

# Kenya

```
## [1] "Census Females"
```

```
## # A tibble: 86 x 7
```

```
##   age `1962` `1969` `1989` `1999` `2009` `2019`  
##   <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl>  
## 1 0 114962. 180506 401598. 543989. 605394. 549078.  
## 2 1 124197. 208046. 365428. 433581. 566581. 575921.  
## 3 2 141646. 212504. 376228. 440024. 584414. 597634.  
## 4 3 141163. 208169. 374954. 428539. 590820. 611884.  
## 5 4 137277. 206301. 369718. 422904. 593132. 619616.  
## 6 5 132355. 198945. 364496. 409859. 579842. 620166.  
## 7 6 130667. 189674. 354931. 397985. 565593. 616144.  
## 8 7 125741. 180390. 348116. 395986. 553310. 615971.  
## 9 8 118982. 169485. 337418. 406667. 547863. 622445.  
## 10 9 110984. 158670. 325087. 410989. 535936. 626357.  
## # ... with 76 more rows
```

```
## [1] "Census Females 5-year"
```

```
## # A tibble: 18 x 2
```

```
##   age `1979`  
##   <dbl> <dbl>  
## 1 0 1423936.  
## 2 5 1235895.  
## 3 10 1046913.  
## 4 15 872886.  
## 5 20 701504.  
## 6 25 546283.  
## 7 30 423762.  
## 8 35 334882.  
## 9 40 274175.  
## 10 45 227571.  
## 11 50 184967.  
## 12 55 142658.  
## 13 60 109394.  
## 14 65 84777.  
## 15 70 62651.  
## 16 75 86752.  
## 17 80 NA  
## 18 85 NA
```

```
## [1] "Census Males"
```

```
## # A tibble: 86 x 7
```

```
##   age `1962` `1969` `1989` `1999` `2009` `2019`  
##   <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl>  
## 1 0 110490. 181280 407366. 559955. 617213. 548946.  
## 2 1 119896. 209856. 370701. 444554. 579266. 580058.  
## 3 2 137308. 214870. 380545. 449449. 596090. 601059.  
## 4 3 136838. 211596. 380154. 438004. 604392. 617870.  
## 5 4 134196. 210258. 374474. 432305. 607876. 626295.  
## 6 5 130987. 203113. 368800. 419618. 595609. 627665.
```

```
## 7      6 130752. 194028. 358900. 407236. 580858. 623689.
## 8      7 127766. 185536. 352312. 403393. 566023. 621037.
## 9      8 123091. 175184. 340718. 414324. 561125. 628883.
## 10     9 117015. 165066. 327739. 416104. 548548. 632145.
## # ... with 76 more rows
```

```
## [1] "Census Males 5-year"
```

```
## # A tibble: 18 x 2
```

```
##   age   `1979`
##   <dbl>   <dbl>
```

```
## 1      0 1424953.
## 2      5 1244344.
## 3     10 1052936.
## 4     15  851898.
## 5     20  664211.
## 6     25  519992.
## 7     30  404695.
## 8     35  312473.
## 9     40  258557.
## 10    45  221009.
## 11    50  181751.
## 12    55  143338.
## 13    60  114261.
## 14    65   93665.
## 15    70   66506.
## 16    75   87947.
## 17    80      NA
## 18    85      NA
```

### *Thiele log-Normal Hump Spline*

```
## [1] "relative convergence (4)"
```

##	log_tau2_logpop	log_tau2_logpop	log_tau2_logpop	log_tau2_logpop	log_lambda_fx	log
##	2.766198596	6.075024972	1.749506401	5.699944978	5.317783549	10
##	log_lambda_tp	tp_slope	tp_params_5	tp_params_10	log_lambda_phi	log
##	3.142779501	-0.001730044	0.107201229	0.642072857	11.322763047	11
##	log_lambda_lambda	log_lambda_delta	log_lambda_epsilon			
##	3.723742217	8.657475174	5.360048758			

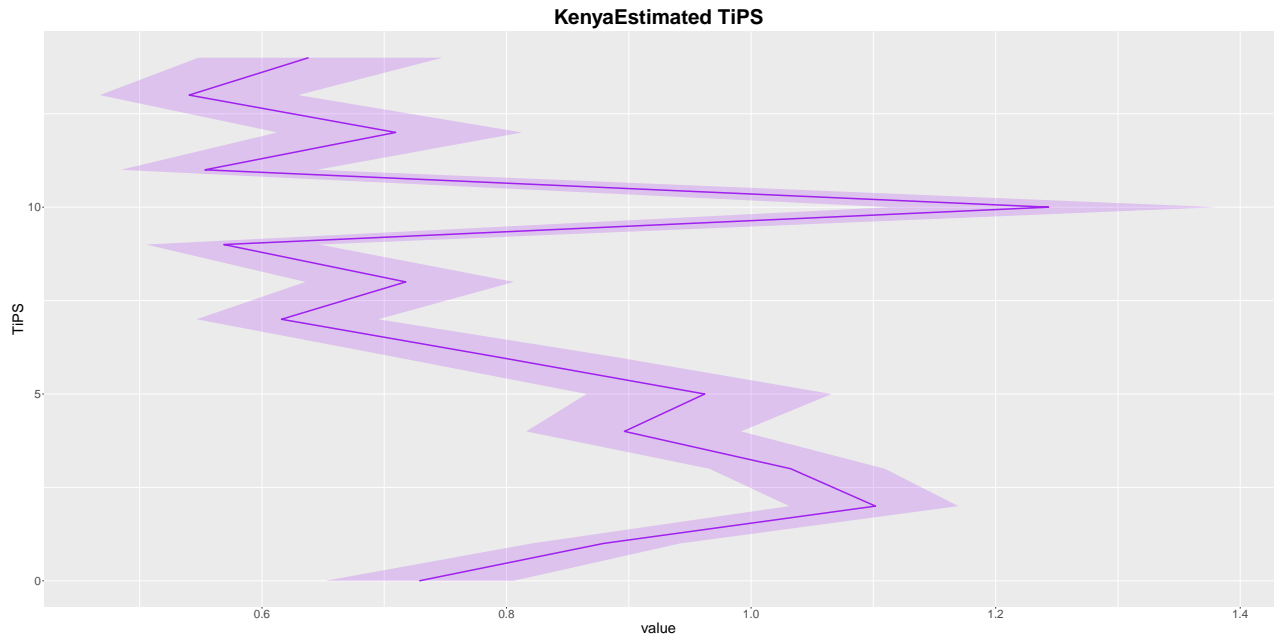


Figure 1: Estimated TiPS

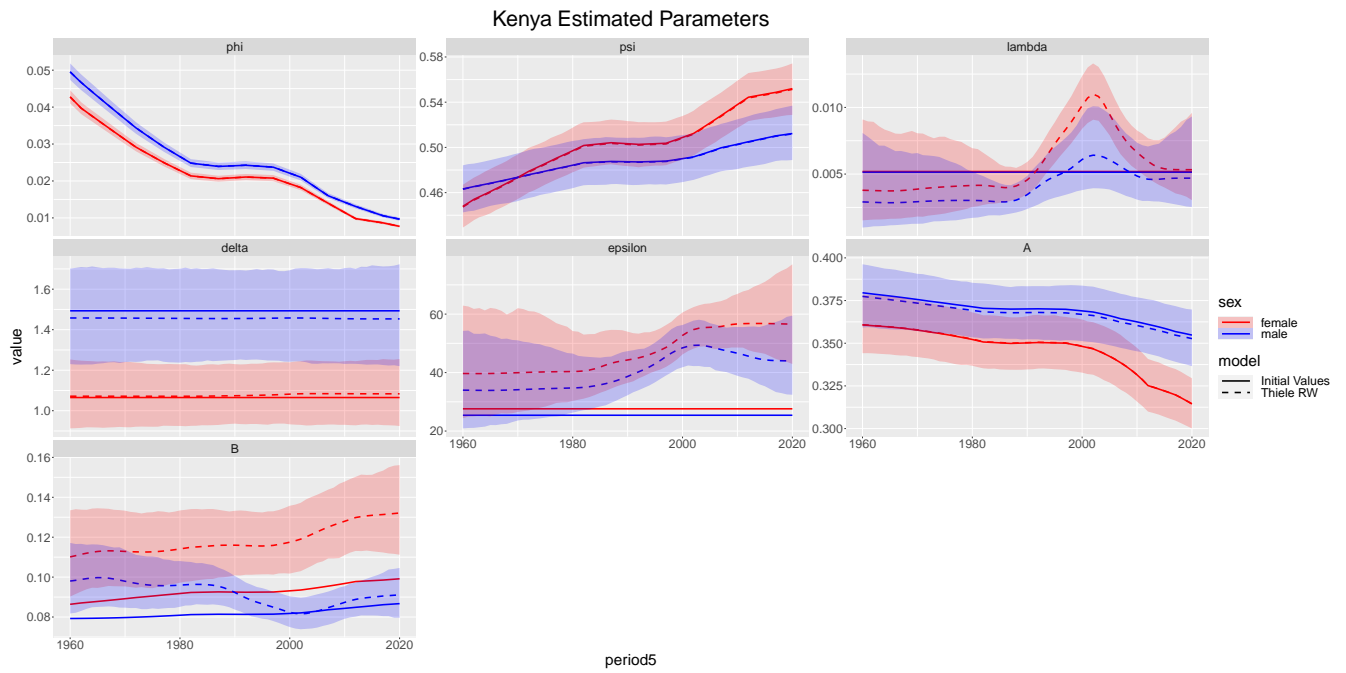


Figure 2: Estimated parameters

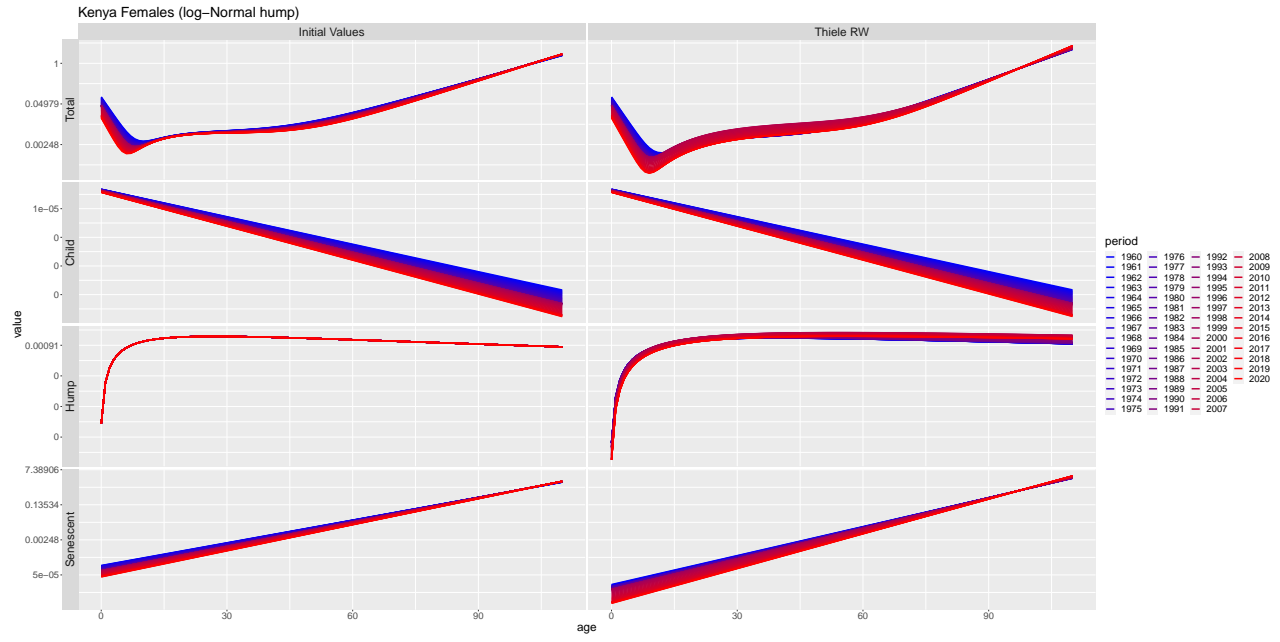


Figure 3: Thiele Decomposed

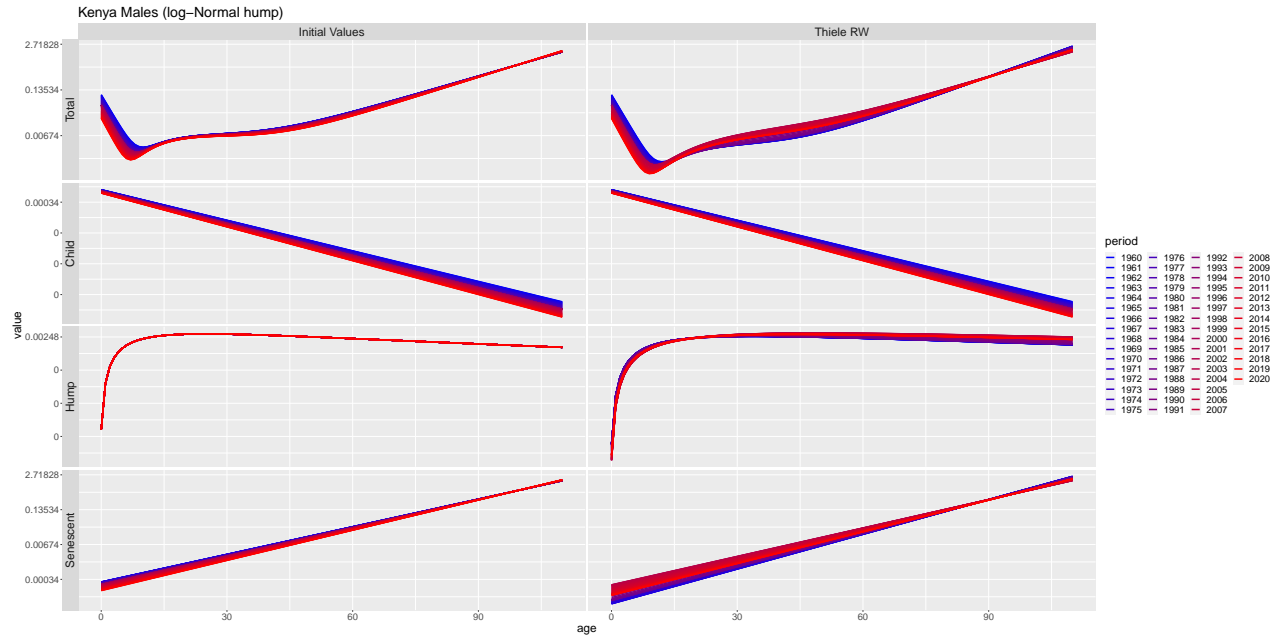


Figure 4: Thiele Decomposed

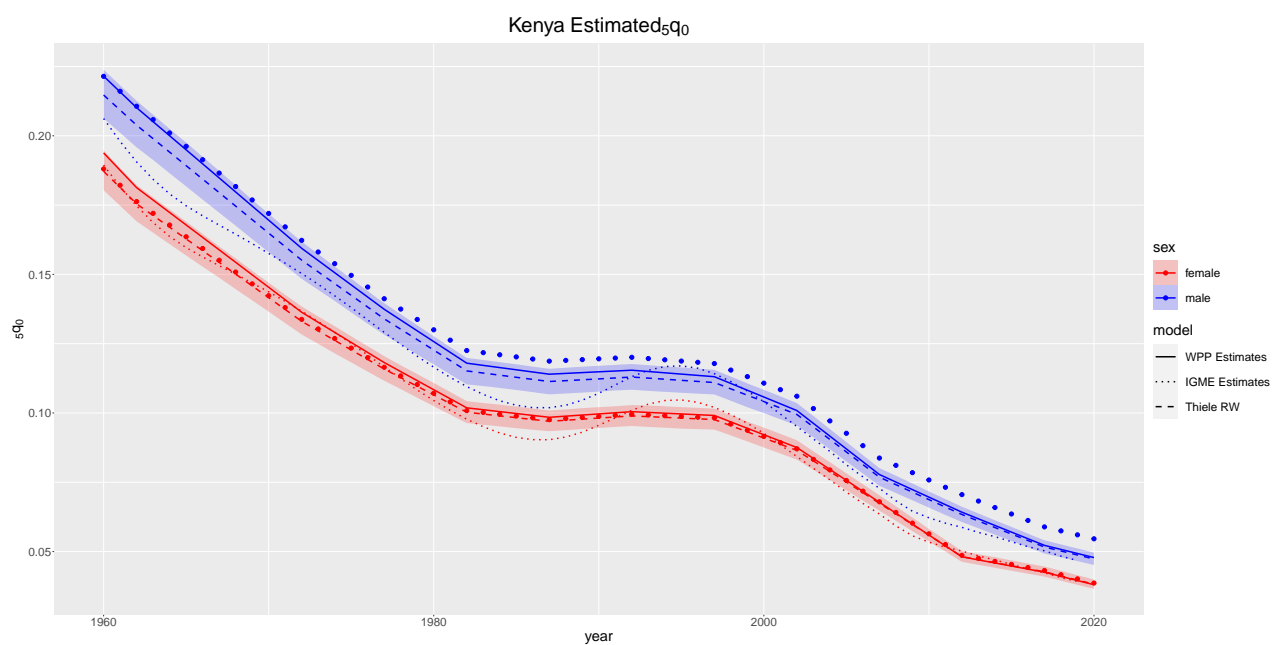


Figure 5: Estimated  $_5q_0$

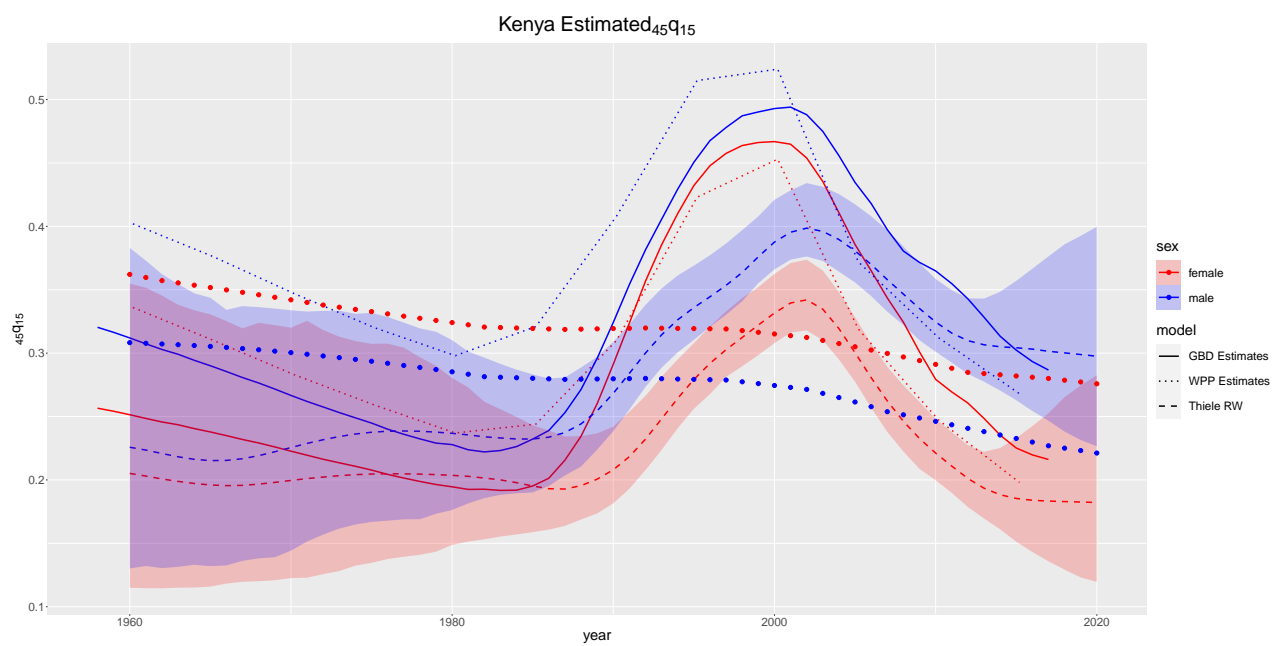


Figure 6: Estimated  $_{45}q_{15}$

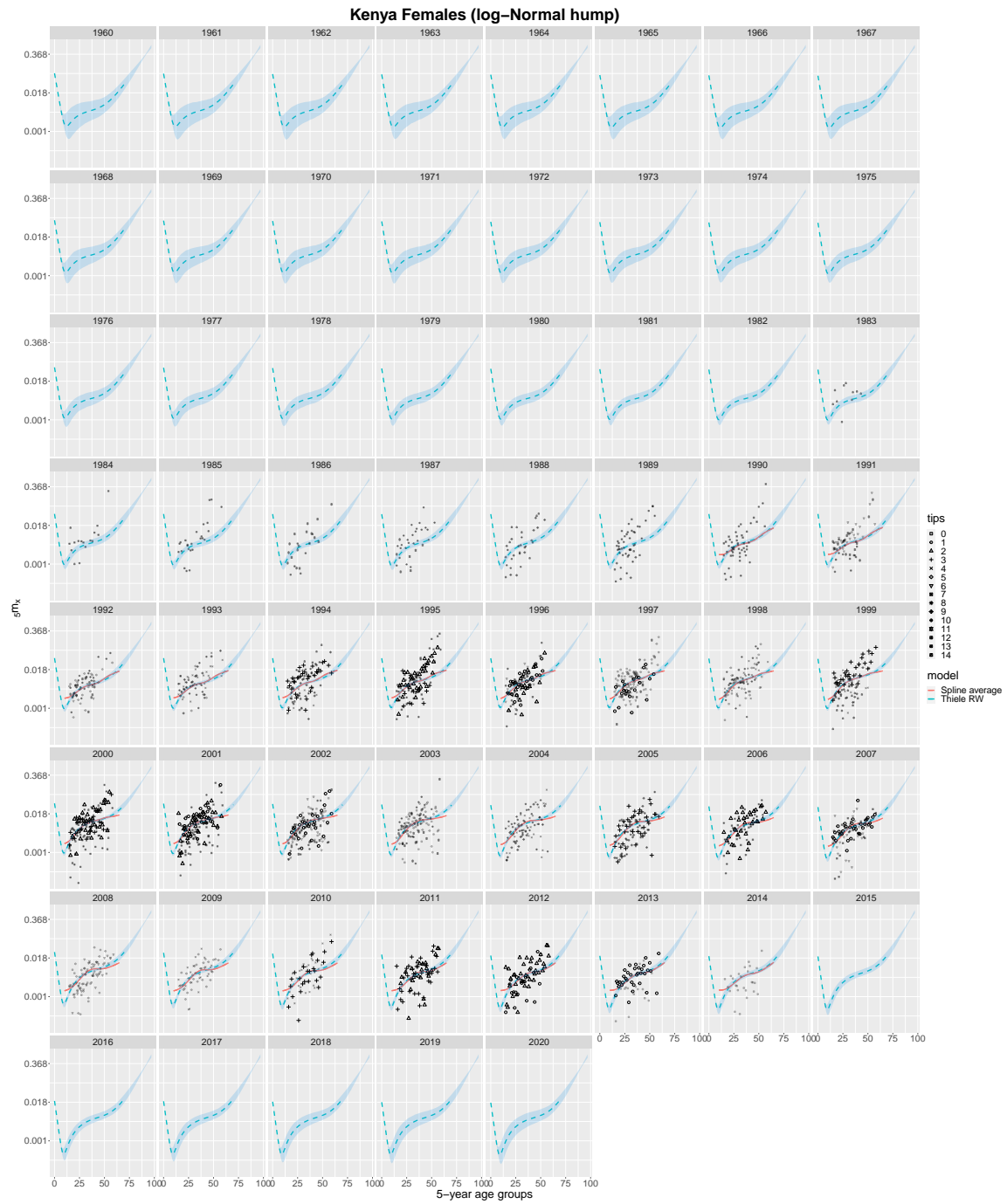


Figure 7: Mortality Schedules

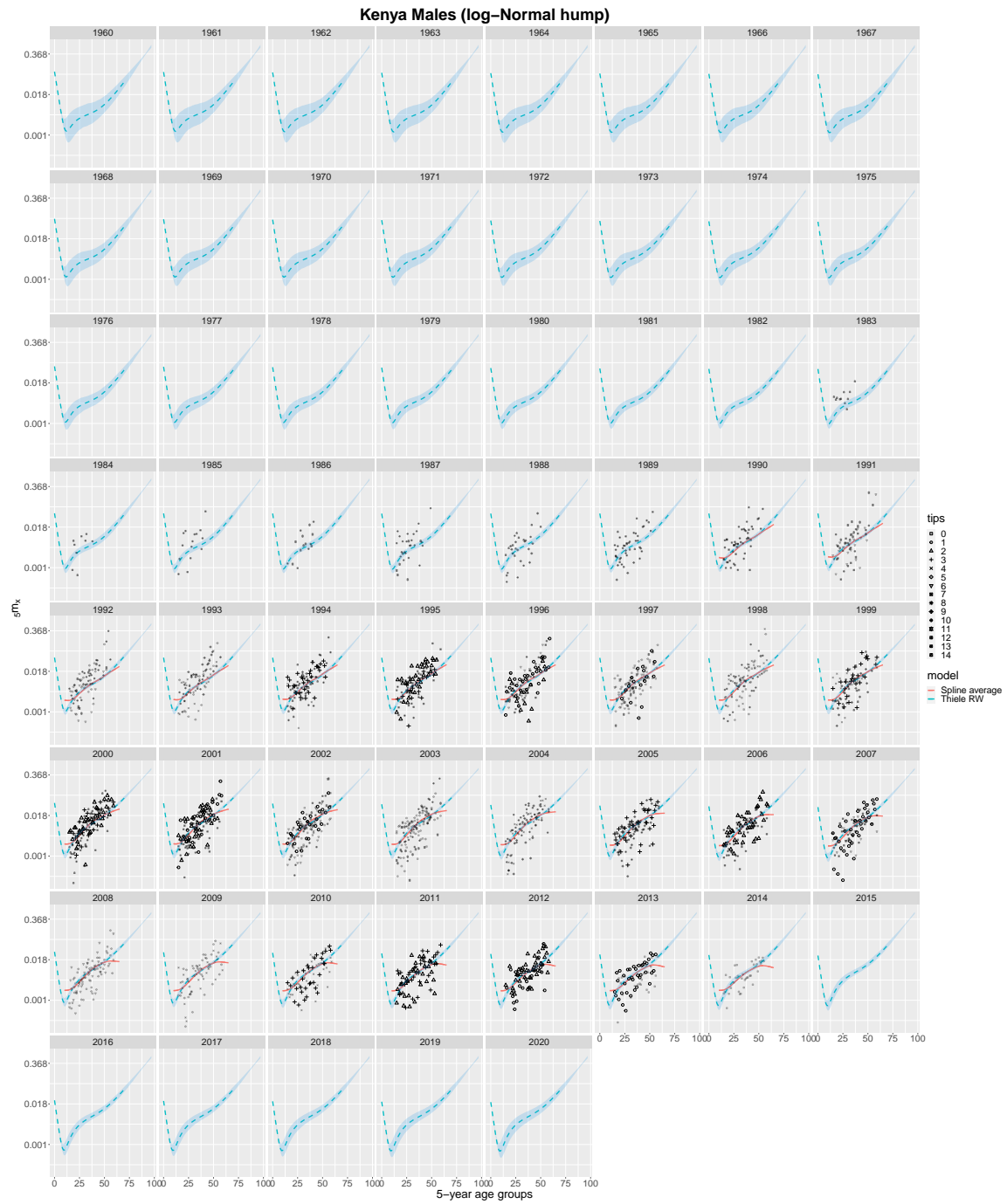


Figure 8: Mortality Schedules

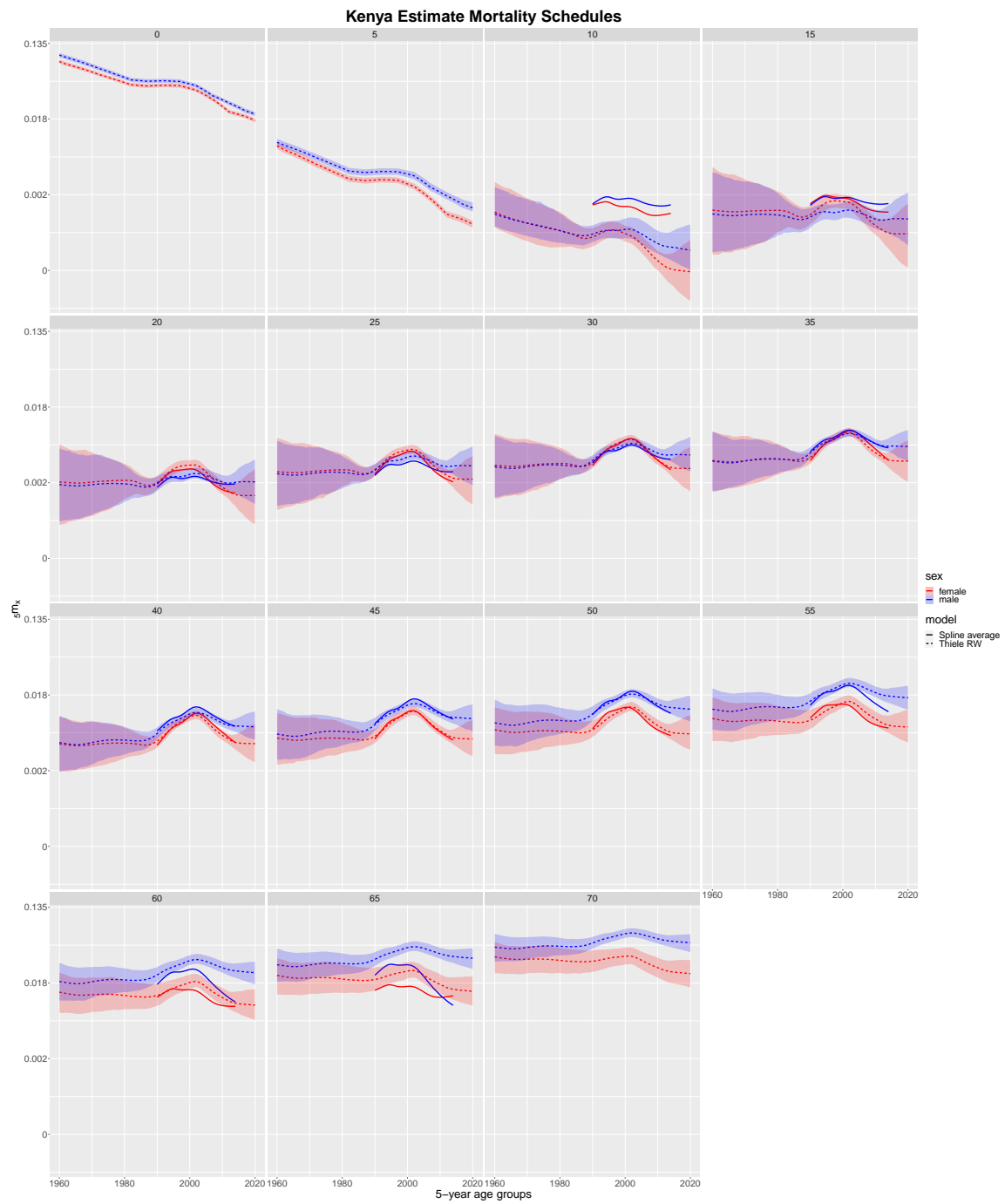


Figure 9: Mortality Schedules



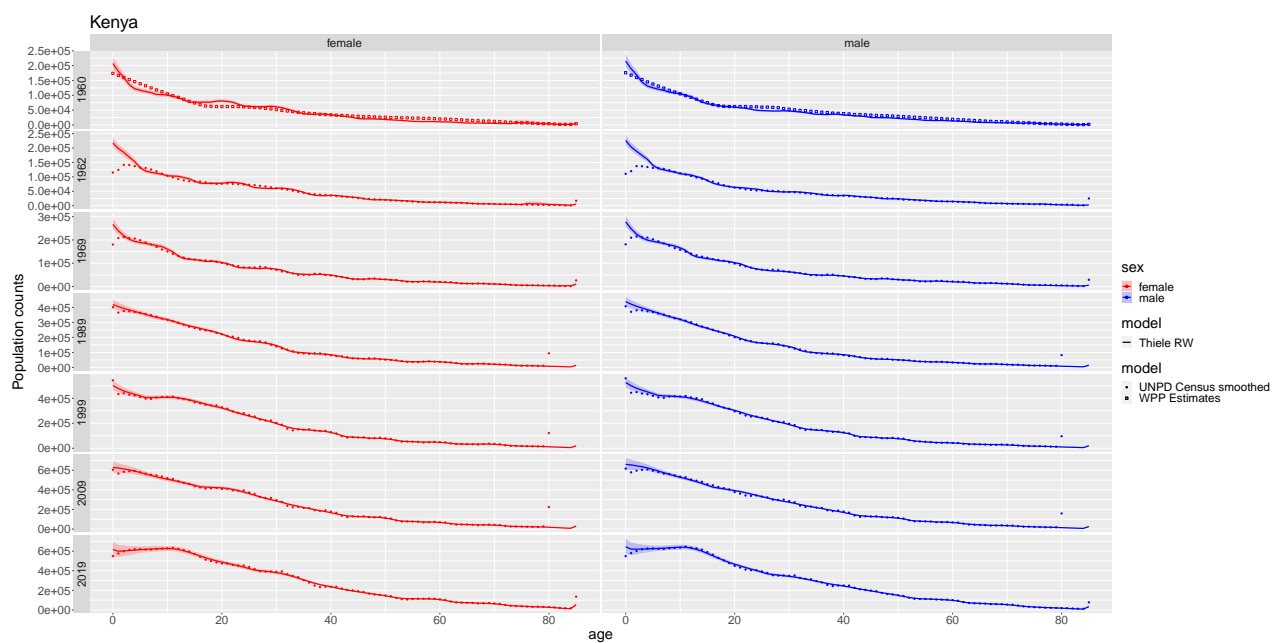


Figure 10: Population

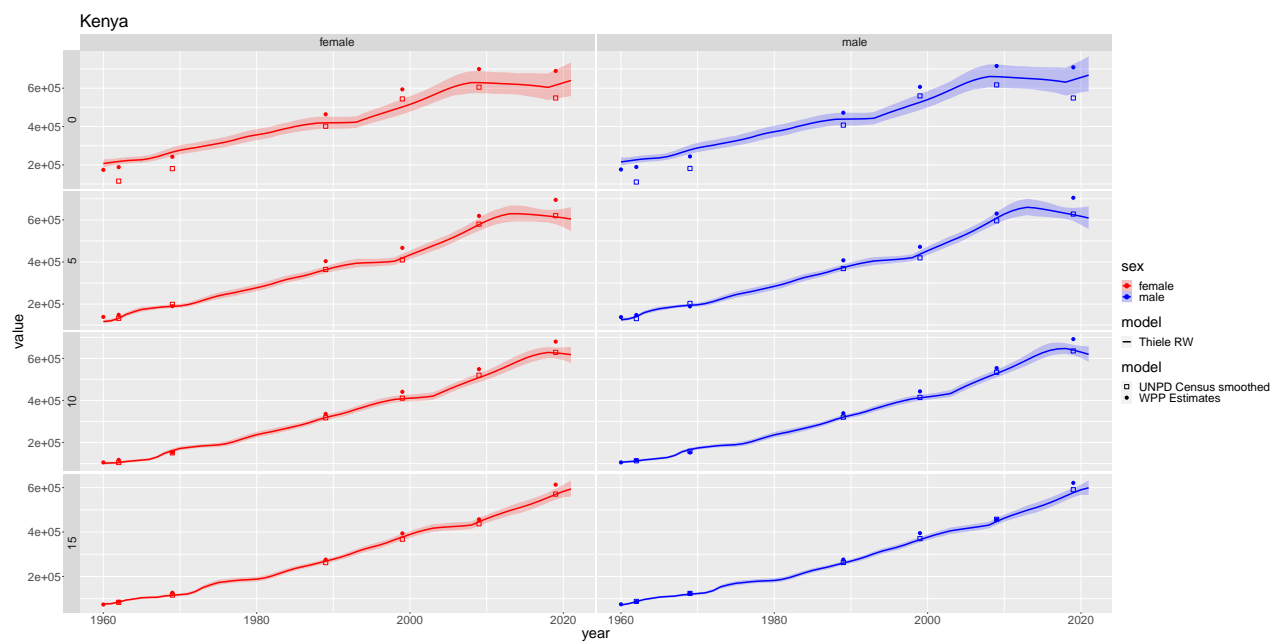


Figure 11: Population

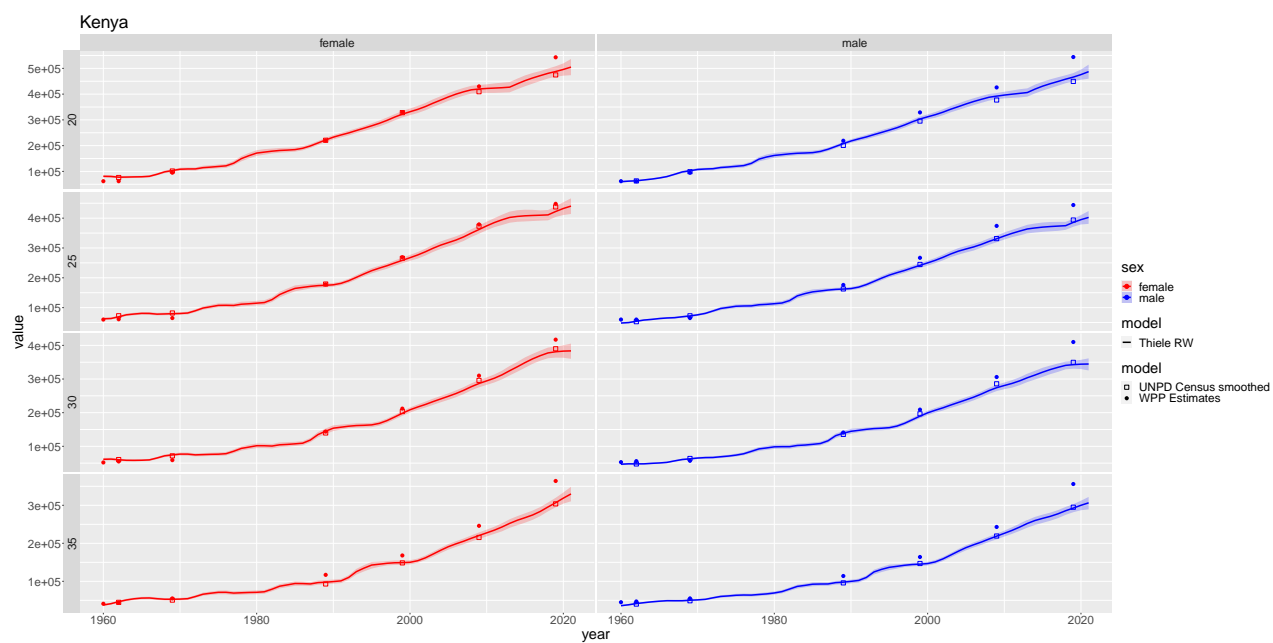


Figure 12: Population

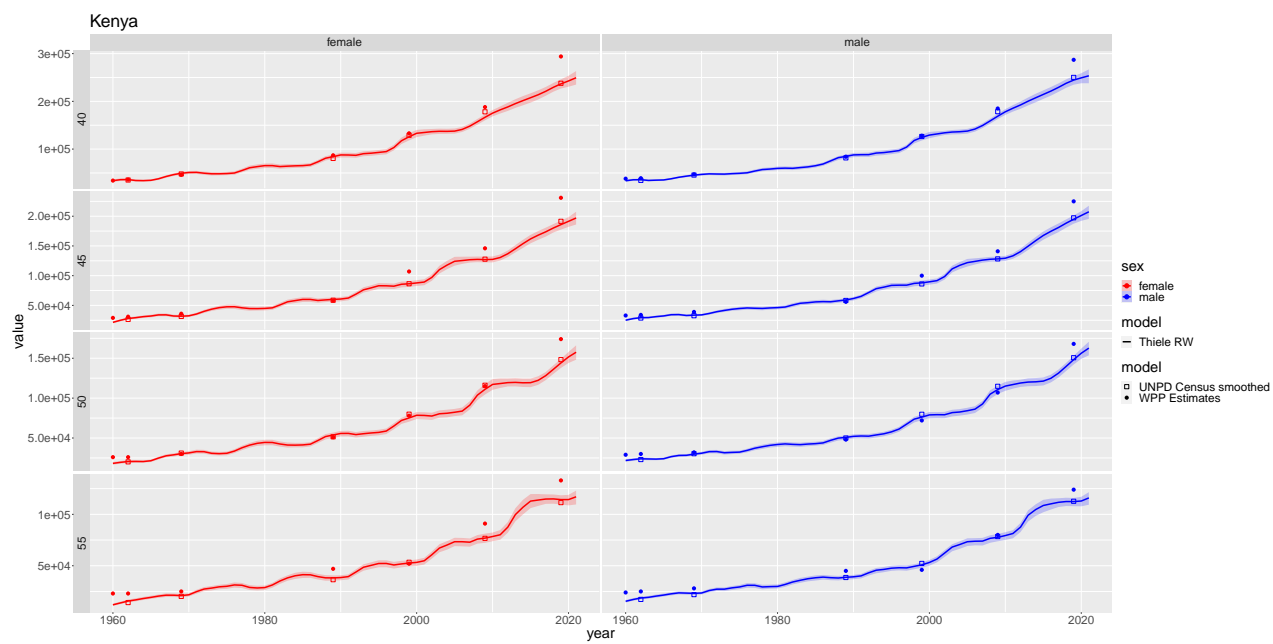


Figure 13: Population

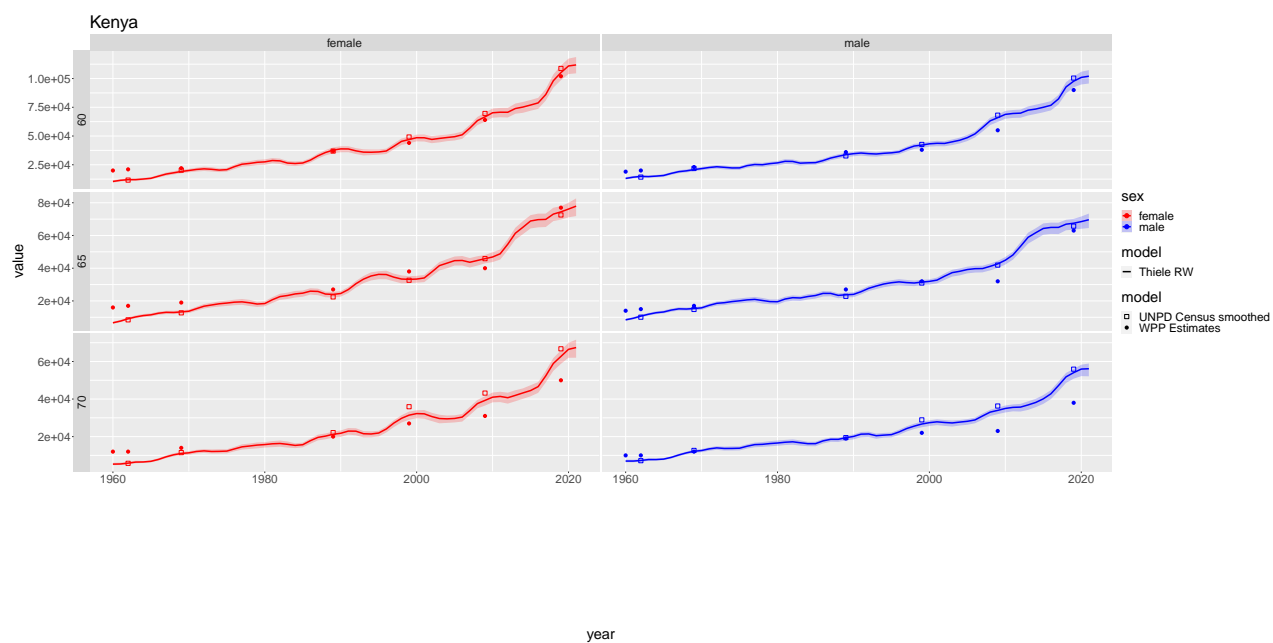


Figure 14: Population

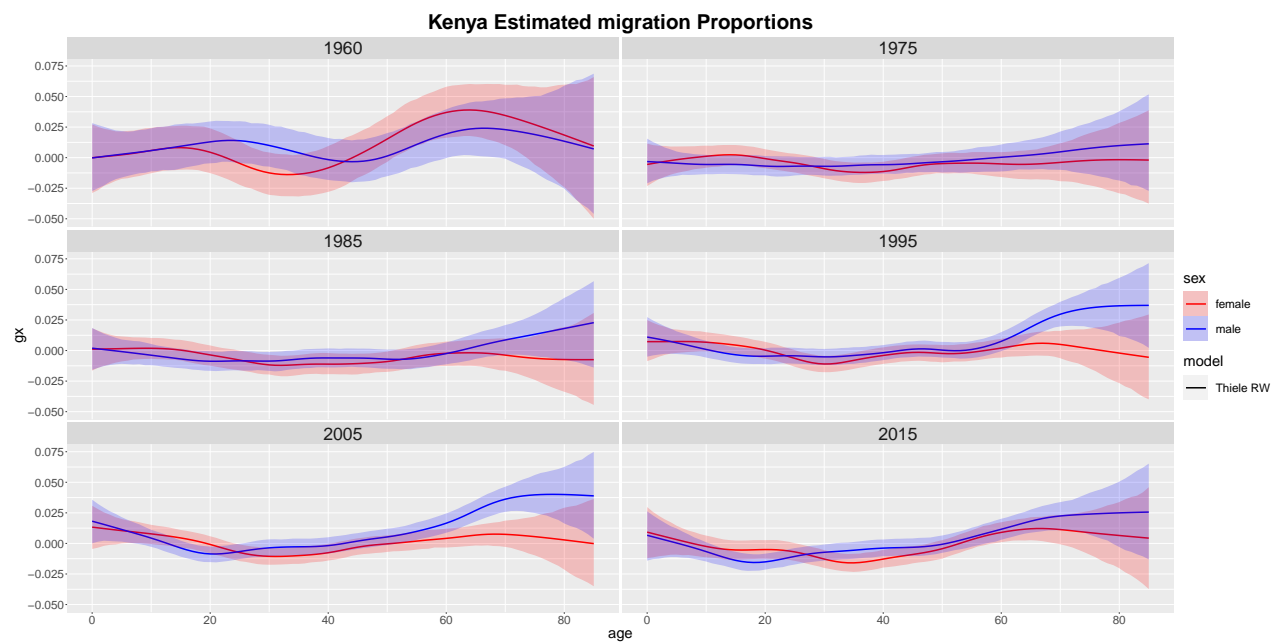


Figure 15: Migration

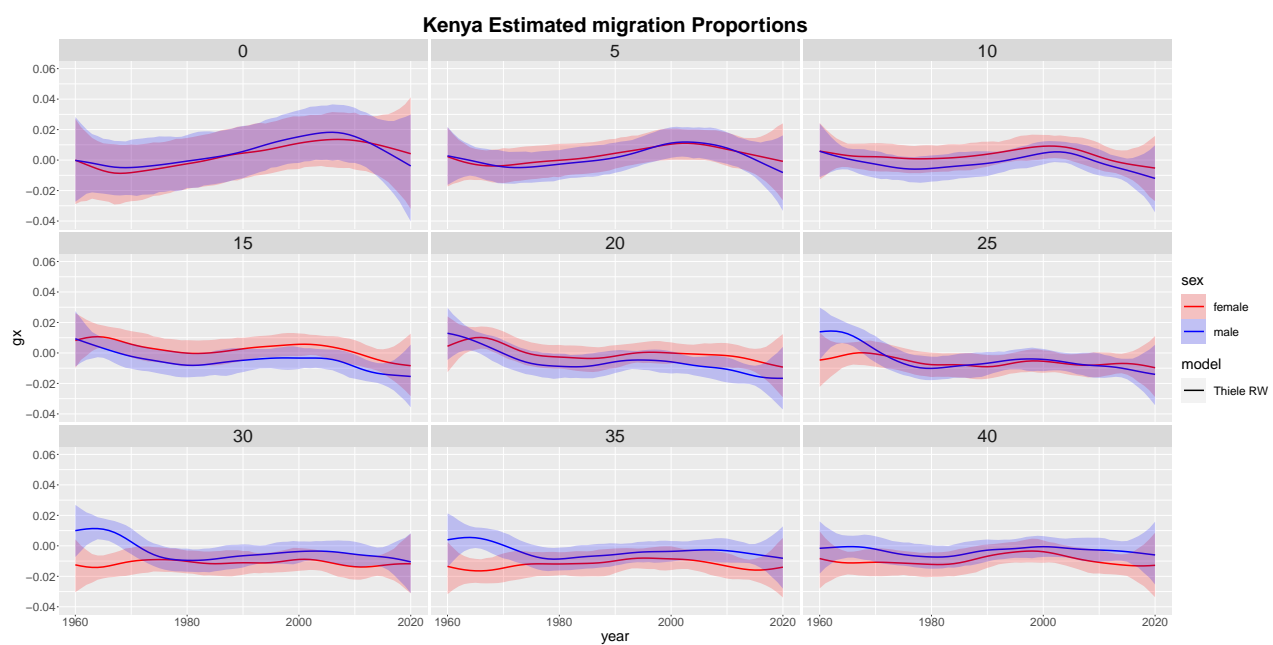


Figure 16: Migration

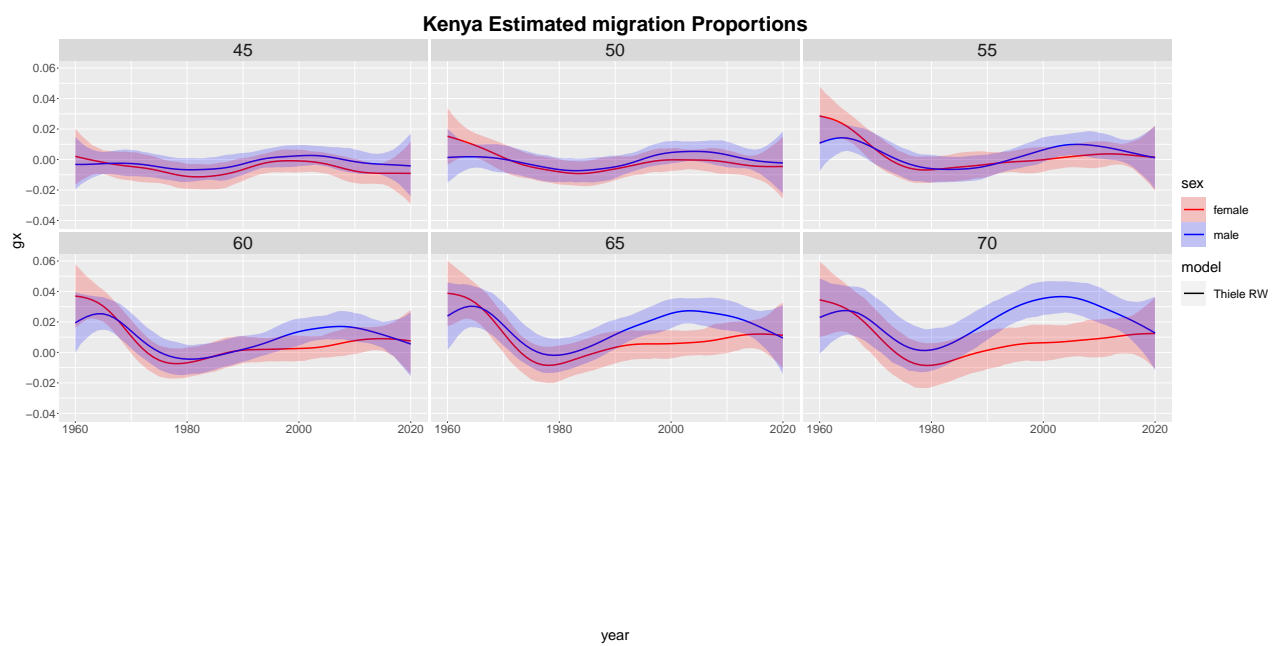


Figure 17: Migration

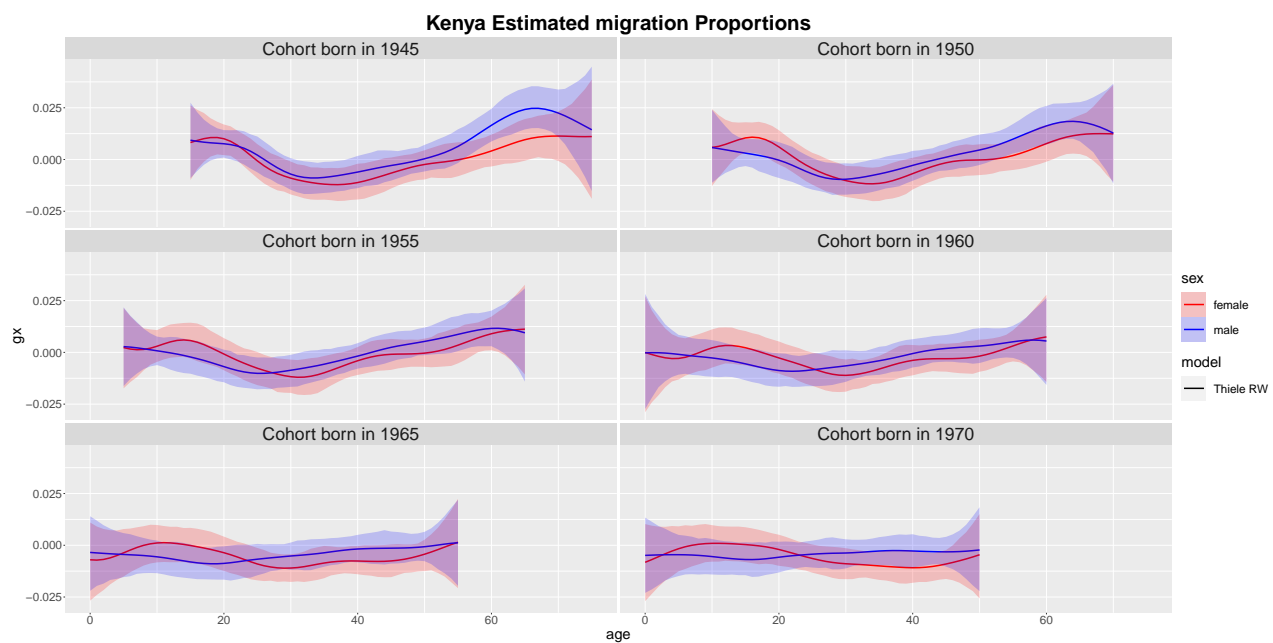


Figure 18: Migration

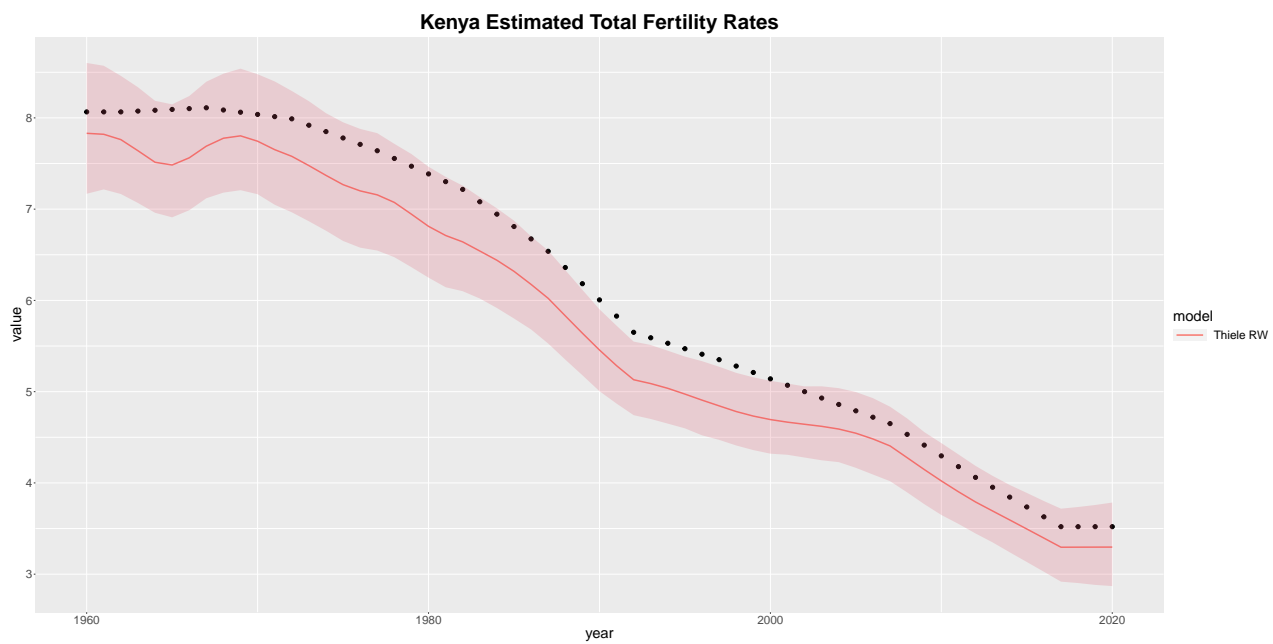


Figure 19: Total Fertility

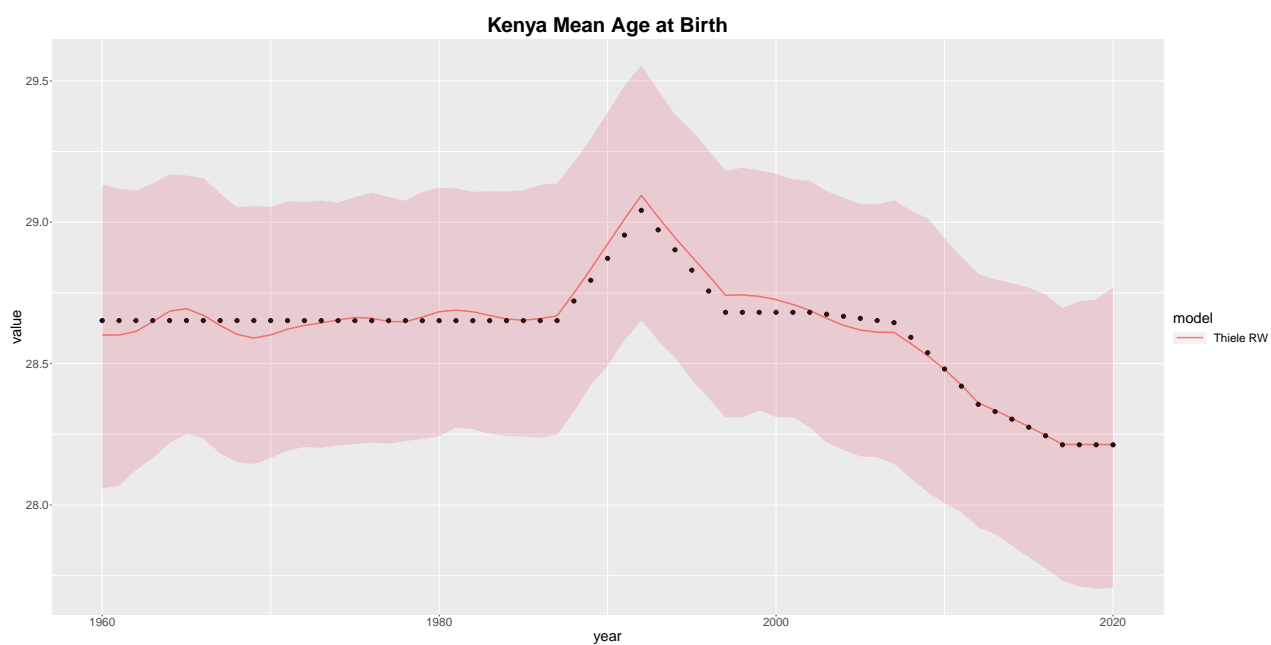


Figure 20: Mean age at births

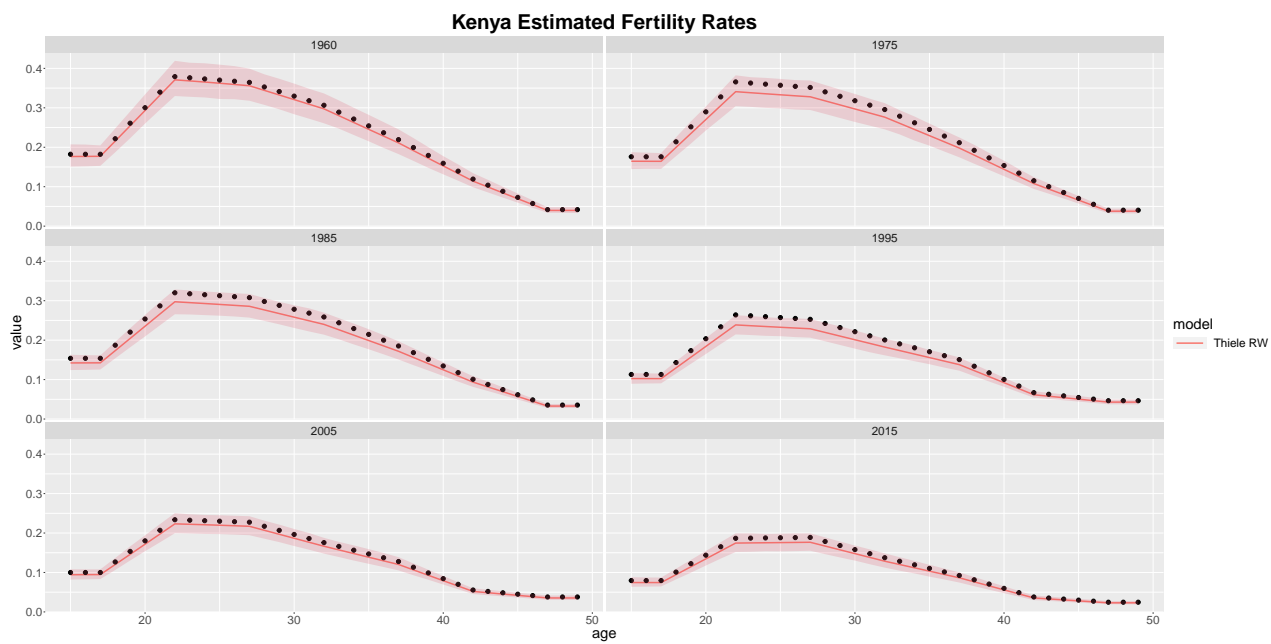


Figure 21: Fertility

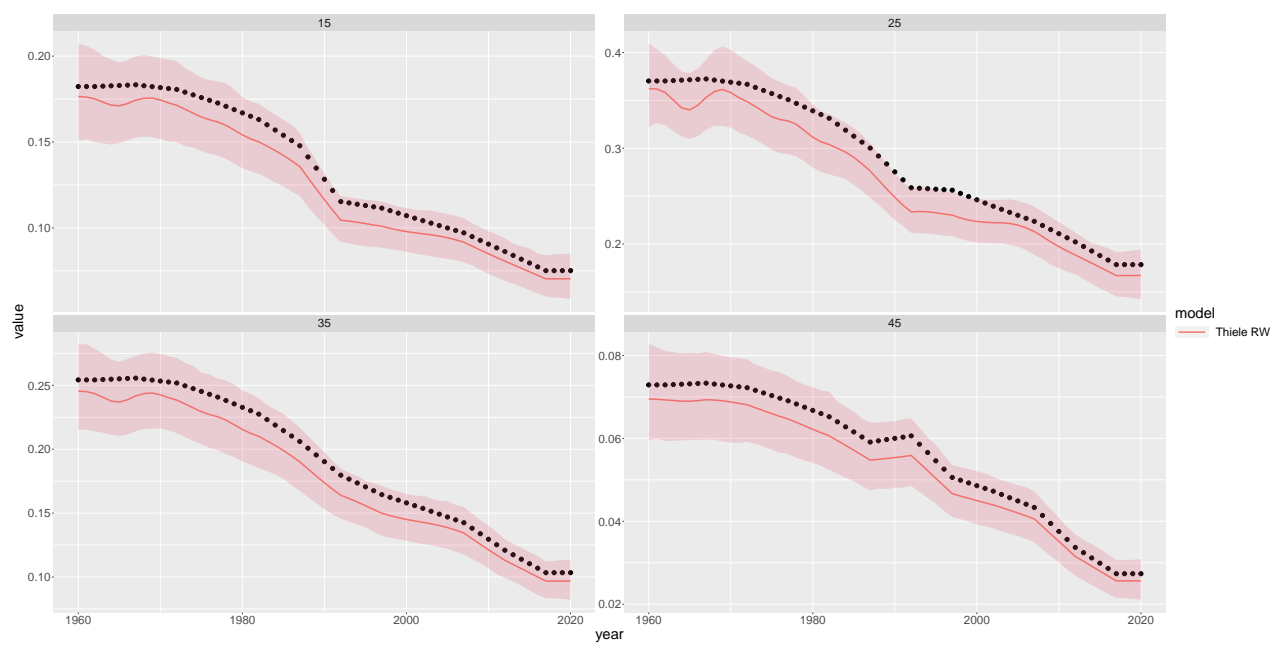


Figure 22: Fertility