

CHAPTER 5 ASDA ANALYSIS EXAMPLES REPLICATION-SUDAAN

GENERAL NOTES ABOUT ANALYSIS EXAMPLES REPLICATION

These examples are intended to provide guidance on how to use the commands/procedures for analysis of complex sample survey data and assume all data management and other preliminary work is done. The relevant syntax for the procedure of interest is shown first along with the associated output for that procedure(s). In some examples, there may be more than one block of syntax and in this case all syntax is first presented followed by the output produced.

In some software packages certain procedures or options are not available but we have made every attempt to demonstrate how to match the output produced by Stata 10+ in the textbook. Check the ASDA website for updates to the various software tools we cover.

NOTES ABOUT DESCRIPTIVE ANALYSES IN SUDAAN 10.0.1

The analysis replication examples were all run using SAS-callable SUDAAN version 10.0.1. There are very few differences between SAS-callable and stand-alone SUDAAN with the exception of the names of the procedures are sometimes slightly different as to avoid confusion with SAS procedures.

SUDAAN does not offer the ability to perform graphical analyses within the program therefore are not included in this chapter's output however output data sets can be saved and used in other software packages and this will be included in the Chapter 7 examples.

SUDAAN PROC DESCRIPT/PROC RATIO can perform all of the descriptive analyses presented in Chapter 5 of ASDA. Some of the fine points of this procedure are the use of a SUBPOPN statement for subpopulation analyses, a CONTRAST statement for linear contrasts, a CLASS statement for declaration of categorical variables and many other options for analysis/output. Please see the Sudaan 10.0.1 Language and Examples Guides for additional detail.

* analysis examples 5.1 and 5.2 graphics not available in Sudaan ;

```

title "Analysis Example 5.3 : Totals: NCSR data " ;
proc descript data=ncsr filetype=sas defft4 ;
nest sestrat seclustr ;
weight ncsrwtsh_pop ;
var mde ;
print total setotal lowtotal uptotal defftotal ;
setenv decwidth=3 ;
run ;
    
```

Analysis Example 5.3 : Totals: NCSR data

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design

Sample Weight: NCSRWTSH_POP
 Stratification Variables(s): SESTRAT
 Primary Sampling Unit: SECLUSTR

Number of observations read : 9282 Weighted count :209128097
 Denominator degrees of freedom : 42

Variance Estimation Method: Taylor Series (WR)
 by: Variable, SUDAAN Reserved Variable One.

Variable	SUDAAN Reserved Variable		
	One		

	Total	1	

MDE	Total	40092206.52	40092206.52
	SE Total	2567487.98	2567487.98
	Lower 95% Limit		
	Total	34910806.08	34910806.08
	Upper 95% Limit		
	Total	45273606.96	45273606.96
	DEFF Total #4	9.03	9.03

```
options ls=85 ps=63 ;
proc crosstab data=ncsr filetype=sas deft4 ;
nest sestrat seclustr ;
weight ncsrwtsh_pop ;
class mde / nofreq ;
table mde ;
rformat mde mdef. ;
setenv decwidth=2 colwidth=12 ;
run ;
```

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method,
Assuming a With Replacement (WR) Design
Sample Weight: NCSRWTSH_POP
Stratification Variables(s): SESTRAT
Primary Sampling Unit: SECLUSTR

Number of observations read : 9282 Weighted count :209128097
Denominator degrees of freedom : 42

Variance Estimation Method: Taylor Series (WR)
 by: MDE.

		MDE		
		Total	No	Yes
Sample Size		9282.00	7453.00	1829.00
Weighted Size		209128097.42	169035890.90	40092206.52
SE Weighted		10218607.41	7876169.96	2567487.98
Row Percent		100.00	80.83	19.17
SE Row Percent		0.00	0.49	0.49
Lower 95% Limit				
ROWPER		.	79.83	18.21
Upper 95% Limit				
ROWPER		.	81.79	20.17
DEFF Row Percent				
#4		.	1.42	1.42
Col Percent		100.00	80.83	19.17
SE Col Percent		0.00	0.49	0.49
Lower 95% Limit				
COLPER		.	79.83	18.21
Upper 95% Limit				
COLPER		.	81.79	20.17
DEFF Col Percent				
#4		.	1.42	1.42
Tot Percent		100.00	80.83	19.17
SE Tot Percent		0.00	0.49	0.49
Lower 95% Limit				
TOTPER		.	79.83	18.21
Upper 95% Limit				
TOTPER		.	81.79	20.17
DEFF Tot Percent				
#4		.	1.42	1.42

```
proc descript data=ncsr filetype=sas deft4 ;  
nest sestrat seclustr ;  
weight ncsrwtsh_pop ;  
class mar3cat / nofreq ;  
rformat mar3cat marf. ;  
var mde ;  
print total setotal lowtotal uptotal deffttotal ;  
setenv decwidth=3 ;  
run ;
```

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method,
Assuming a With Replacement (WR) Design
Sample Weight: NCSRWTSH_POP
Stratification Variables(s): SESTRAT
Primary Sampling Unit: SECLUSTR

Number of observations read : 9282 Weighted count :209128097
Denominator degrees of freedom : 42

Variance Estimation Method: Taylor Series (WR)
 by: Variable, Marital Status-3 categories.

Variable	Marital Status-3 categories			
	Total	Married	Previously Married	
MDE	Total	40092206.52	20304190.50	10360670.65
	SE Total	2567487.98	1584108.64	702621.51
	Lower 95% Limit			
	Total	34910806.08	17107329.88	8942723.06
	Upper 95% Limit			
	Total	45273606.96	23501051.12	11778618.23
	DEFF Total #4	9.03	6.82	2.97

Variance Estimation Method: Taylor Series (WR)
 by: Variable, Marital Status-3 categories.

Variable	Marital Status-3 categories	
	Never	Married
MDE	Total	9427345.37
	SE Total	773137.58
	Lower 95% Limit	
	Total	7867090.58
	Upper 95% Limit	
	Total	10987600.16
	DEFF Total #4	3.06

```

title "Analysis Example 5.4: HRS 2006 HH Level Analysis of Total Assets" ;
proc descript data=hrs filetype=sas deft4 ;
nest stratum secu ;
weight kwgthh ;
subpopn kfinr=1 ;
var h8atota ;
setenv decwidth=1 colwidth=18 ;
print total setotal lowtotal uptotal deffttotal ;
run ;

```

Analysis Example 5.4: HRS 2006 HH Level Analysis of Total Assets
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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design
 Sample Weight: KWGTHH
 Stratification Variables(s): STRATUM
 Primary Sampling Unit: SECU

Number of observations read : 17826 Weighted count : 82249292
 Number of observations skipped : 641
 (WEIGHT variable nonpositive)
 Observations in subpopulation : 11942 Weighted count : 53853171
 Denominator degrees of freedom : 56

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Variance Estimation Method: Taylor Series (WR)
 For Subpopulation: KFINR = 1
 by: Variable, SUDAAN Reserved Variable One.

Variable		SUDAAN Reserved Variable One
		Total
h8atota:w8	Total	28397485842007.0
total of all assets	SE Total	1595585607020.4
	Lower 95% Limit	
	Total	25201143806870.0
	Upper 95% Limit	
	Total	31593827877144.0
	DEFF Total #4	1.7

Variance Estimation Method: Taylor Series (WR)
 For Subpopulation: KFINR = 1
 by: Variable, SUDAAN Reserved Variable One.

Variable		SUDAAN Reserved Variable One
		1
h8atota:w8	Total	28397485842007.0
total of all assets	SE Total	1595585607020.4
	Lower 95% Limit	
	Total	25201143806870.0
	Upper 95% Limit	
	Total	31593827877144.0
	DEFF Total #4	1.7

```

title "Analysis Example 5.5: NCS-R Data HH Income" ;
proc descriptive data=ncsr filetype=sas deff1 ;
nest sestrat seclustr ;
weight ncsrwtlg ;
var hhinc ;
setenv decwidth=2 ;
run ;

```

Analysis Example 5.5: NCS-R Data HH Income

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design

Sample Weight: NCSRWTLG
 Stratification Variables(s): SESTRAT
 Primary Sampling Unit: SECLUSTR

Number of observations read : 5692 Weighted count : 5692
 Number of observations skipped : 3590
 (WEIGHT variable nonpositive)
 Denominator degrees of freedom : 42

Date: 02-19-2010 SUDAAN Page: 1
 Time: 13:11:34 Table: 1

Variance Estimation Method: Taylor Series (WR)
 by: Variable, SUDAAN Reserved Variable One.

-----		SUDAAN Reserved Variable	
Variable		One	
-----		-----	
		Total	1
-----		-----	
Household	Sample Size	5692.00	5692.00
Income :	Weighted Size	5692.00	5692.00
Topcode	Total	337405044.44	337405044.44
	Lower 95% Limit		
	Total	307570947.49	307570947.49
	Upper 95% Limit		
	Total	367239141.39	367239141.39
	Mean	59277.06	59277.06
	SE Mean	1596.34	1596.34
	Lower 95% Limit		
	Mean	56055.51	56055.51
	Upper 95% Limit		
	Mean	62498.61	62498.61
	DEFF Mean #1	6.09	6.09
	DEFF Total #1	16.13	16.13
-----		-----	


```

title "Analysis Example 5.6: NHANES 2005-2006" ;
proc sort data=nhanes0506 ;
by sdmvstra sdmvpsu ;
run ;
proc descript filetype=sas deft1 data=nhanes0506 ;
nest sdmvstra sdmvpsu ;
weight wtmec2yr ;
subpopn age18p=1 ;
var bpxsy1 ;
print mean semean lowmean upmean deffmean ;
run ;

```

Analysis Example 5.6: NHANES 2005-2006

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design

Sample Weight: WTMEC2YR

Stratification Variables(s): SDMVSTRA

Primary Sampling Unit: SDMVPSU

Number of observations read : 9950 Weighted count :291616892
Number of observations skipped : 398
(WEIGHT variable nonpositive)
Observations in subpopulation : 5334 Weighted count :217700471
Denominator degrees of freedom : 15

Date: 02-19-2010
Time: 13:13:59

SUDAAN

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Variance Estimation Method: Taylor Series (WR)
For Subpopulation: AGE18P = 1
by: Variable, SUDAAN Reserved Variable One.

		SUDAAN Reserved	
Variable		Variable One	
		Total	1
Systolic:	Mean	123.11	123.11
Blood pres (1st	SE Mean	0.54	0.54
rdg) mm Hg	Lower 95% Limit		
	Mean	121.96	121.96
	Upper 95% Limit		
	Mean	124.27	124.27
	DEFF Mean #1	5.57	5.57

```

title "Analysis Example 5.7: HRS HH Level Analysis " ;
proc descriptive filetype=sas deff1 data=hrs ;
nest stratum secu ;
weight kwgthh ;
subpopn kfinr=1 ;
var h8atota ;
print mean semean lowmean upmean deffmean ;
run ;

```

Analysis Example 5.7: HRS HH Level Analysis

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization
 Method, Assuming a With Replacement (WR) Design
 Sample Weight: KWGTHH
 Stratification Variables(s): STRATUM
 Primary Sampling Unit: SECU

Number of observations read : 17826 Weighted count : 82249292
 Number of observations skipped : 641
 (WEIGHT variable nonpositive)
 Observations in subpopulation : 11942 Weighted count : 53853171
 Denominator degrees of freedom : 56

Date: 02-19-2010 SUDAAN Page: 1
 Time: 13:15:39 Table: 1

Variance Estimation Method: Taylor Series (WR)
 For Subpopulation: KFINR = 1
 by: Variable, SUDAAN Reserved Variable One.

Variable		SUDAAN Reserved Variable One	
		Total	1
h8atota:w8	Mean	527313.16	527313.16
total of all assets	SE Mean	28012.78	28012.78
	Lower 95% Limit		
	Mean	471196.82	471196.82
	Upper 95% Limit		
	Mean	583429.50	583429.50
	DEFF Mean #1	1.53	1.53

```

title "Analysis Example 5.8: HRS HH Level Analysis of Quantiles" ;
proc descriptive filetype=sas data=hrs ;
nest stratum secu ;
weight kwgthh ;
subpopn kfinr=1 ;
var h8atota ;
percentiles 25 75 / median ;
setenv decwidth=1 ;
run ;

```

Analysis Example 5.8: HRS HH Level Analysis of Quantiles

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design

Sample Weight: KWGTHH
Stratification Variables(s): STRATUM
Primary Sampling Unit: SECU

Number of observations read : 17826 Weighted count : 82249292
Number of observations skipped : 641
(WEIGHT variable nonpositive)
Observations in subpopulation : 11942 Weighted count : 53853171
Denominator degrees of freedom : 56

Date: 02-19-2010 SUDAAN Page: 1
Time: 13:17:55 Table: 1

Variance Estimation Method: Taylor Series (WR)
For Subpopulation: KFINR = 1
by: Variable, SUDAAN Reserved Variable One, Percentiles.

for: Variable = h8atota:w8 total of all assets.

SUDAAN Reserved				
Variable One	Sample	Weighted		Lower 95%
Percentiles	Size	Size	Quantile	Limit

Total				
25.00	11942.0	53853171.0	39852.9	33474.5
50.00	11942.0	53853171.0	183309.0	164645.8
75.00	11942.0	53853171.0	495931.4	461718.0
1				
25.00	11942.0	53853171.0	39852.9	33474.5
50.00	11942.0	53853171.0	183309.0	164645.8
75.00	11942.0	53853171.0	495931.4	461718.0

Variance Estimation Method: Taylor Series (WR)
For Subpopulation: KFINR = 1
by: Variable, SUDAAN Reserved Variable One, Percentiles.

for: Variable = h8atota:w8 total of all assets.

SUDAAN Reserved

Variable One Percentiles	Upper 95% Limit	SE Quantile

Total		
25.00	46573.0	3269.3
50.00	205531.9	10205.0
75.00	530401.4	17143.1
1		
25.00	46573.0	3269.3
50.00	205531.9	10205.0
75.00	530401.4	17143.1

```

proc descript filetype=sas data=hrs ;
nest stratum secu ;
weight kwgthh ;
subpopn kfinr=1 & kage > 74 ;
var h8atota ;
percentiles 25 75 / median;
setenv decwidth=1 ;
run ;

```

Analysis Example 5.8: HRS HH Level Analysis of Quantiles

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design

Sample Weight: KWGTHH
 Stratification Variables(s): STRATUM
 Primary Sampling Unit: SECU

Number of observations read : 17826 Weighted count : 82249292
 Number of observations skipped : 641
 (WEIGHT variable nonpositive)
 Observations in subpopulation : 3796 Weighted count : 13879335
 Denominator degrees of freedom : 56

Date: 02-19-2010 SUDAAN Page: 1
 Time: 13:20:28 Table: 1

Variance Estimation Method: Taylor Series (WR)
 For Subpopulation: KFINR = 1 & KAGE > 74
 by: Variable, SUDAAN Reserved Variable One, Percentiles.

for: Variable = h8atota:w8 total of all assets.

SUDAAN Reserved				
Variable One	Sample	Weighted		Lower 95%
Percentiles	Size	Size	Quantile	Limit

Total				
25.00	3796.0	13879335.0	40329.4	30081.0
50.00	3796.0	13879335.0	177781.3	157738.6
75.00	3796.0	13879335.0	461308.3	417162.7
1				
25.00	3796.0	13879335.0	40329.4	30081.0
50.00	3796.0	13879335.0	177781.3	157738.6
75.00	3796.0	13879335.0	461308.3	417162.7

Variance Estimation Method: Taylor Series (WR)
For Subpopulation: KFINR = 1 & KAGE > 74
by: Variable, SUDAAN Reserved Variable One, Percentiles.

for: Variable = h8atota:w8 total of all assets.

```
-----  
SUDAAN Reserved  
Variable One      Upper 95%      SE  
Percentiles      Limit        Quantile  
-----  
Total  
  25.00           49752.3      4909.9  
  50.00           204271.5     11614.4  
  75.00           518550.9     25306.1  
1  
  25.00           49752.3      4909.9  
  50.00           204271.5     11614.4  
  75.00           518550.9     25306.1  
-----
```

```

title "Analysis Example 5.9: NHANES Data for Ratios " ;
proc ratio data=nhanes0506 filetype=sas deft1 ;
nest sdmvstra sdmvpsu ;
weight wtmec2yr ;
subpopn age18p=1 ;
numer lbdhdd ;
denom lbxtc ;
setenv decwidth=4 ;
print nsum rhat serhat lowrhat uprhat deffrhat ;
run ;

```

Analysis Example 5.9: NHANES Data for Ratios
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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design
Sample Weight: WTMEC2YR
Stratification Variables(s): SDMVSTRA
Primary Sampling Unit: SDMVPSU

Number of observations read : 9950 Weighted count :291616892
Number of observations skipped : 398
(WEIGHT variable nonpositive)
Observations in subpopulation : 5334 Weighted count :217700471
Denominator degrees of freedom : 15

Date: 02-19-2010 SUDAAN Page: 1
Time: 13:22:16 Table: 1

Variance Estimation Method: Taylor Series (WR)
For Subpopulation: AGE18P = 1
by: Variable, SUDAAN Reserved Variable One.

Variable	SUDAAN Reserved Variable One		
	Total	1	
Direct HDL-Cholesterol (mg/dL)/Total Cholesterol(mg/dL)	Sample Size	4996.0000	4996.0000
	Ratio Est.	0.2754	0.2754
	SE Ratio	0.0023	0.0023
	Lower 95% Limit Ratio	0.2705	0.2705
	Upper 95% Limit Ratio	0.2802	0.2802
	DEFF Ratio #1	4.1879	4.1879

```

title "Analysis Example 5.10: Proportions in SubGroups: HRS" ;
proc descriptive data=hrs ;
nest stratum secu ;
weight kwgthh ;
subpopn kage > 70 ;
class gender / nofreq ;
var diabetes ;
rformat gender gf. ;
setenv decwidth=3 ;
print mean semean lowmean upmean deffmean ;
run ;

```

Analysis Example 5.10: Proportions in SubGroups: HRS
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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design
Sample Weight: KWGTHH
Stratification Variables(s): STRATUM
Primary Sampling Unit: SECU

Number of observations read : 17826 Weighted count : 82249292
Number of observations skipped : 641
(WEIGHT variable nonpositive)
Observations in subpopulation : 7247 Weighted count : 24906331
Denominator degrees of freedom : 56
Date: 02-19-2010 SUDAAN Page: 1
Time: 13:26:53 Table: 1

Variance Estimation Method: Taylor Series (WR)
For Subpopulation: KAGE > 70
by: Variable, gender.

Variable	gender			
	Total	Male	Female	
DIABETES	Mean	0.205	0.236	0.183
	SE Mean	0.007	0.008	0.008
	Lower 95% Limit			
	Mean	0.191	0.219	0.166
	Upper 95% Limit			
	Mean	0.218	0.252	0.200
	DEFF Mean #1	1.456	0.876	1.522


```

title "Analysis Example 5.11: Means by Subgroups: NHANES " ;
proc descript data=nhanes0506 filetype=sas deft1 ;
nest sdmvstra sdmvpsu ;
weight wtmec2yr ;
subpopn age > 45 ;
var bpxsy1 ;
class riagendr / nofreq ;
rformat riagendr gf. ;
setenv decwidth=4 colwidth=17 ;
run ;

```

Analysis Example 5.11: Means by Subgroups: NHANES
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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design

Sample Weight: WTMEC2YR
 Stratification Variables(s): SDMVSTRA
 Primary Sampling Unit: SDMVPSU

Number of observations read : 9950 Weighted count :291616892
 Number of observations skipped : 398
 (WEIGHT variable nonpositive)
 Observations in subpopulation : 2422 Weighted count :102959777
 Denominator degrees of freedom : 15

Date: 02-19-2010 SUDAAN Page: 1
 Time: 13:33:57 Table: 1

Variance Estimation Method: Taylor Series (WR)
 For Subpopulation: AGE > 45
 by: Variable, Gender - Adjudicated.

Variable		Gender - Adjudicated		
		Total	Male	Female
Systolic:	Sample Size	2094.0000	1093.0000	1001.0000
Blood pres (1st	Weighted Size	90292383.3863	43935737.8060	46356645.5803
rdg) mm Hg	Total	11789203985.2535	5666081553.4625	6123122431.7910
	Lower 95% Limit			
	Total	9393799981.3193	4359711536.9001	4971447625.4693
	Upper 95% Limit			
	Total	14184607989.1877	6972451570.0248	7274797238.1128
	Mean	130.5670	128.9629	132.0873
	SE Mean	0.7637	0.7567	1.0645
	Lower 95% Limit			
	Mean	128.9392	127.3501	129.8183
	Upper 95% Limit			
	Mean	132.1948	130.5757	134.3563
	DEFF Mean #1	4.1382	2.4991	3.4773
	DEFF Total #1	39.1057	20.1599	14.1460

```

* example 5.12: HRS HH Data ;
title "Analysis Example 5.12: Proportions in SubGroups: HRS" ;
proc descriptive data=sas data=hrs ;
  nest stratum secu ;
  weight kwgthh ;
  subpopn kfinr=1 ;
  class edcat / nofreq ;
  rformat edcat edcatf. ;
  var h8atota ;
  print mean semean lowmean upmean ;
  setenv decwidth=3 colwidth=12 ;
run ;

```

Analysis Example 5.12: Proportions in SubGroups: HRS

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design

Sample Weight: KWGTHH
 Stratification Variables(s): STRATUM
 Primary Sampling Unit: SECU

Number of observations read : 17826 Weighted count : 82249292
 Number of observations skipped : 641
 (WEIGHT variable nonpositive)
 Observations in subpopulation : 11942 Weighted count : 53853171
 Denominator degrees of freedom : 56

Date: 03-13-2010
Time: 08:03:43

SUDAAN

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Table: 1

Variance Estimation Method: Taylor Series (WR)
 For Subpopulation: KFINR = 1
 by: Variable, EDCAT.

Variable		EDCAT				
		Total	0-11	12	13-15	16+
h8atota:w8	Mean	528744.89	178386.05	328391.95	455457.61	1107204.10
total of all	SE Mean	28187.99	24561.12	17082.72	27000.33	102113.52
assets	Lower 95% Limit					
	Mean	472277.57	129184.22	294171.16	401369.45	902646.14
	Upper 95% Limit					
	Mean	585212.21	227587.89	362612.75	509545.77	1311762.06

```
proc descript filetype=sas data=hrs ;
nest stratum secu ;
weight kwgthh ;
subpopn kfinr=1 ;
class edcat / nofreq ;
rformat edcat edcatf. ;
var h8atota ;
contrast edcat = (1 0 0 -1) ;
setenv decwidth=3 colwidth=20 ;
run ;
```

Analysis Example 5.12: Proportions in SubGroups: HRS

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design

Sample Weight: KWGTHH
Stratification Variables(s): STRATUM
Primary Sampling Unit: SECU

Number of observations read : 17826 Weighted count : 82249292
Number of observations skipped : 641
(WEIGHT variable nonpositive)
Observations in subpopulation : 11942 Weighted count : 53853171
Denominator degrees of freedom : 56

Date: 03-13-2010
Time: 08:03:56

SUDAAN

Page: 1
Table: 1

Variance Estimation Method: Taylor Series (WR)
For Subpopulation: KFINR = 1
by: Variable, SUDAAN Reserved Variable One, Contrast.

for: Variable = h8atota:w8 total of all assets.

SUDAAN Reserved Variable One		Contrast
		CONTRAST_1
Total	Sample Size	5511.000
	Weighted Size	24236054.000
	Cntrst Total	-13442139781605.288
	Lower 95% Limit	
	Cntrst Total	-16440861556595.144
	Upper 95% Limit	
	Cntrst Total	-10443418006615.430
	Cntrst Mean	-928818.049
	SE Cntrst Mean	108250.078
	Lower 95% Limit	
	Cntrst Mean	-1145669.012
	Upper 95% Limit	
	Cntrst Mean	-711967.087
	T-Test	
Cont.Mean=0	-8.580	
P-value T-Test		
Cont. Mean=0	0.000	
1	Sample Size	5511.000
	Weighted Size	24236054.000
	Cntrst Total	-13442139781605.288
	Lower 95% Limit	
	Cntrst Total	-16440861556595.144
	Upper 95% Limit	
	Cntrst Total	-10443418006615.430
	Cntrst Mean	-928818.049
	SE Cntrst Mean	108250.078
	Lower 95% Limit	
	Cntrst Mean	-1145669.012
	Upper 95% Limit	
	Cntrst Mean	-711967.087
	T-Test	
Cont.Mean=0	-8.580	
P-value T-Test		
Cont. Mean=0	0.000	

```

title "Analysis Example 5.13: Difference in Means for Panel Data: HRS" ;
proc descriptive data=hrspanel filetype=sas ;
nest stratum secu ;
weight weight ;
subpopn finr0406=1 ;
class year / nofreq ;
var totassets ;
print mean semean lowmean upmean ;
setenv decwidth=2 ;
run ;
Analysis Example 5.13: Difference in Means for Panel Data: HRS

```

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design
 Sample Weight: WEIGHT
 Stratification Variables(s): STRATUM
 Primary Sampling Unit: SECU

Number of observations read : 35268 Weighted count :159934747
 Number of observations skipped : 1020
 (WEIGHT variable nonpositive)
 Observations in subpopulation : 23505 Weighted count :105084460
 Denominator degrees of freedom : 56

Date: 03-13-2010
 Time: 08:09:25

SUDAAN

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Variance Estimation Method: Taylor Series (WR)
 For Subpopulation: FINR0406 = 1
 by: Variable, YEAR.

Variable		YEAR		
		Total	2004	2006
TOTASSETS	Mean	470990.98	411786.38	527313.16
	SE Mean	22552.47	20639.72	28012.78
	Lower 95% Limit			
	Mean	425812.95	370440.07	471196.82
	Upper 95% Limit			
	Mean	516169.01	453132.70	583429.50

```

proc descript data=hrspanel filetype=sas ;
nest stratum secu ;
weight weight ;
subpopn finr0406=1 ;
class year / nofreq ;
var totassets ;
contrast year=(1 -1) / name="2004 versus 2006" ;
setenv decwidth=2 colwidth=19 ;
run ;

```

Analysis Example 5.13: Difference in Means for Panel Data: HRS

S U D A A N

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design

Sample Weight: WEIGHT
 Stratification Variables(s): STRATUM
 Primary Sampling Unit: SECU

Number of observations read : 35268 Weighted count :159934747
 Number of observations skipped : 1020
 (WEIGHT variable nonpositive)
 Observations in subpopulation : 23505 Weighted count :105084460
 Denominator degrees of freedom : 56

Date: 03-13-2010 SUDAAN
 Time: 08:10:12

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Variance Estimation Method: Taylor Series (WR)
 For Subpopulation: FINR0406 = 1
 by: Variable, SUDAAN Reserved Variable One, Contrast.
 for: Variable = TOTASSETS.

		Contrast
SUDAAN Reserved Variable One		----- 2004 versus 2006
Total	Sample Size	23505.00
	Weighted Size	105084460.00
	Cntrst Total	-7301138570072.47
	Lower 95% Limit	
	Cntrst Total	-9481522020686.54
	Upper 95% Limit	
	Cntrst Total	-5120755119458.40
	Cntrst Mean	-115526.78
	SE Cntrst Mean	20025.41
	Lower 95% Limit	
	Cntrst Mean	-155642.50
	Upper 95% Limit	
	Cntrst Mean	-75411.06
	T-Test	
Cont.Mean=0	-5.77	
P-value T-Test		
Cont. Mean=0	0.00	
1	Sample Size	23505.00
	Weighted Size	105084460.00
	Cntrst Total	-7301138570072.47
	Lower 95% Limit	
	Cntrst Total	-9481522020686.54
	Upper 95% Limit	
	Cntrst Total	-5120755119458.40
	Cntrst Mean	-115526.78
	SE Cntrst Mean	20025.41
	Lower 95% Limit	
	Cntrst Mean	-155642.50
	Upper 95% Limit	
	Cntrst Mean	-75411.06
	T-Test	
Cont.Mean=0	-5.77	
P-value T-Test		
Cont. Mean=0	0.00	