Namibia

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

```
## # A tibble: 43 x 4
##      age `1991` `2001` `2011`
##    <dbl>  <dbl>  <dbl>  <dbl>
##  1     0 46828. 47792. 60848.
##  2     2 42986. 49644. 55720.
##  3     4 42018. 50888. 53124.
##  4     6 39427. 50523. 48727.
##  5     8 37034. 50764. 47317.
##  6    10 36109. 50431. 49623.
##  7    12 35157. 46630. 49687.
##  8    14 34762. 43426. 48194
##  9    16 34041. 42348. 48149.
## 10    18 31973. 40145. 48728.
## # ... with 33 more rows
```

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

```
## # A tibble: 43 x 4
##      age `1991` `2001` `2011`
##    <dbl>  <dbl>  <dbl>  <dbl>
##  1     0 46744. 47808. 60428.
##  2     2 42744. 49595. 55378.
##  3     4 41828. 50459. 52865.
##  4     6 39128. 49773. 48245.
##  5     8 36359. 49258. 46668.
##  6    10 35500. 48743. 49086
##  7    12 34769. 45351. 48717.
##  8    14 33921. 41860. 46508.
##  9    16 32932. 40918. 46405.
## 10    18 30939. 39525. 47424.
## # ... with 33 more rows
```

Thiele log-Normal Hump RW

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

```
##           log_tau2_logpop_f          log_tau2_logpop_f
##                   5.7428748                  3.8188208
##           log_tau2_logpop_m          log_tau2_logpop_m
##                   5.7527352                  3.7976815
##                log_tau2_fx                log_tau2_gx_f
##                   4.1501459                  4.2225642
##              log_tau2_gx_m              logit_rho_g_x_f
##                   4.1637158                  6.9560623
##             logit_rho_g_t_f             logit_rho_g_x_m
##                   6.5758109                  6.7930228
##             logit_rho_g_t_m               log_lambda_tp
##                   7.3557752                  3.8034495
## log_lambda_tp_0_inflated_sd            log_dispersion_f
##                   0.2810058                  1.5314567
```

```
##            log_dispersion_m     log_marginal_prec_phi_f
##                   1.6408002                   4.4591983
##     log_marginal_prec_psi_f  log_marginal_prec_lambda_f
##                   4.6108244                   2.1216585
##   log_marginal_prec_delta_f log_marginal_prec_epsilon_f
##                   3.0457663                   3.8697522
##       log_marginal_prec_A_f       log_marginal_prec_B_f
##                   6.9210944                   6.9310706
##     log_marginal_prec_phi_m     log_marginal_prec_psi_m
##                   4.6564846                   4.6052808
##  log_marginal_prec_lambda_m   log_marginal_prec_delta_m
##                   2.3625297                   3.1160349
## log_marginal_prec_epsilon_m       log_marginal_prec_A_m
##                   3.6837413                   6.9246178
##       log_marginal_prec_B_m             logit_rho_phi_f
##                   6.9539385                   1.7597916
##             logit_rho_psi_f               logit_rho_A_f
##                   1.2034216                   1.1932636
##               logit_rho_B_f             logit_rho_phi_m
##                   2.7833915                   1.5920663
##             logit_rho_psi_m               logit_rho_A_m
##                   1.1916969                   1.2130123
##               logit_rho_B_m
##                   1.5653532
```

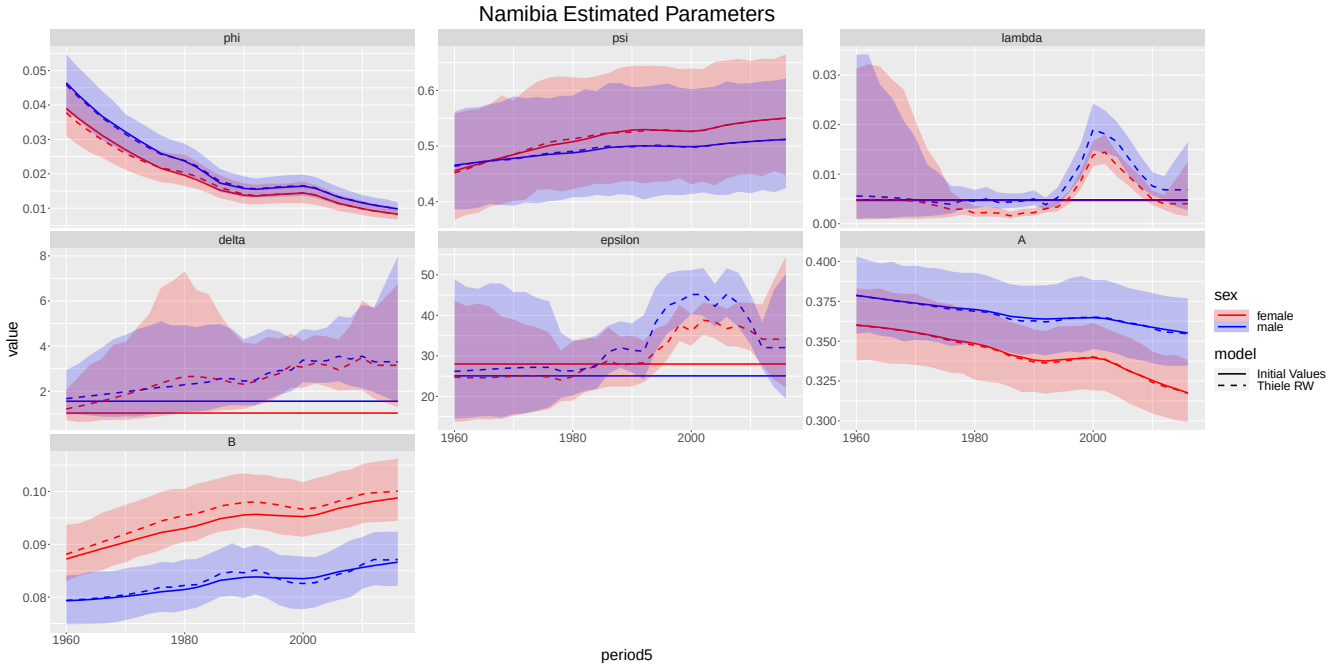

Figure 1: Estimated parameters

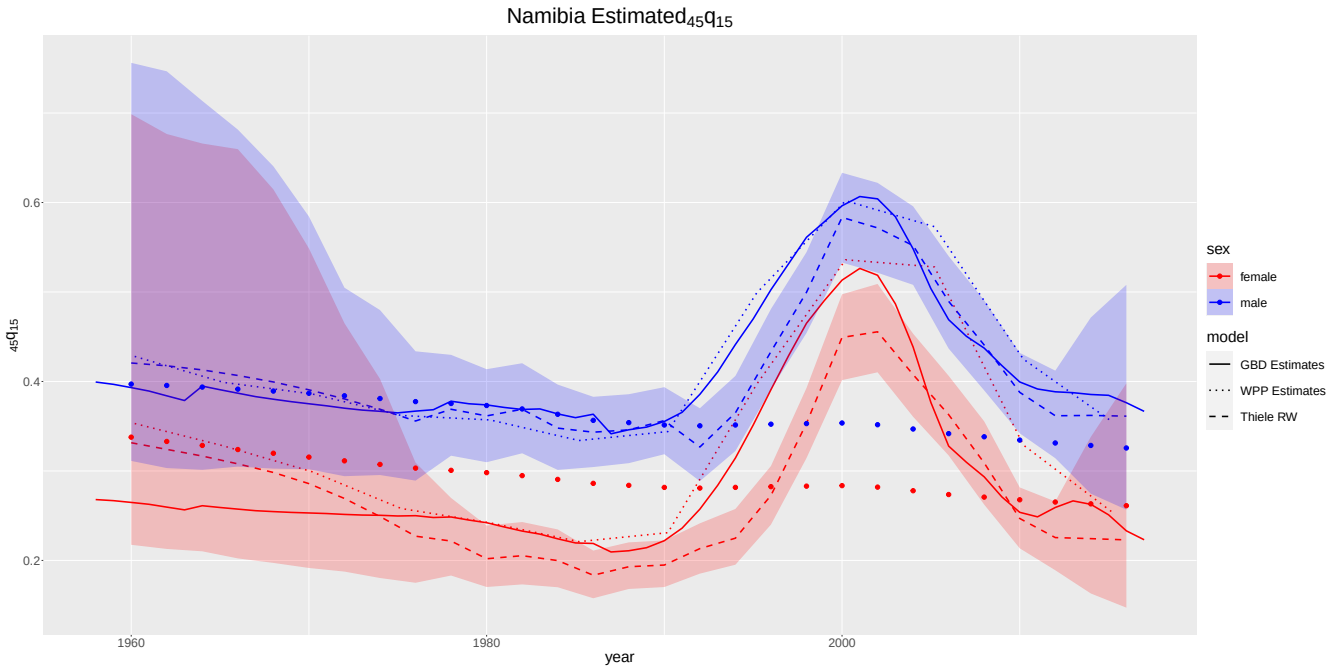

Figure 2: Estimated ${}_{45}q_{15}$

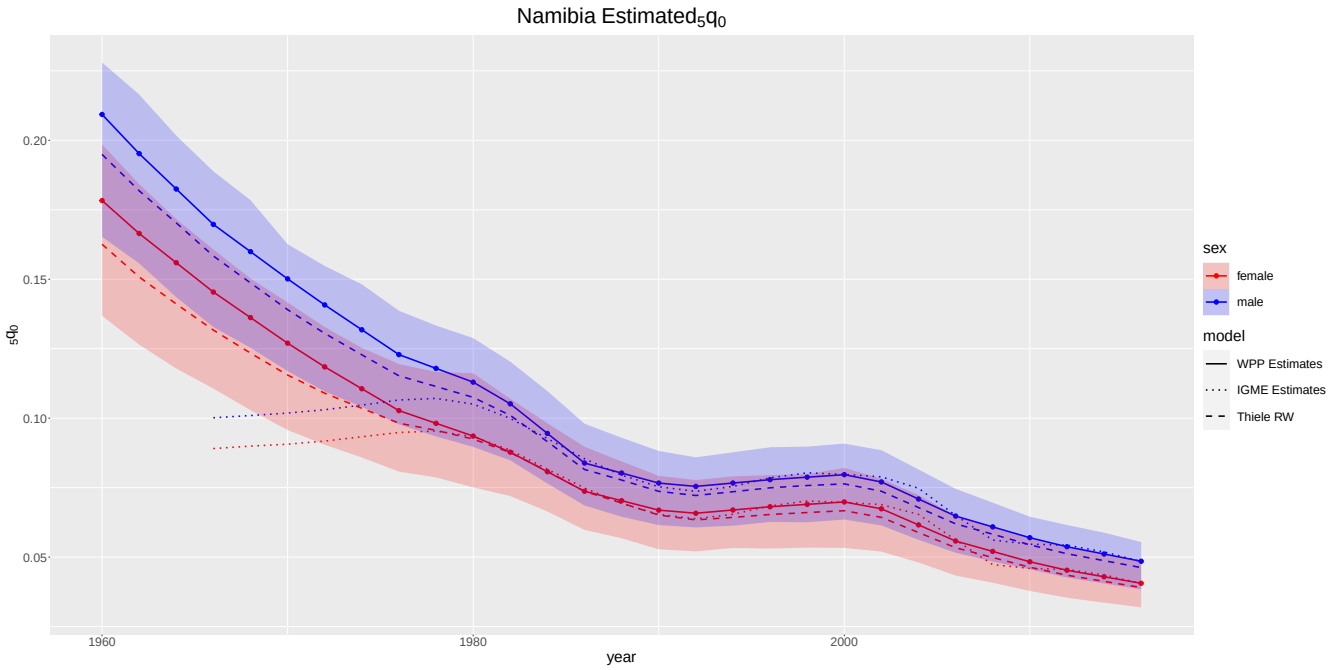

Figure 3: Estimated $_5q_0$

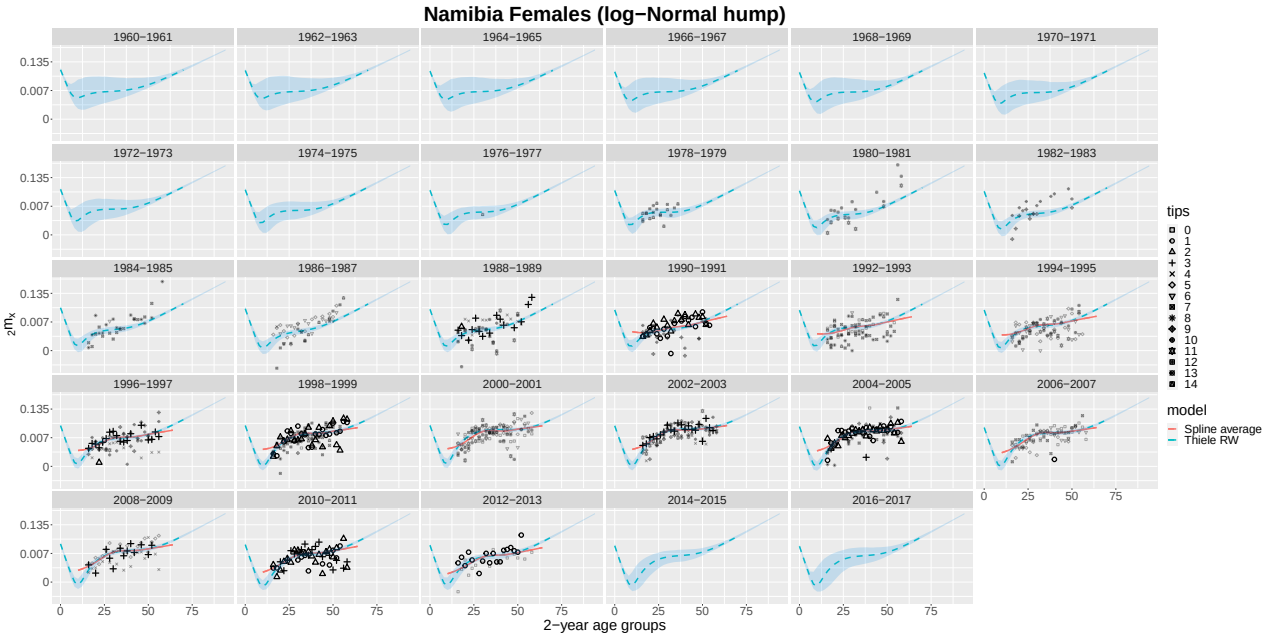

Figure 4: Mortality Schedules

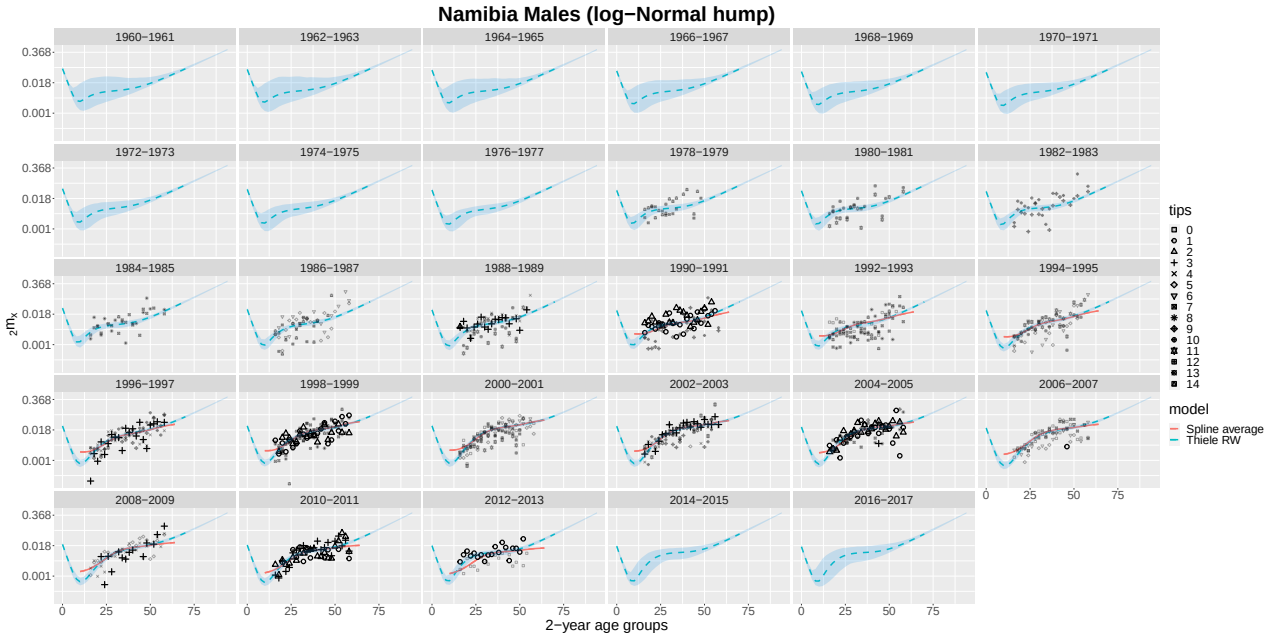

Figure 5: Mortality Schedules

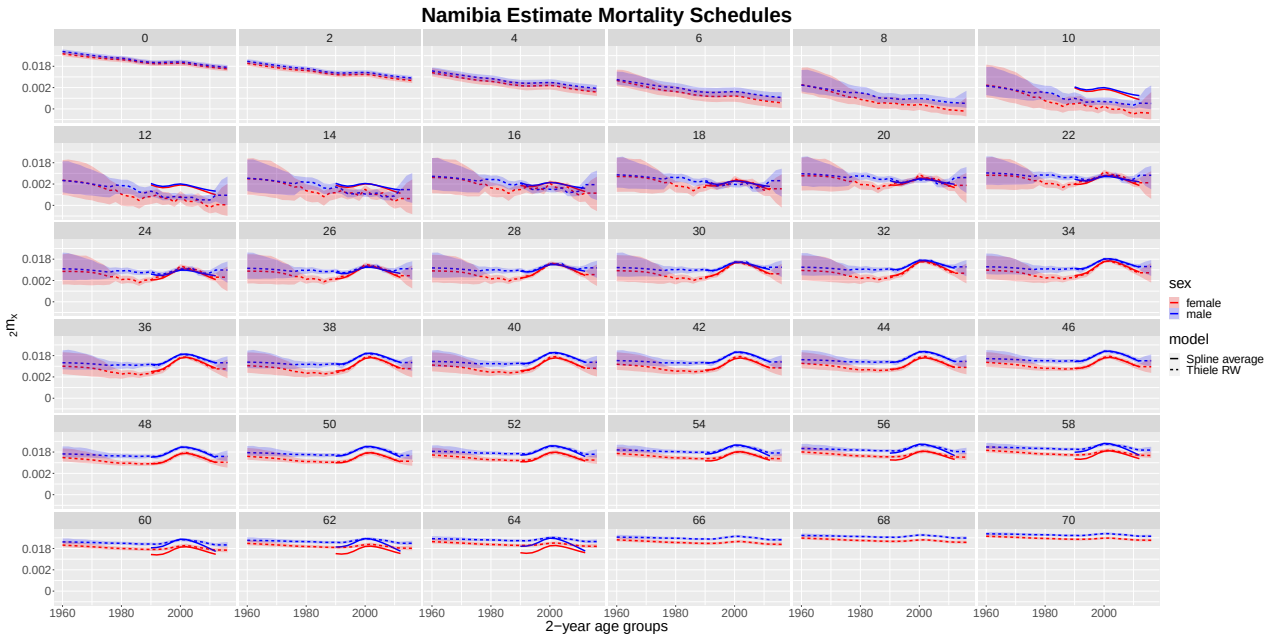

Figure 6: Mortality Schedules

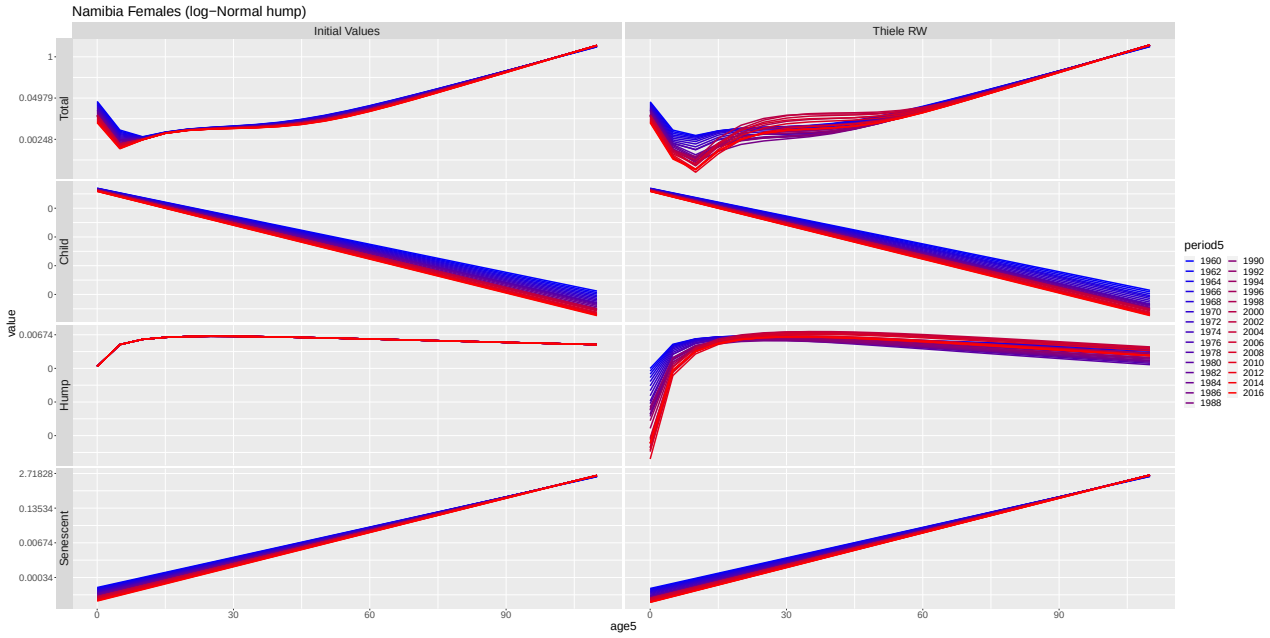

Figure 7: Thiele Decomposed

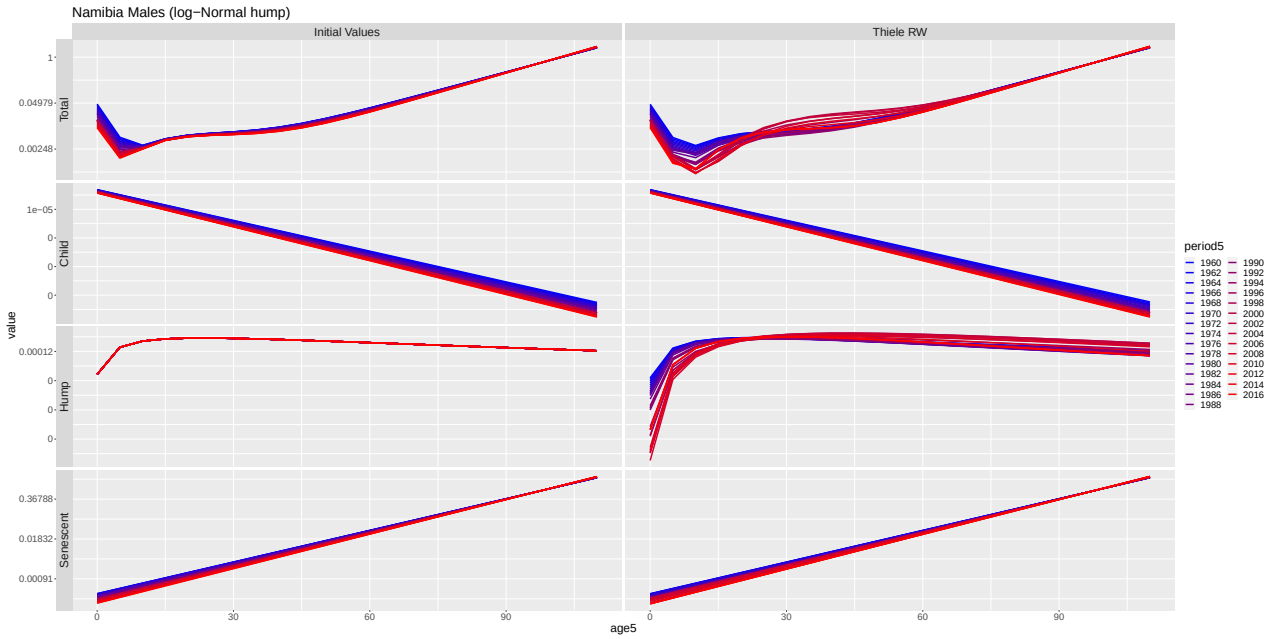

Figure 8: Thiele Decomposed

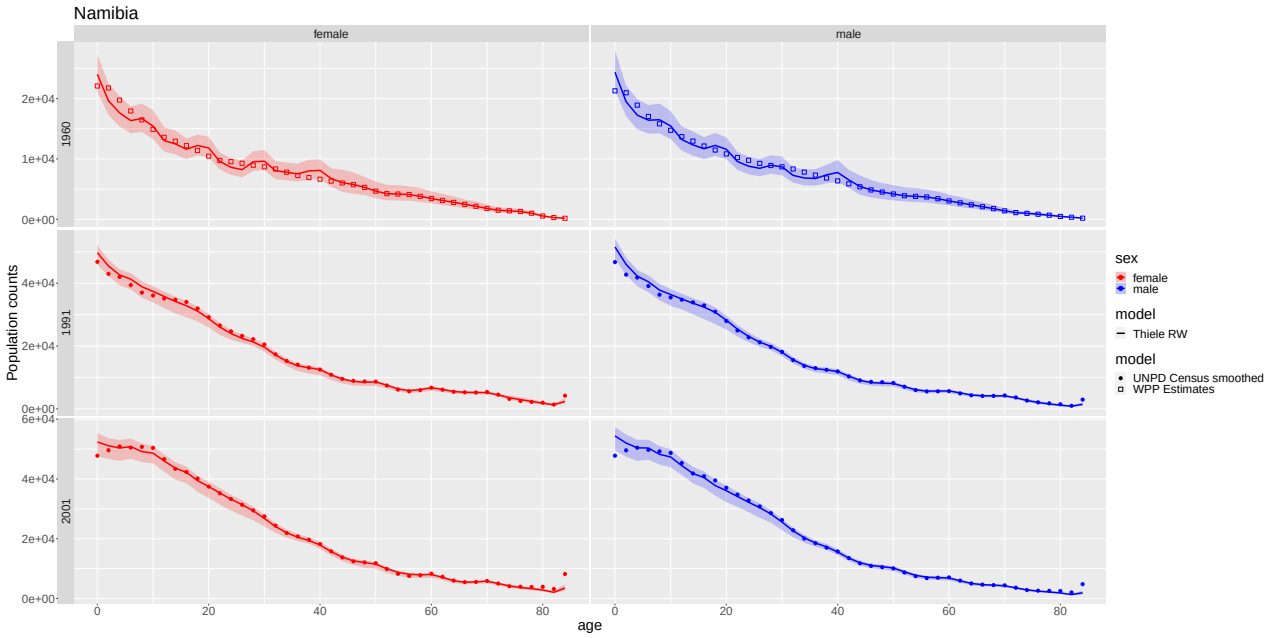

Figure 9: Population

Figure 10: Population

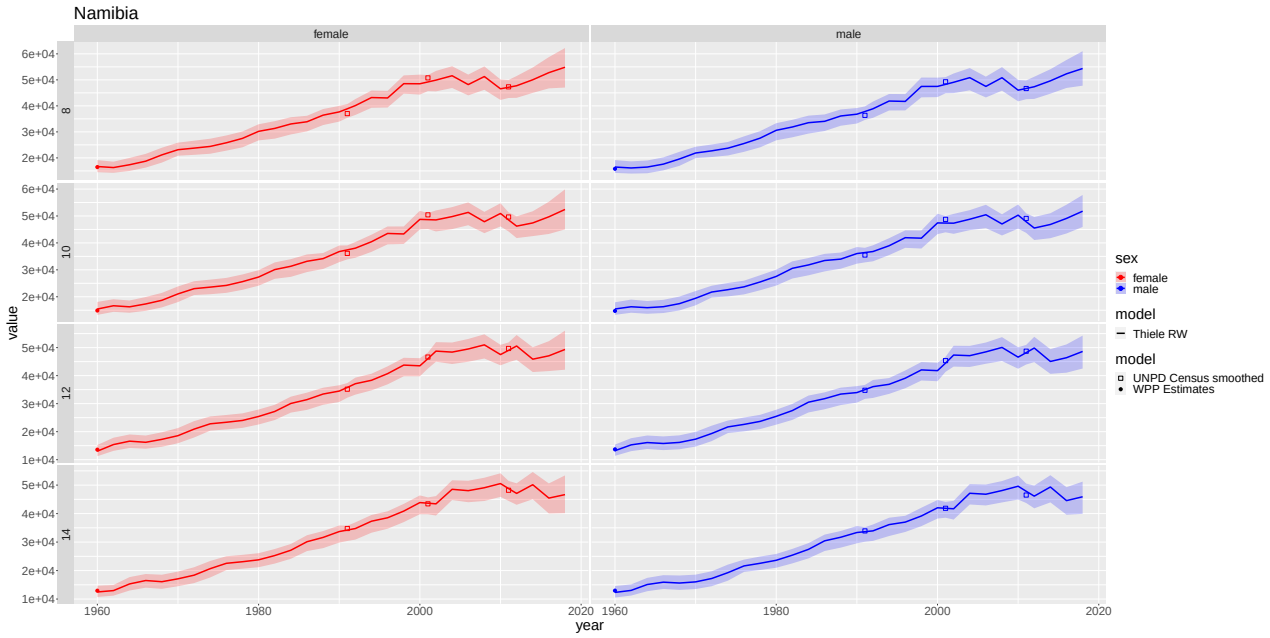

Figure 11: Population

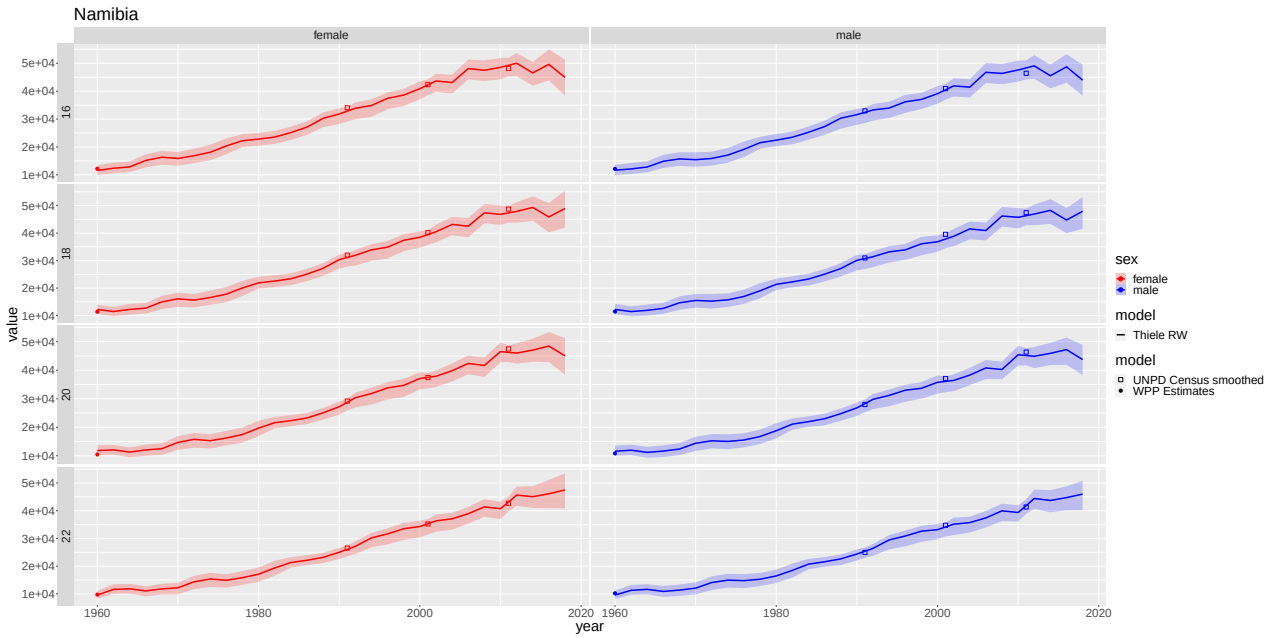

Figure 12: Population

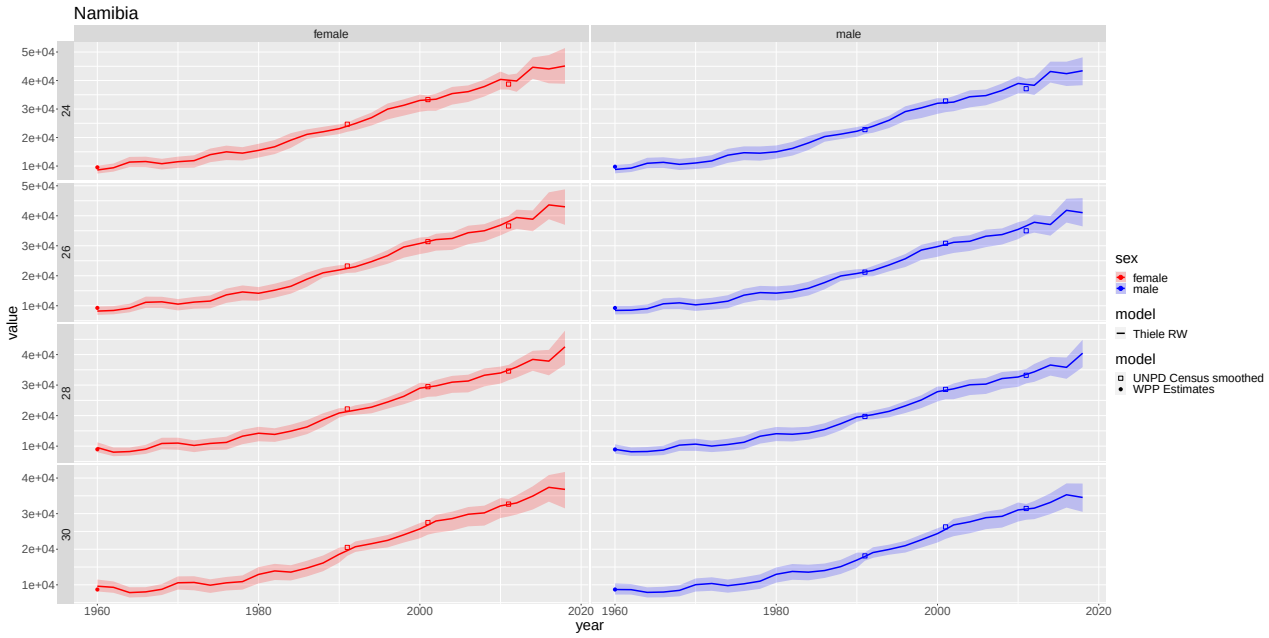

Figure 13: Population

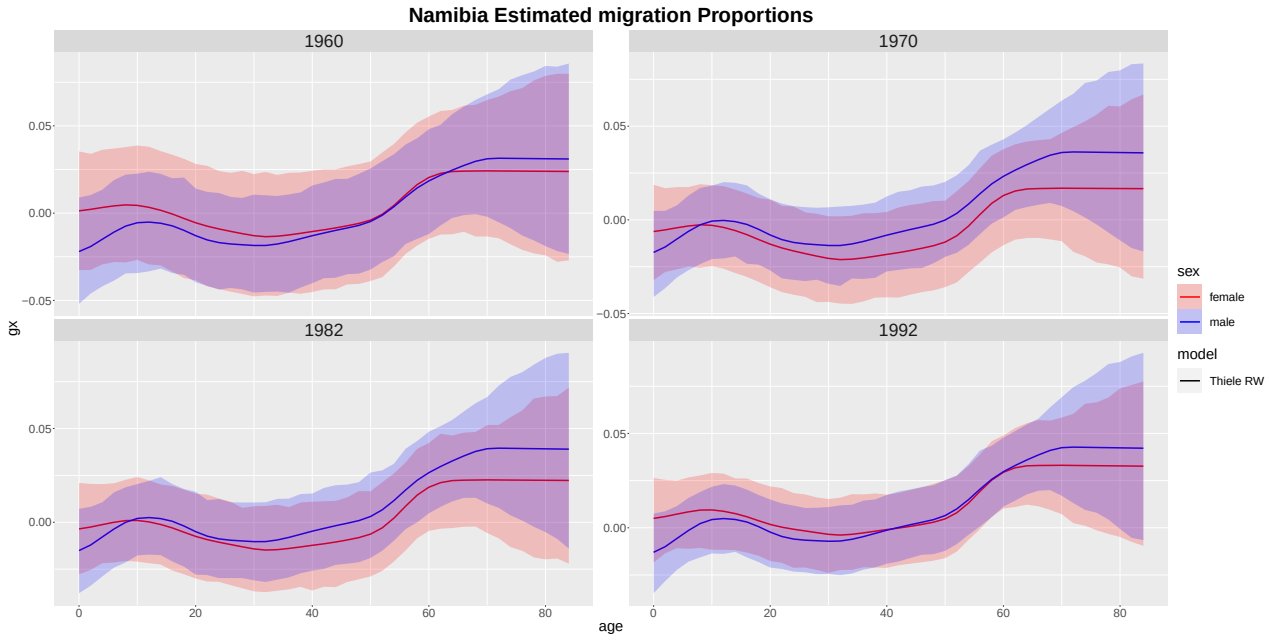

Figure 14: Migration

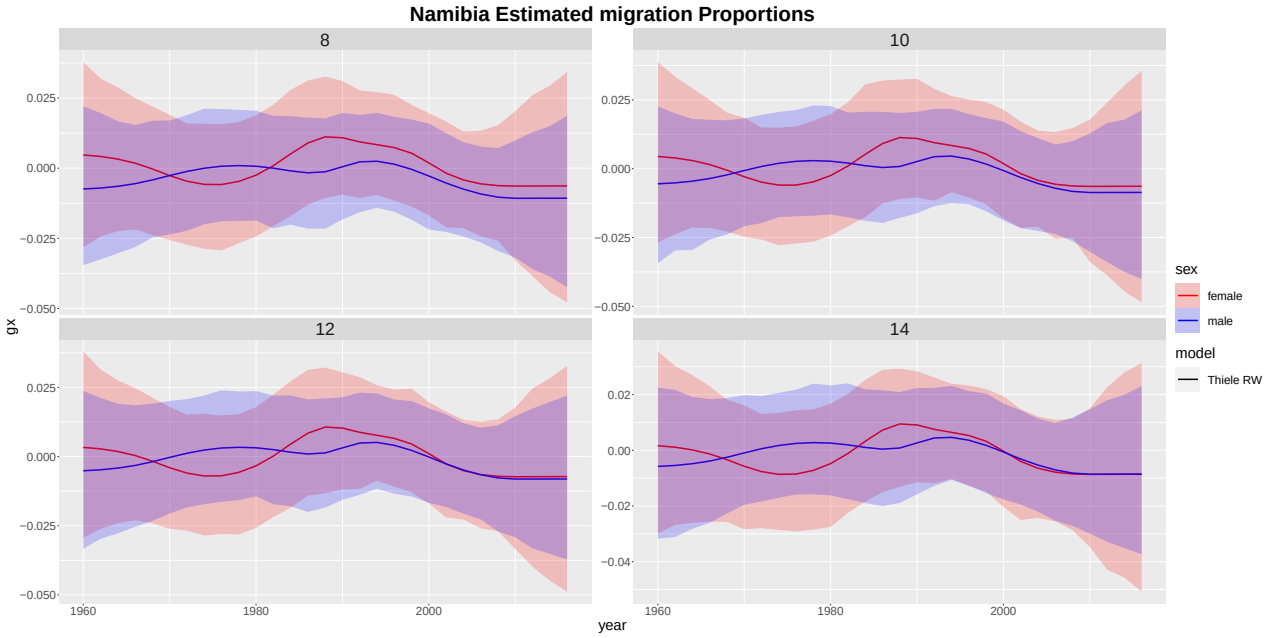

Figure 15: Migration

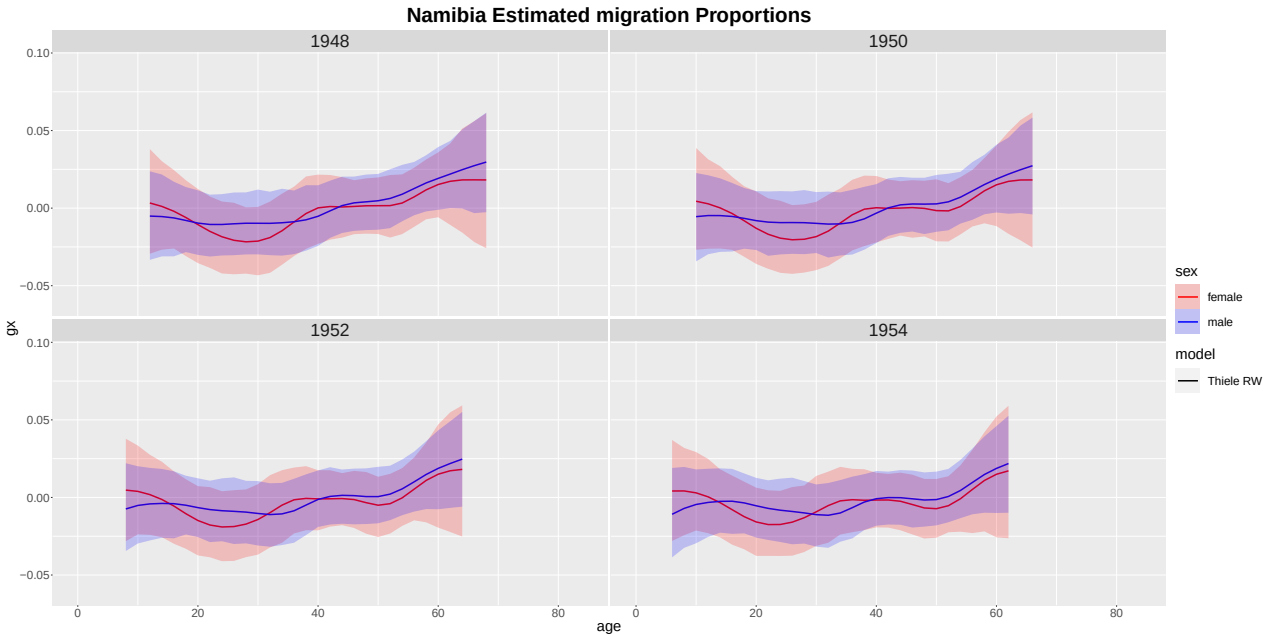

Figure 16: Migration

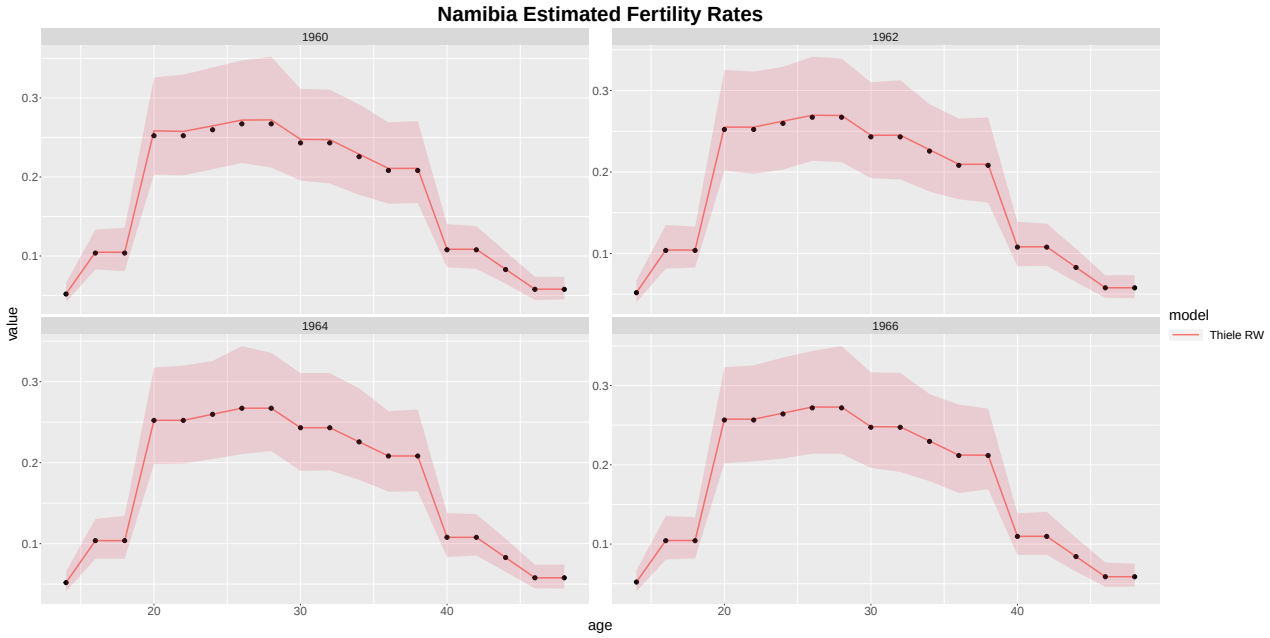

Figure 17: Fertility

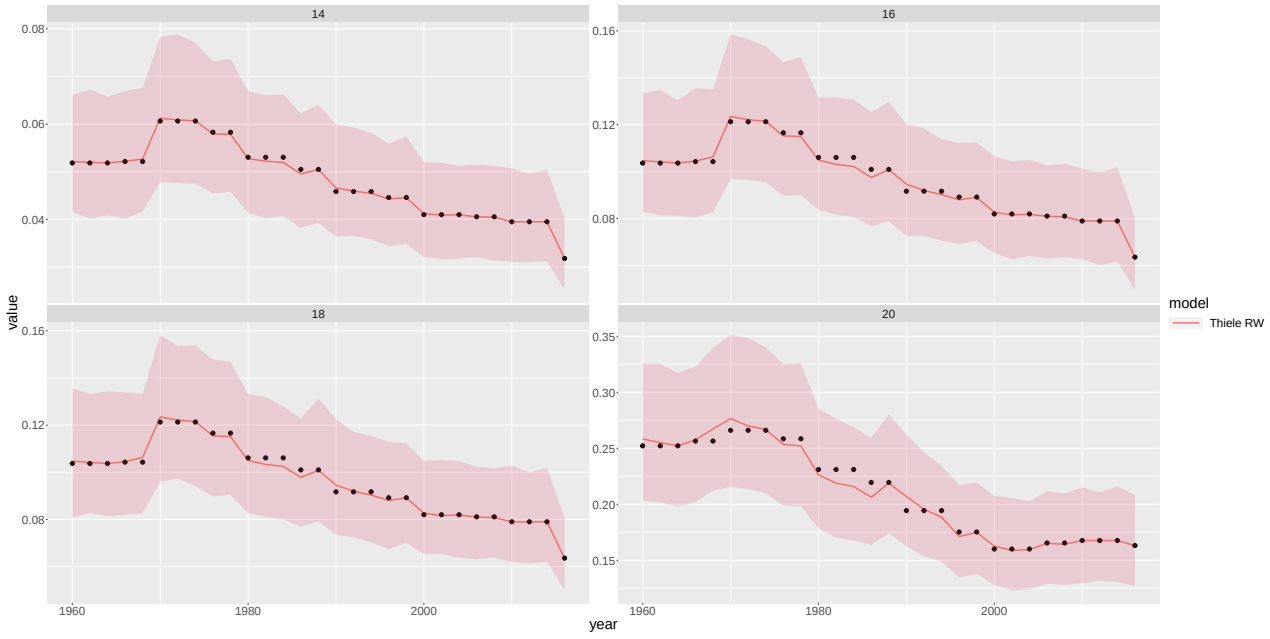

Figure 18: Fertility

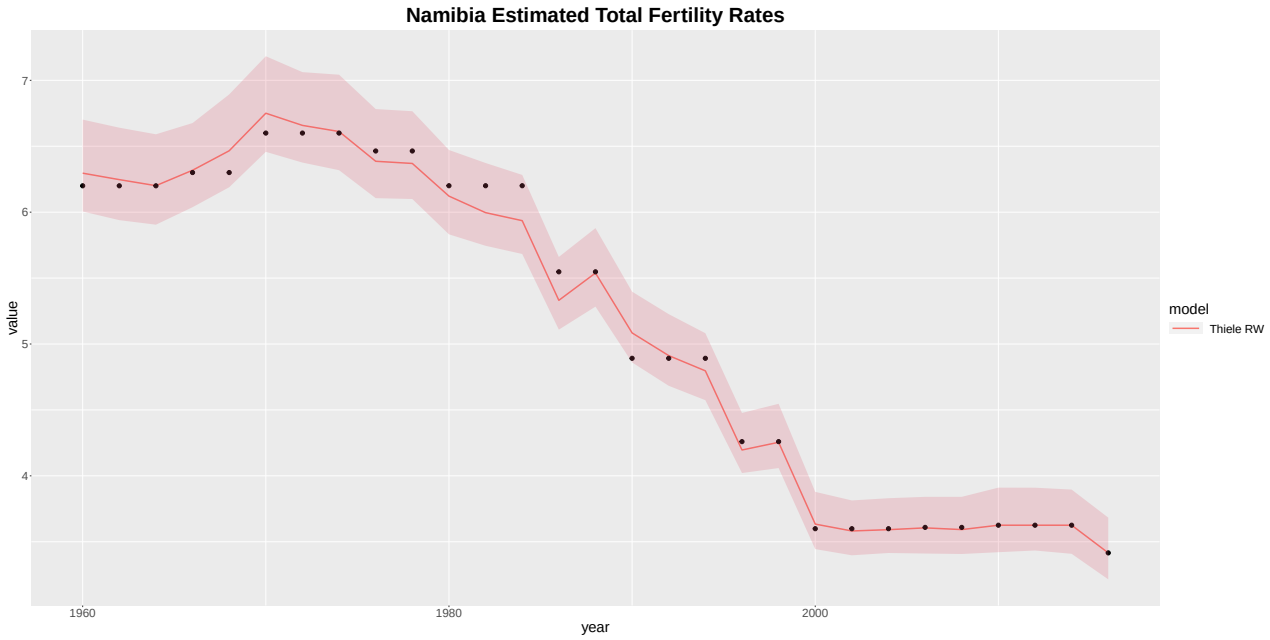

Figure 19: Total Fertility