Stata Users Breakout Session

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Setup

Load `.dta` file

```
. cd "Z:\pma\admin\presentations\workshop2022"
Z:\pma\admin\presentations\workshop2022

.
. use workshop_2022.dta
```

Result of the Female Questionnaire in Phase 1 vs Phase 2

```
. tab resultfq_2 resultfq_1, miss

     result of female |  result of female questionnaire
        questionnaire | completed  partly co          . |     Total
----------------------+---------------------------------+----------
            completed |    12,501          8      4,506 |    17,015
          not at home |       106          0          0 |       106
            postponed |        24          0          0 |        24
              refused |        87          0          0 |        87
     partly completed |        14          0          8 |        22
     respondent moved |        18          0          0 |        18
        incapacitated |        24          0          0 |        24
not interviewed (fema |         4          0          0 |         4
not interviewed (hous |       197          0          0 |       197
niu (not in universe) |     1,352          1          0 |     1,353
                    . |     1,987         25          0 |     2,012
----------------------+---------------------------------+----------
                Total |    16,314         34      4,514 |    20,862
```

Dropping women who did not complete a survey in both surveys

```
. keep if resultfq_1 == 1
(4,548 observations deleted)

. keep if resultfq_2 == 1
(3,813 observations deleted)
```

Dropping women who were not part of the de facto population

```
. keep if (resident_1 == 11 | resident_1 == 22) & (resident_2 == 11 | resident_2 == 22)
(358 observations deleted)
```

We'll call our dependent variable `category`

```
> gen category = .
(12,143 missing values generated)

. replace category = 1 if cp_1 == 0 & cp_2 == 0
(5,107 real changes made)

. replace category = 2 if cp_1 == 1 & cp_2 == 1
(3,917 real changes made)

. replace category = 3 if cp_1 == 0 & cp_2 == 1
(1,939 real changes made)

. replace category = 4 if cp_1 == 1 & cp_2 == 0
(1,178 real changes made)
```

“Non-users” were not using a method at the time of *both* of their interviews.

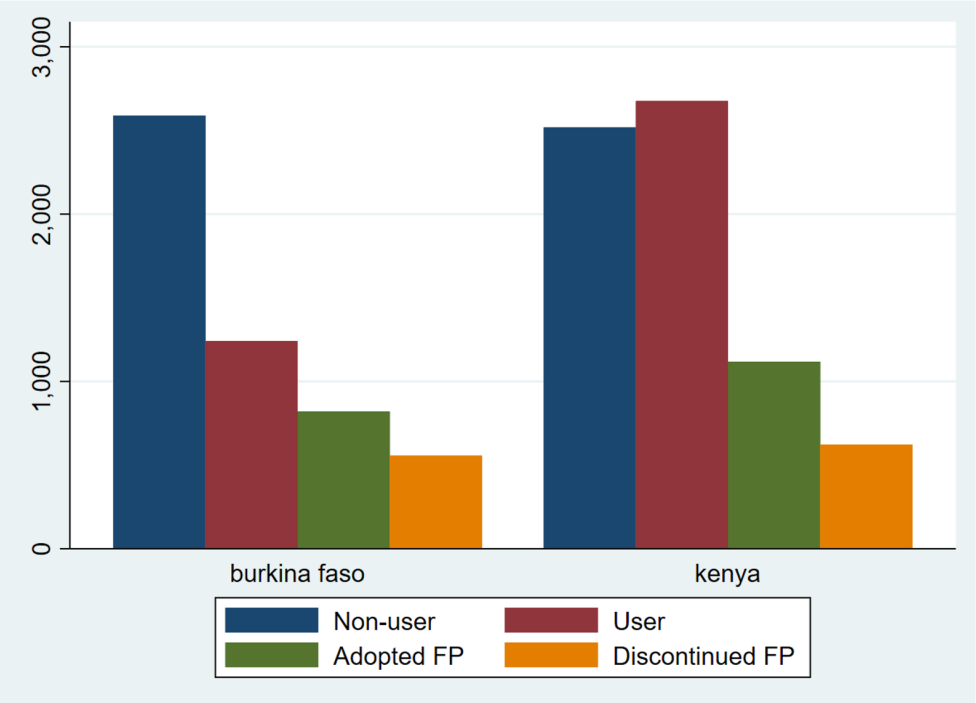
“Users” were using a method at the time of *both* of their interviews.

```
. label define categorical 1 "Non-user" 2 "User" 3 "Adopted FP" 4 "Discontinued FP"

. label values category categorical

. tab category, gen(cat_)

       category |      Freq.     Percent        Cum.
----------------+-----------------------------------
       Non-user |      5,107       42.06       42.06
           User |      3,917       32.26       74.33
     Adopted FP |      1,939       15.97       90.30
Discontinued FP |      1,178        9.70      100.00
----------------+-----------------------------------
          Total |     12,141      100.00
```

Data Visualization

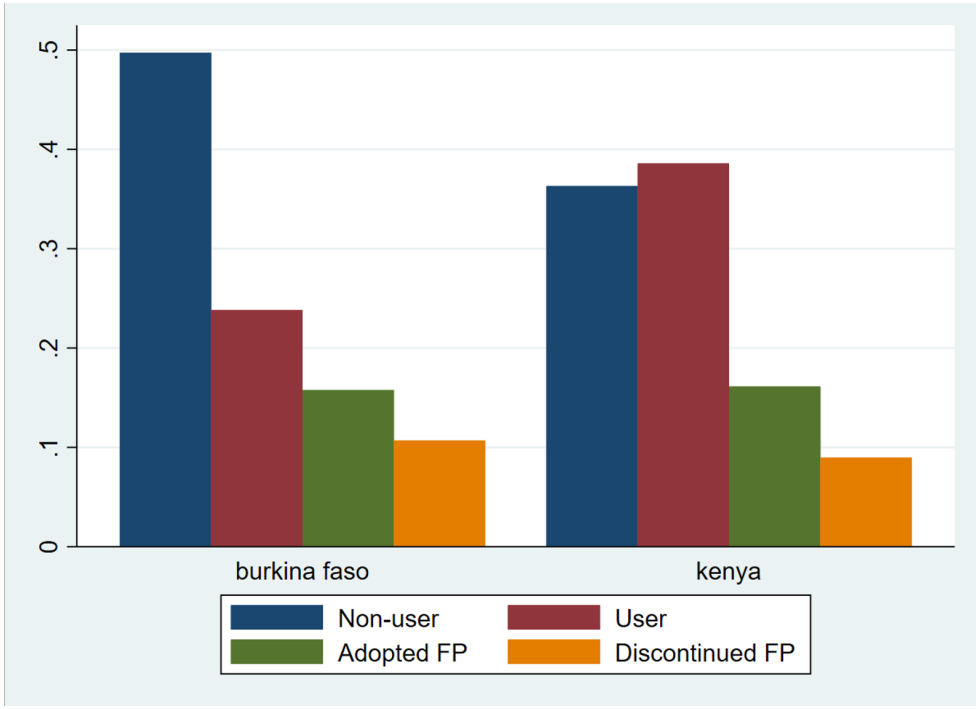
First graph uses counts of interviewed women

```
. graph bar (sum) cat_1-cat_4, over(country) legend(label(1 "Non-user")
label(2 "User") label(3 "Adopted FP") label(4 "Discontinued FP"))
```



Second graph uses proportions, so the visualization isn't biased by a difference in sample sizes

```
. graph bar cat_1-cat_4, over(country) legend(label(1 "Non-user") label(2 "User")
label(3 "Adopted FP") label(4 "Discontinued FP"))
```



Data Analysis

Rename outcome variable

```
. rename cat_3 adoption

. rename cat_4 discontinue
```

Explanatory variables

```
. tab cvincomeloss_2, miss

     income loss resulted from covid-19 |
                            restrictions |      Freq.     Percent        Cum.
---------------------------------------+-----------------------------------
                                    no |        658        5.42        5.42
                                   yes |      7,566       62.31       67.73
                            don't know |          2        0.02       67.74
                  niu (not in universe) |      3,917       32.26      100.00
---------------------------------------+-----------------------------------
                                 Total |     12,143      100.00
```

use hhincomelossamt to understand who did not lose income in cvincomeloss

```
. tab cvincomeloss_2 hhincomelossamt_2

income loss resulted |    household income loss since covid-19
        from covid-19 |                restrictions
         restrictions |      none    partial   complete  no respon |     Total
----------------------+-----------------------------------------+----------
                   no |         0        547        111          0 |       658
                  yes |         0      5,449      2,117          0 |     7,566
           don't know |         0          2          0          0 |         2
niu (not in universe) |     3,904          0          0         13 |     3,917
----------------------+-----------------------------------------+----------
                Total |     3,904      5,998      2,228         13 |    12,143

. replace cvincomeloss_2 = 0 if hhincomelossamt_2 == 1
(3,904 real changes made)
```

look at the other explanatory variable

```
. tab country covidconcern_2, row
```

pma country	concerned about getting infected					Total
	not conce	a little	concerned	very conc	currently	
burkina faso	212	461	955	3,576	1	5,208
	4.07	8.85	18.34	68.66	0.02	100.00
kenya	162	216	1,515	5,034	8	6,935
	2.34	3.11	21.85	72.59	0.12	100.00
Total	374	677	2,470	8,610	9	12,143
	3.08	5.58	20.34	70.91	0.07	100.00

pma country	concerned about getting infected no respon	Total
burkina faso	3	5,208
	0.06	100.00
kenya	0	6,935
	0.00	100.00
Total	3	12,143
	0.02	100.00

replace NIU to missing

```
. forvalues i = 1/2 {
  foreach var in age marstat educattgen cvincomeloss covidconcern
  hhincomelossamt wealtht cp {
    replace `var'_`i' = . if `var'_`i' > 90
  }
}
(0 real changes made)
(1 real change made, 1 to missing)
(2 real changes made, 2 to missing)
(0 real changes made)
(0 real changes made)
(0 real changes made)
(2 real changes made, 2 to missing)
(2 real changes made, 2 to missing)
(0 real changes made)
(0 real changes made)
(1 real change made, 1 to missing)
(15 real changes made, 15 to missing)
(3 real changes made, 3 to missing)
(13 real changes made, 13 to missing)
(993 real changes made, 993 to missing)
(0 real changes made)
```

Establishing the survey weight settings

```
. svyset [pw=panelweight], psu(eaid_1) strata(strata_1)

      pweight: panelweight
          VCE: linearized
  Single unit: missing
     Strata 1: strata_1
         SU 1: eaid_1
        FPC 1: <zero>

.
```

Demonstrating weighted proportions

```
. tab country adoption, row

                      | category==Adopted FP
           pma country |         0          1 |     Total
-----------------------+----------------------+----------
          burkina faso |     4,386        821 |     5,207
                       |     84.23      15.77 |    100.00
-----------------------+----------------------+----------
                 kenya |     5,816      1,118 |     6,934
                       |     83.88      16.12 |    100.00
-----------------------+----------------------+----------
                 Total |    10,202      1,939 |    12,141
                       |     84.03      15.97 |    100.00
```

```
. svy: tab country adoption, row
(running tabulate on estimation sample)

Number of strata   =        23                  Number of obs     =     12,141
Number of PSUs     =       474                  Population size   = 12,134.981
                                                Design df         =        451

-------------------------------
pma       |category==Adopted FP
country   |     0      1  Total
----------+--------------------
  burkina | .8503  .1497      1
    kenya | .8353  .1647      1
          |
    Total | .8418  .1582      1
-------------------------------
  Key:  row proportion

  Pearson:
    Uncorrected   chi2(1)         =    5.0554
    Design-based  F(1, 451)       =    1.8652     P = 0.1727
```

Creating an age category recode

```
. recode age_2 (15/24=1) (25/34=2) (35/49=3), gen(age_rec)
(12143 differences between age_2 and age_rec)

. label define agerecode 1 "15-24" 2 "25-34" 3 "35-49"

. label values age_rec agerecode

.
. recode birthevent_2 (99=0) (0=0) (1/2=1) (else=2), gen(birth_rec)
(10389 differences between birthevent_2 and birth_rec)

. label define birthrecode 0 "No births" 1 "1 or 2 births" 2 "3+ births"

. label values birth_rec birthrecode
```

Logistic regressions

```
. svy: logit adoption i.age_rec urban i.wealtht_2 i.educattgen_2
cvincomeloss_2 i.covidconcern_2 if country == 1
```

```
Survey: Logistic regression

Number of strata   =         2                  Number of obs     =      4,884
Number of PSUs     =       167                  Population size   = 4,917.0532
                                                Design df         =        165
                                                F(  12,    154)   =       2.37
                                                Prob > F          =     0.0080

------------------------------------------------------------------------------
                             |             Linearized
                    adoption | Odds Ratio   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----------------------------+------------------------------------------------------------------
                     age_rec |
                       25-34 |   1.226821   .1934572     1.30   0.197      .898594    1.674938
                       35-49 |   .8174621   .1453411    -1.13   0.259     .5754526     1.16125
                             |
                       urban |   1.146531    .177051     0.89   0.377     .8452188    1.555257
                             |
                  wealtht_2  |
              middle tertile |   .9513569   .1448867    -0.33   0.744      .704291    1.285094
             highest tertile |   .7452848   .1341151    -1.63   0.104     .5224149    1.063234
                             |
                educattgen_2 |
        primary/middle school |    1.21569   .1879139     1.26   0.208      .895936    1.649561
      secondary/post-primary  |   1.215347   .2058244     1.15   0.251     .8699221    1.697931
     tertiary/post-secondary  |   1.613717   .4801887     1.61   0.110     .8967397    2.903944
                             |
               cvincomeloss_2 |   1.226766   .1760785     1.42   0.156     .9240291    1.628688
                             |
               covidconcern_2 |
           a little concerned |    1.85145   .6998676     1.63   0.105     .8777511    3.905283
                    concerned |   1.231492   .4213398     0.61   0.544     .6266885    2.419979
                very concerned |   1.692226    .557636     1.60   0.112     .8828585    3.243588
                             |
                       _cons |   .0988454    .036659    -6.24   0.000     .0475266    .2055778
------------------------------------------------------------------------------
Note: _cons estimates baseline odds.
```

```
. svy: logit adoption i.age_rec urban i.wealtht_2 i.educattgen_2
cvincomeloss_2 i.covidconcern_2 if country == 7
```

```
Survey: Logistic regression

Number of strata   =        21                 Number of obs     =      6,250
Number of PSUs     =       307                 Population size   = 6,154.4236
                                               Design df         =        286
                                               F(  13,    274)   =       2.50
                                               Prob > F          =     0.0031

------------------------------------------------------------------------------
             |             Linearized
    adoption | Odds Ratio   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
     age_rec |
       25-34 |   1.094059   .1216833     0.81   0.420     .8789546    1.361807
       35-49 |   .8469074   .0952419    -1.48   0.141     .6787413    1.056739
             |
       urban |    1.04929   .1261373     0.40   0.689     .8282016    1.329398
             |
  wealtht_2  |
middle tertile |   .9526526   .0966364    -0.48   0.633     .7802294     1.16318
highest tertile |    .748508   .0988333    -2.19   0.029     .5771993      .97066
             |
  educattgen_2 |
primary/middle school |   1.110445   .2934678     0.40   0.692     .6600643    1.868135
secondary/post-primary |   1.456977   .4119012     1.33   0.184     .8351936    2.541664
tertiary/post-secondary |    1.70385   .5049793     1.80   0.073     .9507886    3.053364
             |
cvincomeloss_2 |   1.145468   .1109547     1.40   0.162      .946633    1.386067
             |
covidconcern_2 |
a little concerned |   .4658068   .1763542    -2.02   0.045     .2210914     .981386
concerned |    .695045   .2078831    -1.22   0.225     .3857825    1.252228
very concerned |   .7418588   .2221675    -1.00   0.320     .4114576    1.337573
currently / previously.. |   1.715145   1.741972     0.53   0.596     .2323332    12.66165
             |
       _cons |   .2004338   .0769846    -4.18   0.000     .0941117    .4268726
------------------------------------------------------------------------------
Note: _cons estimates baseline odds.
```

```
. svy: logit discontinue i.age_rec urban i.wealtht_2 i.educattgen_2
cvincomeloss_2 i.covidconcern_2 if country == 1
```

```
Survey: Logistic regression

Number of strata   =         2                  Number of obs     =      4,884
Number of PSUs     =       167                  Population size   = 4,917.0532
                                                Design df         =        165
                                                F(  12,    154)   =       2.63
                                                Prob > F          =     0.0032

------------------------------------------------------------------------------
             |             Linearized
  discontinue | Odds Ratio   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
     age_rec |
       25-34 |   1.997721    .395008     3.50   0.001     1.352022    2.951793
       35-49 |   1.502569   .3049388     2.01   0.046     1.006494    2.243148
             |
       urban |   1.246211   .2167926     1.27   0.208     .8839372     1.75696
             |
  wealtht_2  |
middle tertile |   1.292635   .2078525     1.60   0.112     .9410084    1.775654
highest tertile |   .8651644   .1962709    -0.64   0.524     .5528006    1.354031
             |
  educattgen_2 |
primary/middle school |    1.55014   .3041314     2.23   0.027     1.052288    2.283533
secondary/post-primary |   1.590812   .3603386     2.05   0.042     1.017154    2.488004
tertiary/post-secondary |   1.244363   .3600868     0.76   0.451     .7027667    2.203347
             |
cvincomeloss_2 |   .9379963   .1561508    -0.38   0.701     .6752308    1.303017
             |
  covidconcern_2 |
a little concerned |   .9803776   .4661284    -0.04   0.967     .3834356    2.506653
concerned |   1.198057   .5428279     0.40   0.691     .4897297    2.930881
very concerned |   1.232284   .4641504     0.55   0.580     .5857734    2.592341
             |
       _cons |   .0474947   .0207013    -6.99   0.000      .020086    .1123044
------------------------------------------------------------------------------
Note: _cons estimates baseline odds.
```

```
. svy: logit discontinue i.age_rec urban i.wealtht_2 i.educattgen_2
cvincomeloss_2 i.covidconcern_2 if country == 7
```

```
Survey: Logistic regression

Number of strata   =        21                 Number of obs     =      6,244
Number of PSUs     =       307                 Population size   = 6,147.8281
                                               Design df         =        286
                                               F(  12,    275)   =       6.50
                                               Prob > F          =     0.0000

------------------------------------------------------------------------------
             |             Linearized
  discontinue | Odds Ratio   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
     age_rec |
       25-34 |   2.107144   .3068978     5.12   0.000     1.581951    2.806697
       35-49 |   1.414137    .206907     2.37   0.019     1.060279    1.886092
             |
       urban |   1.233563   .1806088     1.43   0.153     .9247091    1.645573
             |
  wealtht_2  |
middle tertile |   .9911905   .1392847    -0.06   0.950     .7516848    1.307009
highest tertile |   1.003775   .1802205     0.02   0.983     .7049528    1.429266
             |
  educattgen_2 |
primary/middle school |   2.081409   .6423746     2.38   0.018     1.133806    3.820989
secondary/post-primary |   2.098543   .7022264     2.22   0.028      1.08611    4.054733
tertiary/post-secondary |   2.692685   .9507192     2.81   0.005     1.343911    5.395113
             |
 cvincomeloss_2 |   1.023195   .1439162     0.16   0.871     .7757561    1.349559
             |
 covidconcern_2 |
a little concerned |   8.217591   5.473967     3.16   0.002     2.214755    30.49041
     concerned |    4.33853   2.902794     2.19   0.029     1.162535     16.1912
very concerned |   4.005398   2.649054     2.10   0.037     1.089666    14.72306
currently / previously.. |          1  (empty)
             |
       _cons |   .0069633   .0058409    -5.92   0.000     .0013359    .0362955
------------------------------------------------------------------------------
Note: _cons estimates baseline odds.
```

Logistic regressions with parity

```
. svy: logit adoption i.age_rec i.birth_rec urban i.wealtht_2 i.educattgen_2
cvincomeloss_2 i.covidconcern_2 if country == 1
```

```
Survey: Logistic regression

Number of strata   =         2                  Number of obs     =      4,884
Number of PSUs     =       167                  Population size   = 4,917.0532
                                                Design df         =        165
                                                F(  14,    152)   =       3.42
                                                Prob > F          =     0.0001

------------------------------------------------------------------------------
                             |             Linearized
                   adoption | Odds Ratio   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----------------------------+------------------------------------------------------------------
                    age_rec |
                      25-34  |   .8558144   .1484611    -0.90   0.371     .6076139    1.205401
                      35-49  |   .5507701   .1085525    -3.03   0.003     .3732206    .8127839
                             |
                  birth_rec |
              1 or 2 births  |   1.968136   .3218075     4.14   0.000     1.425108    2.718081
                  3+ births  |   2.454594   .5072408     4.35   0.000     1.632223    3.691304
                             |
                      urban  |   1.213194   .1921216     1.22   0.224     .8874379    1.658528
                             |
                  wealtht_2  |
             middle tertile  |   .9199756   .1427184    -0.54   0.592     .6772536    1.249687
            highest tertile  |   .7194164   .1314295    -1.80   0.073     .5015637    1.031893
                             |
               educattgen_2  |
  primary/middle school      |   1.278157   .1984294     1.58   0.116     .9407234    1.736628
 secondary/post-primary      |   1.551715   .2709867     2.52   0.013     1.099163    2.190592
tertiary/post-secondary      |   2.419245   .7651474     2.79   0.006     1.295617    4.517342
                             |
               cvincomeloss_2 |   1.209911   .1778908     1.30   0.197     .9050617    1.617441
                             |
              covidconcern_2 |
     a little concerned      |   1.902249   .7444261     1.64   0.102     .8784095    4.119437
               concerned     |   1.208323   .4226843     0.54   0.589     .6056523    2.410696
          very concerned     |   1.652469   .5595275     1.48   0.140     .8468102    3.224634
                             |
                     _cons   |   .0613305   .0256176    -6.68   0.000     .0268846    .1399101
------------------------------------------------------------------------------
Note: _cons estimates baseline odds.
```

```
. svy: logit adoption i.age_rec i.birth_rec urban i.wealtht_2 i.educattgen_2
cvincomeloss_2 i.covidconcern_2 if country == 7
```

```
Survey: Logistic regression

Number of strata   =        21                  Number of obs     =      6,250
Number of PSUs     =       307                  Population size   = 6,154.4236
                                                Design df         =        286
                                                F(  15,    272)   =       6.69
                                                Prob > F          =     0.0000

------------------------------------------------------------------------------
                             |             Linearized
                    adoption | Odds Ratio   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----------------------------+------------------------------------------------------------------
                     age_rec |
                       25-34 |   .6956052   .0883514    -2.86   0.005     .5417376     .893175
                       35-49 |     .54574   .0830337    -3.98   0.000     .4045071    .7362841
                             |
                   birth_rec |
               1 or 2 births |   2.614024   .4046864     6.21   0.000       1.9274    3.545252
                   3+ births |   2.379317   .4200688     4.91   0.000     1.680869    3.367989
                             |
                       urban |   1.057397   .1325801     0.45   0.657      .826148    1.353375
                             |
                  wealtht_2  |
              middle tertile |   .9646635   .0990405    -0.35   0.726     .7881573    1.180698
             highest tertile |   .7643795   .1040363    -1.97   0.049     .5847409    .9992051
                             |
                educattgen_2 |
       primary/middle school |   1.104853   .2896461     0.38   0.704     .6594879    1.850982
     secondary/post-primary  |   1.565569   .4348617     1.61   0.108     .9062182    2.704654
    tertiary/post-secondary  |   1.830081   .5345897     2.07   0.039     1.029833    3.252173
                             |
              cvincomeloss_2 |   1.110472   .1094672     1.06   0.289      .914623    1.348259
                             |
              covidconcern_2 |
          a little concerned |   .4640682   .1750394    -2.04   0.043     .2208805    .9750038
                   concerned |   .6900264   .2072154    -1.24   0.218     .3820877    1.246144
              very concerned |   .7342906   .2210459    -1.03   0.306     .4060122    1.327996
currently / previously..     |   2.038117   1.961597     0.74   0.460     .3065518    13.55047
                             |
                       _cons |    .130007   .0499182    -5.31   0.000     .0610585    .2768136
------------------------------------------------------------------------------
Note: _cons estimates baseline odds.
```

```
. svy: logit discontinue i.age_rec i.birth_rec urban i.wealtht_2 i.educattgen_2
cvincomeloss_2 i.covidconcern_2 if country == 1
```

```
Survey: Logistic regression

Number of strata   =         2                  Number of obs     =      4,884
Number of PSUs     =       167                  Population size   = 4,917.0532
                                                Design df         =        165
                                                F(  14,    152)   =       6.09
                                                Prob > F          =     0.0000

------------------------------------------------------------------------------
             |             Linearized
  discontinue | Odds Ratio   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
     age_rec |
       25-34 |   1.420174   .2657685     1.87   0.063     .9814596    2.054994
       35-49 |   1.100599   .2220481     0.48   0.635     .7389728    1.639191
             |
   birth_rec |
1 or 2 births|   4.027007   .9259732     6.06   0.000     2.557468    6.340952
    3+ births|   3.454542   .9191819     4.66   0.000     2.042819    5.841858
             |
       urban |   1.299959   .2309044     1.48   0.142     .9154154    1.846039
             |
  wealtht_2  |
middle tertile|  1.215252   .2034112     1.16   0.246     .8732487      1.6912
highest tertile|  .7987195     .18717    -0.96   0.339     .5028657    1.268635
             |
educattgen_2 |
primary/middle school|  1.575616   .2916368     2.46   0.015     1.093287    2.270736
secondary/post-primary|  2.103299    .452831     3.45   0.001      1.37495    3.217474
tertiary/post-secondary|  1.979558   .5905862     2.29   0.023     1.098354    3.567748
             |
cvincomeloss_2|    .916188   .1532561    -0.52   0.601     .6584869    1.274741
             |
covidconcern_2|
a little concerned|  .9978152   .4683988    -0.00   0.996     .3949326    2.521026
concerned    |   1.163408   .5215497     0.34   0.736     .4800905    2.819296
very concerned|  1.195911   .4439307     0.48   0.630     .5746353     2.48889
             |
       _cons |   .0195486   .0083054    -9.26   0.000      .008449    .0452301
------------------------------------------------------------------------------
Note: _cons estimates baseline odds.
```

```
. svy: logit discontinue i.age_rec i.birth_rec urban i.wealtht_2 i.educattgen_2
cvincomeloss_2 i.covidconcern_2 if country == 7
```

```
Survey: Logistic regression

Number of strata   =        21                 Number of obs     =      6,244
Number of PSUs     =       307                 Population size   = 6,147.8281
                                               Design df         =        286
                                               F(  14,    273)   =       8.52
                                               Prob > F          =     0.0000

------------------------------------------------------------------------------
             |             Linearized
  discontinue | Odds Ratio   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
     age_rec |
       25-34 |    1.34614   .2343759     1.71   0.089     .9555599    1.896367
       35-49 |   .9021614   .1683259    -0.55   0.581     .6248727    1.302498
             |
   birth_rec |
1 or 2 births |   2.617935   .5974912     4.22   0.000     1.670566    4.102552
    3+ births |   2.455745   .6056097     3.64   0.000     1.511391    3.990153
             |
       urban |   1.247157   .1808523     1.52   0.129     .9374805    1.659127
             |
  wealtht_2  |
middle tertile |   1.000419    .140337     0.00   0.998     .7590481    1.318543
highest tertile |   1.026956   .1840712     0.15   0.882     .7216631    1.461401
             |
 educattgen_2 |
primary/middle school |   2.067883   .6330899     2.37   0.018     1.131931    3.777738
secondary/post-primary |   2.199786   .7279246     2.38   0.018     1.146872    4.219355
tertiary/post-secondary |   2.863487   1.013747     2.97   0.003     1.426486    5.748079
             |
cvincomeloss_2 |   .9949636   .1386367    -0.04   0.971     .7563068     1.30893
             |
 covidconcern_2 |
a little concerned |   8.394167   5.599473     3.19   0.002     2.258167    31.20321
concerned |   4.393515   2.950779     2.20   0.028     1.171379    16.47885
very concerned |   4.055277   2.690995     2.11   0.036     1.098452    14.97132
currently / previously.. |          1  (empty)
             |
       _cons |   .0043616   .0036492    -6.50   0.000     .0008403    .0226386
------------------------------------------------------------------------------
Note: _cons estimates baseline odds.
```