03_table3_multiple_alpha

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2023-10-24

```
# source("R/07_summarization.R")
source("R/00_functions.R")
## the R file below is the code for results
# source("02_table2_plmlmm_code.R")
file_location <- "results/result_alphas_2023-08-23/"
files <- list.files(path = "results/result_alphas_2023-08-23/", pattern = ".Rdata")
files
```

```
#> [1] "anchor_time_c(3, 6, 9, 12)_alpha_multiple_2023-08-29 14:25:25.Rdata"
#> [2] "anchor_time_c(4, 8, 12)_alpha_multiple_2023-08-29 13:42:34.Rdata"
#> [3] "anchor_time_c(5, 10, 15)_alpha_multiple_2023-08-29 14:05:08.Rdata"
#> [4] "anchor_time_c(6, 10, 11, 12)_alpha_multiple_2023-08-29 18:20:22.Rdata"
```

```
alphas <- anchortime <- map_dfr(files, ~pulltime(file_location, .)) %>%
  mutate(term = rep(c("bias", "mse", "cov50", "cov80", "cov90"), 4))
```

```
options(digits = 4)
# [1] "anchor_time_c(3, 6, 9, 12)_alpha_multiple_2023-08-24 13:09:38.Rdata"
# [2] "anchor_time_c(5, 10, 15)_alpha_multiple_2023-08-23 21:34:49.Rdata"
# [3] "anchor_time_c(6, 10, 11, 12)_alpha_multiple_2023-08-24 09:48:43.Rdata"
# [4] "anchor_time_c(6, 9, 12, 15)_alpha_multiple_2023-08-24 13:02:29.Rdata"
# [5] "anchor_time_c(8, 10, 12, 14)_alpha_multiple_2023-08-21 13:57:11.Rdata"
# [6] "anchor_time_c(8, 10, 12)_alpha_multiple_2023-08-23 21:43:28.Rdata"
bias <- anchortime %>%
  filter(term == "bias") %>%
  unnest() %>%
  mutate(Time = c("t(3, 6, 9, 12)",
                  "t(4, 8, 12)",
                  "t(5, 10, 15)",
                  "t(6, 10, 11, 12)")) %>%
  mutate(Time = factor(Time, levels = c("t(4, 8, 12)",
                                        "t(5, 10, 15)",
                                        "t(3, 6, 9, 12)",
                                        "t(6, 10, 11, 12)"))) %>%
  arrange(Time) %>%
  dplyr::select(-term) %>%
  dplyr::select(Time, sgl_n, eld_n, mhl_n,
                mhl_p0, mhl_p1, mhl_p2, mhl_p3,
                mhl_p4, mhl_p5, mhl_p6, mhl_p7)
```

```
#> Warning: ‘cols‘ is now required when using ‘unnest()‘.
```

```
#> i Please use `cols = c(eld_n, mhl_n, mhl_p0, mhl_p1, mhl_p2, mhl_p3, mhl_p4,
#>   mhl_p5, mhl_p6, mhl_p7, sgl_n)`.
```

```
bias
```

```
#> # A tibble: 4 x 12
#>   Time        sgl_n eld_n mhl_n mhl_p0 mhl_p1 mhl_p2 mhl_p3 mhl_p4 mhl_p5 mhl_p6
#>   <fct>       <dbl> <dbl> <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>
#> 1 t(4, 8, 12)  3.07  2.83  2.84   3.19   3.11   3.04   2.97   2.90   2.84   2.79
#> 2 t(5, 10, 1~  3.12  2.84  2.85   3.19   3.11   3.04   2.97   2.90   2.84   2.79
#> 3 t(3, 6, 9,~  3.14  2.82  2.83   3.47   3.39   3.31   3.21   3.11   3.03   2.92
#> 4 t(6, 10, 1~  3.16  2.85  2.85   3.47   3.39   3.30   3.21   3.12   3.03   2.92
#> # i 1 more variable: mhl_p7 <dbl>
```

```
rmse <- anchortime %>%
  filter(term == "mse") %>%
  unnest() %>%
  mutate(Time = c("t(3, 6, 9, 12)",
                  "t(4, 8, 12)",
                  "t(5, 10, 15)",
                  "t(6, 10, 11, 12)")) %>%
  mutate(Time = factor(Time, levels = c("t(4, 8, 12)",
                                        "t(5, 10, 15)",
                                        "t(3, 6, 9, 12)",
                                        "t(6, 10, 11, 12)"))) %>%
  arrange(Time) %>%
  dplyr::select(-term) %>%
  dplyr::select(Time, sgl_n, eld_n, mhl_n,
                mhl_p0, mhl_p1, mhl_p2, mhl_p3,
                mhl_p4, mhl_p5, mhl_p6, mhl_p7) %>%
  mutate_if(is.numeric, sqrt)
```

```
#> Warning: `cols` is now required when using `unnest()`.
#> i Please use `cols = c(eld_n, mhl_n, mhl_p0, mhl_p1, mhl_p2, mhl_p3, mhl_p4,
#>   mhl_p5, mhl_p6, mhl_p7, sgl_n)`.
```

```
cov50 <- anchortime %>%
  filter(term == "cov50") %>%
  unnest() %>%
  mutate(Time = c("t(3, 6, 9, 12)",
                  "t(4, 8, 12)",
                  "t(5, 10, 15)",
                  "t(6, 10, 11, 12)")) %>%
  mutate(Time = factor(Time, levels = c("t(4, 8, 12)",
                                        "t(5, 10, 15)",
                                        "t(3, 6, 9, 12)",
                                        "t(6, 10, 11, 12)"))) %>%
  arrange(Time) %>%
  dplyr::select(-term) %>%
  dplyr::select(Time, sgl_n, eld_n, mhl_n,
                mhl_p0, mhl_p1, mhl_p2, mhl_p3,
                mhl_p4, mhl_p5, mhl_p6, mhl_p7)
```

```
#> Warning: `cols` is now required when using `unnest()`.
#> i Please use `cols = c(eld_n, mhl_n, mhl_p0, mhl_p1, mhl_p2, mhl_p3, mhl_p4,
#>   mhl_p5, mhl_p6, mhl_p7, sgl_n)`.
```

```
cov80 <- anchortime %>%
  filter(term == "cov80") %>%
  unnest() %>%
  mutate(Time = c("t(3, 6, 9, 12)",
                  "t(4, 8, 12)",
                  "t(5, 10, 15)",
                  "t(6, 10, 11, 12)")) %>%
  mutate(Time = factor(Time, levels = c("t(4, 8, 12)",
                                        "t(5, 10, 15)",
                                        "t(3, 6, 9, 12)",
                                        "t(6, 10, 11, 12)"))) %>%
  arrange(Time) %>%
  dplyr::select(-term) %>%
  dplyr::select(Time, sgl_n, eld_n, mhl_n,
                mhl_p0, mhl_p1, mhl_p2, mhl_p3,
                mhl_p4, mhl_p5, mhl_p6, mhl_p7)
```

```
#> Warning: `cols` is now required when using `unnest()`.
#> i Please use `cols = c(eld_n, mhl_n, mhl_p0, mhl_p1, mhl_p2, mhl_p3, mhl_p4,
#>   mhl_p5, mhl_p6, mhl_p7, sgl_n)`.
```

```
cov90 <- anchortime %>%
  filter(term == "cov90") %>%
  unnest() %>%
  mutate(Time = c("t(3, 6, 9, 12)",
                  "t(4, 8, 12)",
                  "t(5, 10, 15)",
                  "t(6, 10, 11, 12)")) %>%
  mutate(Time = factor(Time, levels = c("t(4, 8, 12)",
                                        "t(5, 10, 15)",
                                        "t(3, 6, 9, 12)",
                                        "t(6, 10, 11, 12)"))) %>%
  arrange(Time) %>%
  dplyr::select(-term) %>%
  dplyr::select(Time, sgl_n, eld_n, mhl_n,
                mhl_p0, mhl_p1, mhl_p2, mhl_p3,
                mhl_p4, mhl_p5, mhl_p6, mhl_p7)
```

```
#> Warning: `cols` is now required when using `unnest()`.
#> i Please use `cols = c(eld_n, mhl_n, mhl_p0, mhl_p1, mhl_p2, mhl_p3, mhl_p4,
#>   mhl_p5, mhl_p6, mhl_p7, sgl_n)`.
```

```
bias
```

```
#> # A tibble: 4 x 12
#>   Time        sgl_n eld_n mhl_n mhl_p0 mhl_p1 mhl_p2 mhl_p3 mhl_p4 mhl_p5 mhl_p6
#>   <fct>       <dbl> <dbl> <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>
#> 1 t(4, 8, 12)  3.07  2.83  2.84   3.19   3.11   3.04   2.97   2.90   2.84   2.79
```

```
#> 2 t(5, 10, 1~  3.12  2.84  2.85   3.19   3.11   3.04   2.97   2.90   2.84   2.79
#> 3 t(3, 6, 9,~  3.14  2.82  2.83   3.47   3.39   3.31   3.21   3.11   3.03   2.92
#> 4 t(6, 10, 1~  3.16  2.85  2.85   3.47   3.39   3.30   3.21   3.12   3.03   2.92
#> # i 1 more variable: mhl_p7 <dbl>
```

```
rmse
```

```
#> # A tibble: 4 x 12
#>   Time        sgl_n eld_n mhl_n mhl_p0 mhl_p1 mhl_p2 mhl_p3 mhl_p4 mhl_p5 mhl_p6
#>   <fct>       <dbl> <dbl> <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>
#> 1 t(4, 8, 12)  4.32  4.17  4.17   4.32   4.24   4.17   4.11   4.03   3.99   3.94
#> 2 t(5, 10, 1~  4.47  4.18  4.20   4.31   4.24   4.17   4.10   4.04   3.99   3.94
#> 3 t(3, 6, 9,~  4.44  4.14  4.15   4.60   4.51   4.44   4.33   4.24   4.15   4.05
#> 4 t(6, 10, 1~  4.50  4.13  4.13   4.60   4.51   4.43   4.34   4.24   4.15   4.05
#> # i 1 more variable: mhl_p7 <dbl>
```

```
cov50
```

```
#> # A tibble: 4 x 12
#>   Time        sgl_n eld_n mhl_n mhl_p0 mhl_p1 mhl_p2 mhl_p3 mhl_p4 mhl_p5 mhl_p6
#>   <fct>       <dbl> <dbl> <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>
#> 1 t(4, 8, 12) 0.459 0.487 0.485  0.600  0.607  0.611  0.616  0.619  0.615  0.611
#> 2 t(5, 10, 1~ 0.443 0.484 0.484  0.600  0.607  0.611  0.616  0.618  0.615  0.611
#> 3 t(3, 6, 9,~ 0.452 0.484 0.485  0.576  0.584  0.588  0.598  0.607  0.612  0.618
#> 4 t(6, 10, 1~ 0.442 0.482 0.481  0.577  0.584  0.589  0.598  0.606  0.612  0.618
#> # i 1 more variable: mhl_p7 <dbl>
```

```
cov80
```

```
#> # A tibble: 4 x 12
#>   Time        sgl_n eld_n mhl_n mhl_p0 mhl_p1 mhl_p2 mhl_p3 mhl_p4 mhl_p5 mhl_p6
#>   <fct>       <dbl> <dbl> <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>
#> 1 t(4, 8, 12) 0.741 0.763 0.762  0.872  0.873  0.877  0.876  0.876  0.872  0.869
#> 2 t(5, 10, 1~ 0.731 0.757 0.757  0.872  0.874  0.877  0.876  0.875  0.871  0.868
#> 3 t(3, 6, 9,~ 0.739 0.757 0.757  0.862  0.867  0.870  0.872  0.874  0.877  0.875
#> 4 t(6, 10, 1~ 0.727 0.753 0.752  0.862  0.867  0.870  0.872  0.874  0.877  0.875
#> # i 1 more variable: mhl_p7 <dbl>
```

```
cov90
```

```
#> # A tibble: 4 x 12
#>   Time        sgl_n eld_n mhl_n mhl_p0 mhl_p1 mhl_p2 mhl_p3 mhl_p4 mhl_p5 mhl_p6
#>   <fct>       <dbl> <dbl> <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>
#> 1 t(4, 8, 12) 0.843 0.853 0.853  0.938  0.939  0.940  0.941  0.941  0.939  0.937
#> 2 t(5, 10, 1~ 0.838 0.848 0.848  0.938  0.939  0.940  0.941  0.941  0.939  0.937
#> 3 t(3, 6, 9,~ 0.835 0.849 0.849  0.932  0.934  0.936  0.937  0.939  0.941  0.941
#> 4 t(6, 10, 1~ 0.830 0.845 0.845  0.932  0.934  0.937  0.937  0.940  0.941  0.942
#> # i 1 more variable: mhl_p7 <dbl>
```

saving the files as .tex

```r
library(xtable)

# xtable(bias, type = "latex",
#        file = "/figure/S03_multiple_alpha_060_095_bias_20230822.tex")
# xtable(rmse, type = "latex",
#        file = "/figure/S03_multiple_alpha_060_095_mse_20230822.tex")
# xtable(cov50, type = "latex",
#        file = "/figure/S03_multiple_alpha_060_095_cov50_20230822.tex")
# xtable(cov80, type = "latex",
#        file = "/figure/S03_multiple_alpha_060_095_cov80_20230822.tex")
# xtable(cov90, type = "latex",
#        file = "/figure/S03_multiple_alpha_060_095_cov90_20230822.tex")

print(xtable(bias, type = "latex"),
      file = paste0("figure/S03_multiple_alpha_060_095_bias_", Sys.Date(), ".tex"))
print(xtable(rmse, type = "latex"),
      file = paste0("figure/S03_multiple_alpha_060_095_rmse_", Sys.Date(), ".tex"))
print(xtable(cov50, type = "latex"),
      file = paste0("figure/S03_multiple_alpha_060_095_cov50_", Sys.Date(), ".tex"))
print(xtable(cov80, type = "latex"),
      file = paste0("figure/S03_multiple_alpha_060_095_cov80_", Sys.Date(), ".tex"))
print(xtable(cov90, type = "latex"),
      file = paste0("figure/S03_multiple_alpha_060_095_cov90_", Sys.Date(), ".tex"))
```

```r
sessionInfo()
```

```
#> R version 4.2.2 (2022-10-31)
#> Platform: aarch64-apple-darwin20 (64-bit)
#> Running under: macOS 14.0
#>
#> Matrix products: default
#> BLAS:   /Library/Frameworks/R.framework/Versions/4.2-arm64/Resources/lib/libRblas.0.dylib
#> LAPACK: /Library/Frameworks/R.framework/Versions/4.2-arm64/Resources/lib/libRlapack.dylib
#>
#> locale:
#> [1] en_US.UTF-8/en_US.UTF-8/en_US.UTF-8/C/en_US.UTF-8/en_US.UTF-8
#>
#> attached base packages:
#> [1] stats     graphics  grDevices utils     datasets  methods   base
#>
#> other attached packages:
#>  [1] xtable_1.8-4    lubridate_1.9.2 forcats_1.0.0   stringr_1.5.0
#>  [5] dplyr_1.1.2     purrr_1.0.1     readr_2.1.4     tidyr_1.3.0
#>  [9] tibble_3.2.1    ggplot2_3.4.3   tidyverse_2.0.0 here_1.0.1
#>
#> loaded via a namespace (and not attached):
#>  [1] pillar_1.9.0      compiler_4.2.2    freshr_1.0.2      tools_4.2.2
#>  [5] digest_0.6.33     timechange_0.2.0  evaluate_0.21     lifecycle_1.0.3
#>  [9] gtable_0.3.3      pkgconfig_2.0.3   rlang_1.1.1       cli_3.6.1
#> [13] rstudioapi_0.15.0 yaml_2.3.7        xfun_0.39         fastmap_1.1.1
#> [17] withr_2.5.0       knitr_1.43        generics_0.1.3    vctrs_0.6.3
#> [21] hms_1.1.3         rprojroot_2.0.3   grid_4.2.2        tidyselect_1.2.0
#> [25] glue_1.6.2        R6_2.5.1          fansi_1.0.4       rmarkdown_2.23
```

```
#> [29] tzdb_0.4.0        magrittr_2.0.3    scales_1.2.1      htmltools_0.5.5
#> [33] colorspace_2.1-0  utf8_1.2.3        stringi_1.7.12    munsell_0.5.0
```