# texdoc 2.0
# An update on creating LaTeX documents from within Stata

## Example 2

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UK Stata Users Group meeting
London, September 89, 2016

## Contents

# 1 The texdoc source file

— *crosswise09.texdoc* —

```
texdoc init crosswise09, replace logdir logall

/***
\documentclass{article}
\usepackage{stata}
\usepackage{graphicx, hyperref}

\title{My Analysis of the Crosswise09 Data}
\author{Ben Jann}
\date{\today}

\begin{document}

\maketitle

\tableofcontents

\section{Settings}

***/

about
version 14.1
clear all
set linesize 100
set type double
set more off
// required user packages: fre, rrreg, rrlogit, estout, coefplot

/***

\section{Number of Observations}

***/

use crosswise09.dta
fre uni
fre version
fre f7
tab uni version, chi2 exact
gen byte touse = (f7!=1) | inlist(b1,1,2) | inlist(b2,1,2) ///
                         | inlist(f11,1,2) | inlist(f12,1,2)
fre touse
fre version if touse
tab uni version if touse, chi2 exact

/***
```

```
\section{Item-Nonresponse}

***/

gen byte partial    = b1==1  if inlist(b1,1,2)  & version==1 & touse
gen byte severe     = b2==1  if inlist(b2,1,2)  & version==1 & touse
replace  partial    = f11==1 if inlist(f11,1,2) & version==2 & touse
replace  severe     = f12==1 if inlist(f12,1,2) & version==2 & touse
gen byte missing = (partial>=.)
tab version missing if touse, missing row
drop missing
gen byte missing = (severe>=.)
tab version missing if touse, missing row
drop missing
gen byte missing = (partial>=.) | (severe>=.)
tab version missing if touse, missing row
drop missing
count if (partial<.) & (severe>=.) & touse
count if (partial>=.) & (severe<.) & touse

/***

\section{Table 1: Descriptives}

***/

su f2 if touse
egen byte agecat = cut(f2) if touse, at(18,23,28,`r(max)')
tab agecat version if touse, chi2 exact col
tab f1 version if touse, chi2 exact col
tab f3 version if touse, chi2 exact col

/***

\section{Table 2: Prevalence estimates}

***/

gen byte crosswise  = version==1 if touse
gen pyes            = cond(crosswise, 0.25, 1) if touse

// - direct questioning (DQ)

reg partial if crosswise==0
reg severe  if crosswise==0

// - crosswise model (CM)

rrreg partial if crosswise, pw(pyes)
rrreg severe  if crosswise, pw(pyes)
```

```
// - difference between DQ and CM

rrreg partial crosswise, pw(pyes) robust hc2
rrreg severe  crosswise, pw(pyes) robust hc2

/***

\section{Table 3: Regression estimates}

***/

gen byte female     = f1==2 if inlist(f1,1,2)
gen byte internet   = f8_4==1
gen byte students   = f8_5==1
gen byte papers3or4 = f7==3 if f7<.
gen byte papers5    = f7==4 if f7<.
gen byte zurich     = uni==1
gen byte munich     = uni==2

su partial crosswise zurich munich female  ///
    papers3or4 papers5 internet students if partial<.
su partial crosswise zurich munich female  ///
    papers3or4 papers5 internet students if partial<. & crosswise==1

eststo reg1: rrreg partial ///
    zurich munich ///
    female papers3or4 papers5 internet students  ///
    if crosswise, pw(pyes) robust
test zurich = munich

eststo logit1: rrlogit partial ///
    zurich munich ///
    female papers3or4 papers5 internet students ///
    if crosswise, pw(pyes) robust
test zurich = munich

eststo reg2: rrreg partial crosswise ///
    zurich munich ///
    female papers3or4 papers5 internet students ///
    , pw(pyes) robust
test zurich = munich

eststo logit2: rrlogit partial crosswise ///
    zurich munich ///
    female papers3or4 papers5 internet students ///
    , pw(pyes) nolog robust
test zurich = munich

esttab reg1 reg2 logit1 logit2, order(crosswise) ///
    compress mtitle nonumber star(+ 0.1 * 0.05 ** 0.01 *** 0.001)
```

```
/***

\section{Graph: Regression estimates}

***/

coefplot reg2 reg1 || logit2 logit1, drop(_cons) xline(0) ///
    bylabels(LPM Logit) byopts(xrescale legend(off))
texdoc graph

/***

\end{document}
```

*— end of file —*

## 2 The resulting LaTeX source file

Applying

```
. texdoc do crosswise09.texdoc
```

generates to the following LaTeX file.

— *crosswise09.tex* —

```
\documentclass{article}
\usepackage{stata}
\usepackage{graphicx, hyperref}

\title{My Analysis of the Crosswise09 Data}
\author{Ben Jann}
\date{\today}

\begin{document}

\maketitle

\tableofcontents

\section{Settings}

\begin{stlog}\input{crosswise09/1.log.tex}\end{stlog}

\section{Number of Observations}

\begin{stlog}\input{crosswise09/2.log.tex}\end{stlog}

\section{Item-Nonresponse}

\begin{stlog}\input{crosswise09/3.log.tex}\end{stlog}

\section{Table 1: Descriptives}

\begin{stlog}\input{crosswise09/4.log.tex}\end{stlog}

\section{Table 2: Prevalence estimates}

\begin{stlog}\input{crosswise09/5.log.tex}\end{stlog}

\section{Table 3: Regression estimates}

\begin{stlog}\input{crosswise09/6.log.tex}\end{stlog}

\section{Graph: Regression estimates}

\begin{stlog}\input{crosswise09/7.log.tex}\end{stlog}
\begin{center}
    \includegraphics{crosswise09/7}
```

```
\end{center}

\end{document}
```

*— end of file —*

# 3 The resulting PDF

The following pages display the resulting PDF after compiling the LaTeX source file.

# My Analysis of the Crosswise09 Data

Ben Jann

September 8, 2016

## Contents



## 1 Settings

```
. about
Stata/MP 14.1 for Mac (64-bit Intel)
Revision 20 Jul 2016
Copyright 1985-2015 StataCorp LP
Total physical memory:    8.01 GB
30-user 2-core Stata network perpetual license:
       Serial number:  501406208640
         Licensed to:  Ben Jann
                       University of Bern
. version 14.1
. clear all
. set linesize 100
. set type double
. set more off
. // required user packages: fre, rrreg, rrlogit, estout, coefplot
```

# 2 Number of Observations

```
. use crosswise09.dta
. fre uni
uni -- location of data collection
```

| | | Freq. | Percent | Valid | Cum. |
|---|---|---|---|---|---|
| Valid | 1 ETH Zurich | 111 | 23.42 | 23.42 | 23.42 |
| | 2 LMU Munich | 90 | 18.99 | 18.99 | 42.41 |
| | 3 University Leipzig | 273 | 57.59 | 57.59 | 100.00 |
| | Total | 474 | 100.00 | 100.00 | |

```
. fre version
version -- experimental condition
```

| | | Freq. | Percent | Valid | Cum. |
|---|---|---|---|---|---|
| Valid | 1 crosswise | 358 | 75.53 | 75.53 | 75.53 |
| | 2 direct | 116 | 24.47 | 24.47 | 100.00 |
| | Total | 474 | 100.00 | 100.00 | |

```
. fre f7
f7 -- number of papers
```

| | | Freq. | Percent | Valid | Cum. |
|---|---|---|---|---|---|
| Valid | 1 none | 65 | 13.71 | 13.74 | 13.74 |
| | 2 one or two | 178 | 37.55 | 37.63 | 51.37 |
| | 3 three or four | 111 | 23.42 | 23.47 | 74.84 |
| | 4 five or more | 119 | 25.11 | 25.16 | 100.00 |
| | Total | 473 | 99.79 | 100.00 | |
| Missing | . | 1 | 0.21 | | |
| Total | | 474 | 100.00 | | |

```
. tab uni version, chi2 exact
Enumerating sample-space combinations:
stage 3:  enumerations = 1
stage 2:  enumerations = 2
stage 1:  enumerations = 0
```

| location of data collection | experimental condition: crosswise | direct | Total |
|---|---|---|---|
| ETH Zurich | 85 | 26 | 111 |
| LMU Munich | 68 | 22 | 90 |
| University Leipzig | 205 | 68 | 273 |
| Total | 358 | 116 | 474 |

```
          Pearson chi2(2) =   0.0942   Pr = 0.954
           Fisher´s exact =                 0.967
. gen byte touse = (f7!=1) | inlist(b1,1,2) | inlist(b2,1,2) ///
>                          | inlist(f11,1,2) | inlist(f12,1,2)
. fre touse
touse
```

| | | Freq. | Percent | Valid | Cum. |
|---|---|---|---|---|---|
| Valid | 0 | 64 | 13.50 | 13.50 | 13.50 |
| | 1 | 410 | 86.50 | 86.50 | 100.00 |
| | Total | 474 | 100.00 | 100.00 | |

```
. fre version if touse
version ── experimental condition
```

| | | Freq. | Percent | Valid | Cum. |
|---|---|---|---|---|---|
| Valid | 1 crosswise | 313 | 76.34 | 76.34 | 76.34 |
| | 2 direct | 97 | 23.66 | 23.66 | 100.00 |
| | Total | 410 | 100.00 | 100.00 | |

```
. tab uni version if touse, chi2 exact
Enumerating sample-space combinations:
stage 3:  enumerations = 1
stage 2:  enumerations = 1
stage 1:  enumerations = 0
```

| location of data collection | experimental condition: crosswise | direct | Total |
|---|---|---|---|
| ETH Zurich | 55 | 16 | 71 |
| LMU Munich | 66 | 21 | 87 |
| University Leipzig | 192 | 60 | 252 |
| Total | 313 | 97 | 410 |

```
          Pearson chi2(2) =   0.0639   Pr = 0.969
           Fisher´s exact =                 0.972
```

# 3 Item-Nonresponse

```
. gen byte partial    = b1==1  if inlist(b1,1,2)  & version==1 & touse
(164 missing values generated)
. gen byte severe     = b2==1  if inlist(b2,1,2)  & version==1 & touse
(164 missing values generated)
. replace  partial    = f11==1 if inlist(f11,1,2) & version==2 & touse
(96 real changes made)
. replace  severe     = f12==1 if inlist(f12,1,2) & version==2 & touse
(96 real changes made)
. gen byte missing = (partial>=.)
. tab version missing if touse, missing row
```

| Key |
|---|
| *frequency*<br>*row percentage* |

| experiment al | missing |
|---|---|

| condition | 0 | 1 | Total |
|---|---|---|---|
| crosswise | 310 | 3 | 313 |
| | 99.04 | 0.96 | 100.00 |
| direct | 96 | 1 | 97 |
| | 98.97 | 1.03 | 100.00 |
| Total | 406 | 4 | 410 |
| | 99.02 | 0.98 | 100.00 |

```
. drop missing
. gen byte missing = (severe>=.)
. tab version missing if touse, missing row
```

| Key |
|---|
| *frequency*<br>*row percentage* |

| experimental condition | missing 0 | 1 | Total |
|---|---|---|---|
| crosswise | 310 | 3 | 313 |
| | 99.04 | 0.96 | 100.00 |
| direct | 96 | 1 | 97 |
| | 98.97 | 1.03 | 100.00 |
| Total | 406 | 4 | 410 |
| | 99.02 | 0.98 | 100.00 |

```
. drop missing
. gen byte missing = (partial>=.) | (severe>=.)
. tab version missing if touse, missing row
```

| Key |
|---|
| *frequency*<br>*row percentage* |

| experimental condition | missing 0 | 1 | Total |
|---|---|---|---|
| crosswise | 309 | 4 | 313 |
| | 98.72 | 1.28 | 100.00 |
| direct | 96 | 1 | 97 |
| | 98.97 | 1.03 | 100.00 |
| Total | 405 | 5 | 410 |
| | 98.78 | 1.22 | 100.00 |

```
. drop missing
. count if (partial<.) & (severe>=.) & touse
  1
```

```
. count if (partial>=.) & (severe<.) & touse
  1
```

# 4 Table 1: Descriptives

```
. su f2 if touse
```

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| f2 | 407 | 23.24324 | 3.799442 | 18 | 60 |

```
. egen byte agecat = cut(f2) if touse, at(18,23,28,`r(max)´)
(68 missing values generated)

. tab agecat version if touse, chi2 exact col
```

| Key |
|---|
| *frequency*<br>*column percentage* |

```
Enumerating sample-space combinations:
stage 3:  enumerations = 1
stage 2:  enumerations = 6
stage 1:  enumerations = 0
```

| | experimental condition | |
|---|---|---|
| agecat | crosswise | direct | Total |
| 18 | 154 | 47 | 201 |
| | 49.52 | 49.47 | 49.51 |
| 23 | 126 | 42 | 168 |
| | 40.51 | 44.21 | 41.38 |
| 28 | 31 | 6 | 37 |
| | 9.97 | 6.32 | 9.11 |
| Total | 311 | 95 | 406 |
| | 100.00 | 100.00 | 100.00 |

```
          Pearson chi2(2) =   1.3053   Pr = 0.521
           Fisher´s exact =                 0.557

. tab f1 version if touse, chi2 exact col
```

| Key |
|---|
| *frequency*<br>*column percentage* |

| | experimental condition | |
|---|---|---|
| sex | crosswise | direct | Total |
| male | 154 | 42 | 196 |
| | 49.68 | 43.30 | 48.16 |
| female | 156 | 55 | 211 |

```
             |      50.32       56.70 |      51.84
-------------+---------------------------------+-----------
       Total |         310          97 |         407
             |      100.00      100.00 |      100.00

          Pearson chi2(1) =   1.2040   Pr = 0.273
           Fisher´s exact =                 0.296
   1-sided Fisher´s exact =                 0.163
```

```
. tab f3 version if touse, chi2 exact col
```

| Key |
|---|
| *frequency*<br>*column percentage* |

```
                |      experimental
                |        condition
    nationality | crosswise     direct |     Total
----------------+----------------------+----------
german or swiss |      288         93 |       381
                |    92.90      95.88 |     93.61
----------------+----------------------+----------
          other |       22          4 |        26
                |     7.10       4.12 |      6.39
----------------+----------------------+----------
          Total |      310         97 |       407
                |   100.00     100.00 |    100.00

          Pearson chi2(1) =   1.0920   Pr = 0.296
           Fisher´s exact =                 0.351
   1-sided Fisher´s exact =                 0.214
```

# 5 Table 2: Prevalence estimates

```
. gen byte crosswise  = version==1 if touse
(64 missing values generated)
. gen pyes            = cond(crosswise, 0.25, 1) if touse
(64 missing values generated)

. // - direct questioning (DQ)
.
. reg partial if crosswise==0
      Source |       SS           df       MS      Number of obs   =        96
-------------+----------------------------------   F(0, 95)        =      0.00
       Model |           0         0           .   Prob > F        =         .
    Residual |  6.48958333        95  .068311404   R-squared       =    0.0000
-------------+----------------------------------   Adj R-squared   =    0.0000
       Total |  6.48958333        95  .068311404   Root MSE        =    .26136

------------------------------------------------------------------------------
     partial |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       _cons |   .0729167   .0266754     2.73   0.007     .0199593     .125874
------------------------------------------------------------------------------

. reg severe  if crosswise==0
      Source |       SS           df       MS      Number of obs   =        96
-------------+----------------------------------   F(0, 95)        =      0.00
```

```
      Model |          0         0          .   Prob > F        =         .
   Residual |  .989583333        95  .010416667   R-squared       =    0.0000
-------------+------------------------------   Adj R-squared   =    0.0000
      Total |  .989583333        95  .010416667   Root MSE        =    .10206

------------------------------------------------------------------------------
      severe |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       _cons |   .0104167   .0104167     1.00   0.320     -.010263    .0310964
------------------------------------------------------------------------------

.
. // - crosswise model (CM)
.
. rrreg partial if crosswise, pw(pyes)
Randomized response regression                  Number of obs     =        310
                                                F(   0,    309)   =       0.00
                                                Prob > F          =          .
                                                R-squared         =     0.0000
                                                Adj R-squared     =     0.0000
                                                Root MSE          =     0.9623

------------------------------------------------------------------------------
     partial |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       _cons |   .2225806   .0546551     4.07   0.000     .1150374    .3301239
------------------------------------------------------------------------------

Pr(non-negated question) = pyes
Pr(surrogate "yes")      = 0
Pr(surrogate "no")       = 0
. rrreg severe  if crosswise, pw(pyes)
Randomized response regression                  Number of obs     =        310
                                                F(   0,    309)   =       0.00
                                                Prob > F          =          .
                                                R-squared         =     0.0000
                                                Adj R-squared     =     0.0000
                                                Root MSE          =     0.8766

------------------------------------------------------------------------------
      severe |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       _cons |    .016129   .0497849     0.32   0.746    -.0818313    .1140894
------------------------------------------------------------------------------

Pr(non-negated question) = pyes
Pr(surrogate "yes")      = 0
Pr(surrogate "no")       = 0

.
. // - difference between DQ and CM
.
. rrreg partial crosswise, pw(pyes) robust hc2
Randomized response regression                  Number of obs     =        406
                                                F(   1,    404)   =       6.05
                                                Prob > F          =     0.0143
                                                R-squared         =     0.0056
                                                Adj R-squared     =     0.0031
                                                Root MSE          =     0.8511

------------------------------------------------------------------------------
             |               Robust
     partial |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   crosswise |    .149664   .0608271     2.46   0.014     .0300868    .2692411
------------------------------------------------------------------------------
```

```
       _cons |   .0729167   .0266017     2.74   0.006     .0206216    .1252117
------------------------------------------------------------------------------

Pr(non-negated question) = pyes
Pr(surrogate "yes")      = 0
Pr(surrogate "no")       = 0

. rrreg severe  crosswise, pw(pyes) robust hc2

Randomized response regression                  Number of obs     =        406
                                                F(   1,    404)   =       0.01
                                                Prob > F          =     0.9107
                                                R-squared         =     0.0000
                                                Adj R-squared     =    -0.0025
                                                Root MSE          =     0.7682

------------------------------------------------------------------------------
             |               Robust
      severe |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   crosswise |   .0057124   .0508988     0.11   0.911    -.0943471    .1057719
       _cons |   .0104167   .0103879     1.00   0.317    -.0100044    .0308377
------------------------------------------------------------------------------

Pr(non-negated question) = pyes
Pr(surrogate "yes")      = 0
Pr(surrogate "no")       = 0
```

# 6 Table 3: Regression estimates

```
. gen byte female     = f1==2 if inlist(f1,1,2)
(3 missing values generated)

. gen byte internet   = f8_4==1

. gen byte students   = f8_5==1

. gen byte papers3or4 = f7==3 if f7<.
(1 missing value generated)

. gen byte papers5    = f7==4 if f7<.
(1 missing value generated)

. gen byte zurich     = uni==1

. gen byte munich     = uni==2

.
. su partial crosswise zurich munich female  ///
>     papers3or4 papers5 internet students if partial<.
    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
     partial |        406    .5049261    .5005926          0          1
   crosswise |        406    .7635468    .4254279          0          1
      zurich |        406    .1724138    .3782058          0          1
      munich |        406    .2093596    .4073535          0          1
      female |        403    .5186104    .5002746          0          1
-------------+---------------------------------------------------------
  papers3or4 |        405    .2691358    .4440592          0          1
     papers5 |        405    .2888889    .4538068          0          1
    internet |        406    .8940887    .3081038          0          1
    students |        406    .2413793    .4284478          0          1

. su partial crosswise zurich munich female  ///
>     papers3or4 papers5 internet students if partial<. & crosswise==1
```

```
    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
     partial |        310    .6387097    .4811511          0          1
   crosswise |        310           1           0          1          1
      zurich |        310    .1741935    .3798891          0          1
      munich |        310    .2096774    .4077365          0          1
      female |        307     .504886    .5007924          0          1
-------------+---------------------------------------------------------
  papers3or4 |        309    .2944984    .4565563          0          1
     papers5 |        309    .2912621     .455081          0          1
    internet |        310     .883871    .3208976          0          1
    students |        310    .2290323    .4208894          0          1
```

```
.
. eststo reg1: rrreg partial ///
>     zurich munich ///
>     female papers3or4 papers5 internet students  ///
>     if crosswise, pw(pyes) robust
Randomized response regression                  Number of obs     =        306
                                                F(   7,    298)   =       1.23
                                                Prob > F          =     0.2841
                                                R-squared         =     0.0258
                                                Adj R-squared     =     0.0029
                                                Root MSE          =     0.9599
------------------------------------------------------------------------------
             |               Robust
     partial |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      zurich |   .1297747   .1679073     0.77   0.440    -.2006596    .4602089
      munich |  -.2022313   .1352413    -1.50   0.136    -.4683803    .0639178
      female |   .0313942   .1168534     0.27   0.788    -.1985681    .2613565
  papers3or4 |  -.1129604   .1359154    -0.83   0.407     -.380436    .1545152
     papers5 |   .0879665   .1432817     0.61   0.540    -.1940055    .3699386
    internet |   .1726924   .1687123     1.02   0.307    -.1593261    .5047109
    students |   .1897438   .1378786     1.38   0.170    -.0815952    .4610829
       _cons |   .0344005   .1662536     0.21   0.836    -.2927793    .3615803
------------------------------------------------------------------------------

Pr(non-negated question) = pyes
Pr(surrogate "yes")      = 0
Pr(surrogate "no")       = 0

. test zurich = munich

 ( 1)  zurich - munich = 0

       F(  1,   298) =    2.97
            Prob > F =    0.0860

.
. eststo logit1: rrlogit partial ///
>     zurich munich ///
>     female papers3or4 papers5 internet students ///
>     if crosswise, pw(pyes) robust

Fitting constant-only model:

Iteration 0:   log pseudolikelihood = -212.10304
Iteration 1:   log pseudolikelihood = -199.85397
Iteration 2:   log pseudolikelihood = -199.85373
Iteration 3:   log pseudolikelihood = -199.85373

Fitting full model:

Iteration 0:   log pseudolikelihood = -199.85373
Iteration 1:   log pseudolikelihood = -198.77043
Iteration 2:   log pseudolikelihood = -197.73043
```

```
Iteration 3:   log pseudolikelihood = -196.81341
Iteration 4:   log pseudolikelihood = -196.68131
Iteration 5:   log pseudolikelihood = -196.68051
Iteration 6:   log pseudolikelihood = -196.68051

Randomized response logistic regression         Number of obs     =        306
                                                Nonzero outcomes  =        196
P(non-negated question) =  pyes                 Zero outcomes     =        110
P(surrogate "yes")      =  0                    Wald chi2(7)      =       6.36
P(surrogate "no")       =  0                    Prob > chi2       =     0.4987
Log pseudolikelihood = -196.68051               Pseudo R2         =     0.0159
```

| partial | Coef. | Robust Std. Err. | z | P>\|z\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| zurich | .5216706 | .9830921 | 0.53 | 0.596 | -1.405155 | 2.448496 |
| munich | -1.001754 | .9174338 | -1.09 | 0.275 | -2.799891 | .7963832 |
| female | .2318339 | .8098296 | 0.29 | 0.775 | -1.355403 | 1.819071 |
| papers3or4 | -.6753206 | .8620195 | -0.78 | 0.433 | -2.364848 | 1.014207 |
| papers5 | .2226108 | .8264936 | 0.27 | 0.788 | -1.397287 | 1.842509 |
| internet | 1.011847 | 1.588698 | 0.64 | 0.524 | -2.101945 | 4.125639 |
| students | .9554459 | .7934316 | 1.20 | 0.229 | -.5996515 | 2.510543 |
| _cons | -2.303029 | 1.297016 | -1.78 | 0.076 | -4.845134 | .2390766 |

```
. test zurich = munich
 ( 1)  [partial]zurich - [partial]munich = 0
           chi2(  1) =    1.64
         Prob > chi2 =    0.2001
.
. eststo reg2: rrreg partial crosswise ///
>     zurich munich ///
>     female papers3or4 papers5 internet students ///
>     , pw(pyes) robust

Randomized response regression                  Number of obs     =        402
                                                F(   8,    393)   =       1.70
                                                Prob > F          =     0.0976
                                                R-squared         =     0.0268
                                                Adj R-squared     =     0.0070
                                                Root MSE          =     0.8472
```

| partial | Coef. | Robust Std. Err. | t | P>\|t\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| crosswise | .1722132 | .0640163 | 2.69 | 0.007 | .046356 | .2980703 |
| zurich | .122656 | .1280605 | 0.96 | 0.339 | -.1291133 | .3744253 |
| munich | -.1326625 | .1057303 | -1.25 | 0.210 | -.3405302 | .0752052 |
| female | .0409437 | .0889149 | 0.46 | 0.645 | -.1338647 | .2157522 |
| papers3or4 | -.097614 | .1074576 | -0.91 | 0.364 | -.3088777 | .1136497 |
| papers5 | .0471034 | .109144 | 0.43 | 0.666 | -.1674756 | .2616825 |
| internet | .1475172 | .1376815 | 1.07 | 0.285 | -.1231672 | .4182016 |
| students | .1606791 | .1024078 | 1.57 | 0.117 | -.0406565 | .3620148 |
| _cons | -.1198158 | .1376898 | -0.87 | 0.385 | -.3905164 | .1508849 |

```
Pr(non-negated question) = pyes
Pr(surrogate "yes")      = 0
Pr(surrogate "no")       = 0
. test zurich = munich
 ( 1)  zurich - munich = 0
```

```
       F(  1,   393) =    2.83
            Prob > F =    0.0935

.
. eststo logit2: rrlogit partial crosswise ///
>     zurich munich ///
>     female papers3or4 papers5 internet students ///
>     , pw(pyes) nolog robust
Randomized response logistic regression         Number of obs     =        402
                                                Nonzero outcomes  =        203
P(non-negated question) =  pyes                 Zero outcomes     =        199
P(surrogate "yes")      =  0                    Wald chi2(8)      =      15.36
P(surrogate "no")       =  0                    Prob > chi2       =     0.0526
Log pseudolikelihood = -220.02124               Pseudo R2         =     0.0339

------------------------------------------------------------------------------
             |               Robust
     partial |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   crosswise |    1.640846   .5820506     2.82   0.005      .5000476    2.781644
      zurich |     .7572907   .7581485     1.00   0.318     -.7286531    2.243234
      munich |    -.2324246   .7642652    -0.30   0.761     -1.730357    1.265508
      female |     .5202687   .5969944     0.87   0.383     -.6498187    1.690356
  papers3or4 |    -.7994094   .7180947    -1.11   0.266     -2.206849    .6080304
     papers5 |    -.3420689   .7012229    -0.49   0.626      -1.71644    1.032303
    internet |     1.392363   1.848611     0.75   0.451     -2.230848    5.015574
    students |     1.072526    .558806     1.92   0.055      -.022714    2.167765
       _cons |    -4.524949   1.658885    -2.73   0.006     -7.776303   -1.273595
------------------------------------------------------------------------------

. test zurich = munich
 ( 1)  [partial]zurich - [partial]munich = 0

           chi2(  1) =    1.03
         Prob > chi2 =    0.3110

.
. esttab reg1 reg2 logit1 logit2, order(crosswise) ///
>     compress mtitle nonumber star(+ 0.1 * 0.05 ** 0.01 *** 0.001)
```

| | reg1 | reg2 | logit1 | logit2 |
|---|---|---|---|---|
| main | | | | |
| crosswise | | 0.172** | | 1.641** |
| | | (2.69) | | (2.82) |
| zurich | 0.130 | 0.123 | 0.522 | 0.757 |
| | (0.77) | (0.96) | (0.53) | (1.00) |
| munich | -0.202 | -0.133 | -1.002 | -0.232 |
| | (-1.50) | (-1.25) | (-1.09) | (-0.30) |
| female | 0.0314 | 0.0409 | 0.232 | 0.520 |
| | (0.27) | (0.46) | (0.29) | (0.87) |
| papers3or4 | -0.113 | -0.0976 | -0.675 | -0.799 |
| | (-0.83) | (-0.91) | (-0.78) | (-1.11) |
| papers5 | 0.0880 | 0.0471 | 0.223 | -0.342 |
| | (0.61) | (0.43) | (0.27) | (-0.49) |
| internet | 0.173 | 0.148 | 1.012 | 1.392 |
| | (1.02) | (1.07) | (0.64) | (0.75) |
| students | 0.190 | 0.161 | 0.955 | 1.073+ |
| | (1.38) | (1.57) | (1.20) | (1.92) |
| _cons | 0.0344 | -0.120 | -2.303+ | -4.525** |

```
                (0.21)        (-0.87)       (-1.78)       (-2.73)
------------------------------------------------------------------
N                  306           402           306           402
------------------------------------------------------------------
t statistics in parentheses
+ p<0.1, * p<0.05, ** p<0.01, *** p<0.001
```

# 7 Graph: Regression estimates

```
. coefplot reg2 reg1 || logit2 logit1, drop(_cons) xline(0) ///
>     bylabels(LPM Logit) byopts(xrescale legend(off))
```