CU53_MODEL_DEVELOPMENT_01_ESCENARIOS

June 13, 2023

#

CU53_impacto de las políticas de inversión en sanidad, infraestructuras y promoción turística en el SPI

1 IV. Model development

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

1.0.1 Paquetes

[1]:
```
library(readr)
library(dplyr)
library(tidyr)
```

```
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
```

1.1 Generación de escenarios

[2]:
```
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'

[3]:
```
inversiones <- read_csv("CU_53_05_05_inversiones_cm.csv")
```

```r
spi <- read_csv("CU_53_05_02_01_spi.csv")
spi_meta <- read_csv("CU_53_05_02_02_spi_metadata.csv")

inversiones <- inversiones |>
  group_by(anyo) |>
  mutate(total_anyo = sum(inversion),
         porc_inv = round(100*(inversion/total_anyo), 2)) |>
  ungroup()

parametros_sim <- inversiones |> group_by(grupo) |>
  summarise(m = mean(porc_inv), s = sd(porc_inv))

a <- 20

dfb <- spi |> filter(country == "Spain") |>
  select(spiyear, score_spi) |>
  inner_join(inversiones,
             by = c("spiyear" = "anyo")) |>
  mutate(b = score_spi/porc_inv) |>
  group_by(grupo) |>
  summarise(b = mean(b))

b <- setNames(dfb$b, dfb$grupo)

escenario_spi <- spi |> filter(country != "World") |>
  select(spicountrycode, spiyear, score_spi) |>
  mutate(inv_inf = (score_spi - rnorm(n(),
                                      a, 1))/rnorm(n(),
                                                   b[["INFRAESTRUCTURAS"]],
                                                   0.1*b[["INFRAESTRUCTURAS"]]),
         inv_tur = (score_spi - rnorm(n(),
                                      a, 1))/rnorm(n(),
                                                   b[["TURISMO"]],
                                                   0.1*b[["TURISMO"]]),
         inv_san = (score_spi - rnorm(n(),
                                      a, 1))/rnorm(n(),
                                                   b[["SANIDAD"]],
                                                   0.1*b[["SANIDAD"]])) |>
  select(-score_spi)

write_csv(escenario_spi, "ESCENARIO_INVERSIONES_PAISES.csv")

## ESCENARIOS INVERSIONES CM

x_inv <- inversiones |>
  group_by(anyo) |>
  mutate(total_anyo = sum(inversion),
```

```
        porc_inv = round(100*(inversion/total_anyo), 2)) |>
  ungroup() |>
  pivot_wider(id_cols = anyo, names_from = "grupo",
              values_from = "porc_inv") |>
  rename(spiyear = anyo,
         inv_inf = INFRAESTRUCTURAS,
         inv_tur = TURISMO,
         inv_san = SANIDAD) |>
  select(-RESTO) |>
  slice_tail(n = 1)

x_escen <- x_inv |> bind_rows(x_inv) |> bind_rows(x_inv) |> bind_rows(x_inv) |>
  mutate(spiyear = 2022:2025) |>
  mutate(across(inv_inf:inv_tur, ~.x*1.1^c(0:3)))

write_csv(x_escen, "ESCENARIO_INVERSIONES_REGION.csv")
```

```
Rows: 24 Columns: 3
  Column specification

Delimiter: ","
chr (1): grupo
dbl (2): anyo, inversion

 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.
Rows: 2364 Columns: 81
  Column specification

Delimiter: ","
chr  (3): country, spicountrycode, status
dbl (78): rank_score_spi, spiyear, score_spi, score_bhn, score_fow,
score_op…

 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.
Rows: 81 Columns: 8
  Column specification

Delimiter: ","
chr (8): id_var, name_var, role, Dimension, Component, Unit of
measurement, …

 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.
Warning message in inner_join(select(filter(spi, country == "Spain"), spiyear,
score_spi), :
"Each row in `x` is expected to match at most 1 row in `y`.
  Row 7 of `x` matches multiple rows.
  If multiple matches are expected, set `multiple = "all"` to silence
this
   warning."
```