CU55_MODEL_DEVELOPMENT_03_SIMULACION

June 13, 2023

#

CU55_Modelo agregado de estimación del gasto medio por turista

1 IV. Model development

En este anexo se incluye el código utilizado durante el desarrollo de los modelos incluidos en el caso de uso.

1.1 Modelo de Simulación

[1]:
```
Sys.setlocale(category = "LC_ALL", locale = "es_ES.UTF-8")
```

'es_ES.UTF-8/es_ES.UTF-8/es_ES.UTF-8/C/es_ES.UTF-8/C'

[2]:
```
## simulación turistas

library(readr)
library(dplyr)
library(tidyr)
library(purrr)
library(tibble)
library(stringr)

gasto_municipio <- read_csv("cu_55_step_01_input/CU_55_05_02_gasto_municipio.
↪csv")

dm <- gasto_municipio |>
  mutate(nmes = factor(str_sub(mes, 6, 7)),
         pais_orig = factor(pais_orig)) |>
  select(nmes, pais_orig, turistas, gasto) |>
  filter(str_detect(pais_orig, "Total", negate = TRUE))

escenario <- read_csv("ESCENARIO_DESTINO.csv")

# pfutbol <- sum(escenario$Futbol == 1) / nrow(escenario)
# rate_nservicios <- mean(escenario$nservicios)
# rate_capacidad <- mean(escenario$capacidad)
# m_cont <- apply(escenario[,4:25], 2, mean)
```

```r
# s_cont <- apply(escenario[,4:25], 2, sd)

## de la configuración
nsim <- 100

simulacion <- escenario |>
  mutate(sim_turistas = list(rpois(nsim, turistas))) |>
  unnest(sim_turistas) |>
  select(-turistas)

simulacion.x <- simulacion |>
  mutate(nmes = factor(str_sub(mes, 6, 7), levels = levels(dm$nmes)),
         pais_orig = factor(pais_orig, levels = levels(dm$pais_orig))) |>
  select(nmes, pais_orig, turistas = sim_turistas) |>
  model.matrix(~., data = _)

modelo <- read_rds("modelo_xgb.rds")
predict(modelo, simulacion.x)
```

```
Attaching package: ‘dplyr’


The following objects are masked from ‘package:stats’:

    filter, lag


The following objects are masked from ‘package:base’:

    intersect, setdiff, setequal, union


Rows: 24 Columns: 4
  Column specification

Delimiter: ","
chr (3): mes, pais_orig, mun_dest
dbl (1): turistas

 Use `spec()` to retrieve the full column specification for this
data.
 Specify the column types or set `show_col_types = FALSE` to quiet
this message.


        Error in `mutate()`:
      In argument: `nmes = factor(str_sub(mes, 6, 7), levels =
```

```
    levels(dm$nmes))`.
  Caused by error in `levels()`:
  ! objeto 'dm' no encontrado
  Traceback:


      1. model.matrix(~., data = select(mutate(simulacion, nmes =␣
↪factor(str_sub(mes,
    .     6, 7), levels = levels(dm$nmes)), pais_orig = factor(pais_orig,
    .     levels = levels(dm$pais_orig))), nmes, pais_orig, turistas =␣
↪sim_turistas))

      2. model.matrix.default(~., data = select(mutate(simulacion, nmes =␣
↪factor(str_sub(mes,
    .     6, 7), levels = levels(dm$nmes)), pais_orig = factor(pais_orig,
    .     levels = levels(dm$pais_orig))), nmes, pais_orig, turistas =␣
↪sim_turistas))

      3. terms(object, data = data)

      4. terms.formula(object, data = data)

      5. select(mutate(simulacion, nmes = factor(str_sub(mes, 6, 7), levels =␣
↪levels(dm$nmes)),
    .     pais_orig = factor(pais_orig, levels = levels(dm$pais_orig))),
    .     nmes, pais_orig, turistas = sim_turistas)

      6. mutate(simulacion, nmes = factor(str_sub(mes, 6, 7), levels =␣
↪levels(dm$nmes)),
    .     pais_orig = factor(pais_orig, levels = levels(dm$pais_orig)))

      7. mutate.data.frame(simulacion, nmes = factor(str_sub(mes, 6, 7),
    .     levels = levels(dm$nmes)), pais_orig = factor(pais_orig,
    .     levels = levels(dm$pais_orig)))

      8. mutate_cols(.data, dplyr_quosures(…), by)

      9. withCallingHandlers(for (i in seq_along(dots)) {
    .     poke_error_context(dots, i, mask = mask)
    .     context_poke("column", old_current_column)
    .     new_columns <- mutate_col(dots[[i]], data, mask, new_columns)
    . }, error = dplyr_error_handler(dots = dots, mask = mask, bullets =␣
↪mutate_bullets,
    .     error_call = error_call, error_class = "dplyr:::mutate_error"),
    .     warning = dplyr_warning_handler(state = warnings_state, mask = mask,
    .         error_call = error_call))
```

```
       10. mutate_col(dots[[i]], data, mask, new_columns)

       11. mask$eval_all_mutate(quo)

       12. eval()

       13. factor(str_sub(mes, 6, 7), levels = levels(dm$nmes))

       14. levels(dm$nmes)

       15. .handleSimpleError(function (cnd)
     . {
     .     local_error_context(dots, i = frame[[i_sym]], mask = mask)
     .     if (inherits(cnd, "dplyr:::internal_error")) {
     .         parent <- error_cnd(message = bullets(cnd))
     .     }
     .     else {
     .         parent <- cnd
     .     }
     .     message <- c(cnd_bullet_header(action), i = if␣
↪(has_active_group_context(mask)) cnd_bullet_cur_group_label())
     .     abort(message, class = error_class, parent = parent, call =␣
↪error_call)
     . }, "objeto 'dm' no encontrado", base::quote(levels(dm$nmes)))

       16. h(simpleError(msg, call))

       17. abort(message, class = error_class, parent = parent, call =␣
↪error_call)

       18. signal_abort(cnd, .file)
```