

CHAPTER 5 ANALYSIS EXAMPLES REPLICATION WesVar4.3

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.

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 ANALYSIS USING WesVar4.3

WesVar Tables menus can perform nearly all of the descriptive analyses presented in Chapter 5 of ASDA. WesVar uses repeated replication variance estimation methods exclusively and as a result does not offer the Taylor Series Linearization approach.

WesVar is a point and click tool with log and output files that echo the options and variables selected for the particular analysis. As a result the output presented for WesVar examples consists of the log file and selected key output file. The exact syntax is not presented since it is not generated by the program nor is it possible to run WesVar with just user-written syntax but "Workbook" files can be created for a record of the analysis session. The workbook files will be posted on the ASDA web site in the near future and would enhance this output. From the output provided, you can determine the data used, output options, variables analyzed and other details of the analysis.

Some of the fine points of this tool are the use of the subpopulation filter in the Tables statement, creation of variables used in the analyses (means, ratios, differences, etc.), various output options to specify the statistics of interest and a number of Repeated Replication variance estimation methods (JK1, JK2, BRR, etc.). For these examples, the JK2 method was used throughout but other methods are available. See the WesVar User's Guide for details.

ANALYSIS EXAMPLES 5.1 AND 5.2 NOT INCLUDED HERE DUE TO NO GRAPHICS IN WESVAR 4.3

ANALYSIS EXAMPLE 5.3 NCSR DATA

WESVAR VERSION NUMBER : 4.3
TIME THE JOB EXECUTED : 09:26:38 03/26/2010
INPUT DATASET NAME : C:\Program Files\Westat\WesVar\Data\ncsr_winter2010.var
TIME THE INPUT DATASET CREATED : 12:05:26 03/25/2010
FULL SAMPLE WEIGHT : ncsrwtsh_pop
REPLICATE WEIGHTS : RPL01...RPL42
VARIANCE ESTIMATION METHOD : JK2

ANALYSIS VARIABLES : mde
COMPUTED STATISTIC : M_mde = MEAN(mde)
TABLE(S) : MAR3CAT

FACTOR(S) : 1.00

NUMBER OF REPLICATES : 42
NUMBER OF OBSERVATIONS READ : 9282
WEIGHTED NUMBER OF OBSERVATIONS READ : 209128097.425

STATISTIC	EST_TYPE	ESTIMATE	STDERROR	LOWER 95%	UPPER 95%	DEFF
SUM_WTS	VALUE	2.09e+08	1.022e+07	7.93e+07	3.39e+08	N/A
mde	VALUE	4.01e+07	2.567e+06	7.47e+06	7.27e+07	N/A
M_mde	VALUE	0.19	0.005	0.13	0.25	1.408

WESVAR VERSION NUMBER : 4.3
 TIME THE JOB EXECUTED : 09:34:06 03/26/2010
 INPUT DATASET NAME : C:\Program Files\Westat\WesVar\Data\ncsr_winter2010.var
 TIME THE INPUT DATASET CREATED : 12:05:26 03/25/2010
 FULL SAMPLE WEIGHT : ncsrwtsh_pop
 REPLICATE WEIGHTS : RPL01...RPL42
 VARIANCE ESTIMATION METHOD : JK2

ANALYSIS VARIABLES : mde
 COMPUTED STATISTIC : M_mde = MEAN(mde)
 TABLE(S) : MAR3CAT

FACTOR(S) : 1.00

NUMBER OF REPLICATES : 42
 NUMBER OF OBSERVATIONS READ : 9282
 WEIGHTED NUMBER OF OBSERVATIONS READ : 209128097.425

Marital Status-3 categories	STATISTIC	EST_TYPE	ESTIMATE	STDERROR	LOWER 95%	UPPER 95%	DEFF
Married	mde	VALUE	2.03e+07	1.584e+06	1.71e+07	2.35e+07	6.819
Previously Married	mde	VALUE	1.04e+07	7.026e+05	8.94e+06	1.18e+07	2.968
Never Married	mde	VALUE	9.43e+06	7.731e+05	7.87e+06	1.10e+07	3.065
MARGINAL	mde	VALUE	4.01e+07	2.567e+06	3.49e+07	4.53e+07	9.029
Married	M_mde	VALUE	0.17	0.006	0.16	0.19	1.480
Previously Married	M_mde	VALUE	0.24	0.011	0.22	0.26	1.218
Never Married	M_mde	VALUE	0.19	0.010	0.17	0.21	1.324
MARGINAL	M_mde	VALUE	0.19	0.005	0.18	0.20	1.408

ANALYSIS EXAMPLE 5.4 HRS DATA

WESVAR VERSION NUMBER : 4.3
 TIME THE JOB EXECUTED : 14:43:34 04/05/2010
 INPUT DATASET NAME : C:\Program Files\Westat\WesVar\Data\final_hrs_hhwgt_JK2.var
 TIME THE INPUT DATASET CREATED : 14:22:08 04/05/2010
 FULL SAMPLE WEIGHT : KWGTHH
 REPLICATE WEIGHTS : RPL01...RPL56
 VARIANCE ESTIMATION METHOD : JK2

OPTION COMPLETE : ON
 OPTION FUNCTION LOG : ON
 OPTION VARIABLE LABEL : ON
 OPTION VALUE LABEL : ON
 OPTION OUTPUT REPLICATE ESTIMATES : OFF
 FINITE POPULATION CORRECTION FACTOR : 1.00000
 VALUE OF ALPHA (CONFIDENCE LEVEL %) : 0.05000 (95.00000 %)
 DEGREES OF FREEDOM : 56
 t VALUE : 2.003
 SUBSET CRITERIA : KFINR = 1

ANALYSIS VARIABLES : H8ATOTA
 COMPUTED STATISTIC : None Specified.
 TABLE(S) : None Specified.

FACTOR(S) : 1.00

NUMBER OF REPLICATES : 56
 NUMBER OF OBSERVATIONS READ : 12558
 WEIGHTED NUMBER OF OBSERVATIONS READ : 53853171.000
 EXCLUDED: 616 observations excluded from CELL_n because of zero weights.

STATISTIC	EST_TYPE	ESTIMATE	STDERROR	LOWER 95%	UPPER 95%	DEFF
SUM_WTS	VALUE	5.39e+07	9.831e+05	5.19e+07	5.58e+07	N/A
H8ATOTA	VALUE	2.84e+13	1.596e+12	2.52e+13	3.16e+13	N/A

ANALYSIS EXAMPLE 5.5 NCSR DATA

WESVAR VERSION NUMBER : 4.3
TIME THE JOB EXECUTED : 09:52:03 03/26/2010
INPUT DATASET NAME : C:\Program Files\Westat\WesVar\Data\final_ncsr_part2weight_JK2.var
TIME THE INPUT DATASET CREATED : 09:51:19 03/26/2010
FULL SAMPLE WEIGHT : NCSRWTLG
REPLICATE WEIGHTS : RPL01...RPL42
VARIANCE ESTIMATION METHOD : JK2

ANALYSIS VARIABLES : None Specified.
COMPUTED STATISTIC : M_HHINC = MEAN(HHINC)
TABLE(S) : None Specified.

FACTOR(S) : 1.00

NUMBER OF REPLICATES : 42
NUMBER OF OBSERVATIONS READ : 5692
WEIGHTED NUMBER OF OBSERVATIONS READ : 5692.000

STATISTIC	EST_TYPE	ESTIMATE	STDERROR	LOWER 95%	UPPER 95%	DEFF	EFF_SAMP
SUM_WTS	VALUE	5692.00	251.096	5185.27	6198.73	N/A	N/A
M_HHINC	VALUE	59277.06	1607.245	56033.51	62520.61	6.178	921.272

ANALYSIS EXAMPLE 5.6 NHANES DATA

WESVAR VERSION NUMBER : 4.3
TIME THE JOB EXECUTED : 10:01:42 03/26/2010
INPUT DATASET NAME : C:\Program Files\Westat\WesVar\Data\nhanes0506_july11_2009_JK2.var
TIME THE INPUT DATASET CREATED : 09:55:06 03/26/2010
FULL SAMPLE WEIGHT : WTMEC2YR
REPLICATE WEIGHTS : RPL01...RPL15
VARIANCE ESTIMATION METHOD : JK2

SUBSET CRITERIA : age18P = 1

ANALYSIS VARIABLES : BPXSY1
COMPUTED STATISTIC : M_BPXSY1 = MEAN(BPXSY1)
TABLE(S) : None Specified.

FACTOR(S) : 1.00

NUMBER OF REPLICATES : 15
NUMBER OF OBSERVATIONS READ : 5563
WEIGHTED NUMBER OF OBSERVATIONS READ : 217700471.284
EXCLUDED: 229 observations excluded from CELL_n because of zero weights.

STATISTIC	EST_TYPE	ESTIMATE	STDERROR	LOWER 95%	UPPER 95%	DEFF
SUM_WTS	VALUE	1.91e+08	1.249e+07	1.66e+08	2.16e+08	N/A
BPXSY1	VALUE	2.35e+10	1.520e+09	2.05e+10	2.66e+10	N/A
M_BPXSY1	VALUE	123.11	0.546	122.01	124.21	4.004

ANALYSIS EXAMPLE 5.7 HRS DATA

WESVAR VERSION NUMBER : 4.3
TIME THE JOB EXECUTED : 10:09:34 03/26/2010
INPUT DATASET NAME : C:\Program Files\Westat\WesVar\Data\final_hrs_hhwgt_JK2.var
TIME THE INPUT DATASET CREATED : 10:07:05 03/26/2010
FULL SAMPLE WEIGHT : KWGTHH
REPLICATE WEIGHTS : RPL01...RPL56
VARIANCE ESTIMATION METHOD : JK2

SUBSET CRITERIA : kfinr=1

ANALYSIS VARIABLES : None Specified.
COMPUTED STATISTIC : M_H8ATOTA = MEAN(H8ATOTA)
TABLE(S) : None Specified.

FACTOR(S) : 1.00

NUMBER OF REPLICATES : 56
NUMBER OF OBSERVATIONS READ : 12558
WEIGHTED NUMBER OF OBSERVATIONS READ : 53853171.000
EXCLUDED: 616 observations excluded from CELL_n because of zero weights.

STATISTIC	EST_TYPE	ESTIMATE	STDERROR	LOWER 95%	UPPER 95%	DEFF	EFF_SAMP
SUM_WTS	VALUE	5.39e+07	9.831e+05	5.19e+07	5.58e+07	N/A	N/A
M_H8ATOTA	VALUE	5.27e+05	2.801e+04	4.71e+05	5.84e+05	1.560	7654.599

ANALYSIS EXAMPLE 5.8 HRS DATA

WESVAR VERSION NUMBER : 4.3
TIME THE JOB EXECUTED : 10:29:09 03/26/2010
INPUT DATASET NAME : C:\Program Files\Westat\WesVar\Data\final_hrs_hhwgt_JK2.var
TIME THE INPUT DATASET CREATED : 10:07:05 03/26/2010
FULL SAMPLE WEIGHT : KWGTHH
REPLICATE WEIGHTS : RPL01...RPL56
VARIANCE ESTIMATION METHOD : JK2

SUBSET CRITERIA : KFINR = 1
OPTION BIN QUANTILE : OFF

ANALYSIS VARIABLES : None Specified.
COMPUTED STATISTIC : H8ATOTA_Q1 = QUANTILE(H8ATOTA, 0.25)
H8ATOTA_Q2 = QUANTILE(H8ATOTA, 0.5)
H8ATOTA_Q3 = QUANTILE(H8ATOTA, 0.75)
TABLE(S) : None Specified.

FACTOR(S) : 1.00

NUMBER OF REPLICATES : 56
NUMBER OF OBSERVATIONS READ : 12558
WEIGHTED NUMBER OF OBSERVATIONS READ : 53853171.000
EXCLUDED: 616 observations excluded from CELL_n because of zero weights.

STATISTIC	EST_TYPE	ESTIMATE	STDERROR	LOWER 95%	UPPER 95%
SUM_WTS	VALUE	5.39e+07	983134.890	5.19e+07	5.58e+07
H8ATOTA_Q1	VALUE	39852.93	3236.315	32916.81	45979.10
H8ATOTA_Q2	VALUE	183309.04	9909.801	164922.61	204920.19
H8ATOTA_Q3	VALUE	495931.38	17406.982	463560.08	533817.51

ANALYSIS EXAMPLE 5.9 NHANES DATA

WESVAR VERSION NUMBER : 4.3
TIME THE JOB EXECUTED : 10:20:37 03/26/2010
INPUT DATASET NAME : C:\Program Files\Westat\WesVar\Data\nhanes0506_july11_2009_JK2.var
TIME THE INPUT DATASET CREATED : 10:19:19 03/26/2010
FULL SAMPLE WEIGHT : WTMEC2YR
REPLICATE WEIGHTS : RPL01...RPL15
VARIANCE ESTIMATION METHOD : JK2

SUBSET CRITERIA : AGE18P=1

ANALYSIS VARIABLES : None Specified.
COMPUTED STATISTIC : RATIO=(LBDHDD/LBXTC)
TABLE(S) : None Specified.

FACTOR(S) : 1.00

NUMBER OF REPLICATES : 15
NUMBER OF OBSERVATIONS READ : 5563
WEIGHTED NUMBER OF OBSERVATIONS READ : 217700471.284
EXCLUDED: 229 observations excluded from CELL_n because of zero weights.

STATISTIC	EST_TYPE	ESTIMATE	STDERROR	LOWER 95%	UPPER 95%	DEFF
SUM_WTS	VALUE	2.05e+08	1.227e+07	1.81e+08	2.30e+08	N/A
RATIO	VALUE	0.28	0.002	0.27	0.28	N/A

ANALYSIS EXAMPLE 5.10 HRS DATA

WESVAR VERSION NUMBER : 4.3
TIME THE JOB EXECUTED : 11:03:15 03/26/2010
INPUT DATASET NAME : C:\Program Files\Westat\WesVar\Data\final_hrs_JK2.var
TIME THE INPUT DATASET CREATED : 10:39:00 03/26/2010
FULL SAMPLE WEIGHT : KWGTR
REPLICATE WEIGHTS : RPL01...RPL56
VARIANCE ESTIMATION METHOD : JK2

SUBSET CRITERIA : KAGE > 70 AND KFINR=1

ANALYSIS VARIABLES : DIABETES
COMPUTED STATISTIC : M_DIABETES = MEAN(DIABETES)
TABLE(S) : GENDER

FACTOR(S) : 1.00

NUMBER OF REPLICATES : 56
NUMBER OF OBSERVATIONS READ : 5757
WEIGHTED NUMBER OF OBSERVATIONS READ : 18923815.000
EXCLUDED: 406 observations excluded from CELL_n because of zero weights.

GENDER	STATISTIC	EST_TYPE	ESTIMATE	STDERROR	LOWER 95%	UPPER 95%	DEFF
MALE	M_DIABETES	VALUE	0.23	0.010	0.21	0.26	1.316
FEMALE	M_DIABETES	VALUE	0.19	0.010	0.17	0.21	1.904
MARGINAL	M_DIABETES	VALUE	0.21	0.007	0.19	0.22	1.656

ANALYSIS EXAMPLE 5.11 NHANES DATA

WESVAR VERSION NUMBER : 4.3
TIME THE JOB EXECUTED : 11:10:13 03/26/2010
INPUT DATASET NAME : C:\Program Files\Westat\WesVar\Data\nhanes0506_july11_2009_JK2.var
TIME THE INPUT DATASET CREATED : 10:19:19 03/26/2010
FULL SAMPLE WEIGHT : WTMEC2YR
REPLICATE WEIGHTS : RPL01...RPL15
VARIANCE ESTIMATION METHOD : JK2

SUBSET CRITERIA : AGE > 45

ANALYSIS VARIABLES : None Specified.
COMPUTED STATISTIC : M_BPXS1 = MEAN(BPXS1)
TABLE(S) : RIAGENDR

FACTOR(S) : 1.00

NUMBER OF REPLICATES : 15
NUMBER OF OBSERVATIONS READ : 2527
WEIGHTED NUMBER OF OBSERVATIONS READ : 102959777.366
EXCLUDED: 105 observations excluded from CELL_n because of zero weights.

RIAGENDR	STATISTIC	EST_TYPE	ESTIMATE	STDERROR	LOWER 95%	UPPER 95%	DEFF
MALE	M_BPXS1	VALUE	128.96	0.774	127.40	130.53	1.909
FEMALE	M_BPXS1	VALUE	132.09	1.089	129.89	134.28	2.302
MARGINAL	M_BPXS1	VALUE	130.57	0.783	128.99	132.15	2.958

ANALYSIS EXAMPLE 5.12 HRS DATA

WESVAR VERSION NUMBER : 4.3
 TIME THE JOB EXECUTED : 11:38:15 03/26/2010
 INPUT DATASET NAME : C:\Program Files\Westat\WesVar\Data\final_hrs_hhwgt_JK2.var
 TIME THE INPUT DATASET CREATED : 10:07:05 03/26/2010
 FULL SAMPLE WEIGHT : KWGTHH
 REPLICATE WEIGHTS : RPL01...RPL56
 VARIANCE ESTIMATION METHOD : JK2

SUBSET CRITERIA : KFINR=1

ANALYSIS VARIABLES : None Specified.
 COMPUTED STATISTIC : M_H8ATOTA = MEAN(H8ATOTA)
 TABLE(S) : EDCAT

FACTOR(S) : 1.00

NUMBER OF REPLICATES : 56
 NUMBER OF OBSERVATIONS READ : 12558
 WEIGHTED NUMBER OF OBSERVATIONS READ : 53853171.000
 EXCLUDED: 616 observations excluded from CELL_n because of zero weights.

EDCAT	STATISTIC	EST_TYPE	ESTIMATE	STDERROR	LOWER 95%	UPPER 95%	DEFF
0-11	M_H8ATOTA	VALUE	178386.05	24566.339	129173.76	227598.35	1.651
12	M_H8ATOTA	VALUE	328391.95	17060.878	294214.91	362569.00	1.607
13-15	M_H8ATOTA	VALUE	455457.61	26984.044	401402.07	509513.15	1.086
16+	M_H8ATOTA	VALUE	1107204.10	102102.829	902667.54	1311740.66	1.377
MARGINAL	M_H8ATOTA	VALUE	528744.89	28182.565	472288.43	585201.36	1.570

LABEL	STATISTIC	EST_TYPE	ESTIMATE	STDERROR	LOWER 95%	UPPER 95%
DIFFED1_ED4	M_H8ATOTA	VALUE	-928818.05	108162.027	-1.15e+06	-710538.24

ANALYSIS EXAMPLE 5.13 HRS 2004 AND 2006 DATA

WESVAR VERSION NUMBER : 4.3
 TIME THE JOB EXECUTED : 11:43:56 03/26/2010
 INPUT DATASET NAME : C:\Program Files\Westat\WesVar\Data\CHAPTER5_ex5_13_JK2.var
 TIME THE INPUT DATASET CREATED : 11:41:22 03/26/2010
 FULL SAMPLE WEIGHT : weight
 REPLICATE WEIGHTS : RPL01...RPL56
 VARIANCE ESTIMATION METHOD : JK2

SUBSET CRITERIA : finr0406 = 1

ANALYSIS VARIABLES : None Specified.
 COMPUTED STATISTIC : M_totassets = MEAN(totassets)
 TABLE(S) : year

FACTOR(S) : 1.00

NUMBER OF REPLICATES : 56
 NUMBER OF OBSERVATIONS READ : 24486
 WEIGHTED NUMBER OF OBSERVATIONS READ : 105084460.000
 EXCLUDED: 981 observations excluded from CELL_n because of zero weights.

year	STATISTIC	EST_TYPE	ESTIMATE	STDERROR	LOWER 95%	UPPER 95%	DEFF
2004	SUM_WTS	VALUE	5.12e+07	942782.854	4.93e+07	5.31e+07	N/A
2006	SUM_WTS	VALUE	5.39e+07	983134.890	5.19e+07	5.58e+07	N/A
MARGINAL	SUM_WTS	VALUE	1.05e+08	1.918e+06	1.01e+08	1.09e+08	N/A
2004	M_totassets	VALUE	411786.38	20641.642	370129.86	453442.91	2.019
2006	M_totassets	VALUE	527313.16	28007.718	470791.30	583835.03	1.560
MARGINAL	M_totassets	VALUE	470990.98	22560.774	425461.50	516520.47	2.802
LABEL	STATISTIC	EST_TYPE	ESTIMATE	STDERROR	LOWER 95%	UPPER 95%	
DIFF04_06	M_totassets	VALUE	-115526.78	19976.121	-155840.22	-75213.33	