variables##

```

CSDESCRIPTIVES
/PLAN FILE='P:\ASDA3\Data Sets for Analysis Examples and Stata R Code\nhanes.csaplan'
/SUMMARY VARIABLES=indfmpir BPXD11 bmxbmi
/SUBPOP TABLE=Imputation_ DISPLAY=LAYERED
/MEAN
/STATISTICS SE COUNT
/MISSING SCOPE=ANALYSIS CLASSMISSING=EXCLUDE.
  
```

Complex Samples: Descriptives

Notes

Output Created		27-FEB-2025 13:20:22
Comments		
Input	Active Dataset	MI1_DesignVars
	File Label	Imputations
	Filter	<none>
	Weight	<none>
	Split File	Imputation Number
	N of Rows in Working Data File	33690
	Plan File	P:\ASDA3\Data Sets for Analysis Examples and Stata R Code\nhanes.csaplan
Missing Value Handling	Definition of Missing	User-defined missing values among the strata, cluster, or subpopulation variables are treated as missing.
	Cases Used	Each statistic is based on all valid data for the analysis variable(s) used in computing the statistic.
Syntax	CSDESCRIPTIVES /PLAN FILE='P:\ASDA3\Data Sets	

```

for Analysis Examples and Stata R
Code\nhanes.csaplan'
/SUMMARY VARIABLES=indfmpir
BPXD11 bmx bmi
/SUBPOP TABLE=Imputation_
DISPLAY=LAYERED
/MEAN
/STATISTICS SE COUNT
/MISSING SCOPE=ANALYSIS
CLASSMISSING=EXCLUDE.

```

Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.22

Warnings

This procedure ignores split file specifications.

Univariate Statistics

		Estimate	Standard Error	Unweighted Count
Mean	Ratio of family income to poverty	2.8501	.10119	33203
	Diastolic: Blood pres (1st rdg) mm Hg	71.32	.455	33207
	Body Mass Index (kg/m**2)	28.6215	.21256	33600

Subpopulation Descriptives

Univariate Statistics

Imputation Number			Estimate	Standard Error	Unweighted Count
Original data	Mean	Ratio of family income to poverty	2.8592	.10641	5128
		Diastolic: Blood pres (1st rdg) mm Hg	71.39	.506	5132
		Body Mass Index (kg/m**2)	28.6233	.21400	5525
1	Mean	Ratio of family income to poverty	2.8500	.09975	5615
		Diastolic: Blood pres (1st rdg) mm Hg	71.34	.463	5615
		Body Mass Index (kg/m**2)	28.6204	.21239	5615
2	Mean	Ratio of family income to poverty	2.8442	.10070	5615
		Diastolic: Blood pres (1st rdg) mm Hg	71.30	.458	5615
		Body Mass Index (kg/m**2)	28.6203	.21693	5615
3	Mean	Ratio of family income to poverty	2.8487	.10250	5615
		Diastolic: Blood pres (1st rdg) mm Hg	71.26	.440	5615
		Body Mass Index (kg/m**2)	28.6191	.20867	5615
4	Mean	Ratio of family income to poverty	2.8544	.09855	5615
		Diastolic: Blood pres (1st rdg) mm Hg	71.28	.419	5615
		Body Mass Index (kg/m**2)	28.6209	.21021	5615
5	Mean	Ratio of family income to poverty	2.8446	.10090	5615
		Diastolic: Blood pres (1st rdg) mm Hg	71.36	.460	5615
		Body Mass Index (kg/m**2)	28.6252	.21389	5615

```

*****
* Section 12.6.3 Multiple Imputation of missing data on 4 variables of interest using FCS Method, WITHOUT weight
and design variables in models.
* Activate original data set.
DATASET ACTIVATE NHANES_C12.

* Declare the 2nd data set without design variables/weight.
DATASET DECLARE MI2_NoDesignVars.
MULTIPLE IMPUTATION riagendr RIDRETH1 agec agecsq indfmpir BPXDI1 marcat bmx bmi
  /IMPUTE METHOD=FCS MAXITER= 10 NIMPUTATIONS=5 SCALEMODEL=LINEAR INTERACTIONS=NONE SINGULAR=1E-012
  MAXPCTMISSING=NONE
  /MISSINGSUMMARIES NONE
  /IMPUTATIONSUMMARIES MODELS DESCRIPTIVES
  /OUTFILE IMPUTATIONS=MI2_NoDesignVars.

```

Multiple Imputation

Notes

Output Created		27-FEB-2025 13:21:12
Comments		
Input	Active Dataset	Nhanes_c12
	Filter	filter_agewt
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5615
Syntax	MULTIPLE IMPUTATION riagendr RIDRETH1 agec agecsq indfmpir BPXDI1 marcat bmx bmi /IMPUTE METHOD=FCS MAXITER= 10 NIMPUTATIONS=5 SCALEMODEL=LINEAR INTERACTIONS=NONE SINGULAR=1E-012 MAXPCTMISSING=NONE /MISSINGSUMMARIES NONE /IMPUTATIONSUMMARIES MODELS DESCRIPTIVES /OUTFILE IMPUTATIONS=MI2_NoDesignVars.	
Resources	Processor Time	00:00:05.80
	Elapsed Time	00:00:02.25
Files Saved	Imputed Values File	MI2_NoDesignVars

[Nhanes_c12]

Imputation Specifications

Imputation Method	Fully Conditional Specification
Number of Imputations	5
Model for Scale Variables	Linear Regression
Interactions Included in Models	(none)
Maximum Percentage of Missing Values	100.0%
Maximum Number of Parameters in Imputation Model	100

Imputed Values

Imputation Results

Imputation Method	Fully Conditional Specification	
Fully Conditional Specification Method Iterations	10	
Dependent Variables	Imputed	indfmpir,BPXDI1,marcat,bmxbmi
	Not Imputed(Too Many Missing Values)	
	Not Imputed(No Missing Values)	riagendr,RIDRETH1,agec,agecsq
Imputation Sequence	riagendr,RIDRETH1,agec,agecsq,indfmpir,BPXDI1,marcat,bmxbmi	

Imputation Models

	Model		Missing Values	Imputed Values
	Type	Effects		
Ratio of family income to poverty	Linear Regression	riagendr,RIDRETH1,marcat,agec,agecsq,BPXDI1,bmxbmi	487	2435
Diastolic: Blood pres (1st rdg) mm Hg	Linear Regression	riagendr,RIDRETH1,marcat,agec,agecsq,indfmpir,bmxbmi	483	2415
1=married 2=prev married 3=never married	Logistic Regression	riagendr,RIDRETH1,agec,agecsq,indfmpir,BPXDI1,bmxbmi	300	1500
Body Mass Index (kg/m**2)	Linear Regression	riagendr,RIDRETH1,marcat,agec,agecsq,indfmpir,BPXDI1	90	450

Descriptive Statistics

Data	Imputation	indfmpir				
		N	Mean	Std. Deviation	Minimum	Maximum
Original Data		5128	2.3739	1.66622	.0000	5.0000
Imputed Values	1	487	2.2962	1.68974	-2.8054	7.1547
	2	487	2.3734	1.56060	-3.2906	7.6140
	3	487	2.0808	1.69020	-3.3187	8.3709
	4	487	2.3104	1.72816	-2.8436	7.5831
	5	487	2.2577	1.72291	-3.6944	6.6966
Complete Data After Imputation	1	5615	2.3672	1.66826	-2.8054	7.1547
	2	5615	2.3739	1.65719	-3.2906	7.6140
	3	5615	2.3485	1.67020	-3.3187	8.3709
	4	5615	2.3684	1.67162	-2.8436	7.5831
	5	5615	2.3638	1.67138	-3.6944	6.6966

Data	Imputation	BPXDI1				
		N	Mean	Std. Deviation	Minimum	Maximum
Original Data		5132	70.74	12.712	.00	120.00
Imputed Values	1	483	70.61	12.596	23.44	104.33
	2	483	70.95	12.865	37.92	104.41
	3	483	69.37	13.071	22.10	109.80
	4	483	70.43	12.011	37.33	106.11
	5	483	69.20	12.075	32.36	102.65
Complete Data After Imputation	1	5615	70.73	12.701	.00	120.00
	2	5615	70.76	12.724	.00	120.00
	3	5615	70.62	12.748	.00	120.00
	4	5615	70.71	12.653	.00	120.00
	5	5615	70.61	12.665	.00	120.00

marcat

Data	Imputation	Category	N	Percent
Original Data		1	2991	56.3
		2	1183	22.3
		3	1141	21.5
Imputed Values	1	1	62	20.7
		2	5	1.7
		3	233	77.7
	2	1	55	18.3
		2	3	1.0
		3	242	80.7
	3	1	75	25.0
		2	3	1.0
		3	222	74.0
	4	1	65	21.7
		2	9	3.0
		3	226	75.3
	5	1	81	27.0
		2	3	1.0
		3	216	72.0
Complete Data After Imputation	1	1	3053	54.4
		2	1188	21.2
		3	1374	24.5
	2	1	3046	54.2
		2	1186	21.1
		3	1383	24.6
	3	1	3066	54.6
		2	1186	21.1
		3	1363	24.3
	4	1	3056	54.4
		2	1192	21.2
		3	1367	24.3
	5	1	3072	54.7
		2	1186	21.1
		3	1357	24.2

bmxbmi

Data	Imputation	N	Mean	Std. Deviation	Minimum	Maximum
Original Data		5525	28.6177	6.92018	13.4000	82.1000
Imputed Values	1	90	27.0261	7.60191	12.1032	45.5362
	2	90	29.0264	7.32188	10.2283	48.1799
	3	90	28.3989	6.82005	3.8940	43.9289
	4	90	27.5658	6.69154	11.4814	40.3285
	5	90	28.4462	6.95953	10.0417	44.5248
Complete Data After Imputation	1	5615	28.5922	6.93378	12.1032	82.1000
	2	5615	28.6242	6.92630	10.2283	82.1000
	3	5615	28.6142	6.91804	3.8940	82.1000
	4	5615	28.6008	6.91726	11.4814	82.1000
	5	5615	28.6149	6.92022	10.0417	82.1000

```

* Activate imputed data set.
DATASET ACTIVATE mi2_Nodesignvars.
* Use CSPLAN file with weight and design variables.
CSPLAN ANALYSIS
  /PLAN FILE='P:\ASDA3\data sets for analysis examples and stata r code\nhanes.csaplan'
  /PLANVARS ANALYSISWEIGHT=WTMEC2YR
  /SRSESTIMATOR TYPE=WOR
  /PRINT PLAN
  /DESIGN STRATA=SDMVSTRA CLUSTER=SDMVPSU
  /ESTIMATOR TYPE=WR.

```

Complex Samples: Plan

Notes

Output Created	27-FEB-2025 13:21:40	
Comments		
Input	Active Dataset	MI2_NoDesignVars
	File Label	Imputations
	Filter	<none>
	Weight	<none>
	Split File	Imputation Number
Syntax	CSPLAN ANALYSIS /PLAN FILE='P:\ASDA3\data sets for analysis examples and stata r code\nhanes.csaplan' /PLANVARS ANALYSISWEIGHT=WTMEC2YR /SRSESTIMATOR TYPE=WOR /PRINT PLAN /DESIGN STRATA=SDMVSTRA CLUSTER=SDMVPSU /ESTIMATOR TYPE=WR.	
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.20
Files Saved	Plan File	P:\ASDA3\data sets for analysis examples and stata r code\nhanes.csaplan

[MI2_NoDesignVars]

Warnings

This procedure ignores split file specifications.

This procedure does not check the consistency of the working data file with the plan file. We recommend looking at the output table or the plan file to check consistency before performing selection or analysis.

Summary

			Stage 1
Design Variables	Stratification	1	Masked variance pseudo-stratum
	Cluster	1	Masked variance pseudo-PSU
Analysis Information	Estimator Assumption		Sampling with replacement

Plan File: P:\ASDA3\data sets for analysis examples and stata r code\nhanes.csaplan
 Weight Variable: Full sample 2 year MEC exam weight
 SRS Estimator: Sampling without replacement

* Descriptives without Design Variables and Weight in Imputation by Imputation_.
 * Note this is not combined / pooled across imputations, not available in SPSS 29.

output comment text="##Imputation without Weight and Design Variables##".

Output Comment

Notes

Output Created		27-FEB-2025 13:21:40
Comments		
Input	Active Dataset	MI2_NoDesignVars
	File Label	Imputations
	Filter	<none>
	Weight	<none>
	Split File	Imputation Number
Syntax	output comment text="##Imputation without Weight and Design Variables##".	
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.00

##Imputation without Weight and Design Variables##

CSDESCRIPTIVES

```

/PLAN FILE='P:\ASDA3\Data Sets for Analysis Examples and Stata R Code\nhanes.csaplan'
/SUMMARY VARIABLES=indfmpir BPXD11 bmx bmi
/SUBPOP TABLE=Imputation_ DISPLAY=LAYERED
/MEAN
/STATISTICS SE COUNT
/MISSING SCOPE=ANALYSIS CLASSMISSING=EXCLUDE.
  
```

Complex Samples: Descriptives

Notes

Output Created		27-FEB-2025 13:21:40
Comments		
Input	Active Dataset	MI2_NoDesignVars
	File Label	Imputations
	Filter	<none>
	Weight	<none>
	Split File	Imputation Number
	N of Rows in Working Data File	33690
	Plan File	P:\ASDA3\Data Sets for Analysis Examples and Stata R Code\nhanes.csaplan
Missing Value Handling	Definition of Missing	User-defined missing values among the strata, cluster, or subpopulation variables are treated as missing.
	Cases Used	Each statistic is based on all valid data for the analysis variable(s) used in computing the statistic.
Syntax	CSDESCRIPTIVES /PLAN FILE='P:\ASDA3\Data Sets for Analysis Examples and Stata R Code\nhanes.csaplan' /SUMMARY VARIABLES=indfmpir	

		BPXDI1 bmx bmi /SUBPOP TABLE=Imputation_ DISPLAY=LAYERED /MEAN /STATISTICS SE COUNT /MISSING SCOPE=ANALYSIS CLASSMISSING=EXCLUDE.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.20

Warnings

This procedure ignores split file specifications.

Univariate Statistics

		Estimate	Standard Error	Unweighted Count
Mean	Ratio of family income to poverty	2.8302	.09998	33203
	Diastolic: Blood pres (1st rdg) mm Hg	71.33	.459	33207
	Body Mass Index (kg/m**2)	28.6201	.21065	33600

Subpopulation Descriptives

Univariate Statistics

Imputation Number			Estimate	Standard Error	Unweighted Count
Original data	Mean	Ratio of family income to poverty	2.8592	.10641	5128
		Diastolic: Blood pres (1st rdg) mm Hg	71.39	.506	5132
		Body Mass Index (kg/m**2)	28.6233	.21400	5525
1	Mean	Ratio of family income to poverty	2.8235	.10028	5615
		Diastolic: Blood pres (1st rdg) mm Hg	71.32	.474	5615
		Body Mass Index (kg/m**2)	28.6038	.20855	5615
2	Mean	Ratio of family income to poverty	2.8340	.09800	5615
		Diastolic: Blood pres (1st rdg) mm Hg	71.41	.462	5615
		Body Mass Index (kg/m**2)	28.6217	.20724	5615
3	Mean	Ratio of family income to poverty	2.8177	.09779	5615
		Diastolic: Blood pres (1st rdg) mm Hg	71.25	.422	5615
		Body Mass Index (kg/m**2)	28.6276	.21469	5615
4	Mean	Ratio of family income to poverty	2.8234	.10006	5615
		Diastolic: Blood pres (1st rdg) mm Hg	71.39	.460	5615
		Body Mass Index (kg/m**2)	28.6077	.20536	5615
5	Mean	Ratio of family income to poverty	2.8255	.09866	5615
		Diastolic: Blood pres (1st rdg) mm Hg	71.21	.447	5615
		Body Mass Index (kg/m**2)	28.6366	.21477	5615

* Note: no Fully Efficient Fractional Imputation (FEFI) method available in SPSS 29.

* Note: Complete Case Analysis not included here since we have no Design-Based Pooled/Combined of MI datasets to compare with.

* Export Output.

OUTPUT EXPORT

```

/CONTENTS EXPORT=ALL LAYERS=PRINTSETTING MODELVIEWS=PRINTSETTING
/DOC DOCUMENTFILE='P:\ASDA3\Replication SPSS 29\Chapter 12\Analysis Example Replication ASDA3 '+
'SPSS C12 Code and Results.docx'
NOTESCAPTIONS=YES WIDETABLES=WRAP PAGEBREAKS=YES
PAGESIZE=INCHES(8.5, 11.0) TOPMARGIN=INCHES(1.0) BOTTOMMARGIN=INCHES(1.0).

```