Kenya

```
## [1] "Census Females"
##
   # A tibble: 18 x 8
                                                                  `2009`
                                                                            2019
##
                                                         1999
                 1962
                           1969
                                     1979
                                               1989
      aggr.age
##
         <dbl>
                  <dbl>
                            <dbl>
                                      <dbl>
                                                <dbl>
                                                         <dbl>
                                                                   <dbl>
                                                                             <dbl>
##
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                                  1423936. 1891568. 2256516. 2940322. 2978323.
##
              5 597154.
                          874226. 1235895. 1708725. 2055280. 2735980. 3064593.
##
    3
                          691456. 1046913. 1476419. 1934383. 2438712. 2977774.
             10 477386.
    4
             15 395882.
                          550900.
                                   872886. 1226523. 1748105. 2146642. 2652670.
##
##
    5
             20 367906.
                                   701504. 1019471. 1482544. 1940959. 2304416.
                          464071
##
    6
             25 336176.
                          392957.
                                    546283.
                                             821903. 1176768. 1657743. 2043947.
##
    7
             30 272548.
                          318636.
                                   423762.
                                             615387.
                                                       900106. 1300974. 1753184.
             35 208542.
                                   334882.
                                             464691.
                                                       706673. 1001392. 1385454.
##
    8
                          257704.
##
    9
             40 161280.
                          208136.
                                   274175.
                                             370261.
                                                       547466.
                                                                 777107. 1087393.
##
  10
             45 124664.
                          167178
                                   227571.
                                             298181.
                                                       426343.
                                                                 621651.
                                                                           866858.
##
  11
             50
                 92140.
                          136058.
                                   184967.
                                             239216.
                                                       335929.
                                                                 486662.
                                                                           679125.
##
  12
             55
                 67382.
                          109512.
                                    142658.
                                             192942.
                                                       258435.
                                                                 370542.
                                                                           556669.
##
  13
             60
                 53409.
                           88640.
                                    109394.
                                             158686.
                                                       207777.
                                                                 289461.
                                                                           452658.
##
  14
                 39397.
                           66777.
                                     84777.
                                             123427.
                                                       168755.
                                                                 223312.
             65
                                                                           354144.
##
  15
             70
                 26466.
                           45690.
                                     62651.
                                               90086.
                                                       129033.
                                                                 171156.
                                                                           265847.
## 16
                 17945.
                           30620.
                                     86752.
                                               60564.
                                                        82113.
                                                                 118734.
             75
                                                                           181084.
## 17
             80
                 14141.
                           21530
                                        NA
                                               94209.
                                                       121769.
                                                                 224687.
                                                                           118391.
## 18
             85
                 17121.
                           26621
                                        NA
                                                  NA
                                                           NA
                                                                     NA
                                                                           141785.
## [1] "Census Males"
   # A tibble: 18 x 8
##
                 1962
                           `1969`
                                     1979
                                               1989
                                                         1999
                                                                  2009
                                                                            2019
      aggr.age
##
          <dbl>
                            <dbl>
                                      <dbl>
                                                <dbl>
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                                                                   <dbl>
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##
   1
              0 680883. 1058102
                                  1424953. 1914189. 2308755. 3002234. 2997631.
    2
                          901502. 1244344. 1728441. 2097298. 2809453. 3102097.
##
              5 609628.
                          726541. 1052936. 1484869. 1952354. 2523246. 3040190.
##
    3
             10 513677.
                                   851898. 1189315. 1694212. 2142963. 2651859.
##
    4
             15 386214.
                          565756.
##
    5
             20 289232.
                                   664211.
                                             936316. 1368457. 1791316. 2159206.
                          441444
##
    6
             25 250085.
                          352038.
                                   519992.
                                             760638. 1097757. 1518251. 1840199.
                                                       874258. 1262642. 1615620.
##
    7
             30 221413.
                          290906.
                                   404695.
                                             604081.
##
    8
             35 189179.
                          244789
                                   312473.
                                             470056.
                                                       691971. 1002938. 1362683.
##
   9
                                   258557.
                                                       540968.
             40 162241.
                          203129
                                             370463.
                                                                 782174. 1125199.
## 10
             45 137093.
                          167854.
                                   221009.
                                             291860.
                                                       428326.
                                                                 623496.
                                                                           898890.
##
  11
             50 107131.
                          138027.
                                   181751.
                                             233257.
                                                       335648.
                                                                 488150.
                                                                           687325.
##
  12
             55
                 81154.
                          116068.
                                    143338.
                                             186345.
                                                       248443.
                                                                 373342.
                                                                           537408.
##
  13
             60
                 64459.
                           98553
                                    114261.
                                             148130.
                                                       189804.
                                                                 283422.
                                                                           419991.
                 47331.
                           75013.
                                     93665.
                                             114381.
##
  14
             65
                                                       149855.
                                                                 205573.
                                                                           316734.
##
  15
             70
                 33717.
                           50794.
                                     66506.
                                               86192.
                                                       115173.
                                                                 150987.
                                                                           223830.
## 16
             75
                 24812.
                           33529.
                                     87947.
                                               66706.
                                                        79747.
                                                                  99893.
                                                                           138307.
## 17
             80
                 20104.
                           22078
                                               82347.
                                                        95999.
                                                                 159220.
                                        NA
                                                                            81682.
## 18
             85
                 25148.
                                                            NA
                                                                            83593.
                           29194
                                        NA
                                                  NA
                                                                     NA
```

Thiele log-Normal Hump RW

user system elapsed ## 41.73 1.22 43.05 ## [1] "relative convergence (4)"

Thiele log-Normal Hump RW (Pop 5-9 to 70-74, DHS 15-19 to 45-49)

```
## user system elapsed
## 32.16 0.85 33.14
```

[1] "relative convergence (4)"

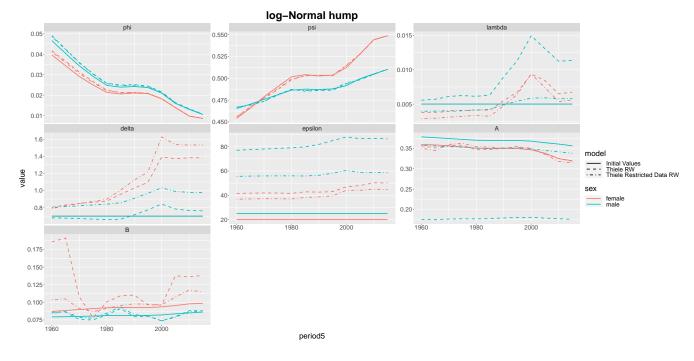


Figure 1: Estimated parameters

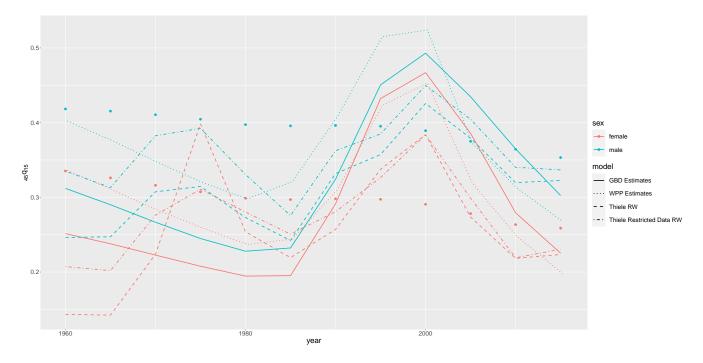


Figure 2: Estimated $_{45}q_{15}$

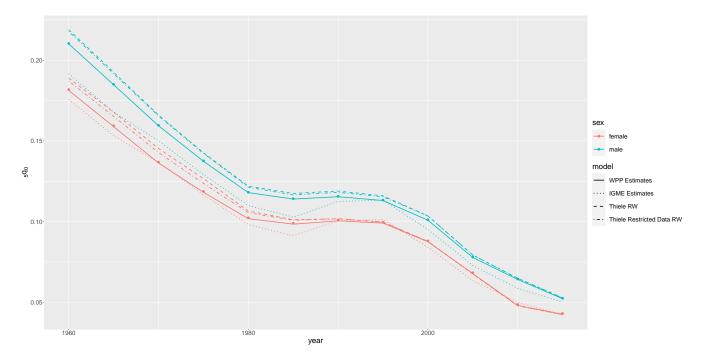


Figure 3: Estimated $_5q_0$

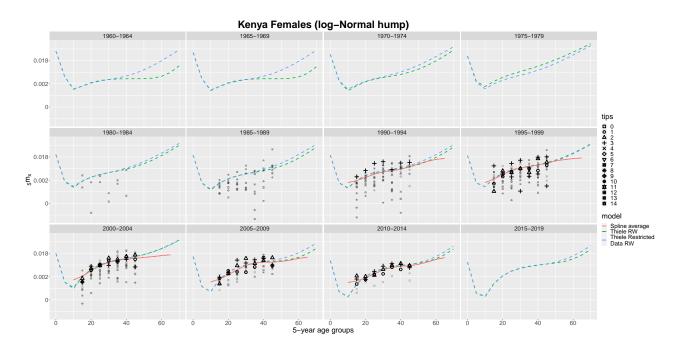


Figure 4: Mortality Schedules

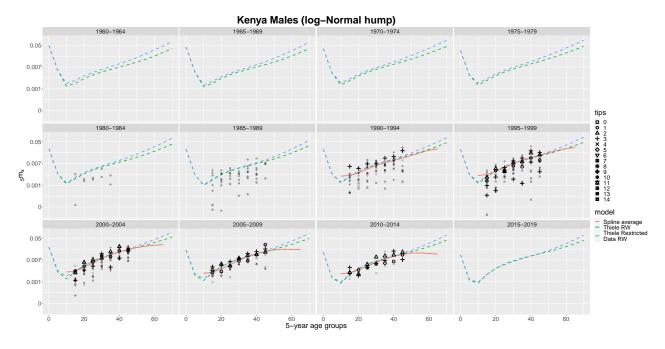


Figure 5: Mortality Schedules

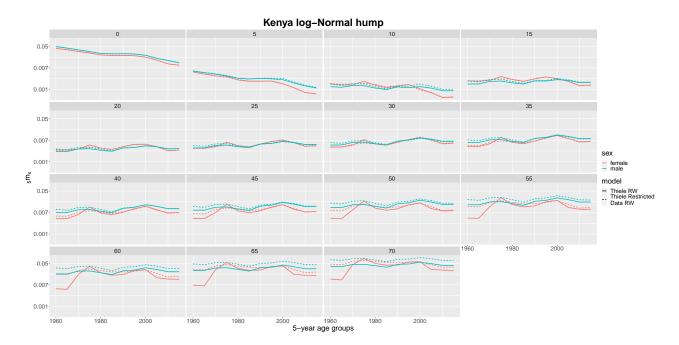


Figure 6: Mortality Schedules

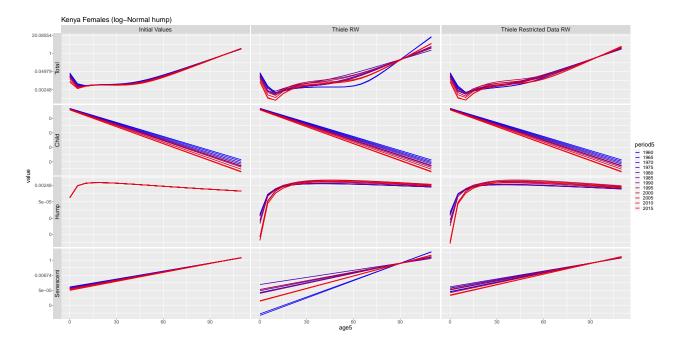


Figure 7: Thiele Decomposed

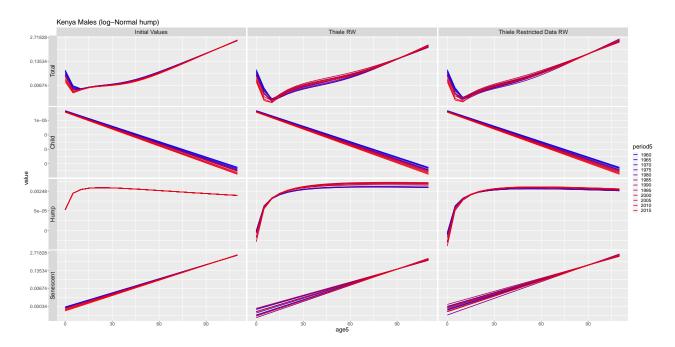


Figure 8: Thiele Decomposed

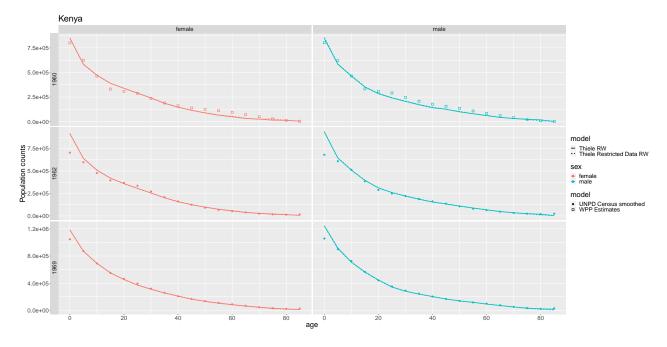


Figure 9: Population

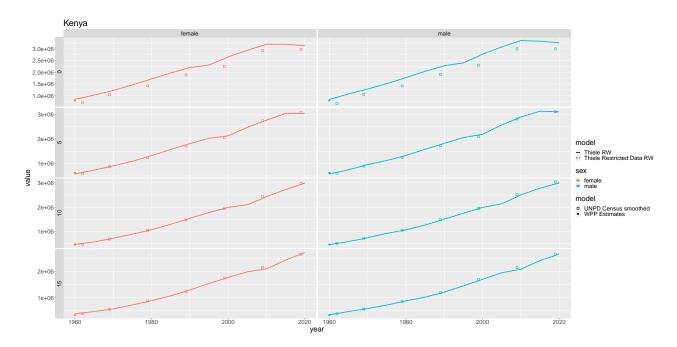


Figure 10: Population

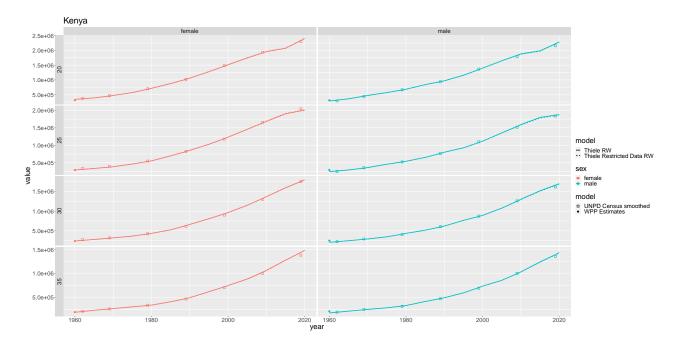


Figure 11: Population

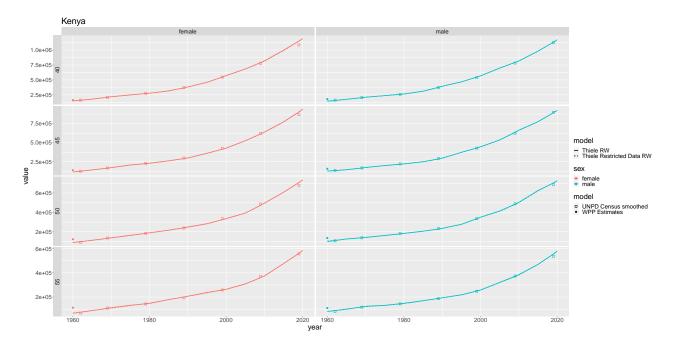


Figure 12: Population

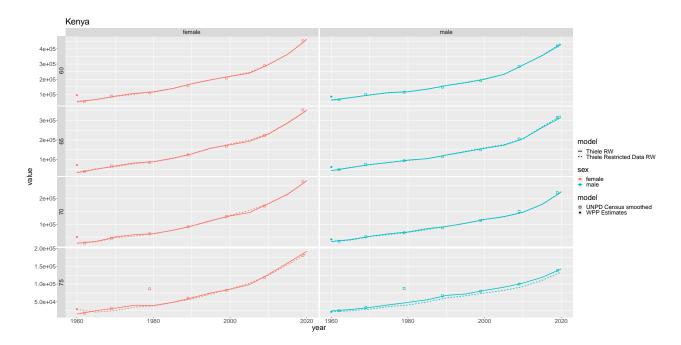


Figure 13: Population

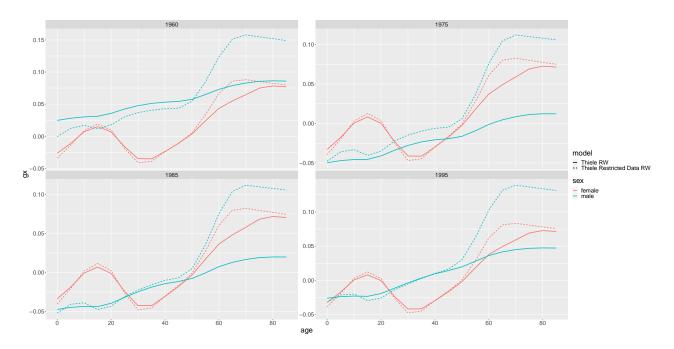


Figure 14: Migration

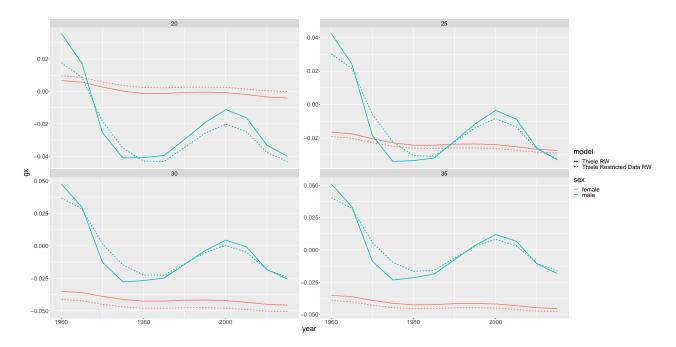


Figure 15: Migration

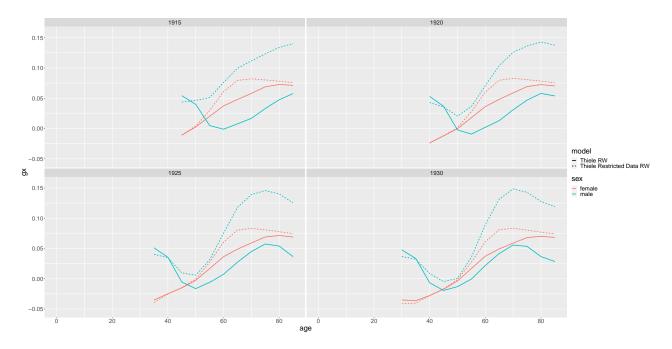


Figure 16: Migration

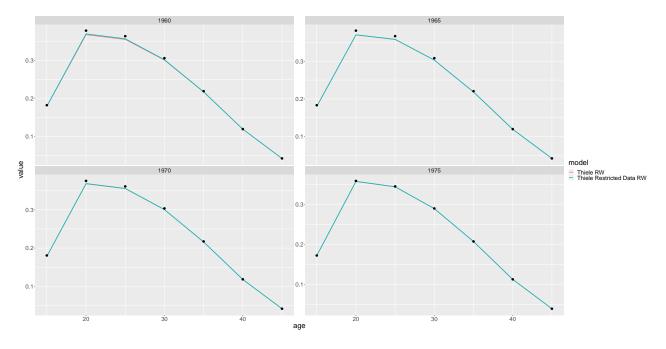


Figure 17: Fertility

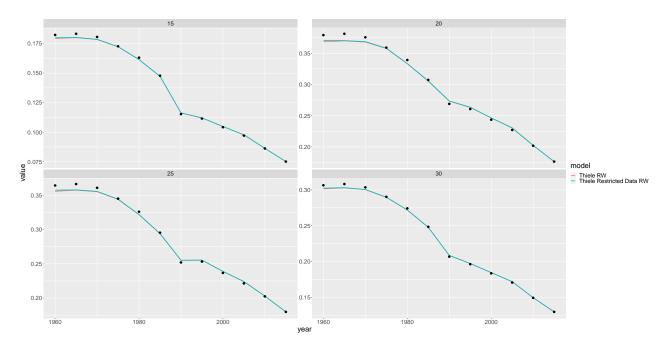


Figure 18: Fertility