

# CODECHECK certificate 2024-024

<https://doi.org/10.5281/zenodo.14576035>








Item	Value
Title	Evaluating individualized treatment effect predictions: A model-based perspective on discrimination and calibration assessment
Authors	Jeroen Hoogland  , Orestis Efthimiou  , Tri-Long Nguyen  , Thomas P A Debray 
Reference	<a href="https://doi.org/10.1002/sim.10186">https://doi.org/10.1002/sim.10186</a>
Codechecker	Samuel Langton 
Date of check	2024-12-16 10:00:00
Summary	R to generate and analyze simulated data in order to evaluate the prediction performance of individualized treatment effects.
Repository	<a href="https://github.com/langtonhugh/iteval-sims">https://github.com/langtonhugh/iteval-sims</a>

Table 1: CODECHECK summary

Output	Comment	Size (b)
codecheck_outputs/figure1.png	manuscript Figure 1	104252
codecheck_outputs/figure2.png	manuscript Figure 2	65322
codecheck_outputs/F1.png	manuscript F 1	101575
codecheck_outputs/F2.png	manuscript F 2	69888
codecheck_outputs/table1.png	manuscript table 1	194273
codecheck_outputs/table2.png	manuscript table 2	58913

Table 2: Summary of output files generated

## Summary

The three R scripts comprising this project were fairly straightforward to execute. I had some issues getting the simulation script (`sim.R`) running. It kept throwing an error but the specifics were masked by the usage of `doParallel` – you only get the error about “cannot open connection” but the problem was actually that the `results` folder did not exist. Once this was created, the script executed fine. The results folder is not necessary if users are only interested in producing the plots and tables in `replicate.R`, because by default that script loads in pre-computed simulated data. The full simulation had to be run overnight (~6 hours) on a standard laptop.

The figures are not saved automatically. Because each figure is constructed within a loop, I could not easily add in a `ggsave()` to save the figures using specific dimensions and DPI. The tables are generated automatically but the script appears to only generate the corresponding LaTeX syntax and print it to the Console. To actually do the codecheck, I copied the `replicate.R` code into a `.qmd` file and displayed the tables using `flextable`.

## Recommendations

I have raised an issue on the repository<sup>1</sup> to propose fixing the `results` folder problem.

The figures and tables could be saved automatically. As it stands, the scripts only output the results to either the R Console or the Plot window. This means that my reproduced figures differ slightly (e.g., dimensions, aspect ratio) from those in the paper, even though the results match. It also means that the code produces tables that are not labelled as per the paper, making it more difficult for readers to check their outputs to the results in the paper. Rmarkdown, `flextable`, and `ggsave` might be nice additions to solve this.

---

<sup>1</sup><https://github.com/jeroenhoogland/iteval-sims/issues/1#issue-2762859630>

## Manifest files

figure1.png

Comment: manuscript Figure 1

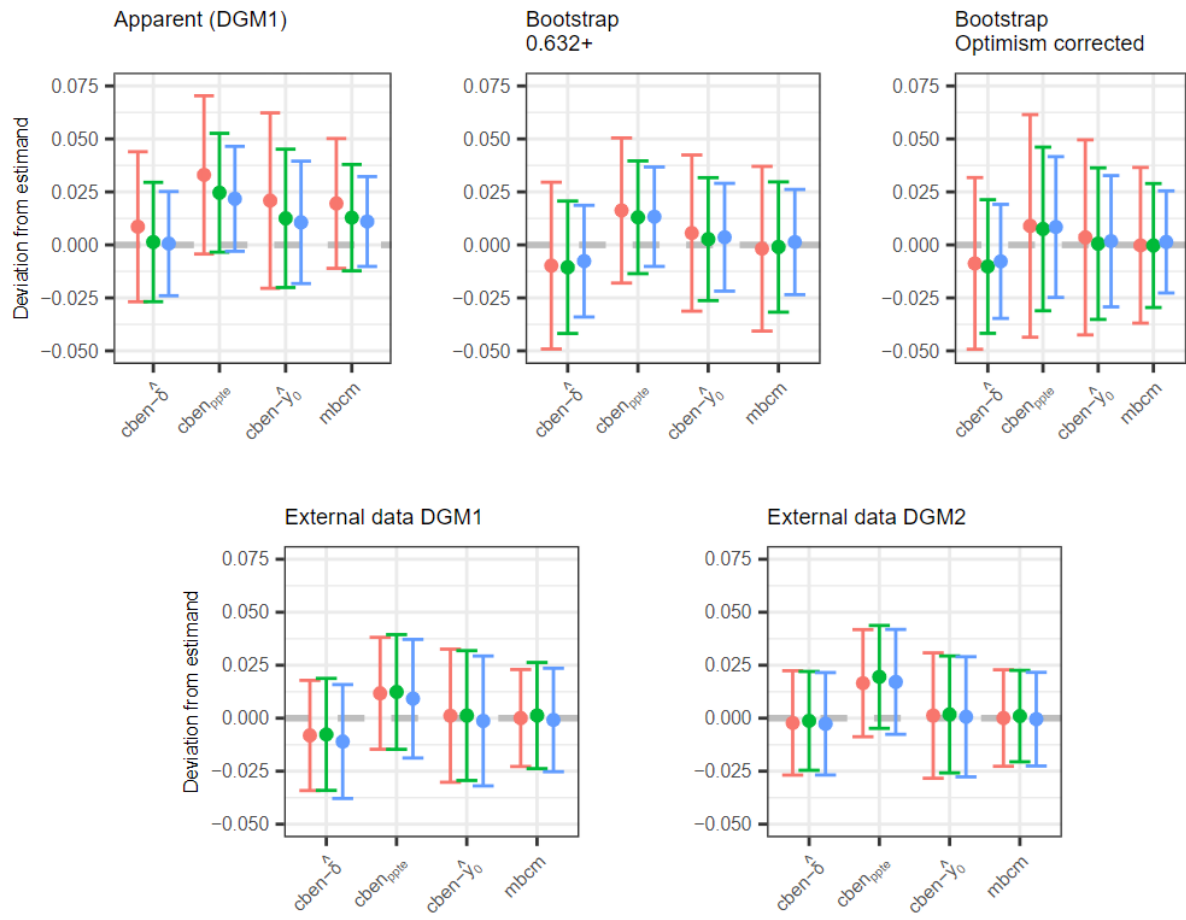
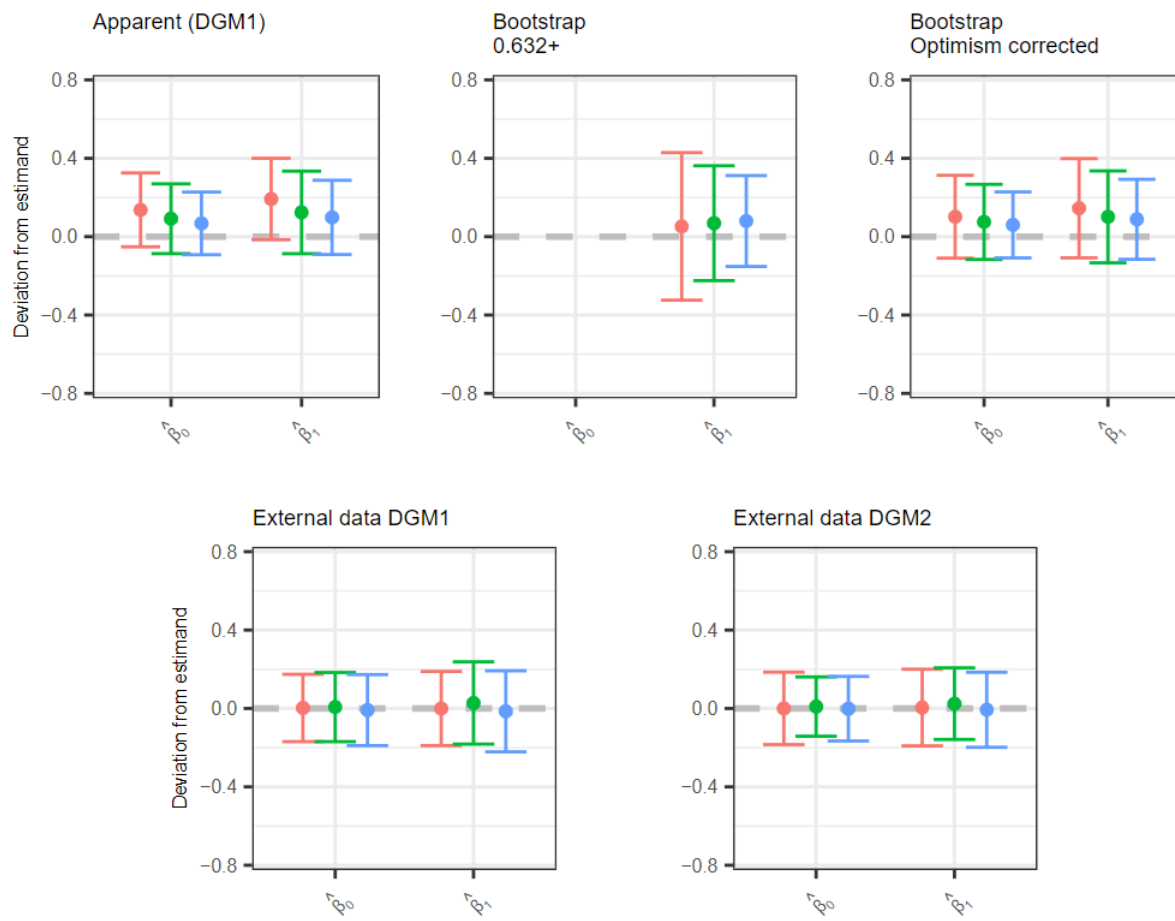


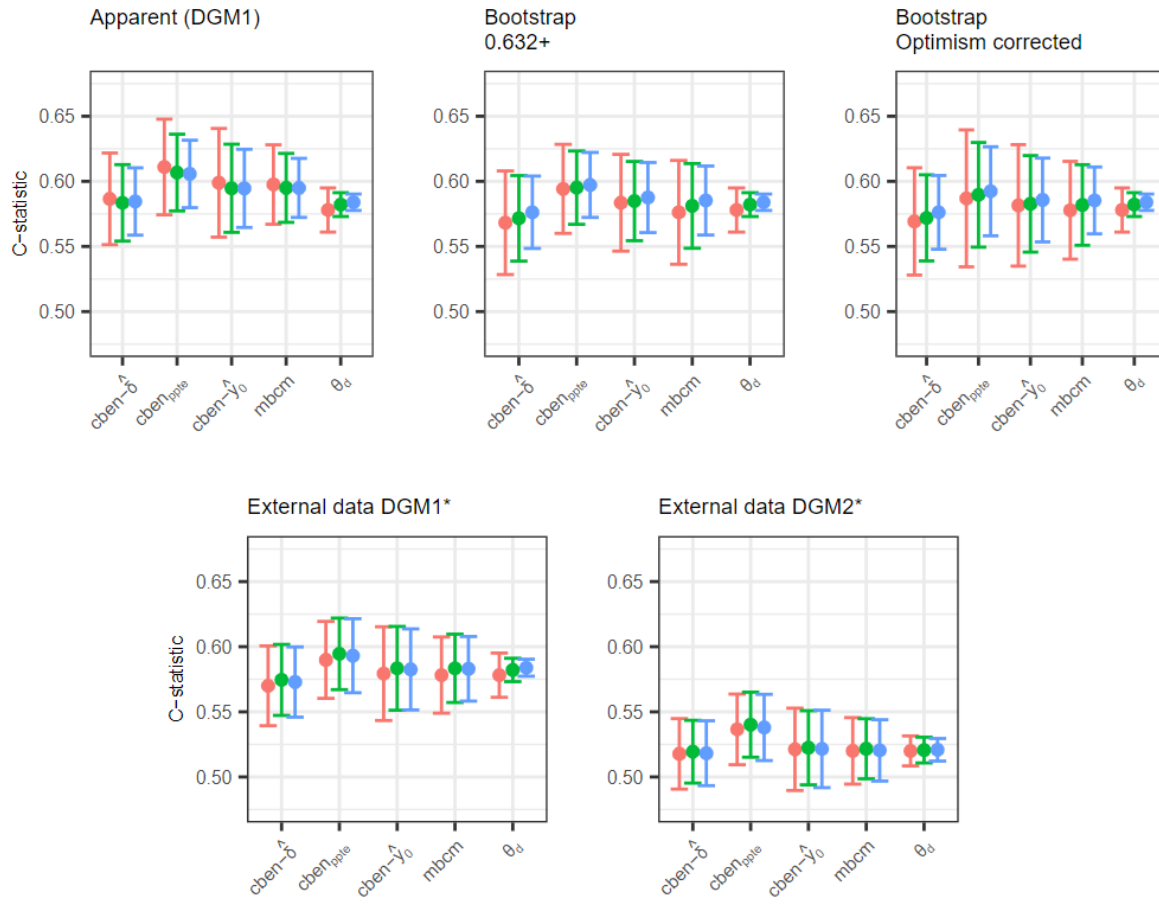
figure2.png

Comment: manuscript Figure 2



F1.png

Comment: manuscript F 1



F2.png

Comment: manuscript F 2

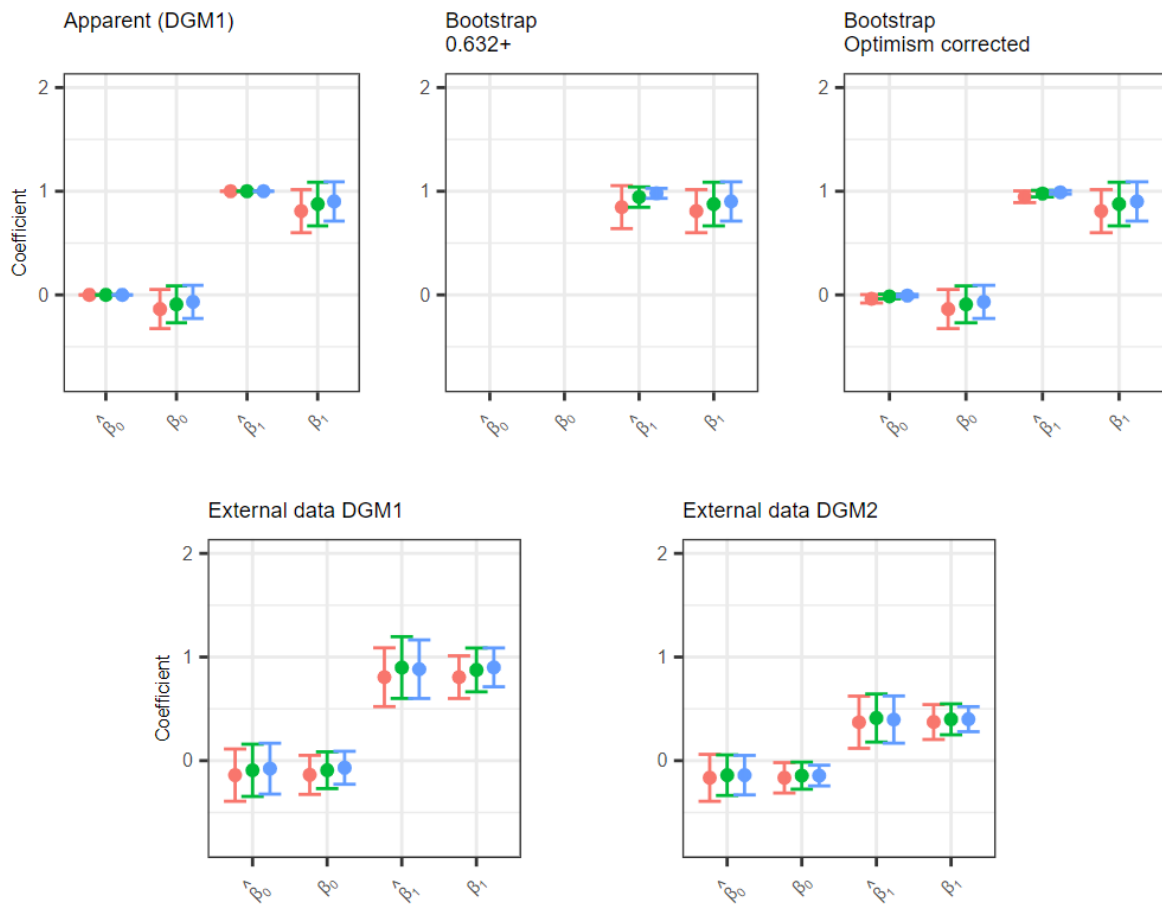


table1.png

Comment: manuscript table 1

**Table 1**

Statistic	V1	V2	V3	V4
apparent.dscr	0.036,0.028,0.025	0.05,0.037,0.033	0.046,0.035,0.031	0.036,0.028,0.024
ext1.app.dscr	0.027,0.027,0.029	0.029,0.03,0.029	0.033,0.032,0.029	0.037,0.028,0.024
ext2.app.dscr	0.025,0.023,0.024	0.03,0.031,0.03	0.042,0.042,0.042	0.085,0.08,0.078
boot0.632.dscr	0.041,0.033,0.027	0.038,0.03,0.027	0.037,0.029,0.026	0.039,0.031,0.025
boot.opt.dscr	0.041,0.033,0.028	0.053,0.039,0.034	0.046,0.036,0.031	0.037,0.029,0.024
ext1.total.dscr	0.027,0.027,0.029	0.029,0.03,0.029	0.031,0.031,0.031	0.023,0.025,0.024
ext2.total.dscr	0.025,0.023,0.024	0.03,0.031,0.03	0.03,0.028,0.028	0.023,0.022,0.022

table2.png

Comment: manuscript table 2

**Table 2**

Statistic	V1	V2	V3	V4	V5	V6
apparent.cal	0.23	0.20	0.17	0.28	0.24	0.21
boot0.632.cal				0.38	0.30	0.24
boot.opt.cal	0.23	0.21	0.18	0.29	0.26	0.22
ext1.total.cal	0.17	0.18	0.18	0.19	0.21	0.21
ext2.total.cal	0.18	0.15	0.16	0.20	0.18	0.19



## Citing this document

Samuel Langton (2024). CODECHECK Certificate 2024-024. Zenodo. <https://doi.org/10.5281/zenodo.14576035>

## About CODECHECK

This certificate confirms that the codechecker could independently reproduce the results of a computational analysis given the data and code from a third party. A CODECHECK does not check whether the original computation analysis is correct. However, as all materials required for the reproduction are freely available by following the links in this document, the reader can then study for themselves the code and data.

## About this document

This document was created using R Markdown using the `codecheck` R package. `make codecheck.pdf` will regenerate the report file.

## Session info

replicate.R

```
load("../replicate_script_info.RData")
rep_info
```

```
## R version 4.4.2 (2024-10-31 ucrt)
## Platform: x86_64-w64-mingw32/x64
## Running under: Windows 11 x64 (build 22621)
##
## Matrix products: default
##
## locale:
## [1] LC_COLLATE=English_United States.utf8
## [2] LC_CTYPE=English_United States.utf8
## [3] LC_MONETARY=English_United States.utf8
## [4] LC_NUMERIC=C
## [5] LC_TIME=English_United States.utf8
##
## time zone: Europe/Amsterdam
## tzcode source: internal
##
## attached base packages:
## [1] stats      graphics  grDevices  utils      datasets
## [6] methods    base
##
## other attached packages:
## [1] DescTools_0.99.58 xtable_1.8-4      stringr_1.5.1
## [4] patchwork_1.3.0   ggplot2_3.5.1
```

```
##
## loaded via a namespace (and not attached):
## [1] gld_2.6.6           gtable_0.3.6
## [3] xfun_0.49           lattice_0.22-6
## [5] vctr_0.6.5          tools_4.4.2
## [7] generics_0.1.3      tibble_3.2.1
## [9] proxy_0.4-27        fansi_1.0.6
## [11] pkgconfig_2.0.3     Matrix_1.7-1
## [13] data.table_1.16.4   uuid_1.2-1
## [15] readxl_1.4.3        lifecycle_1.0.4
## [17] rootSolve_1.8.2.4   flextable_0.9.7
## [19] compiler_4.4.2      farver_2.1.2
## [21] textshaping_0.4.1   Exact_3.3
## [23] munsell_0.5.1       fontquiver_0.2.1
## [25] fontLiberation_0.1.0 htmltools_0.5.8.1
## [27] class_7.3-22        yaml_2.3.10
## [29] pillar_1.9.0        MASS_7.3-61
## [31] openssl_2.2.2       boot_1.3-31
## [33] fontBitstreamVera_0.1.1 zip_2.3.1
## [35] tidyselect_1.2.1    digest_0.6.37
## [37] mvtnorm_1.3-2        stringi_1.8.4
## [39] dplyr_1.1.4          labeling_0.4.3
## [41] forcats_1.0.0        fastmap_1.2.0
## [43] grid_4.4.2           colorspace_2.1-1
## [45] lmom_3.2             expm_1.0-0
## [47] cli_3.6.3           magrittr_2.0.3
## [49] utf8_1.2.4          e1071_1.7-16
## [51] withr_3.0.2          gdtools_0.4.1
## [53] scales_1.3.0         rmarkdown_2.29
## [55] officer_0.6.7        httr_1.4.7
## [57] cellranger_1.1.0     askpass_1.2.1
## [59] ragg_1.3.3           hms_1.1.3
## [61] evaluate_1.0.1       knitr_1.49
## [63] haven_2.5.4          rlang_1.1.4
## [65] Rcpp_1.0.13-1        glue_1.8.0
## [67] xml2_1.3.6           rstudioapi_0.17.1
## [69] jsonlite_1.8.9       R6_2.5.1
## [71] plyr_1.8.9           systemfonts_1.1.0
```

sim.R

```
load("../results/info.RData")
info
```

```
## R version 4.4.2 (2024-10-31 ucrt)
## Platform: x86_64-w64-mingw32/x64
## Running under: Windows 11 x64 (build 22621)
##
## Matrix products: default
##
##
## locale:
```

```
## [1] LC_COLLATE=English_United States.utf8
## [2] LC_CTYPE=English_United States.utf8
## [3] LC_MONETARY=English_United States.utf8
## [4] LC_NUMERIC=C
## [5] LC_TIME=English_United States.utf8
##
## time zone: Europe/Amsterdam
## tzcode source: internal
##
## attached base packages:
## [1] parallel stats graphics grDevices utils
## [6] datasets methods base
##
## other attached packages:
## [1] pbapply_1.7-2 doParallel_1.0.17 iterators_1.0.14
## [4] foreach_1.5.2
##
## loaded via a namespace (and not attached):
## [1] compiler_4.4.2 tools_4.4.2 rstudioapi_0.17.1
## [4] codetools_0.2-20
```