covid19-peru

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Comparing the TOTAL of people FULLY VACCINATED (2 doses) and the TOTAL confirmed DEATHS from COVID-19 by each of the 24 departments of Peru

All data for this project was obtained through the **"Plataforma Nacional de Datos Abiertos"** of Peru https://www.datosabiertos.gob.pe/.

For more information on data preprocessing visit the following GitHub repository https://github.com/xxotto/covid19-peru.

1. Load the packages

```
library(ggplot2)
library(ggrepel)
library(dplyr)
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
library(broom)
library(ggpubr)
```

2. Import data

Read the file of "TOTAL number of people fully vaccinated (2 doses) and the TOTAL confirmed DEATHS from COVID-19 by each of the 24 departments of Peru":

```
vnd_xdep = read.csv('Data/vac_fal_x_departamento.csv')
```

3. Linear model

```
lm <- lm(tasa_mortalidad ~ vac_porcentaje, data = vnd_xdep)
summary(lm)
```

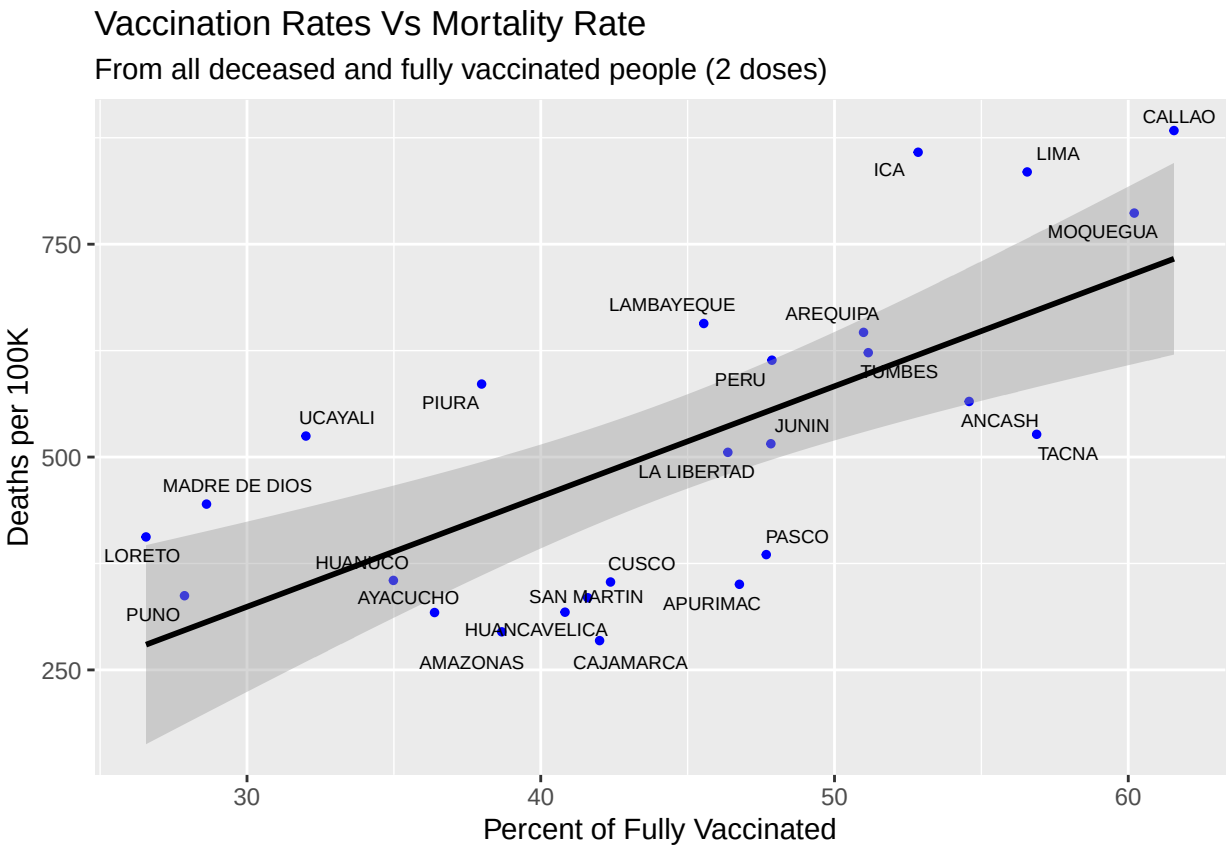
```
##
## Call:
```

```
## lm(formula = tasa_mortalidad ~ vac_porcentaje, data = vnd_xdep)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -195.192 -137.507   -3.059  130.097  237.909
##
## Coefficients:
##                Estimate Std. Error t value Pr(>|t|)
## (Intercept)     -64.372    126.712  -0.508   0.6161
## vac_porcentaje   12.952      2.784   4.653   0.0001 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 136.6 on 24 degrees of freedom
## Multiple R-squared:  0.4742, Adjusted R-squared:  0.4523
## F-statistic: 21.65 on 1 and 24 DF,  p-value: 0.0001004
```

4. Linear model

```
lm_graph<-ggplot(vnd_xdep, aes(x=vac_porcentaje, y=tasa_mortalidad)) +
                geom_point(color = "blue", size = 1) +
                geom_smooth(method="lm", col="black") +
                ggtitle("Vaccination Rates Vs Mortality Rate",
                        subtitle="From all deceased and fully vaccinated people (2 doses)") +
                xlab("Percent of Fully Vaccinated") + ylab("Deaths per 100K") +
                geom_text_repel(aes(label = departamento), size = 2.3,
                                hjust = 0.5, vjust = 0.5,
                                min.segment.length = Inf)
lm_graph
```

```
## `geom_smooth()` using formula 'y ~ x'
```


Vaccination Rates Vs Mortality Rate
From all deceased and fully vaccinated people (2 doses)
Deaths per 100K
750
500
250
30
40
50
60
Percent of Fully Vaccinated
CALLAO
ICA
LIMA
MOQUEGUA
LAMBAYEQUE
AREQUIPA
PERU
TUMBES
PIURA
UCAYALI
ANCASH
JUNIN
TACNA
LA LIBERTAD
MADRE DE DIOS
PASCO
LORETO
HUANUCO
CUSCO
AYACUCHO
SAN MARTIN
APURIMAC
PUNO
HUANCAVELICA
AMAZONAS
CAJAMARCA