

Choropleth Map of Poland (Area and Population)

An example in R (RStudio) and Quarto

Mirosława Kołodziejczyk

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Table of contents

1 Packages used	1
2 Data Sources	2
3 Poland. Geographical location	2
4 Poland in Europe	3
5 Seats of the Governors	5
6 Voivodship area and population	6
7 Selected voivodeships	8
7.1 Lublin voivodeship. Counties area and population	8
7.2 Podlaskie voivodship. Counties area and population	9

This is an example of choropleth maps created in R (RStudio), using the ‘ggplot2’ library. The maps show the area and population of Poland by voivodeship (province) and selected county (district).

A dynamic version of the map (leaflet) as well as animations can be found [here](#).

1 Packages used

```
library(sf)
library(dplyr)
library(ggplot2)
library(ggspatial)
library(readxl)
library(gridExtra)
```

2 Data Sources

Maps and statistics were taken from the following sources:

https://gadm.org/download_country_v3.html,

<https://stat.gov.pl/statystyka-regionalna/>.

```
gadm_3sf <- readRDS("dane/gadm36_POL_3_sf.rds")
gadm_2sf <- readRDS("dane/gadm36_POL_2_sf.rds")
gadm_1sf <- (readRDS("dane/gadm36_POL_1_sf.rds"))
gadm_0sf <- (readRDS("dane/gadm36_POL_0_sf.rds"))

woj <- read_excel("wojewodztwa.xlsx")
```

3 Poland. Geographical location

```
war_x = 21.03
war_y = 52.2

ggplot(gadm_0sf) +
# annotation_spatial(gadm_0sf) +
  layer_spatial(gadm_0sf) +
  annotation_map_tile(type = "osm", zoomin = -1) +
  geom_sf(data = gadm_0sf, fill = "#48948e") +
  coord_sf(
    # Longitude
    xlim = c(-160, 160),
    # Latitude
    ylim = c(-80, 80)) +
  geom_hline(yintercept = 0, linetype = "dashed", color = "#5a84b8",
```

```

      size = 0.1) +
geom_vline(xintercept = 0, linetype = "dashed", color = "#5a84b8",
            size = 0.1)

```

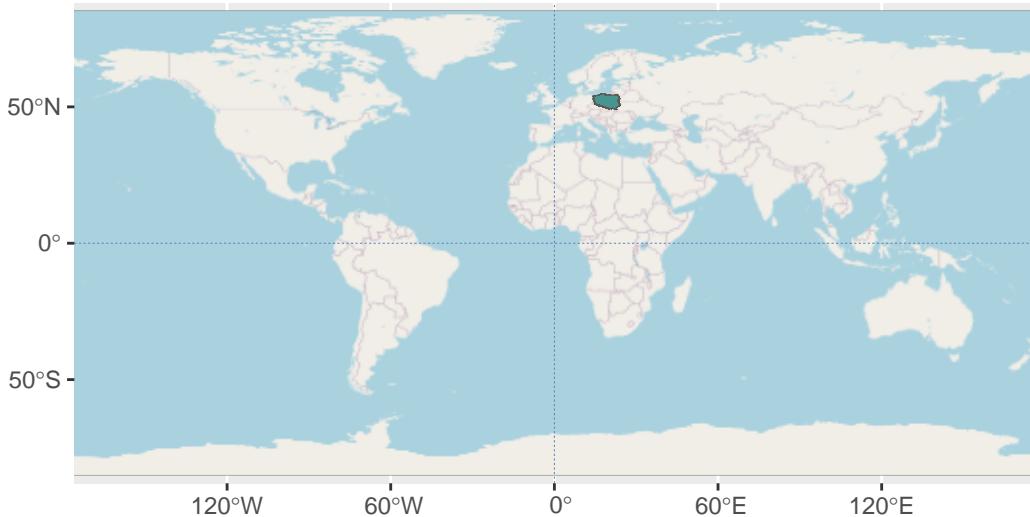


Figure 1: Poland. Geographical location

4 Poland in Europe

```

ggplot(gadm_0sf) +
# annotation_spatial(gadm_0sf) +
layer_spatial(gadm_0sf) +
annotation_map_tile(type = "osm", zoomin = -1) +
geom_sf(data = gadm_0sf, fill = "#48948e") +
annotate("text", x = war_x-1.5, y = war_y+1.25, colour = "white",
        label = "Polska", size = 4) +
annotate("point", x = war_x, y = war_y, colour = "#87ede5", size = 1) +
annotate("text", x = war_x, y = war_y-0.5, colour = "white",
        label = "Warszawa", size = 2) +
coord_sf(
# Longitude

```

```
xlim = c(-5, 40),  
# Latitude  
ylim = c(37, 60),  
crs = 4326)
```



Figure 2: Poland in Europe

5 Seats of the Governors

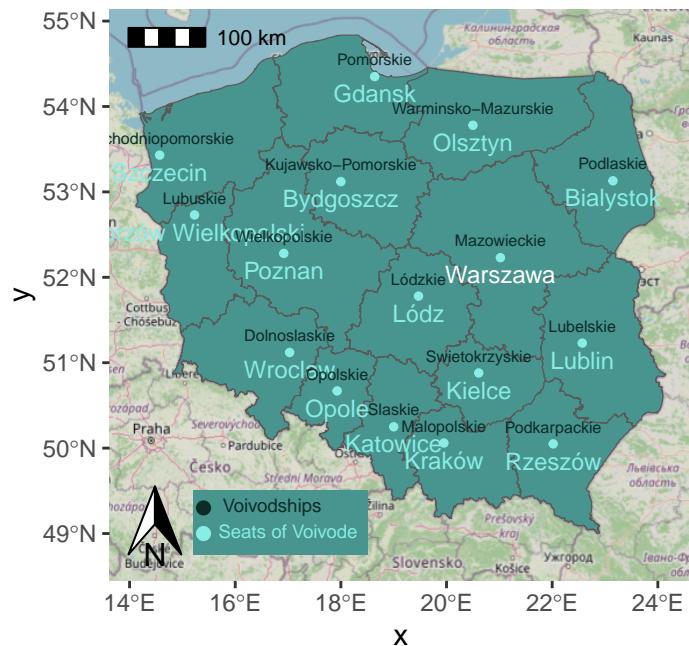


Figure 3: Seats of the Governors

6 Voivodship area and polulation

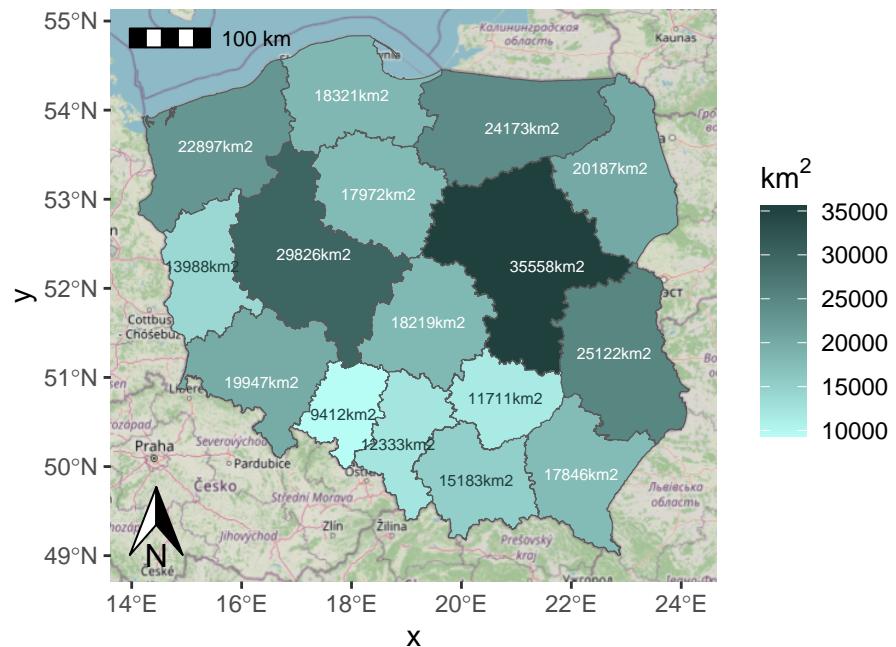


Figure 4: Voivodship area

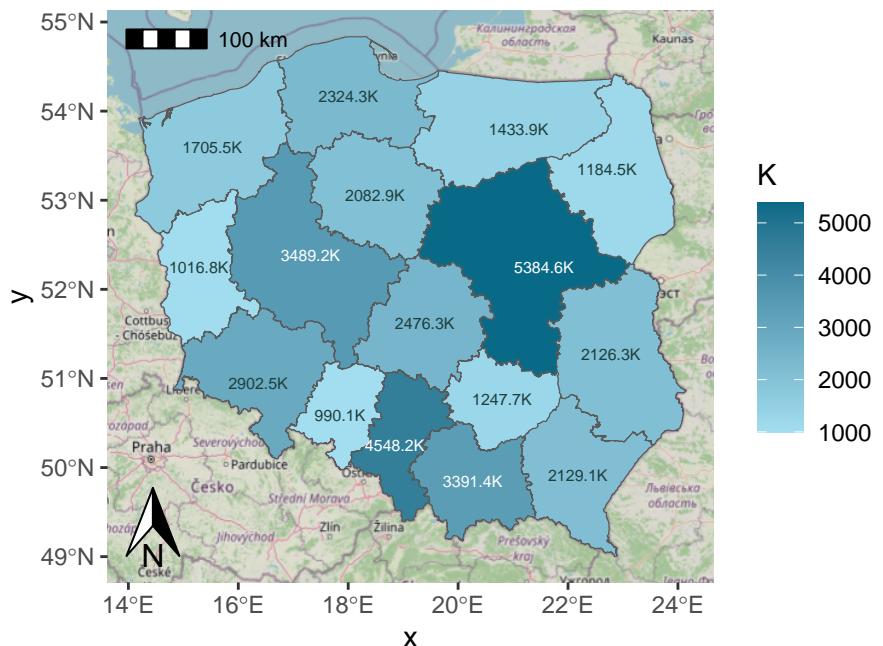


Figure 5: Voivodship population

7 Selected voivodeships

7.1 Lublin voivodeship. Counties area and population

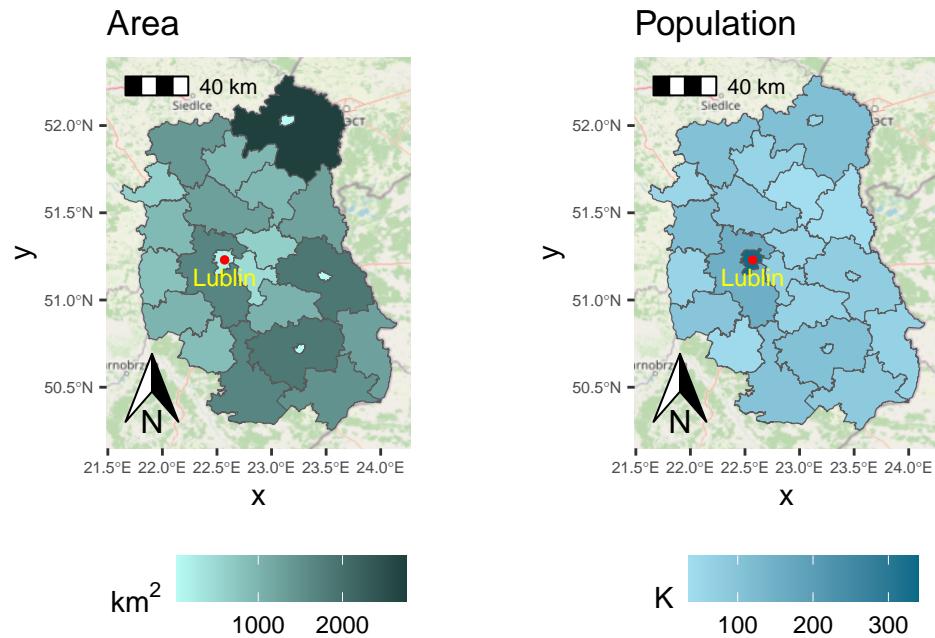


Figure 6: Lublin voivodeship. Area and Population

7.2 Podlaskie voivodship. Counties area and population

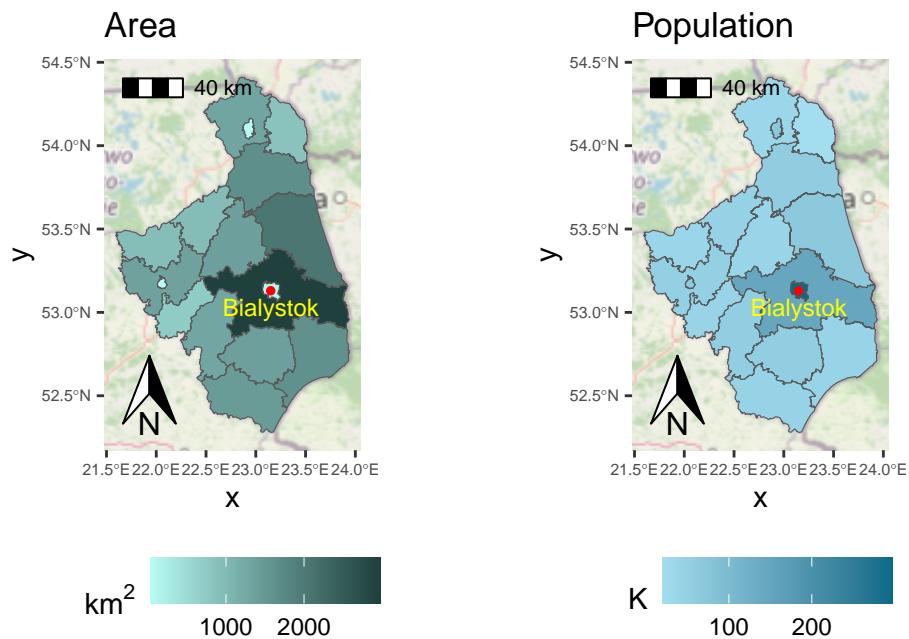


Figure 7: Podlaskie voivodship. Area and population