Análisis de la fiabilidad del propietario

Nadal

2025-05-26

Se importan las librerias a utilizar

```
library(dplyr)
library(lubridate)
library(tidyr)
library(cluster)
library(factoextra)
```

Evaluación de la fiabilidad del propietario

Análisis por cluster de desviación del precio ponderado de la vivienda con el precio ponderado del barrio y la influencia de la fiabilidad del propietario

```
pisos = read.csv("pisos_limpios.csv", sep=',')
head(pisos)
##
     Χ
                                                       name
## 1 1 48154
                              Precioso apartamento con wifi
                             PENTHOUSE ON FRONT LINE BEACH
## 2 2 137143
## 3 3 165971
                                   ★ Architectural touch! ★
## 4 4 169284
                                    Apartment near downtown
## 5 5 182221
                         Apartments Calatrava City Valencia
## 6 6 192674 Modern 2 br in El Carmen - Parking Available
##
description
## 1 Second floor on a farm from the late 19th century, very beautiful
and completely renovated, preserving old elements such as wooden beams in
the ceiling. It consists of two bedrooms, with an integrated kitchen and
bathroom. Located on Calle Sagunto, a five-minute walk from the historic
center (the Barrio del Carmen) and very well connected by buses and
especially by the tram, which with a stop 100m from the portal, brings
you closer to the beach in a journey of about 15 minutes, or to the
airport
## 2
<NA>
Hola! I am ready to welcome you in my apt., which was my first work as an
architect. I designed it with special dedication & care, and hope you'll
love it as much as I do. <br/> />Bright, spacious, centrally located, &
fully equipped. Come and enjoy it! :)<br />⟨br />⟨l) 30€ cleaning fee to
pay on arrival, 20€ if you're staying for just one night.
## 4
```

```
<NA>
## 5
<NA>
## 6
Lovely 2 bedroom 2 bath apartment in the heart of the old city of
Valencia. <br /><br />Perfect location for a short getaway or longer
stay. Walking distance to most all of the major sites and within a short
walk of all services and entertainment. Parking available at cost.
neighborhood overview
## 1
Very close neighborhood to the city's old town and with the tram 50m from
the house, to get to the airport or the beach, very well connected and
with several supermarkets nearby.
## 2
<NA>
## 3 Just outside the old city centre (one block away from the Old Town),
in a classic, traditional and safe environment. <pr />Supermarket,
pharmacy, atm, restaurants .. All you need is within walking distance.<br
/>Close to all amenities, the apartment is home to all of the central
sights and most of the city's attractions.
## 4
It's a neighborhood with all amenities. 200 meters away is in Abastos
gym, with 3 pools and sports space. <br />You have a pharmacy, various
supermarkets, and tapas bars and takeaway food centers that will make the
guest's stay more comfortable
## 5
<NA>
## 6
                                                          El Barrio del
Carmen is a vibrant real neighborhood that makes up much of the old city.
Full of shops, museums, cafes, bars and street life. Many quiet squares
and hidden gems. Turia River Gardens near flat are great for jogging,
biking, sports or a peaceful stroll
##
     host id
                                    host name host since
                                                           host location
## 1 219476
                                      Antonio 2010-09-01
                                                                   Spain
## 2 670775 Cpi Gestión Encuentra Tu Mansión 2011-06-06 Valencia, Spain
## 3 791187
                                         Inés 2011-07-07 Valencia, Spain
## 4 806645
                                  Maria Jesus 2011-07-11 Valencia, Spain
## 5 1315567
                                       Chiara 2011-10-20 Valencia, Spain
## 6 933504
                                      Anthony 2011-08-07
                                                            New York, NY
##
host_about
## 1
Un saludo a todos. Espero que os pongáis en contacto conmigo lo antes
posible. Hasta entonces!
## 2
Hola a todos! Mi nombre es Piedad Villena y estoy deseando que os paséis
por mi hospedaje. Seguro que no os arrepentiréis!
## 3
Architect, world traveler, and food enthusiast! \n\nI love Valencia and
```

```
I am on call 24/7 and do my best to help people have the best experience
possible during their stay.\n\nIf you feel like my place fits your tastes
and expectations, go ahead and drop me a line, I'll be happy to get to
know you ;)
## 4
Hola. Soy de Valencia. Tengo 40 años y soy fan del Camino de Santiago.
\nTe ayudaré a que tu estancia en Valencia sea lo mejor posible. \n \nUn
saludo.
## 5 Io amo Viaggiare, Amo la Spagna, l'Italia ed il Sud America.
\nVeneziana di nascita , Valenciana d'adozione , vivo tra il Veneto e la
Spagna !\nAdoro la Spagna ma soprattutto Valencia, il suo clima (300
giorni di sole all'anno! ) le piste ciclabili e le corse nel parco del
Turia.\nAmo passare il mio tempo libero alla palla della Malvarosa e me
incanta la paella e la movida spagnola ! Ti aspetto per farti conoscere
Valencia, las fallas e la fantastica cucina di questa bellissima città !
## 6
                                                                 Hi I have
various flats that we own or lease for others in Valencia.
originally from New York and have been in Valencia 14 years now. If you
have any questions about our adopted city or our apartments please write
us. We would be happy to help even if you do not end up staying with us.
\n\nHola! Poseo y gestiono diferentes viviendas en Valencia. Estoy
encantado de alquilarlos para facilitar vuestra estancia en mi ciudad.
     host_response_time host_response_rate host_acceptance_rate
host is superhost
## 1
           within a day
                                      100%
                                                             91%
t
## 2 within a few hours
                                      100%
                                                            100%
## 3
         within an hour
                                                            100%
                                      100%
t
## 4
         within an hour
                                       97%
                                                             82%
## 5 within a few hours
                                       83%
                                                             38%
## 6 within a few hours
                                      100%
                                                             97%
t
##
     host_listings_count host_total_listings_count
## 1
                       4
                                                  4
                       5
                                                  5
## 2
## 3
                       9
                                                 16
## 4
                      13
                                                 18
## 5
                       2
                                                  2
## 6
                   host verifications host has profile pic
host_identity_verified
                   ['email', 'phone']
## 1
                                                          t
t
                   ['email', 'phone']
## 2
                                                          t
t
```

consider it a privilege to be able to host people in this amazing city.

```
## 3
                     ['email', 'phone']
t
## 4 ['email', 'phone', 'work_email']
                                                              t
## 5 ['email', 'phone', 'work email']
                                                              t
t
## 6
                     ['email', 'phone']
                                                              t
t
     neighbourhood_cleansed neighbourhood_group_cleansed latitude
longitude
## 1
                    MORVEDRE
                                                   LA SAIDIA 39.48375 -
0.37502
## 2
                    EL SALER
                                             POBLATS DEL SUD 39.36335 -
0.31932
                                                   EXTRAMURS 39.46790 -
## 3
                  LA ROQUETA
0.38206
## 4
                   NOU MOLES
                                                 L'OLIVERETA 39.46759 -
0.39067
## 5
                        AIORA
                                              CAMINS AL GRAU 39.46343 -
0.34325
## 6
                    EL CARME
                                                CIUTAT VELLA 39.48002 -
0.38021
     accommodates bathrooms bedrooms
                 4
## 1
                            1
                                      2
## 2
                 7
                            2
                                      1
                 5
                            1
## 3
                                      1
## 4
                 3
                            1
                                      1
## 5
                 5
                            1
                                      2
                                      2
## 6
                 5
                            2
##
amenities
## 1
["Dishes and silverware", "Coffee maker", "Hot water", "Washer", "Host
greets you", "Microwave", "Essentials", "Wifi", "Air conditioning", "Free
street parking", "Bed linens", "Hangers", "Cooking basics", "Hair dryer",
"Shampoo", "Refrigerator", "TV", "Kitchen", "Pack \\u2019n play/Travel
crib", "Heating", "Iron"]
## 2
["Washer", "Smoking allowed", "Dryer", "Pets allowed", "Heating",
"Elevator", "Pool", "Wifi", "Indoor fireplace", "Free parking on
premises", "TV", "Kitchen"]
## 3
["Long term stays allowed", "Mini fridge", "Dishes and silverware", "Body
soap", "Paid parking off premises", "Extra pillows and blankets", "Cleaning products", "Coffee maker", "Hammock", "Hot water", "Room-
darkening shades", "Washer", "Self check-in", "Pets allowed",
"Microwave", "Clothing storage: closet", "Essentials", "Elevator", "Conditioner", "Wifi", "Air conditioning", "Free street parking", "Bed
linens", "Hangers", "Cooking basics", "Hair dryer", "Freezer", "Shampoo",
"Lockbox", "Portable fans", "TV", "Kitchen", "Shower gel", "Oven",
```

```
"Heating", "Beach essentials", "Single level home", "Stove",
"Dishwasher", "Iron"]
["Bathtub", "Backyard", "Dishes and silverware", "Body soap", "Paid
parking off premises", "Extra pillows and blankets", "Cleaning products",
"Drying rack for clothing", "Coffee maker", "First aid kit", "Hot water" "Washer", "Host greets you", "Crib", "Private entrance", "Microwave",
"Clothing storage: closet", "Essentials", "Elevator", "Wifi", "TV with
standard cable", "High chair", "Patio or balcony", "Air conditioning",
"Free street parking", "Bed linens", "Hangers", "Cooking basics", "Hair
dryer", "Luggage dropoff allowed", "Shampoo", "Babysitter
recommendations", "Bidet", "Refrigerator", "Kitchen", "Shower gel", "Pack
\\u2019n play/Travel crib", "Oven", "Heating", "Iron"]
## 5 ["Long term stays allowed", "Board games", "Wine glasses", "Dishes
and silverware", "Laundromat nearby", "Body soap", "Extra pillows and
blankets", "Cleaning products", "Drying rack for clothing", "Coffee
maker", "First aid kit", "Hot water", "Children\\u2019s books and toys",
"Room-darkening shades", "Washer", "Hot water kettle", "Bikes", "Self check-in", "Crib", "Pets allowed", "Microwave", "Essentials", "Conditioner", "Wifi", "Toaster", "High chair", "Patio or balcony", "Dedicated workspace", "Fire extinguisher", "Air conditioning", "Free street parking", "Bed linens", "Hangers", "Cooking basics", "Hair dryer", "Smart lock", "Luggage dropoff allowed", "Shampoo", "Babysitter
recommendations", "Refrigerator", "Portable fans", "Coffee", "TV",
"Kitchen", "Dining table", "City skyline view", "Shower gel", "Smoking
allowed", "Pack \\u2019n play/Travel crib", "Paid parking on premises",
"Heating", "Cleaning available during stay", "Free parking on premises",
"Ceiling fan", "Dishwasher", "Clothing storage", "Iron"]
["Long term stays allowed", "Smoke alarm", "Bathtub", "43 inch TV with
standard cable", "Dishes and silverware", "Paid parking off premises", "Coffee maker", "Baby safety gates", "Children\\u2019s books and toys",
"Hot water", "Private patio or balcony", "Room-darkening shades",
"Washer", "Host greets you", "Children\\u2019s dinnerware", "Crib", "Pets allowed", "Exterior security cameras on property", "Microwave",
"Essentials", "Elevator", "Central air conditioning", "Wifi", "High
chair", "Dedicated workspace", "Hangers", "Cooking basics", "Hair dryer",
"Luggage dropoff allowed", "Shampoo", "Refrigerator", "Kitchen", "Pack \\u2019n play/Travel crib", "Oven", "Heating", "Stove", "Dishwasher",
"Fire extinguisher", "Iron"]
         price minimum_nights maximum_nights availability_365
number_of_reviews
## 1 $150.00
                                  3
                                                    25
                                                                         180
177
## 2 $390.00
                                10
                                                   170
                                                                          90
## 3 $132.00
                                  5
                                                    10
                                                                         117
544
## 4 $48.00
                                  2
                                                 1125
                                                                          42
174
```

## 5 8	\$217.00	3	50	149
	\$125.00	4	365	69
## ## 1		31 2010	-10-12 202 4 -12-01	
## 2			-07-02 2013-07-02	
## 3			-07-23 2024-12-16	
## 4			-06-16 2024-11-18	
## 5			-08-04 2024-05-04	
## 6			-01-14 2024-12-03	
<pre>## review_scores_accuracy review_scores_cleanliness review_scores_checkin</pre>				
	ew_scores_cn		4	62
## 1		4.66	4.	62
4.85 ## 2		5.00	-	00
5.00		3.00	٥.	00
## 3		4.90	1	88
4.89		4.90	4.	00
## 4		4.60	1	40
4.72		4.00	7.	40
## 5		4.38	4	38
4.63		4.50	7.	30
## 6		4.90	4	82
4.98		4.50	7.	02
## review_scores_communication review_scores_location				
	ew_scores_va	-	0.1_0.1_0.00.00000	
## 1		4.79		4.49
4.50				
4.50 ## 2		5.00		4.00
		5.00		4.00
## 2		5.00 4.88		4.84
## 2 4.00				
## 2 4.00 ## 3				
## 2 4.00 ## 3 4.84		4.88		4.84
## 2 4.00 ## 3 4.84 ## 4		4.88		4.84
## 2 4.00 ## 3 4.84 ## 4 4.38		4.88 4.77		4.84 4.51
## 2 4.00 ## 3 4.84 ## 4 4.38 ## 5		4.88 4.77		4.84 4.51
## 2 4.00 ## 3 4.84 ## 4 4.38 ## 5 4.38 ## 6 4.78		4.88 4.77 4.63 4.98		4.84 4.51 4.25 4.91
## 2 4.00 ## 3 4.84 ## 4 4.38 ## 5 4.38 ## 6 4.78	license	4.88 4.77 4.63	reviews_per_month	4.84 4.51 4.25 4.91
## 2 4.00 ## 3 4.84 ## 4 4.38 ## 5 4.38 ## 6 4.78 ## num_a	license amenities	4.88 4.77 4.63 4.98 instant_bookable n		4.844.514.254.91dollarPrice
## 2 4.00 ## 3 4.84 ## 4 4.38 ## 5 4.38 ## 6 4.78 ## num_a	license	4.88 4.77 4.63 4.98	reviews_per_month 1.02	4.84 4.51 4.25 4.91
## 2 4.00 ## 3 4.84 ## 4 4.38 ## 5 4.38 ## 6 4.78 ## num_a ## 1 21	license amenities VT-41540-V	4.88 4.77 4.63 4.98 instant_bookable r	1.02	4.84 4.51 4.25 4.91 dollarPrice 150
## 2 4.00 ## 3 4.84 ## 4 4.38 ## 5 4.38 ## 6 4.78 ## 1 21 ## 2	license amenities VT-41540-V	4.88 4.77 4.63 4.98 instant_bookable n		4.844.514.254.91dollarPrice
## 2 4.00 ## 3 4.84 ## 4 4.38 ## 5 4.38 ## 6 4.78 ## num_a ## 1 21 ## 2 12	license amenities VT-41540-V VT32745V	4.88 4.77 4.63 4.98 instant_bookable n f	1.02	4.84 4.51 4.25 4.91 dollarPrice 150 390
## 2 4.00 ## 3 4.84 ## 4 4.38 ## 5 4.38 ## 6 4.78 ## num_a ## 1 21 ## 2 12 ## 3	license amenities VT-41540-V	4.88 4.77 4.63 4.98 instant_bookable r	1.02	4.84 4.51 4.25 4.91 dollarPrice 150
## 2 4.00 ## 3 4.84 ## 4 4.38 ## 5 4.38 ## 6 4.78 ## num_a ## 1 21 ## 2 12 ## 3	license amenities VT-41540-V VT32745V VT-32757-V	4.88 4.77 4.63 4.98 instant_bookable r f f	1.02 0.01 3.33	4.84 4.51 4.25 4.91 dollarPrice 150 390 132
## 2 4.00 ## 3 4.84 ## 4 4.38 ## 5 4.38 ## 6 4.78 ## 1 21 ## 2 12 ## 3 40 ## 4	license amenities VT-41540-V VT32745V VT-32757-V	4.88 4.77 4.63 4.98 instant_bookable n f	1.02	4.84 4.51 4.25 4.91 dollarPrice 150 390
## 2 4.00 ## 3 4.84 ## 4 4.38 ## 6 4.78 ## 1 21 ## 2 12 ## 2 14 40 ## 4	license amenities VT-41540-V VT32745V VT-32757-V	4.88 4.77 4.63 4.98 instant_bookable r f f	1.02 0.01 3.33	4.84 4.51 4.25 4.91 dollarPrice 150 390 132

```
57
## 6
           <NA>
                                f
                                               1.20
                                                            125
39
##
     precio_ponderado
                           peso
## 1
             102.6461 1.4613317
## 2
             162.2948 2.4030345
## 3
             106.5067 1.2393587
## 4
             79.2171 0.6059298
## 5
             116.2909 1.8660102
## 6
             144.7894 0.8633229
# FIAILIDAD HOST: host_since, host_location, host_about,
host response time, host response rate, host acceptance rate,
host_is_superhost, host_listings_count, host_total_listings_count,
host verifications, host has profile pic, host identity verified, license
# DISPONIBILIDAD VIVIENDA: maximum nights, minimum nights,
availability 365
pisos$precio_ponderado <- as.numeric(gsub(",", ".",</pre>
pisos$precio ponderado))
```

Se agrupan los datos según la columna neighbourhood_cleansed (que representa los barrios), y luego se calcula la media del precio_ponderado para cada barrio.

```
# Calcular media del precio ponderado por barrio
precio_barrio <- pisos %>%
  group_by(neighbourhood_cleansed) %>%
  summarise(precio_ponderado_barrio = mean(precio_ponderado, na.rm =
TRUE))
precio_barrio
## # A tibble: 62 × 2
      neighbourhood cleansed precio ponderado barrio
##
##
      <chr>>
## 1 AIORA
                                                 94.9
## 2 ALBORS
                                                119.
## 3 ARRANCAPINS
                                                106.
## 4 BENICALAP
                                                 88.3
## 5 BENIMACLET
                                                128.
## 6 BENIMAMET
                                                118.
## 7 BETERO
                                                 98.1
## 8 CABANYAL-CANYAMELAR
                                                107.
## 9 CAMI FONDO
                                                120.
## 10 CAMPANAR
                                                 97.8
## # i 52 more rows
pisos <- left_join(pisos, precio_barrio, by = "neighbourhood_cleansed")</pre>
```

Transformación/ Adición de variables

Creamos una variable para la desviación relativa entre el precio de la vivienda y el precio medio del barrio. Esta variable indica cuánto se desvía el precio del alojamiento respecto al barrio.

```
pisos$desviacion_precio <- (pisos$precio_ponderado -</pre>
pisos$precio ponderado barrio) / pisos$precio ponderado barrio
pisos$host is superhost <- as.numeric(pisos$host is superhost == "t")</pre>
pisos$host identity verified <- as.numeric(pisos$host identity verified
== "t")
pisos$host_has_profile_pic <- as.numeric(pisos$host_has_profile_pic ==</pre>
analisis fiabilidad general <- function(pisos) {</pre>
  library(dplyr)
  library(lubridate)
  df <- pisos
  ## Transformaciones a variables numéricas
  # Convertir fecha de host al nº de días que lleva siendo host
  df$host_since <- ymd(df$host_since)</pre>
  df$antiguedad host <- as.numeric(difftime(Sys.Date(), df$host_since,</pre>
units = "days"))
  # De booleanas a binarias
  df$host_is_superhost <- as.numeric(df$host_is_superhost == "t")</pre>
  df$host identity verified <- as.numeric(df$host identity verified ==</pre>
  df$host_has_profile_pic <- as.numeric(df$host_has_profile_pic == "t")</pre>
  df$instant_bookable <- as.numeric(df$instant_bookable == "t")</pre>
  # Transformación de categórica ordinal a numérica
  df$host_response_time <- gsub("a few days or more", "4",</pre>
df$host_response_time)
  df$host response time <- gsub("within a day", "3",</pre>
df$host response time)
  df$host response time <- gsub("within a few hours", "2",</pre>
df$host response time)
  df$host_response_time <- gsub("within an hour", "1",</pre>
df$host_response_time)
  df$host response time <- as.numeric(df$host response time)</pre>
  # Arreglo de la variable price
  df$host_response_rate <- as.numeric(gsub("%", "",</pre>
df$host response rate)) / 100
```

```
df$host_acceptance_rate <- as.numeric(gsub("%", "",</pre>
df$host_acceptance_rate)) / 100
  # Crear una nueva variable que cuente cuántos métodos de verificación
tiene cada anfitrión, usando la variable host verifications.
  df$num_verificaciones <- sapply(df$host_verifications, function(x)</pre>
length(unlist(strsplit(as.character(x), ",\\s*"))))
  # Escalar y calcular score
  variables fiabilidad <- df %>%
    select(antiguedad host, host is superhost, host identity verified,
           host has profile pic, instant bookable, host response time,
           host_response_rate, host_acceptance_rate, num_verificaciones)
  variables_fiabilidad <- scale(variables_fiabilidad)</pre>
  df$score_fiabilidad <- rowSums(variables_fiabilidad, na.rm = TRUE)</pre>
    # Normalización
  df$fiabilidad_normalizada <- ((df$score_fiabilidad -</pre>
mean(df$score_fiabilidad))/sd(df$score_fiabilidad, na.rm = TRUE))
  # Reescalar a rango 0-5
  score_min <- min(df$fiabilidad_normalizada, na.rm = TRUE)</pre>
  score max <- max(df$fiabilidad normalizada, na.rm = TRUE)</pre>
  df$score fiabilidad 0a5 <- (df$fiabilidad normalizada - score min) /
(score max - score min) * 5
  df$score_fiabilidad_0a5 <- round(df$score_fiabilidad_0a5, 2)</pre>
  # Mostrar resumen
  cat("==== Análisis General de Fiabilidad del Anfitrión =====\n\n")
  cat("Número de observaciones:", nrow(df), "\n")
  cat("Número de barrios únicos:",
length(unique(df$neighbourhood cleansed)), "\n")
  cat("\nEstadísticas descriptivas del score de fiabilidad:\n")
  print(summary(df$score fiabilidad 0a5))
  cat("\nFiabilidad media global:\n")
  cat(round(mean(df$score_fiabilidad_0a5, na.rm = TRUE), 2), "\n")
  return(df)
}
pisos_analizados <- analisis_fiabilidad_general(pisos)</pre>
## ==== Análisis General de Fiabilidad del Anfitrión =====
##
```

```
## Número de observaciones: 3525
## Número de barrios únicos: 62
##
## Estadísticas descriptivas del score de fiabilidad:
## Min. 1st Qu. Median Mean 3rd Qu. Max.
## 0.000 3.380 3.640 3.639 3.970 5.000
##
## Fiabilidad media global:
## 3.64
```

Clustering por barrios

```
analisis_fiabilidad_por_barrios <- function(pisos, barrios_path,</pre>
n_cluster) {
 library(dplyr)
 library(lubridate)
 # Leer datos
 df <- pisos
 barrios_cluster <- read.csv(barrios_path, sep = ",")</pre>
 # Estándar: nombre de columna para filtrar barrios
 nombres_col <- names(barrios_cluster)</pre>
  if ("barrio" %in% nombres_col) {
    barrios <- barrios cluster$barrio
  } else if ("neighbourhood cleansed" %in% nombres col) {
    barrios <- barrios_cluster$neighbourhood_cleansed</pre>
  } else {
    stop("El archivo de barrios debe tener una columna llamada 'barrio' o
'neighbourhood_cleansed'.")
  }
 # Filtrar los barrios seleccionados
 df <- df %>% filter(neighbourhood_cleansed %in% barrios)
 # Transformaciones a numérico
 # Convertir fecha de host al nº de días que lleva siendo host
 df$host_since <- ymd(df$host_since)</pre>
  df$antiguedad_host <- as.numeric(difftime(Sys.Date(), df$host_since,</pre>
units = "days"))
 # De booleanas a binarias
 df$host is superhost <- as.numeric(df$host is superhost == "t")</pre>
 df$host_identity_verified <- as.numeric(df$host_identity_verified ==</pre>
"t")
 df$host has profile pic <- as.numeric(df$host has profile pic == "t")</pre>
 df$instant bookable <- as.numeric(df$instant bookable == "t")</pre>
```

```
# Transformación de categórica ordinal a numérica
  df$host response time <- gsub("a few days or more", "4",</pre>
df$host response time)
  df$host_response_time <- gsub("within a day", "3",</pre>
df$host_response_time)
  df$host_response_time <- gsub("within a few hours", "2",</pre>
df$host response time)
  df$host_response_time <- gsub("within an hour", "1",</pre>
df$host response time)
  df$host_response_time <- as.numeric(df$host_response_time)</pre>
  # Arreglo de la variable price
  df$host_response_rate <- as.numeric(gsub("%", "",</pre>
df$host response rate)) / 100
  df$host_acceptance_rate <- as.numeric(gsub("%", "",</pre>
df$host acceptance_rate)) / 100
  # Crear una nueva variable que cuente cuántos métodos de verificación
tiene cada anfitrión, usando la variable host_verifications.
  df$num verificaciones <- sapply(df$host verifications, function(x)</pre>
length(unlist(strsplit(as.character(x), ",\\s*"))))
  # Escalar y calcular score de fiabilidad
  variables fiabilidad <- df %>%
    select(antiguedad_host, host_is_superhost, host_identity_verified,
           host has profile pic, instant bookable, host response time,
           host_response_rate, host_acceptance_rate, num_verificaciones)
  variables fiabilidad <- scale(variables fiabilidad)</pre>
  df$score fiabilidad <- rowSums(variables fiabilidad, na.rm = TRUE)</pre>
  # Normalización
  df$fiabilidad_normalizada <- ((df$score_fiabilidad -</pre>
mean(df$score fiabilidad))/sd(df$score fiabilidad, na.rm = TRUE))
  # Reescalar a 0-5
  score_min <- min(df$fiabilidad_normalizada, na.rm = TRUE)</pre>
  score_max <- max(df$fiabilidad_normalizada, na.rm = TRUE)</pre>
  df$score_fiabilidad_0a5 <- (df$fiabilidad_normalizada - score_min) /</pre>
(score max - score min) * 5
  # Redondear a 2 decimales
  df$score fiabilidad 0a5 <- round(df$score fiabilidad 0a5, 2)</pre>
  # Resumen
```

```
cat(sprintf("===== Análisis de Fiabilidad del Anfitrión (Filtrado por
el cluster %s) =====\n\n", n_cluster))
  cat("Barrios incluidos:\n")
  print(unique(df$neighbourhood_cleansed))
  cat("\nEstadísticas descriptivas del score de fiabilidad:\n")
  summary_variable <- summary(df$score_fiabilidad_0a5)</pre>
  print(summary_variable)
  cat("\nFiabilidad media del cluster:\n")
  print(summary variable[4])
  return(df)
}
cluster_1 <- analisis_fiabilidad_por_barrios(pisos, "cluster1.csv", 1)</pre>
## ===== Análisis de Fiabilidad del Anfitrión (Filtrado por el cluster 1)
=====
##
## Barrios incluidos:
## [1] "EL PERELLONET" "LA GRAN VIA"
                                        "PINEDO"
##
## Estadísticas descriptivas del score de fiabilidad:
##
      Min. 1st Qu. Median
                              Mean 3rd Ou.
                                               Max.
     0.000
             1.870
                     2.580
                              2.428
                                      2.980
##
                                              5.000
##
## Fiabilidad media del cluster:
##
       Mean
## 2.427681
cluster_2 <- analisis_fiabilidad_por_barrios(pisos, "cluster2.csv", 2)</pre>
## ===== Análisis de Fiabilidad del Anfitrión (Filtrado por el cluster 2)
=====
##
## Barrios incluidos:
## [1] "AIORA"
                          "EL CARME"
                                           "EL BOTANIC"
                                                             "BENICALAP"
## [5] "LA SEU"
                          "EN CORTS"
                                           "SANT ANTONI"
                                                             "NATZARET"
## [9] "LA VEGA BAIXA" "LA CARRASCA"
                                           "SANT LLORENS"
                                                             "MARXALENES"
## [13] "TORMOS"
                          "CIUTAT JARDI"
                                           "L'AMISTAT"
                                                             "SANT
MARCEL.LI"
## [17] "EL CALVARI"
## Estadísticas descriptivas del score de fiabilidad:
##
      Min. 1st Ou.
                    Median
                               Mean 3rd Ou.
                                               Max.
##
     0.000
             3.417
                     3.655
                              3.666
                                      4.043
                                              5.000
##
## Fiabilidad media del cluster:
```

```
##
      Mean
## 3.66611
cluster_3 <- analisis_fiabilidad_por_barrios(pisos, "cluster3.csv", 3)</pre>
## ===== Análisis de Fiabilidad del Anfitrión (Filtrado por el cluster 3)
=====
##
## Barrios incluidos:
   [1] "EL SALER"
                              "PENYA-ROJA"
                                                    "SANT PAU"
   [4] "MESTALLA"
                              "SANT FRANCESC"
                                                    "LA PETXINA"
##
##
   [7] "BENIMACLET"
                              "LA MALVA-ROSA"
                                                    "MALILLA"
## [10] "CAMI FONDO"
                              "TRINITAT"
                                                    "VARA DE QUART"
                              "EL PLA DEL REMEI"
## [13] "PATRAIX"
                                                    "L'HORT DE SENABRE"
## [16] "L'ILLA PERDUDA"
                              "EXPOSICIO"
                                                    "LA FONTETA S.LLUIS"
##
## Estadísticas descriptivas del score de fiabilidad:
##
      Min. 1st Qu. Median
                              Mean 3rd Qu.
##
     0.000
             3.160
                     3.470
                              3.474
                                      3.860
                                              5.000
## Fiabilidad media del cluster:
##
       Mean
## 3.474435
cluster_4 <- analisis_fiabilidad_por_barrios(pisos, "cluster4.csv", 4)</pre>
## ===== Análisis de Fiabilidad del Anfitrión (Filtrado por el cluster 4)
=====
##
## Barrios incluidos:
   [1] "MORVEDRE"
   [2] "LA ROQUETA"
##
   [3] "NOU MOLES"
##
    [4] "LA CREU DEL GRAU"
##
   [5] "CABANYAL-CANYAMELAR"
    [6] "RUSSAFA"
##
   [7] "ARRANCAPINS"
##
   [8] "EL PILAR"
##
   [9] "EL MERCAT"
##
## [10] "LA XEREA"
## [11] "LA RAIOSA"
## [12] "BETERO"
## [13] "MONT-OLIVET"
## [14] "BENIMAMET"
## [15] "CIUTAT DE LES ARTS I DE LES CIENCIES"
## [16] "CAMPANAR"
## [17] "ALBORS"
## [18] "EL GRAU"
## [19] "NA ROVELLA"
## [20] "TRES FORQUES"
## [21] "ELS ORRIOLS"
```

```
## [22] "LA PUNTA"
## [23] "TORREFIEL"
## [24] "LES TENDETES"
## Estadísticas descriptivas del score de fiabilidad:
      Min. 1st Qu. Median
                            Mean 3rd Qu.
##
##
    0.000 3.430 3.780
                            3.745 4.100
                                            5.000
##
## Fiabilidad media del cluster:
##
      Mean
## 3.74491
write.csv(pisos_analizados, "pisos_con_analisis_fiabilidad.csv")
```