09_merge_figures

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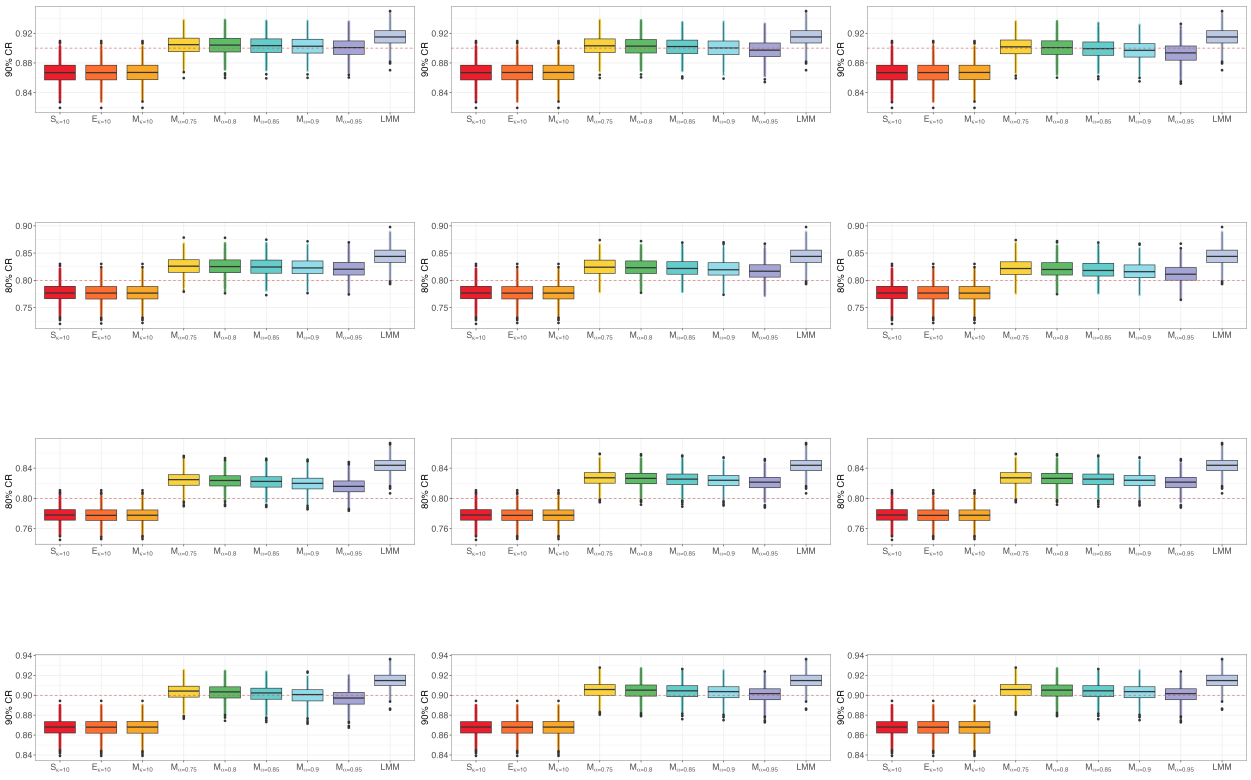
```
plot1 <- readPNG('figure/S06_sim1000_ss500_anchor6time_5cov90_2023-09-01.png')
plot2 <- readPNG('figure/S06_sim1000_ss500_anchor4time_5cov90_2023-09-01.png')
plot3 <- readPNG('figure/S06_sim1000_ss500_anchor3time_5cov90_2023-09-01.png')

plot4 <- readPNG('figure/S06_sim1000_ss500_anchor6time_4cov80_2023-09-01.png')
plot5 <- readPNG('figure/S06_sim1000_ss500_anchor4time_4cov80_2023-09-01.png')
plot6 <- readPNG('figure/S06_sim1000_ss500_anchor3time_4cov80_2023-09-01.png')

plot7 <- readPNG('figure/S07_sim1000_ss900_anchor3time_4cov80_2023-09-02.png')
plot8 <- readPNG('figure/S07_sim1000_ss900_anchor4time_4cov80_2023-09-03.png')
plot9 <- readPNG('figure/S07_sim1000_ss900_anchor6time_4cov80_2023-09-03.png')

plot10 <- readPNG('figure/S07_sim1000_ss900_anchor3time_5cov90_2023-09-02.png')
plot11 <- readPNG('figure/S07_sim1000_ss900_anchor4time_5cov90_2023-09-03.png')
plot12 <- readPNG('figure/S07_sim1000_ss900_anchor6time_5cov90_2023-09-03.png')

grid.arrange(rasterGrob(plot1),
             rasterGrob(plot2),
             rasterGrob(plot3),
             rasterGrob(plot4),
             rasterGrob(plot5),
             rasterGrob(plot6),
             rasterGrob(plot7),
             rasterGrob(plot8),
             rasterGrob(plot9),
             rasterGrob(plot10),
             rasterGrob(plot11),
             rasterGrob(plot12),
             ncol = 3)
```




```
library(matrixStats)
```

```
tbl_sum <- function(data = sim_ss500,
                    what) {
  data0 <- data %>%
    filter(term == what)

  if (what == "mse") {
    data1 <- data0 %>%
      dplyr::select(-"term") %>%
      mutate_all(as.numeric) %>%
      mutate_all(sqrt) %>%
            as.matrix()
  }
  else {
    data1 <- data0 %>%
    dplyr::select(-"term") %>%
    mutate_all(as.numeric) %>%
    as.matrix()
  }

  result <- rbind(Mean = colMeans(data1),
                  Median = colMedians(data1),
                  Sd = colSds(data1)) %>%
    as.data.frame()
```

```
  return(result)
}
```

```
load("~/Desktop/paper2023/data/S06_sim1000_ss500_anchor6time_0summary_2023-08-29.Rdata")
s500_a6 <- map(list("bias", "mse", "coverage50",
                    "coverage80", "coverage90"),
               ~tbl_sum(what= .)) %>%
  cbind() %>%
  as.data.frame() %>%
  unnest() %>%
  mutate(stat = rep(c("Mean", "Median", "Sd"), 5),
         term = rep(c("bias", "mse", "cov50",
                      "cov80", "cov90"), each = 3),
         time = "t(6,8,10,12,14,15)",
         ss = 500)
```

```
#> Warning: `cols` is now required when using `unnest()`.
#> i Please use `cols = c(.)`.
```

```
load("~/Desktop/paper2023/data/S07_sim1000_ss900_anchor6time_0summary_2023-09-02.Rdata")
s900_a6 <- map(list("bias", "mse", "coverage50",
                    "coverage80", "coverage90"),
               ~tbl_sum(what= .)) %>%
  cbind() %>%
  as.data.frame() %>%
  unnest() %>%
  mutate(stat = rep(c("Mean", "Median", "Sd"), 5),
         term = rep(c("bias", "mse", "cov50",
                      "cov80", "cov90"), each = 3),
         time = "t(6,8,10,12,14,15)",
         ss = 900)
```

```
#> Warning: `cols` is now required when using `unnest()`.
#> i Please use `cols = c(.)`.
```

```
load("~/Desktop/paper2023/data/S06_sim1000_ss500_anchor4time_0summary_2023-08-31.Rdata")
s500_a4 <- map(list("bias", "mse", "coverage50",
                    "coverage80", "coverage90"),
               ~tbl_sum(sim_ss500, what= .)) %>%
  cbind() %>%
  as.data.frame() %>%
  unnest() %>%
  mutate(stat = rep(c("Mean", "Median", "Sd"), 5),
         term = rep(c("bias", "mse", "cov50",
                      "cov80", "cov90"), each = 3),
         time = "t(6,9,12,15)",
         ss = 500)
```

```
#> Warning: `cols` is now required when using `unnest()`.
#> i Please use `cols = c(.)`.
```

```
load("~/Desktop/paper2023/data/S07_sim1000_ss900_anchor4time_0summary_2023-09-03.Rdata")
s900_a4 <- map(list("bias", "mse", "coverage50",
                    "coverage80", "coverage90"),
                ~tbl_sum(sim_ss, what= .)) %>%
  cbind() %>%
  as.data.frame() %>%
  unnest() %>%
  mutate(stat = rep(c("Mean", "Median", "Sd"), 5),
         term = rep(c("bias", "mse", "cov50",
                      "cov80", "cov90"), each = 3),
         time = "t(6,9,12,15)",
         ss = 900)
```

```
#> Warning: ‘cols‘ is now required when using ‘unnest()‘.
#> i Please use ‘cols = c(.)‘.
```

```
load("~/Desktop/paper2023/data/S06_sim1000_ss500_anchor3time_0summary_2023-08-31.Rdata")
s500_a3 <- map(list("bias", "mse", "coverage50",
                    "coverage80", "coverage90"),
                ~tbl_sum(sim_ss500, what= .)) %>%
  cbind() %>%
  as.data.frame() %>%
  unnest() %>%
  mutate(stat = rep(c("Mean", "Median", "Sd"), 5),
         term = rep(c("bias", "mse", "cov50",
                      "cov80", "cov90"), each = 3))  %>%
  cbind() %>%
  as.data.frame() %>%
  unnest() %>%
  mutate(stat = rep(c("Mean", "Median", "Sd"), 5),
         term = rep(c("bias", "mse", "cov50",
                      "cov80", "cov90"), each = 3),
         time = "t(6,9,12)",
         ss = 500)
```

```
#> Warning: ‘cols‘ is now required when using ‘unnest()‘.
#> i Please use ‘cols = c(.)‘.
```

```
#> Warning: ‘cols‘ is now required when using ‘unnest()‘.
#> i Please use ‘cols = c()‘.
```

```
load("~/Desktop/paper2023/data/S07_sim1000_ss900_anchor3time_0summary_2023-09-01.Rdata")
s900_a3 <- map(list("bias", "mse", "coverage50",
                    "coverage80", "coverage90"),
                ~tbl_sum(sim_ss, what= .)) %>%
  cbind() %>%
  as.data.frame() %>%
  unnest() %>%
  mutate(stat = rep(c("Mean", "Median", "Sd"), 5),
         term = rep(c("bias", "mse", "cov50",
                      "cov80", "cov90"), each = 3),
         time = "t(6,9,12)",
         ss = 900)
```

```
#> Warning: ‘cols‘ is now required when using ‘unnest()‘.
#> i Please use ‘cols = c(.)‘.
```

```
s500_all <- rbind(s500_a3, s500_a4, s500_a6) %>% as.data.frame() %>% filter(stat %in% c("Mean", "Sd"))
s500_final <- s500_all %>% pivot_wider(names_from = stat, values_from = 1:9)


s900_all <- rbind(s900_a3, s900_a4, s900_a6) %>% as.data.frame() %>% filter(stat %in% c("Mean", "Sd"))
s900_final <- s900_all %>% pivot_wider(names_from = stat, values_from = 1:9)
```

```
result500 <- rbind(s500_final) %>%
  as.data.frame() %>%
  dplyr::select(ss, time, term, sgl_n_Mean, sgl_n_Sd, everything()) %>%
  select(-contains("_Sd"), -ss)

# result <- read_csv("figure/S09_final_simulation_study_results.csv")


# results <- read_excel("figure/S09_final_simulation_study_results.xlsx") %>%
#   as.data.frame() %>%
#   dplyr::select(-1) %>%
#   dplyr::select("sample size" = 1, "time" = 2, everything())
#
# options(digits = 3)
library(xtable)

print(xtable(result500, type = "latex"),
      file = paste0("figure/S09_final_simulation_500_", Sys.Date(), ".tex"))

########################
result900 <- rbind(s900_final) %>%
  as.data.frame() %>%
  dplyr::select(ss, time, term, sgl_n_Mean, sgl_n_Sd, everything()) %>%
    select(-contains("_Sd"), -ss)

# result <- read_csv("figure/S09_final_simulation_study_results.csv")
# View(result)

# results <- read_excel("figure/S09_final_simulation_study_results.xlsx") %>%
#   as.data.frame() %>%
#   dplyr::select(-1) %>%
#   dplyr::select("sample size" = 1, "time" = 2, everything())
#
# options(digits = 3)
library(xtable)

print(xtable(result900, type = "latex"),
      file = paste0("figure/S09_final_simulation_900_", Sys.Date(), ".tex"))
```

```
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] grid      stats     graphics  grDevices utils     datasets  methods
#> [8] base
#>
#> other attached packages:
#>  [1] xtable_1.8-4      matrixStats_1.0.0 gridExtra_2.3     png_0.1-8
#>  [5] flextable_0.9.2   gtsummary_1.7.1   lubridate_1.9.2   forcats_1.0.0
#>  [9] stringr_1.5.0     dplyr_1.1.2       purrr_1.0.1       readr_2.1.4
#> [13] tidyr_1.3.0       tibble_3.2.1      ggplot2_3.4.3     tidyverse_2.0.0
#> [17] here_1.0.1
#>
#> loaded via a namespace (and not attached):
#>  [1] Rcpp_1.0.11             freshr_1.0.2            rprojroot_2.0.3
#>  [4] digest_0.6.33           utf8_1.2.3              mime_0.12
#>  [7] R6_2.5.1                evaluate_0.21           highr_0.10
#> [10] pillar_1.9.0            gdtools_0.3.3           rlang_1.1.1
#> [13] uuid_1.1-0              curl_5.0.1              rstudioapi_0.15.0
#> [16] data.table_1.14.8       rmarkdown_2.23          textshaping_0.3.6
#> [19] munsell_0.5.0           shiny_1.7.4.1           compiler_4.2.2
#> [22] httpuv_1.6.11           xfun_0.39               askpass_1.1
#> [25] pkgconfig_2.0.3         systemfonts_1.0.4       gfonts_0.2.0
#> [28] htmltools_0.5.5         openssl_2.1.0           tidyselect_1.2.0
#> [31] fontBitstreamVera_0.1.1 httpcode_0.3.0          fansi_1.0.4
#> [34] crayon_1.5.2            tzdb_0.4.0              withr_2.5.0
#> [37] later_1.3.1             crul_1.4.0              jsonlite_1.8.7
#> [40] gtable_0.3.3            lifecycle_1.0.3         magrittr_2.0.3
#> [43] scales_1.2.1            zip_2.3.0               cli_3.6.1
#> [46] stringi_1.7.12          broom.helpers_1.13.0    promises_1.2.0.1
#> [49] xml2_1.3.5              ragg_1.2.5              ellipsis_0.3.2
#> [52] generics_0.1.3          vctrs_0.6.3             tools_4.2.2
#> [55] glue_1.6.2              officer_0.6.2           fontquiver_0.2.1
#> [58] hms_1.1.3               fastmap_1.1.1           yaml_2.3.7
#> [61] timechange_0.2.0        colorspace_2.1-0        fontLiberation_0.1.0
#> [64] gt_0.9.0                knitr_1.43
```