ASDA2 ANALYSIS EXAMPLE REPLICATION SPSS C5

```
GET
  SAS DATA='P:\ASDA 2\Data sets\nhanes 2011_2012\nhanes1112_sub_8aug2016.sas7bdat'.
DATASET NAME DataSet2 WINDOW=FRONT.

DATASET NAME DataSet1 WINDOW=FRONT.
USE ALL.
COMPUTE filter_$=(age18p=1 ).
VARIABLE LABELS filter_$ 'age18p=1  (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.

WEIGHT BY WTMEC2YR.
GRAPH
  /HISTOGRAM(NORMAL)=LBDTCSI.
EXAMINE VARIABLES=LBXTC BY RIAGENDR
/PLOT=BOXPLOT
/STATISTICS=NONE
/NOTOTAL.
* get NCSR data.
GET
  SAS DATA='P:\ASDA 2\Data sets\NCSR\ncsr_sub_5apr2017.sas7bdat'.
DATASET NAME DataSet3 WINDOW=FRONT.
COMPUTE ncsrwtsh_pop=ncsrwtsh*(209128094/ 9282) .
* Analysis Example 5.3 total count of US Adults with MDE
* Complex Samples Frequencies.
CSTABULATE
  /PLAN FILE='P:\ASDA 2\Data sets\NCSR\ncsr_pop_wgt.csaplan'
  /TABLES VARIABLES=mde
  /CELLS POPSIZE
  /STATISTICS SE CIN(95) DEFF
  /MISSING SCOPE=TABLE CLASSMISSING=EXCLUDE.
* Analysis Example 5.3 Total Count of US Adults with MDE by Marital Status
* Complex Samples Frequencies.
CSTABULATE
 /PLAN FILE='P:\ASDA 2\Data sets\NCSR\ncsr_pop_wgt.csaplan'
 /TABLES VARIABLES=mde
 /SUBPOP TABLE=MAR3CAT DISPLAY=LAYERED
 /CELLS POPSIZE
 /STATISTICS SE CV CIN(95) DEFF
 /MISSING SCOPE=TABLE CLASSMISSING=EXCLUDE.
* get HRS data.
GET
  SAS DATA='P:\ASDA 2\Data sets\HRS 2012\hrs_sub_28sep2016.sas7bdat'.
DATASET NAME DataSet5 WINDOW=FRONT.
* Analysis Preparation Wizard.
CSPLAN ANALYSIS
  /PLAN FILE='P:\ASDA 2\Data sets\HRS 2012\hrs_HHwgt.csaplan'
  /PLANVARS ANALYSISWEIGHT=NWGTHH
  /SRSESTIMATOR TYPE=WOR
  /PRINT PLAN
  /DESIGN STRATA=STRATUM CLUSTER=SECU
  /ESTIMATOR TYPE=WR.
COMPUTE finr=0.
IF (nfinr =1) finr=1.
EXECUTE.
* Analysis Example 5.4 HRS Data to Estimate Total HH Assets
* Complex Samples Descriptives.
CSDESCRIPTIVES
 /PLAN FILE='P:\ASDA 2\Data sets\HRS 2012\hrs_HHwgt.csaplan'
 /SUMMARY VARIABLES=H11ATOTA
 /SUBPOP TABLE=FINR DISPLAY=LAYERED
 /MEAN
 /SUM
 /STATISTICS SE DEFF CIN(95)
```

```
 /MISSING SCOPE=ANALYSIS CLASSMISSING=EXCLUDE.
* Analysis Example 5.5 HRS Data HH Income
CSDESCRIPTIVES
 /PLAN FILE='P:\ASDA 2\Data sets\HRS 2012\hrs_HHwgt.csaplan'
 /SUMMARY VARIABLES=H11iTOT
 /SUBPOP TABLE=FINR DISPLAY=LAYERED
 /MEAN
 /SUM
 /STATISTICS SE DEFF CIN(95)
 /MISSING SCOPE=ANALYSIS CLASSMISSING=EXCLUDE.
GET
  SAS DATA='P:\ASDA 2\Data sets\nhanes 2011_2012\nhanes1112_sub_8aug2016.sas7bdat'.
DATASET NAME DataSet2 WINDOW=FRONT.
* Prepare CSPlan File for NHANES
CSPLAN ANALYSIS
  /PLAN FILE='P:\ASDA 2\Data sets\nhanes 2011_2012\nhanes_csplan.csaplan'
  /PLANVARS ANALYSISWEIGHT=WTMEC2YR
  /SRSESTIMATOR TYPE=WOR
  /PRINT PLAN
  /DESIGN STRATA=SDMVSTRA CLUSTER=SDMVPSU
  /ESTIMATOR TYPE=WR.
* ANALYSIS EXAMPLE 5.6 Mean Systolic Blood Pressure in US Adults using the NHANES Data
* Complex Samples Frequencies.
CSDESCRIPTIVES
 /PLAN FILE='P:\ASDA 2\Data sets\nhanes 2011_2012\nhanes_csplan.csaplan'
 /SUMMARY VARIABLES=BPXSY1
 /SUBPOP TABLE=age18p DISPLAY=LAYERED
 /MEAN
 /STATISTICS SE DEFF CIN(95)
 /MISSING SCOPE=ANALYSIS CLASSMISSING=EXCLUDE.
* get HRS data.
GET
  SAS DATA='P:\ASDA 2\Data sets\HRS 2012\hrs_sub_28sep2016.sas7bdat'.
DATASET NAME DataSet5 WINDOW=FRONT.
COMPUTE finr=0.
IF (nfinr =1) finr=1.
EXECUTE.
* Analysis Example 5.7 Total HH Wealth Using HRS Data
CSDESCRIPTIVES
 /PLAN FILE='P:\ASDA 2\Data sets\HRS 2012\hrs_HHwgt.csaplan'
 /SUMMARY VARIABLES=H11aTOTa
 /SUBPOP TABLE=FINR DISPLAY=LAYERED
 /MEAN
 /SUM
 /STATISTICS SE DEFF CIN(95)
 /MISSING SCOPE=ANALYSIS CLASSMISSING=EXCLUDE.
GET
  SAS DATA='P:\ASDA 2\Data sets\nhanes 2011_2012\nhanes1112_sub_8aug2016.sas7bdat'.
DATASET NAME DataSet2 WINDOW=FRONT.
weight by wtmec2yr.
DATASET ACTIVATE DataSet2.
USE ALL.
FILTER BY age18p.
EXECUTE.
* Analysis Example 5.8 Standard Deviations for Continuous Variables NHANES data.
DESCRIPTIVES VARIABLES=LBXTC LBDHDD
  /STATISTICS=MEAN STDDEV MIN MAX.
* ANALYSIS EXAMPLE 5.9 QUANTILES NOT AVAILABLE IN SPSS
* ANALYSIS EXAMPLE 5.10 ESTIMATING THE LORENZ CURVE AND GINI COEFFICIENT NOT AVAILABLE IN SPSS
* Analysis Example 5.11 Correlation Analysis
* compute standardized variables.
compute stdlbxtc =(lbxtc - 194.4355) / 41.05184.
compute stdlbdhdd=(lbdhdd - 52.83826)/ 14.93157.
execute.
* Complex Samples General Linear Model.
CSGLM  stdlbdhdd WITH stdlbxtc
  /PLAN FILE='P:\ASDA 2\Data sets\nhanes 2011_2012\nhanes_csplan.csaplan'
  /DOMAIN VARIABLE=age18p(1)
```

```
  /MODEL stdlbxtc
  /INTERCEPT INCLUDE=YES SHOW=YES
  /STATISTICS PARAMETER SE CINTERVAL
  /PRINT SUMMARY VARIABLEINFO SAMPLEINFO
  /TEST TYPE=F PADJUST=LSD
  /MISSING CLASSMISSING=EXCLUDE
  /CRITERIA CILEVEL=95.
* ANALYSIS EXAMPLE 5.12 RATIO of HDL to Total Cholesterol in US Adult Population using NHANES Data
* Complex Samples Ratios.
CSDESCRIPTIVES
 /PLAN FILE='P:\ASDA 2\Data sets\nhanes 2011_2012\nhanes_csplan.csaplan'
 /RATIO NUMERATOR=lbdhdd DENOMINATOR=lbxtc
 /subpop table=age18p display=layered
 /STATISTICS SE DEFF CIN(95)
 /MISSING SCOPE=ANALYSIS CLASSMISSING=EXCLUDE.
* get HRS data.
GET
  SAS DATA='P:\ASDA 2\Data sets\HRS 2012\hrs_sub_28sep2016.sas7bdat'.
DATASET NAME DataSet5 WINDOW=FRONT.
* Analysis Preparation Wizard.
CSPLAN ANALYSIS
  /PLAN FILE='P:\ASDA 2\Data sets\HRS 2012\hrs_rwgt.csaplan'
  /PLANVARS ANALYSISWEIGHT=nwgtr
  /SRSESTIMATOR TYPE=WOR
  /PRINT PLAN
  /DESIGN STRATA=STRATUM CLUSTER=SECU
  /ESTIMATOR TYPE=WR.
compute
age70=(nage > 70).
execute.
* Analysis Example 5.13 Diabetes by Gender, Among Subpopulation Age >70.
* Complex Samples Descriptives.
CSDESCRIPTIVES
 /PLAN FILE='P:\ASDA 2\Data sets\HRS 2012\hrs_rwgt.csaplan'
 /SUMMARY VARIABLES=diabetes
 /SUBPOP TABLE=age70 BY GENDER DISPLAY=LAYERED
 /MEAN
 /STATISTICS SE DEFF CIN(95)
 /MISSING SCOPE=ANALYSIS CLASSMISSING=EXCLUDE.
GET
  SAS DATA='P:\ASDA 2\Data sets\nhanes 2011_2012\nhanes1112_sub_8aug2016.sas7bdat'.
DATASET NAME DataSet2 WINDOW=FRONT.
COMPUTE age45 = age > 45.
* Analysis Example 5.14
* Complex Samples Descriptives.
CSDESCRIPTIVES
  /PLAN FILE='P:\ASDA 2\Data sets\nhanes 2011_2012\nhanes_csplan.csaplan'
 /SUMMARY VARIABLES=BPXSY1
 /SUBPOP TABLE=riagendr BY age45 DISPLAY=LAYERED
 /MEAN
 /STATISTICS SE DEFF CIN(95)
 /MISSING SCOPE=ANALYSIS CLASSMISSING=EXCLUDE.
* Analysis Example 5.15.
* get HRS data.
GET
  SAS DATA='P:\ASDA 2\Data sets\HRS 2012\hrs_sub_28sep2016.sas7bdat'.
DATASET NAME DataSet5 WINDOW=FRONT.
COMPUTE finr=0.
IF (nfinr =1) finr=1.
EXECUTE.
* Analysis Example 5.4 HRS Data to Estimate Total HH Assets
* Complex Samples Descriptives.
*NOTE: LINEAR DIFFERENCES NOT AVAILABLE IN SPSS V22 DESCRIPTIVE COMMANDS BUT DEMONSTRATED HERE USING CSGLM
INSTEAD, see CSGLM FOR DETAILS.
CSGLM H11ATOTA BY EDCAT
 /PLAN FILE='P:\ASDA 2\Data sets\HRS 2012\hrs_HHwgt.csaplan'
 /DOMAIN VARIABLE=FINR(1)
 /MODEL EDCAT
```

```
 /INTERCEPT INCLUDE=YES SHOW=YES
 /PRINT SUMMARY VARIABLEINFO SAMPLEINFO
 /TEST TYPE=F PADJUST=LSD
 /EMMEANS TABLES=EDCAT COMPARE CONTRAST=SIMPLE(4)
 /MISSING CLASSMISSING=EXCLUDE
 /CRITERIA CILEVEL=95.
* Analysis Example 5.16 data for 2010 and 2012 stacked vertically.
GET
  SAS DATA='P:\ASDA 2\Data sets\HRS 2012\hrs 2010\hrs_2010_2012_c5.sas7bdat'.
DATASET NAME DataSet5 WINDOW=FRONT.
CSPLAN ANALYSIS
  /PLAN FILE='P:\ASDA 2\Data sets\HRS 2012\hrs_10_12.csaplan'
  /PLANVARS ANALYSISWEIGHT=hhweight
  /SRSESTIMATOR TYPE=WOR
  /PRINT PLAN
  /DESIGN STRATA=STRATUM CLUSTER=SECU
  /ESTIMATOR TYPE=WR.
CSGLM totassets BY year
  /PLAN FILE='P:\ASDA 2\Data sets\HRS 2012\hrs_10_12.csaplan'
 /DOMAIN VARIABLE=finr2010_2012(1)
 /MODEL year
 /INTERCEPT INCLUDE=YES SHOW=YES
 /STATISTICS PARAMETER SE CINTERVAL
 /PRINT VARIABLEINFO
 /TEST TYPE=F PADJUST=LSD
 /EMMEANS TABLES=year COMPARE CONTRAST=SIMPLE(2010)
 /EMMEANS
 /MISSING CLASSMISSING=EXCLUDE
 /CRITERIA CILEVEL=95.
* Export Output.
OUTPUT EXPORT
  /CONTENTS  EXPORT=ALL  LAYERS=PRINTSETTING  MODELVIEWS=PRINTSETTING
  /DOC  DOCUMENTFILE='P:\ASDA 2\Analysis Example Replication\SPSS\Analysis Example Replication '+
    'SPSS C5.doc'
     NOTESCAPTIONS=YES  WIDETABLES=WRAP PAGEBREAKS=YES
     PAGESIZE=INCHES(8.5, 11.0)  TOPMARGIN=INCHES(1.0)  BOTTOMMARGIN=INCHES(1.0)
     LEFTMARGIN=INCHES(1.0)  RIGHTMARGIN=INCHES(1.0).
```

SPSS OUTPUT CHAPTER 5:

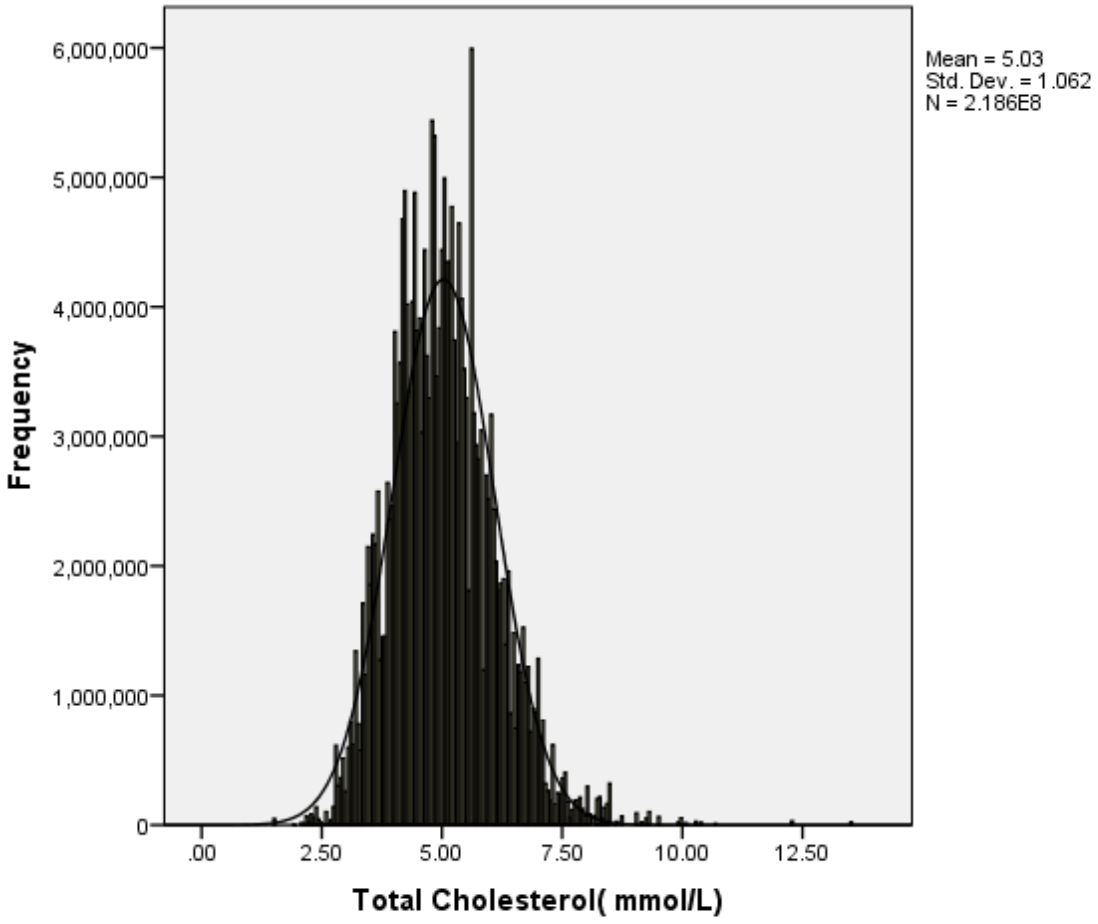
```
DATASET ACTIVATE DataSet3.
GET
  SAS DATA='P:\ASDA 2\Data sets\nhanes 2011_2012\nhanes1112_sub_8aug2016.sas7bdat'.
DATASET NAME DataSet2 WINDOW=FRONT.

USE ALL.
COMPUTE filter_$=(age18p=1 ).
VARIABLE LABELS filter_$ 'age18p=1  (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
WEIGHT BY WTMEC2YR.
GRAPH
  /HISTOGRAM(NORMAL)=LBDTCSI.
```

Graph

Notes

Output Created		22-MAY-2017 12:20:51
Comments		
Input	Active Dataset	DataSet1
	Filter	age18p=1 (FILTER)
	Weight	Full sample 2 year MEC exam weight
	Split File	<none>
	N of Rows in Working Data File	5615
Syntax		GRAPH /HISTOGRAM(NORMAL)=LBDTCSI.
Resources	Processor Time	00:00:00.14
	Elapsed Time	00:00:00.18

[DataSet1]



Cases weighted by Full sample 2 year MEC exam weight

```
Warning # 3211
On at least one case, the value of the weight variable was zero, negative, or
missing.  Such cases are invisible to statistical procedures and graphs which
need positively weighted cases, but remain on the file and are processed by
non-statistical facilities such as LIST and SAVE.
```

```
EXAMINE VARIABLES=LBXTC BY RIAGENDR
/PLOT=BOXPLOT
/STATISTICS=NONE
/NOTOTAL.
```

Gender

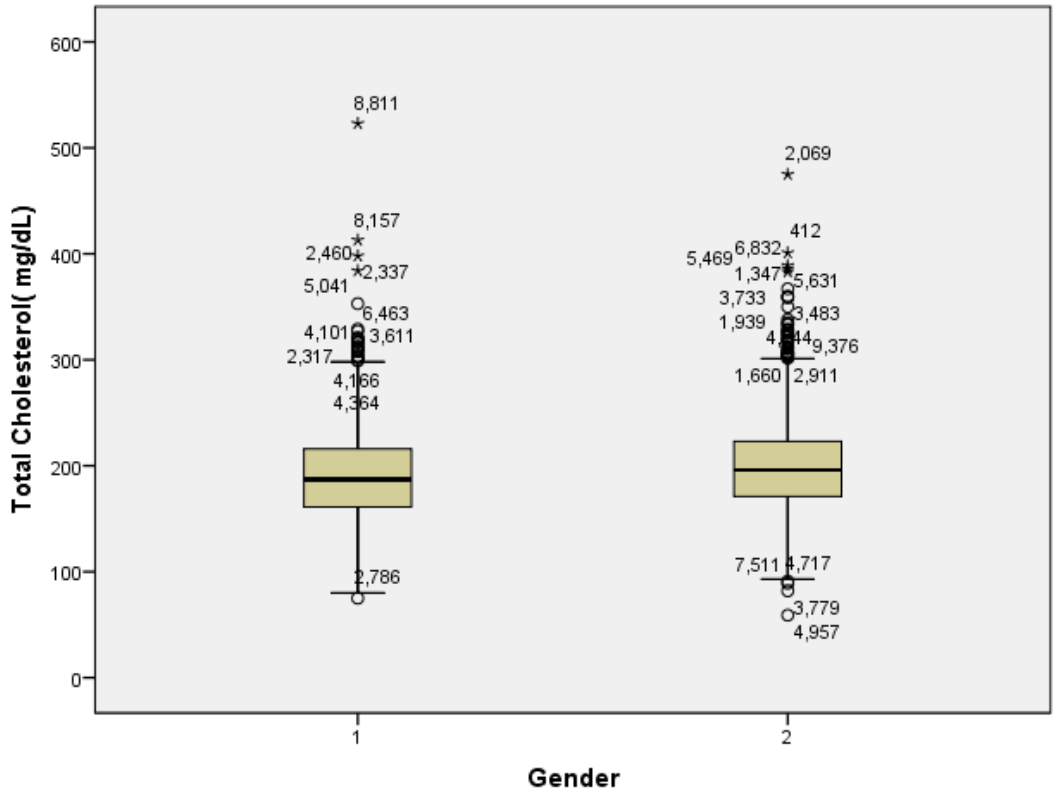
Case Processing Summary

		Cases				
		Valid		Missing		Total
	Gender	N	Percent	N	Percent	N
Total Cholesterol(mg/dL)	1	106186384	94.7%	5932076	5.3%	112118460
	2	112455652	93.8%	7428428	6.2%	119884079

Case Processing Summary

		Cases
		Total
	Gender	Percent
Total Cholesterol(mg/dL)	1	100.0%
	2	100.0%

Total Cholesterol(mg/dL)



Cases weighted by Full sample 2 year MEC exam weight

```
* get NCSR data.
GET
  SAS DATA='P:\ASDA 2\Data sets\NCSR\ncsr_sub_5apr2017.sas7bdat'.
DATASET NAME DataSet3 WINDOW=FRONT.

COMPUTE ncsrwtsh_pop=ncsrwtsh*(209128094/ 9282) .
* Analysis Example 5.3 total count of US Adults with MDE
* Complex Samples Frequencies.
CSTABULATE
  /PLAN FILE='P:\ASDA 2\Data sets\NCSR\ncsr_pop_wgt.csaplan'
  /TABLES VARIABLES=mde
  /CELLS POPSIZE
  /STATISTICS SE CIN(95) DEFF
  /MISSING SCOPE=TABLE CLASSMISSING=EXCLUDE.
```

Complex Samples: Tables

Major Depressive Episode 1=Yes 0=No

		Estimate	Standard Error	95% Confidence Interval	
				Lower	Upper
Population Size	0	169035890.905	7876169.959	153141136.423	184930645.387
	1	40092206.520	2567487.979	34910806.008	45273607.032
	Total	209128097.425	10218607.411	188506112.779	229750082.070

Major Depressive Episode 1=Yes 0=No

		Design Effect
Population Size	0	84.958
	1	9.028
	Total	.

```
* Analysis Example 5.3 Total Count of US Adults with MDE by Marital Status
* Complex Samples Frequencies.
CSTABULATE
 /PLAN FILE='P:\ASDA 2\Data sets\NCSR\ncsr_pop_wgt.csaplan'
 /TABLES VARIABLES=mde
 /SUBPOP TABLE=MAR3CAT DISPLAY=LAYERED
 /CELLS POPSIZE
 /STATISTICS SE CV CIN(95) DEFF
 /MISSING SCOPE=TABLE CLASSMISSING=EXCLUDE.
```

Major Depressive Episode 1=Yes 0=No

		Estimate	Standard Error	95% Confidence Interval	
				Lower	Upper
Population Size	0	169035890.905	7876169.959	153141136.423	184930645.387
	1	40092206.520	2567487.979	34910806.008	45273607.032
	Total	209128097.425	10218607.411	188506112.779	229750082.070

Major Depressive Episode 1=Yes 0=No

		Coefficient of Variation	Design Effect
Population Size	0	.047	84.958
	1	.064	9.028
	Total	.049	.

Subpopulation Tables

Major Depressive Episode 1=Yes 0=No

Marital Status 1=Married 2=Previously Married 3=Never Married			Estimate	Standard Error
1	Population Size	0	96459587.080	4705215.830
		1	20304190.500	1584108.641
		Total	116763777.580	6109331.527
2	Population Size	0	32386705.280	1895123.123
		1	10360670.649	702621.506
		Total	42747375.928	2381848.331
3	Population Size	0	40189598.546	2944180.685
		1	9427345.371	773137.582
		Total	49616943.916	3488233.477

Major Depressive Episode 1=Yes 0=No

Marital Status 1=Married 2=Previously Married 3=Never Married			95% Confidence Interval	
			Lower	Upper
1	Population Size	0	86964077.106	105955097.053
		1	17107329.836	23501051.165
		Total	104434647.409	129092907.752
2	Population Size	0	28562191.981	36211218.579
		1	8942723.044	11778618.253
		Total	37940611.392	47554140.464
3	Population Size	0	34248001.376	46131195.715
		1	7867090.562	10987600.179
		Total	42577403.762	56656484.070

Major Depressive Episode 1=Yes 0=No

Marital Status 1=Married 2=Previously Married 3=Never Married			Coefficient of Variation	Design Effect
1	Population Size	0	.049	18.907
		1	.078	6.075
		Total	.052	32.121
2	Population Size	0	.059	5.823
		1	.068	2.225
		Total	.056	7.403
3	Population Size	0	.073	11.850
		1	.082	2.947
		Total	.070	14.269

```
* get HRS data.
GET
  SAS DATA='P:\ASDA 2\Data sets\HRS 2012\hrs_sub_28sep2016.sas7bdat'.
DATASET NAME DataSet5 WINDOW=FRONT.

* Analysis Preparation Wizard.
CSPLAN ANALYSIS
  /PLAN FILE='P:\ASDA 2\Data sets\HRS 2012\hrs_HHwgt.csaplan'
  /PLANVARS ANALYSISWEIGHT=NWGTHH
  /SRSESTIMATOR TYPE=WOR
  /PRINT PLAN
  /DESIGN STRATA=STRATUM CLUSTER=SECU
  /ESTIMATOR TYPE=WR.
```

Plan File: P:\ASDA 2\Data sets\HRS 2012\hrs_HHwgt.csaplan

Weight Variable: 2012 WEIGHT: HOUSEHOLD LEVEL

SRS Estimator: Sampling without replacement

```
COMPUTE finr=0.
IF (nfinr =1) finr=1.
EXECUTE.

* Analysis Example 5.4 HRS Data to Estimate Total HH Assets
* Complex Samples Descriptives.
CSDESCRIPTIVES
 /PLAN FILE='P:\ASDA 2\Data sets\HRS 2012\hrs_HHwgt.csaplan'
 /SUMMARY VARIABLES=H11ATOTA
 /SUBPOP TABLE=FINR DISPLAY=LAYERED
 /MEAN
 /SUM
 /STATISTICS SE DEFF CIN(95)
 /MISSING SCOPE=ANALYSIS CLASSMISSING=EXCLUDE.
```

Complex Samples: Descriptives

Univariate Statistics

		Estimate	Standard Error	95% Confidence Interval	
				Lower	Upper
Mean	H11ATOTA:W11 Total of all Assets--Cross-wave	474128.8174	19680.72721	434703.5833	513554.0515
Sum	H11ATOTA:W11 Total of all Assets--Cross-wave	4228020591997 9.71	2323788735085 .16750	3762509770385 7.94	4693531413610 1.48

Univariate Statistics

		Design Effect
Mean	H11ATOTA:W11 Total of all Assets--Cross-wave	5.920
Sum	H11ATOTA:W11 Total of all Assets--Cross-wave	10.380

Subpopulation Descriptives

Univariate Statistics

finr			Estimate	Standard Error	95% Confidence Interval Lower
.00	Mean	H11ATOTA:W11 Total of all Assets--Cross-wave	563269.0578	26670.34089	509841.9450
	Sum	H11ATOTA:W11 Total of all Assets--Cross-wave	1701334418375 5.99	1031603297298 .14750	1494679445291 0.99
1.00	Mean	H11ATOTA:W11 Total of all Assets--Cross-wave	428470.7552	17353.77335	393706.9698
	Sum	H11ATOTA:W11 Total of all Assets--Cross-wave	2526686173622 3.72	1353710422880 .11800	2255505389558 1.97

Univariate Statistics

finr			95% Confidence Interval Upper	Design Effect
.00	Mean	H11ATOTA:W11 Total of all Assets--Cross-wave	616696.1707	3.373
	Sum	H11ATOTA:W11 Total of all Assets--Cross-wave	19079893914601.00	4.823
1.00	Mean	H11ATOTA:W11 Total of all Assets--Cross-wave	463234.5406	3.210
	Sum	H11ATOTA:W11 Total of all Assets--Cross-wave	27978669576865.46	5.349

```
* Analysis Example 5.5 HRS Data HH Income

CSDESCRIPTIVES
 /PLAN FILE='P:\ASDA 2\Data sets\HRS 2012\hrs_HHwgt.csaplan'
 /SUMMARY VARIABLES=H11iTOT
 /SUBPOP TABLE=FINR DISPLAY=LAYERED
 /MEAN
 /SUM
 /STATISTICS SE DEFF CIN(95)
 /MISSING SCOPE=ANALYSIS CLASSMISSING=EXCLUDE.
```

Complex Samples: Descriptives

Notes

Output Created		22-MAY-2017 12:20:54
Comments		
Input	Active Dataset	DataSet5
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	20554
	Plan File	P:\ASDA 2\Data sets\HRS 2012\hrs_HHwgt.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:\ASDA 2\Data sets\HRS 2012\hrs_HHwgt.csaplan' /SUMMARY VARIABLES=H11iTOT /SUBPOP TABLE=FINR DISPLAY=LAYERED /MEAN /SUM /STATISTICS SE DEFF CIN(95) /MISSING SCOPE=ANALYSIS CLASSMISSING=EXCLUDE.
Resources	Processor Time	00:00:00.08
	Elapsed Time	00:00:00.21

Univariate Statistics

		Estimate	Standard Error	95% Confidence Interval	
				Lower	Upper
Mean	H11ITOT:W11 Incm: Total HHold / R+Sp only	80648.0964	2289.82002	76061.0357	85235.1571
Sum	H11ITOT:W11 Incm: Total HHold / R+Sp only	7191754641480.94	333578539233.68900	6523516528754.34	7859992754207.54

Univariate Statistics

		Design Effect
Mean	H11ITOT:W11 Incm: Total HHold / R+Sp only	6.484
Sum	H11ITOT:W11 Incm: Total HHold / R+Sp only	17.304

Subpopulation Descriptives

Univariate Statistics

finr			Estimate	Standard Error	95% Confidence Interval
					Lower
.00	Mean	H11ITOT:W11 Incm: Total HHold / R+Sp only	98737.9150	3007.88324	92712.4008
	Sum	H11ITOT:W11 Incm: Total HHold / R+Sp only	2982344064214.44	159820364120.64667	2662185403106.92
1.00	Mean	H11ITOT:W11 Incm: Total HHold / R+Sp only	71382.4039	1937.22918	67501.6675
	Sum	H11ITOT:W11 Incm: Total HHold / R+Sp only	4209410577266.50	177579139702.98346	3853676813795.57

Univariate Statistics

finr			95% Confidence Interval	
			Upper	Design Effect
.00	Mean	H11ITOT:W11 Incm: Total HHold / R+Sp only	104763.4291	3.383
	Sum	H11ITOT:W11 Incm: Total HHold / R+Sp only	3302502725321.96	7.720
1.00	Mean	H11ITOT:W11 Incm: Total HHold / R+Sp only	75263.1403	3.326
	Sum	H11ITOT:W11 Incm: Total HHold / R+Sp only	4565144340737.43	7.203

```
GET
  SAS DATA='P:\ASDA 2\Data sets\nhanes 2011_2012\nhanes1112_sub_8aug2016.sas7bdat'.
DATASET NAME DataSet2 WINDOW=FRONT.

* Prepare CSPlan File for NHANES

CSPLAN ANALYSIS
  /PLAN FILE='P:\ASDA 2\Data sets\nhanes 2011_2012\nhanes_csplan.csaplan'
  /PLANVARS ANALYSISWEIGHT=WTMEC2YR
  /SRSESTIMATOR TYPE=WOR
  /PRINT PLAN
  /DESIGN STRATA=SDMVSTRA CLUSTER=SDMVPSU
  /ESTIMATOR TYPE=WR.

* ANALYSIS EXAMPLE 5.6 Mean Systolic Blood Pressure in US Adults using the NHANES Data
* Complex Samples Frequencies.
CSDESCRIPTIVES
 /PLAN FILE='P:\ASDA 2\Data sets\nhanes 2011_2012\nhanes_csplan.csaplan'
 /SUMMARY VARIABLES=BPXSY1
 /SUBPOP TABLE=age18p DISPLAY=LAYERED
 /MEAN
 /STATISTICS SE DEFF CIN(95)
 /MISSING SCOPE=ANALYSIS CLASSMISSING=EXCLUDE.
```

Complex Samples: Descriptives

Univariate Statistics

		Estimate	Standard Error	95% Confidence Interval		Design Effect
				Lower	Upper	
Mean	Systolic: Blood pres (1st rdg) mm Hg	119.53	.547	118.38	120.68	6.626

Subpopulation Descriptives

Univariate Statistics

Age >=18: 1=Yes 0=No			Estimate	Standard Error	95% Confidence Interval	
					Lower	Upper
0	Mean	Systolic: Blood pres (1st rdg) mm Hg	105.85	.285	105.25	106.45
1	Mean	Systolic: Blood pres (1st rdg) mm Hg	122.03	.616	120.73	123.33

Univariate Statistics

Age >=18: 1=Yes 0=No			Design Effect
0	Mean	Systolic: Blood pres (1st rdg) mm Hg	.841
1	Mean	Systolic: Blood pres (1st rdg) mm Hg	7.192

```
GET
  SAS DATA='P:\ASDA 2\Data sets\HRS 2012\hrs_sub_28sep2016.sas7bdat'.
DATASET NAME DataSet5 WINDOW=FRONT.

COMPUTE finr=0.
IF (nfinr =1) finr=1.
EXECUTE.

* Analysis Example 5.7 Total HH Wealth Using HRS Data

CSDESCRIPTIVES
 /PLAN FILE='P:\ASDA 2\Data sets\HRS 2012\hrs_HHwgt.csaplan'
 /SUMMARY VARIABLES=H11aTOTa
 /SUBPOP TABLE=FINR DISPLAY=LAYERED
 /MEAN
 /SUM
 /STATISTICS SE DEFF CIN(95)
 /MISSING SCOPE=ANALYSIS CLASSMISSING=EXCLUDE.
```

Complex Samples: Descriptives

Univariate Statistics

		Estimate	Standard Error	95% Confidence Interval	
				Lower	Upper
Mean	H11ATOTA:W11 Total of all Assets--Cross-wave	474128.8174	19680.72721	434703.5833	513554.0515
Sum	H11ATOTA:W11 Total of all Assets--Cross-wave	4228020591997 9.71	2323788735085 .16750	3762509770385 7.94	4693531413610 1.48

Univariate Statistics

		Design Effect
Mean	H11ATOTA:W11 Total of all Assets--Cross-wave	5.920
Sum	H11ATOTA:W11 Total of all Assets--Cross-wave	10.380

Subpopulation Descriptives

Univariate Statistics

finr			Estimate	Standard Error	95% Confidence Interval
					Lower
.00	Mean	H11ATOTA:W11 Total of all Assets--Cross-wave	563269.0578	26670.34089	509841.9450
	Sum	H11ATOTA:W11 Total of all Assets--Cross-wave	1701334418375 5.99	1031603297298 .14750	1494679445291 0.99
1.00	Mean	H11ATOTA:W11 Total of all Assets--Cross-wave	428470.7552	17353.77335	393706.9698
	Sum	H11ATOTA:W11 Total of all Assets--Cross-wave	2526686173622 3.72	1353710422880 .11800	2255505389558 1.97

Univariate Statistics

finr			95% Confidence Interval	
			Upper	Design Effect
.00	Mean	H11ATOTA:W11 Total of all Assets--Cross-wave	616696.1707	3.373
	Sum	H11ATOTA:W11 Total of all Assets--Cross-wave	19079893914601.00	4.823
1.00	Mean	H11ATOTA:W11 Total of all Assets--Cross-wave	463234.5406	3.210
	Sum	H11ATOTA:W11 Total of all Assets--Cross-wave	27978669576865.46	5.349

```
* ANALYSIS EXAMPLE 5.9 QUANTILES NOT AVAILABLE IN SPSS

* ANALYSIS EXAMPLE 5.10 ESTIMATING THE LORENZ CURVE AND GINI COEFFICIENT NOT AVAILABLE IN SPSS
```

```
GET
  SAS DATA='P:\ASDA 2\Data sets\nhanes 2011_2012\nhanes1112_sub_8aug2016.sas7bdat'.
DATASET NAME DataSet2 WINDOW=FRONT.
```

Descriptives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Total Cholesterol(mg/dL)	218642036	59	523	194.44	41.048
Direct HDL-Cholesterol (mg/dL)	218642036	14	175	52.84	14.930
Valid N (listwise)	218642036				

```
* Analysis Example 5.11 Correlation Analysis

* compute standardized variables.
compute stdlbxtc =(lbxtc - 194.4355) / 41.05184.
compute stdlbdhdd=(lbdhdd - 52.83826)/ 14.93157.
execute.

* Complex Samples General Linear Model.
CSGLM  stdlbdhdd WITH stdlbxtc
  /PLAN FILE='P:\ASDA 2\Data sets\nhanes 2011_2012\nhanes_csplan.csaplan'
  /DOMAIN VARIABLE=age18p(1)
  /MODEL stdlbxtc
  /INTERCEPT INCLUDE=YES SHOW=YES
  /STATISTICS PARAMETER SE CINTERVAL
  /PRINT SUMMARY VARIABLEINFO SAMPLEINFO
  /TEST TYPE=F PADJUST=LSD
  /MISSING CLASSMISSING=EXCLUDE
  /CRITERIA CILEVEL=95.
```

Sample Design Information

		N
Unweighted Cases	Valid	5187
	Invalid	677
	Total	5864
Population Size		218642035.660
Subpopulation Size		218642035.660[a]
Stage 1	Strata	14
	Units	31
Sampling Design Degrees of Freedom		17

a. Subpopulation: Age >=18: 1=Yes 0=No = 1

Variable Information

		Mean
Dependent Variable	stdlbdhdd	.0000
Covariates	stdlbxtc	.0000

Subpopulation: Age >=18: 1=Yes 0=No = 1

Model Summary[a]

R Square	.058

Subpopulation: Age >=18:

1=Yes 0=No = 1[a]

a. Model: stdlbdhdd =

(Intercept) + stdlbxtc

Tests of Model Effects[a]

Source	df1	df2	Wald F	Sig.
(Corrected Model)	1.000	17.000	288.582	.000
(Intercept)	1.000	17.000	.000	1.000
stdlbxtc	1.000	17.000	288.582	.000

Subpopulation: Age >=18: 1=Yes 0=No = 1[a]

a. Model: stdlbdhdd = (Intercept) + stdlbxtc

Parameter Estimates[a]

			95% Confidence Interval	
Parameter	Estimate	Std. Error	Lower	Upper
(Intercept)	4.098E-7	.034	-.072	.072
stdlbxtc	.241	.014	.211	.271

Subpopulation: Age >=18: 1=Yes 0=No = 1[a]

a. Model: stdlbdhdd = (Intercept) + stdlbxtc

```
* ANALYSIS EXAMPLE 5.12 RATIO of HDL to Total Cholesterol in US Adult Population using NHANES Data
* Complex Samples Ratios.
CSDESCRIPTIVES
 /PLAN FILE='P:\ASDA 2\Data sets\nhanes 2011_2012\nhanes_csplan.csaplan'
 /RATIO NUMERATOR=lbdhdd DENOMINATOR=lbxtc
 /subpop table=age18p display=layered
 /STATISTICS SE DEFF CIN(95)
 /MISSING SCOPE=ANALYSIS CLASSMISSING=EXCLUDE.
```

Ratios 1

Numerator	Denominator	Ratio Estimate	Standard Error	95% Confidence Interval
				Lower
Direct HDL-Cholesterol (mg/dL)	Total Cholesterol(mg/dL)	.272	.003	.266

Ratios 1

Numerator	Denominator	95% Confidence Interval	Design Effect
		Upper	
Direct HDL-Cholesterol (mg/dL)	Total Cholesterol(mg/dL)	.278	6.153

Subpopulation Descriptives

Ratios 1

Age >=18: 1=Yes 0=No	Numerator	Denominator	Ratio Estimate
1	Direct HDL-Cholesterol (mg/dL)	Total Cholesterol(mg/dL)	.272

Ratios 1

Age >=18: 1=Yes 0=No	Numerator	Denominator	Standard Error
1	Direct HDL-Cholesterol (mg/dL)	Total Cholesterol(mg/dL)	.003

Ratios 1

Age >=18: 1=Yes 0=No	Numerator	Denominator	95% Confidence Interval	
			Lower	Upper
1	Direct HDL-Cholesterol (mg/dL)	Total Cholesterol(mg/dL)	.266	.278

Ratios 1

Age >=18: 1=Yes 0=No	Numerator	Denominator	Design Effect
1	Direct HDL-Cholesterol (mg/dL)	Total Cholesterol(mg/dL)	6.153

```
* get HRS data.
GET
  SAS DATA='P:\ASDA 2\Data sets\HRS 2012\hrs_sub_28sep2016.sas7bdat'.
DATASET NAME DataSet5 WINDOW=FRONT.

* Analysis Preparation Wizard.
CSPLAN ANALYSIS
  /PLAN FILE='P:\ASDA 2\Data sets\HRS 2012\hrs_rwgt.csaplan'
  /PLANVARS ANALYSISWEIGHT=nwgtr
  /SRSESTIMATOR TYPE=WOR
  /PRINT PLAN
  /DESIGN STRATA=STRATUM CLUSTER=SECU
  /ESTIMATOR TYPE=WR.

compute
age70=(nage > 70).
execute.

* Analysis Example 5.13 Diabetes by Gender, Among Subpopulation Age >70.
* Complex Samples Descriptives.
CSDESCRIPTIVES
 /PLAN FILE='P:\ASDA 2\Data sets\HRS 2012\hrs_rwgt.csaplan'
 /SUMMARY VARIABLES=diabetes
 /SUBPOP TABLE=age70 BY GENDER DISPLAY=LAYERED
 /MEAN
 /STATISTICS SE DEFF CIN(95)
 /MISSING SCOPE=ANALYSIS CLASSMISSING=EXCLUDE.
```

Complex Samples: Descriptives

Univariate Statistics

		Estimate	Standard Error	95% Confidence Interval		Design Effect
				Lower	Upper	
Mean	1=Yes Diabetes 0=No Diabetes	.22	.004	.21	.22	2.176

Subpopulation Descriptives

Univariate Statistics

age70	Gender 1=Male 2=Female			Estimate	Standard Error	95% Confidence Interval
						Lower
.00	1	Mean	1=Yes Diabetes 0=No Diabetes	.21	.007	.20
	2	Mean	1=Yes Diabetes 0=No Diabetes	.19	.006	.18
1.00	1	Mean	1=Yes Diabetes 0=No Diabetes	.28	.008	.26
	2	Mean	1=Yes Diabetes 0=No Diabetes	.22	.009	.21

Univariate Statistics

age70	Gender 1=Male 2=Female			95% Confidence Interval Upper	Design Effect
.00	1	Mean	1=Yes Diabetes 0=No Diabetes	.22	1.713
	2	Mean	1=Yes Diabetes 0=No Diabetes	.21	1.781
1.00	1	Mean	1=Yes Diabetes 0=No Diabetes	.29	.724
	2	Mean	1=Yes Diabetes 0=No Diabetes	.24	1.533

```
GET
  SAS DATA='P:\ASDA 2\Data sets\nhanes 2011_2012\nhanes1112_sub_8aug2016.sas7bdat'.
DATASET NAME DataSet2 WINDOW=FRONT.

COMPUTE age45 = age > 45.

* Analysis Example 5.14
* Complex Samples Descriptives.
CSDESCRIPTIVES
  /PLAN FILE='P:\ASDA 2\Data sets\nhanes 2011_2012\nhanes_csplan.csaplan'
 /SUMMARY VARIABLES=BPXSY1
 /SUBPOP TABLE=riagendr BY age45 DISPLAY=LAYERED
 /MEAN
 /STATISTICS SE DEFF CIN(95)
 /MISSING SCOPE=ANALYSIS CLASSMISSING=EXCLUDE.
```

Complex Samples: Descriptives

Univariate Statistics

		Estimate	Standard Error	95% Confidence Interval		Design Effect
				Lower	Upper	
Mean	Systolic: Blood pres (1st rdg) mm Hg	119.53	.547	118.38	120.68	6.626

Subpopulation Descriptives

Univariate Statistics

Gender	age45			Estimate	Standard Error	95% Confidence Interval
						Lower
1	.00	Mean	Systolic: Blood pres (1st rdg) mm Hg	115.91	.455	114.95
	1.00	Mean	Systolic: Blood pres (1st rdg) mm Hg	128.30	.869	126.47
2	.00	Mean	Systolic: Blood pres (1st rdg) mm Hg	109.79	.492	108.75
	1.00	Mean	Systolic: Blood pres (1st rdg) mm Hg	128.18	.946	126.19

Univariate Statistics

Gender	age45			95% Confidence Interval	Design Effect
				Upper	
1	.00	Mean	Systolic: Blood pres (1st rdg) mm Hg	116.87	2.660
	1.00	Mean	Systolic: Blood pres (1st rdg) mm Hg	130.13	3.014
2	.00	Mean	Systolic: Blood pres (1st rdg) mm Hg	110.83	3.149
	1.00	Mean	Systolic: Blood pres (1st rdg) mm Hg	130.18	3.638

```
* Analysis Example 5.15.
GET
```

```
  SAS DATA='P:\ASDA 2\Data sets\HRS 2012\hrs_sub_28sep2016.sas7bdat'.
DATASET NAME DataSet5 WINDOW=FRONT.

COMPUTE finr=0.
IF (nfinr =1) finr=1.
EXECUTE.

* Analysis Example 5.15 HRS Data to Estimate Total HH Assets
* Complex Samples Descriptives.

*NOTE: LINEAR DIFFERENCES NOT AVAILABLE IN SPSS V22 DESCRIPTIVE COMMANDS BUT DEMONSTRATED HERE USING CSGLM
INSTEAD, see CSGLM FOR DETAILS.

CSGLM H11ATOTA BY EDCAT
 /PLAN FILE='P:\ASDA 2\Data sets\HRS 2012\hrs_HHwgt.csaplan'
 /DOMAIN VARIABLE=FINR(1)
 /MODEL EDCAT
 /INTERCEPT INCLUDE=YES SHOW=YES
 /PRINT SUMMARY VARIABLEINFO SAMPLEINFO
 /TEST TYPE=F PADJUST=LSD
 /EMMEANS TABLES=EDCAT COMPARE CONTRAST=SIMPLE(4)
 /MISSING CLASSMISSING=EXCLUDE
 /CRITERIA CILEVEL=95.
```

Complex Samples: General Linear Model

Variable Information

		Mean
Dependent Variable	H11ATOTA:W11 Total of all Assets--Cross-wave	429464.8249

Subpopulation: finr = 1.00

Factor Information

		Weighted Count	Weighted Percent
Education 1=0-11 Yrs 2=12 Yrs 3=13-15 Yrs 4=16+ Yrs	1	9008461.000	15.4%
	2	17514052.000	29.8%
	3	14586188.000	24.9%
	4	17576608.000	30.0%
Subpopulation Size		58685309.000	100.0%

Subpopulation: finr = 1.00

Model Summary[a]

R Square	.060

Subpopulation: finr = 1.00[a]

a. Model: H11ATOTA:W11 Total of all Assets--Cross-wave = (Intercept) + edcat

Tests of Model Effects[a]

Source	df1	df2	Wald F	Sig.
(Corrected Model)	3.000	54.000	96.231	.000
(Intercept)	1.000	56.000	753.978	.000
edcat	3.000	54.000	96.231	.000

Subpopulation: finr = 1.00[a]

a. Model: H11ATOTA:W11 Total of all Assets--Cross-wave = (Intercept) + edcat

Estimated Marginal Means: Education 1=0-11 Yrs 2=12 Yrs 3=13-15 Yrs 4=16+ Yrs

Estimates

Education 1=0-11 Yrs 2=12 Yrs 3=13-15 Yrs 4=16+ Yrs	Mean	Std. Error	95% Confidence Interval	
			Lower	Upper
1	122088.6402	10595.59982	100863.1032	143314.1772
2	259027.1608	9802.47002	239390.4537	278663.8679
3	336308.6214	17201.78590	301849.3035	370767.9394
4	834140.9934	46477.79022	741034.7915	927247.1953

Subpopulation: finr = 1.00

Individual Test Results

Education 1=0-11 Yrs 2=12 Yrs 3=13-15 Yrs 4=16+ Yrs Simple Contrast[a]	Contrast Estimate	Hypothesized Value	Difference (Estimate - Hypothesized)	Std. Error	df1
Level 1 vs. Level 4	-712052.353	.000	-712052.353	48886.056	1.000
Level 2 vs. Level 4	-575113.833	.000	-575113.833	47089.549	1.000
Level 3 vs. Level 4	-497832.372	.000	-497832.372	46277.446	1.000

Individual Test Results

Education 1=0-11 Yrs 2=12 Yrs 3=13-15 Yrs 4=16+ Yrs Simple Contrast[a]	df2	Wald F	Sig.
Level 1 vs. Level 4	56.000	212.155	.000
Level 2 vs. Level 4	56.000	149.162	.000
Level 3 vs. Level 4	56.000	115.725	.000

Subpopulation: finr = 1.00

a. Reference Category = 4

Overall Test Results

df1	df2	Wald F	Sig.
3.000	54.000	96.231	.000

Subpopulation: finr = 1.00

```
* Analysis Example 5.16 data for 2010 and 2012 stacked vertically.
GET
  SAS DATA='P:\ASDA 2\Data sets\HRS 2012\hrs 2010\hrs_2010_2012_c5.sas7bdat'.
DATASET NAME DataSet5 WINDOW=FRONT.

CSPLAN ANALYSIS
  /PLAN FILE='P:\ASDA 2\Data sets\HRS 2012\hrs_10_12.csaplan'
  /PLANVARS ANALYSISWEIGHT=hhweight
  /SRSESTIMATOR TYPE=WOR
  /PRINT PLAN
  /DESIGN STRATA=STRATUM CLUSTER=SECU
  /ESTIMATOR TYPE=WR.
CSGLM totassets BY year
  /PLAN FILE='P:\ASDA 2\Data sets\HRS 2012\hrs_10_12.csaplan'
 /DOMAIN VARIABLE=finr2010_2012(1)
 /MODEL year
 /INTERCEPT INCLUDE=YES SHOW=YES
 /STATISTICS PARAMETER SE CINTERVAL
 /PRINT VARIABLEINFO
 /TEST TYPE=F PADJUST=LSD
 /EMMEANS TABLES=year COMPARE CONTRAST=SIMPLE(2010)
 /EMMEANS
 /MISSING CLASSMISSING=EXCLUDE
 /CRITERIA CILEVEL=95.
```

Complex Samples: General Linear Model

Variable Information

		Mean
Dependent Variable	totassets	435340.6791

Subpopulation: finr2010_2012 = 1

Factor Information

		Weighted Count	Weighted Percent
year	2010	53162953.000	49.6%
	2012	54114670.000	50.4%
Subpopulation Size		107277623.000	100.0%

Subpopulation: finr2010_2012 = 1

Tests of Model Effects[a]

Source	df1	df2	Wald F	Sig.
(Corrected Model)	1.000	56.000	.393	.533
(Intercept)	1.000	56.000	736.797	.000
year	1.000	56.000	.393	.533

Subpopulation: finr2010_2012 = 1[a]

a. Model: totassets = (Intercept) + year

Parameter Estimates[a]

			95% Confidence Interval	
Parameter	Estimate	Std. Error	Lower	Upper
(Intercept)	437807.631	17016.294	403719.897	471895.364
[year=2010]	-4978.066	7936.797	-20877.382	10921.249

[year=2012]	.000[b]	.	.	.

Subpopulation: finr2010_2012 = 1[a]

a. Model: totassets = (Intercept) + year

b. Set to zero because this parameter is redundant.

Estimated Marginal Means 1: year

Estimates

year	Mean	Std. Error	95% Confidence Interval	
			Lower	Upper
2010	432829.5644	16010.53325	400756.6122	464902.5165
2012	437807.6308	17016.29428	403719.8973	471895.3644

Subpopulation: finr2010_2012 = 1

Individual Test Results

year Simple Contrast[a]	Contrast Estimate	Hypothesized Value	Difference (Estimate - Hypothesized)	Std. Error	df1
Level 2012 vs. Level 2010	4978.066	.000	4978.066	7936.797	1.000

Individual Test Results

year Simple Contrast[a]	df2	Wald F	Sig.
Level 2012 vs. Level 2010	56.000	.393	.533

Subpopulation: finr2010_2012 = 1

a. Reference Category = 2010

Overall Test Results

df1	df2	Wald F	Sig.
1.000	56.000	.393	.533

Subpopulation: finr2010_2012 = 1

Estimated Marginal Means 2: Grand Mean

Estimates

Mean	Std. Error	95% Confidence Interval	
		Lower	Upper
435318.5976	16037.37929	403191.8664	467445.3288

Subpopulation: finr2010_2012 = 1

```
* Export Output.
OUTPUT EXPORT
  /CONTENTS  EXPORT=ALL  LAYERS=PRINTSETTING  MODELVIEWS=PRINTSETTING
  /DOC  DOCUMENTFILE='P:\ASDA 2\Analysis Example Replication\SPSS\Analysis Example Replication '+
    'SPSS C5.doc'
     NOTESCAPTIONS=YES  WIDETABLES=WRAP PAGEBREAKS=YES
     PAGESIZE=INCHES(8.5, 11.0)  TOPMARGIN=INCHES(1.0)  BOTTOMMARGIN=INCHES(1.0)
```