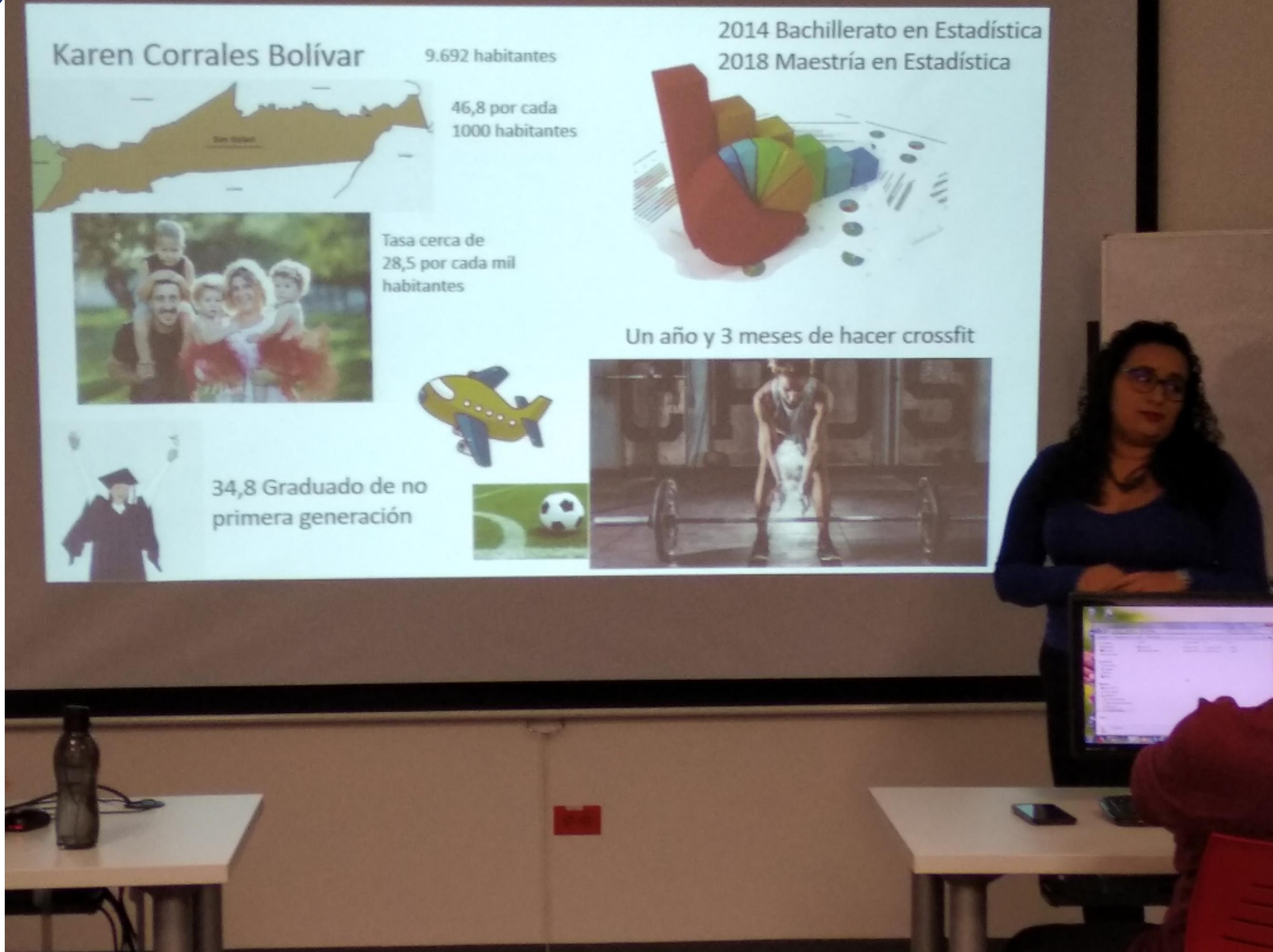




# WORKSHOP

San José – Costa Rica

Septiembre 20 – 21/ 2018



Karen Corrales Bolívar

9.692 habitantes

46,8 por cada 1000 habitantes

Tasa cerca de 28,5 por cada mil habitantes

34,8 Graduado de no primera generación

2014 Bachillerato en Estadística  
2018 Maestría en Estadística

Un año y 3 meses de hacer crossfit

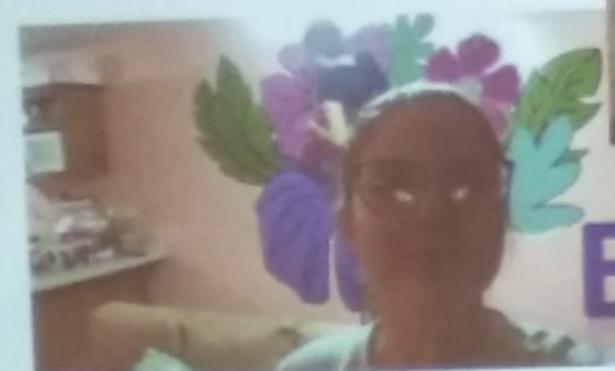
The presentation slide features several data points and corresponding icons. At the top left is a map of Costa Rica with a yellow shaded region labeled 'San José'. Below it is a photo of a family. To the right of the map are two text blocks: population density and a rate per 1000 inhabitants. Further down are a graduation cap icon and a text block about higher education completion. On the right side of the slide is a 3D bar chart and a photo of a person performing a crossfit exercise. Below the slide, a woman with glasses and dark hair is standing at a podium, speaking. In the foreground, there's a small table with a bottle and some cables.



# María José Hidalgo



25 años



ESTADÍSTICA



Soltera



28.644 habitantes

ESPARZA

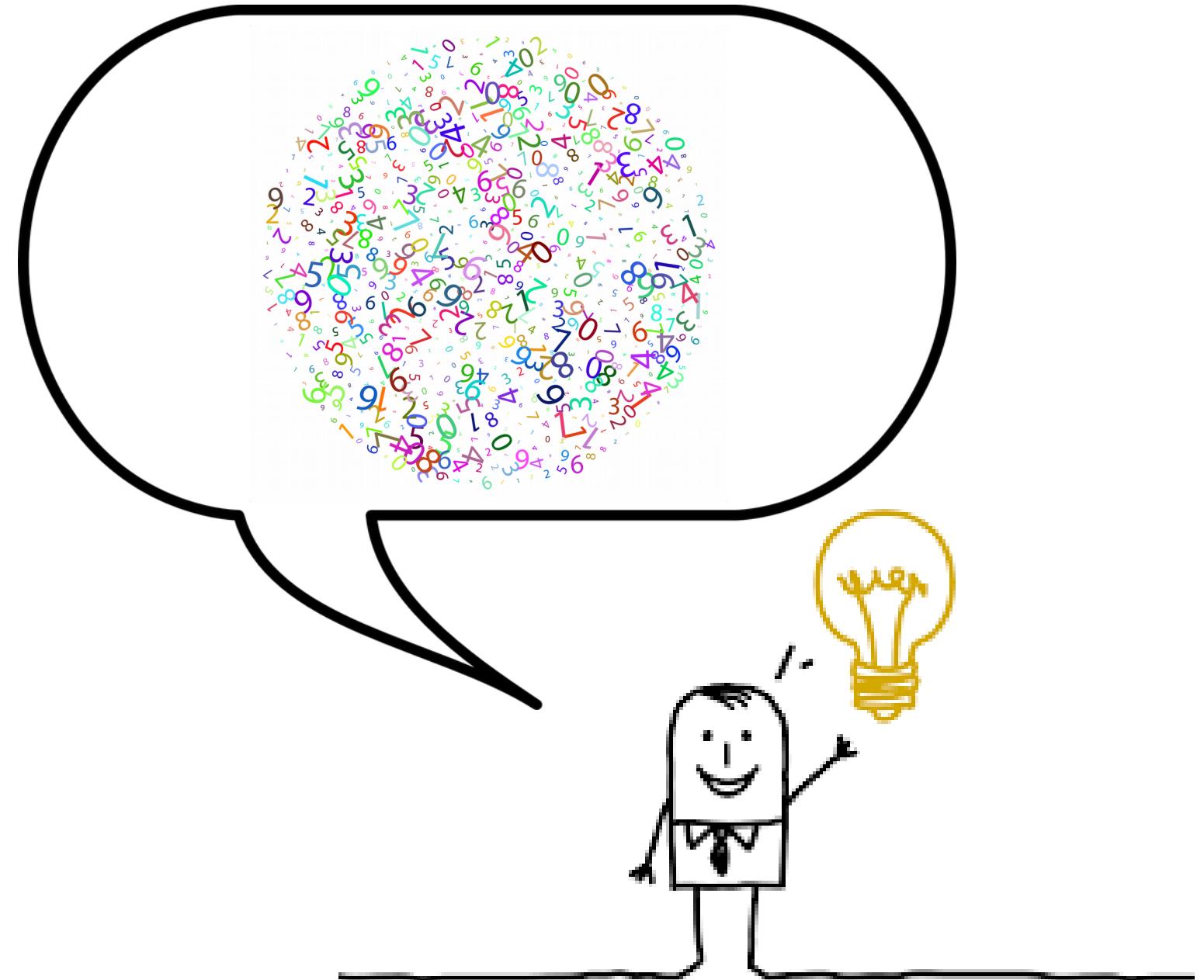








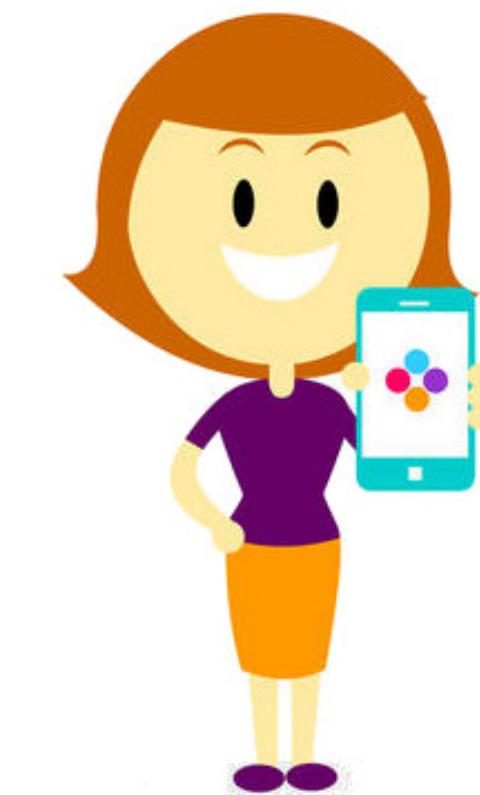
# Cómo vender una idea con Data Storytelling?



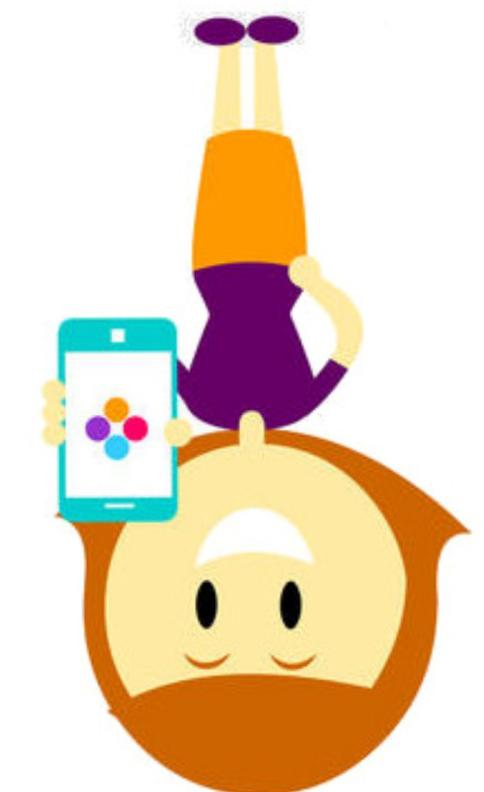
# Vendiendo una App con data storytelling

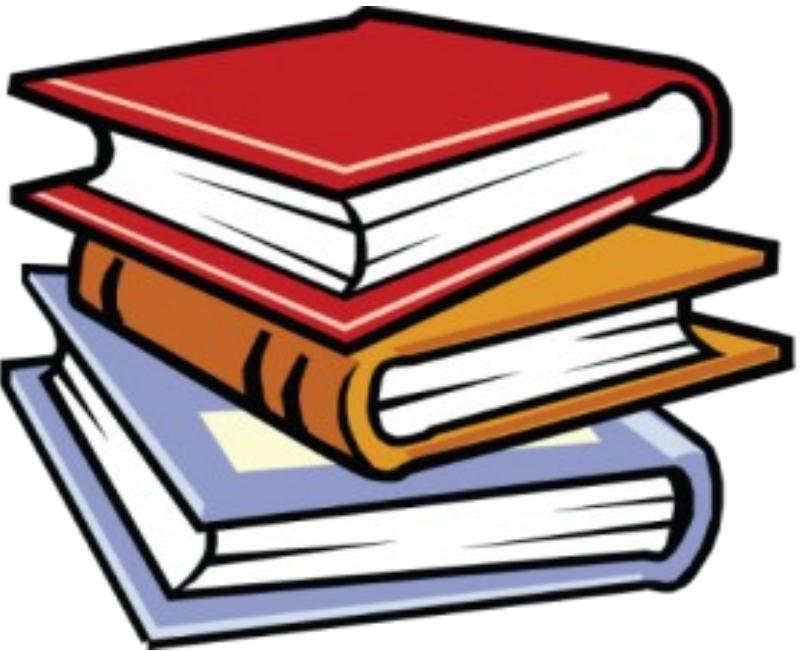


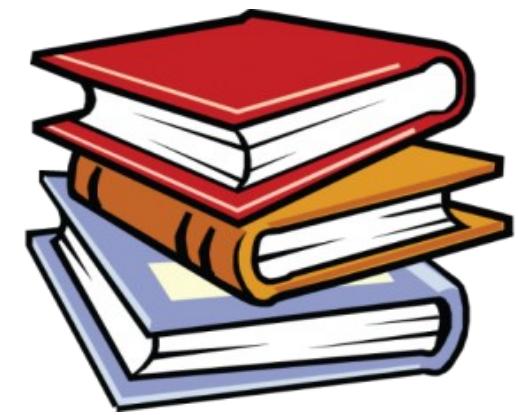
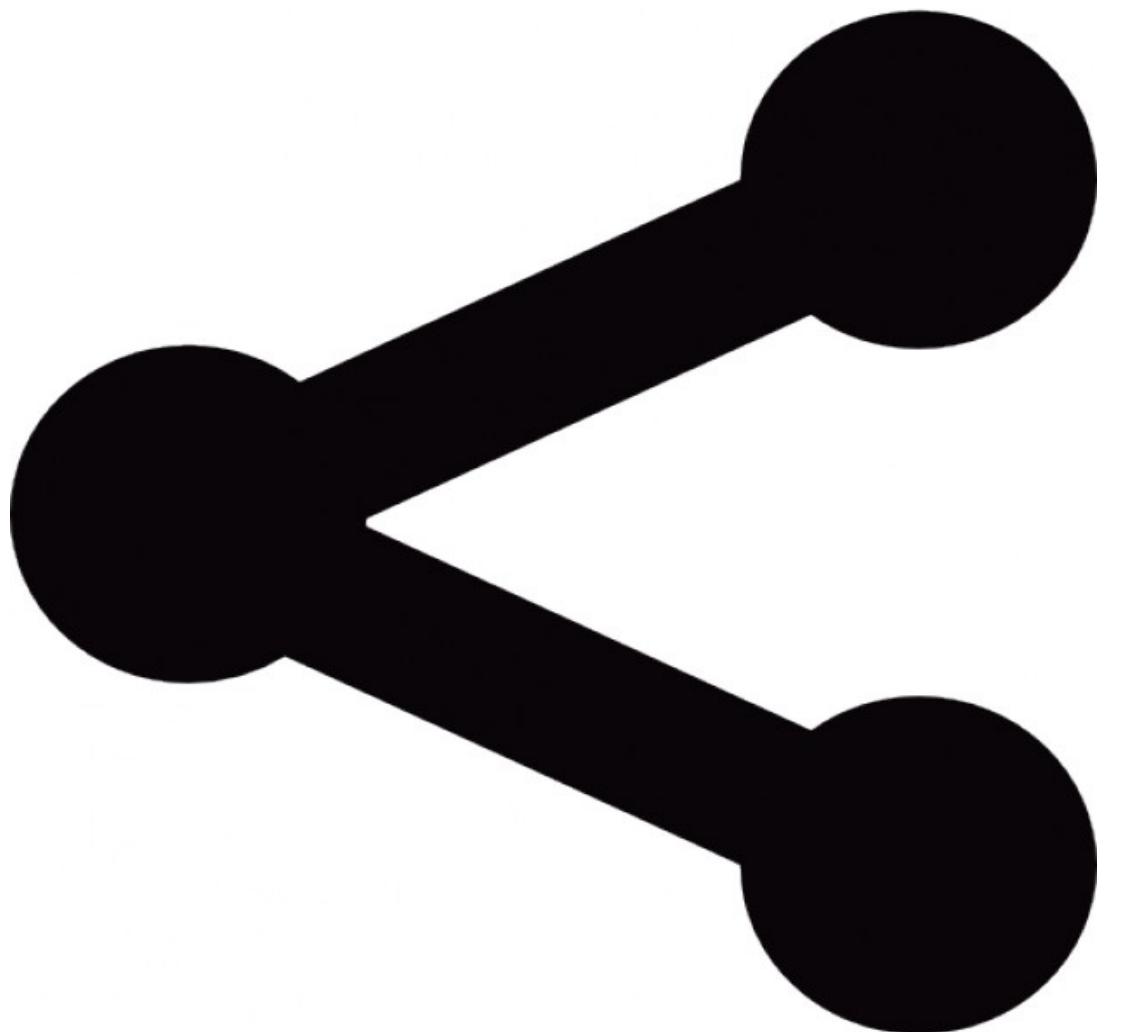
STARTUP  
*Costa Rica*  
BUILDING BRIDGES TO SUPPORT  
ENTREPRENEURS IN COSTA RICA

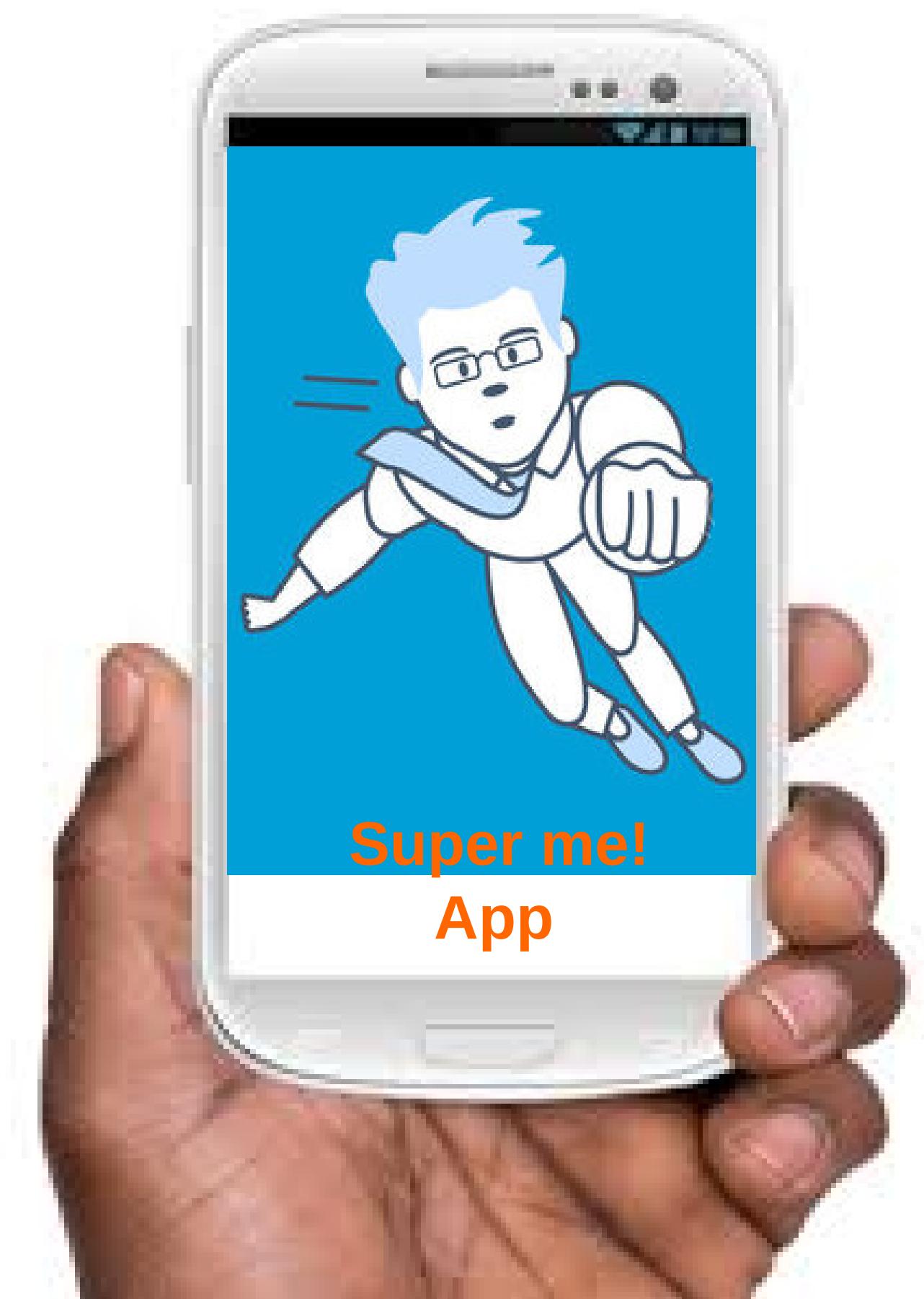


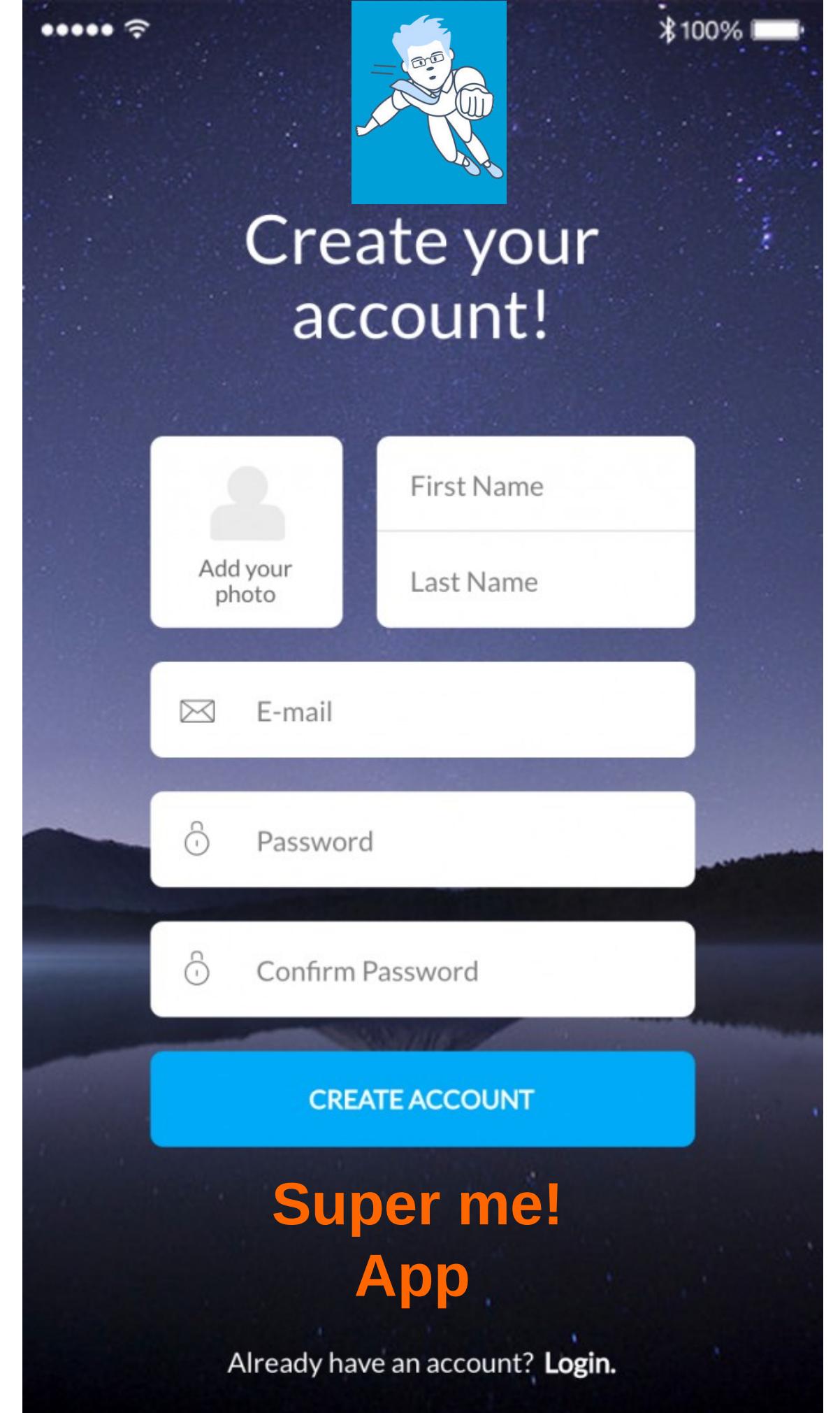
# Vendiendo una App SIN data storytelling











≡bag icon

## LOGIN



[Sign in with Twitter !\[\]\(4dc0640daa750831febba2522cab9890\_img.jpg\)](#)[Sign in with LinkedIn !\[\]\(f1f0b9efde8e401ecf09e26f980a80d7\_img.jpg\)](#)[Sign in with !\[\]\(625eacc208c533f93089a00ed0575312\_img.jpg\)](#)

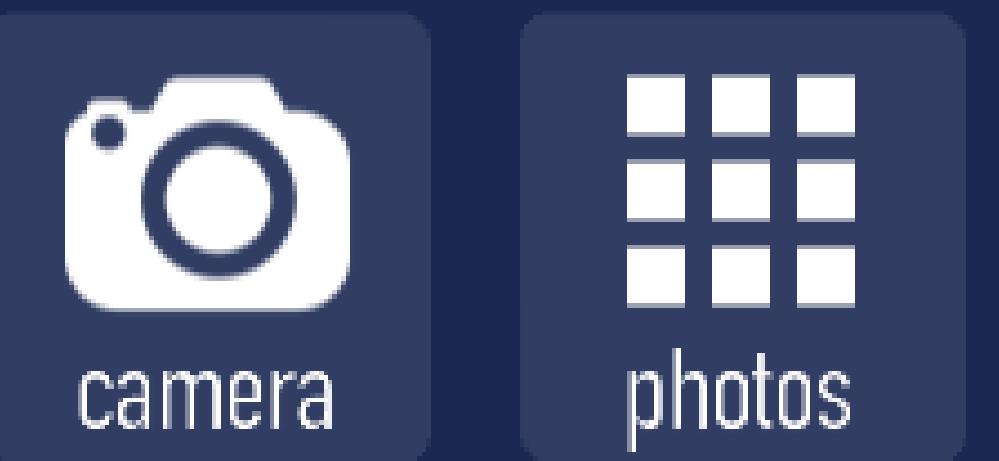
**Super me!**  
**App**

SIGN IN

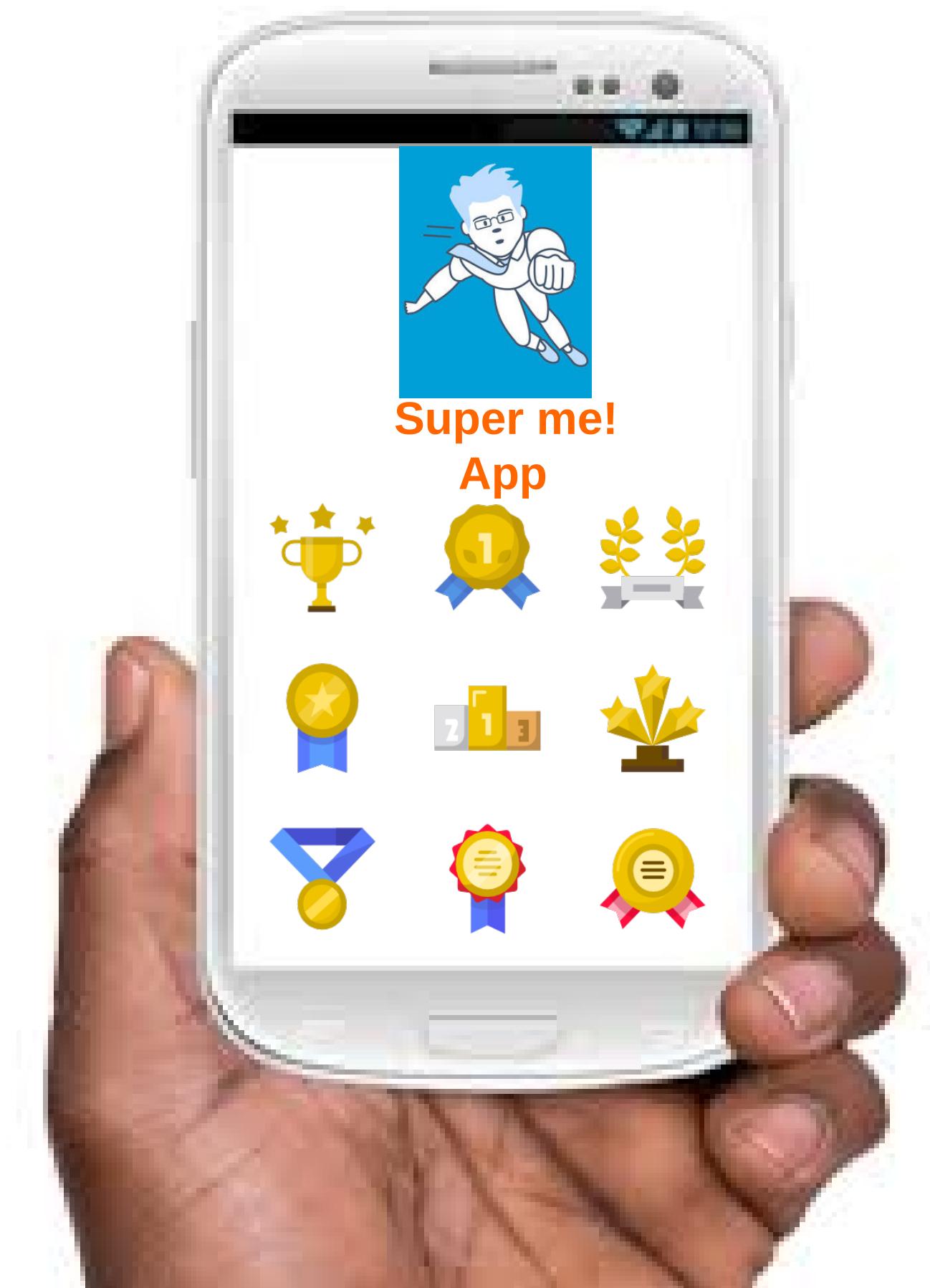


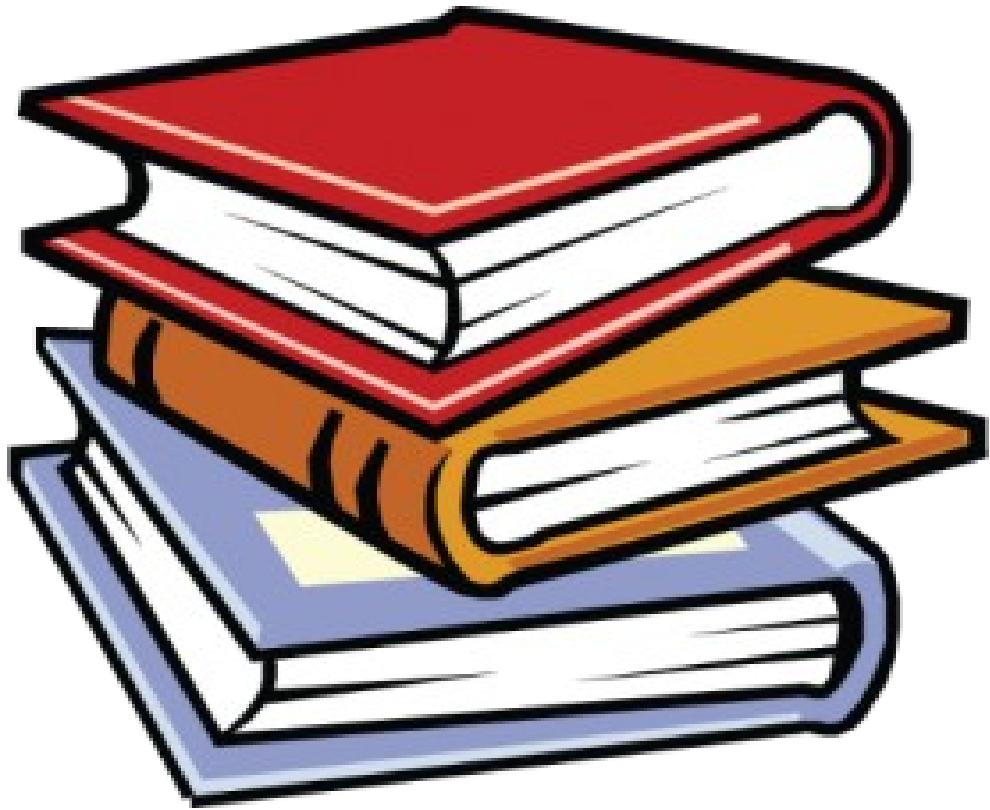
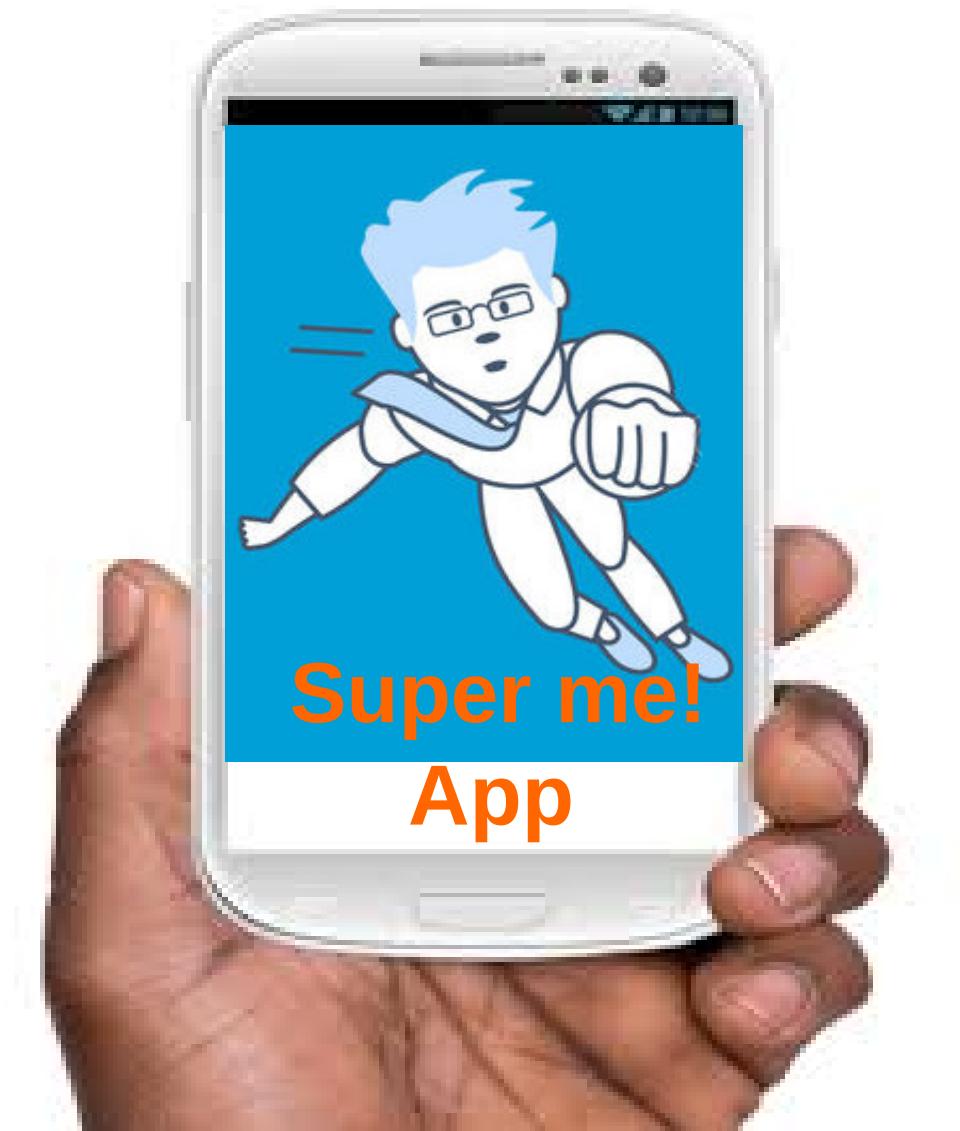


## Photo Upload



Super me!  
App

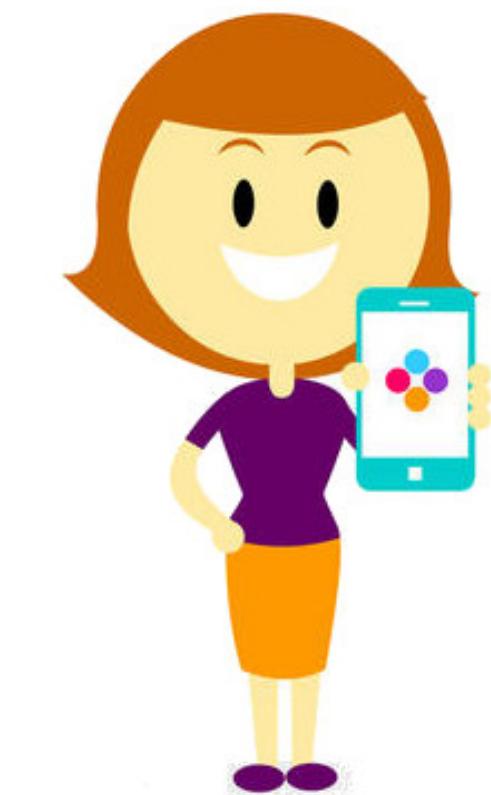




# Vendiendo una App con data storytelling



STARTUP  
*Costa Rica*  
BUILDING BRIDGES TO SUPPORT  
ENTREPRENEURS IN COSTA RICA



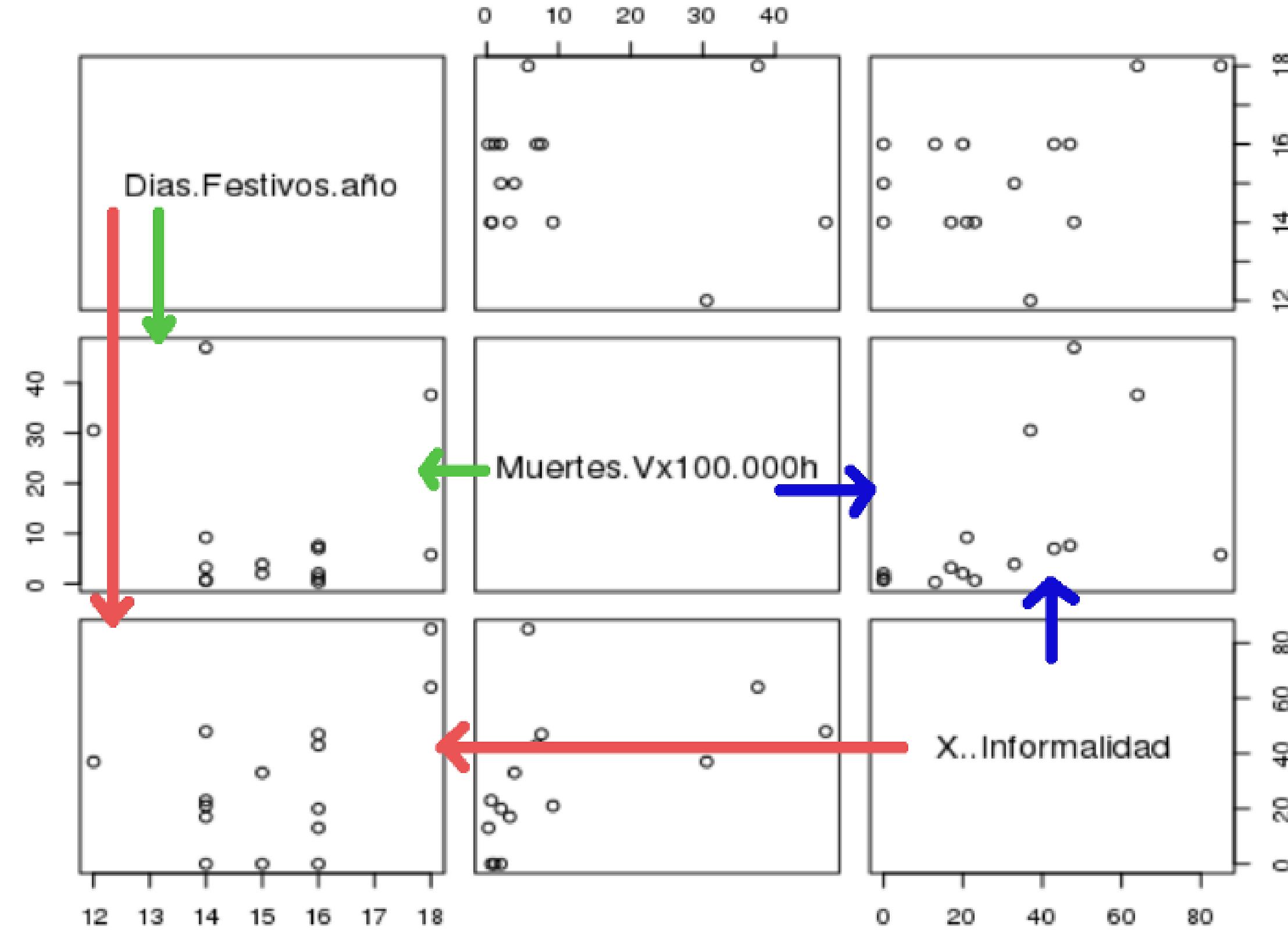
GOBIERNO DE COLOMBIA  
MINTIC vive digital para todos

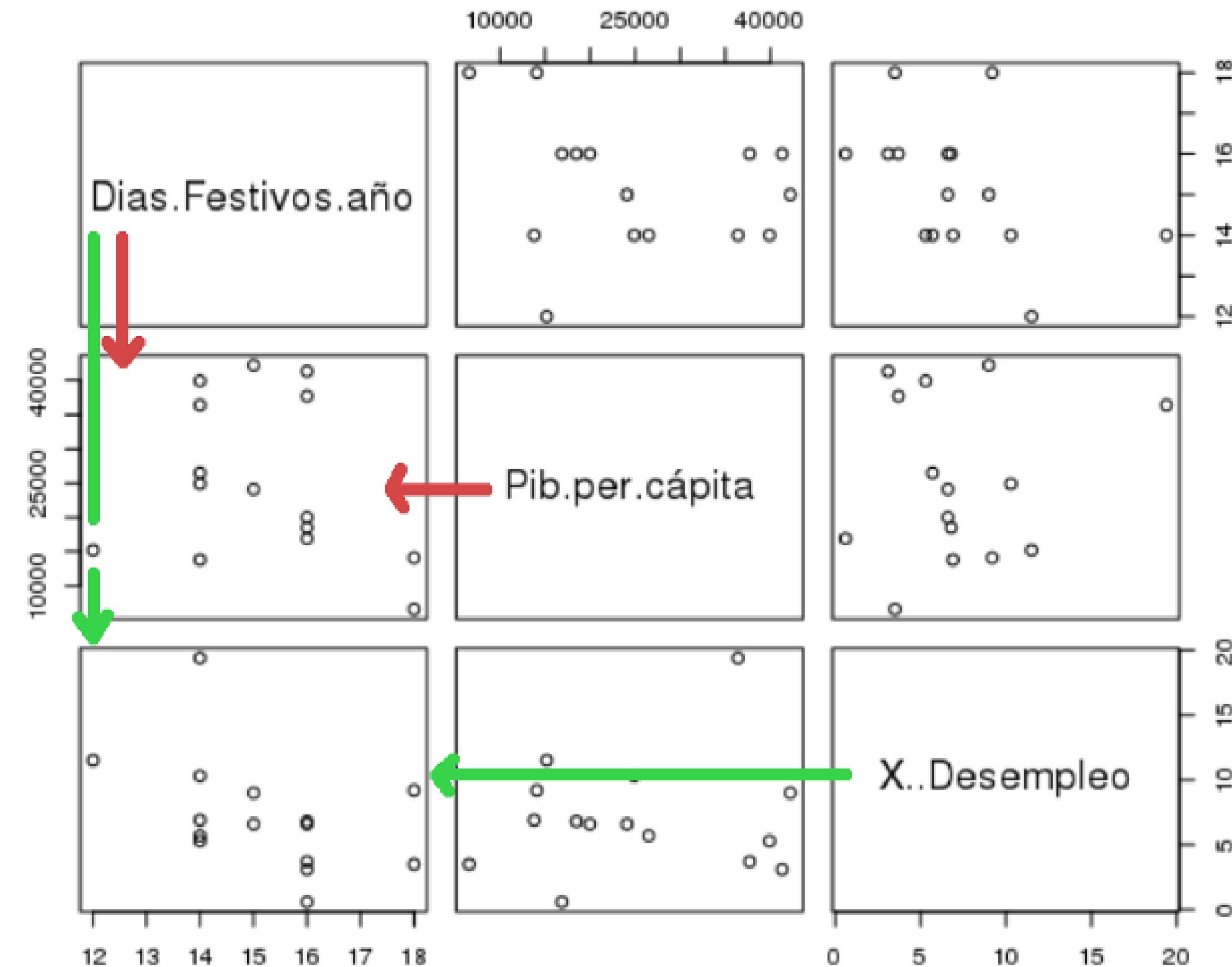
micitt  
MINISTERIO  
DE CIENCIA,  
TECNOLOGÍA  
Y TELECOMUNICACIONES



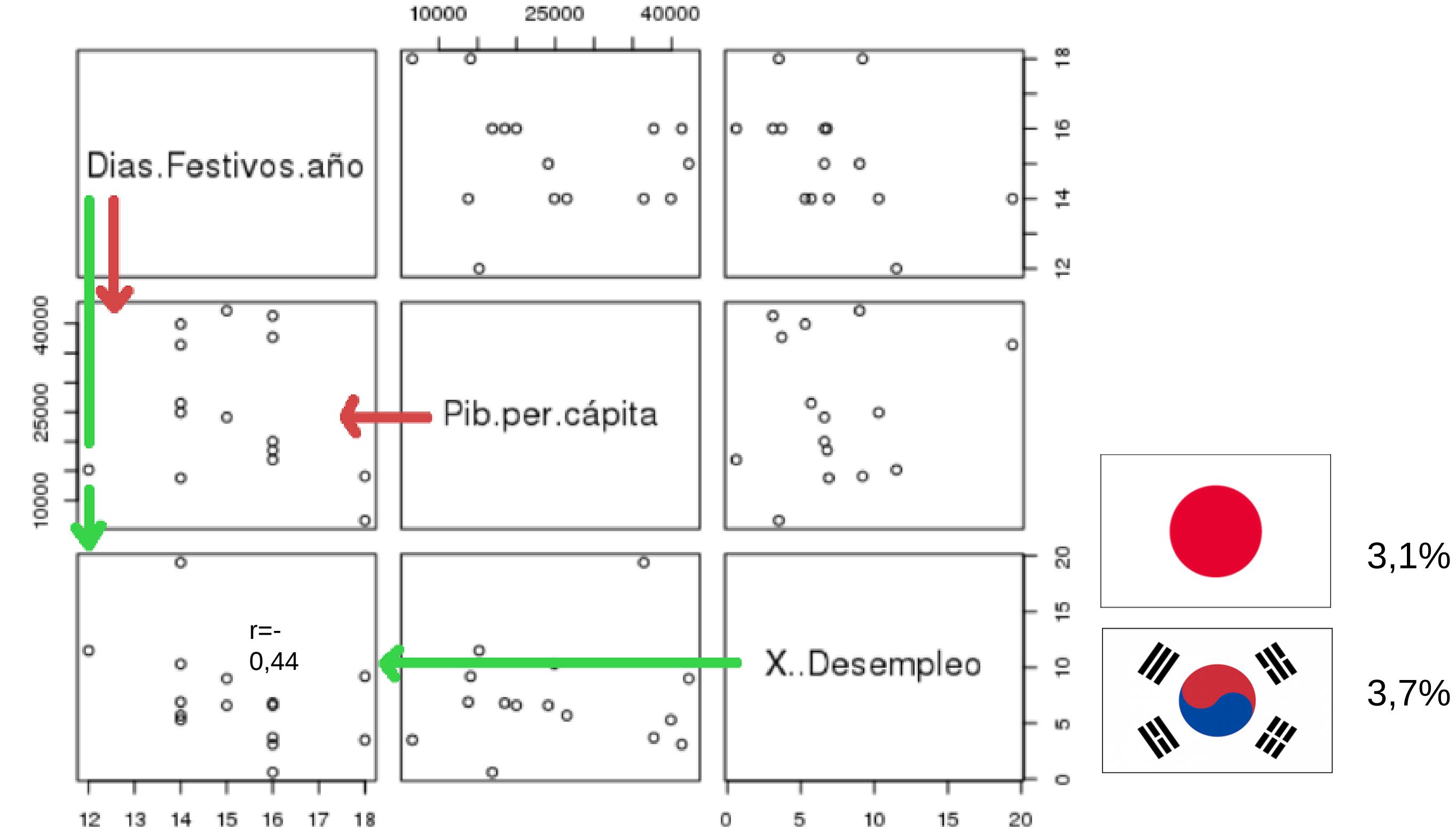
Pais	Continente	Dias Festivos/año
Colombia	America	18
Brasil	America	12
Argentina	America	16
Chile	America	15
Venezuela	America	14
Finlandia	Europa	15
Turquia	Europa	14
Rusia	Europa	14
Malta	Europa	14
Espana	Europa	14
Tailandia	Asia	16
Libano	Asia	16
Corea del Sur	Asia	16
Japón	Asia	16
India	Asia	18

## 15 países con más días festivos al año en el mundo en tres continentes. 2.017

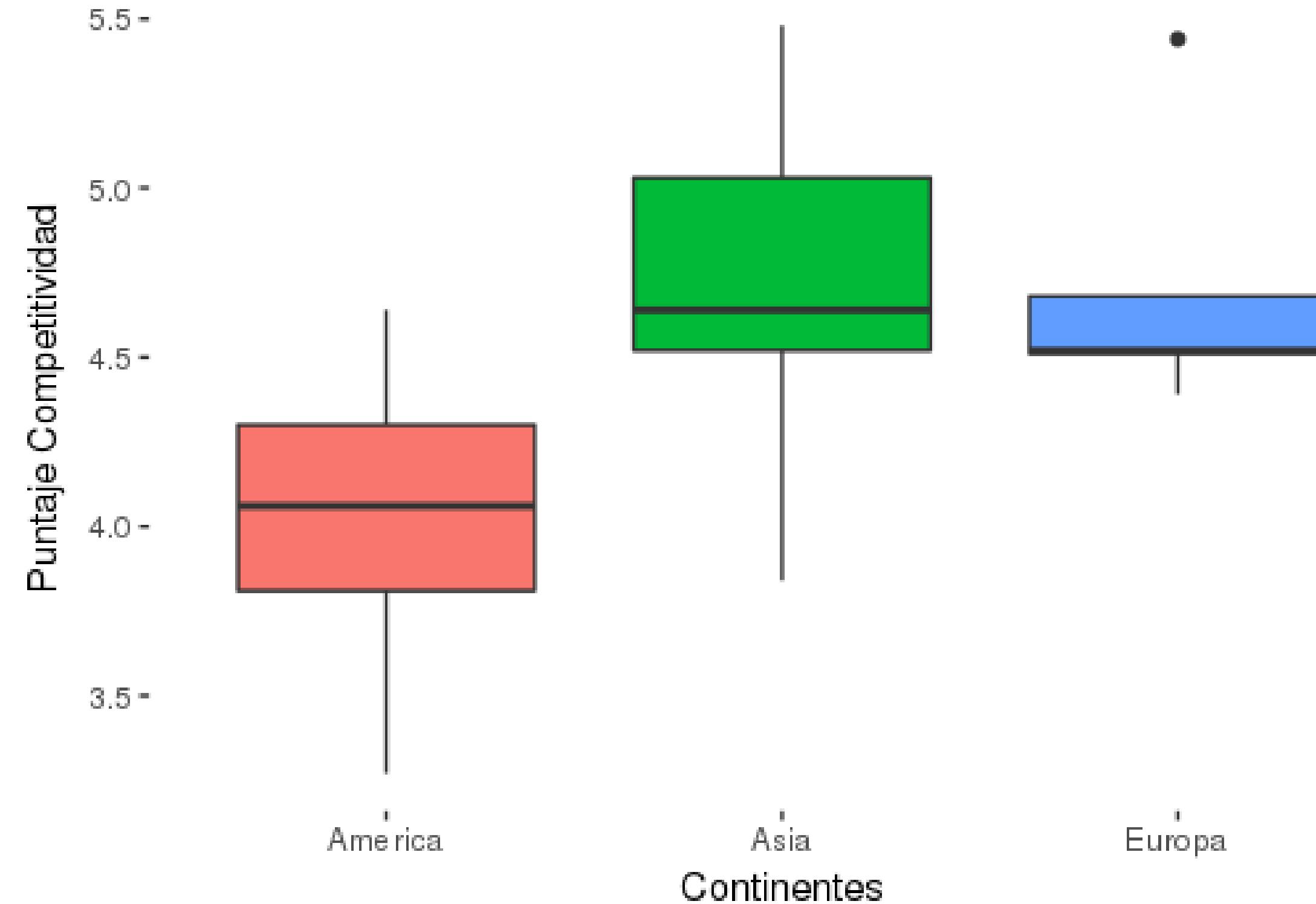


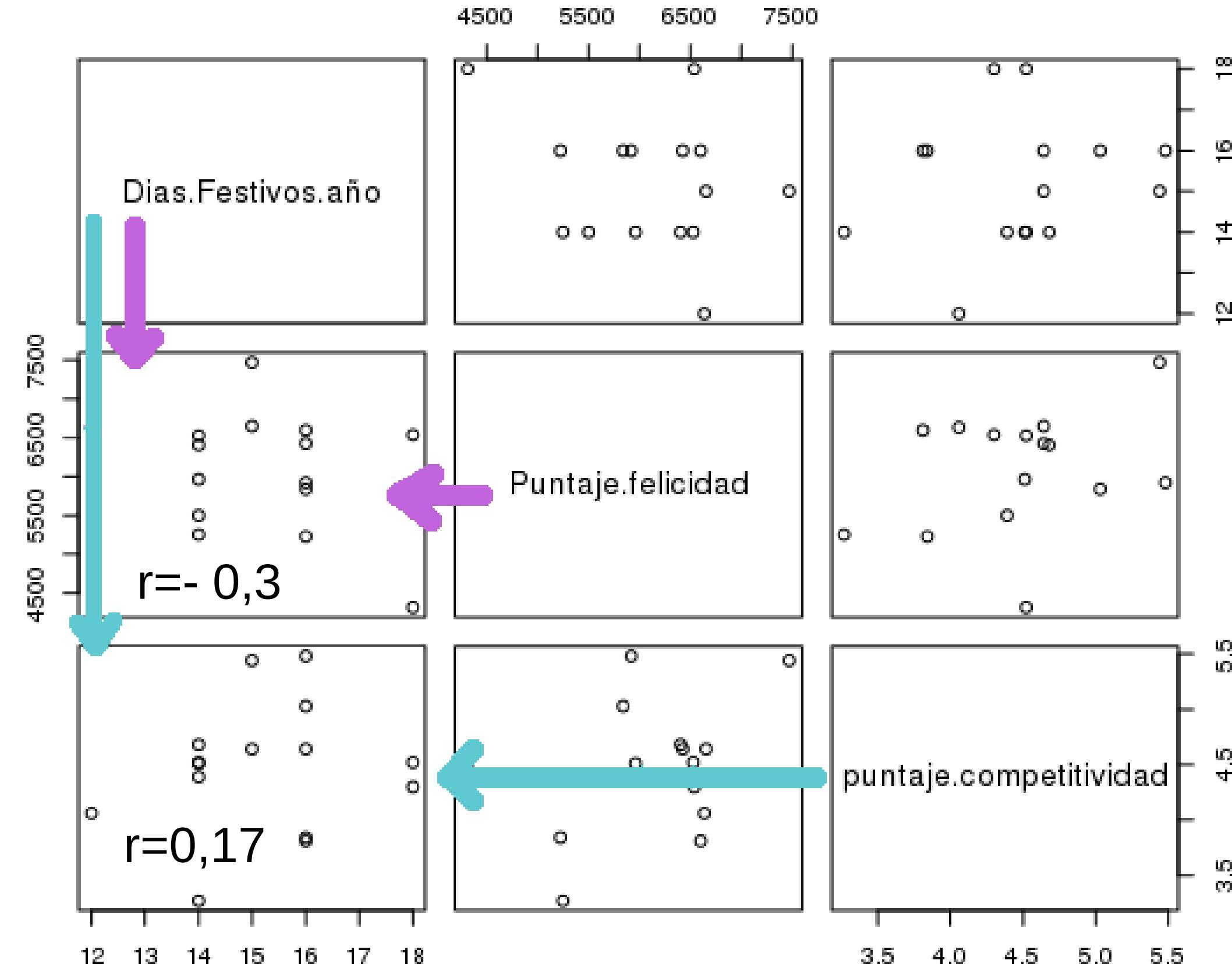


## 15 países con más días festivos al año en el mundo en tres continentes. 2.017



## Competitividad en top 5 países con más festivos por continente







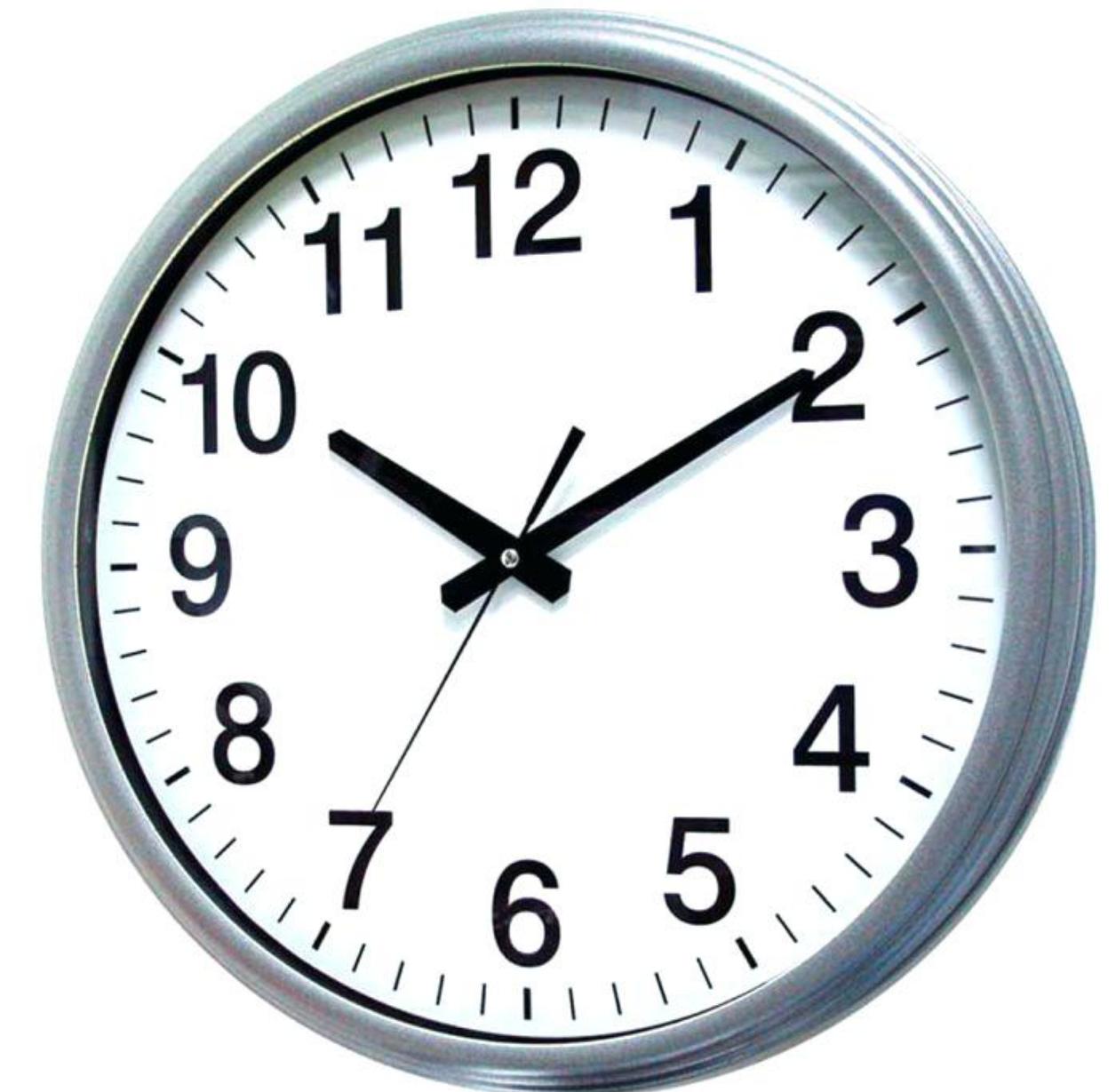
Aug 11  
Mountain Day

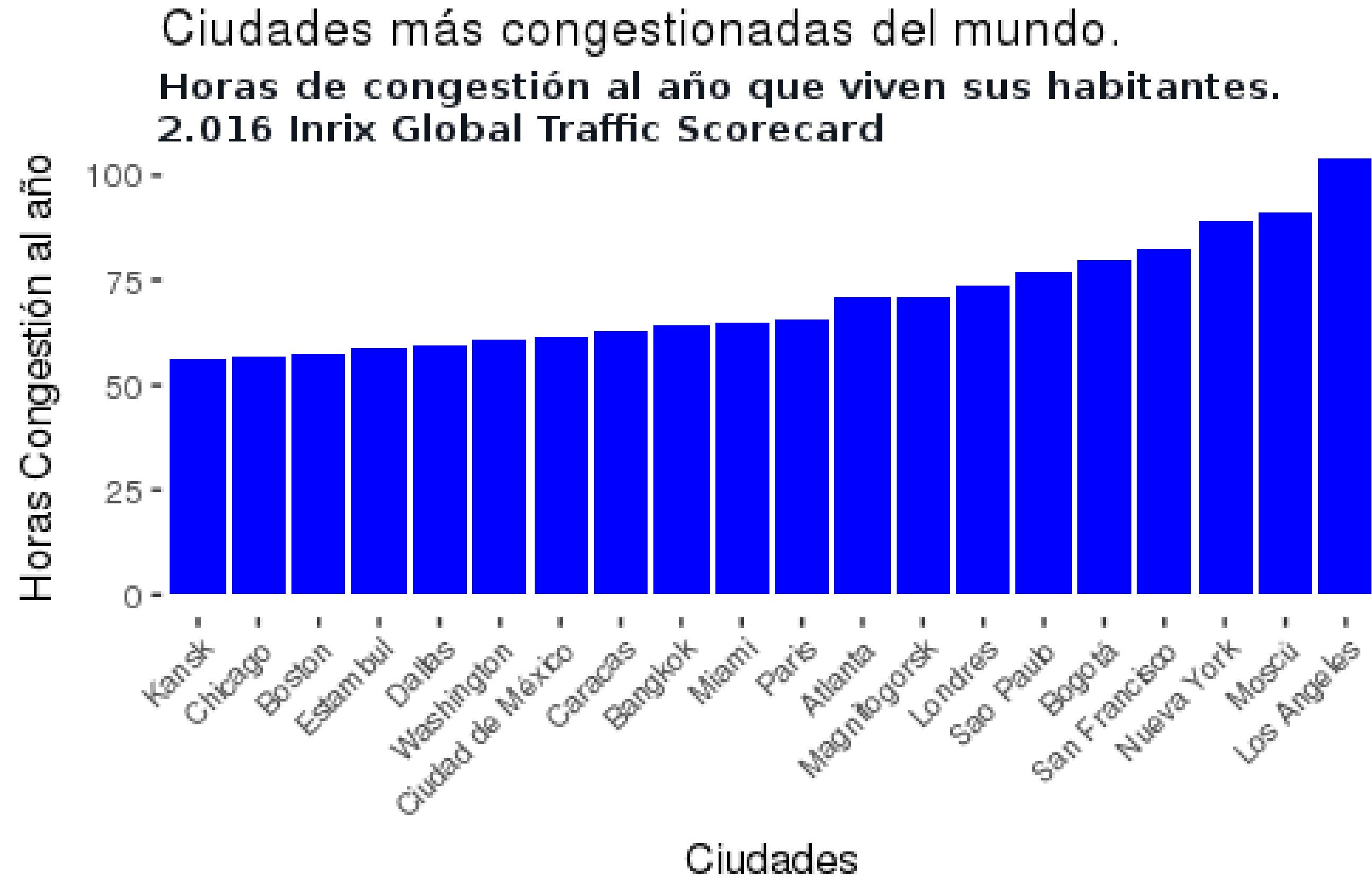
# *Dr. Shigeaki Hinohara, Longevity Expert, Dies at (or Lives to) 105*

By SAM ROBERTS JULY 25, 2017

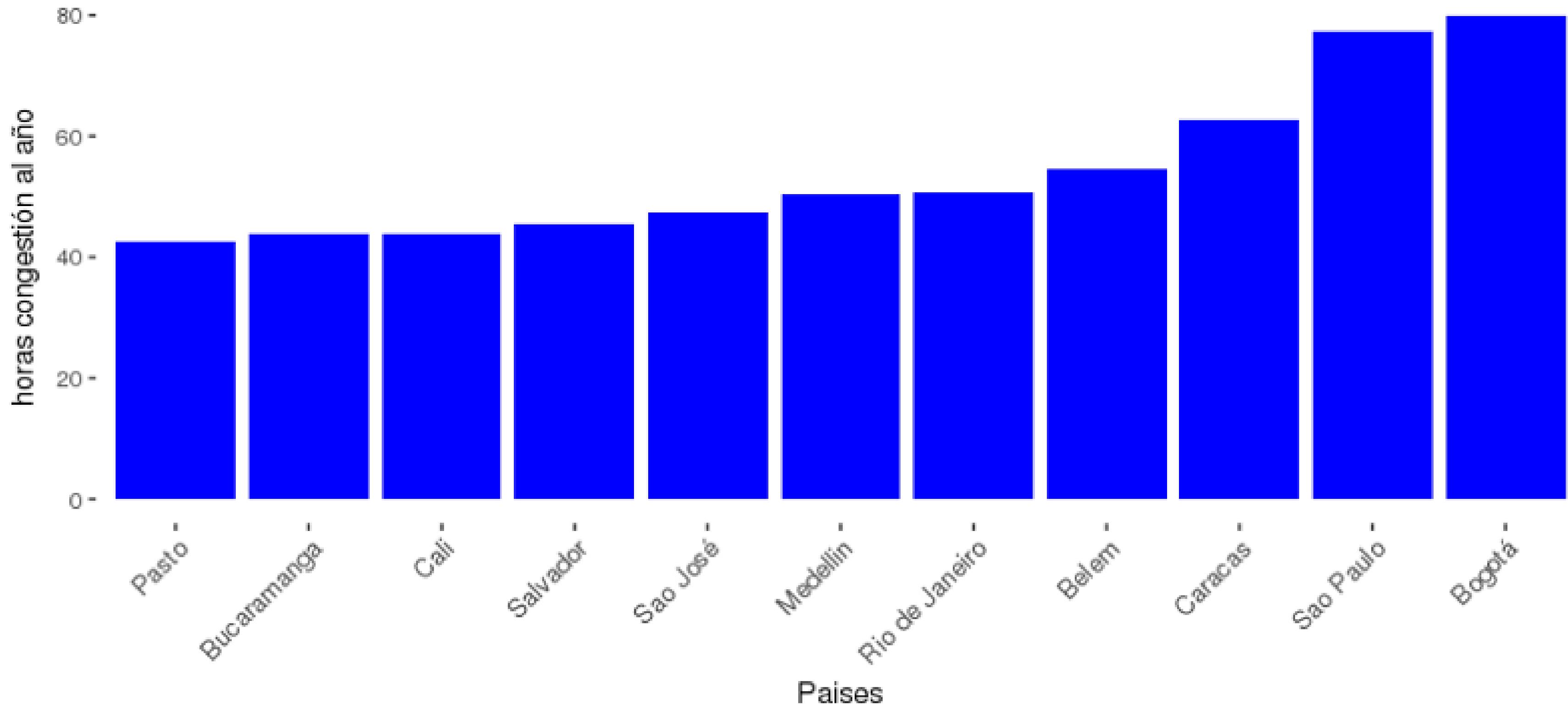


Cómo ser... ?

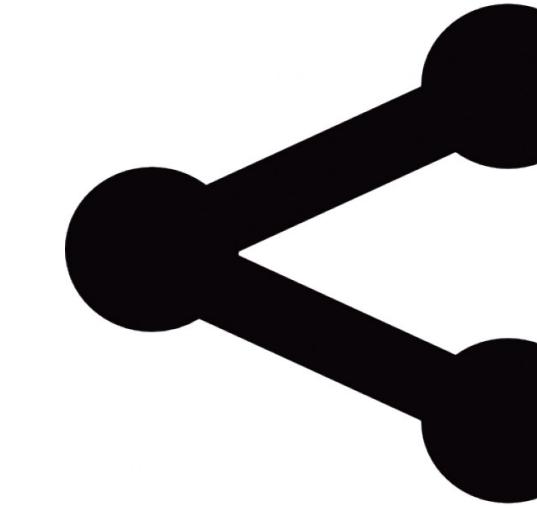




## Ciudades de Sur América con más tiempo de congestiones de tráfico en 2016

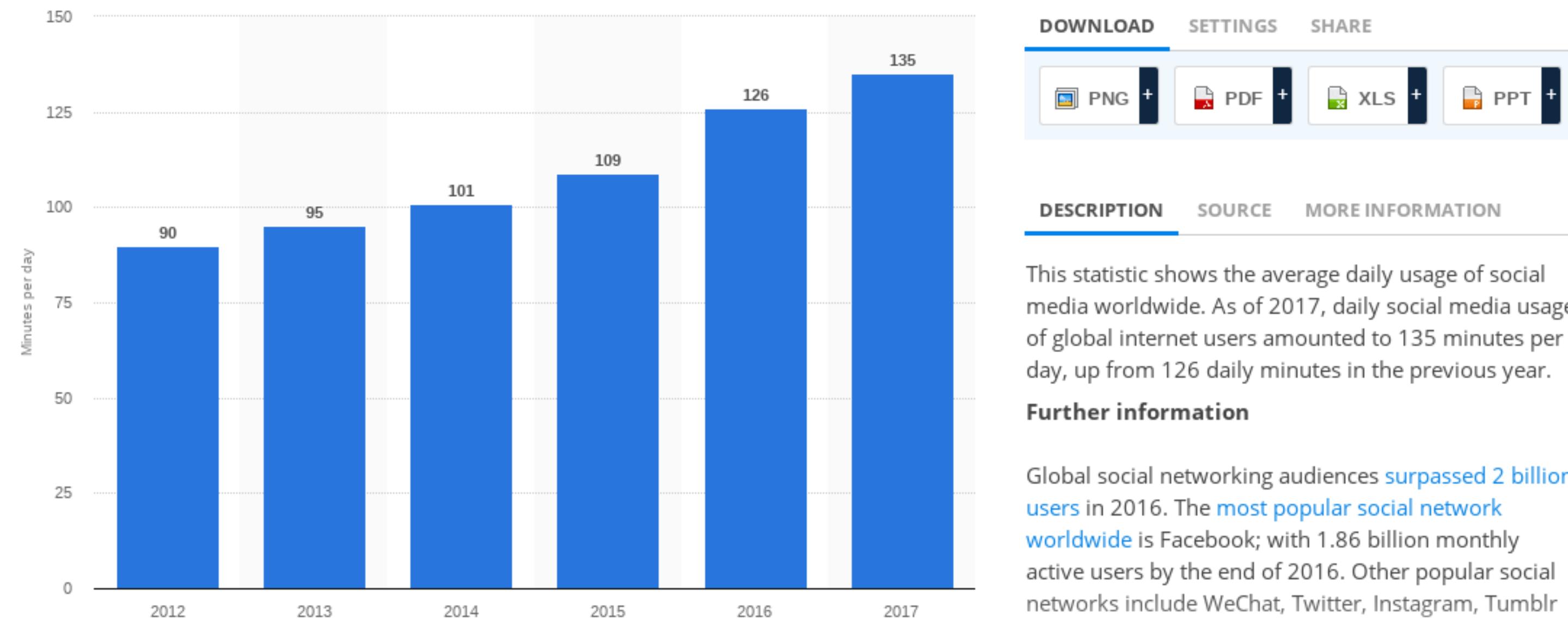




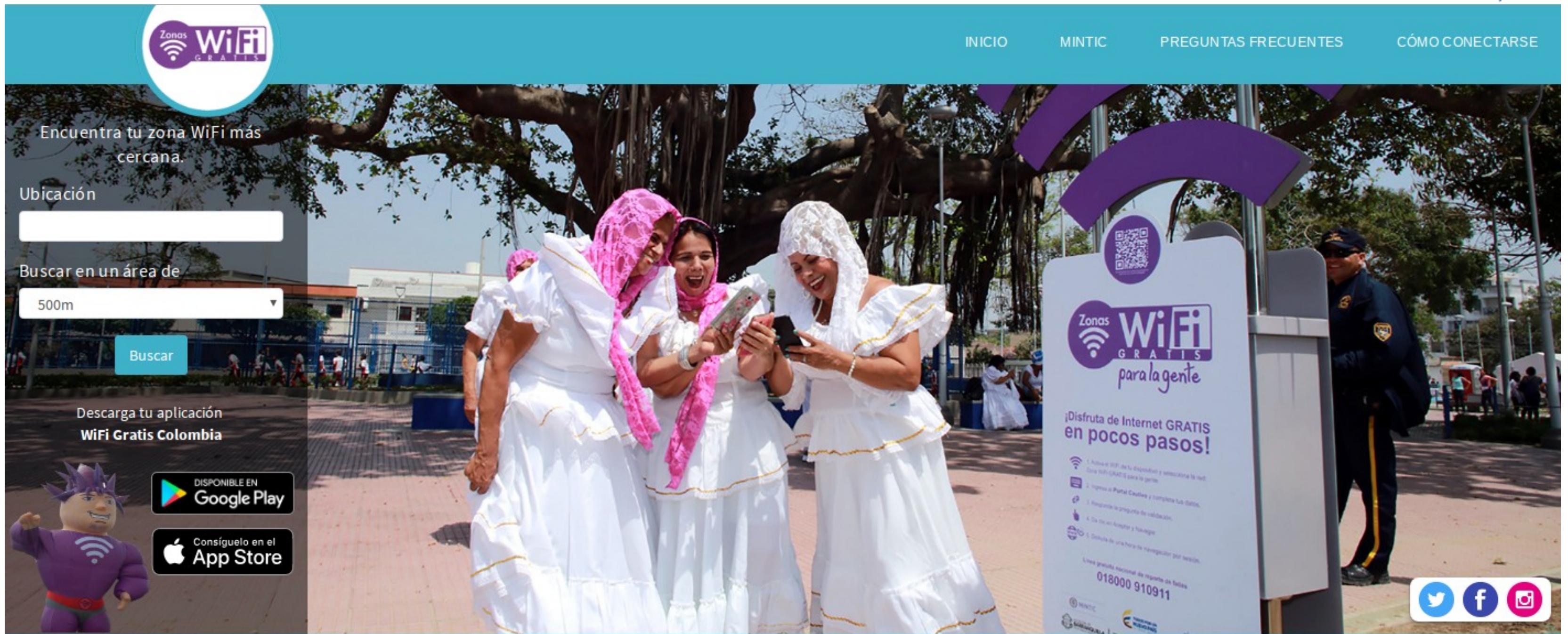


Desde cultura tiempo redes.

## Daily time spent on social networking by internet users worldwide from 2012 to 2017 (in minutes)



# Más de 1.000 zonas...



The image is a composite of two photographs. The left side shows a screenshot of the 'WiFi Gratis Colombia' website. It features a purple header with a 'Zonas WiFi GRATIS' icon. Below it, there's a search bar with the placeholder 'Encuentra tu zona WiFi más cercana.' and a dropdown menu set to '500m'. A 'Buscar' button is visible. To the right of the search bar, there's a section for downloading the app with icons for Google Play and App Store, and a cartoon character holding a WiFi signal. The right side of the image shows a group of women in traditional white dresses and pink headscarves standing outdoors, looking at a smartphone. In the background, there's a large purple WiFi signal icon and a sign that reads 'Zonas WiFi GRATIS para la gente' and '¡Disfruta de Internet GRATIS en pocos pasos!'. A police officer in uniform stands to the right of the sign. The overall theme is the promotion of free WiFi access.



GOBIERNO  
DE COLOMBIA

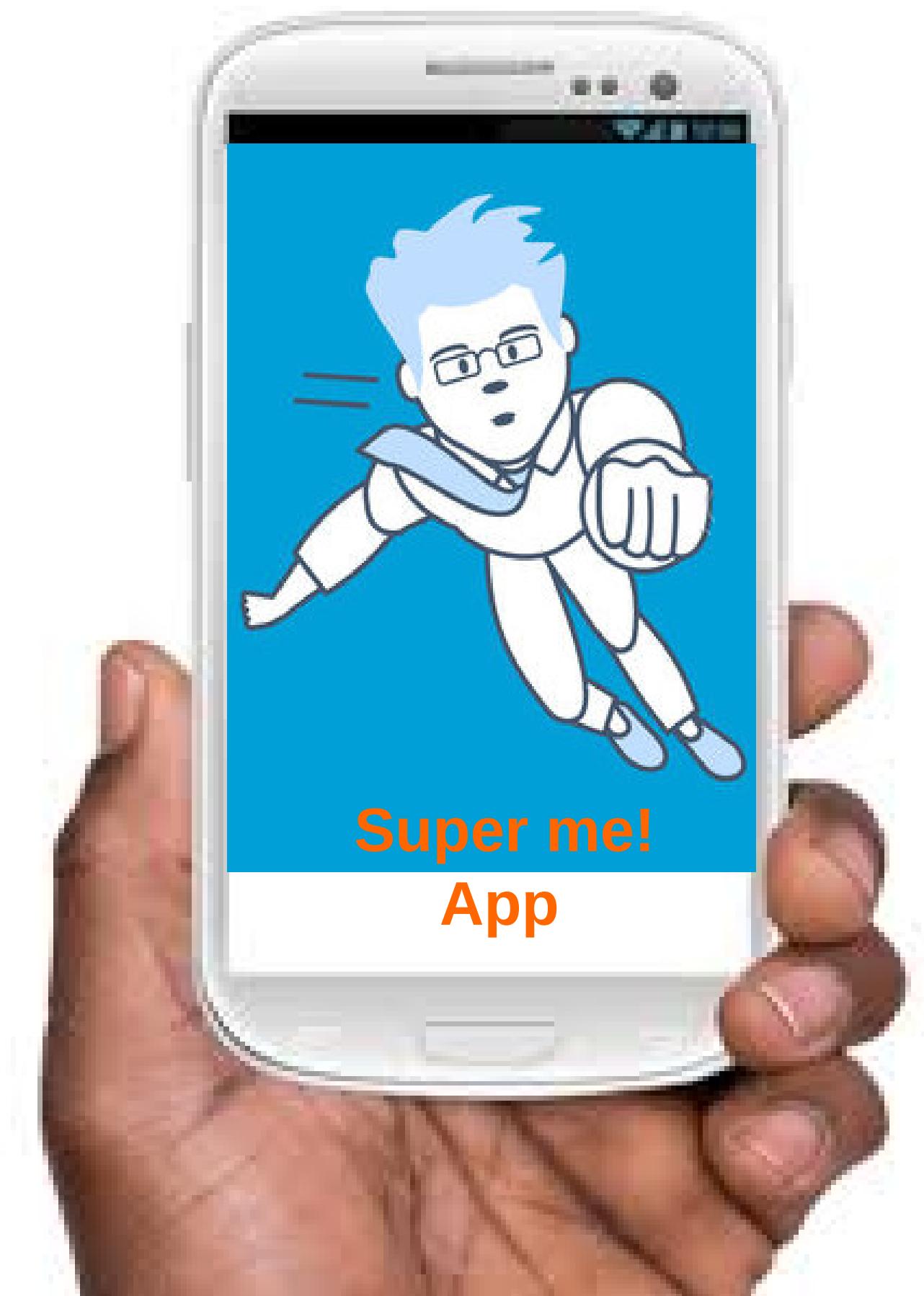


MINTIC

# Wifi gratuito en 57 estaciones de Transmilenio

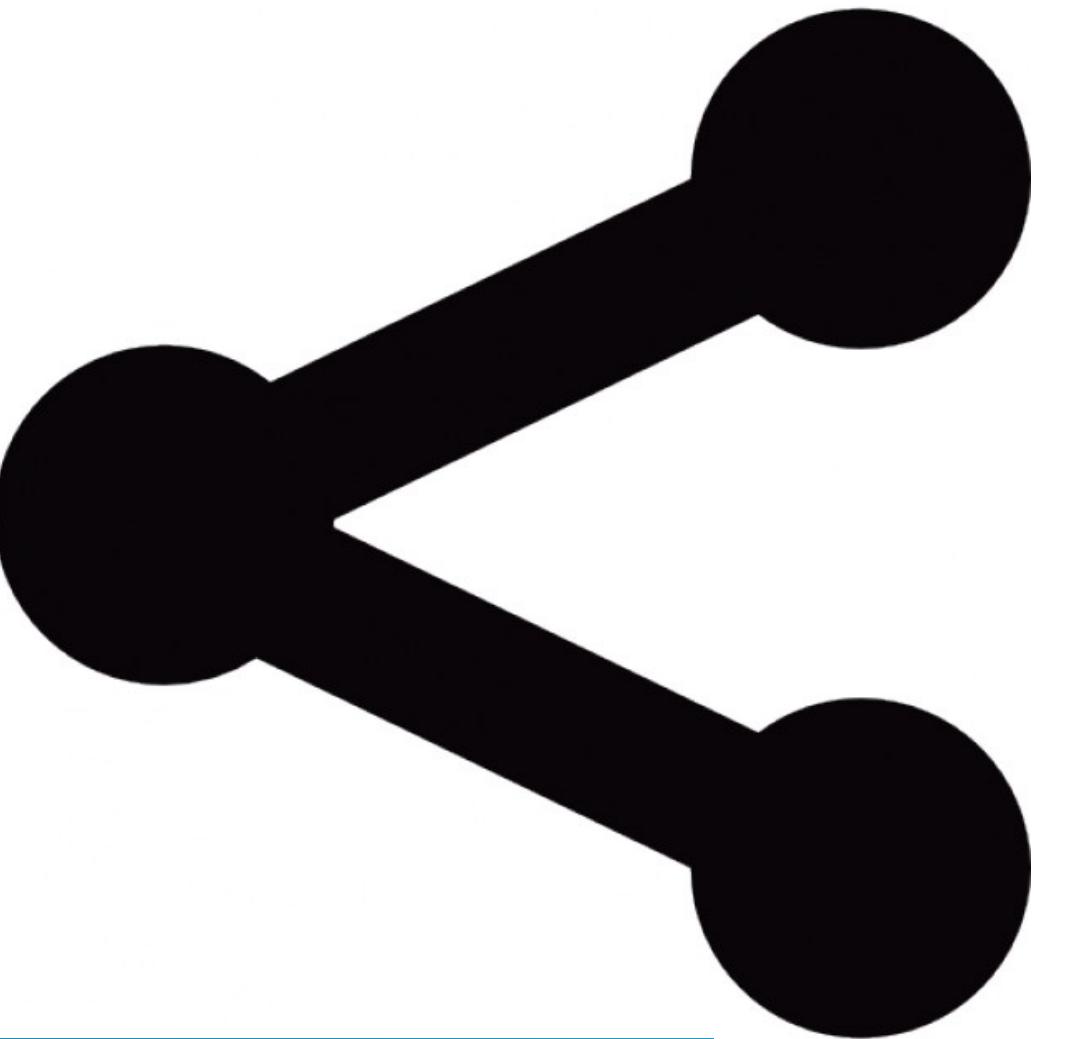
Enviado por ksestupinan | Fecha de publicación: Mar, 02/13/2018 - 14:31

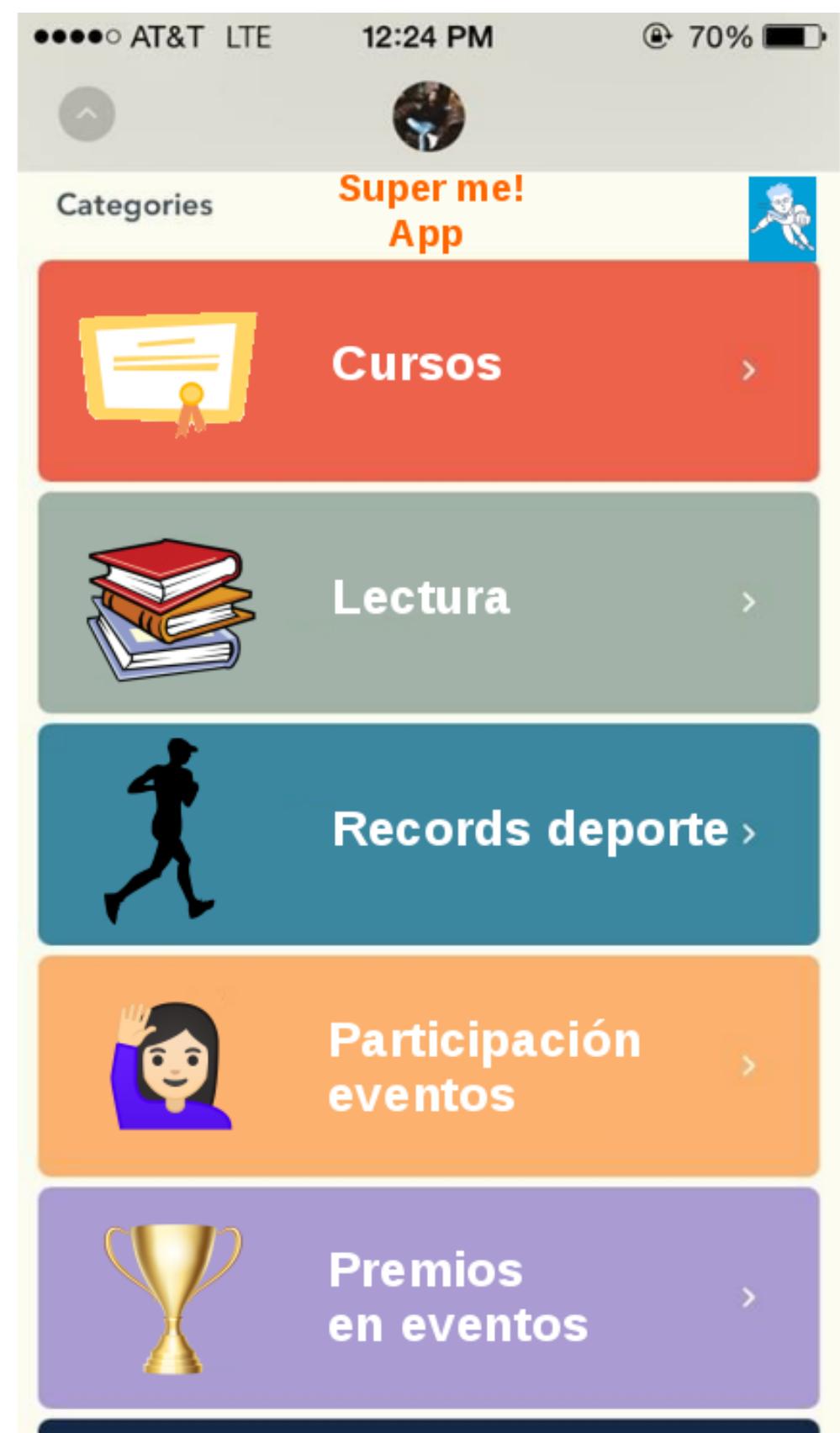
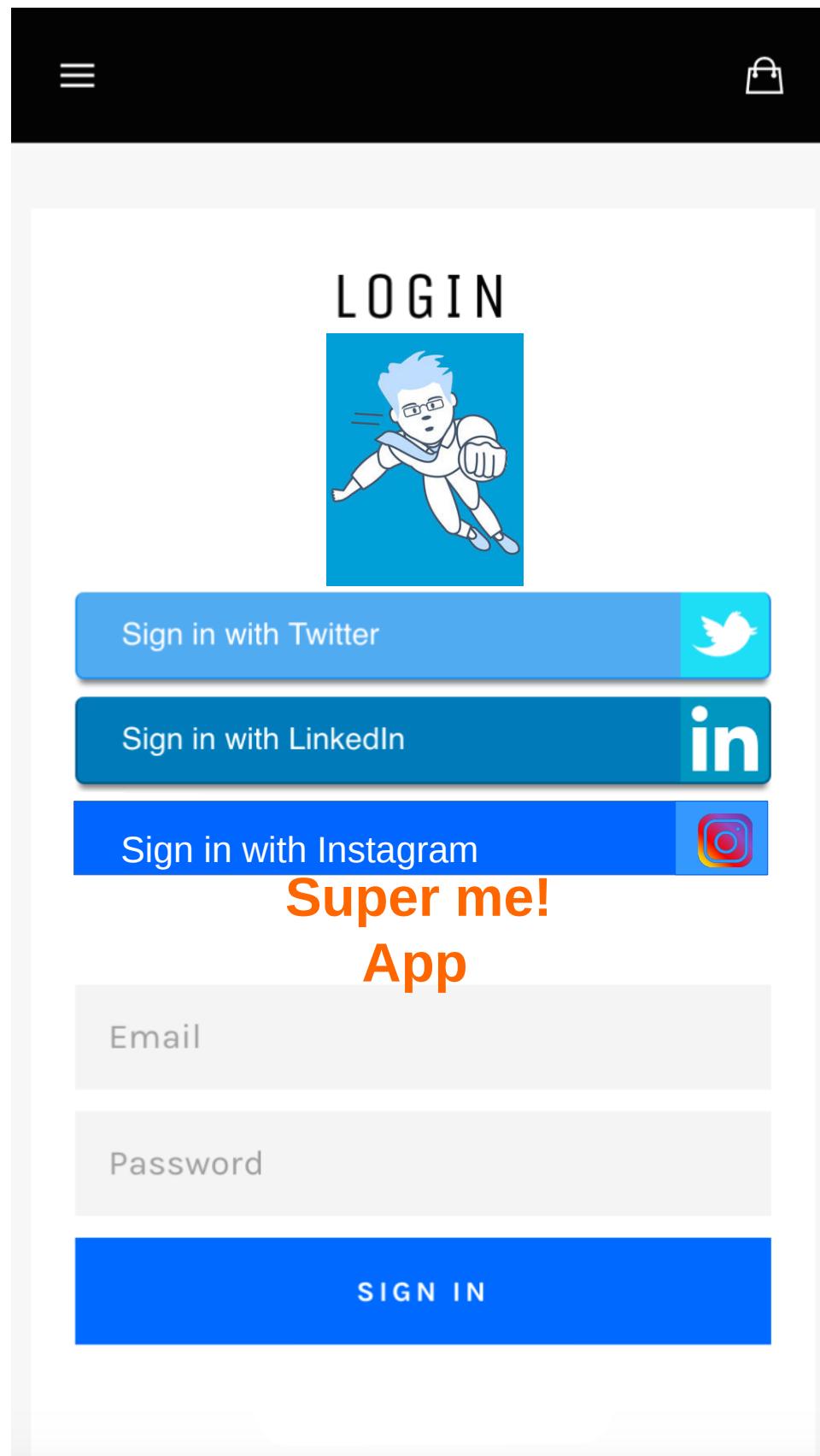
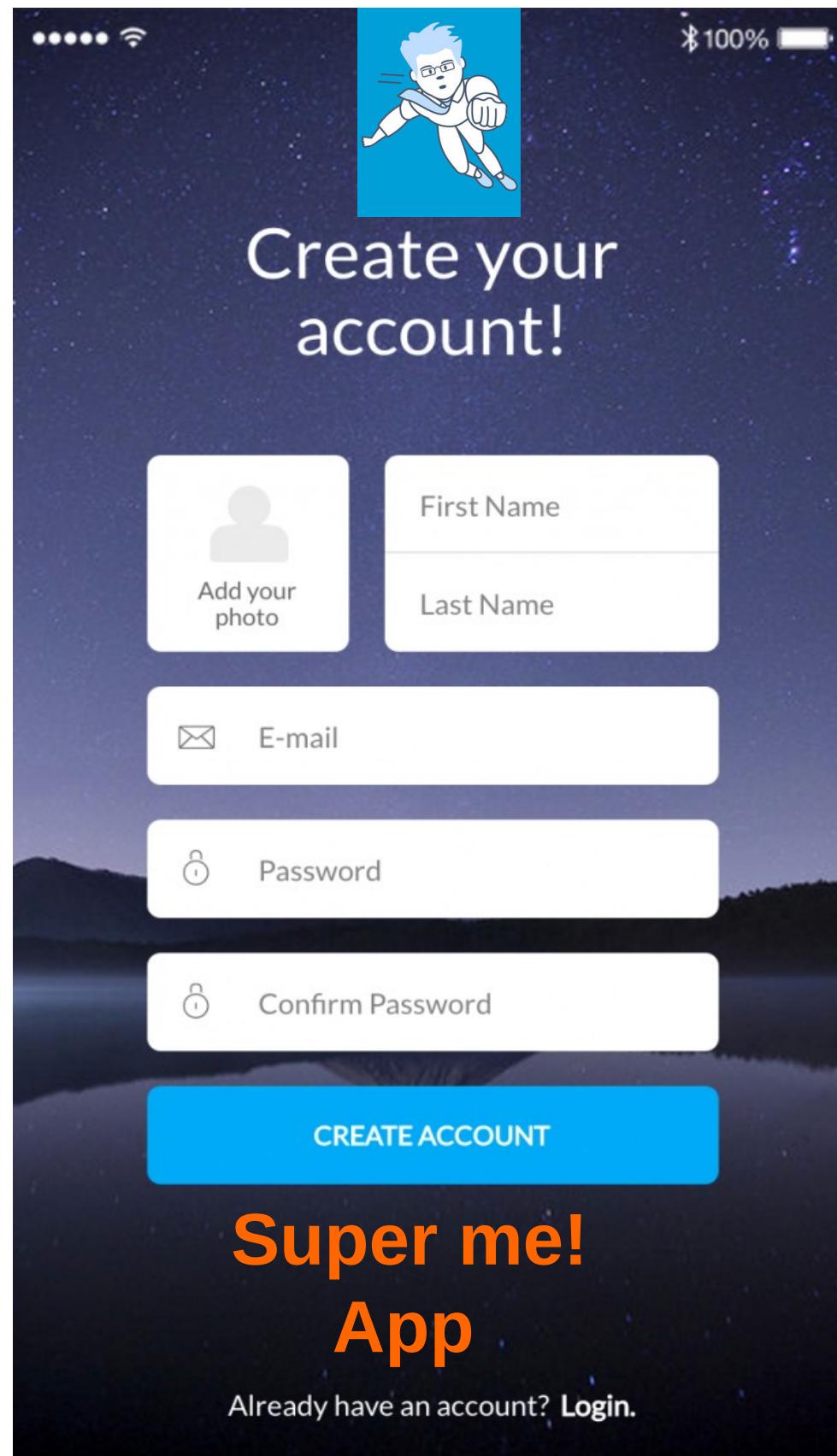






CIENTÍFICAS  
DE DATOS



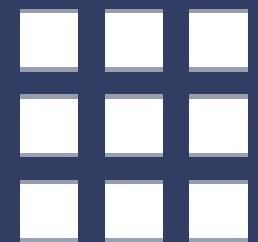




## Photo Upload



camera

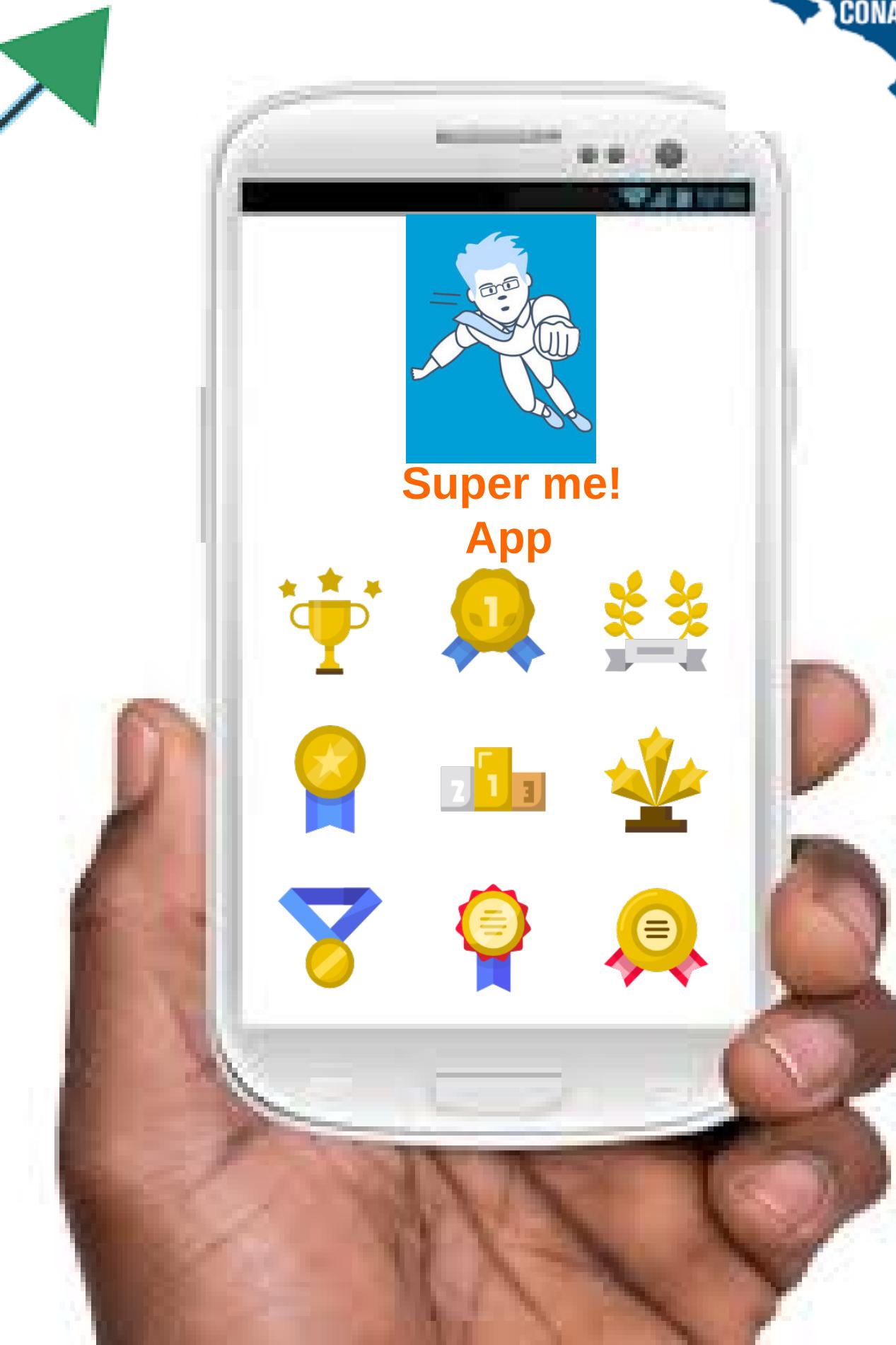


photos

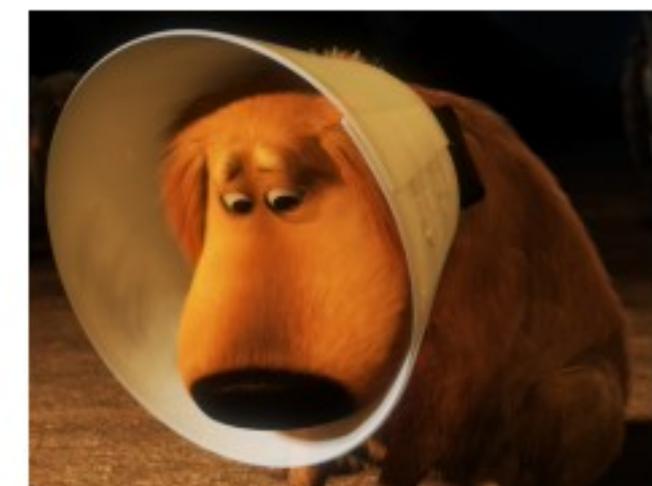


Super me!  
App



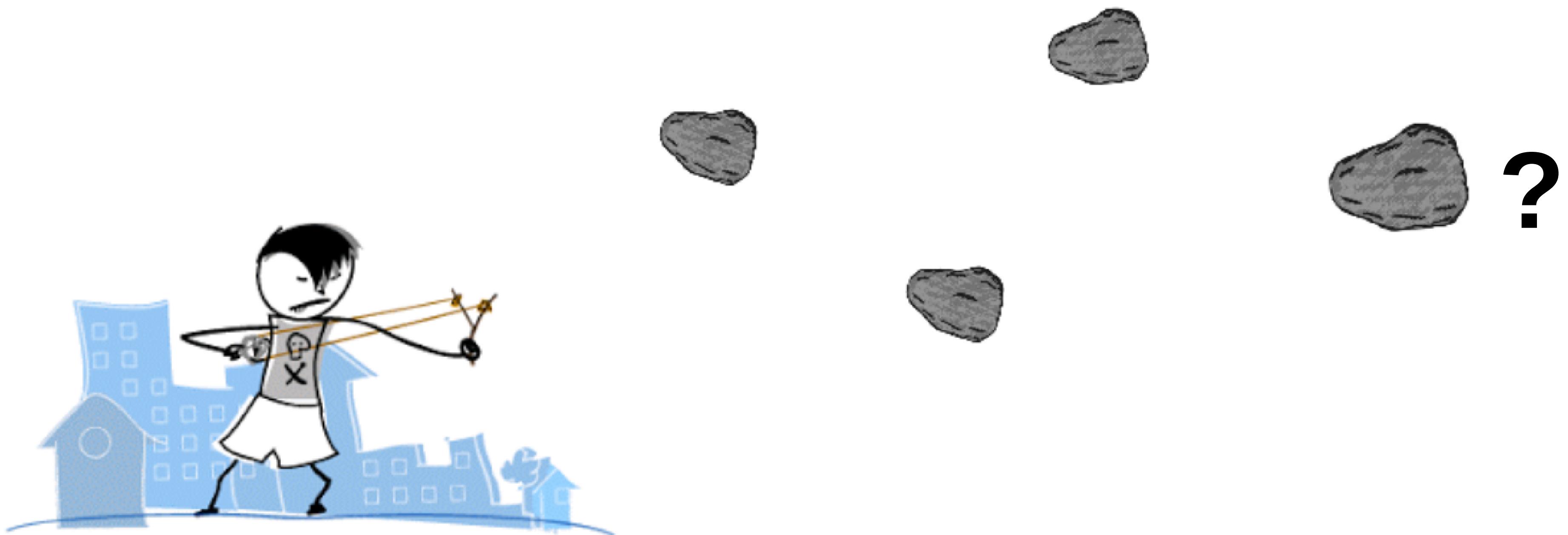


# Fase 2

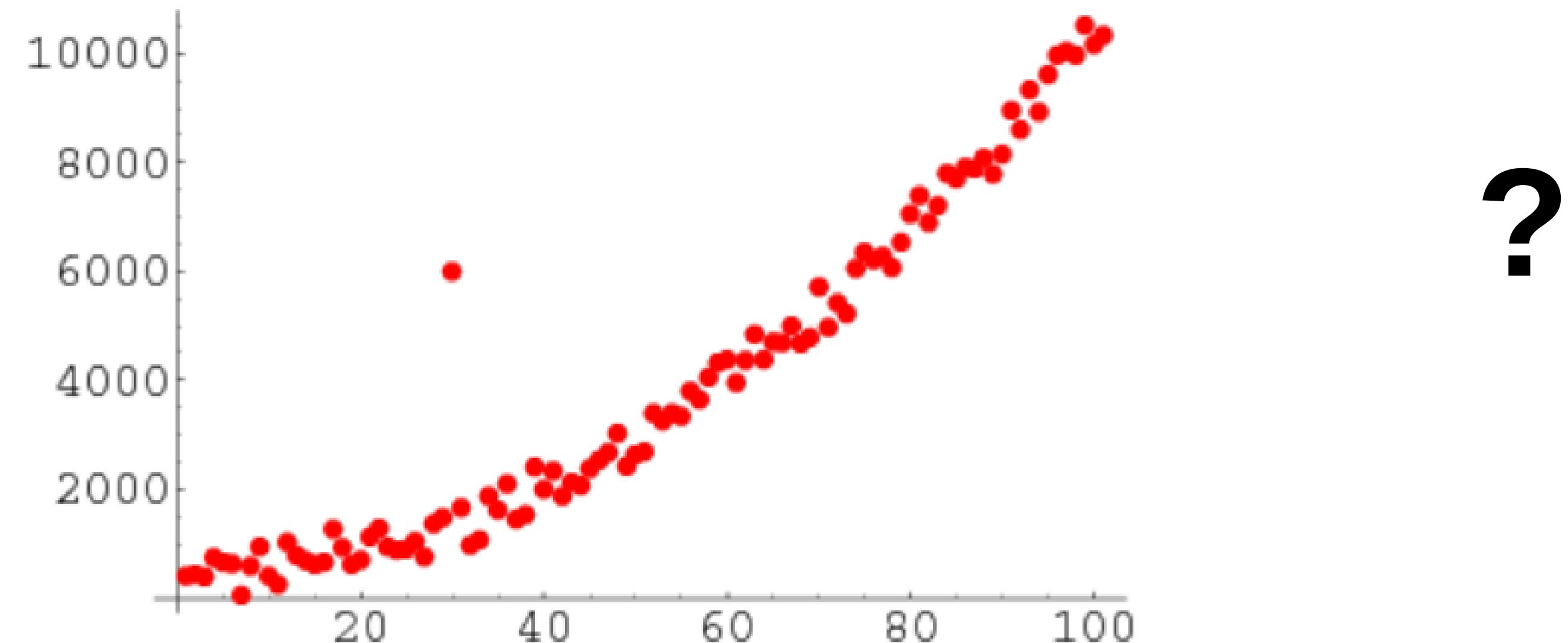


?

# Fase 3

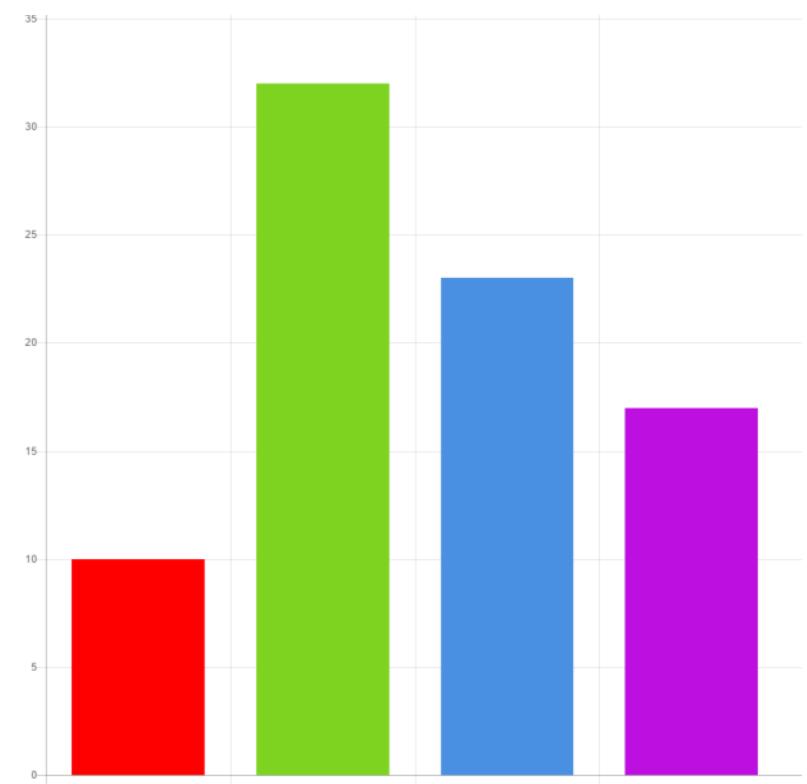
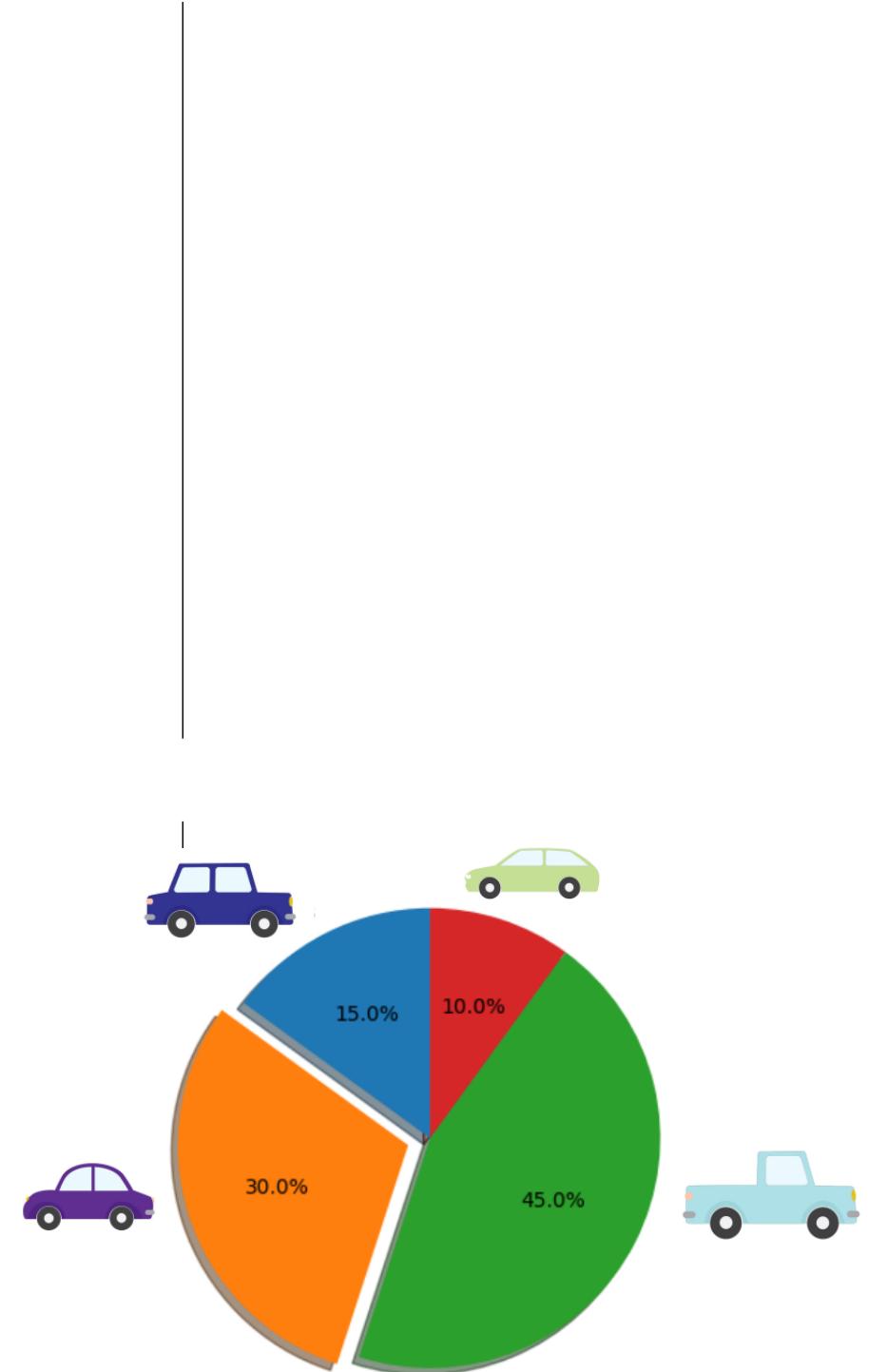
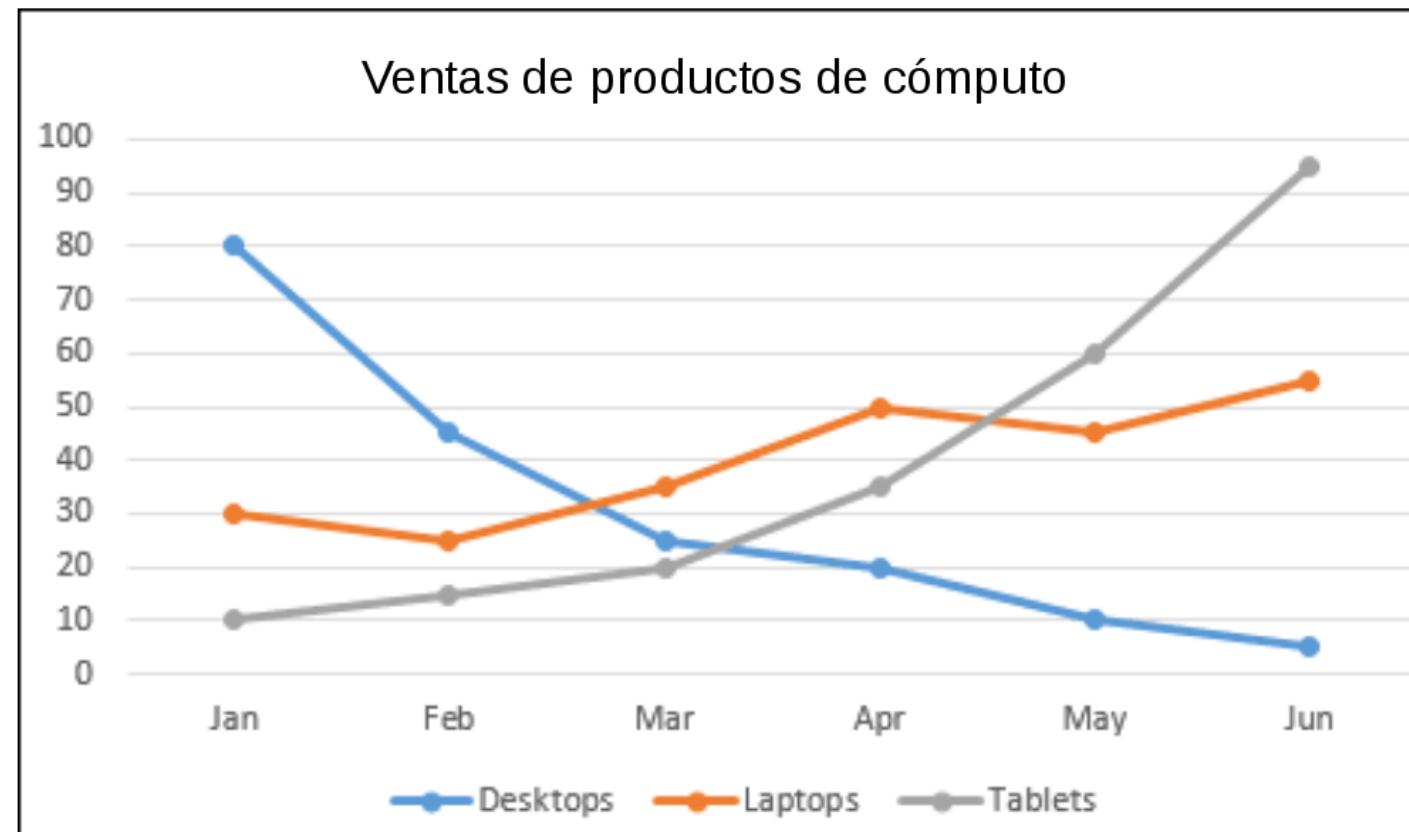


# Fase 3



# **Historia # 2**

## **Formato**



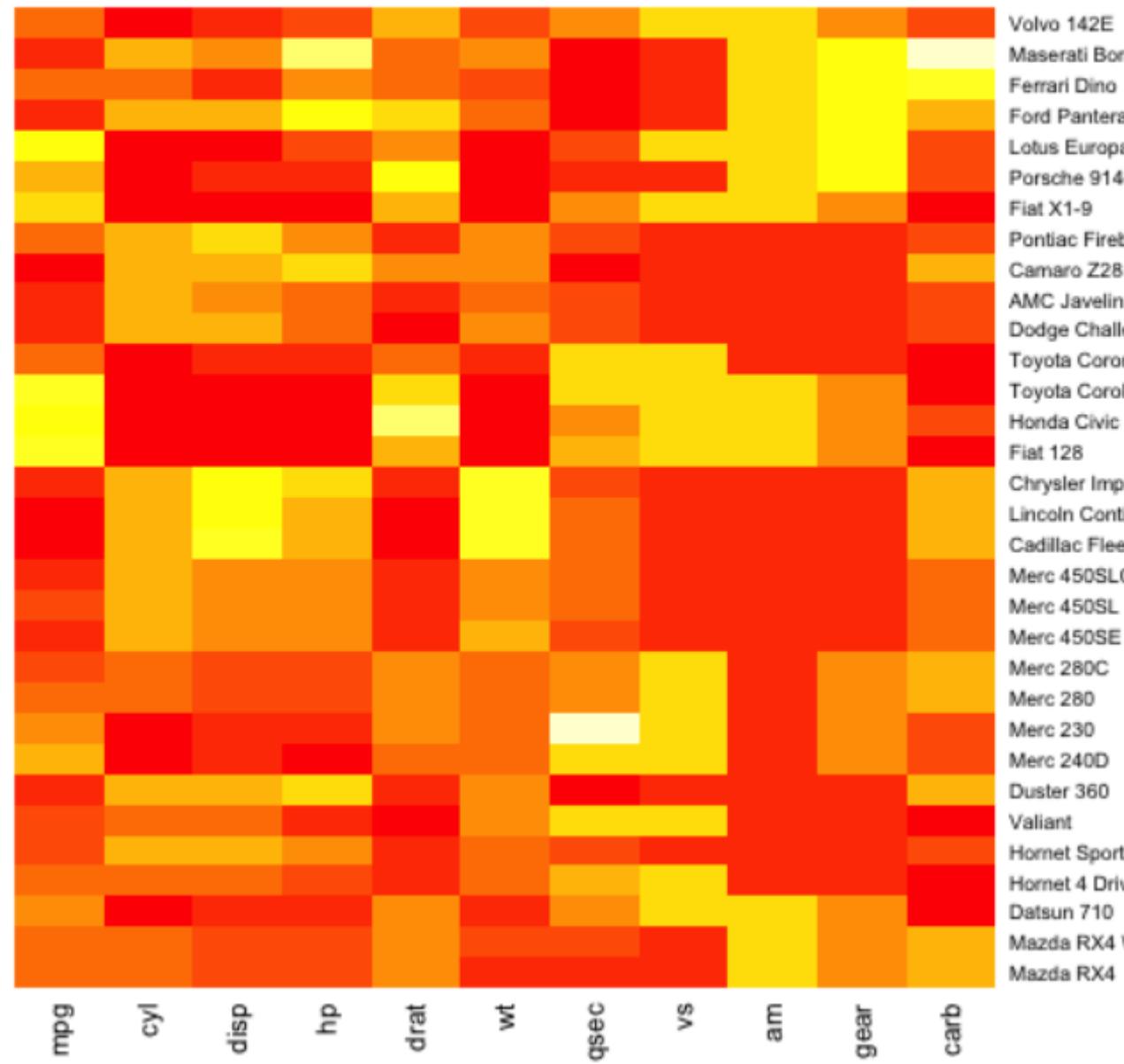
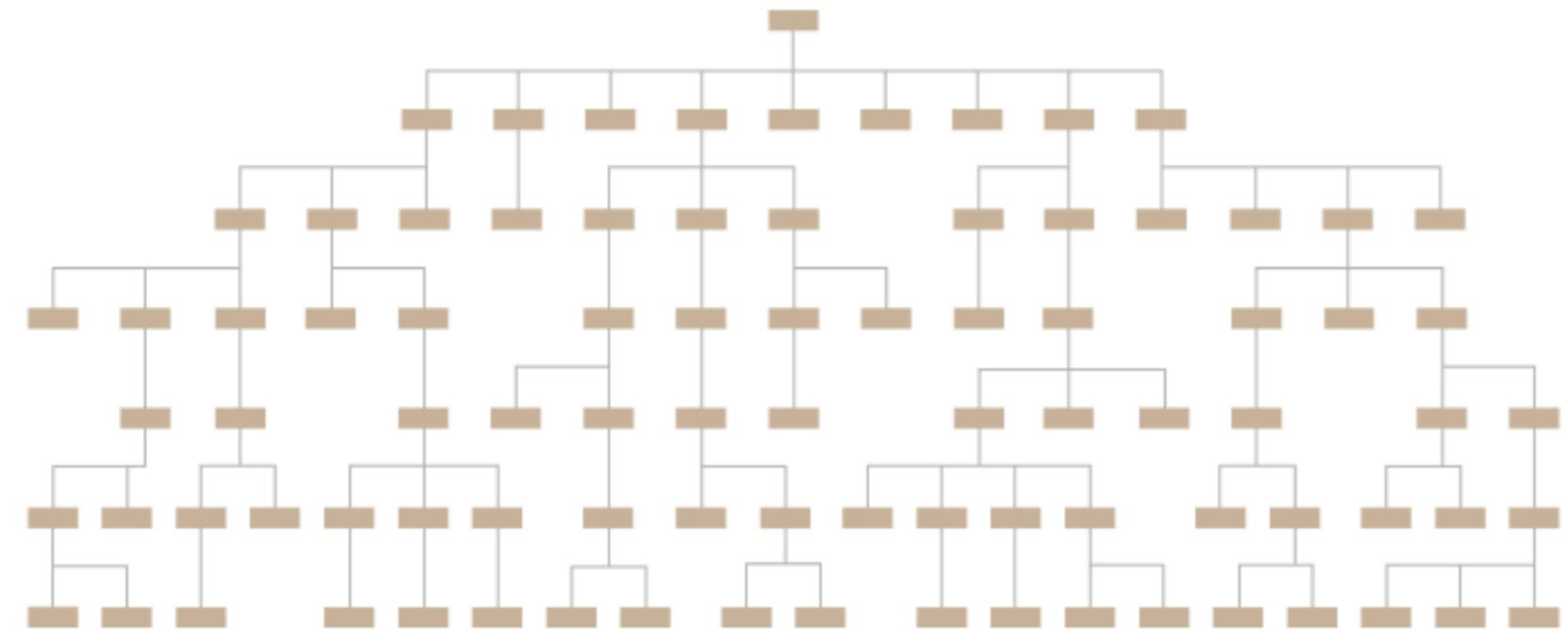
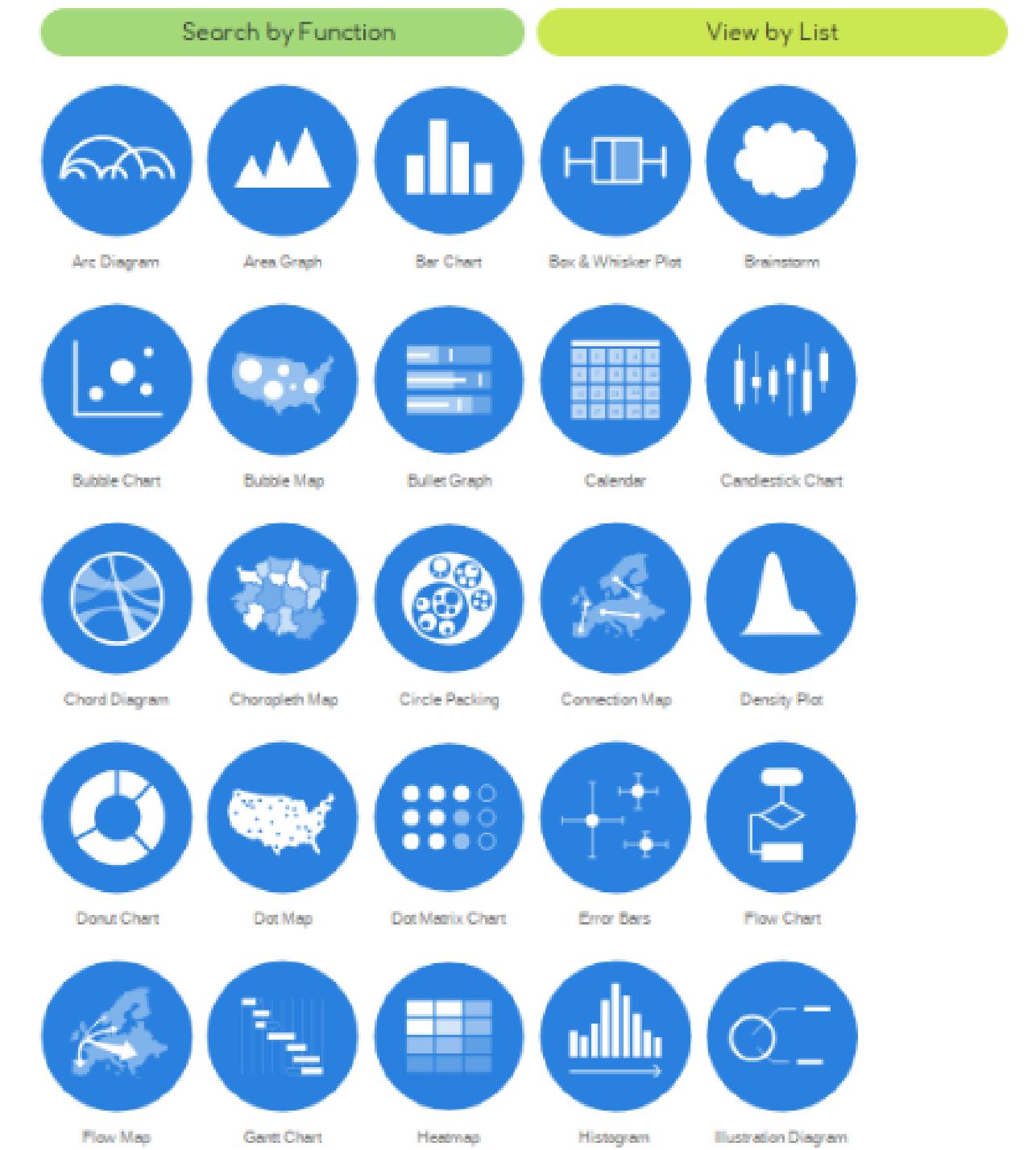


Diagrama de árbol



# www.datavizcatalogue.com



File Edit Code

HistoriaEducacionEstatalCR.html | Open in Browser | Find

Project

HistoriaEducacionEstatalCR.html

# Historia educación estatal CR

Sonia Ardila  
September 17, 2018

## R Markdown

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see <http://rmarkdown.rstudio.com>.

When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
summary(cars)
```

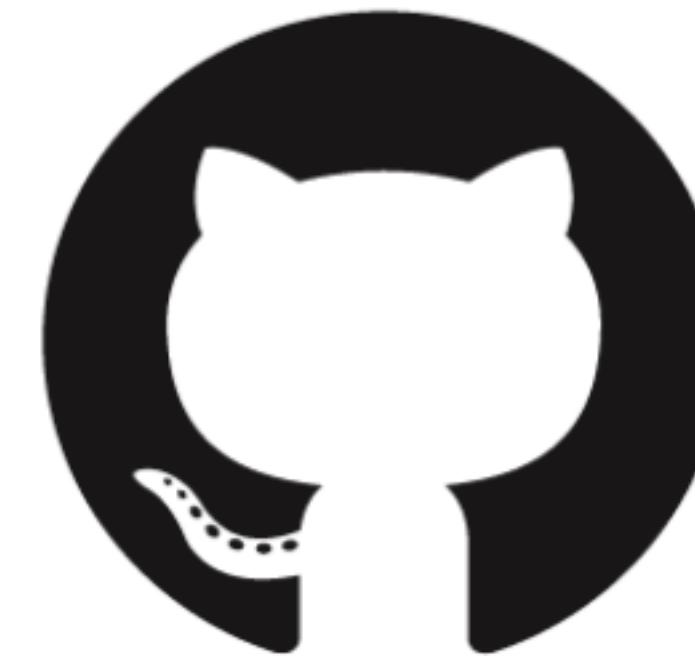
```
##      speed      dist
## Min.   : 4.0   Min.   : 2.00
## 1st Qu.:12.0   1st Qu.: 26.00
## Median :15.0   Median : 36.00
## Mean    :15.4   Mean   : 42.98
## 3rd Qu.:19.0   3rd Qu.: 56.00
## Max.   :25.0   Max.   :120.00
```

## Including Plots

You can also embed plots, for example:



# R Markdown



# GitHub

<https://github.com/sap0408>



**sonia ardila**

sap0408

Data Scientist en formación  
permanente! Data Storyteller!

[Edit bio](#)

 @digital\_

 Colombia

 sap0408@gmail.com

 [View profile](#)

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 [Taller\\_Data\\_Storytelling](#)

Dataset, Slides Taller Sonia Ardila Data storytelling.

 [DataSet-DiasFestivos-UCR](#)

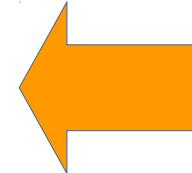
Dataset dias festivos cuatro regiones del mundo.

 [Data-Storytelling-Online](#)

MOOC Científicas de Datos

 [eecr](#)

Educación Estatal Costa Rica 2.011 - 2.016



 [eep](#)

Datos países cuatro continentes relacionados con empleo,  
educación y competitividad.

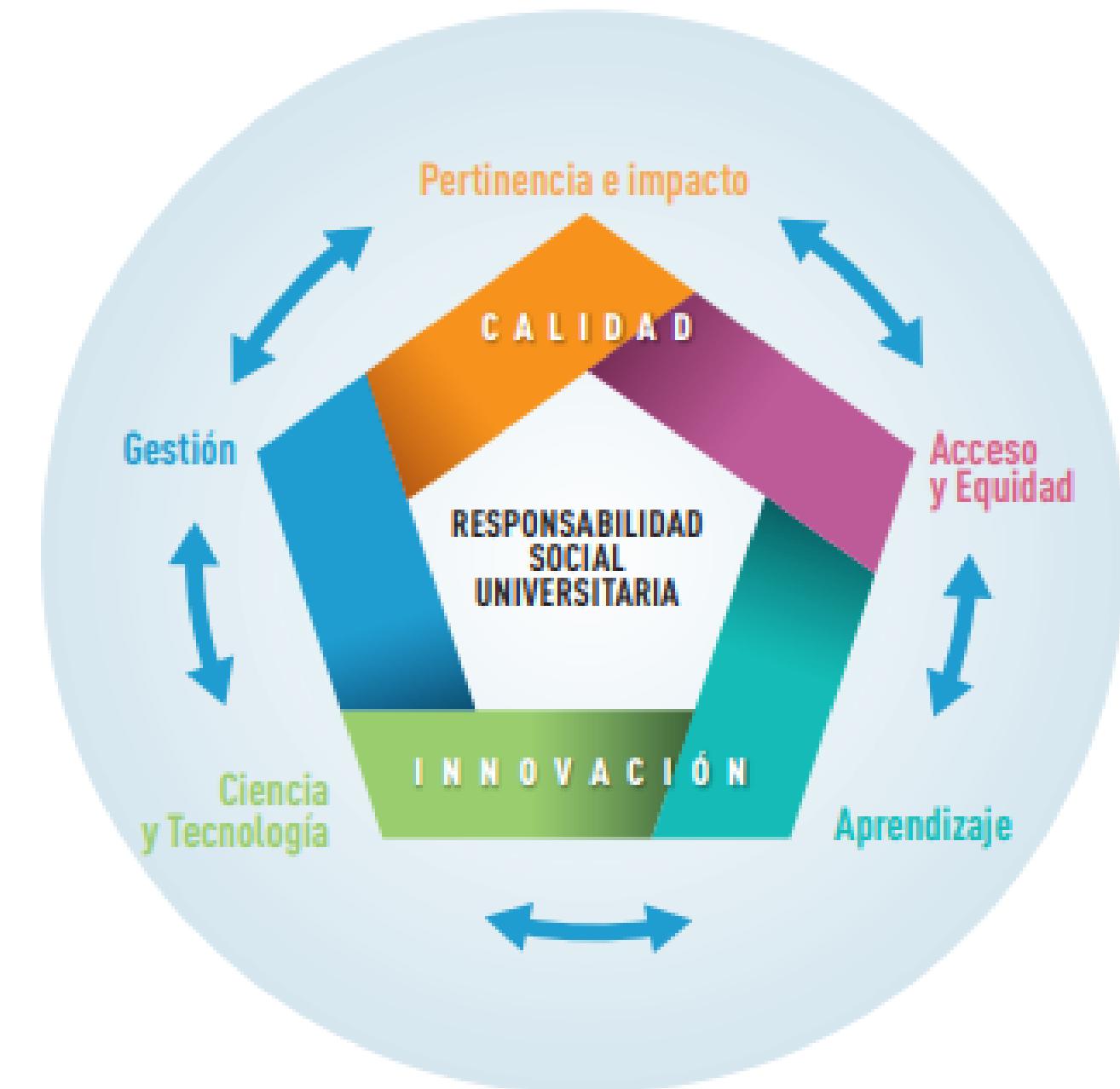
 [dashboardeducacionE](#)

dashboard con datos de educación estatal en Costa Rica  
por carreras, tipo de títulos y otras variables. 2.011-2.016

32 contributions in the last year

[Contribution settings](#) ▾

Con calidad e innovación  
cumplimos con nuestra responsabilidad social



▲	X	Diplomas.U.Pb	Diplomas.U.Pv	Total.diplomas	Bachill.U.Pb	Bachill.U.Pv	Total.Bachill	Licenciatura.U.Pb	Licenciatura.U.Pv	Total.Licenciat
<b>1</b>	2011	12060	28115	40175	5588	13513	19101	3234	11,502	14,736
<b>2</b>	2012	13698	30877	44575	6237	14445	20682	3,414	13,025	16,439
<b>3</b>	2013	14588	30878	45466	6874	14086	20960	3,283	13,491	16,774
<b>4</b>	2014	14999	34779	49778	6632	16348	22980	3,648	14,918	18,566
<b>5</b>	2015	15471	32809	48280	6827	15147	21974	3,717	14,242	17,959
<b>6</b>	2016	15495	30700	46195	6865	14100	20965	3,926	13,433	17,359

Especialidad.Prof.U.Pb	Especialidad.Prof.U.Pv	Total.Especialidad	Maestria.U.Pb	Maestria.U.Pv	Total.Maestria	Doctorado.U.Pb	Doctorado.U.Pv
246	274	520	987	2,755	3742	41	71
281	349	630	1,209	3,017	4226	34	41
365	465	830	1,219	2,776	3995	38	60
304	520	824	1,221	2,932	4153	21	61
314	584	898	1,270	2,764	4034	33	72
232	581	813	1,102	2,482	3584	36	104

Total.Doctorado	Artes.y.Letras.U.Pb	Artes.y.Letras.U.Pv	Total.Artes.y.Letras	Cienc.Bsc.U.Pb	Cienc.Bsc.U.Pv	Total.Cienc..Bsc
112	724	414	1138	1,054	1,090	2144
75	948	473	1421	1,248	1,314	2562
98	776	434	1210	1,421	1,128	2549
82	708	433	1141	1,464	1,399	2863
105	812	481	1293	1,526	1,157	2683
140	1,115	513	1628	1,780	1,191	2971

<b>Cienc.Soc.U.Pb</b>	<b>Cienc.Soc.U.Pv</b>	<b>Total.Cienc.Soc</b>	<b>Educación.U.Pb</b>	<b>Educación.U.Pv</b>	<b>Total.Educación</b>	<b>Rec.Nat.U.Pb</b>	<b>Rec.Nat.U.Pv</b>	<b>Total.Rec.Nat</b>
4,512	12,798	17310	3,192	7,359	10551	609	48	657
5,227	14,569	19796	3,348	7,623	10971	857	108	965
5,964	14,307	20271	3,255	7,778	11033	812	97	909
6,337	16,345	22682	3,402	8,370	11772	721	57	778
6,584	15,827	22411	3,251	7,637	10888	841	62	903
6,215	14,782	20997	3,108	7,221	10329	858	33	891

<b>Ingen.U.Pb</b>	<b>Ingen.U.Pv</b>	<b>Total.Ingenieria</b>	<b>Cienc.Salud.U.Pb</b>	<b>Cienc.Salud.U.Pv</b>	<b>Total.Cienc.Salud</b>
1,052	1,495	2547	916	4,911	5827
1,134	1,704	2838	932	5,086	6018
1,287	1597	2884	1,073	5,537	6610
1,341	2,042	3383	1,026	6,133	7159
1,381	1,950	3331	1,076	5,695	6771
1,396	1,969	3365	1,023	4,991	6014

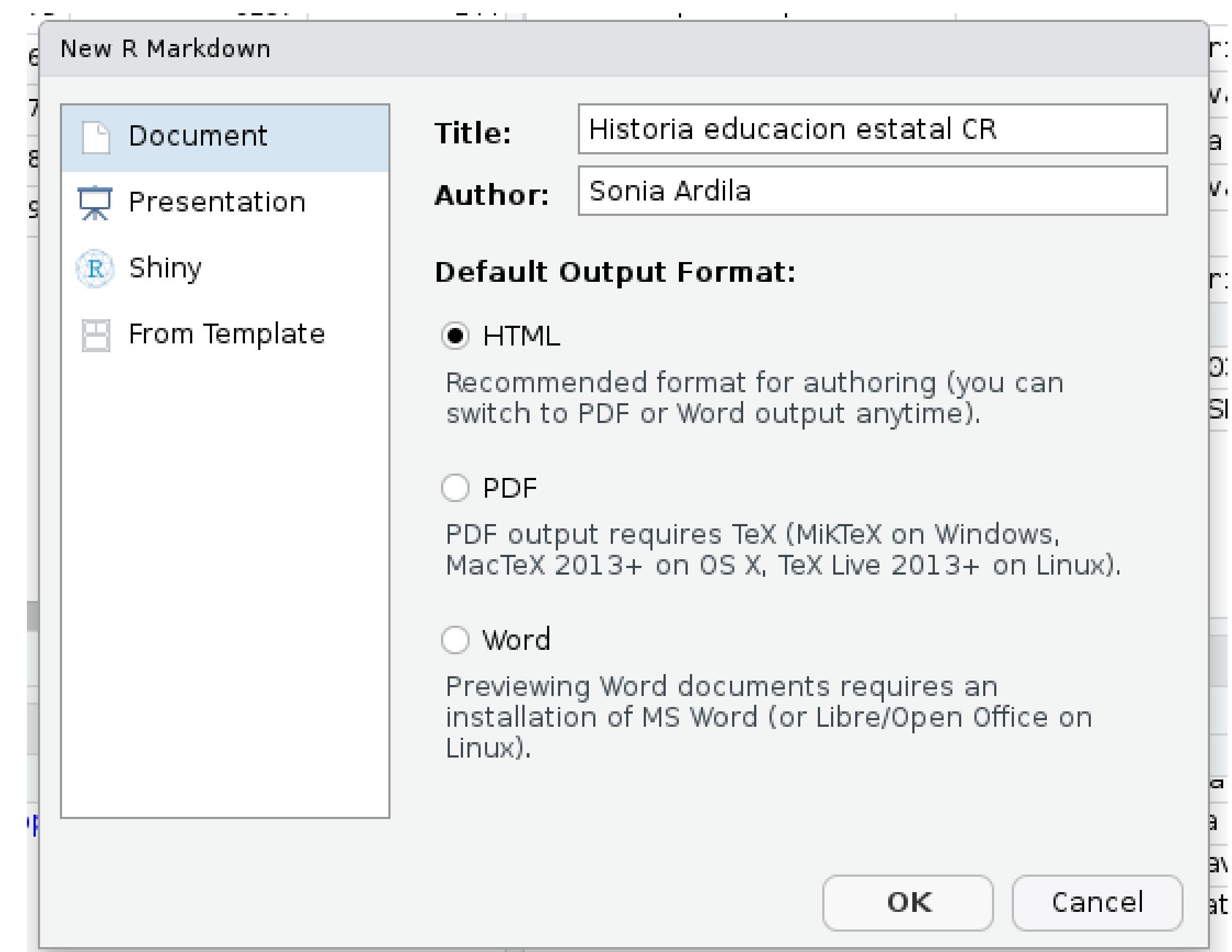
<b>Pib.per.cápita.US</b>	<b>Inversión.Educación.Estat...PIB</b>	<b>Competitividad</b>
9187	7.34	4.31
9985	7.16	4.27
10570	7.40	4.34
10647	7.64	4.35
11406	8.17	4.42
11825	8.16	4.41

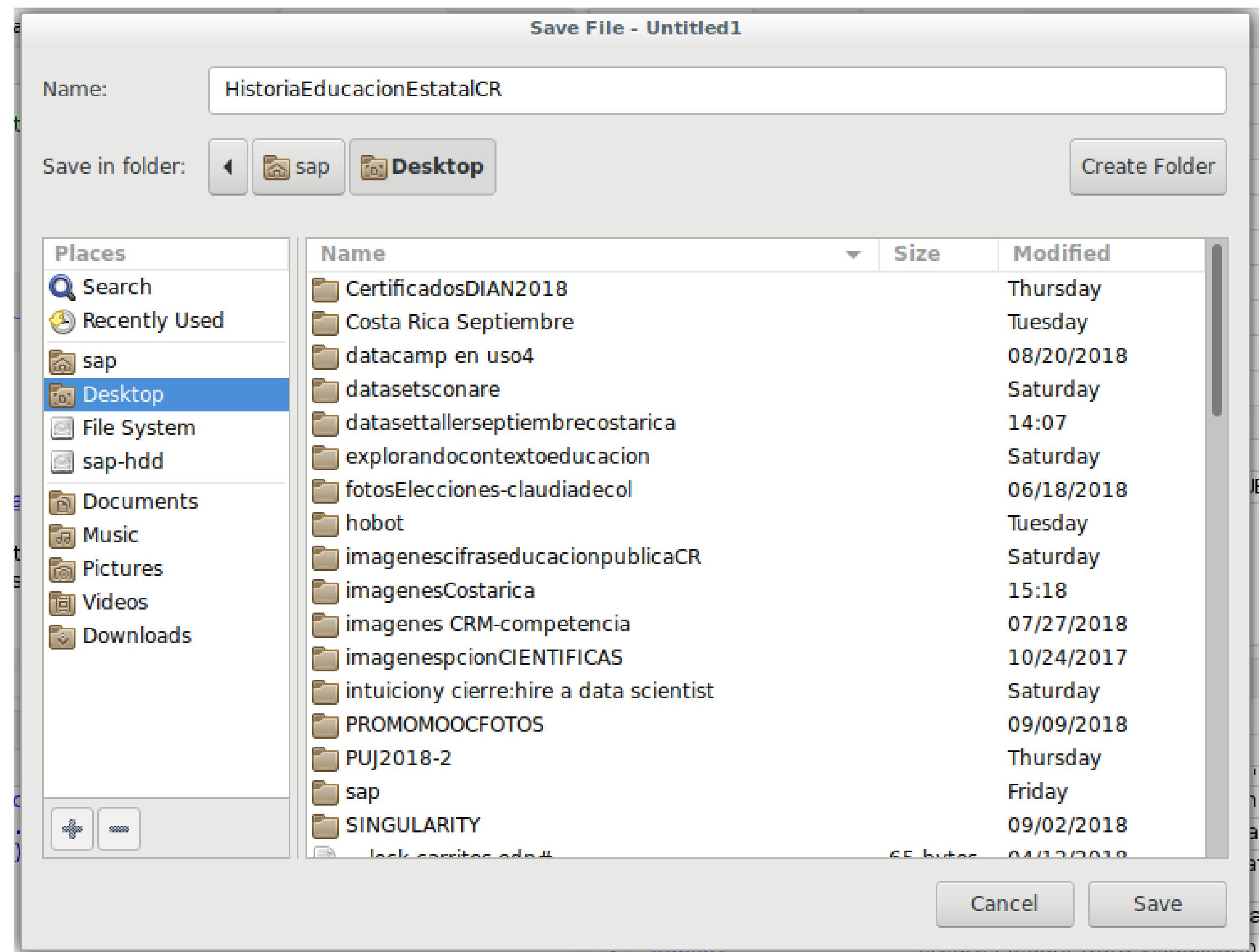
```
install.packages("rmarkdown")
library(rmarkdown)
```

**File**

**New File**

**R Markdown**





~/Desktop/HistoriaEducacionEstatalCR.html

HistoriaEducacionEstatalCR.html | Open in Browser | Find | Publish

# Historia educación estatal CR

Sonia Ardila

September 17, 2018

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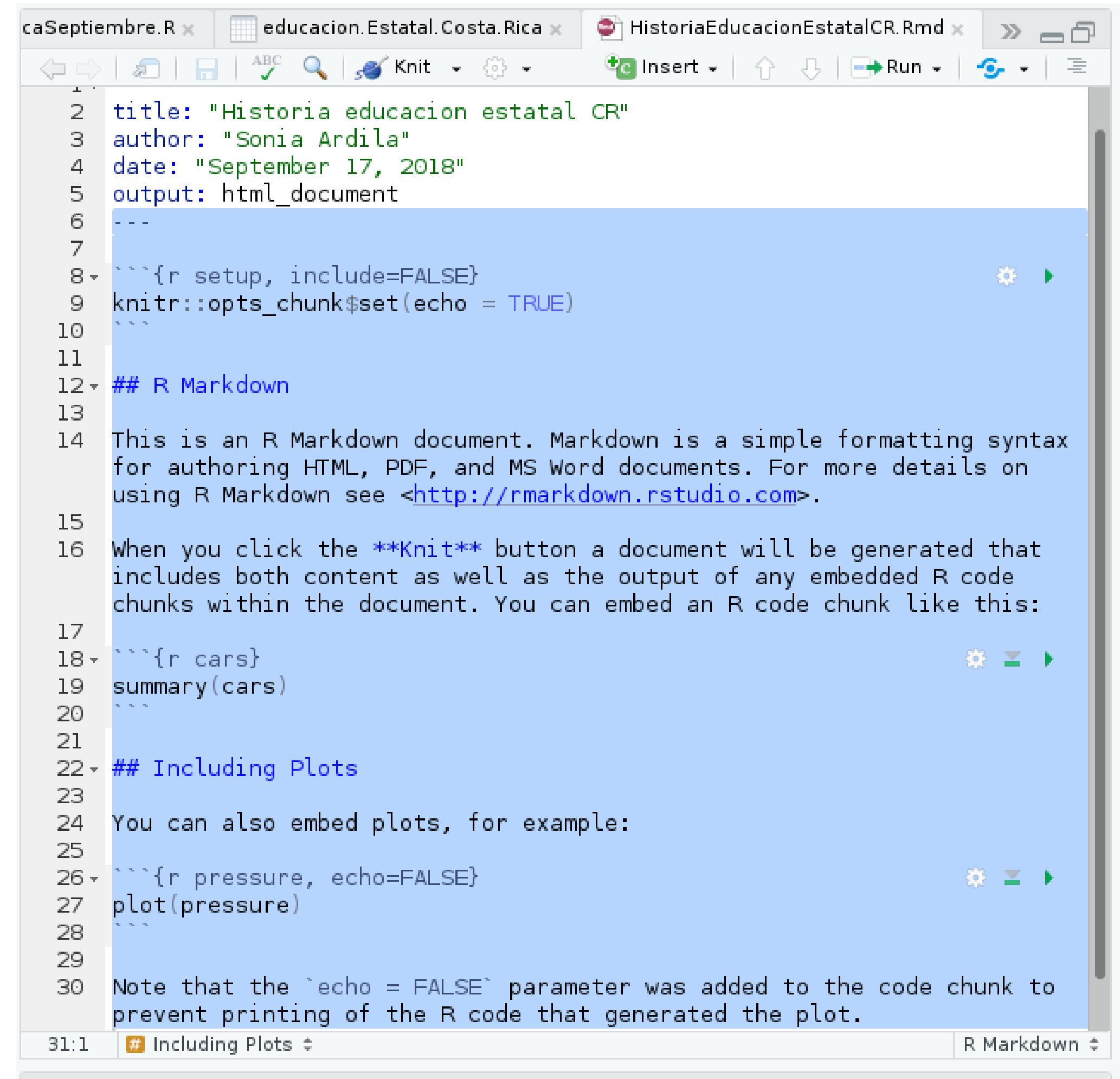
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##  Mean   :15.4   Mean   : 42.98
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##  Max.   :25.0   Max.   :120.00
```

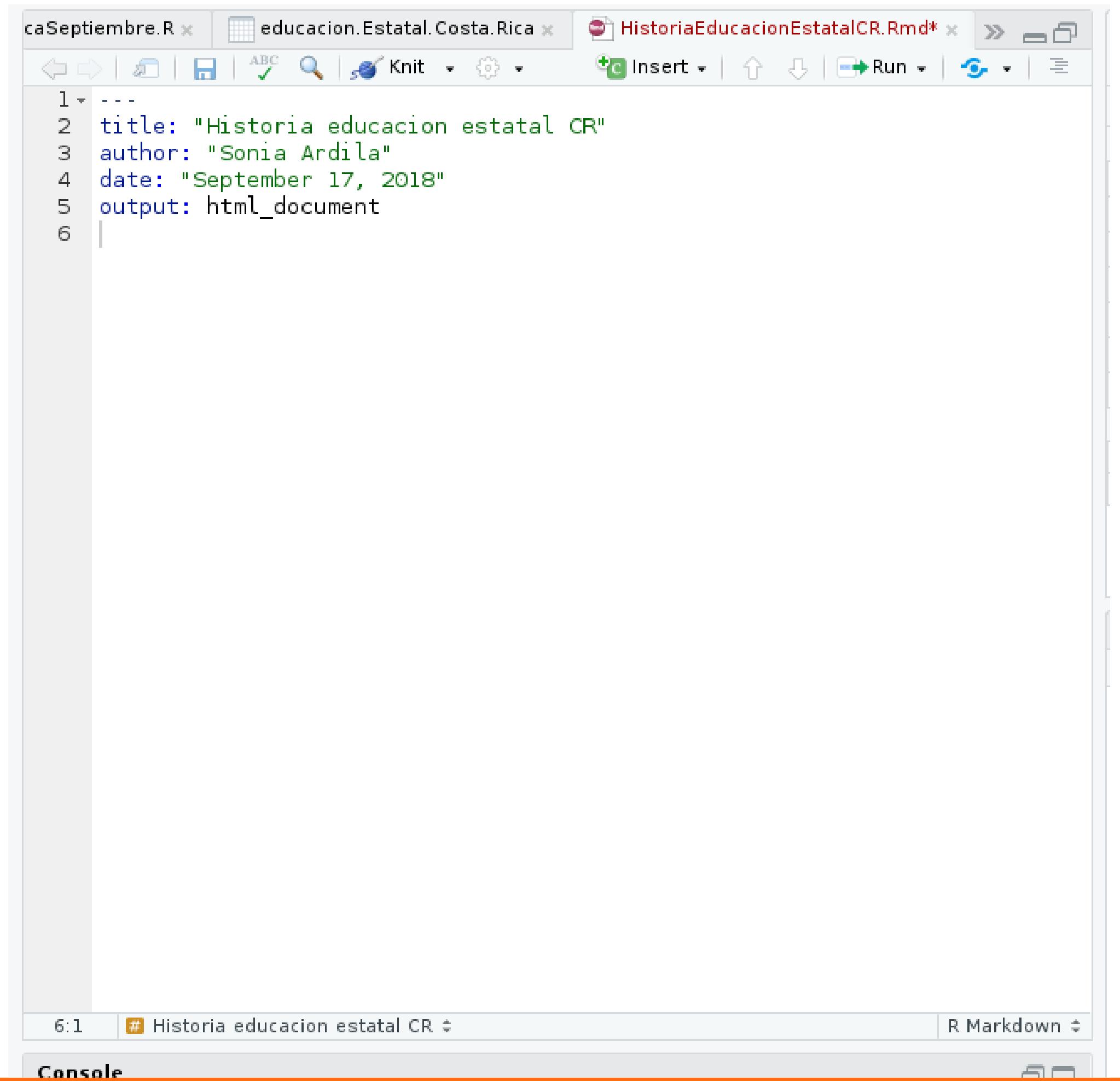
## Including Plots

You can also embed plots, for example:



The screenshot shows an RStudio interface with three tabs at the top: 'caSeptiembre.R', 'educacion.Estatal.Costa.Rica', and 'HistoriaEducacionEstatalCR.Rmd'. The 'HistoriaEducacionEstatalCR.Rmd' tab is active. The code editor contains the following R Markdown document:

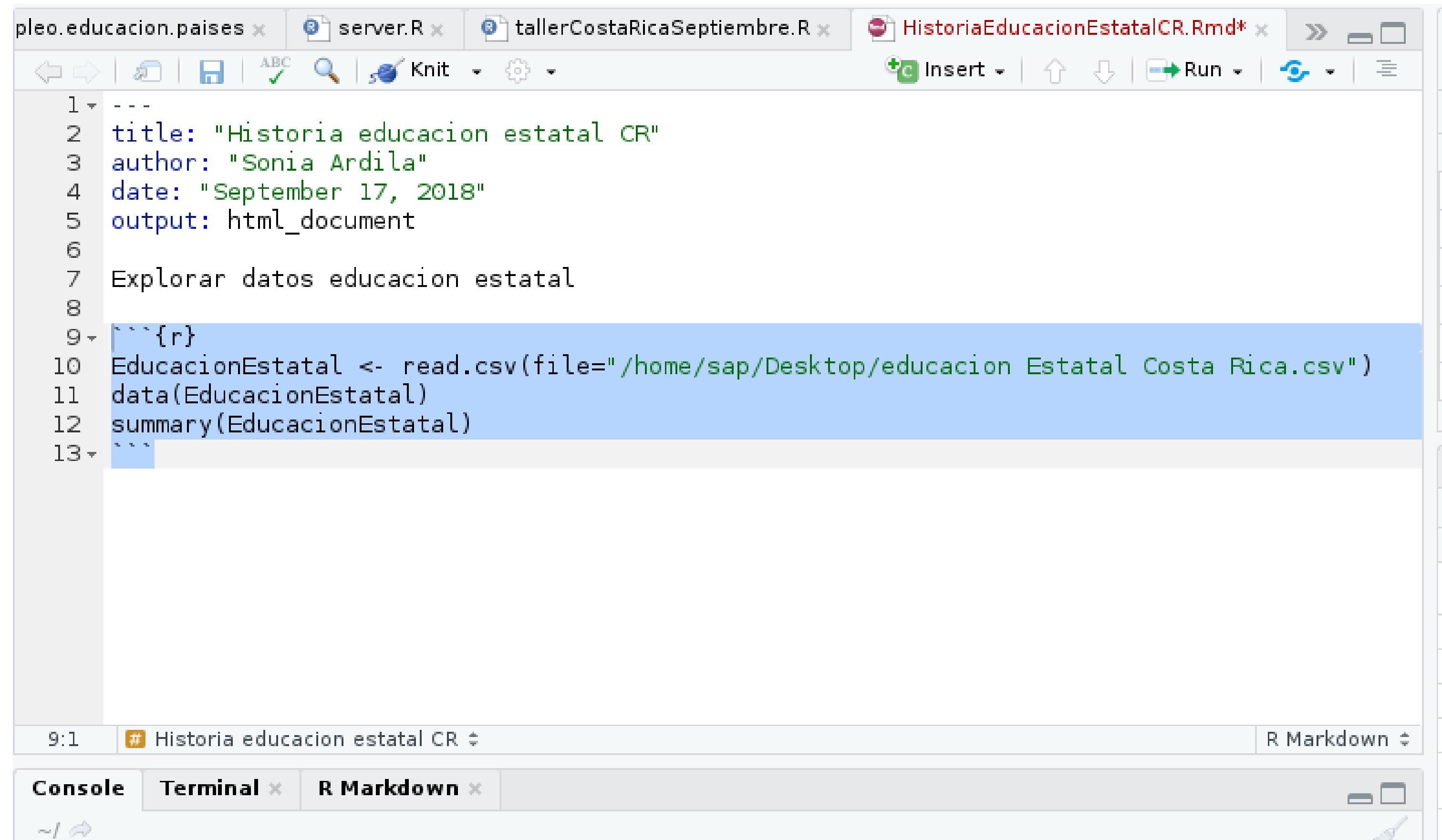
```
1 title: "Historia educación estatal CR"
2 author: "Sonia Ardila"
3 date: "September 17, 2018"
4 output: html_document
5
6 ---
7
8 ```{r setup, include=FALSE}
9 knitr::opts_chunk$set(echo = TRUE)
10
11
12 ## R Markdown
13
14 This is an R Markdown document. Markdown is a simple formatting syntax
15 for authoring HTML, PDF, and MS Word documents. For more details on
16 using R Markdown see <http://rmarkdown.rstudio.com>.
17
18 ```{r cars}
19 summary(cars)
20
21
22 ## Including Plots
23
24 You can also embed plots, for example:
25
26 ```{r pressure, echo=FALSE}
27 plot(pressure)
28
29
30 Note that the `echo = FALSE` parameter was added to the code chunk to
31 prevent printing of the R code that generated the plot.
```



The screenshot shows the RStudio interface with the following details:

- File tabs:** caSeptiembre.R, educación.Estatatal.Costa.Rica, HistoriaEducacionEstatalCR.Rmd\*
- Toolbar:** Includes icons for back, forward, file, ABC, search, Knit, Insert, Run, and others.
- Code Editor:** Displays the following R Markdown code:

```
1 ...  
2 title: "Historia educacion estatal CR"  
3 author: "Sonia Ardila"  
4 date: "September 17, 2018"  
5 output: html_document  
6
```
- Console tab:** Shows the number 6:1 and the text "# Historia educacion estatal CR".
- R Markdown tab:** Shows the text "R Markdown".



The screenshot shows an RStudio interface with the following details:

- File Tab:** The active tab is "HistoriaEducacionEstatalCR.Rmd\*". Other tabs include "pleo.educacion.paises", "server.R", "tallerCostaRicaSeptiembre.R", and "HistoriaEducacionEstatalCR.Rmd\*".
- Toolbar:** Includes icons for back, forward, file, ABC, search, Knit, and settings.
- Code Editor:** The code is written in R Markdown. Lines 1 through 13 are shown:

```
1 ---  
2 title: "Historia educación estatal CR"  
3 author: "Sonia Ardila"  
4 date: "September 17, 2018"  
5 output: html_document  
6  
7 Explorar datos educación estatal  
8  
9 ```{r}  
10 EducaciónEstatatal <- read.csv(file="/home/sap/Desktop/educación Estatal Costa Rica.csv")  
11 data(EducaciónEstatatal)  
12 summary(EducaciónEstatatal)  
13 ```
```
- Console Tab:** Shows the path "9:1" and the file name "Historia educación estatal CR".
- R Markdown Tab:** Shows the status "R Markdown".
- Bottom Navigation:** Tabs for "Console", "Terminal", and "R Markdown".

pleo.educacion.paises x server.R x tallerCostaRicaSeptiembre.R x HistoriaEducacionEstatalCR.Rmd\* > Insert Run

```

1 --
2 title: "Historia educacion estatal CR"
3 author: "Sonia Ardila"
4 date: "September 17, 2018"
5 output: html_document
6
7 Explorar datos educación estatal
8
9 ``{r}
10 EducacionEstatatal <- read.csv(file="/home/sap/Desktop/educacion Estatal Costa Rica.csv")
11 data(EducacionEstatatal)
12 summary(EducacionEstatatal)
13

```

9:1 # Historia educación estatal CR R Markdown

Console Terminal R Markdown

	Diplomas.U.Pv	Diplomas.U.Pv	Total.Diplomas	Bachill.U.Pv
Min.	:2011	Min. :12060	Min. :28115	Min. :40175
1st Qu.	:2012	1st Qu.:13920	1st Qu.:30744	1st Qu.:44798
Median	:2014	Median :14794	Median :30878	Median :45830
Mean	:2014	Mean :14385	Mean :31360	Mean :45745
3rd Qu.	:2015	3rd Qu.:15353	3rd Qu.:32326	3rd Qu.:47759
Max.	:2016	Max. :15495	Max. :34779	Max. :49778
	Bachill.U.Pv	Total.Bachill	Licenciatura.U.Pb	Licenciatura.U.Pv
	Min. :13513	Min. :19101	3,283:1	11,502:1
	1st Qu.:14090	1st Qu.:20752	3,414:1	13,025:1
	Median :14272	Median :20962	3,648:1	13,433:1
	Mean :14606	Mean :21110	3,717:1	13,491:1
	3rd Qu.:14972	3rd Qu.:21722	3,926:1	14,242:1
	Max. :16348	Max. :22980	3234 :1	14,918:1
	Especialidad.Prof.U.Pb	Especialidad.Prof.U.Pv	Total.Especialidad	Maestria.U.Pb
	Min. :232.0	Min. :274.0	Min. :520.0	1,102:1
	1st Qu.:254.8	1st Qu.:378.0	1st Qu.:675.8	1,209:1
	Median :292.5	Median :492.5	Median :818.5	1,219:1
	Mean :290.3	Mean :462.2	Mean :752.5	1,221:1

pleo.educacion.paises x

HistoriaEducacionEstatalCR.html | Open in Browser | Find

```

1 ---  

2 title: "Historia educacion estatal CR"  

3 author: "Sonia Ardila"  

4 date: "September 17, 2018"  

5 output: html_document  

6  

7 Explorar datos  

8  

9 ````{r}  

10 EducacionEstatal <- read.csv(file="/home/sap/Desktop/educacion Estatal Costa Rica.csv")  

11 data(EducacionEstatal)  

12 summary(EducacionEstatal)  

13 ````
```

9:1 # Historia educacion estatal

Console Terminal

```

~/Desktop/  

Min. :2011 Max. :2016  

1st Qu.:2012 1st Qu.:2014  

Median :2014 Median :2014  

Mean :2014 Mean :2014  

3rd Qu.:2015 3rd Qu.:2015  

Max. :2016 Max. :2016  

Bachill.U.Pb Bachill.U.Pv Total.Bachill Licenciatura.U.Pb  

Min. :13513 Min. :13513 Min. :19101 3,283:1  

1st Qu.:14090 1st Qu.:14090 1st Qu.:20752 3,414:1  

Median :14272 Median :14272 Median :20962 3,648:1  

Mean :14606 Mean :14606 Mean :21110 3,717:1  

3rd Qu.:14972 3rd Qu.:14972 3rd Qu.:21722 3,926:1  

Max. :16348 Max. :16348 Max. :22980 3234 :1  

Especialidad.Prof.U.Pb Especialidad.Prof.U.Pv Total.Licenciat Licenciatura.U.Pb  

Min. :232.0 Min. :232.0 Min. :232.0  

1st Qu.:254.8 1st Qu.:254.8 1st Qu.:254.8  

Median :292.5 Median :292.5 Median :292.5  

.. .. ..
```

~/Desktop/HistoriaEducacionEstatalCR.html

title: "Historia educacion estatal CR" author: "Sonia Ardila" date: "September 17, 2018" output: html\_document

Explorar datos educacion estatal

```

EducacionEstatal <- read.csv(file="/home/sap/Desktop/educacion Estatal Costa Rica.csv")
data(EducacionEstatal)
```

```

## Warning in data(EducacionEstatal): data set 'EducacionEstatal' not found
```

```

summary(EducacionEstatal)
```

```

##      X      Diplomas.U.Pb      Diplomas.U.Pv      Total.diplomas
##  Min.   :2011   Min.   :12060   Min.   :28115   Min.   :40175
##  1st Qu.:2012  1st Qu.:13920  1st Qu.:30744  1st Qu.:44798
##  Median :2014  Median :14794  Median :30878  Median :45830
##  Mean   :2014   Mean   :14385   Mean   :31360   Mean   :45745
##  3rd Qu.:2015  3rd Qu.:15353  3rd Qu.:32326  3rd Qu.:47759
##  Max.   :2016   Max.   :15495   Max.   :34779   Max.   :49778
##      Bachill.U.Pb      Bachill.U.Pv      Total.Bachill Licenciatura.U.Pb
##  Min.   :5588   Min.   :13513   Min.   :19101  3,283:1
##  1st Qu.:6336  1st Qu.:14090  1st Qu.:20752  3,414:1
##  Median :6730  Median :14272  Median :20962  3,648:1
##  Mean   :6504   Mean   :14606   Mean   :21110  3,717:1
##  3rd Qu.:6856  3rd Qu.:14972  3rd Qu.:21722  3,926:1
##  Max.   :6874   Max.   :16348   Max.   :22980  3234 :1
##      Licenciatura.U.Pv Total.Licenciat Especialidad.Prof.U.Pb
##  Min.   :11,502:1 14,736:1      Min.   :232.0
##  1st Qu.:13,025:1 16,439:1      1st Qu.:254.8
##  Median :12,420:1 16,774:1      Median :292.5
##  3rd Qu.:13,420:1 17,774:1      3rd Qu.:3234:1
##  Max.   :18,420:1 20,774:1      Max.   :49778
```

```

-- 
14
15 Buscando relaciones entre variables
16 ~`{r}
17 pairs(EducacionEstatal)
18 ~`{r}
19
20
21
22

```

16:1 # Historia educación estatal CR

R Markdown

Console Terminal R Markdown

```

~ / ~
^ Dipломados.U.Pv Dipломатия.U.Pv Total.Diplomados Bachill.U.Pv
Min. :2011 Min. :12060 Min. :28115 Min. :40175 Min. :5588
1st Qu.:2012 1st Qu.:13920 1st Qu.:30744 1st Qu.:44798 1st Qu.:6336
Median :2014 Median :14794 Median :30878 Median :45830 Median :6730
Mean :2014 Mean :14385 Mean :31360 Mean :45745 Mean :6504
3rd Qu.:2015 3rd Qu.:15353 3rd Qu.:32326 3rd Qu.:47759 3rd Qu.:6856
Max. :2016 Max. :15495 Max. :34779 Max. :49778 Max. :6874
Bachill.U.Pv Total.Bachill Licenciatura.U.Pb Licenciatura.U.Pv Total.Licenciat
Min. :13513 Min. :19101 3,283:1 11,502:1 14,736:1
1st Qu.:14090 1st Qu.:20752 3,414:1 13,025:1 16,439:1
Median :14272 Median :20962 3,648:1 13,433:1 16,774:1
Mean :14606 Mean :21110 3,717:1 13,491:1 17,359:1
3rd Qu.:14972 3rd Qu.:21722 3,926:1 14,242:1 17,959:1
Max. :16348 Max. :22980 3234 :1 14,918:1 18,566:1
Especialidad.Prof.U.Pb Especialidad.Prof.U.Pv Total.Especialidad Maestria.U.Pb
Min. :232.0 Min. :274.0 Min. :520.0 1,102:1
1st Qu.:254.8 1st Qu.:378.0 1st Qu.:675.8 1,209:1
Median :292.5 Median :492.5 Median :818.5 1,219:1
Mean :288.3 Mean :467.3 Mean :752.5 1,221:1

```

8  
9 ~`{r}  
10 EducacionEstatal <- read.csv(file="/home/sap/Desktop/educacion Estatal Costa Rica.csv")  
11 data(EducacionEstatal)  
12 summary(EducacionEstatal)  
13 ~`  
14  
15 Buscando relaciones entre variables  
16 ~`{r}  
17 pairs(EducacionEstatal)  
18 ~`  
19  
20  
21  
22

16:1 # Historia educación estatal CR R Markdown

Console Terminal R Markdown

```
~/ ~`{r}
 3ra Qu.:907.5 1,381:1 1597 :1 3ra Qu.:3350 910 :1 5,695:1
  Max. :965.0 1,396:1 2,042:1  Max. :3383 932 :1 6,133:1
  Total.Cienc.Salud Pib.per.cápita.US Inversión.Educación.Estatal...PIB Competitividad
  Min. :5827 Min. : 9187 Min. :7.160 Min. :4.270
  1st Qu.:6015 1st Qu.:10131 1st Qu.:7.355 1st Qu.:4.317
  Median :6314 Median :10608 Median :7.520 Median :4.345
  Mean   :6400 Mean   :10603 Mean   :7.645 Mean   :4.350
  3rd Qu.:6731 3rd Qu.:11216 3rd Qu.:8.030 3rd Qu.:4.395
  Max.   :7159 Max.   :11825 Max.   :8.170 Max.   :4.420
> ~`  

Error: attempt to use zero-length variable name
> ~`{r}
Error: attempt to use zero-length variable name
> pairs(EducacionEstatal)
Error in plot.new() : figure margins too large
> ~`  

Error: attempt to use zero-length variable name
> |
```

```
9 * ````{r}
10 EducacionEstatal <- read.csv(file="/home/sap/Desktop/educacion Estatal Costa Rica.csv")
11 data(EducacionEstatal)
12 summary(EducacionEstatal)
13 *
14
15 Buscando relaciones entre variables
16 * ````{r}
17 pairs(EducacionEstatal[,42:43])
18 *
19
```

R x tallerCostaRicaSeptiembre.R x HistoriaEducacionEstatalCR.Rmd\* education.Estatal.Costa.Rica x > □ □

ABC Knit Insert Run Connections

```

1 --
2 title: "Historia educación estatal CR"
3 author: "Sonia Ardila"
4 date: "September 17, 2018"
5 output: html_document
6
7 Explorar datos educación estatal
8
9 ```{r}
10 EducaciónEstatatal <- read.csv(file="/home/sap/Desktop/educación Estatal Costa Rica.csv")
11 data(EducaciónEstatatal)
12 summary(EducaciónEstatatal)
13 ```
14
15 Buscando relaciones entre variables
16 ```{r}
17 pairs(EducaciónEstatatal[,42:43])
18 ```

19
20
21
22
```

15:1 # Historia educación estatal CR R Markdown

Console Terminal R Markdown

```

Error: attempt to use zero-length variable name
> educación.Estatatal.Costa.Rica <- read.csv("~/Desktop/educación Estatal Costa Rica.csv")
> View(educación.Estatatal.Costa.Rica)
> Buscando relaciones entre variables
Error: unexpected symbol in "Buscando relaciones"
> ```{r}
Error: attempt to use zero-length variable name
> pairs(EducaciónEstatatal[,42:43])
>
```

Environment History Connections

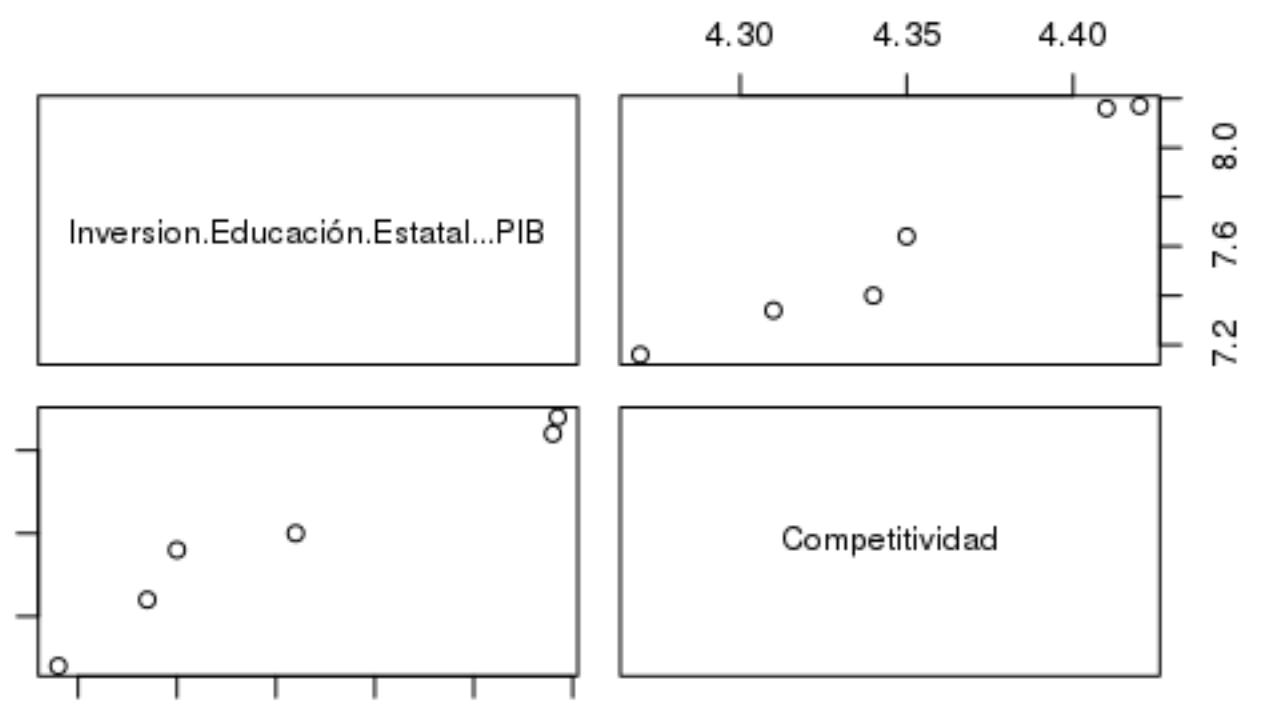
Import Dataset Global Environment

Data

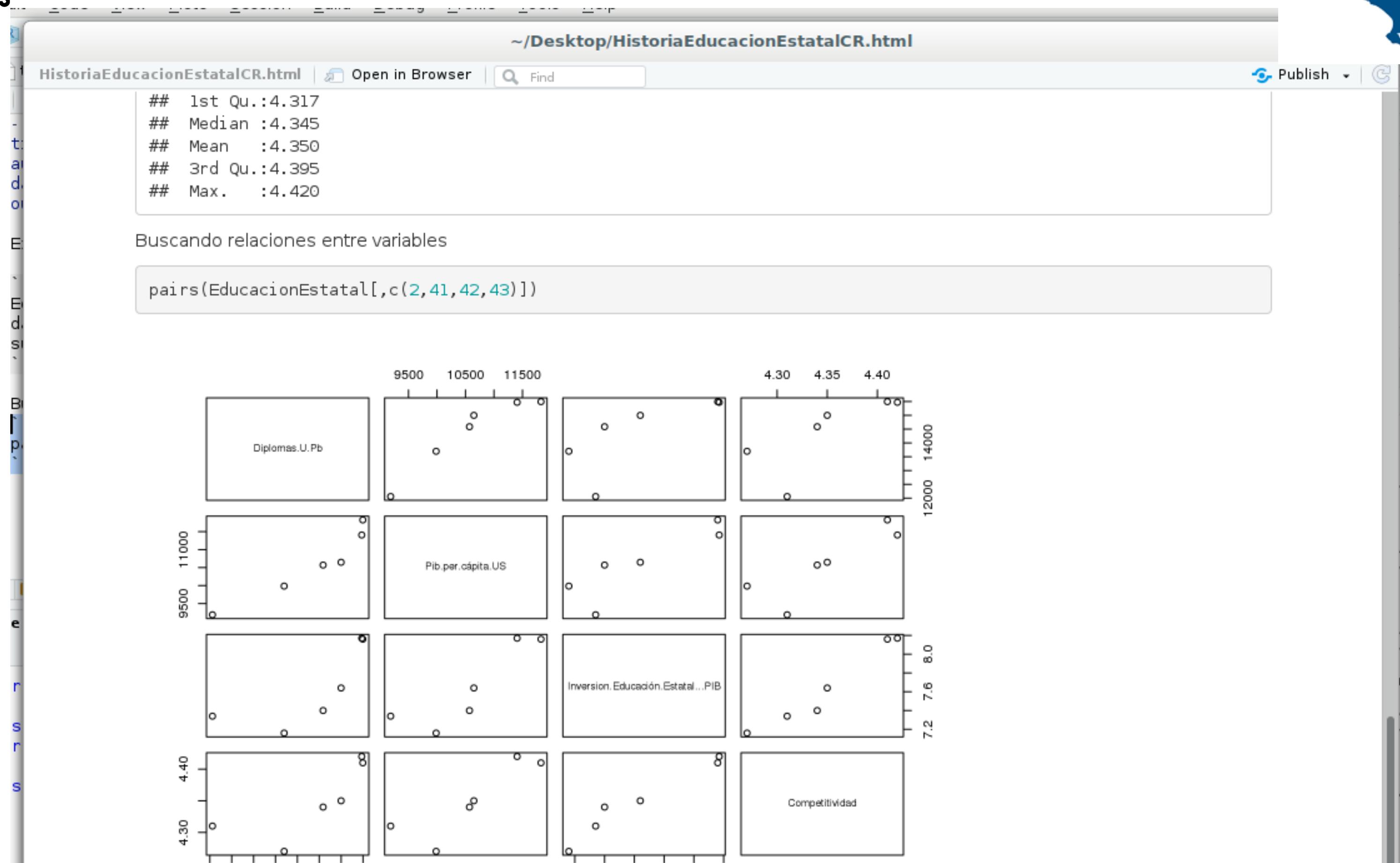
- Descripcion.pers... 7 obs. of 6 variables
- Descripcionperso... 7 obs. of 5 variables
- Diplomas\_otorgad... 942 obs. of 1 variable
- educación.Estata... 6 obs. of 43 variables
- EducaciónEstatatal 6 obs. of 43 variables
- empleo.educacion... 22 obs. of 20 variables
- grafica List of 9

Files Plots Packages Help Viewer

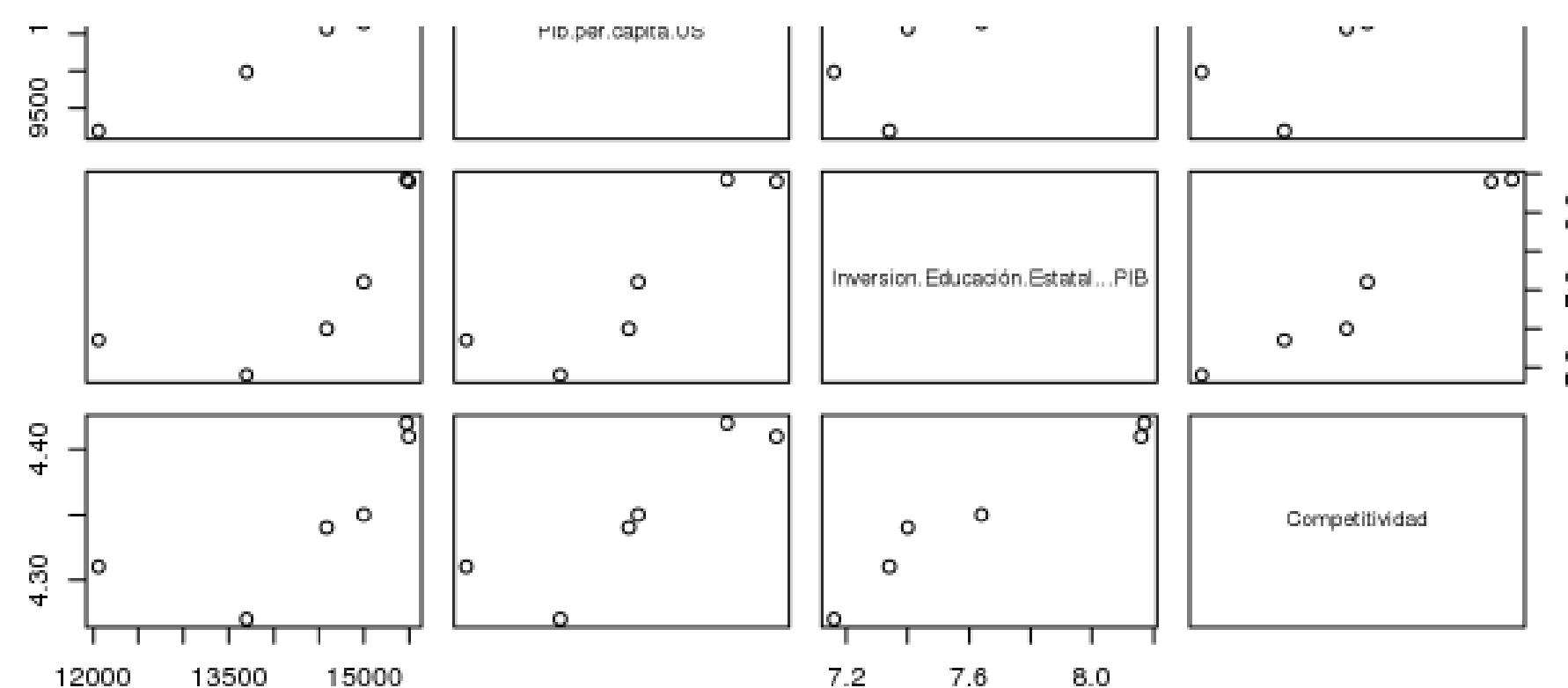
Zoom Export Publish



```
6  
7 Explorar datos educacion estatal  
8  
9 ~`{r}  
10 EducacionEstatal <- read.csv(file="/home/sap/Desktop/educacion Estatal Costa Rica.csv")  
11 data(EducacionEstatal)  
12 summary(EducacionEstatal)  
13 ~`  
14  
15 Buscando relaciones entre variables  
16 ~`{r}  
17 pairs(EducacionEstatal[,c(2,41,42,43)])  
18 ~`  
19  
20  
21  
22
```



```
20
21 ~~~{r}
22 cor(EducacionEstatal[,c(2,41,42,43)])
23 ~~~
24
```



```
cor(EducacionEstatal[,c(2,41,42,43)])
```

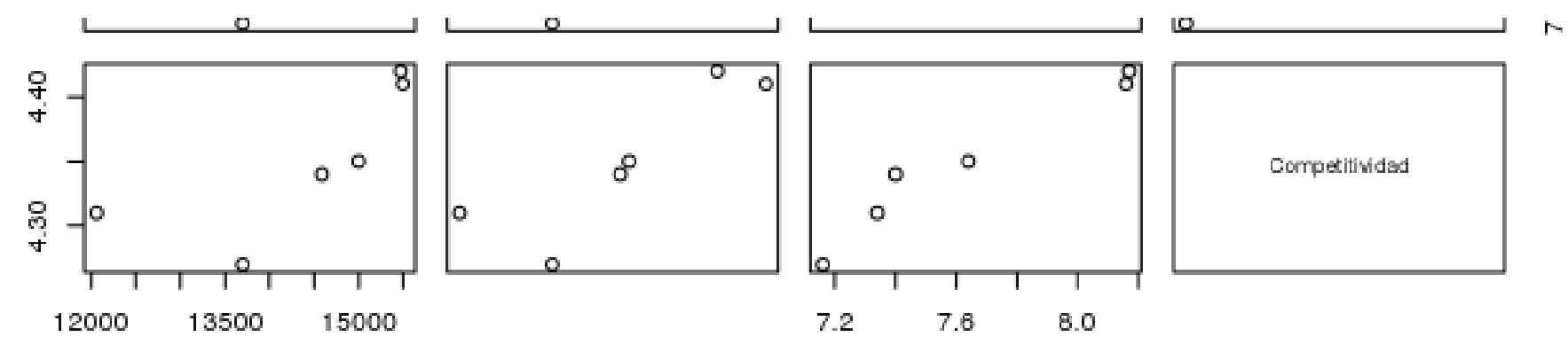
```
##                                     Diplomas.U.Pb Pib.per.cápita.US
## Diplomas.U.Pb                      1.0000000   0.9500616
## Pib.per.cápita.US                   0.9500616   1.0000000
## Inversion.Educación.Estatal...PIB    0.7493127   0.8728597
## Competitividad                    0.7589714   0.8605768
##                                     Inversion.Educación.Estatal...PIB
## Diplomas.U.Pb                      0.7493127
## Pib.per.cápita.US                  0.8728597
## Inversion.Educación.Estatal...PIB    1.0000000
## Competitividad                    0.9750956
##                                     Competitividad
## Diplomas.U.Pb                      0.7589714
## Pib.per.cápita.US                  0.8605768
## Inversion.Educación.Estatal...PIB    0.9750956
## Competitividad                    1.0000000
```

**CORRELATION  
DOES NOT IMPLY  
CAUSATION**

CONTEXT

MATTERS

```
31 ~ ~ ~ {r}
32 sd(EducacionEstatal$Diplomas.U.Pb)
33
```



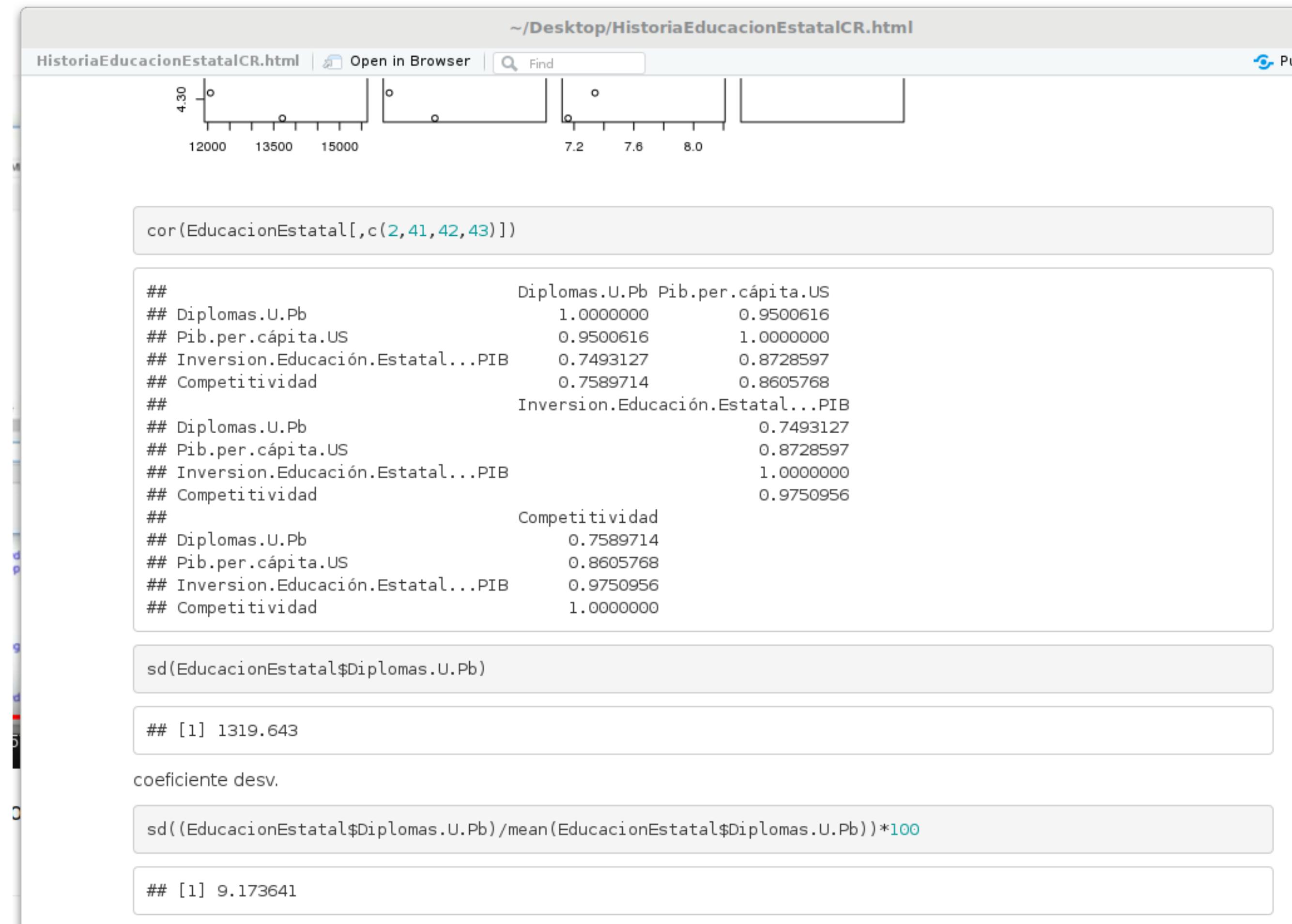
```
cor(EducacionEstatal[,c(2,41,42,43)])
```

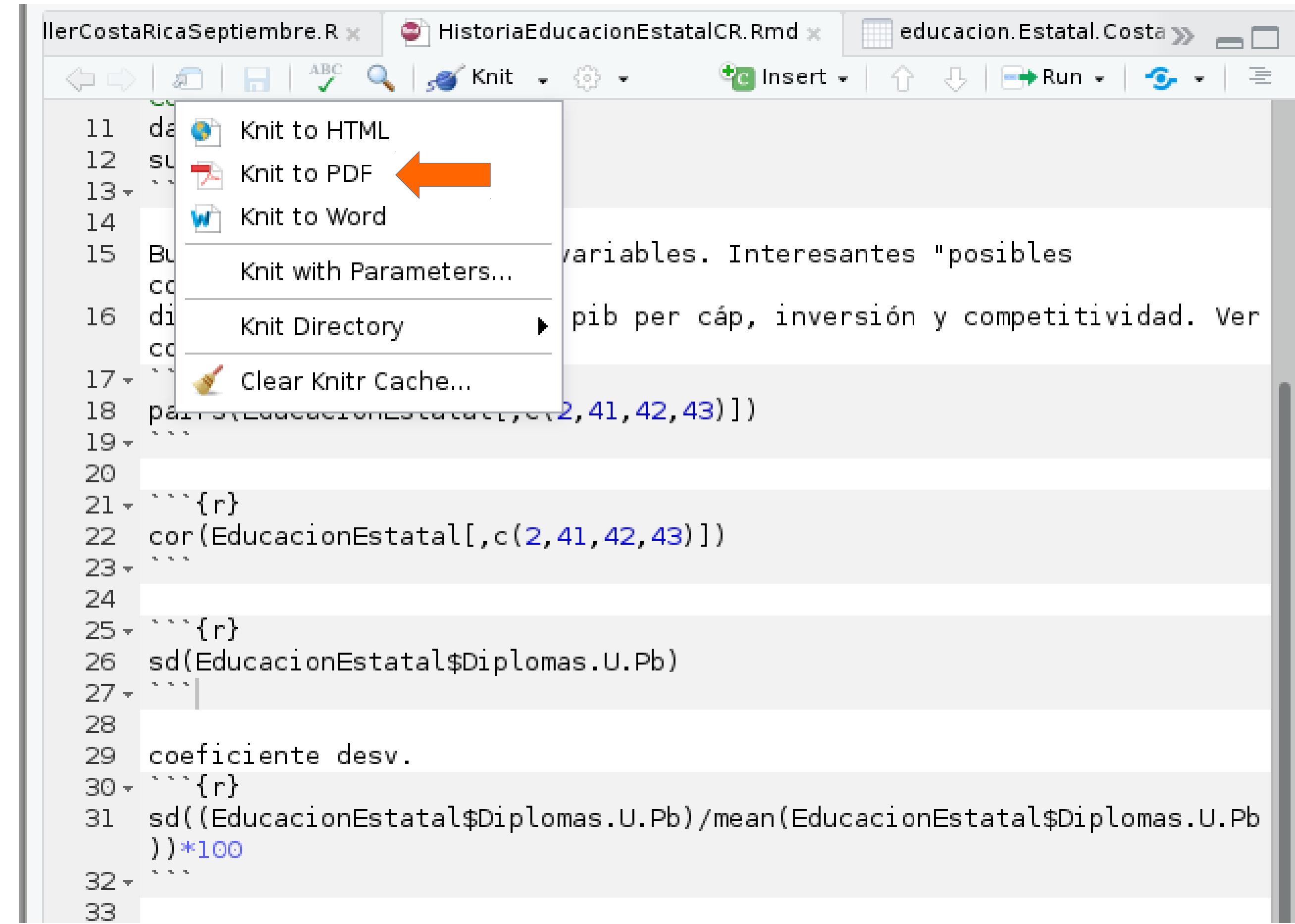
```
##                                     Diplomas.U.Pb Pib.per.cápita.US
## Diplomas.U.Pb                      1.0000000   0.9500616
## Pib.per.cápita.US                   0.9500616   1.0000000
## Inversion.Educación.Estatal...PIB    0.7493127   0.8728597
## Competitividad                     0.7589714   0.8605768
##                                     Inversion.Educación.Estatal...PIB
## Diplomas.U.Pb                      0.7493127
## Pib.per.cápita.US                  0.8728597
## Inversion.Educación.Estatal...PIB    1.0000000
## Competitividad                     0.9750956
##                                     Competitividad
## Diplomas.U.Pb                      0.7589714
## Pib.per.cápita.US                  0.8605768
## Inversion.Educación.Estatal...PIB    0.9750956
## Competitividad                     1.0000000
```

```
sd(EducacionEstatal$Diplomas.U.Pb)
```

```
## [1] 1319.643
```

```
28  
29   coeficiente desv.  
30  ~~~{r}  
31  sd(EducacionEstatal$Diplomas.U.Pb)/mean(EducacionEstatal$Diplomas.U.Pb)*100  
32  ~~~  
33  
34
```





The screenshot shows the RStudio interface with three tabs at the top: "HerrCostaRicaSeptiembre.R", "HistoriaEducacionEstatalCR.Rmd", and "educacion.Estatal.Costa". The "HistoriaEducacionEstatalCR.Rmd" tab is active. In the top right, there are buttons for "Insert", "Run", and "Knit". A dropdown menu for "Knit" is open, showing options: "Knit to HTML", "Knit to PDF", "Knit to Word", "Knit with Parameters...", "Knit Directory", and "Clear Knitr Cache...". An orange arrow points to the "Knit to PDF" option. The main workspace shows R code and some explanatory text in Spanish.

```
11 da Knit to HTML
12 su Knit to PDF ←
13 Knit to Word
14 Knit with Parameters...
15 Bl variables. Interesantes "posibles
16 cc pib per cáp, inversión y competitividad. Ver
17 cc Knit Directory
18 cc Clear Knitr Cache...
19 pán, EducaciónEstatal[,c(2,41,42,43)])
20
21 ~~~{r}
22 cor(EducaciónEstatal[,c(2,41,42,43)])
23 ~~~
24
25 ~~~{r}
26 sd(EducaciónEstatal$Diplomas.U.Pb)
27 ~~~
28
29 coeficiente desv.
30 ~~~{r}
31 sd((EducaciónEstatal$Diplomas.U.Pb)/mean(EducaciónEstatal$Diplomas.U.Pb
32 ))*100
33
```

```
28 cor(EducacionEstatal[,c(2,41,42,43)])  
29 ...  
33:4 # ---
```

R Markdown

Console Terminal x R Markdown x

.../Desktop/HistoriaEducacionEstatalCR.Rmd

```
/usr/lib/rstudio/bin/pandoc +RTS -K512m -RTS HistoriaEducacionEstatalCR.utf8.md --to latex --from markdown+autolink_bare_uris+ascii_identifiers+tex_math_single_backslash --output HistoriaEducacionEstatalCR.tex --template /home/sap/R/x86_64-pc-linux-gnu-library/3.4/rmarkdown/rmd/latex/default-1.17.0.2.tex --highlight-style tango --latex-engine pdflatex --variable graphics=yes --variable 'geometry:margin=1in' --variable 'compact-title:yes'  
output file: HistoriaEducacionEstatalCR.knit.md
```

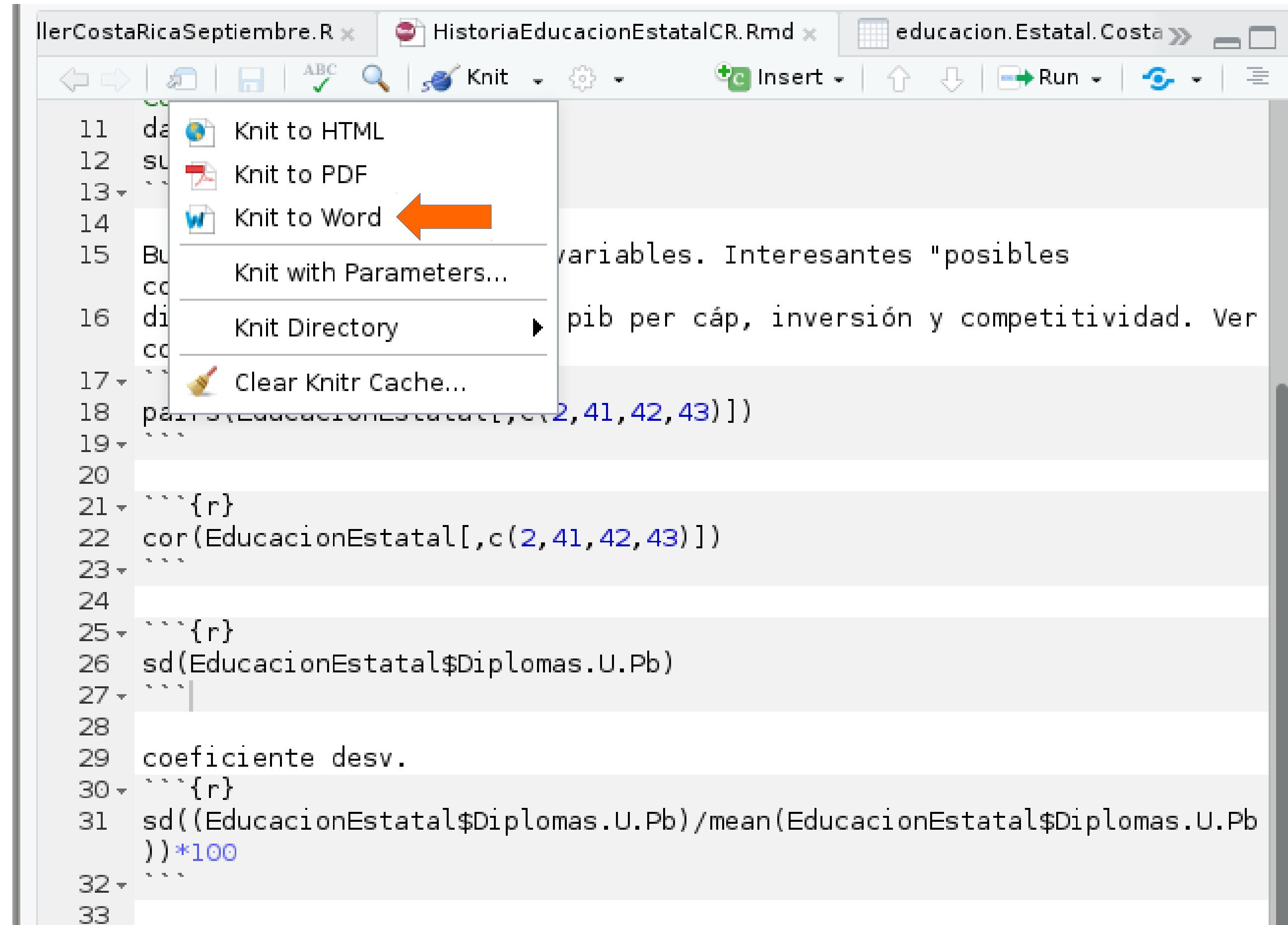
Error: Failed to compile HistoriaEducacionEstatalCR.tex.  
Execution halted

No TeX installation detected (TeX is required to create PDF output). You should install a recommended TeX distribution for your platform:

Windows: MiKTeX (Complete) - <http://miktex.org/2.9/setup>  
(NOTE: Be sure to download the Complete rather than Basic installation)

Mac OS X: TexLive 2013 (Full) - <http://tug.org/mactex/>  
(NOTE: Download with Safari rather than Chrome \_strongly\_ recommended)

Linux: Use system package manager



The screenshot shows the RStudio interface with three tabs at the top: "llerCostaRicaSeptiembre.R", "HistoriaEducacionEstatalCR.Rmd", and "educacion.Estatal.Costa". The "HistoriaEducacionEstatalCR.Rmd" tab is active. In the top right, there's a "Knit" button with a dropdown menu. The menu items are: "Knit to HTML", "Knit to PDF", "Knit to Word" (which is highlighted with an orange arrow), "Knit with Parameters...", "Knit Directory", and "Clear Knitr Cache...". Below the menu, the R code in the "HistoriaEducacionEstatalCR.Rmd" file is visible:

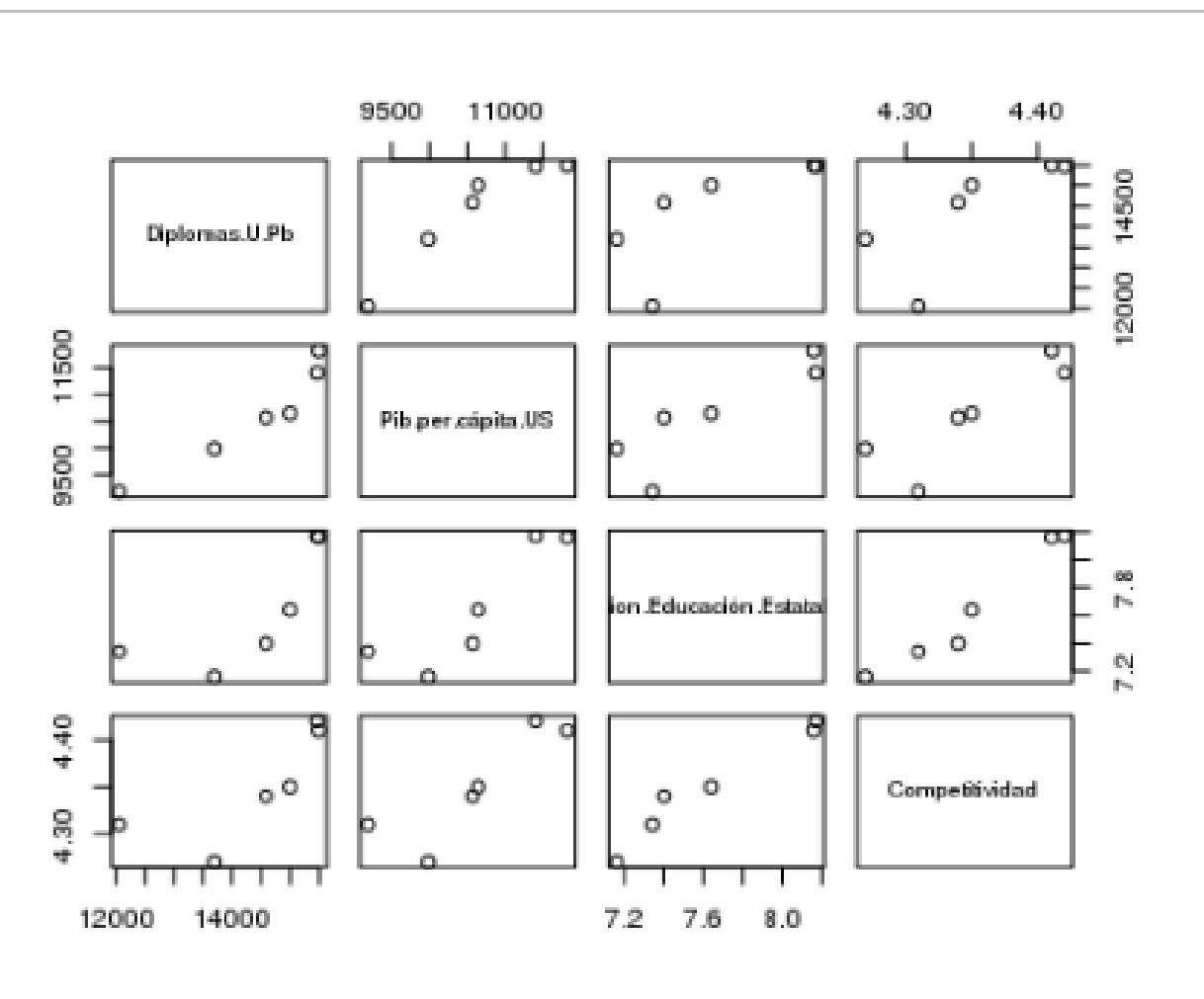
```
11 da
12 su
13 -
14 Knit to Word ←
15 BU
16 cc
17 di
18 cc
19 pa
20 cor(EducacionEstatal[,c(2,41,42,43)])
21 ~~~{r}
22 cor(EducacionEstatal[,c(2,41,42,43)])
23 ~~~
24
25 ~~~{r}
26 sd(EducacionEstatal$Diplomas.U.Pb)
27 ~~~
28
29 coeficiente desv.
30 ~~~{r}
31 sd((EducacionEstatal$Diplomas.U.Pb)/mean(EducacionEstatal$Diplomas.U.Pb
32 ))*100
33 ~~~
```

The code includes several sections of R code and text explaining variables and statistical measures.



Buscando relaciones entre variables. Interesantes "posibles" correlaciones positivas de diplomas univ. publica con pib per cáp, inversión y competitividad. Ver cor

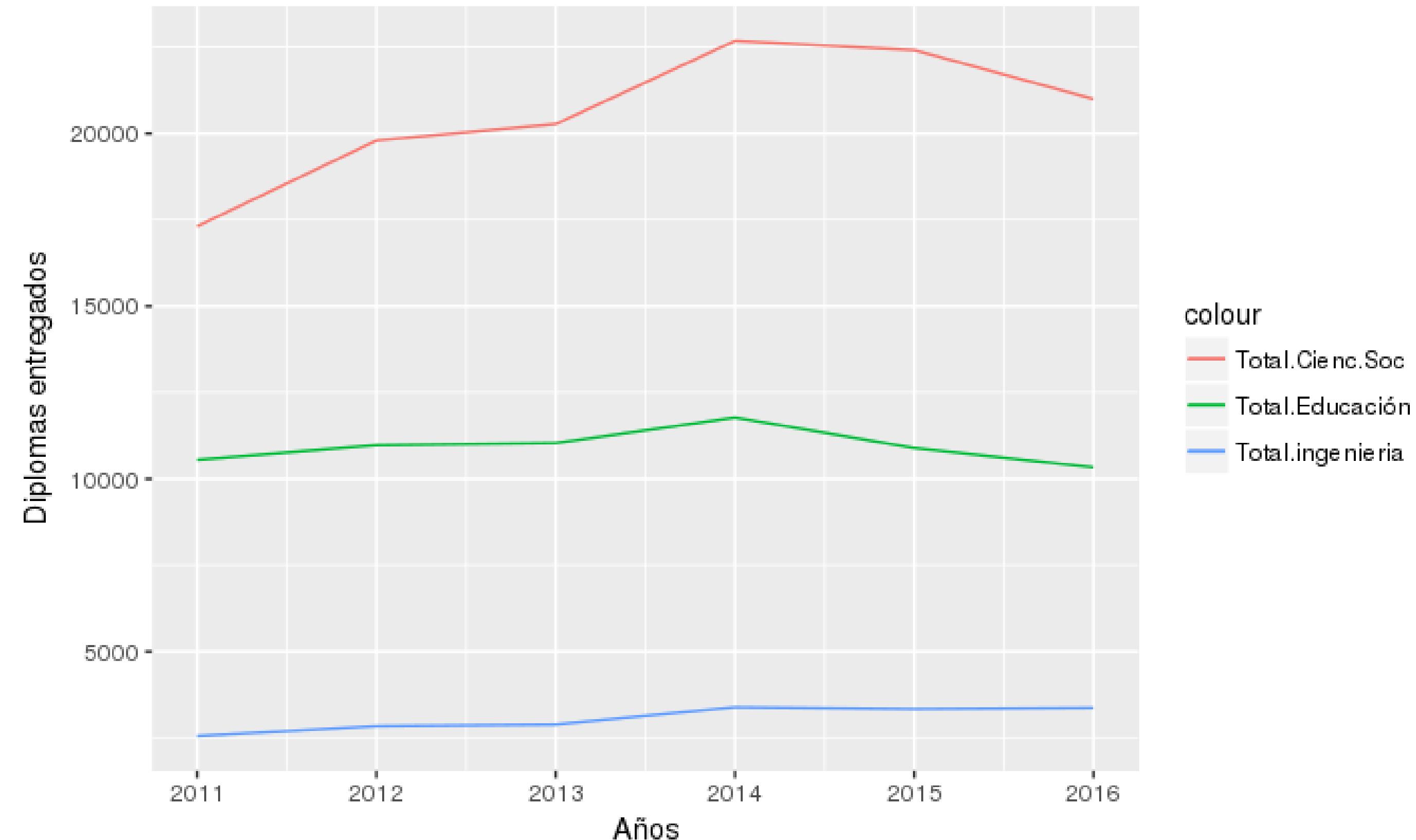
```
pairs(EducacionEstatal[,c(2,41,42,43)])
```



```
cor(EducacionEstatal[,c(2,41,42,43)])
```

```
58  
59 ggplot() + geom_line(data=educacion.Estatal.Costa.Rica, aes(x= X, y=Total.Ingenieria, colour="Total.ingenieria")) +  
60   geom_line(data=educacion.Estatal.Costa.Rica, aes(x= X, y=Total.Cienc.Soc, colour="Total.Cienc.Soc" )) +  
61   geom_line(data=educacion.Estatal.Costa.Rica, aes(x= X, y=Total.Educación, colour="Total.Educación" )) +  
62   labs(y="Diplomas entregados", x= "Años", title="Comportamiento nuevos profesionales en Costa Rica")  
63
```

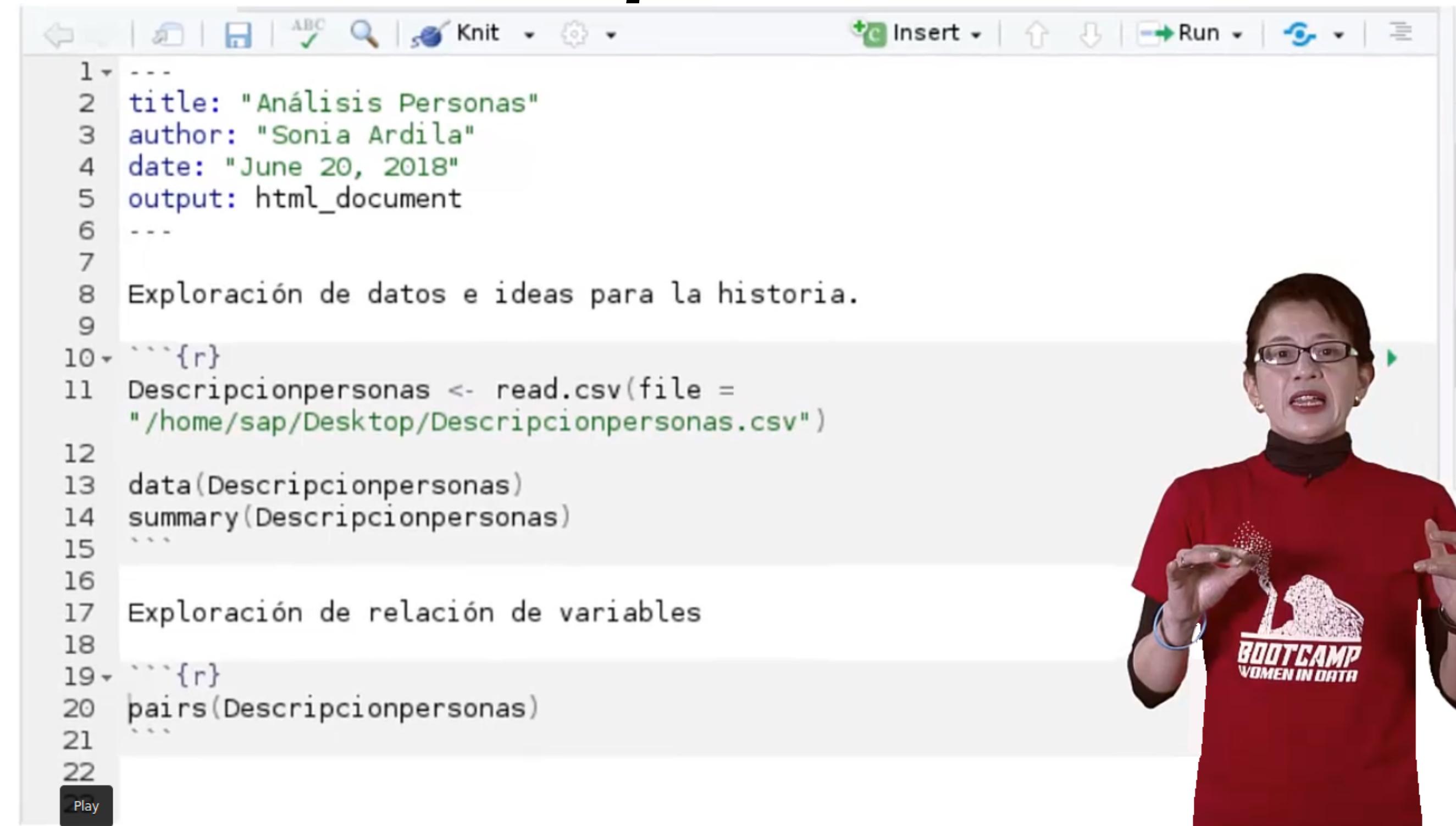
## Comportamiento nuevos profesionales en Costa Rica



# **Historia # 3**

## **Formato**

# Moo



# Veamos los datos en un dashboard



**shiny**  
**shinydashboard**  
**data.table**  
**ggplot2**

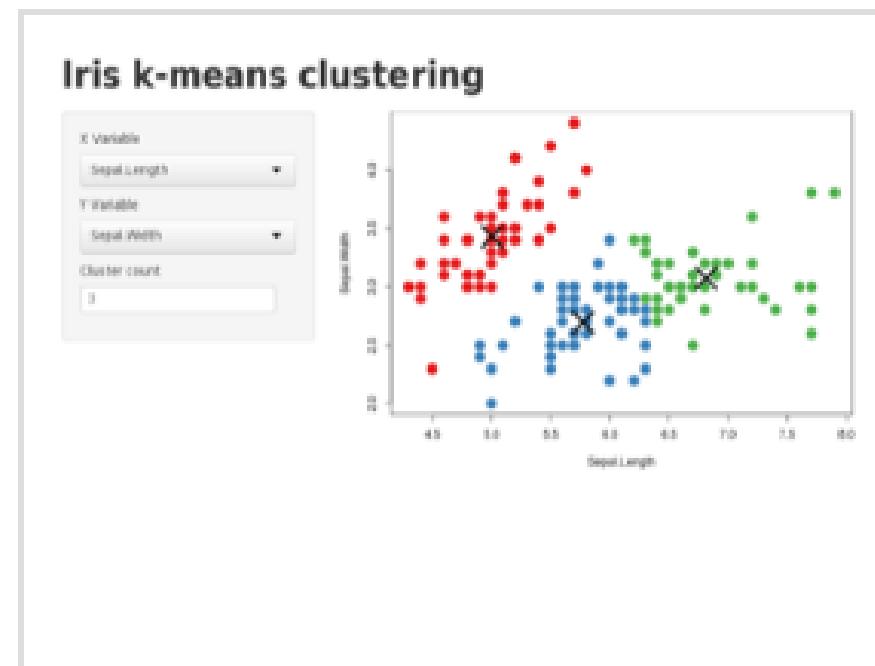
<https://shiny.rstudio.com/gallery>

Shiny from R Studio

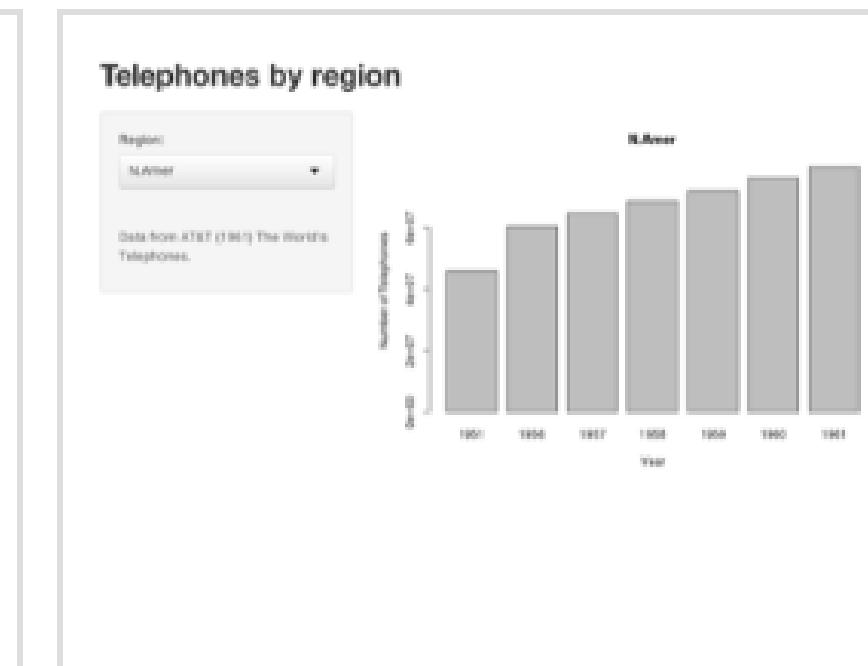


Start simple

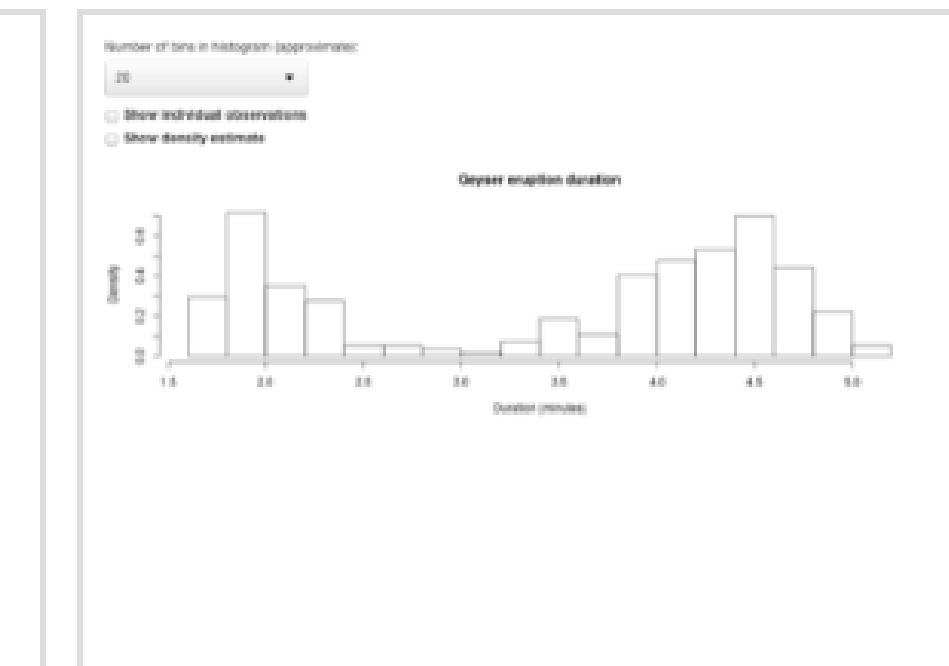
If you're new to Shiny, these simple but complete applications are designed for you to learn from.



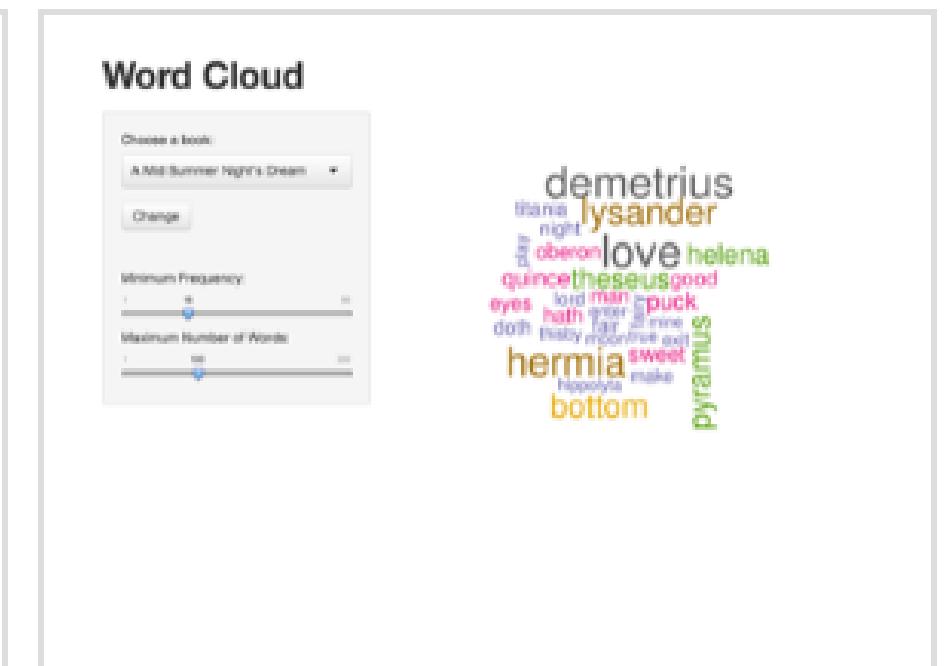
Kmeans example



Telephones by region



Faithful



Word cloud

# Archivo (File)

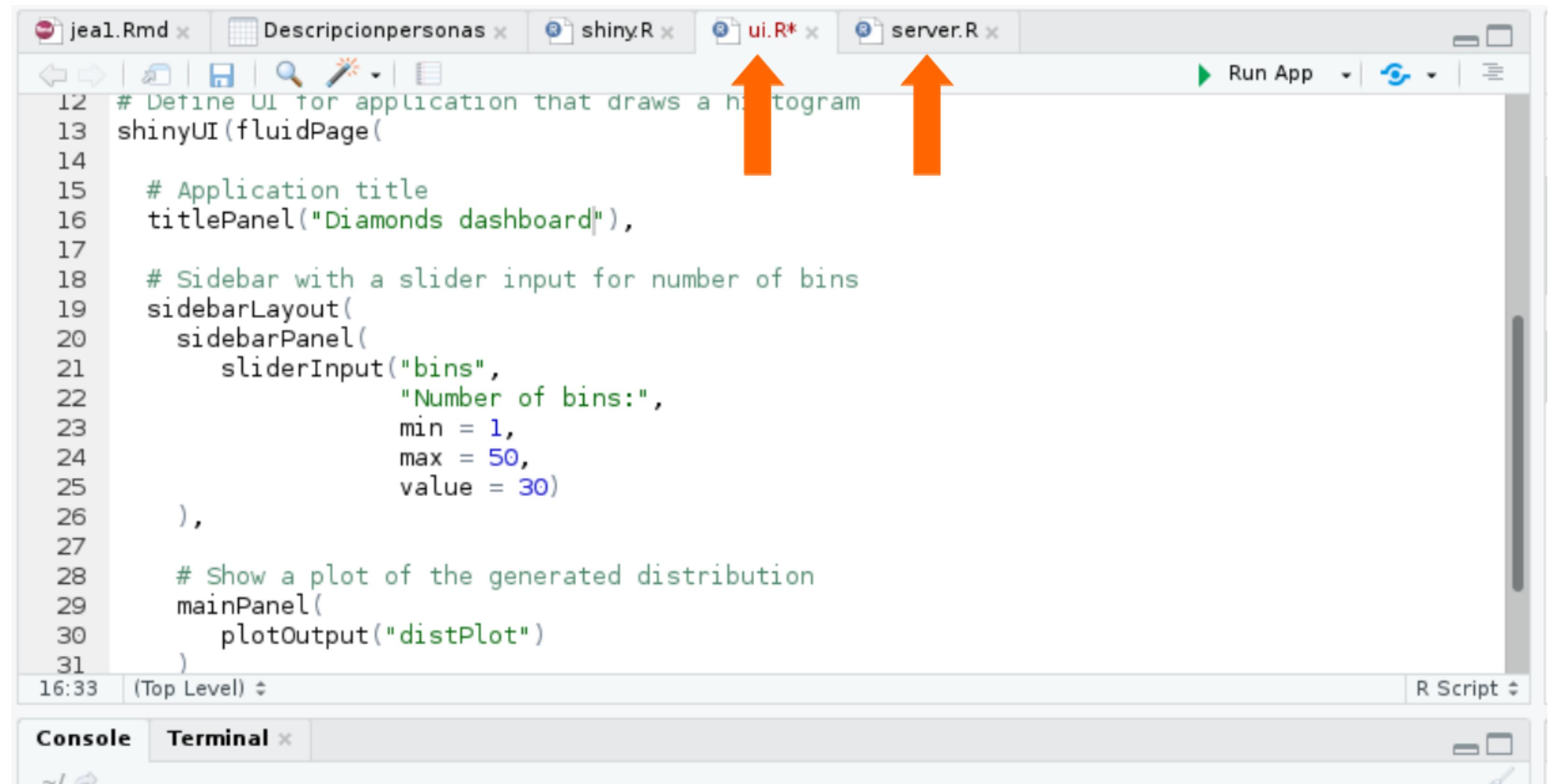
New File

Shiny Web App

The screenshot shows the RStudio interface with the following details:

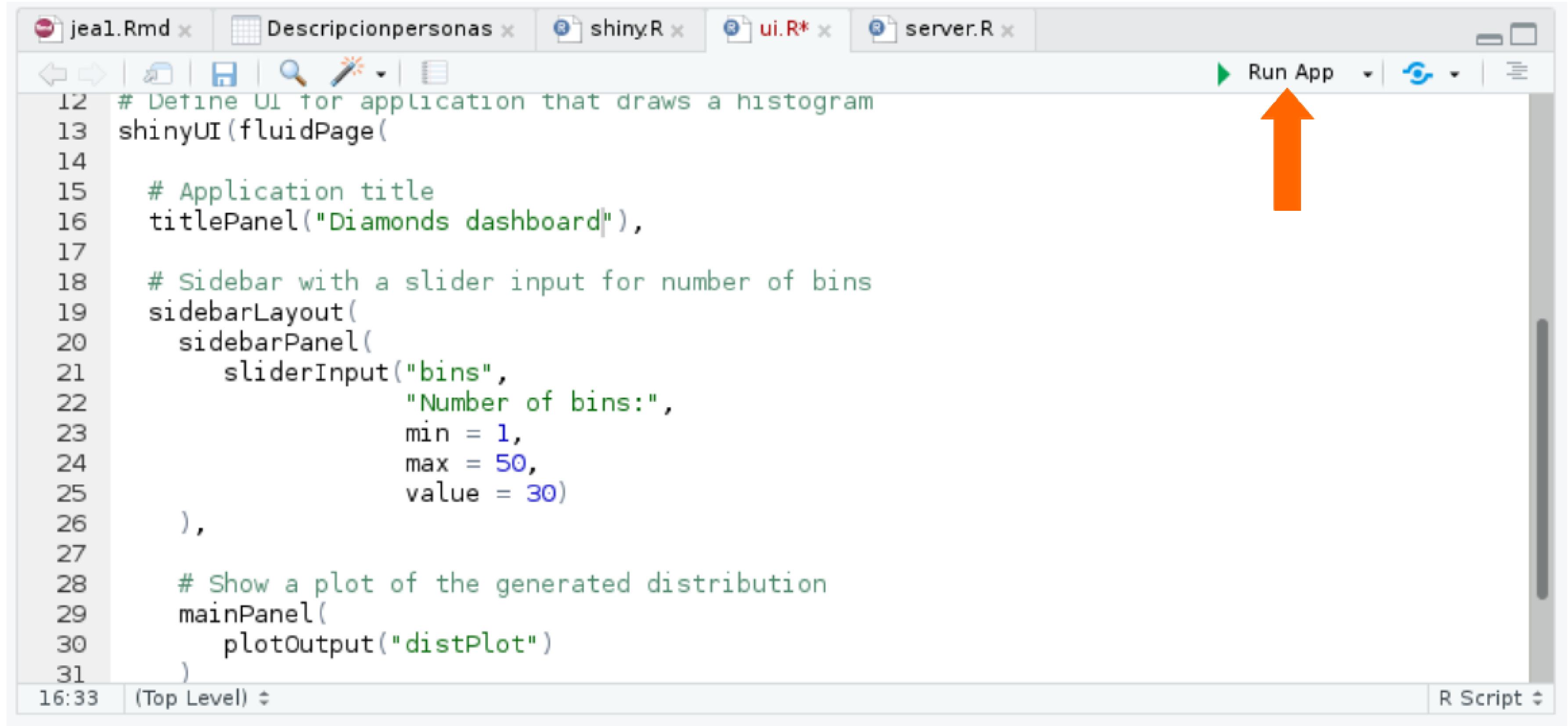
- Top Bar:** Shows tabs for "nd", "Descripcionpersonas", "ui.R", "server.R", and "">>".
- Toolbar:** Includes icons for back, forward, file operations, search, and reload.
- Code Editor:** Displays R code for a shinyServer function. The code generates a histogram of the second column of the faithful dataset, using dark gray bars and white borders. It includes input parameters for the number of bins.
- Terminal:** A separate window at the bottom shows the command "> runApp('Desktop')".
- Status Bar:** Shows the current line number (13:3) and the status "R Script".
- Bottom Navigation:** Buttons for "Console" and "Terminal".

The screenshot shows the RStudio interface. The top menu bar includes 'Environment', 'History', and 'Connections'. Below the menu are icons for 'Import Dataset' and 'Global Environment'. The 'Data' section lists three datasets: 'Descripcion.personas' (7 obs. of 6 variables), 'Descripcionpersonas' (7 obs. of 5 variables), and 'mujeres' (2 obs. of 6 variables). The 'Packages' tab is selected, showing the 'yaml' package with its description: 'Methods to Convert R Data to YAML and Back'. The 'System Library' section contains a 'New Shiny Web Application' dialog box. This dialog has fields for 'Application name' (empty), 'Application type' (radio buttons for 'Single File (app.R)' and 'Multiple File (ui.R/server.R)', with the latter being selected and highlighted by an orange arrow), 'Create within directory' (a browse button next to a field containing '~'), and 'Create' and 'Cancel' buttons at the bottom. To the right of the dialog, there are several vertical tabs: 'Canty for S', 'Extended Rousseeuw et al.', 'IPSS', 'Stata', 'Systat', 'V', 'Colours and Fonts', and 'J. Wand & Jones (1995)'. At the bottom of the screen, there are links for 'Matrix', 'Sparse and Dense Matrix Classes and Methods', and 'Sparse Matrices and Ripley's MASS'.

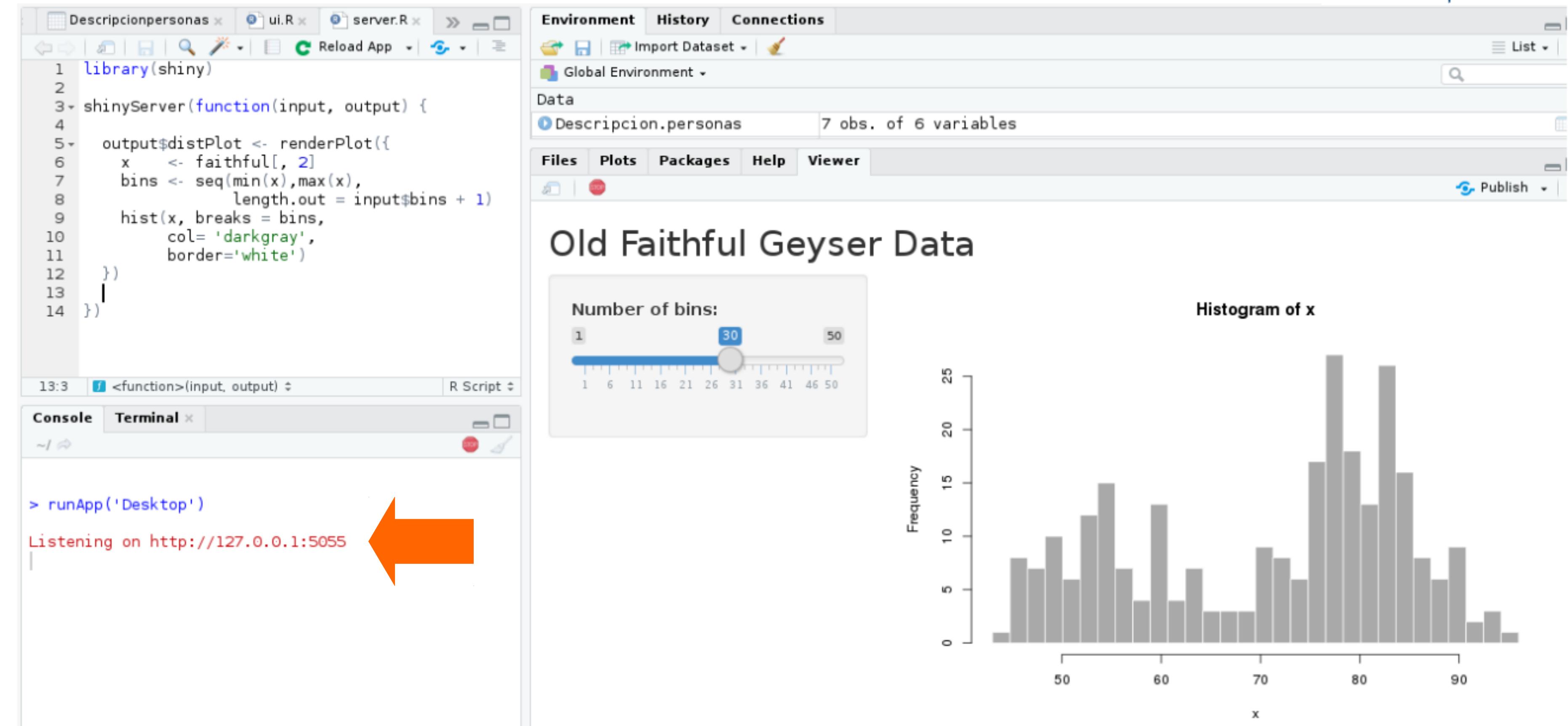


The screenshot shows the RStudio interface with the following details:

- File tabs:** jeal.Rmd, Descripcionpersonas, shiny.R, ui.R\*, server.R.
- Toolbar:** Includes icons for back, forward, file, search, and help.
- Code Editor:** Displays the content of the ui.R\* file. Two specific lines of code are highlighted with orange arrows:
  - Line 12: `# Define UI for application that draws a histogram`
  - Line 13: `shinyUI(fluidPage(`
- Right Panel:** Shows a preview of the shiny dashboard.
- Status Bar:** Shows "16:33 (Top Level)" and "R Script".
- Bottom Navigation:** Shows "Console" and "Terminal" tabs.



```
12 # Define UI for application that draws a histogram
13 shinyUI(fluidPage(
14
15   # Application title
16   titlePanel("Diamonds dashboard"),
17
18   # Sidebar with a slider input for number of bins
19   sidebarLayout(
20     sidebarPanel(
21       sliderInput("bins",
22                 "Number of bins:",
23                 min = 1,
24                 max = 50,
25                 value = 30)
26     ),
27
28     # Show a plot of the generated distribution
29     mainPanel(
30       plotOutput("distPlot")
31     )
32   )
33 
```



The screenshot shows the RStudio interface with the following components:

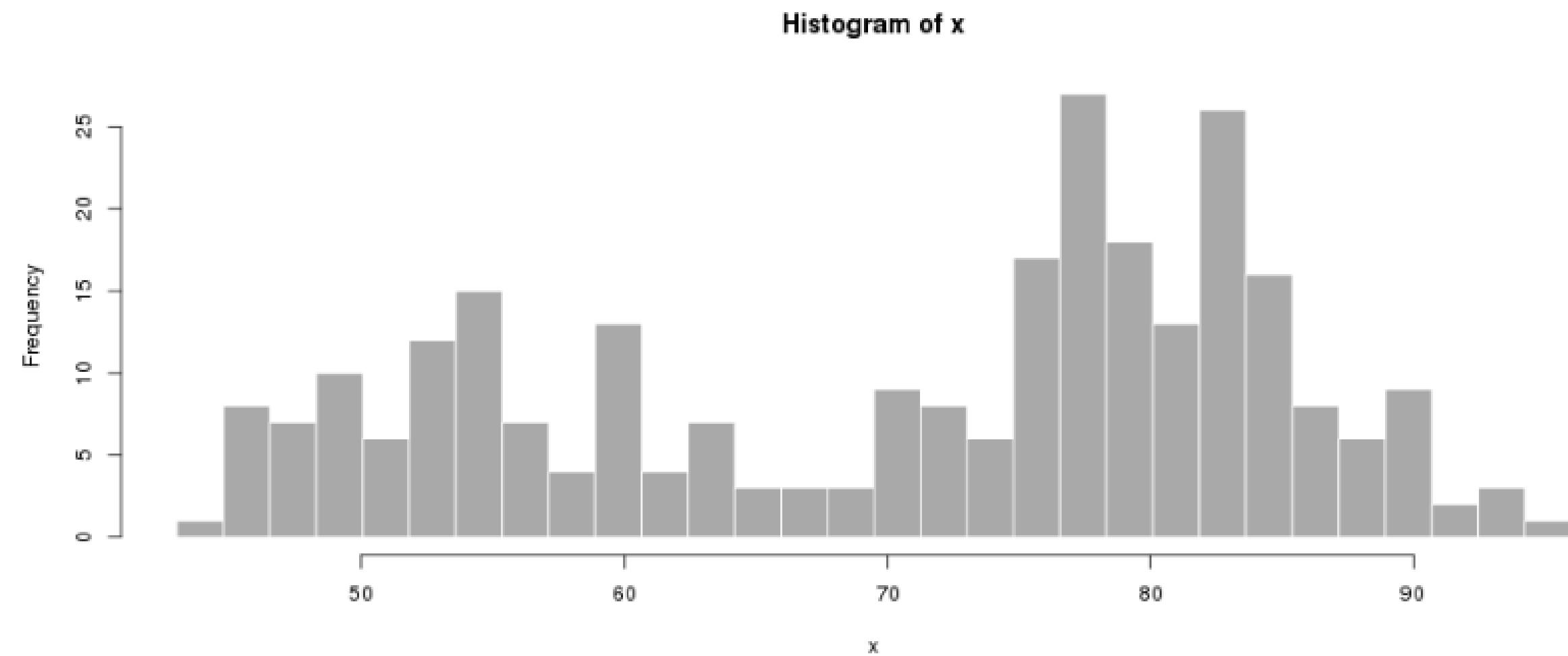
- Code Editor:** Displays the `server.R` script for a shiny application. It includes code to render a histogram of the Old Faithful Geyser Data.
- Environment:** Shows the global environment with a dataset named `Descripcion.personas` containing 7 observations and 6 variables.
- Plots:** A histogram titled "Histogram of x" showing the frequency distribution of the variable `x`. The x-axis ranges from approximately 45 to 95, and the y-axis (Frequency) ranges from 0 to 25. The distribution is roughly bell-shaped with two peaks around 75 and 80.
- Inputs:** A slider input titled "Number of bins" with a value of 30, ranging from 1 to 50.
- Console:** Displays the command `> runApp('Desktop')` and the resulting output: "Listening on http://127.0.0.1:5055". An orange arrow points from the "Listening on" message to the "Histogram of x" plot area.



## Old Faithful Geyser Data

Number of bins:

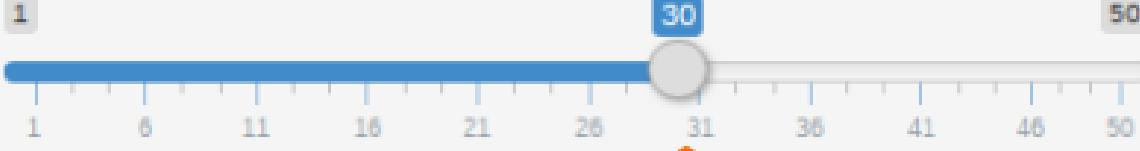
1    6    11    16    21    26    31    36    41    46    50



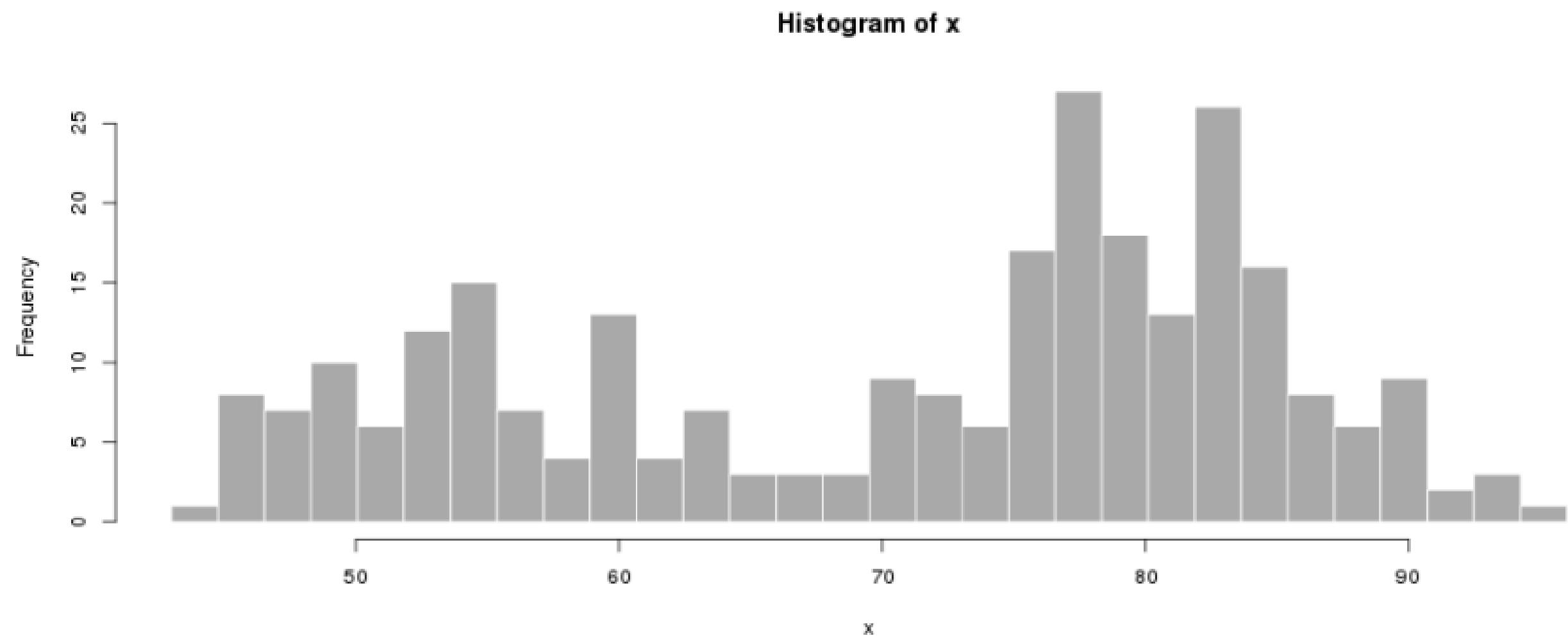


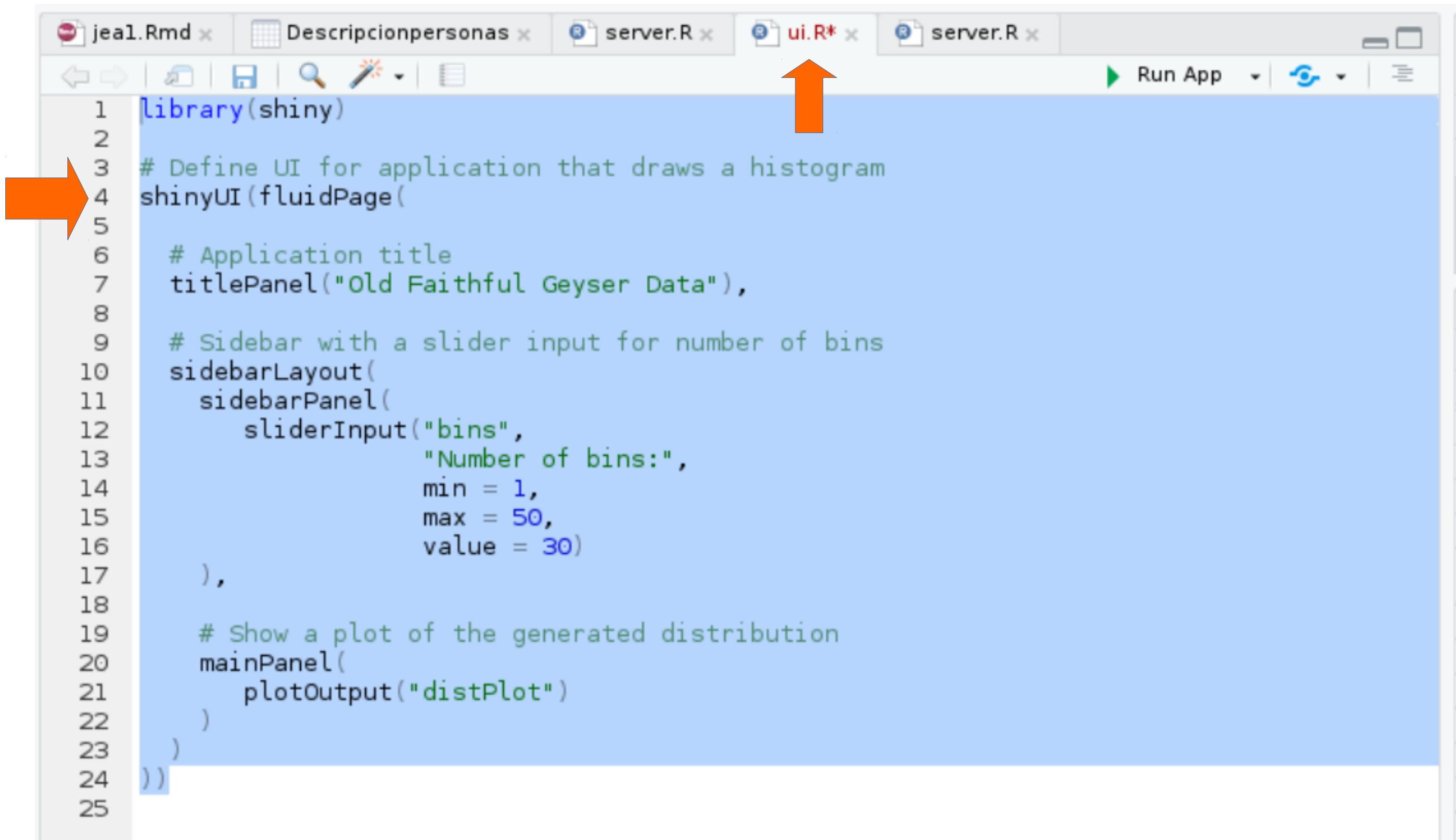
## Old Faithful Geyser Data

Number of bins:

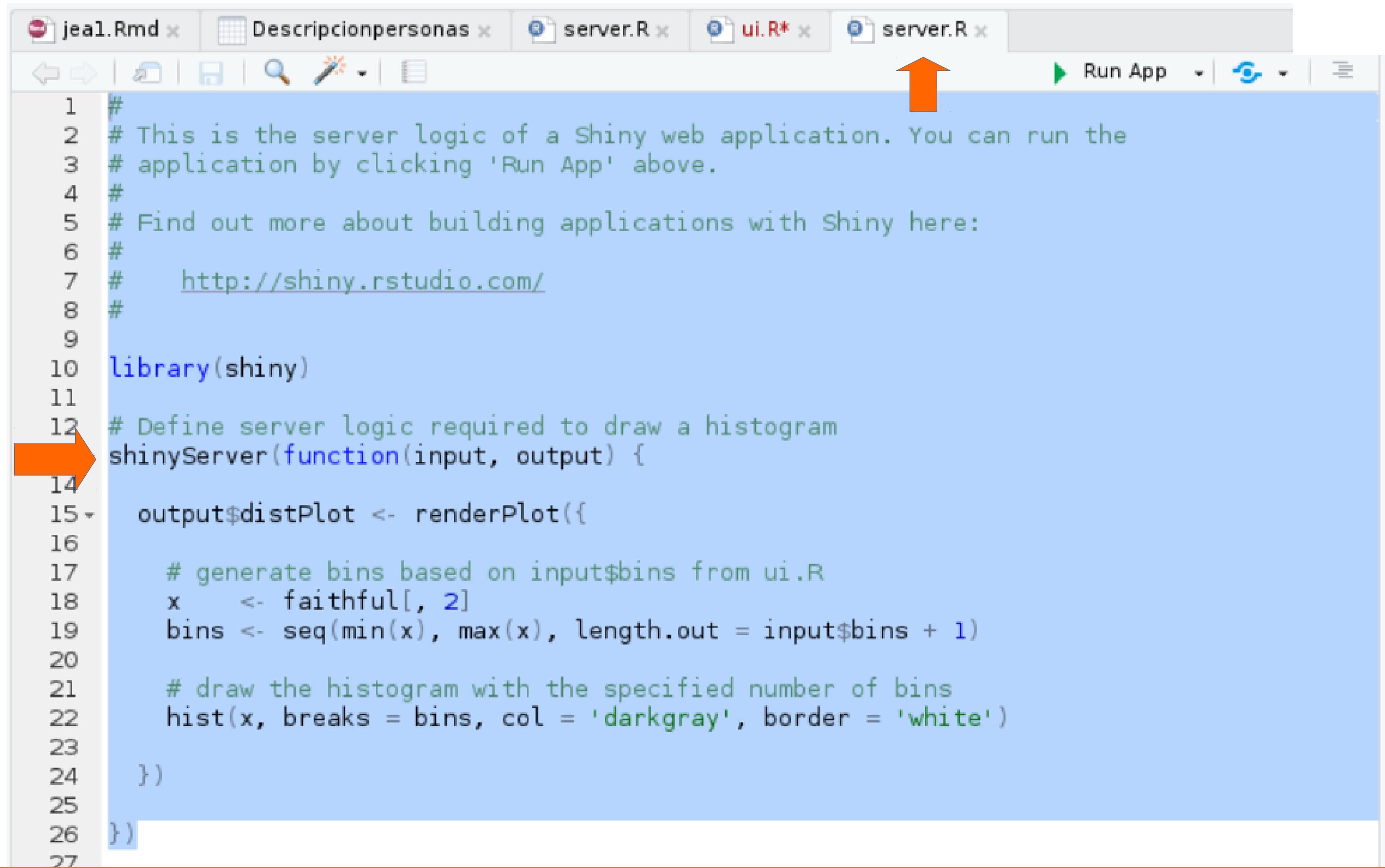


A horizontal slider with a range from 1 to 50. The value is currently set to 30, indicated by a blue box and a grey circle. An orange arrow points to the slider handle.





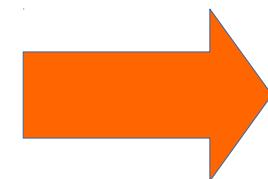
```
1 library(shiny)
2
3 # Define UI for application that draws a histogram
4 shinyUI(fluidPage(
5
6   # Application title
7   titlePanel("Old Faithful Geyser Data"),
8
9   # Sidebar with a slider input for number of bins
10  sidebarLayout(
11    sidebarPanel(
12      sliderInput("bins",
13        "Number of bins:",
14        min = 1,
15        max = 50,
16        value = 30)
17    ),
18
19    # Show a plot of the generated distribution
20    mainPanel(
21      plotOutput("distPlot")
22    )
23  )
24))
25
```



```
jeal.Rmd x Descripcionpersonas x server.R x ui.R* x server.R x
[File] [New] [Open] [Save] [Find] [Edit] | Run App | Help

1 # 
2 # This is the server logic of a Shiny web application. You can run the
3 # application by clicking 'Run App' above.
4 #
5 # Find out more about building applications with Shiny here:
6 #
7 #   http://shiny.rstudio.com/
8 #
9
10 library(shiny)
11
12 # Define server logic required to draw a histogram
shinyServer(function(input, output) {
14
15   output$distPlot <- renderPlot({
16
17     # generate bins based on input$bins from ui.R
18     x    <- faithful[, 2]
19     bins <- seq(min(x), max(x), length.out = input$bins + 1)
20
21     # draw the histogram with the specified number of bins
22     hist(x, breaks = bins, col = 'darkgray', border = 'white')
23
24   })
25
26 })
27
```

**Diamonds**



**educacion.Estatal.Costa.Rica**

```
1 library(shiny)
2 library(ggplot2)
3 library(DT)
4
5 # Define UI for application diamonds
6
7 shinyUI(fluidPage(
8
9   tabsetPanel( tabPanel("All Data",
10               titlePanel("Diamonds DataSet"),
11               fluidRow(column(DT::dataTableOutput("RawData")
12                             ,width = 12)))
13   ),
14   tabPanel("Grafica",
15             sidebarLayout(sidebarPanel("Control"),
16                           mainPanel(
17                             plotOutput("plot1")
18                           )
19                           )
20   )))
21 ))
22 )
```

```
shinyUI(fluidPage(  
  
  tabsetPanel( tabPanel("All Data",  
    titlePanel("Diamonds DataSet"),  
    fluidRow(column(DT::dataTableOutput("RawData")  
      ,width = 12))  
  ),  
  tabPanel("Grafica",  
    sidebarLayout(sidebarPanel("Control"),  
    mainPanel(  
      plotOutput("plot1")  
    )  
  )  
))  
))
```



```
1 library(shiny)
2 library(ggplot2)
3 library(DT)

4

5 # Define server logic required to draw grafica

6

7 shinyServer(function(input, output) {

8

9   output$RawData <- DT::renderDataTable(
10    DT::datatable(
11      diamonds
12    ),
13    options=list(lengthMenu=list(c(7,15,1), c('5','10','All')),
14    pageLength=15),
15    filter="top",
16    selection = 'multiple',
17    style='bootstrap'
18  )
19 })
20
```

to draw grafica

```
put) {
  DataTable(
    st(c(7,15,1), c('5
      carat ↕ cut ↕ color ↕ clarity ↕ depth ↕ table ↕ price ↕ x ↕ y ↕ z ↕
      AI ["⊗ AI All AI AI AI AI AI AI AI AI
      3 0.23 Good E VS1 56.9 65 327 4.05 4.07 2.31
      5 0.31 Good J SI2 63.3 58 335 4.34 4.35 2.75
      11 0.3 Good J SI1 64 55 339 4.25 4.28 2.73
      18 0.3 Good J SI1 63.4 54 351 4.23 4.29 2.7
      19 0.3 Good J SI1 63.8 56 351 4.23 4.26 2.71
      21 0.3 Good I SI2 63.3 56 351 4.26 4.3 2.71
      36 0.23 Good F VS1 58.2 59 402 4.06 4.08 2.37
      Showing 1 to 7 of 4,906 entries (filtered from 53,940 total entries)
      Previous 1 2 3 4 5 ... 701 Next
```

# Diamonds DataSet

Show 5 entries

	carat	cut	color	clarity	depth	table	pri
20839	2.02	EX	I	SI2	63.6	57	3260
22832	2.27	Good	H	SI1	57	64	3261
23540	3.00	Good	E	SI1	64.2	65	3262
24125	2.36	Good	J	SI2	58.9	64	3263
24617	2.30	Good	I	SI2	63.8	55	3264
24628	2.34	Good	J	VS2	63.9	62	3265
24841	2.33	Good	G	SI2	63.9	60	3266

Showing 1 to 7 of 30 entries (filtered from 53,940 total entries)

P

# Diamonds DataSet

Show 5 entries

carat	cut	color	clarity	depth	table
24841	2.33	Good	G	SI2	63.9
25481	2.51	Good	G	SI2	59.5
27240	2.52	Good	G	SI2	63.7
27740	2.8	Good	G	SI2	63.8

Showing 1 to 4 of 4 entries (filtered from 53,940 total entries)

[All Data](#)[Grafica](#)

# Diamonds DataSet

Show  entries

	carat	cut	color	clarity	depth	table	price
24841	2.33	Good	G	SI2	63.9	60	13242
25481	2.51	Good	G	SI2	59.5	65	14251
27240	2.52	Good	G	SI2	63.7	59	17608
27740	2.8	Good	G	SI2	63.8	58	18788

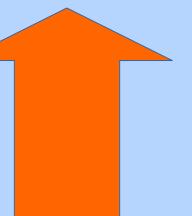
Showing 1 to 4 of 4 entries (filtered from 53,940 total entries)

```
library(shiny)
library(ggplot2)
library(DT)

# Define UI for application educacion estatal Costa Rica

shinyUI(fluidPage(

  tabsetPanel( tabPanel("All Data",
                        titlePanel("Educacion Estatal Costa Rica"),
                        fluidRow(column(DT::dataTableOutput("RawData")
                                      ,width = 12))
),
  tabPanel("Grafica",
           sidebarLayout(sideBarPanel("Control"),
                         checkboxGroupInput("Colores",
                                           "Seleccionar Color",
                                           choices = unique(diamonds$color),
                                           selected = unique(diamonds$color)))
),
  mainPanel(
    plotOutput("plot1")
)
)
)
)
)
```



```
1 library(shiny)
2 library(ggplot2)
3 library(DT)

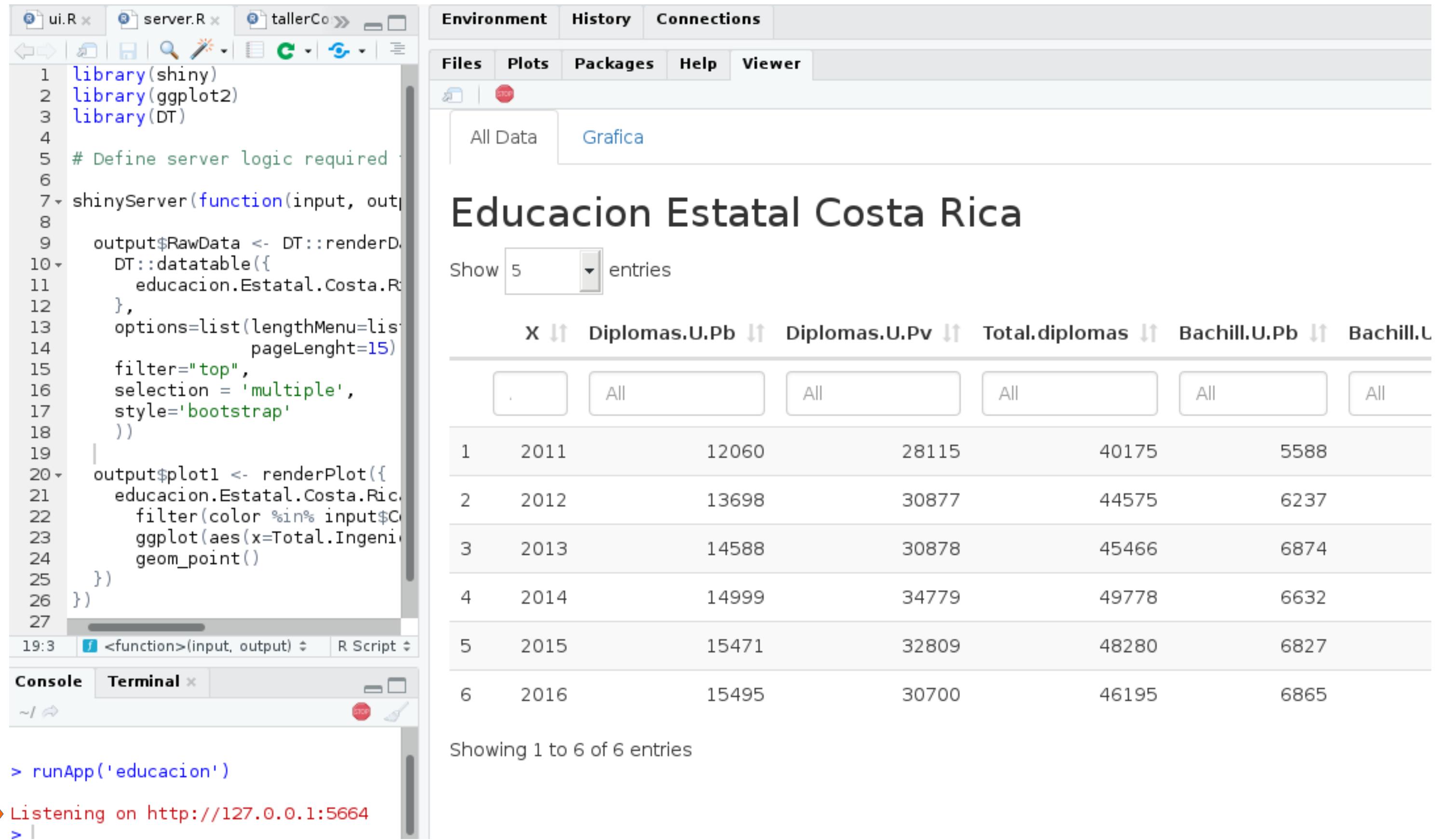
4

5 # Define server logic required to draw grafica
6

7 shinyServer(function(input, output) {
8

9   output$RawData <- DT::renderDataTable(
10    DT::datatable(
11      educacion.Estatal.Costa.Rica
12    ),
13    options=list(lengthMenu=list(c(7,15,1), c('5','10','All')),
14               pageLength=15),
15    filter="top",
16    selection = 'multiple',
17    style='bootstrap'
18  )
19

20   output$plot1 <- renderPlot({
21     educacion.Estatal.Costa.Rica %>%
22       filter(color %in% input$Colores) %>%
23       ggplot(aes(x=Total.Ingenieria,y=Total.Cienc.Soc,colour=color))+
24       geom_point()
25   })
26 }
27 )
```



The screenshot shows the RStudio interface with the following components:

- Code Editor:** Displays the `shiny.R` script. The code defines a shiny server function that renders a data table and a plot.
- Data View:** Shows a data table titled "Educacion Estatal Costa Rica" with columns: X, Diplomas.U.Pb, Diplomas.U.Pv, Total.diplomas, Bachill.U.Pb, and Bachill.U.Pv. The table displays data from 2011 to 2016.
- Console:** Displays the command `> runApp('educacion')` and the response "Listening on http://127.0.0.1:5664". An orange arrow points to this line.

	X	Diplomas.U.Pb	Diplomas.U.Pv	Total.diplomas	Bachill.U.Pb	Bachill.U.Pv
1	2011	12060	28115	40175	5588	
2	2012	13698	30877	44575	6237	
3	2013	14588	30878	45466	6874	
4	2014	14999	34779	49778	6632	
5	2015	15471	32809	48280	6827	
6	2016	15495	30700	46195	6865	

Showing 1 to 6 of 6 entries

Educacion Estatal Cos x

127.0.0.1:5664

Apps Other bookmarks

All Data Grafica

## Educacion Estatal Costa Rica

Show 5 entries Search:

	X	Diplomas.U.Pb	Diplomas.U.Pv	Total.diplomas	Bachill.U.Pb	Bachill.U.Pv	Total.Bachill	Licenciatura.U.Pb	Licenciatura.U.Pv	Total.Licenciat	E
4	2014	14999	34779	49778	6632	16348	22980	3,648	14,918	18,566	
5	2015	15471	32809	48280	6827	15147	21974	3,717	14,242	17,959	
6	2016	15495	30700	46195	6865	14100	20965	3,926	13,433	17,359	

Showing 1 to 3 of 3 entries (filtered from 6 total entries)

Previous 1 Next

U.Pb	Ingen.U.Pv	Total.Ingenieria	Cienc.Salud.U.Pb	Cienc.Salud.U.Pv	Total.Cienc.Salud	Pib.per.cápita.US	Inversion.Educación.Estatal...PIB	Competitividad
All	All	All	All	All	All	7.44 ... 8.17	All	All
2,042	3383	1,026	6,133	7159	10647	7.44	8.17	4.35
1,950	3331	1,076	5,695	6771	11406	7.44	8.17	4.42
1,969	3365	1,023	4,991	6014	11825	7.44	8.17	4.41

Environment History Connections

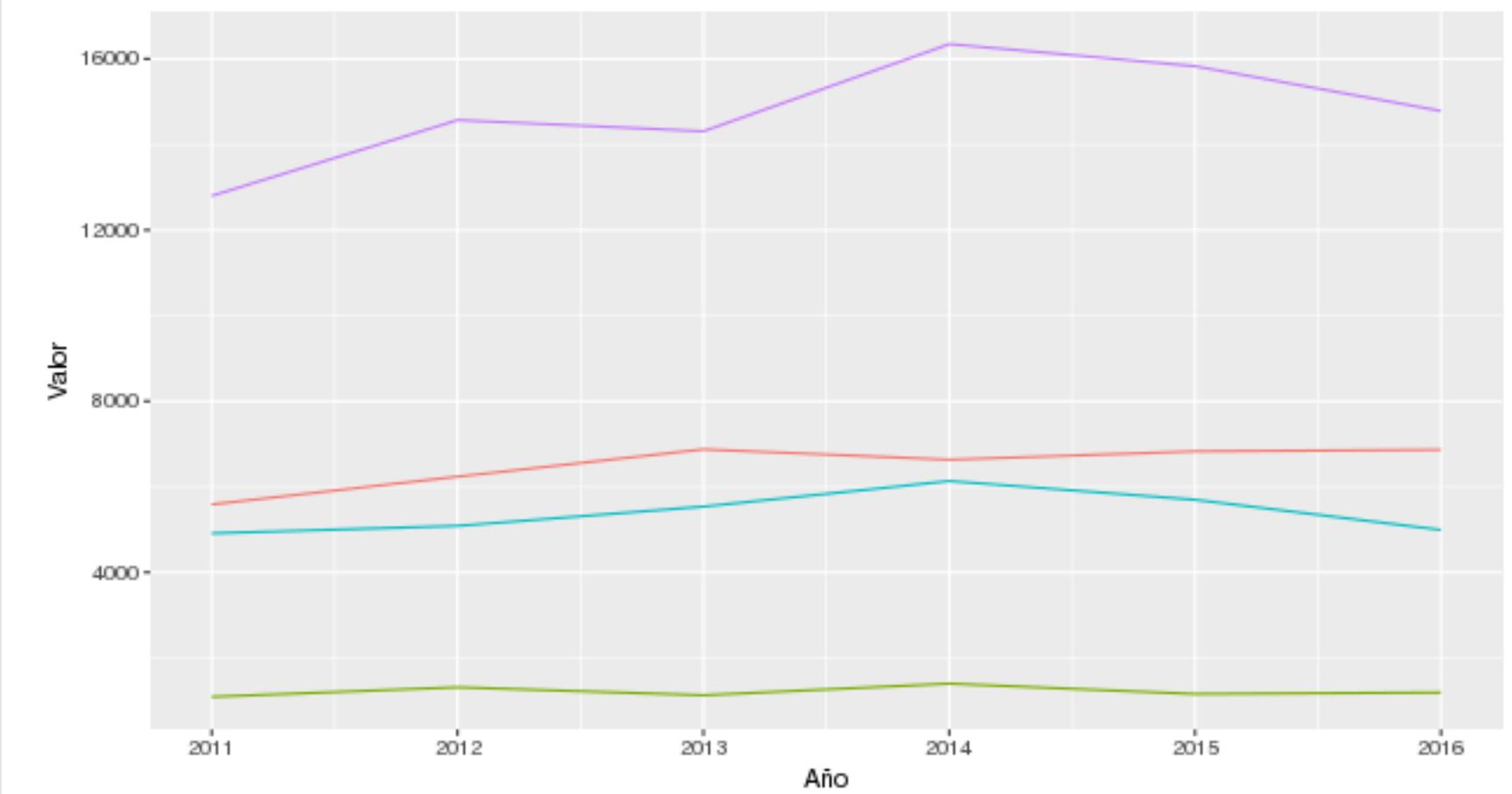
Files Plots Packages Help Viewer

Analisis temporal Analisis cruzado

Escoja las variables (maximo 4):

Bachill.U.Pb Cienc.Bsc.U.Pv  
Cienc.Salud.U.Pv Cienc.Soc.U.Pv

Evolución de variables.



Año	Bachill.U.Pb	Cienc.Bsc.U.Pv	Cienc.Salud.U.Pv	Cienc.Soc.U.Pv
2011	~5500	~2500	~4500	~12500
2012	~5800	~2600	~4600	~14500
2013	~6000	~2700	~4800	~14000
2014	~6200	~2800	~5200	~16500
2015	~6300	~2700	~5000	~16000
2016	~6400	~2600	~4800	~15500

125:5 server(input, output, session) #

R Script

Console Terminal

Listening on http://127.0.0.1:5664

> runApp('RDatelligence/CR/shiny.R')

Listening on http://127.0.0.1:5664

```

taRicaSeptiembre.R x HistoriaEducacionEstatalCR.Rmd x shiny.R x educacion.R x
1 shinyApp(
2
3
4
5
6 ui = fluidPage(
7
8   tabsetPanel(type = "tabs",
9     tabPanel("Analisis temporal",
10       selectizeInput("state", "Escoja las varia-
11         choices = c(" "),#Declarar
12         options = list(maxItems =
13           multiple = TRUE #Permitir
14
15       ),
16
17       plotOutput("tempAnalysis") #Graficar anál
18
19     ),
20
21     tabPanel("Analisis cruzado",
22       selectizeInput("state2", "Escoja las dos
23         choices = c(" "), #Declarar
24         options = list(maxItems =
25           multiple = TRUE #Permitir
26
27
125:5 server(input, output, session) <-
```

**Environment History Connections**

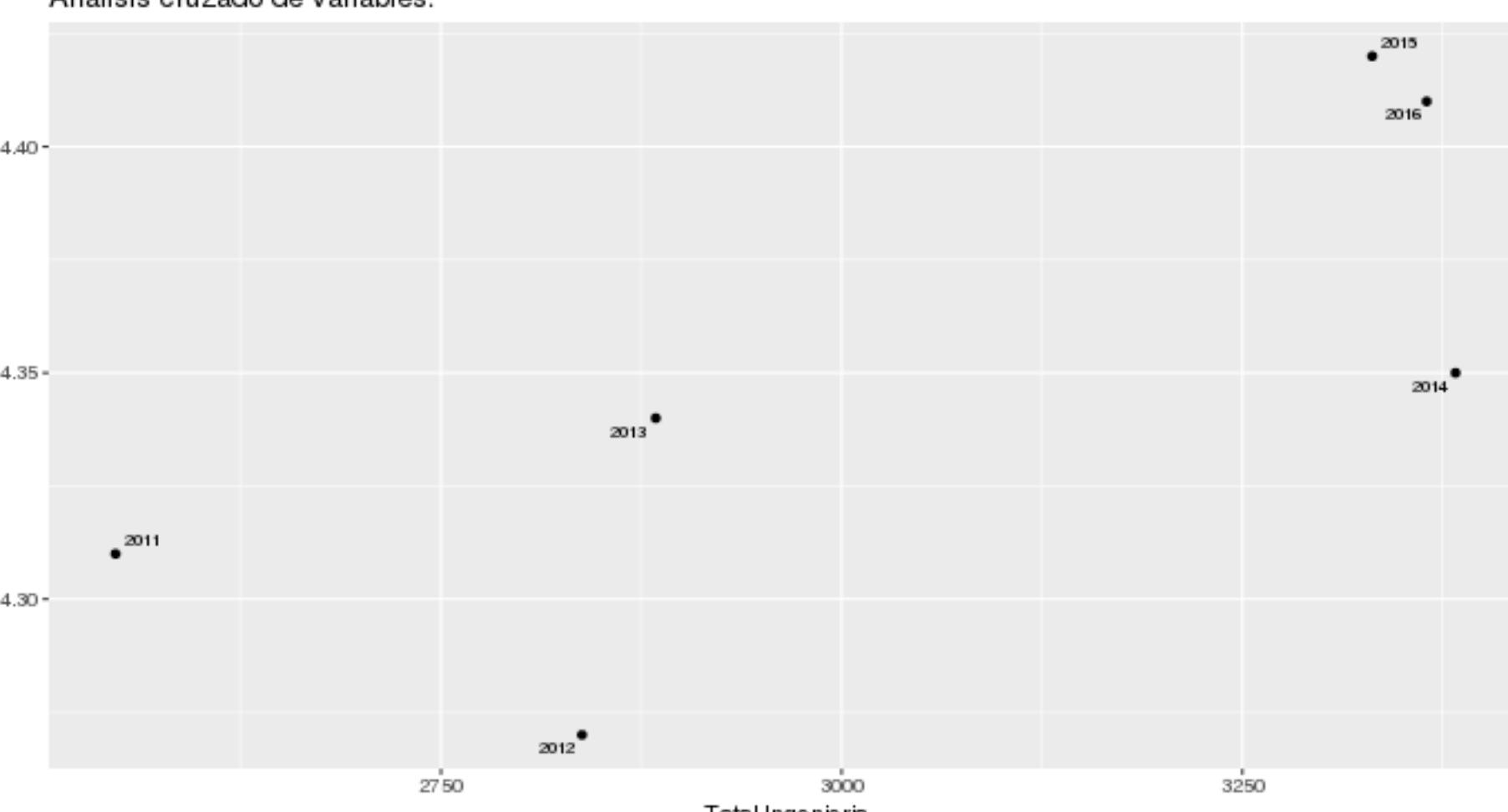
**Files Plots Packages Help Viewer**

**Analisis temporal Analisis cruzado**

**Escoja las dos variables a analizar:**

Total.Ingenieria Competitividad

Análisis cruzado de variables.



Año	Total.Ingenieria	Competitividad
2011	~2850	~4.31
2012	~2950	~4.32
2013	~3050	~4.34
2014	~3200	~4.35
2015	~3250	~4.41
2016	~3250	~4.40

Console Terminal

Listening on http://127.0.0.1:5664

> runApp('RDatelligence/CR/shiny.R')

Listening on http://127.0.0.1:5664

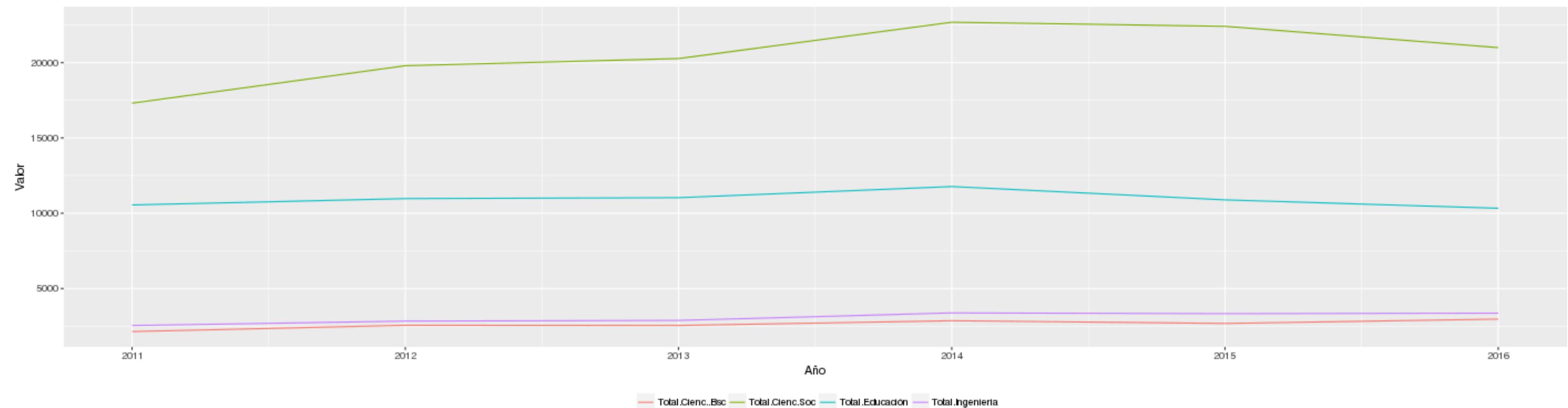
[Analisis temporal](#)      [Analisis cruzado](#)

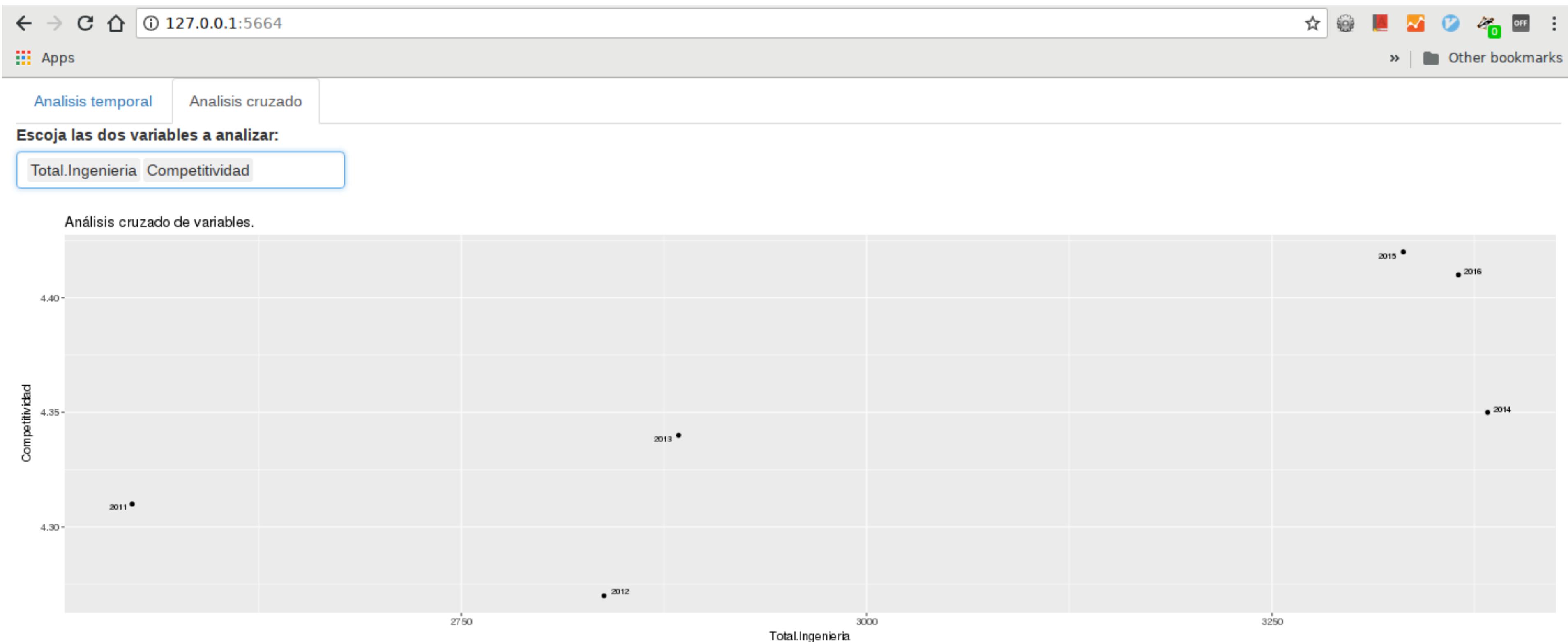
## Analisis cruzado

**Escoja las variables (maximo 4):**

Total.Cienc.Soc Total.Ingenieria  
Total.Educación Total.Cienc.Bs

## Evolución de variables.





```
1 shinyApp(  
2   ui = fluidPage(  
3     tabsetPanel(type = "tabs",  
4       tabPanel("Analisis temporal",  
5         selectizeInput("state", "Escoja las variables (maximo 4):",  
6           choices = c(" "), #Declarar que por defecto no se escoja ninguna variable des  
7           options = list(maxItems = 4), #Limita el número máximo de variables a escoger  
8           multiple = TRUE #Permitir escoger más de una variable  
9         ),  
10        ),  
11        plotOutput("tempAnalysis") #Graficar análisis temporal  
12      ),  
13      ),  
14      tabPanel("Analisis cruzado",  
15        selectizeInput("state2", "Escoja las dos variables a analizar:",  
16          choices = c(" "), #Declarar que por defecto no se escoja ninguna variable des  
17          options = list(maxItems = 2), #Limitar el número máximo de variables a escoger  
18          multiple = TRUE #Permitir escoger más de una variable  
19        ),  
20        plotOutput("crossAnalysis") #Graficar análisis cruzado  
21      ),  
22    ),  
23  ),  
24  ),  
25  ),  
26  ),  
27  ),  
28  ),  
29  ),  
30  ),  
31  ),  
32  server = function(input, output, session) {  
33    library(ggplot2)  
34  }
```



**sonia ardila**

sap0408

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permanente! Data Storyteller!

[Edit bio](#)

 @digital\_

 Colombia

 sap0408@gmail.com

 <http://www.datalab.co>

@soniaardila1

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#### [eep](#)

Datos países cuatro continentes relacionados con empleo,  
educación y competitividad.

#### [dashoardeducacionE](#)

dashboard con datos de educación estatal en Costa Rica  
por carreras, tipo de títulos y otras variables. 2.011-2.016

32 contributions in the last year

[Contribution settings](#) ▾

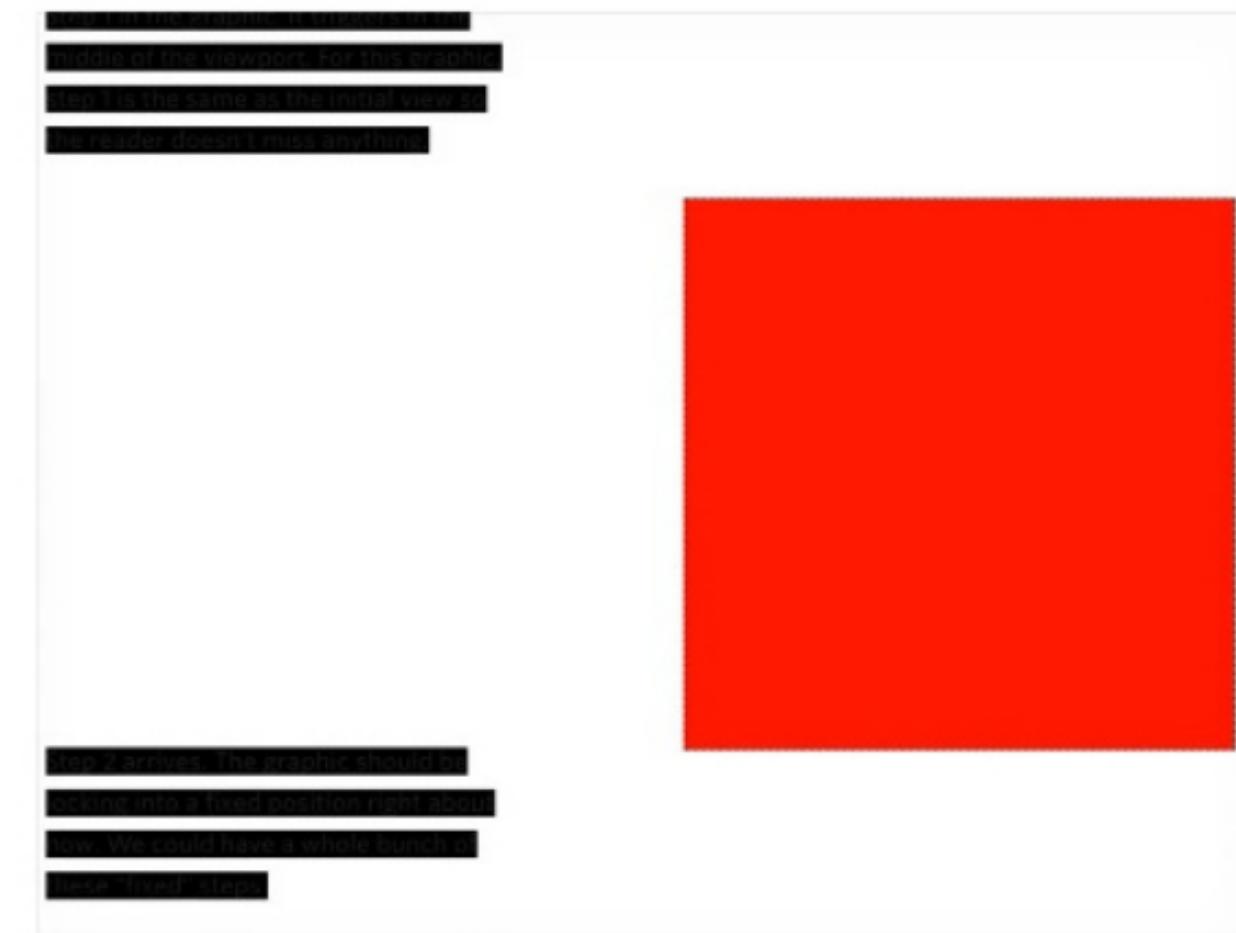
@Scientific\_data

---

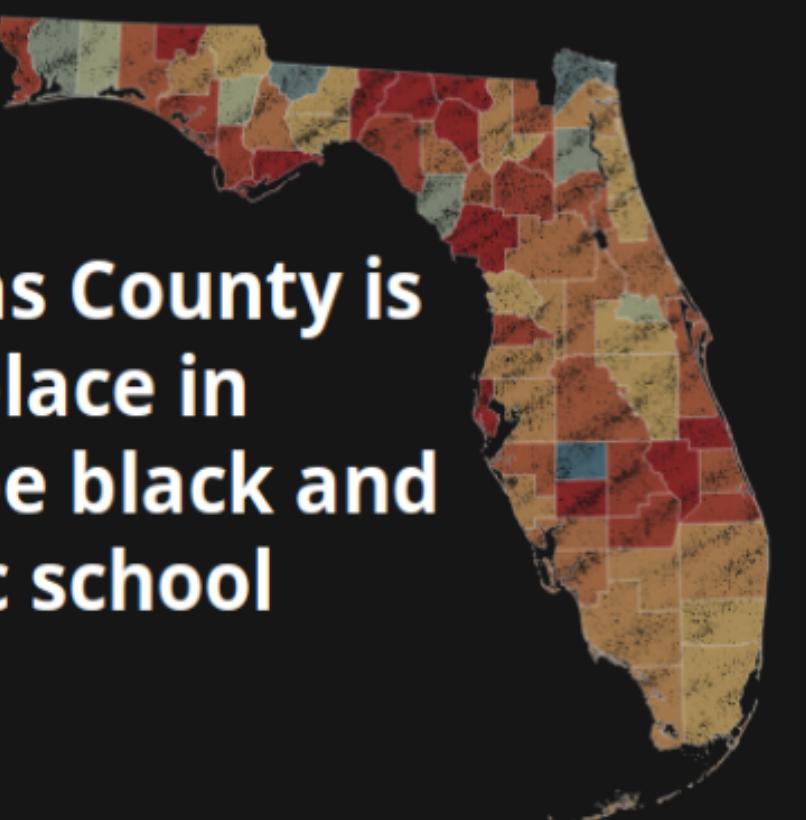
## DATA VIZ TECHNIQUES

---

# SCROLLYTELLING!



Tampa Bay Times

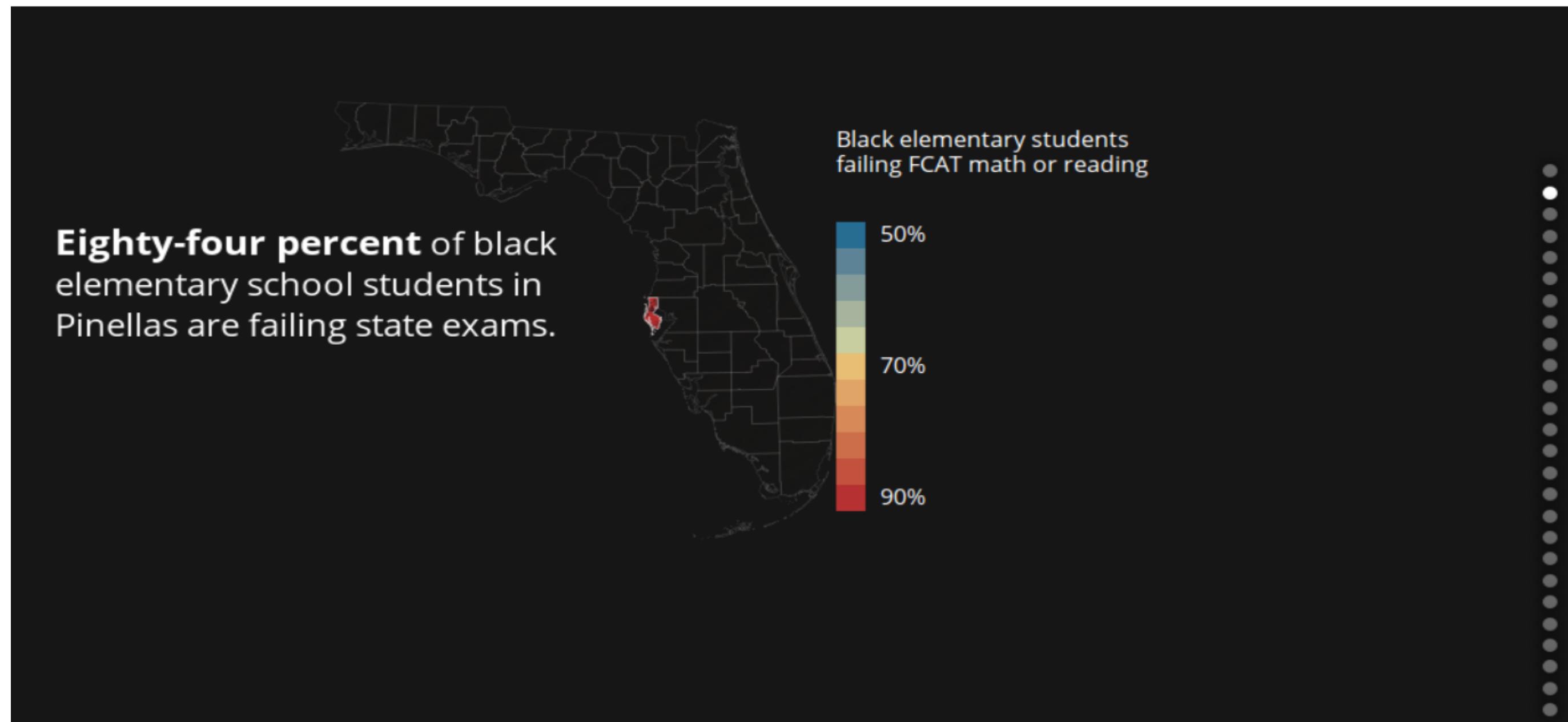


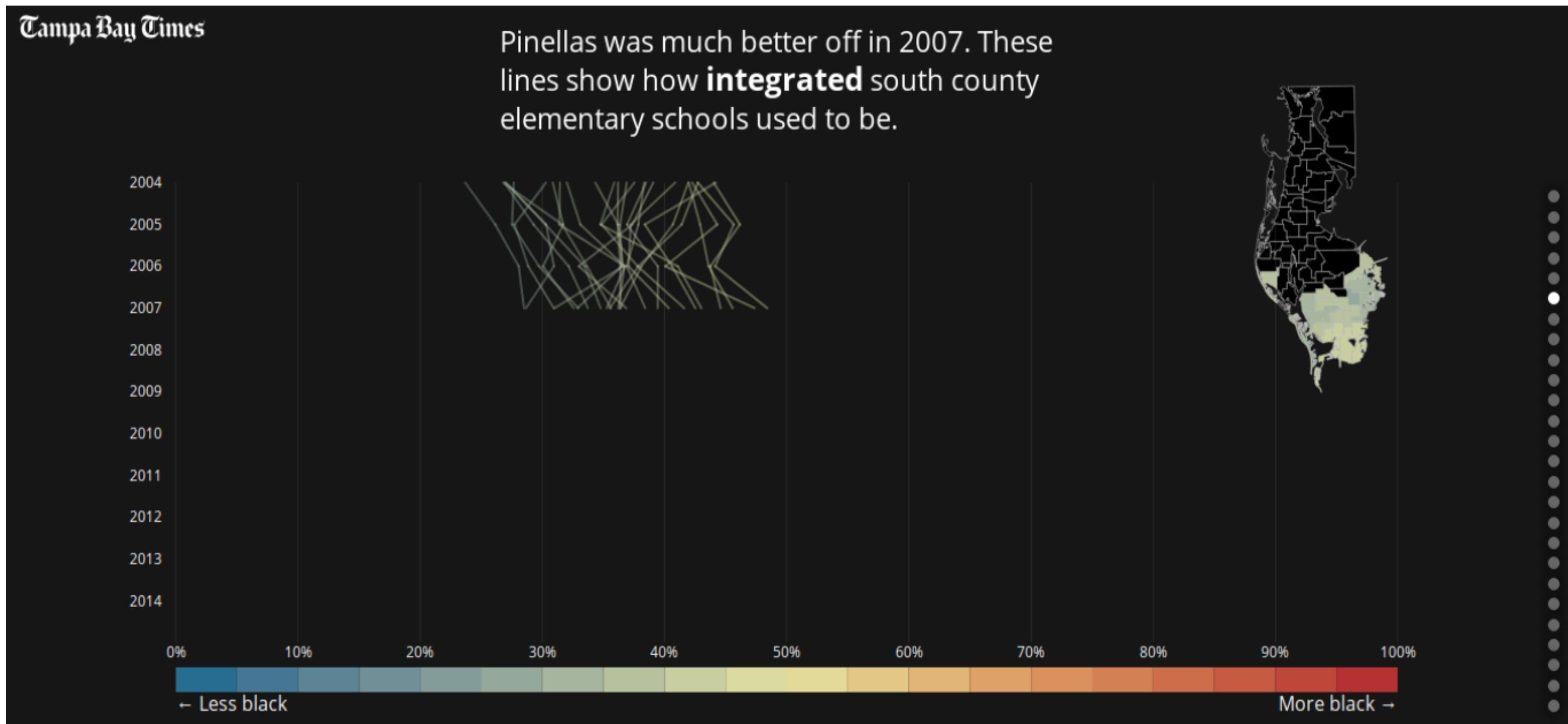
# Why Pinellas County is the worst place in Florida to be black and go to public school

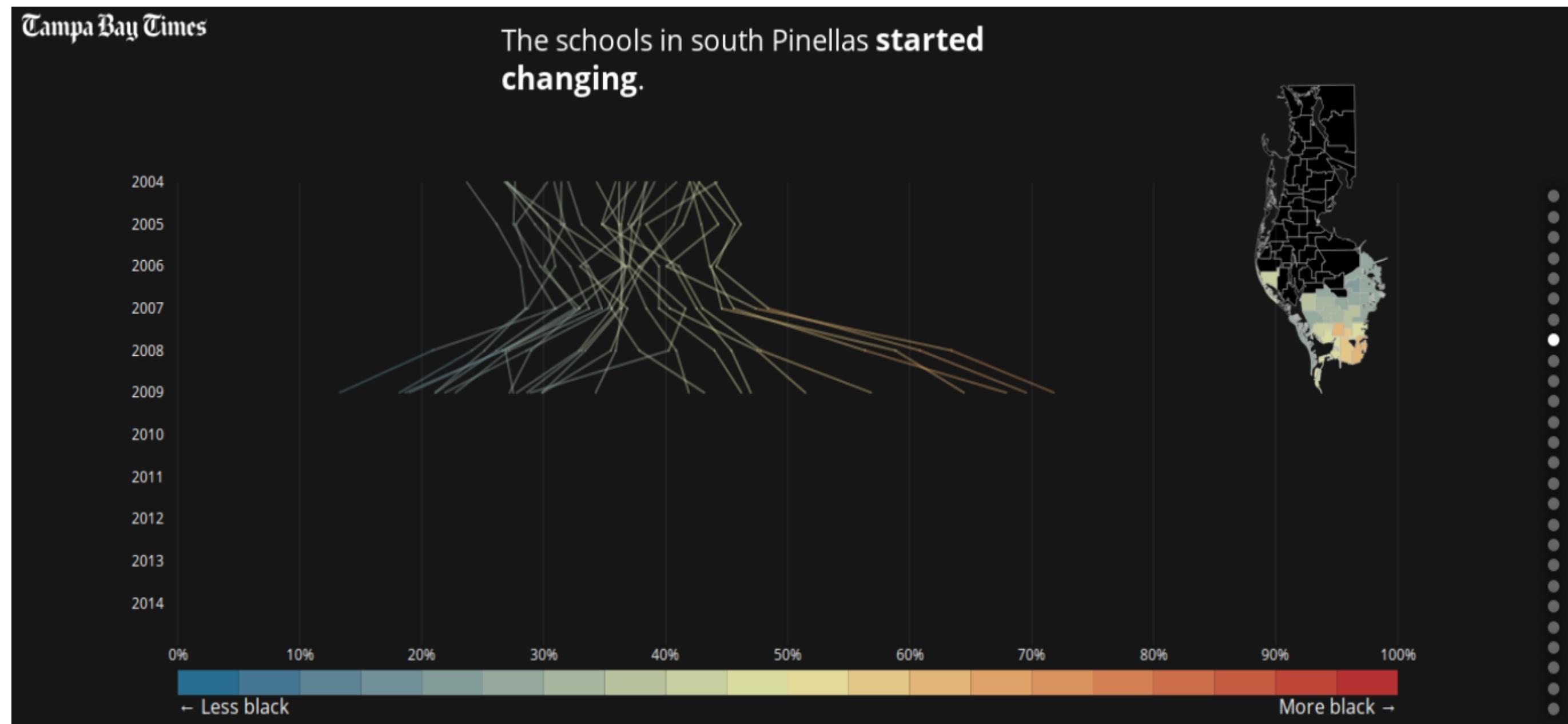
By NATHANIEL LASH  
*Times Staff Writer*

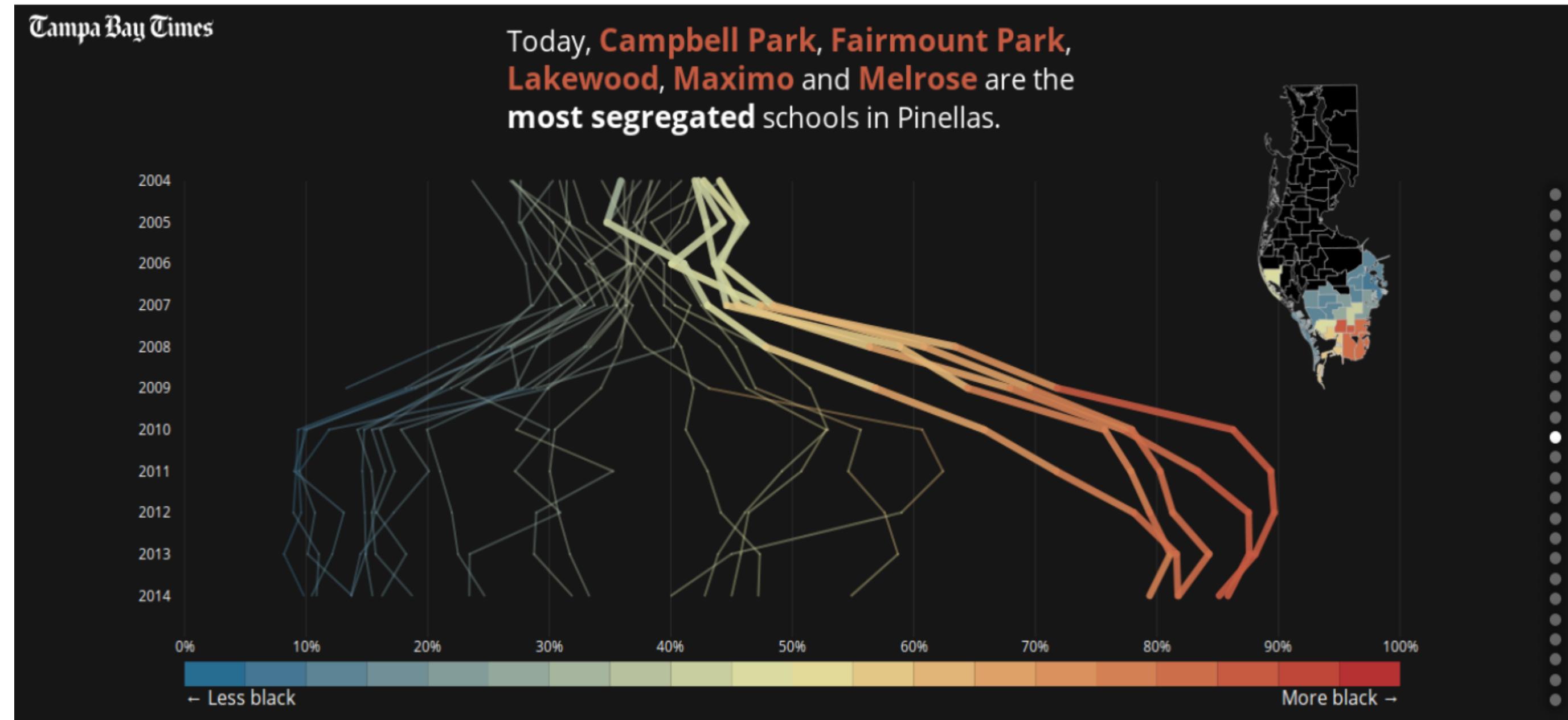
AUG. 12, 2015

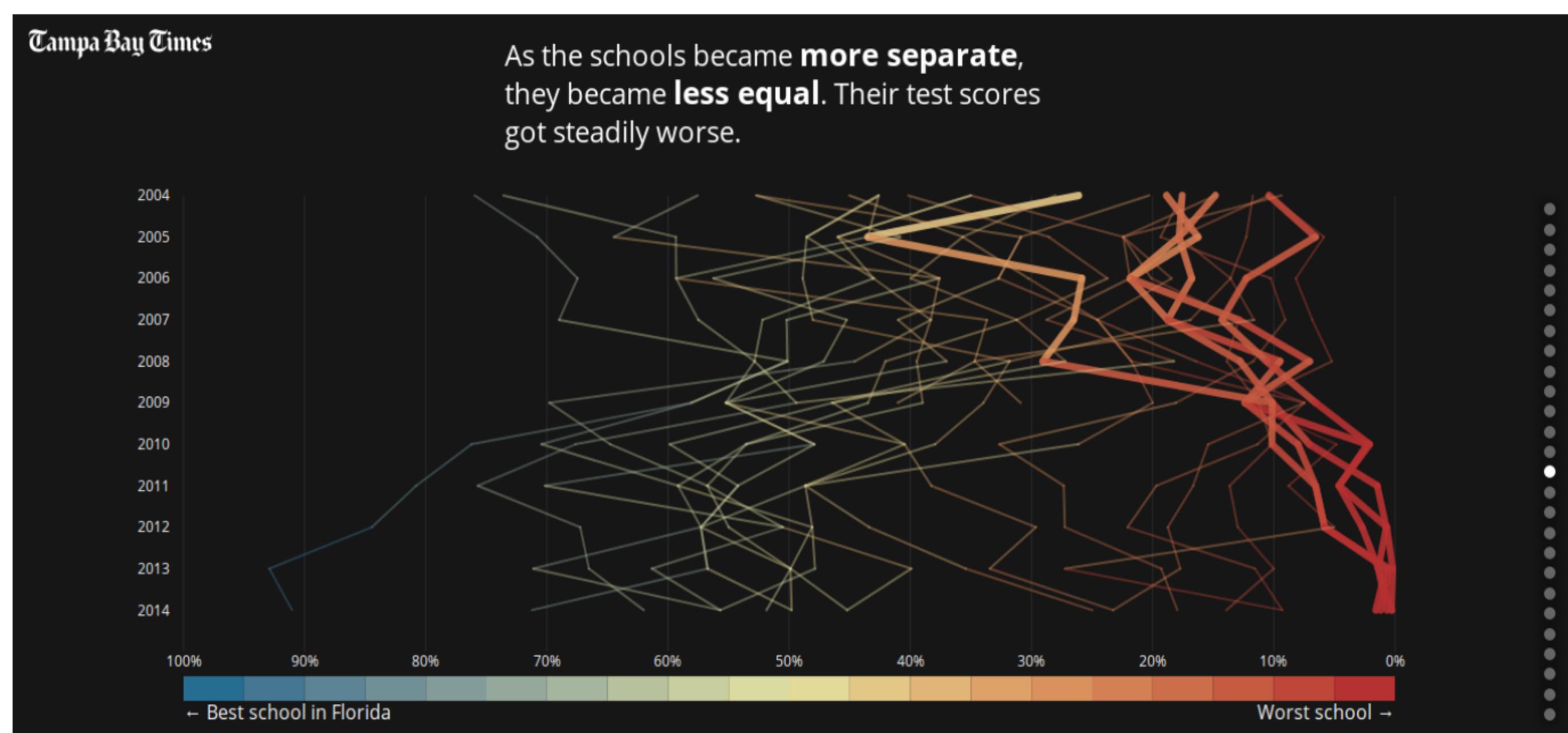
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Tampa Bay Times

Who is responsible?



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## John Alexis Guerra Gómez

I do **Visual Analytics**, i.e., I include the **user** in the big data analysis/science loop.

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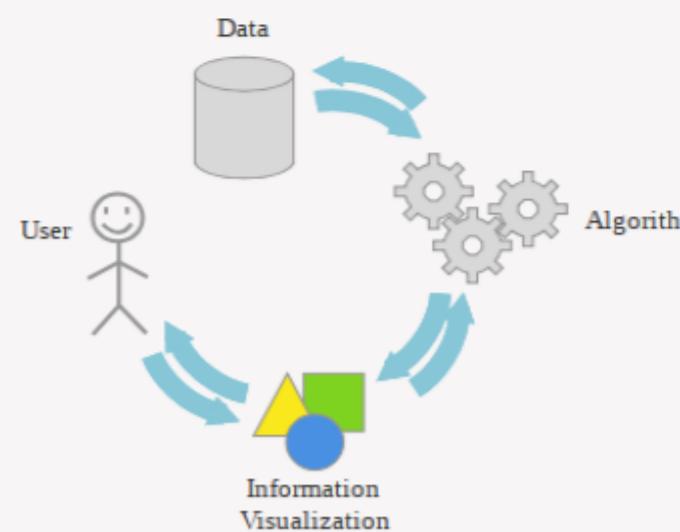
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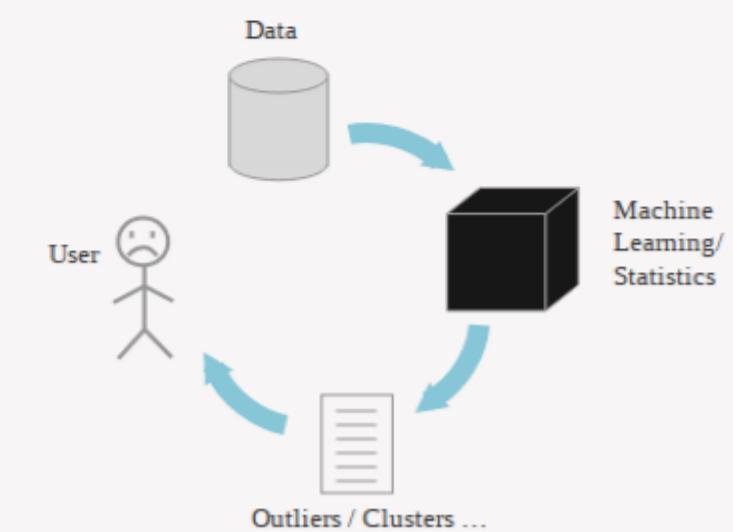
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I create **visual analytics** systems that leverage interactive information



Traditional data science excludes users from the exploration process.

# Resultados Elecciones Colombia Segunda Vuelta 2018



## ¿Cómo votaron los colombianos en la segunda vuelta presidencial, 2018?

Este es un análisis de la votación de los municipios colombianos en la segunda vuelta de las elecciones presidenciales.

Desplace la página hacia abajo para continuar.

# <https://youtu.be/6xsvGYIxJok>



Making data mean more through storytelling | Ben Wellington | TEDxBroadway





data



# WORKSHOP