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tmap

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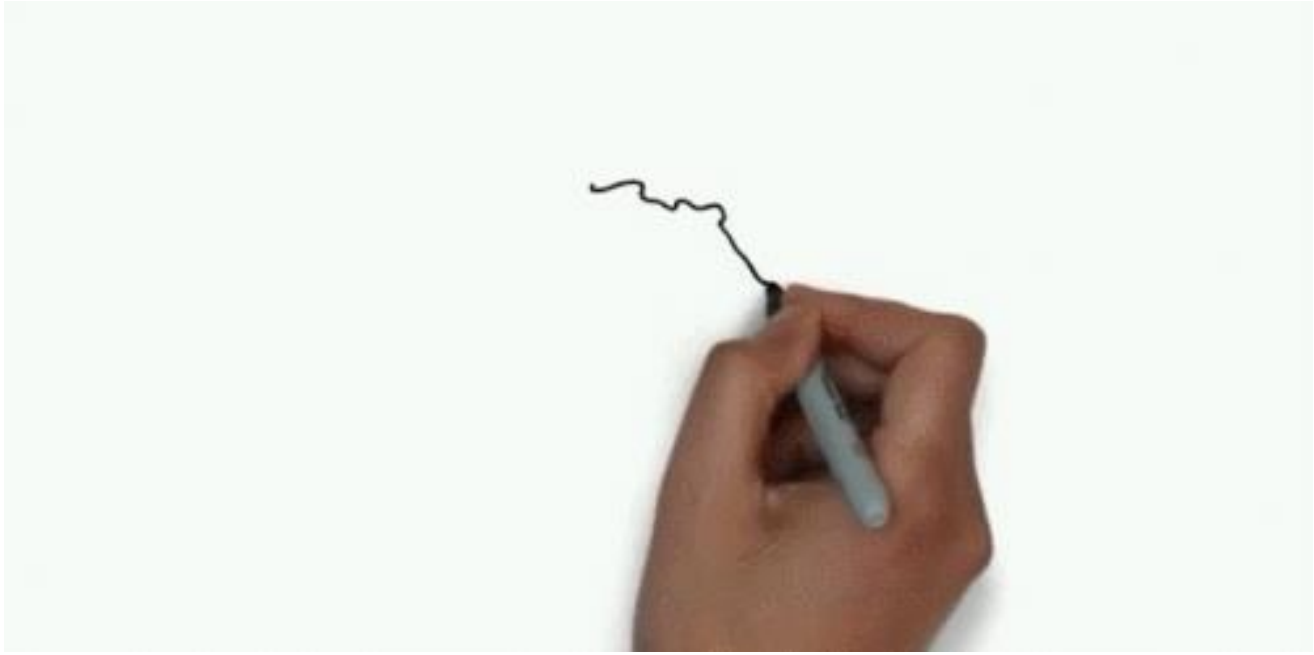
Procesamiento y visualización de datos espaciales en R

Otras formas de visualizar información espacial



{tmap}

tm_shape() +	define los datos de entrada (un objeto vectorial o raster)
tm_fill()	áreas sombreadas para polígonos
tm_borders()	contornos de borde para polígonos
tm_polygons()	áreas sombreadas y contornos para polígonos
tm_lines()	líneas para cadenas de líneas
tm_dots()	para puntos
tm_symbols()	símbolos para puntos, líneas y polígonos
tm_raster()	celdas coloreadas de datos raster (también existen tm_rgb() para rásteres con tres capas)
tm_text()	información de texto para puntos, líneas y polígonos

Argumentos estéticos

fill	color de relleno de un polígono
col	color del borde de un polígono, línea, punto o ráster
lwd	ancho de línea
lty	tipo de línea
size	tamaño de un símbolo
shape	forma de un símbolo
fill_alpha	
col_alpha	

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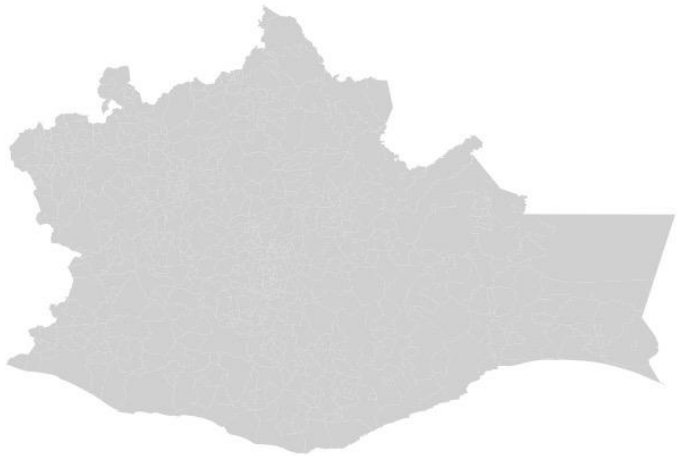
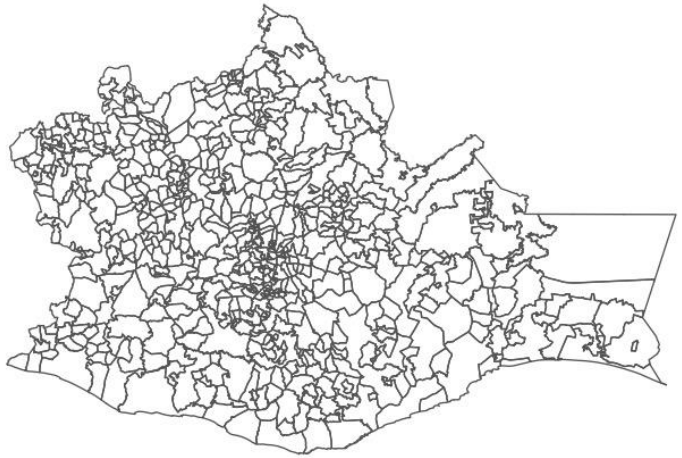
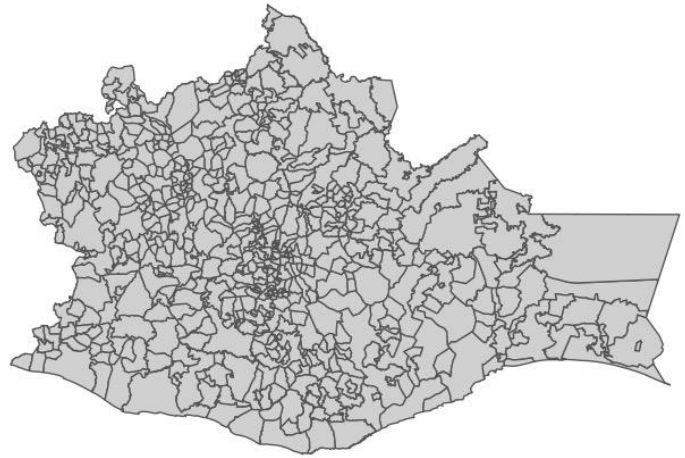
```
tm_shape(oax) +
  tm_fill()
```



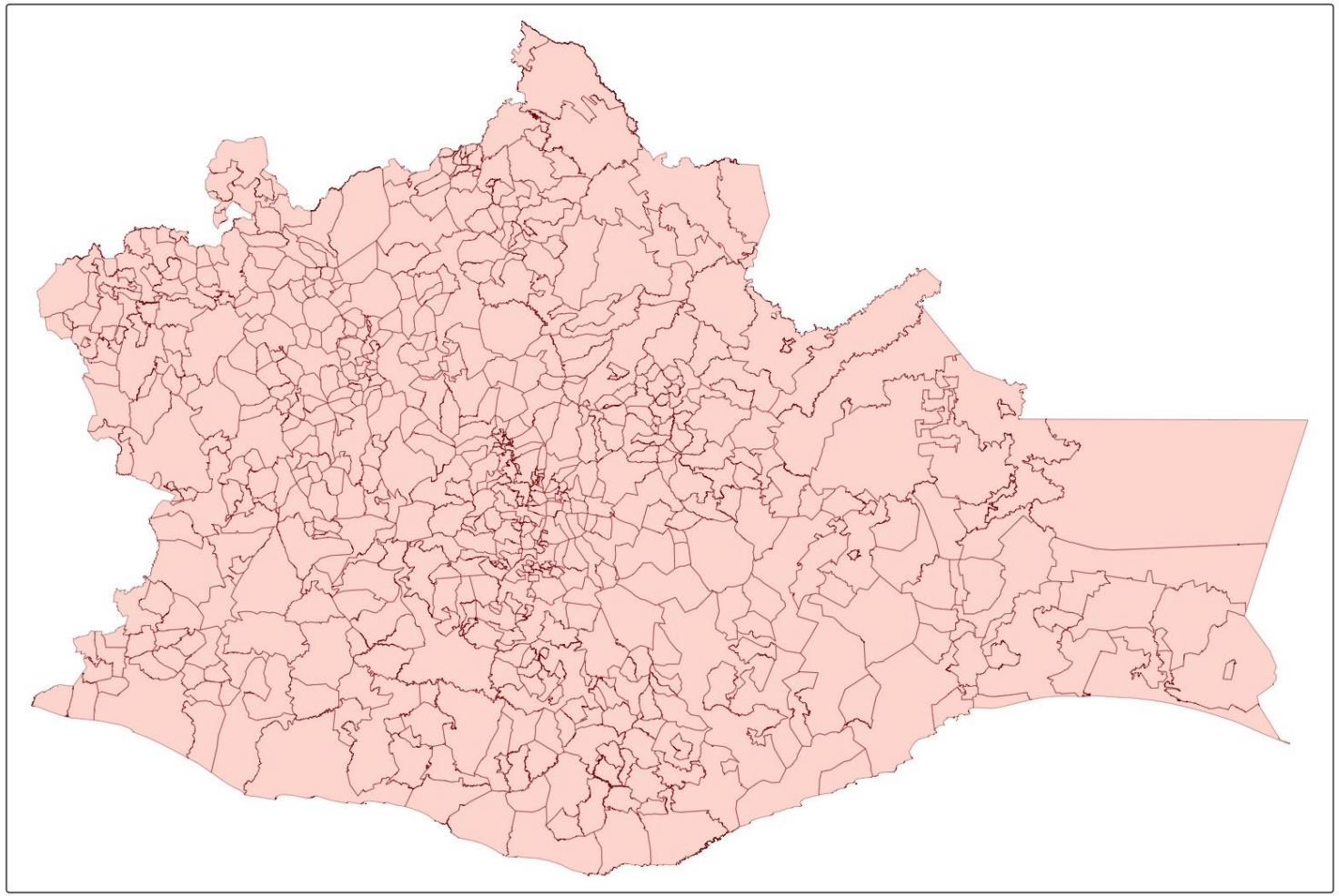
```
tm_shape(oax) +
  tm_borders()
```



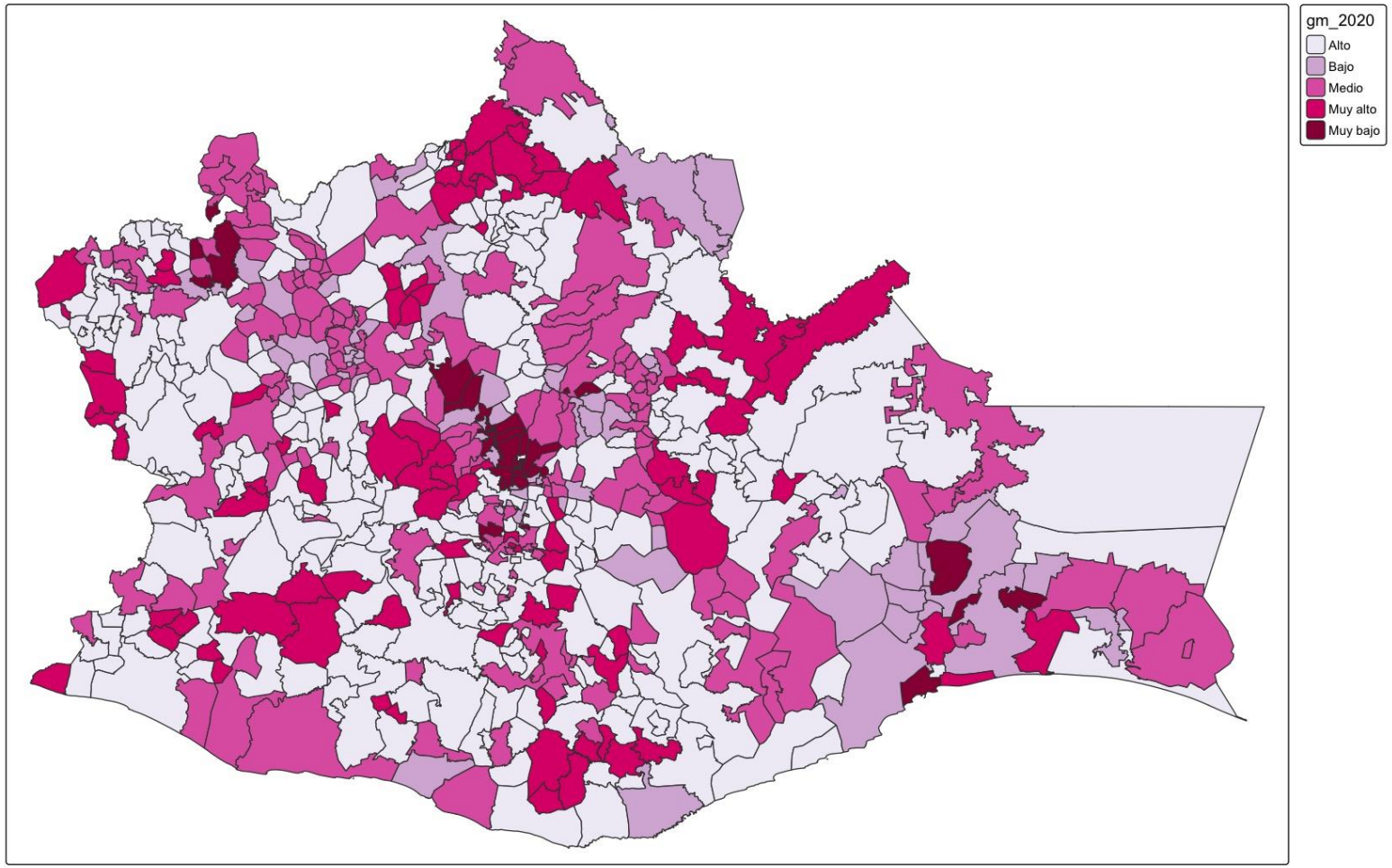
```
tm_shape(oax) +
  tm_fill() +
  tm_borders()
```



```
tm_shape(oax) +
  tm_polygons(fill = "orangered",
              fill_alpha = 0.2,
              col = "darkred",
              lwd = 0.3)
```



```
tm_shape(oax) +
  tm_polygons(fill = "gm_2020",
              fill.scale = tm_scale_categorical(values = " PuRd "))
```



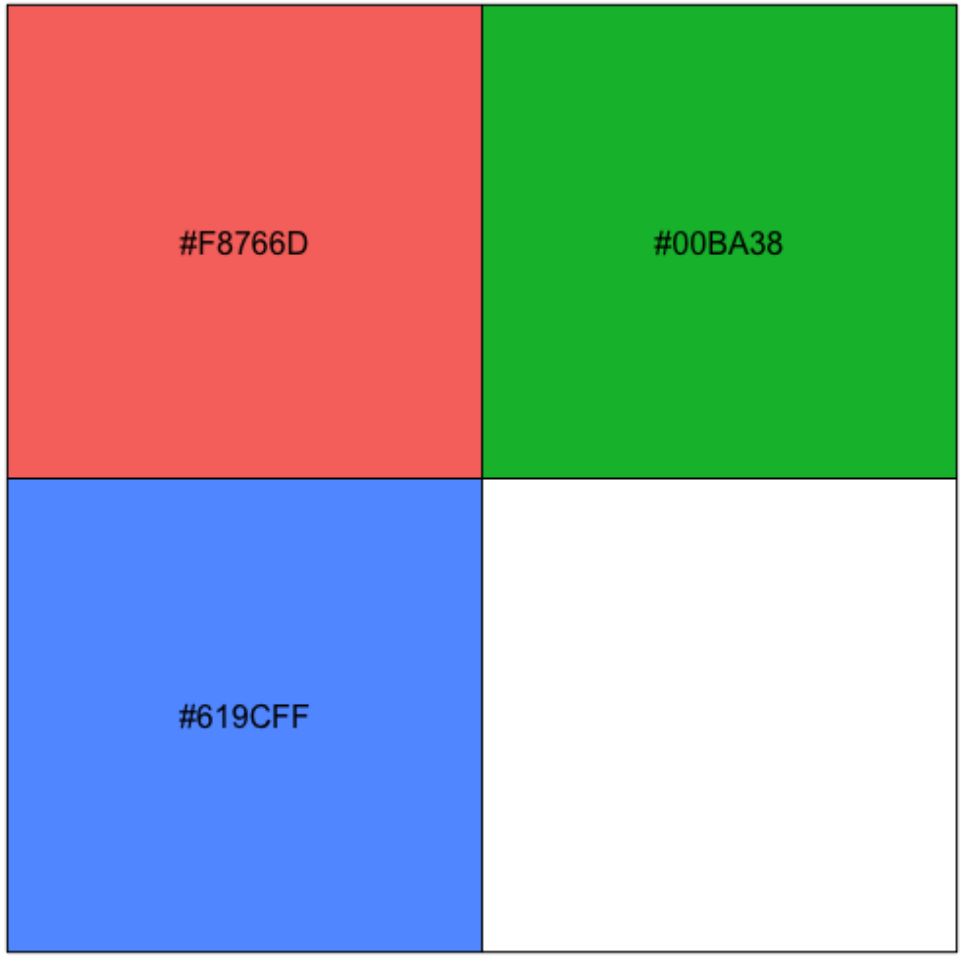
cols4all::c4a_palettes()

Paleta de colores de n categorías

```
library(scales)
pal1 <- hue_pal()(3)
pal1
```

```
[1] "#F8766D" "#00BA38" "#619CFF"
```

```
show_col(hue_pal()(3))
```

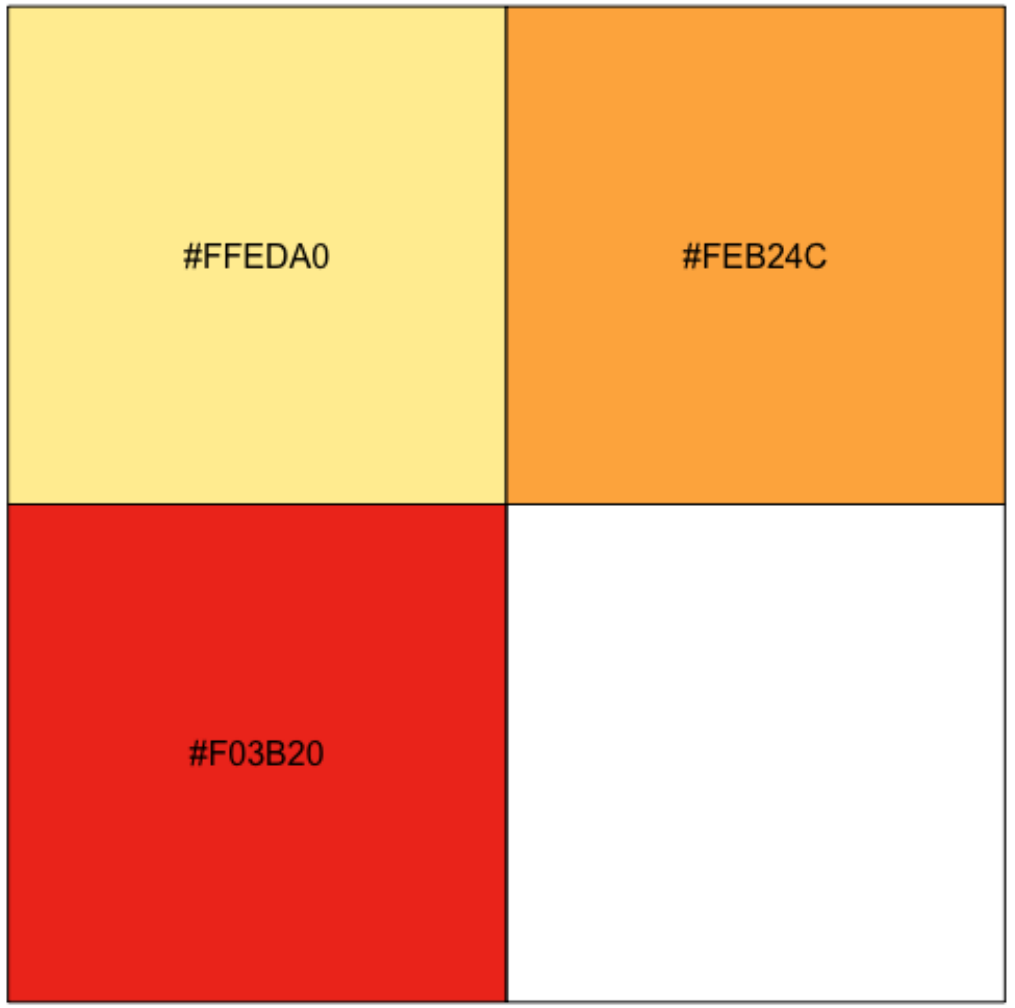


Paleta de colores de n categorías

```
library(scales)
library('RColorBrewer')
pal1 <- brewer.pal(n = 3, name = 'YlOrRd')
pal1
```

```
[1] "#FFEDA0" "#FEB24C" "#F03B20"
```

```
show_col(brewer.pal(n = 3, name = 'YlOrRd'))
```

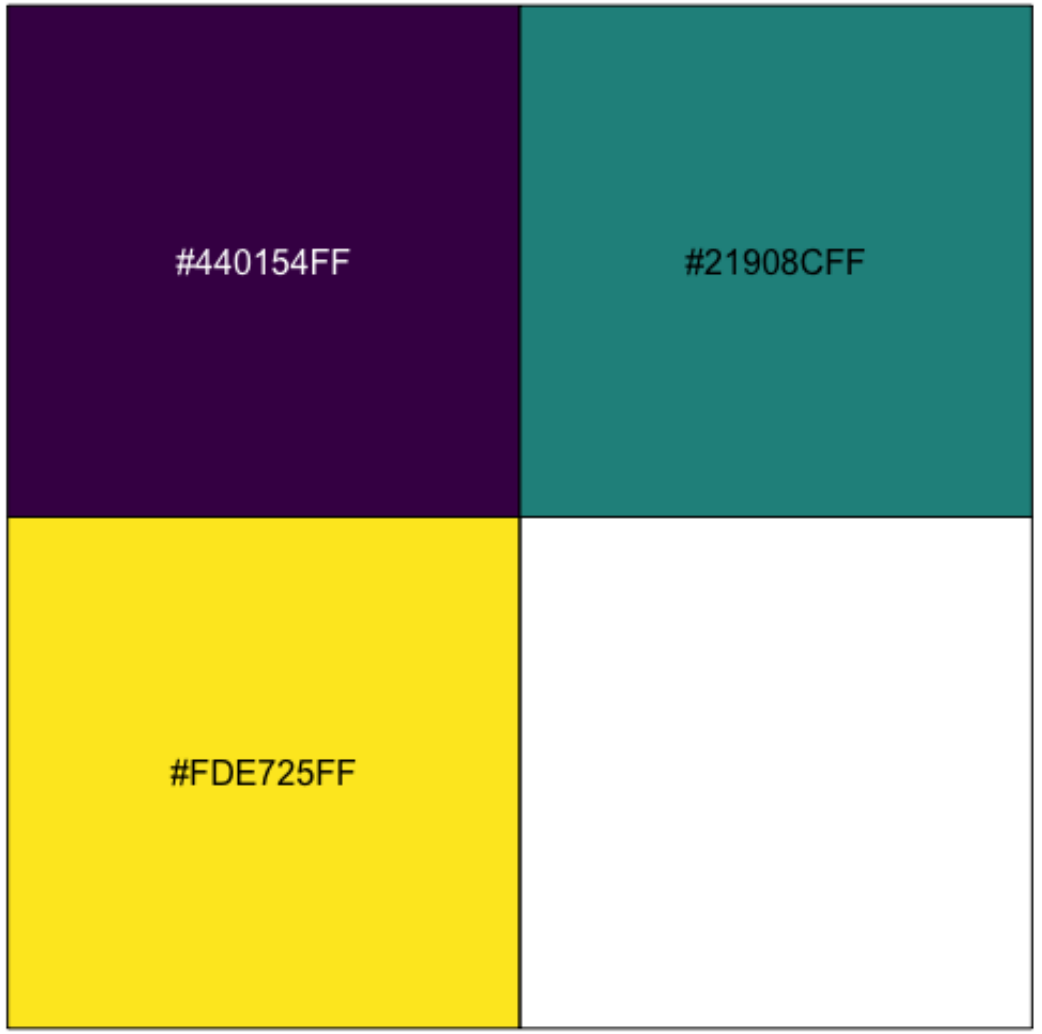


Paleta de colores de n categorías

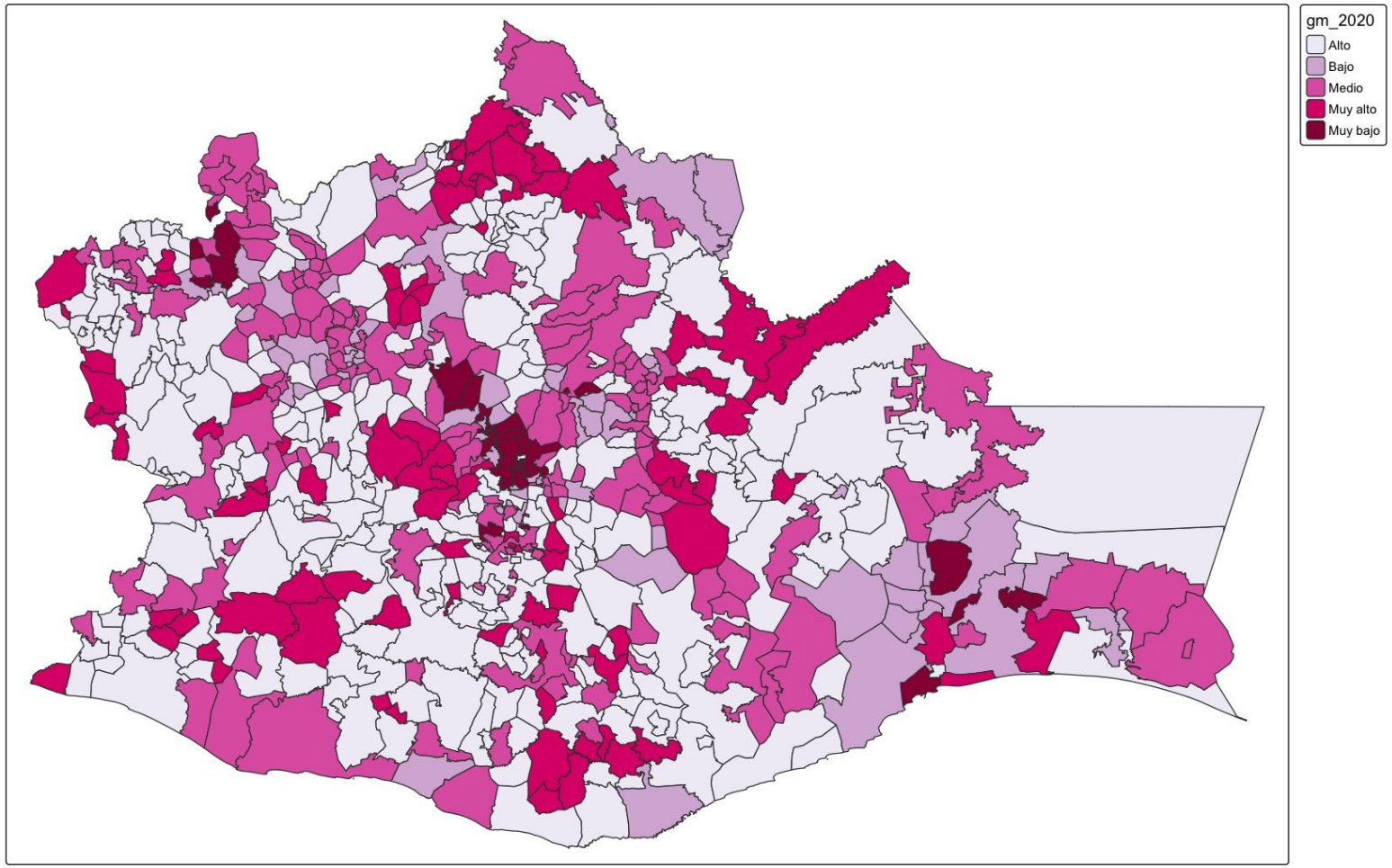
```
library(scales)
library('viridis')
pal1 <- viridis(n = 3)
pal1
```

```
[1] "#440154FF" "#21908CFF" "#FDE725FF"
```

```
show_col(viridis(n = 3))
```



```
tm_shape(oax) +
  tm_polygons(fill = "gm_2020",
              fill.scale = tm_scale_categorical(values = "brewer.pu_rd"))
```



cols4all::c4a_palettes()

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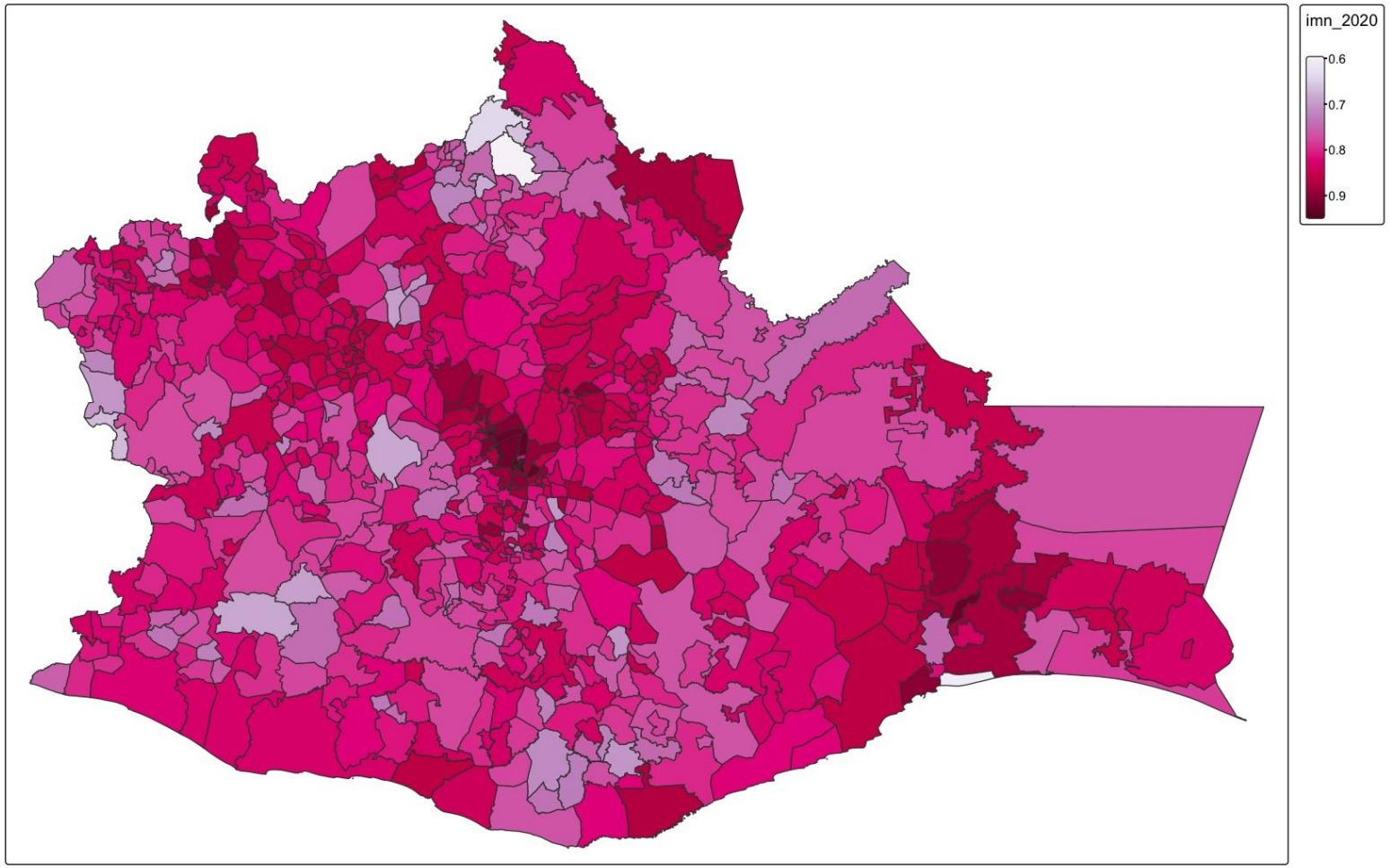
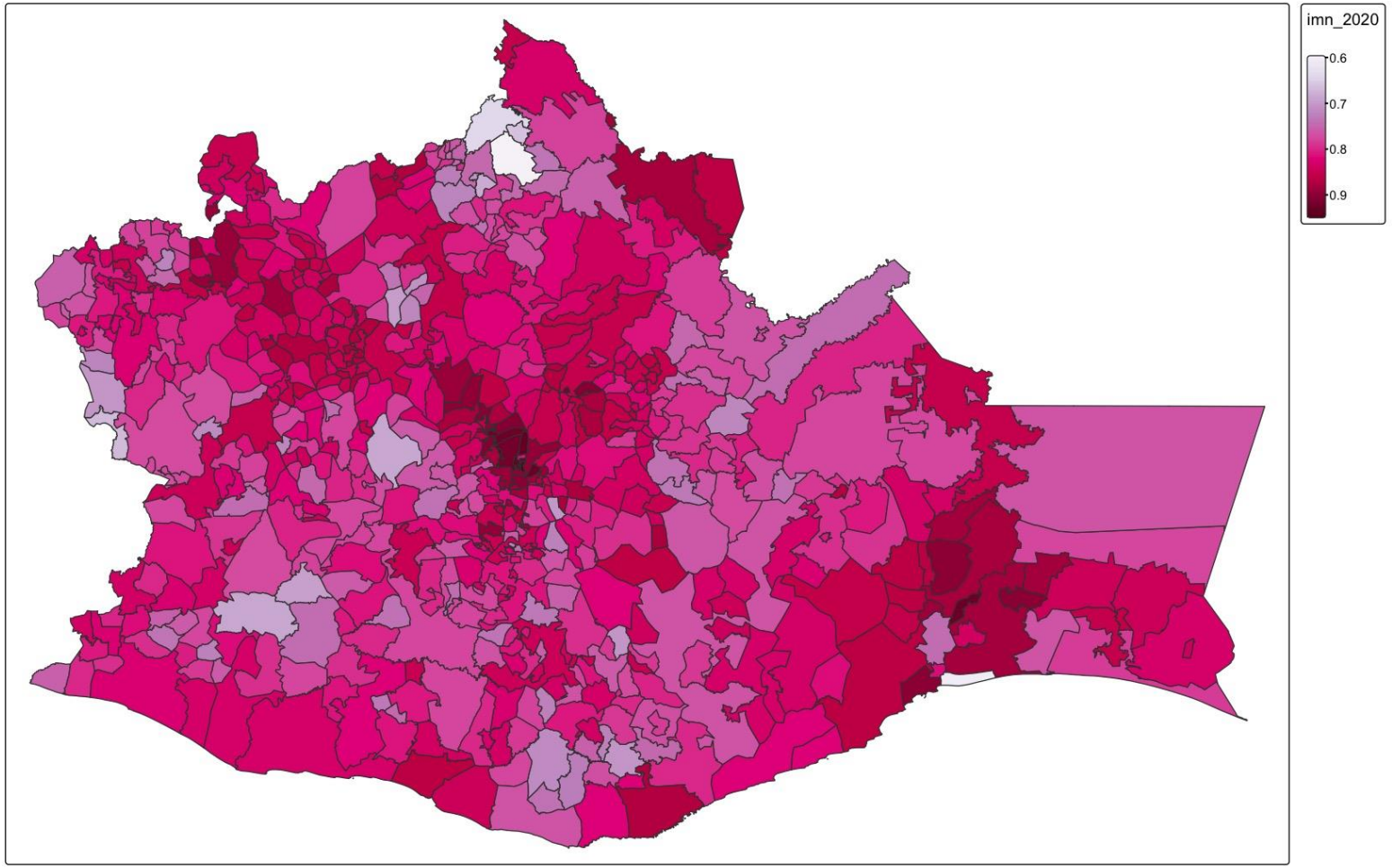
```
tm_shape(oax) +
  tm_polygons(fill = "imn_2020",
              fill.scale = tm_scale_continuous(values = "brewer.pu_rd"))
```

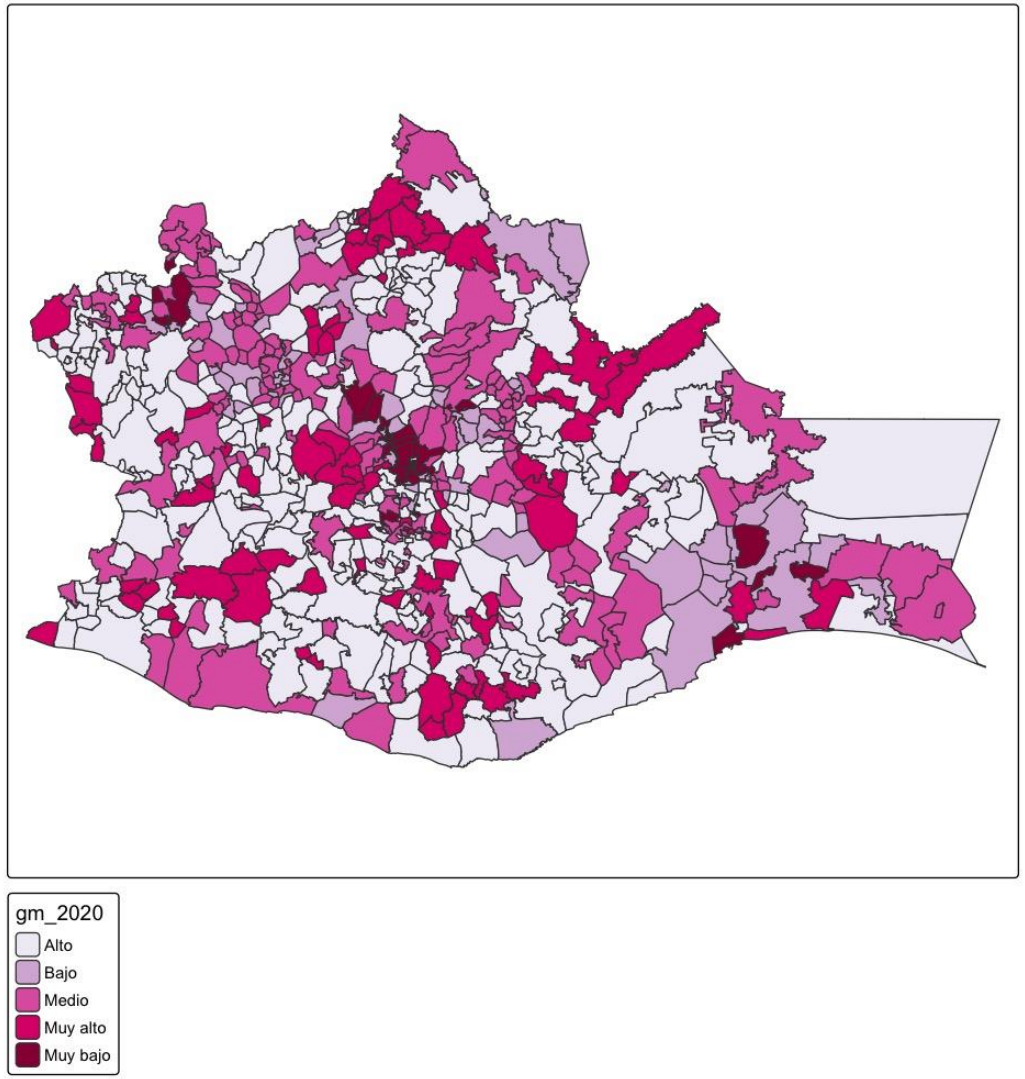


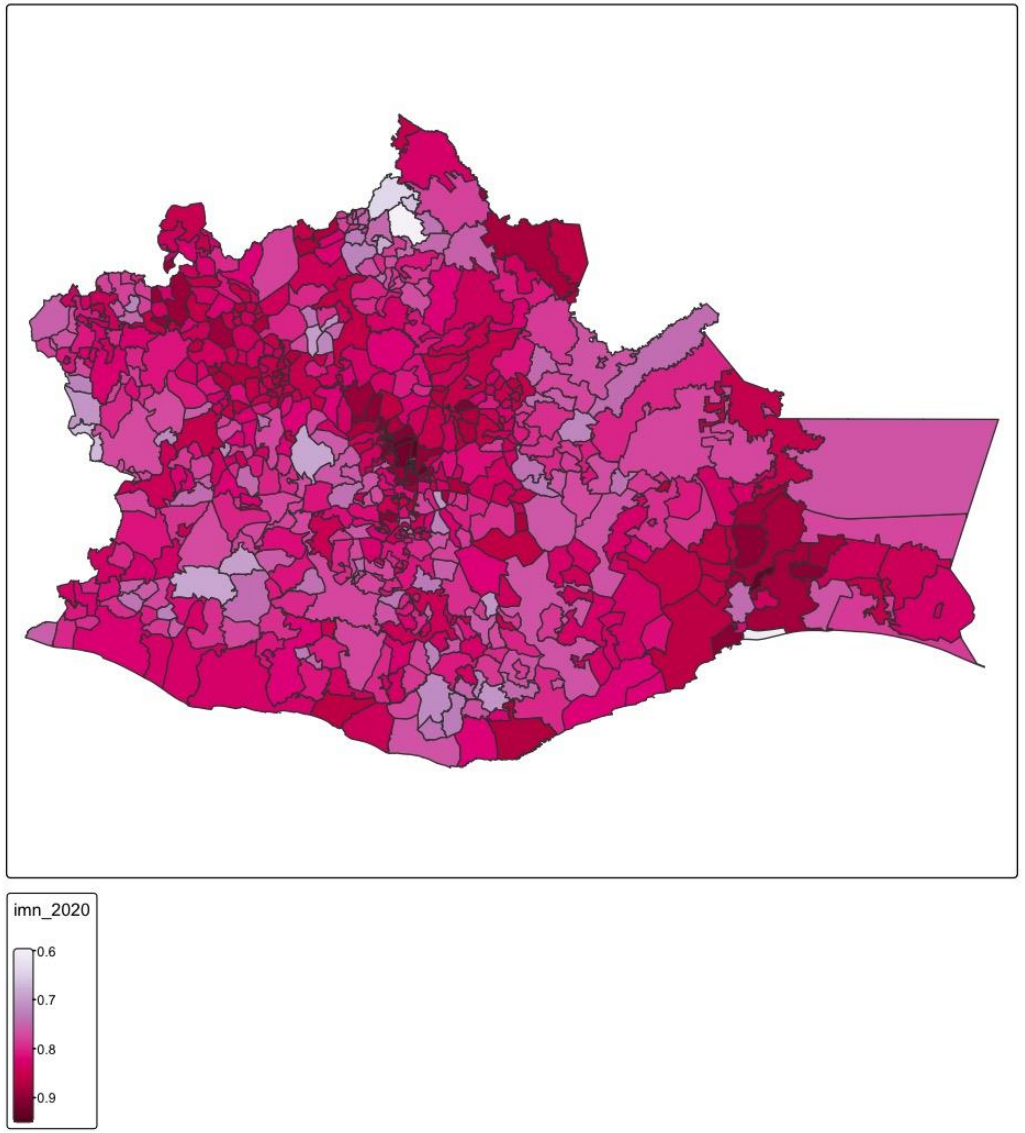
```
tm_shape(oax) +
  tm_polygons(fill = "imn_2020",
              fill.scale = tm_scale_continuous(values = " PuRd "))
```



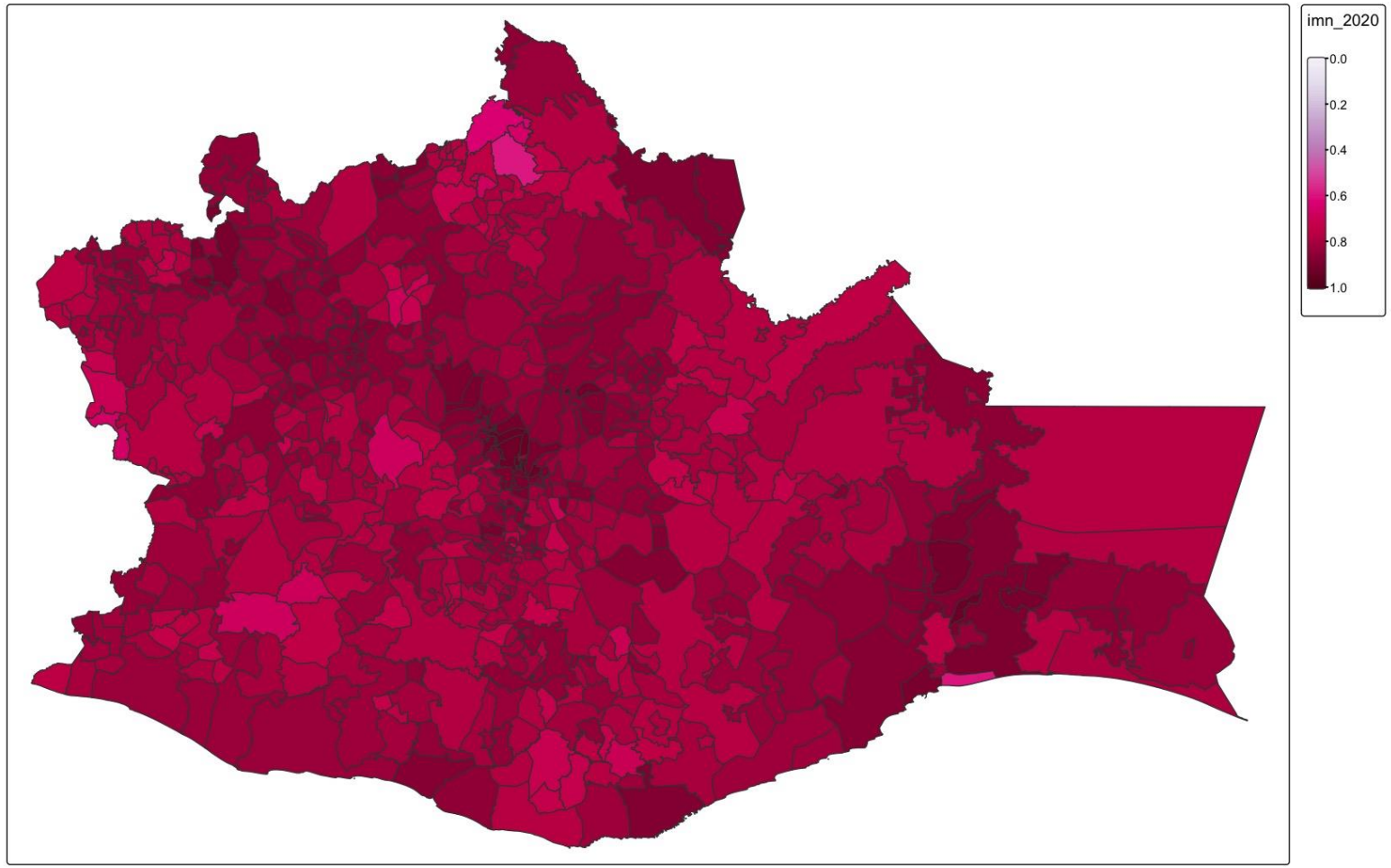
```r
mapas <- tmap_arrange(mapa1, mapa2)

tmap_save(mapas, "./output/mapas.jpg", width = 1920, height = 1080, units = 'px', dpi = 128)
```

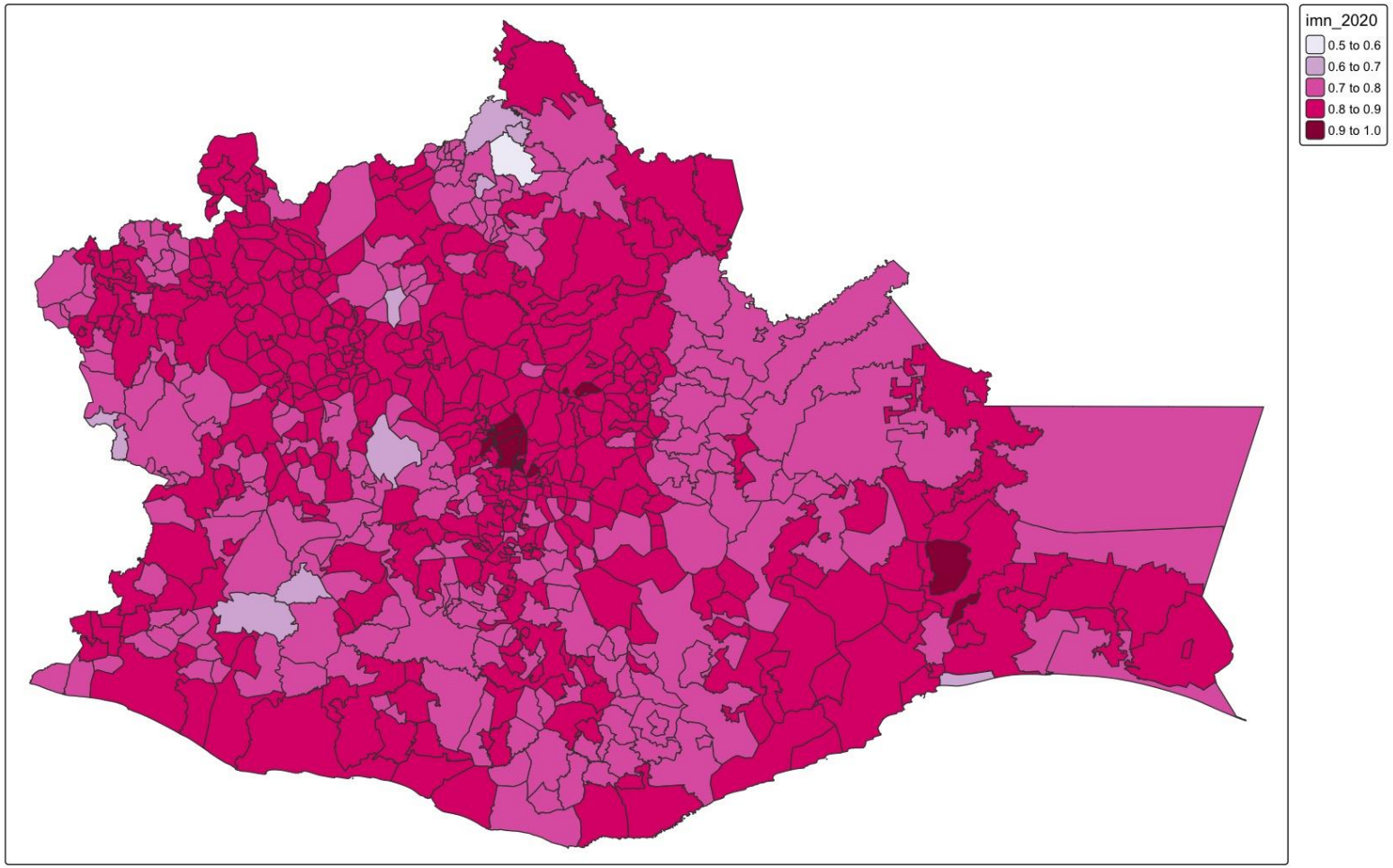




```
tm_shape(oax) +
  tm_polygons(fill = "imn_2020",
              fill.scale = tm_scale_continuous(values = "brewer.pu_rd",
                                               limits = c(0, 1)))
```



```
tm_shape(oax) +
  tm_polygons(fill = "imn_2020",
              fill.scale = tm_scale_intervals(values = "brewer.pu_rd", n = 5))
```



https://r-tmap.github.io/tmap/reference/tm_scale.html?q=tm_scale#ref-usage

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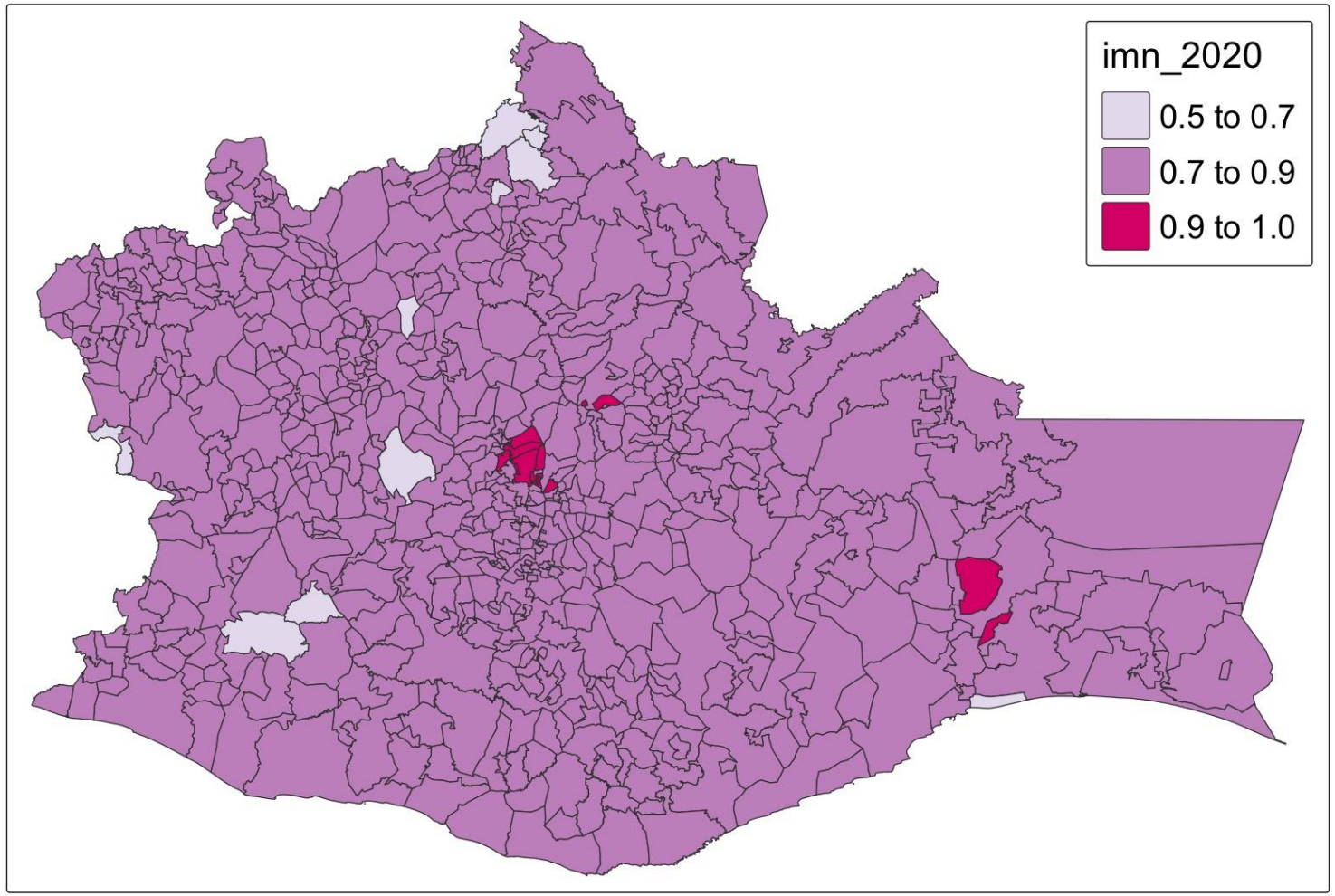
```
tm_shape(oax) +
  tm_polygons(fill = "imn_2020",
              fill.scale = tm_scale(values = "brewer.pu_rd",
                                    breaks = c(0.5, 0.7, 0.9, 1)),
              fill.legend = tm_legend(position = tm_pos_in("right", "top"),
                                      title.size = 2,
                                      text.size = 1.8))
```



Clasificación por intervalos

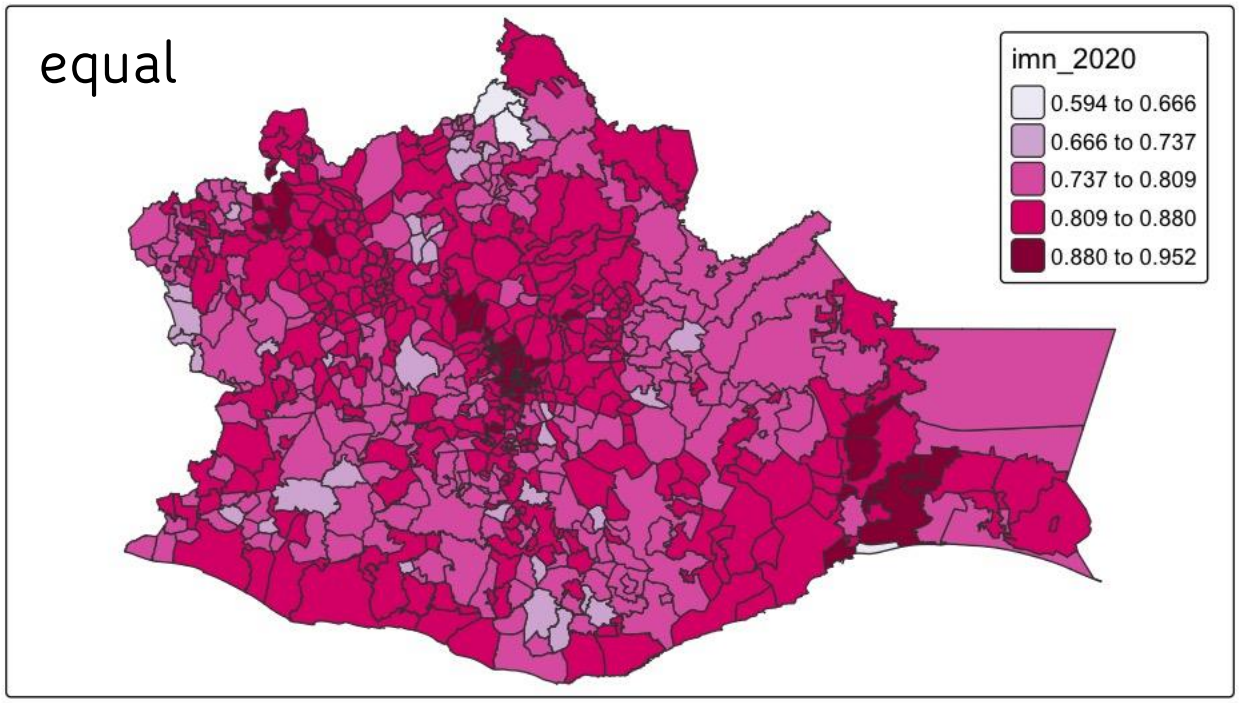
- Valor predeterminado

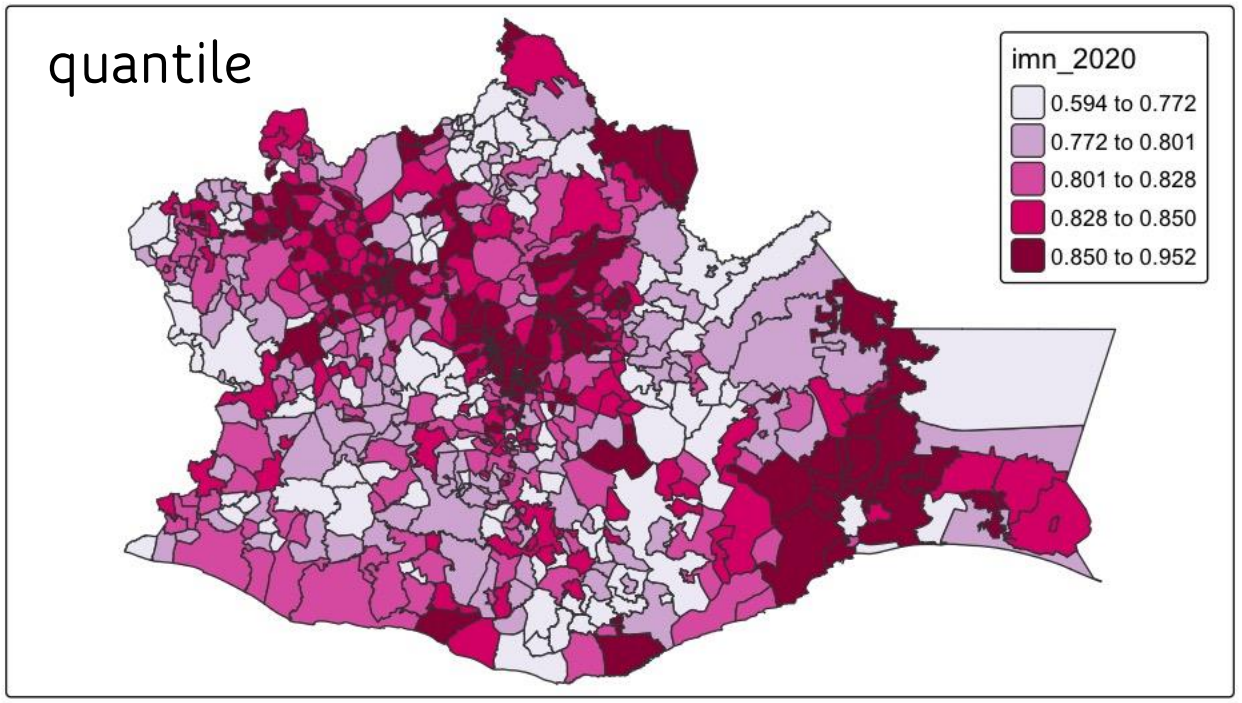
```
tm_scale_intervals(style = "pretty")
```

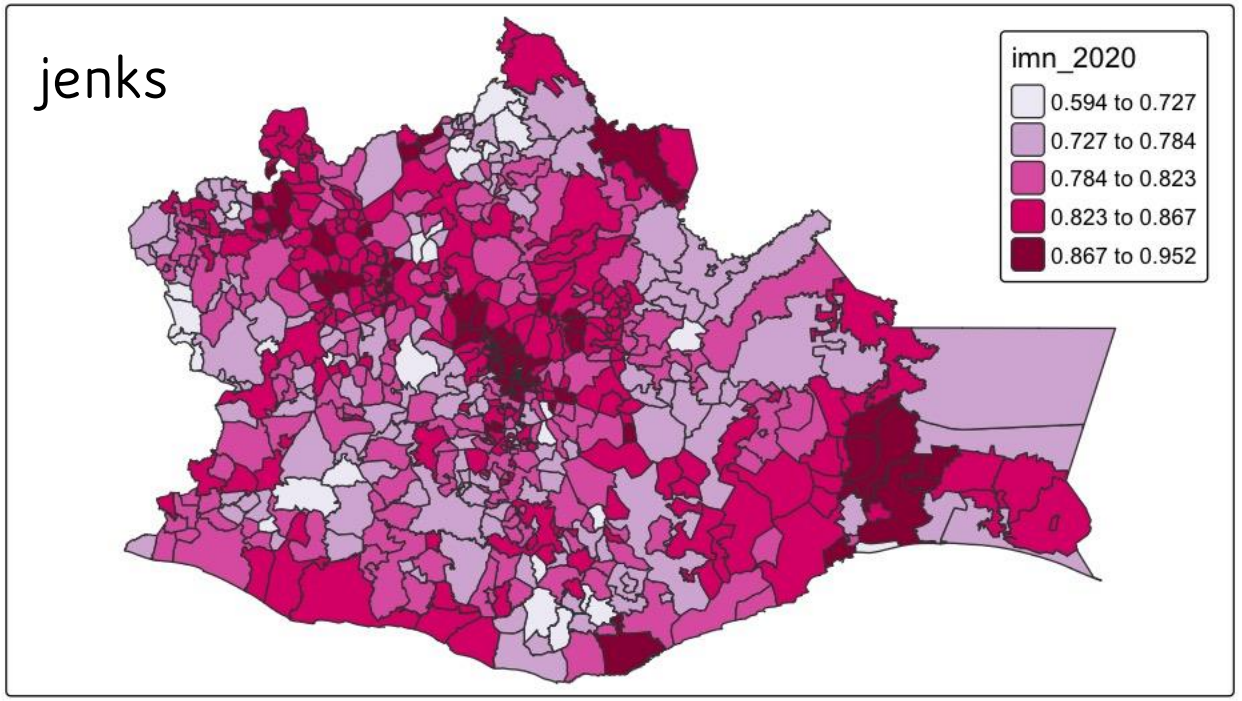
- Otros métodos de clasificación:

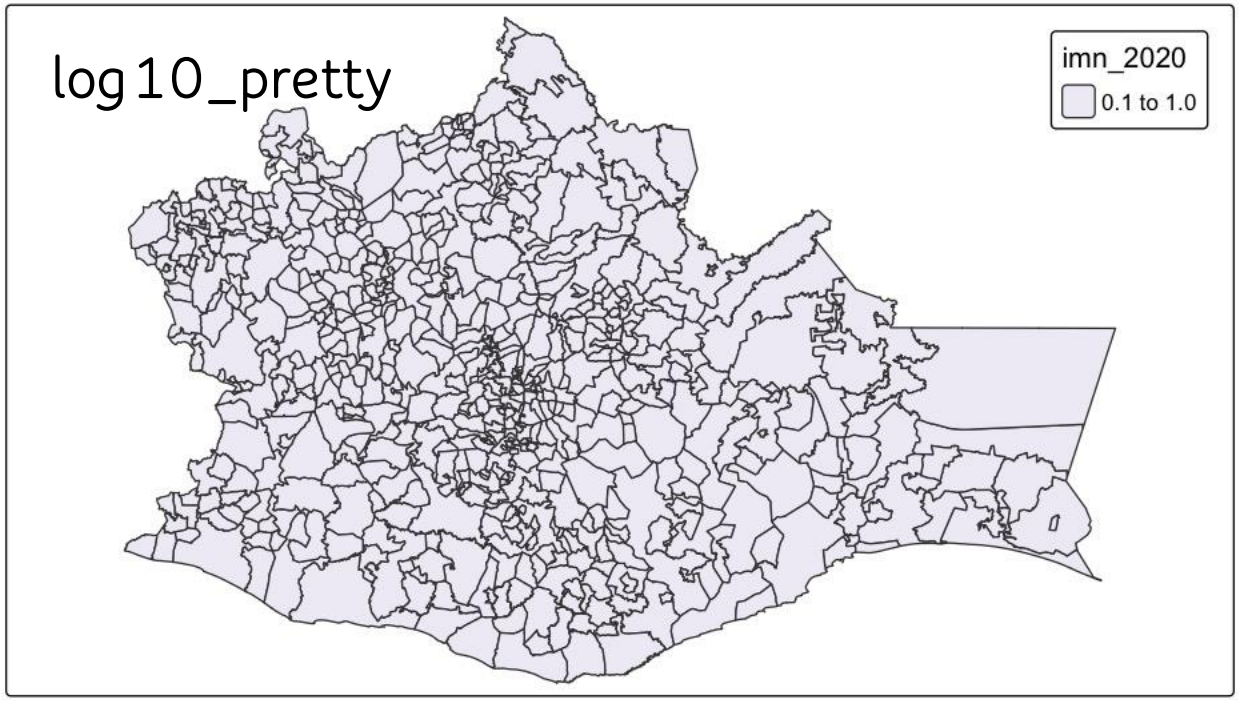
"equal", "quantile", "jenks", "log10_pretty"

```
tm_shape(oax) +
  tm_polygons(fill = "imn_2020",
              fill.scale = tm_scale_intervals(values = "brewer.pu_rd",
                                              style = "equal"),
              fill.legend = tm_legend(position = tm_pos_in("right", "top"),
                                      title.size = 1,
                                      text.size = 0.8))
```


equal
imn_2020
0.594 to 0.666
0.666 to 0.737
0.737 to 0.809
0.809 to 0.880
0.880 to 0.952

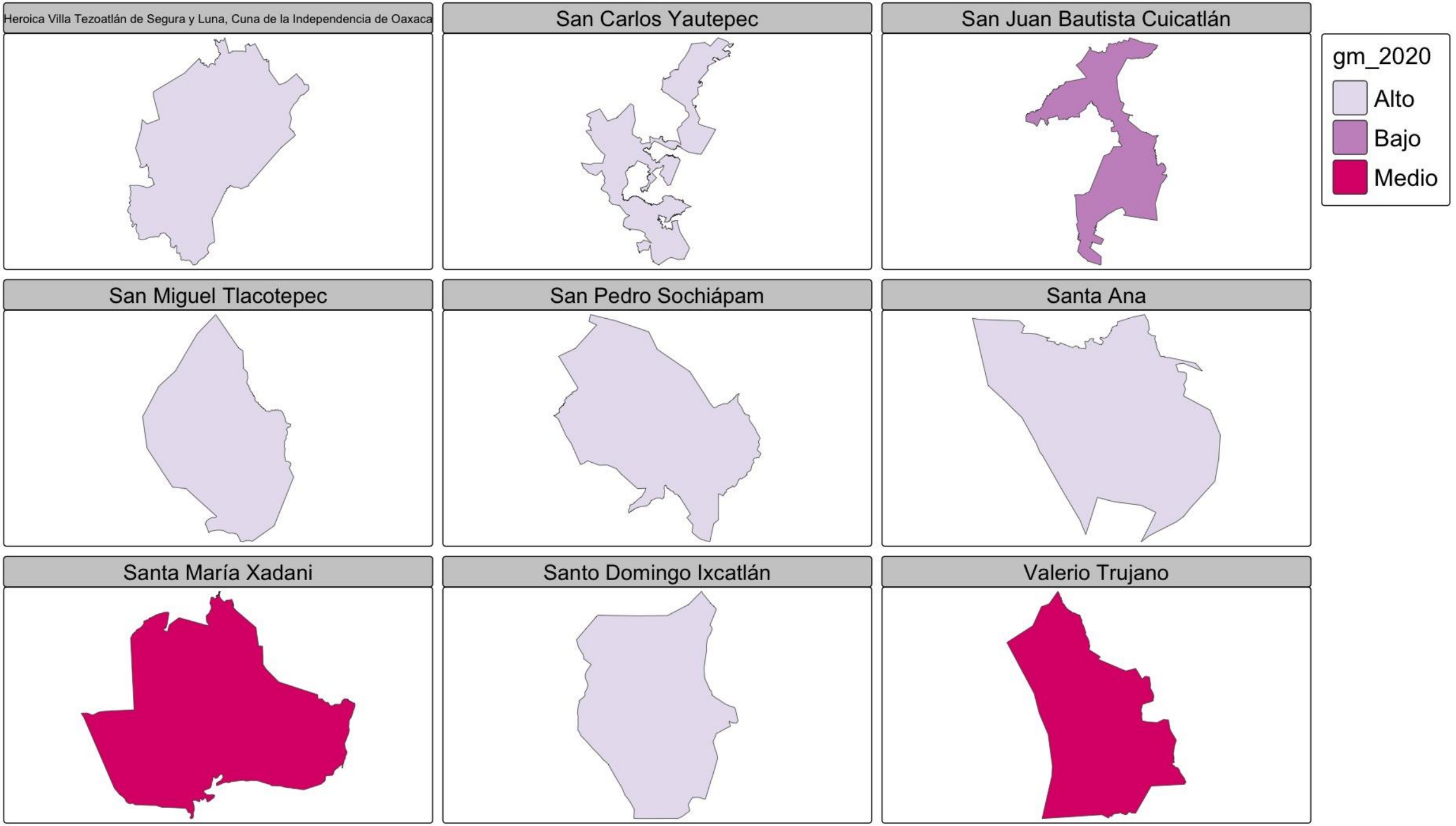

quantile
imn_2020
0.594 to 0.772
0.772 to 0.801
0.801 to 0.828
0.828 to 0.850
0.850 to 0.952


jenks
imn_2020
0.594 to 0.727
0.727 to 0.784
0.784 to 0.823
0.823 to 0.867
0.867 to 0.952


log10_pretty
imn_2020
0.1 to 1.0

facets

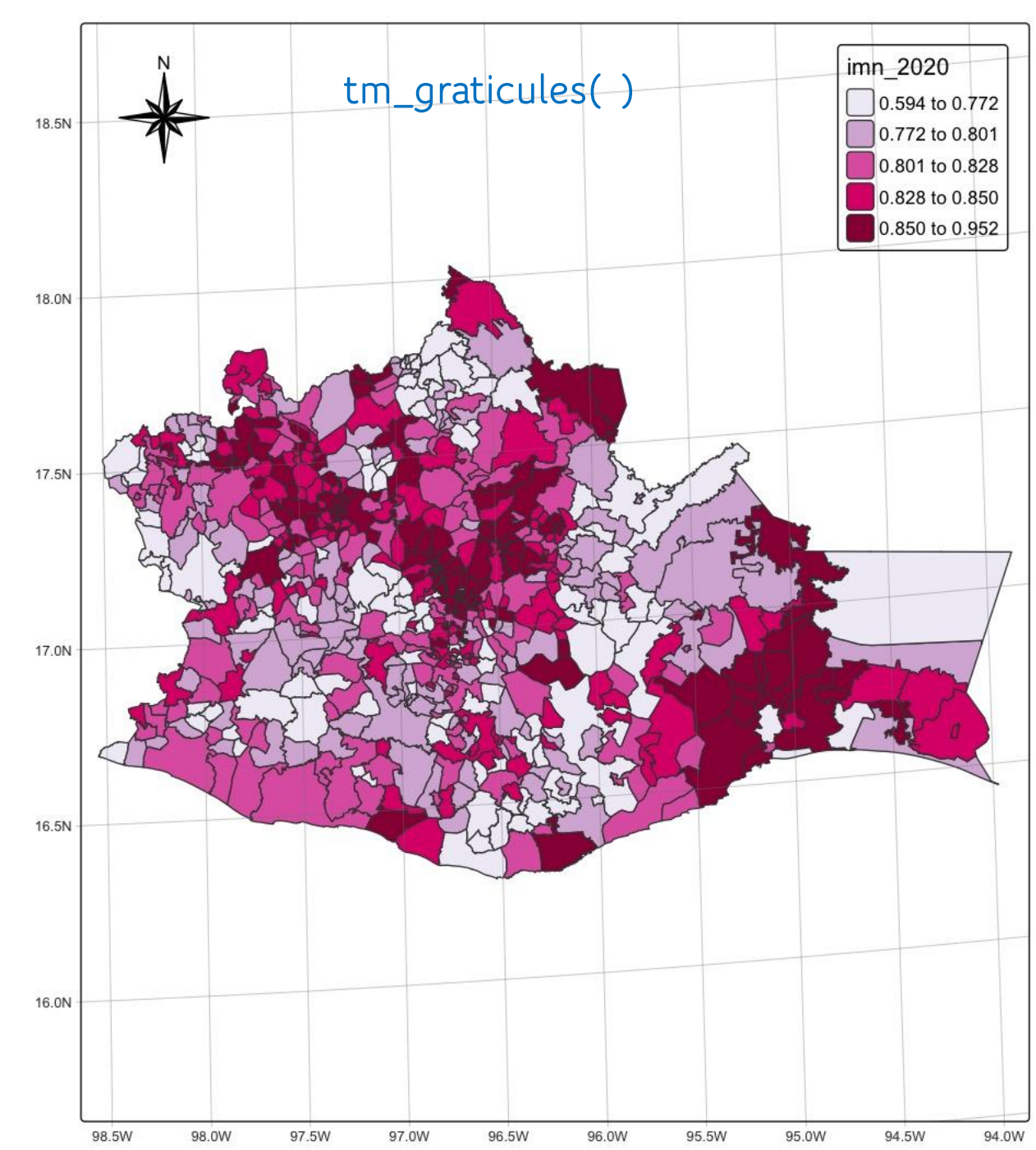
```
oax %>%
  sample_n(9, replace = FALSE) %>%
  tm_shape() +
  tm_polygons(fill = "gm_2020",
              fill.scale = tm_scale_categorical(values = "brewer.pu_rd"),
              fill.legend = tm_legend(title.size = 1.4,
                                      text.size = 1.4)) +
  tm_facets_wrap(by = "nomgeo", nrow = 3) +
  tm_layout(panel.label.size = 1.7,
            panel.label.height = 1.5)
```

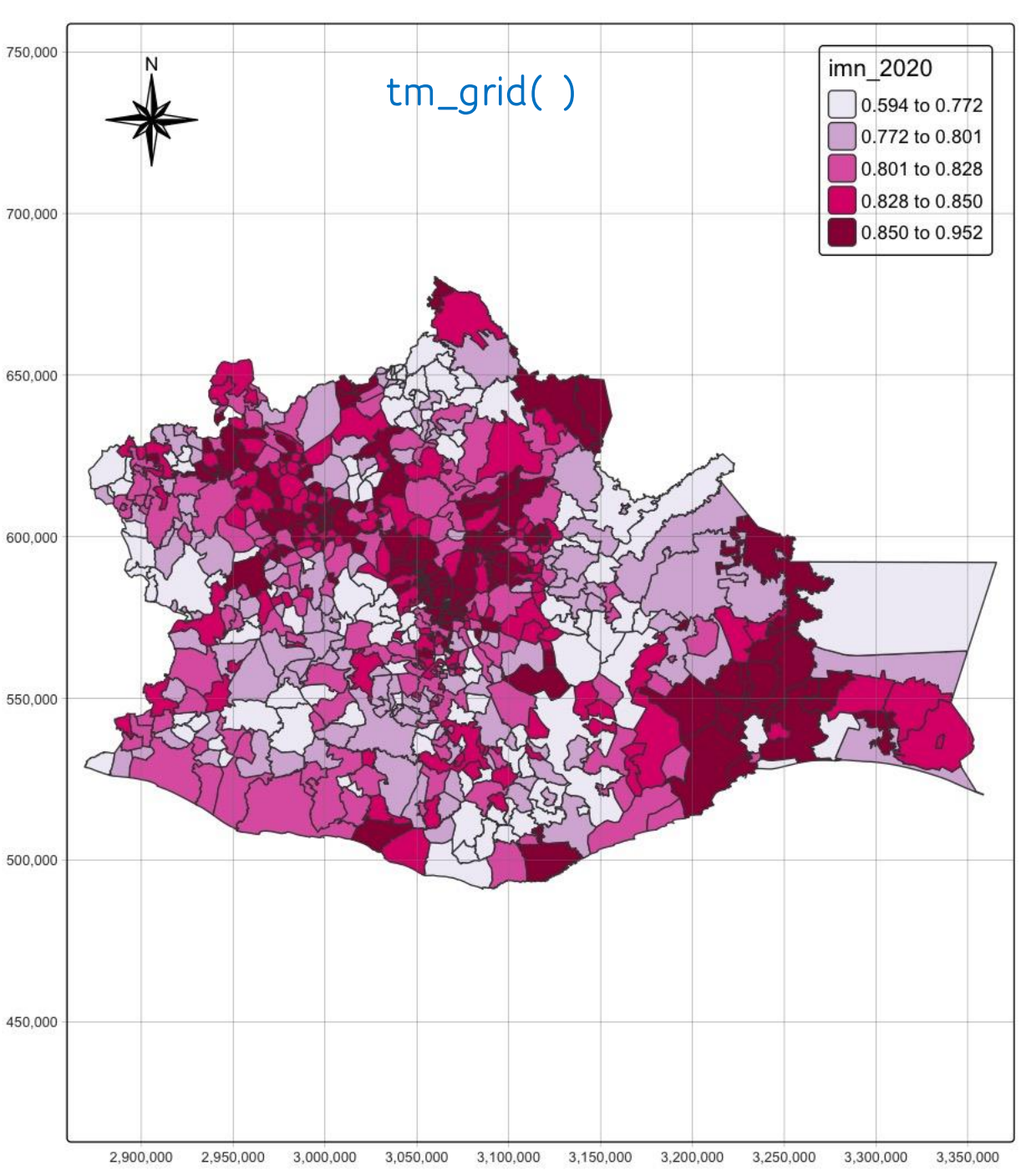

Heroica Villa Tezoatlán de Segura y Luna, Cuna de la Independencia de Oaxaca
San Carlos Yautepec
San Juan Bautista Cuicatlán
San Miguel Tlacotepec
San Pedro Sochiápam
Santa Ana
Santa María Xadani
Santo Domingo Ixcatlán
Valerio Trujano
gm_2020
Alto
Bajo
Medio

grid, rosa de vientos

```
tm_shape(oax) +
  tm_polygons(fill = "imn_2020",
              fill.scale = tm_scale_intervals(values = "brewer.pu_rd",
                                              style = "quantile"),
              fill.legend = tm_legend(position = tm_pos_in("right", "top"),
                                      title.size = 1,
                                      text.size = 0.8)) +
  tm_graticules(lwd = 0.3) +
  tm_compass(type = "8star", position = c("left", "top"))

tm_shape(oax) +
  tm_polygons(fill = "imn_2020",
              fill.scale = tm_scale_intervals(values = "brewer.pu_rd",
                                              style = "quantile"),
              fill.legend = tm_legend(position = tm_pos_in("right", "top"),
                                      title.size = 1,
                                      text.size = 0.8)) +
  tm_grid(lwd = 0.3) +
  tm_compass(type = "8star", position = c("left", "top"))
```


tm_graticules( )
N
imn_2020
0.594 to 0.772
0.772 to 0.801
0.801 to 0.828
0.828 to 0.850
0.850 to 0.952
18.5N
18.0N
17.5N
17.0N
16.5N
16.0N
98.5W
98.0W
97.5W
97.0W
96.5W
96.0W
95.5W
95.0W
94.5W
94.0W


tm_grid( )
N
imn_2020
0.594 to 0.772
0.772 to 0.801
0.801 to 0.828
0.828 to 0.850
0.850 to 0.952
750,000
700,000
650,000
600,000
550,000
500,000
450,000
2,900,000
2,950,000
3,000,000
3,050,000
3,100,000
3,150,000
3,200,000
3,250,000
3,300,000
3,350,000