CU45_MODEL_DEVELOPMENT_02_REGRESION

June 13, 2023

\#

CU45_Planificación y promoción del destino en base a los patrones en origen de los turistas

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 REGRESION

1.1.1 Encoding

```
[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'

1.1.2 Paquetes

```
[2]: library(readr)
     library(dplyr)
     library(tidyr)
     library(nnet)
     library(janitor)
     library(purrr)
     library(effects)
```

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

Attaching package: 'janitor'

The following objects are masked from 'package:stats':

    chisq.test, fisher.test

Loading required package: carData

lattice theme set by effectsTheme()
See ?effectsTheme for details.

1.1.3 Datos

```
[3]: ## ESCENARIO PARA REGRESIÓN
     library(readr)
     library(dplyr)
     set.seed(1)

     cluster_anyos <- read_csv("cluster_anyos.csv")

     escenario <- slice_sample(cluster_anyos, n = 1) |>
       select(-c(anyo, mun_dest, cluster))

     write_csv(escenario, "ESCENARIO_REG.csv")
```

Rows: 563 Columns: 26
  Column specification

Delimiter: ","
chr (1): mun_dest
dbl (25): anyo, receptor, Andalucía, Aragón, Asturias, Principado de,
Balear…

  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.

```
[4]: cluster_anyos <- read_csv("cluster_anyos.csv")
     escenario <- read_csv("ESCENARIO_REG.csv")  |>
       clean_names()
```

Rows: 563 Columns: 26
  Column specification

```
Delimiter: ","
chr  (1): mun_dest
dbl (25): anyo, receptor, Andalucía, Aragón, Asturias, Principado de,
Balear...

  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: 1 Columns: 23
  Column specification

Delimiter: ","
dbl (23): receptor, Andalucía, Aragón, Asturias, Principado de,
Balears, Ill...

  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.
```

1.1.4 Modelo

```
[5]: ANYO <- max(cluster_anyos$anyo)

     options(contrasts = c("contr.sum", "contr.poly"))
     m <- cluster_anyos |>
       filter(anyo == ANYO) |>
       select(-c(anyo, mun_dest)) |>
       clean_names() |>
       multinom(cluster ~ ., data = _)

     ## Coeficientes

     coef(m)
     # m$coefnames[-1] |>
     #   set_names() |>
     #   map_dfc(~effect(.x, m) |>
     #        pluck("x"))

     # kk <- effects::effect("receptor", m)

     ## Predicción escenario
     predict(m, escenario, type = "prob")
     predict(m, escenario)
```

```
# weights:  100 (72 variable)
```

```
initial  value 194.081211
iter  10 value 97.892280
iter  20 value 89.936309
iter  30 value 88.536313
iter  40 value 83.257367
iter  50 value 51.527054
iter  60 value 46.869544
iter  70 value 14.247652
iter  80 value 0.575289
iter  90 value 0.002386
final  value 0.000088
converged
```

A matrix: 3 x 24 of type dbl		(Intercept)	receptor	andalucia	aragon	asturias_principado_
	2	70.60145	-0.009846724	-0.004667775	0.023206027	0.018808361
	3	-20.72793	-0.003745032	-0.010998364	0.011203246	0.004108677
	4	-54.72024	-0.003717105	-0.006535500	-0.004476815	-0.007850345

1   7.41445366524603e-68 **2**   1 **3**   1.34345055340044e-57 **4**   1.21341562016808e-61

2 *Levels*: 1. '1' 2. '2' 3. '3' 4. '4'