

* Stata Analysis Examples Replication for ASDA 3rd Edition
* Berglund Fall 2024

*** CHAPTER 8

use "P:\ASDA3\Data Sets for Analysis Examples and Stata R Code\hrs12.dta", clear
svyset secu [pweight = nwgtr], strata(stratum)

* HRS example

* Table 8.1

svy: logit arthritis ib2.gender ib4.edcat nage

* Table 8.2

svy: logit arthritis ib2.gender ib4.edcat nage, or

* Table 8.3

svy: logit arthritis ib2.gender ib4.edcat nage ib2.gender#ib4.edcat

* Table 8.4

svy: logit arthritis ib2.gender ib4.edcat nage ib2.gender#c.nage

di -3.342 - 0.570 + 0.623 + 0.054*65 - 0.248

di -3.342 - 0.570 + 0.374 + 0.054*65 + 0.146

di -3.342 - 0.570 + 0.337 + 0.054*65 + 0.102

di -3.342 - 0.570 + 0.054*65

di -3.342 + 0.623 + 0.054*65

di -3.342 + 0.374 + 0.054*65

di -3.342 + 0.337 + 0.054*65

di -3.342 + 0.054*65

di exp(-0.027) / exp(0.168)

di exp(0.118) / exp(0.168)

di exp(0.037) / exp(0.168)

di exp(-0.402) / exp(0.168)

di exp(0.791) / exp(0.168)

di exp(0.542) / exp(0.168)

di exp(0.505) / exp(0.168)

* First, use svy: logit to estimate the model.

svy: logit arthritis ib2.gender ib4.edcat nage ib2.gender#ib4.edcat

* men age 65 with < HS education vs. women age 65 with

* college education: odds ratio computation

nlcom exp((65*_b[nage] + 1*_b[1.gender] + 1*_b[1.edcat] ///
+ 0*_b[2.edcat] + 0*_b[3.edcat] + 1*_b[1.edcat#1.gender] ///
+ 0*_b[2.edcat#1.gender] + 0*_b[3.edcat#1.gender] + _b[_cons]) - ///
(65*_b[nage] + 0*_b[1.gender] + 0*_b[1.edcat] + 0*_b[2.edcat] + ///
0*_b[3.edcat] + 0*_b[1.edcat#1.gender] + 0*_b[2.edcat#1.gender] + ///
0*_b[3.edcat#1.gender] + _b[_cons]))

* Fit model including interaction of gender and education.

svy: logit arthritis ib2.gender ib4.edcat nage ib2.gender#ib4.edcat

* Figure 8.3

* Compute marginal effects of less than high school

* education (vs. college) on predicted

* probability of arthritis for males and females.

margins, dydx(1.edcat) by(gender)

marginsplot

graph save Graph "P:\ASDA3\Replication Stata\Chapter 8\fig83a.gph", replace

margins, dydx(2.edcat) by(gender)

marginsplot

graph save Graph "P:\ASDA3\Replication Stata\Chapter 8\fig83b.gph", replace

graph combine "P:\ASDA3\Replication Stata\Chapter 8\fig83a.gph" "P:\ASDA3\Replication Stata\Chapter 8\fig83b.gph"

* Figure 8.4

margins, dydx(1.edcat) by(gender) at(nage=(50(10)90))

marginsplot

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* Example 8.1 (Called 8.5 in Tables), Data Used is NCS-R
use "E:\ASDA3\Data Sets for Analysis Examples and Stata R Code\ncsr.dta", clear
svyset seclustr [pweight = ncsrwtlg], strata(sestrat)
svy: tab ag4cat mde, row se
svy: tab sex mde, row se
svy: tab ald mde, row se
svy: tab ED4CAT mde, row se
svy: tab MAR3CAT mde, row se

```

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* Table 8.6 and 8.7
svy: logistic mde i.ag4cat ib2.sex ald i.ED4CAT i.MAR3CAT
svy: logistic mde i.ag4cat ib2.sex ald i.ED4CAT i.MAR3CAT, coef

svy: logit mde i.ag4cat ib2.sex ald i.ED4CAT i.MAR3CAT
svy: logit mde i.ag4cat ib2.sex ald i.ED4CAT i.MAR3CAT, or

```

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* Table 8.8
test 2.ag4cat 3.ag4cat 4.ag4cat
test 2.MAR3CAT 3.MAR3CAT
test 2.ED4CAT 3.ED4CAT 4.ED4CAT

```

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* Figure 8.5
margins, dydx(ald) by(ag4cat)
marginsplot

```

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estat gof
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* Table 8.9
svy: logit mde i.ag4cat ib2.sex ald i.ED4CAT i.MAR3CAT ///
i.ag4cat#ib2.sex ib2.sex#c.ald i.ED4CAT#ib2.sex ///
i.MAR3CAT#ib2.sex

```

```

* Table 8.10
test 2.ag4cat#1.sex 3.ag4cat#1.sex 4.ag4cat#1.sex
test 1.sex#c.ald
test 2.ED4CAT#1.sex 3.ED4CAT#1.sex 4.ED4CAT#1.sex
test 2.MAR3CAT#1.sex 3.MAR3CAT#1.sex

```

```

* Test need for weighted estimation
svyset seclustr, strata(sestrat)

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```

svy: logit mde i.ag4cat ib2.sex ald i.ED4CAT i.MAR3CAT ///
ncsrwtlg c.ncsrwtlg#i.ag4cat c.ncsrwtlg#ib2.sex ///
c.ncsrwtlg#c.ald c.ncsrwtlg#i.ED4CAT c.ncsrwtlg#i.MAR3CAT

test ncsrwtlg c.ncsrwtlg#2.ag4cat c.ncsrwtlg#3.ag4cat ///
c.ncsrwtlg#4.ag4cat c.ncsrwtlg#1.sex ///
c.ncsrwtlg#c.ald c.ncsrwtlg#2.ED4CAT c.ncsrwtlg#3.ED4CAT ///
c.ncsrwtlg#4.ED4CAT c.ncsrwtlg#2.MAR3CAT ///
c.ncsrwtlg#3.MAR3CAT

```

```
* Table 8.12
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```
svyset seclustr [pweight = ncsrwtlg], strata(sestrat)
```

```

svy: logit ald i.ag4cat ib2.sex i.ED4CAT i.MAR3CAT
test 2.ag4cat 3.ag4cat 4.ag4cat
test 2.MAR3CAT 3.MAR3CAT
test 2.ED4CAT 3.ED4CAT 4.ED4CAT

```

```

svy: probit ald i.ag4cat ib2.sex i.ED4CAT i.MAR3CAT
test 2.ag4cat 3.ag4cat 4.ag4cat
test 2.MAR3CAT 3.MAR3CAT
test 2.ED4CAT 3.ED4CAT 4.ED4CAT

```

```

svy: cloglog ald i.ag4cat ib2.sex i.ED4CAT i.MAR3CAT
test 2.ag4cat 3.ag4cat 4.ag4cat
test 2.MAR3CAT 3.MAR3CAT
test 2.ED4CAT 3.ED4CAT 4.ED4CAT

```