

Micro IV - APS 4

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2022-10-28

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Importação de bibliotecas

```
library(tidyverse)
library(sandwich)
library(stargazer)
library(optmatch)
library(lmtest)
library(Matching)
library(MatchIt)
library(boot)
```

Obtenção dos dados

```
# install.packages("devtools")
# devtools::install_github("mj-ribeiro/Microdados")
```

```
library(Microdados)
```

```
# pnad2003 <- load_pnad(2003, 'pessoas')
# pnad2006 <- load_pnad(2006, 'pessoas')
# pnad2009 <- load_pnad(2009, 'pessoas')
```

```
# write_csv(pnad2003, 'Dados/pnad2003.csv')
# write_csv(pnad2006, 'Dados/pnad2006.csv')
# write_csv(pnad2009, 'Dados/pnad2009.csv')

pnad2003 <- read_csv('Dados/pnad2003.csv')
pnad2006 <- read_csv('Dados/pnad2006.csv')
pnad2009 <- read_csv('Dados/pnad2009.csv')
```

```
pnad2006_filtrada <- pnad2006 %>%
  filter(v4742 <= quantile(v4742, probs = 0.2, na.rm = T),
         v8005==16|v8005==17|v8005==15) %>%
  mutate(tratamento = case_when
         (v8005==15 ~ 0, TRUE ~ 1),
         educ = if_else(v0602==2, 1, 0),
         ano = rep(0,5664))

pnad2009_filtrada <- pnad2009 %>%
  filter(v4742 <= quantile(v4742, probs = 0.2, na.rm = T),
         v8005==16|v8005==17|v8005==15) %>%
  mutate(tratamento = case_when
         (v8005==15 ~ 0,
          TRUE ~ 1),
         educ = if_else(v0602==2, 1, 0),
         ano = rep(1,5665))

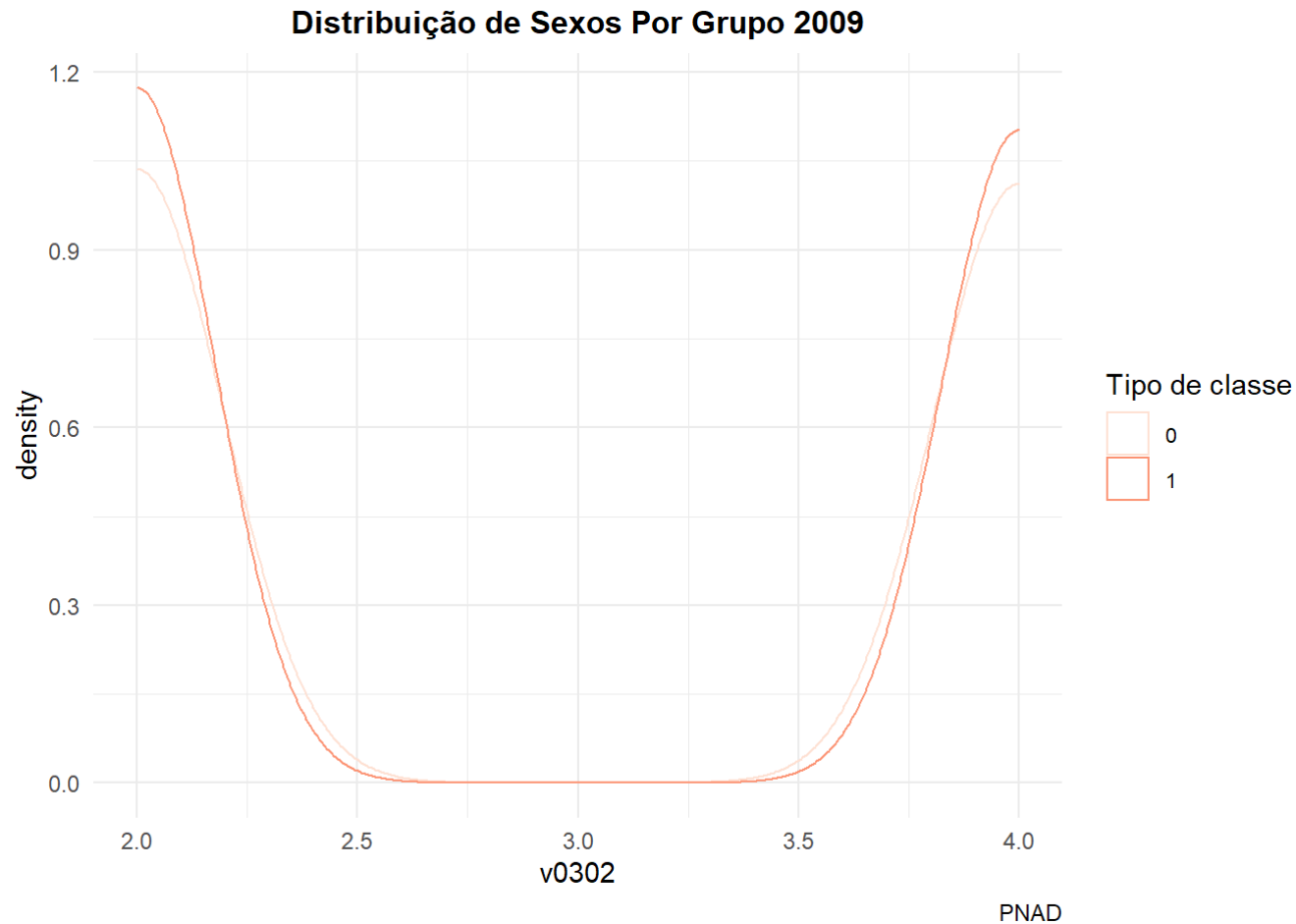
base <- full_join(pnad2006_filtrada, pnad2009_filtrada)
```

Descritivas

2009

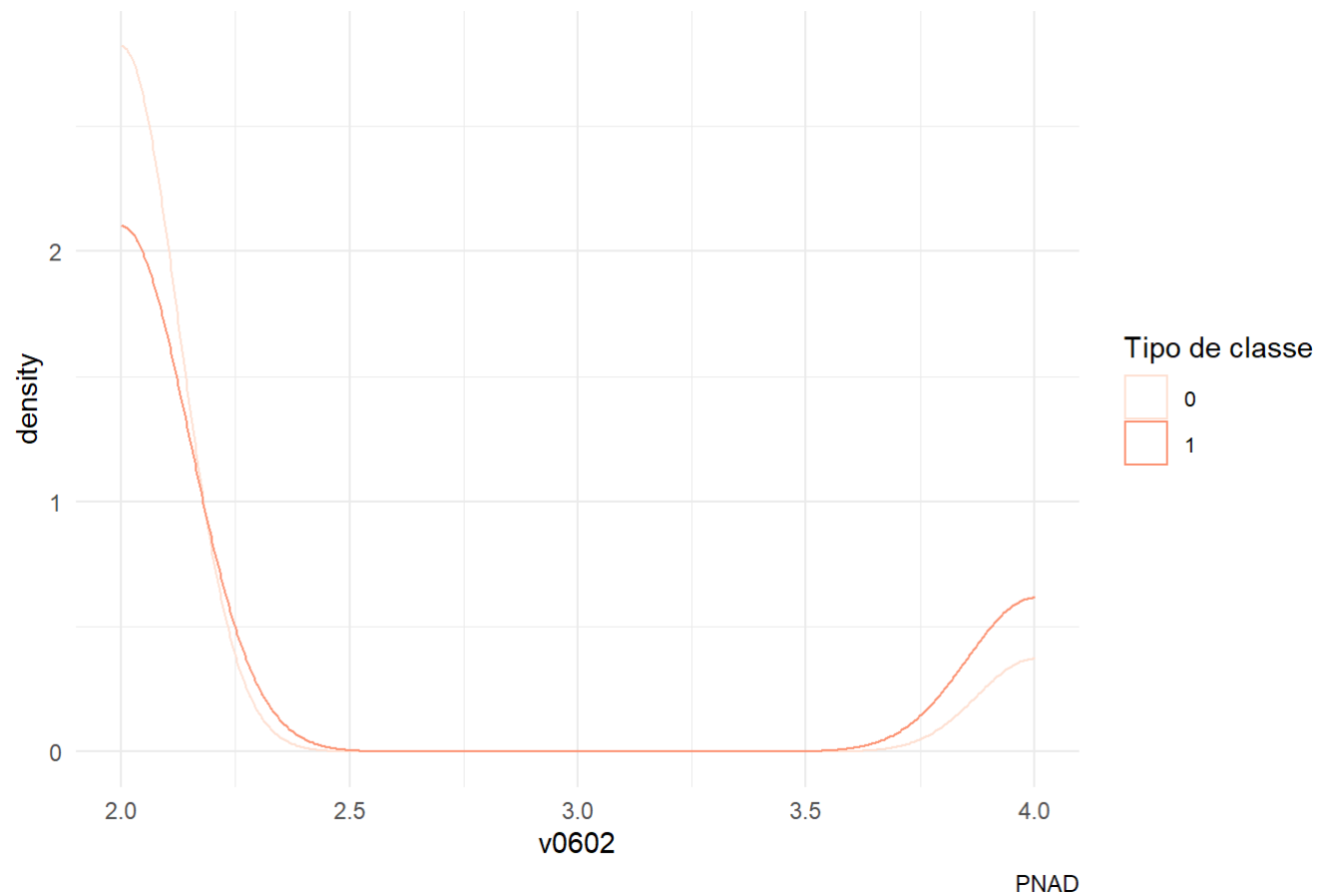
```
pnad2009_filtrada %>%
  ggplot()+
  geom_density(aes(v0302, stat(density), color = factor(tratamento)))+
  theme_minimal() +
  labs(title = 'Distribuição de Sexos Por Grupo 2009',
```

```
caption = 'PNAD') +
scale_colour_brewer(palette = 'Reds', name = "Tipo de classe") +
theme(plot.title=element_text(size=12, face="bold", hjust = 0.5),
      legend.text=element_text(size=8))
```



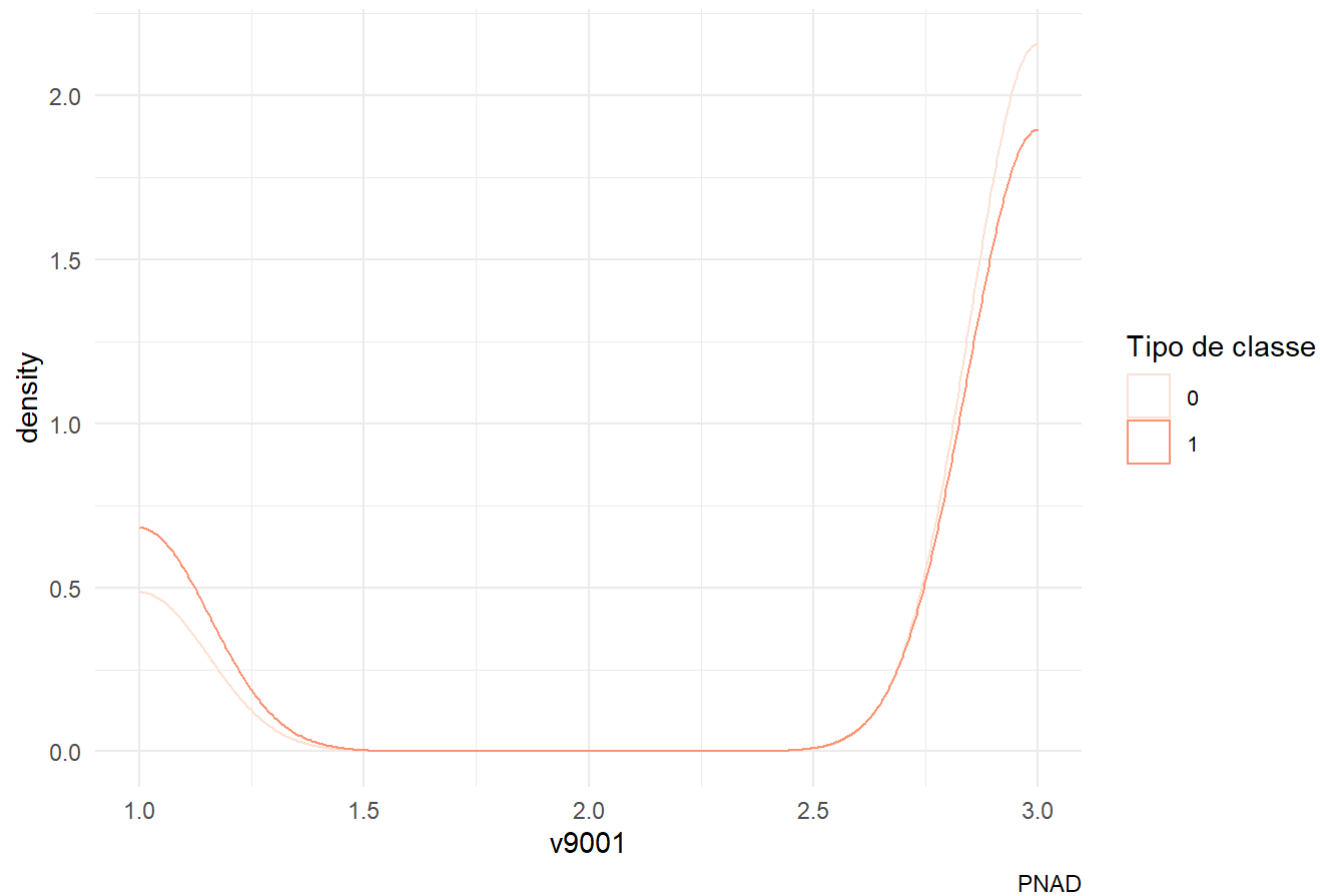
```
pnad2009_filtrada %>%
  ggplot()+
  geom_density(aes(v0602, stat(density), color = factor(tratamento)))+
  theme_minimal() +
  labs(title = 'Frequência Escola ou Creche 2009',
       caption = 'PNAD') +
  scale_colour_brewer(palette = 'Reds', name = "Tipo de classe") +
  theme(plot.title=element_text(size=12, face="bold", hjust = 0.5),
        legend.text=element_text(size=8))
```

Frequência Escola ou Creche 2009



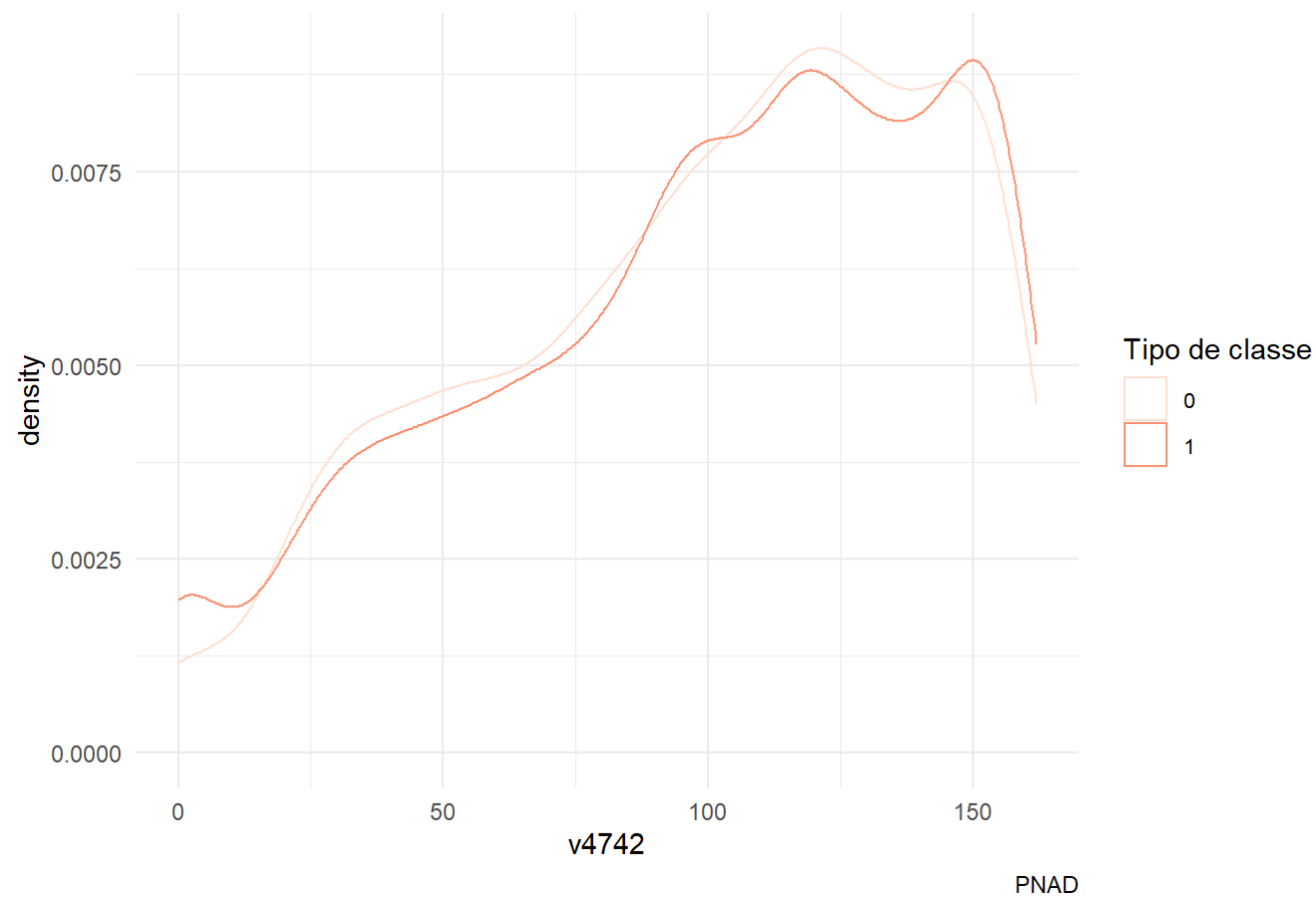
```
pnad2009_filtrada %>%  
  ggplot()+  
  geom_density(aes(v9001, stat(density), color = factor(tratamento)))+  
  theme_minimal() +  
  labs(title = 'Trabalhou na semana de referência 2009',  
        caption = 'PNAD') +  
  scale_colour_brewer(palette = 'Reds', name = "Tipo de classe") +  
  theme(plot.title=element_text(size=12, face="bold", hjust = 0.5),  
        legend.text=element_text(size=8))
```

Trabalhou na semana de referência 2009



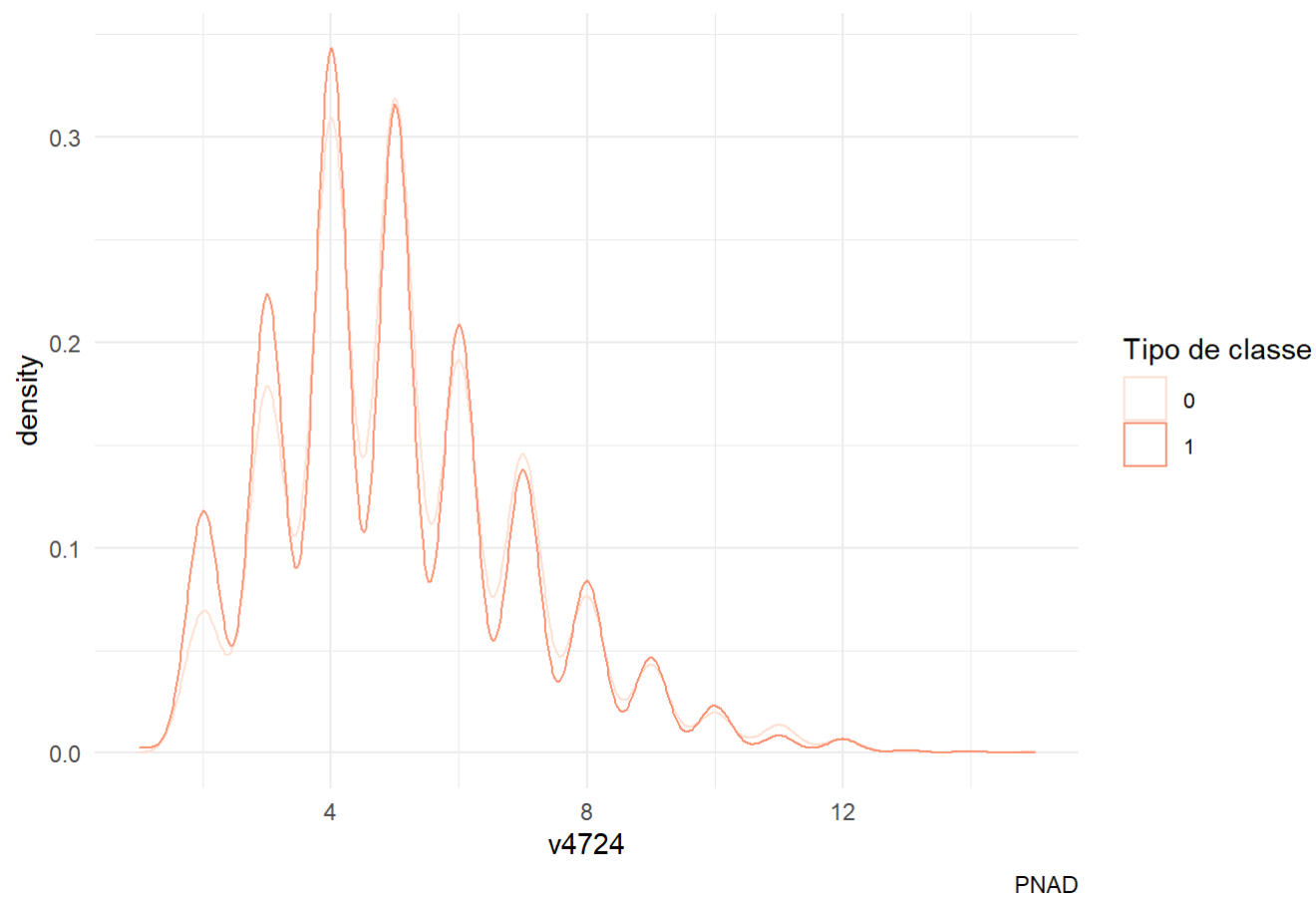
```
pnad2009_filtrada %>%  
  ggplot()+  
  geom_density(aes(v4742, stat(density), color = factor(tratamento)))+  
  theme_minimal() +  
  labs(title = 'Rendimento mensal domiciliar per capita 2009',  
        caption = 'PNAD') +  
  scale_colour_brewer(palette = 'Reds', name = "Tipo de classe") +  
  theme(plot.title=element_text(size=12, face="bold", hjust = 0.5),  
        legend.text=element_text(size=8))
```

Rendimento mensal domiciliar per capita 2009



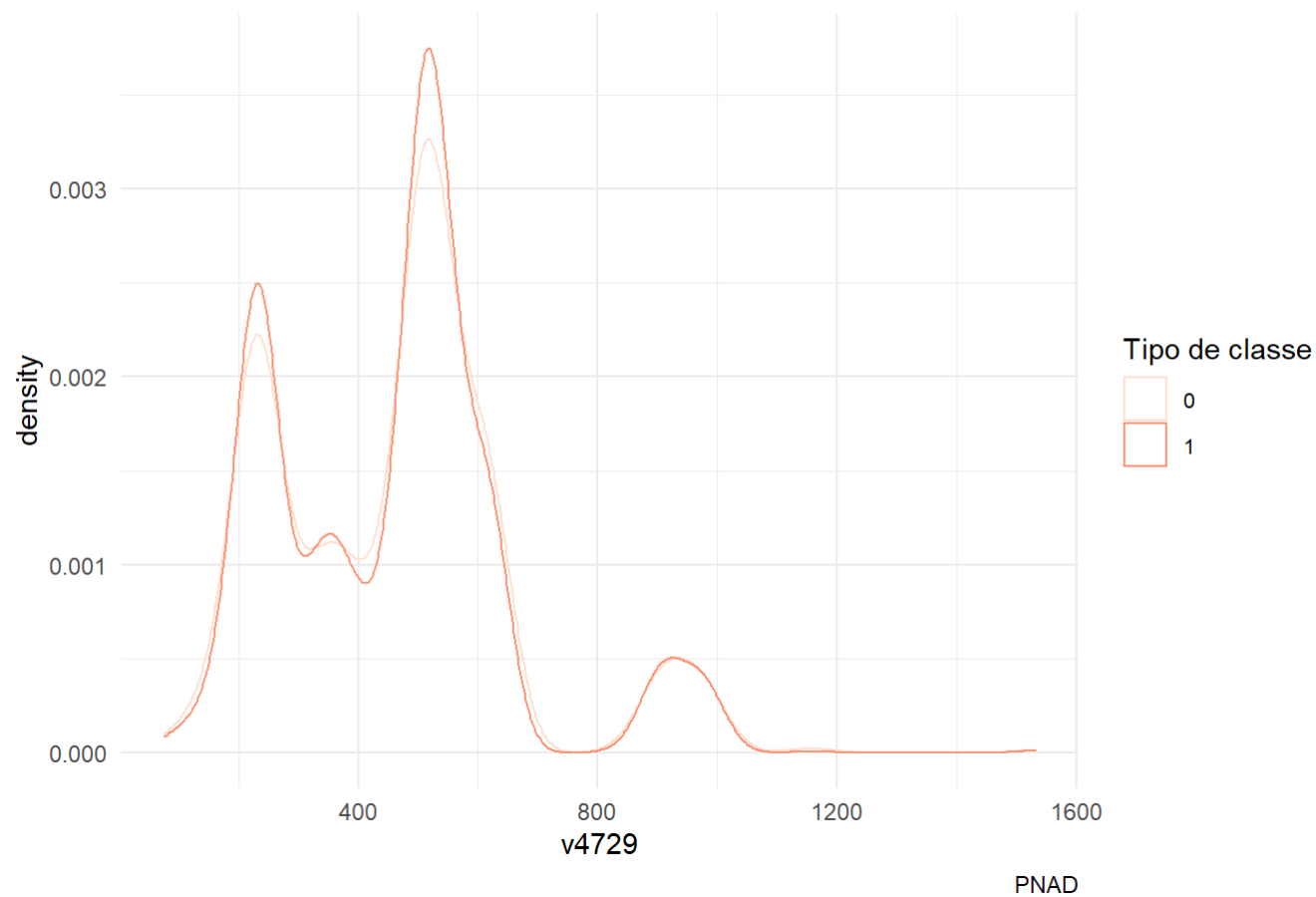
```
pnad2009_filtrada %>%  
  ggplot()+  
  geom_density(aes(v4724, stat(density), color = factor(tratamento)))+  
  theme_minimal() +  
  labs(title = 'Número de componentes da família 2009',  
        caption = 'PNAD') +  
  scale_colour_brewer(palette = 'Reds', name = "Tipo de classe") +  
  theme(plot.title=element_text(size=12, face="bold", hjust = 0.5),  
        legend.text=element_text(size=8))
```

Número de componentes da família 2009



```
pnad2009_filtrada %>%  
  ggplot()+  
  geom_density(aes(v4729, stat(density), color = factor(tratamento)))+  
  theme_minimal() +  
  labs(title = 'Peso da pessoa 2009',  
        caption = 'PNAD') +  
  scale_colour_brewer(palette = 'Reds', name = "Tipo de classe") +  
  theme(plot.title=element_text(size=12, face="bold", hjust = 0.5),  
        legend.text=element_text(size=8))
```

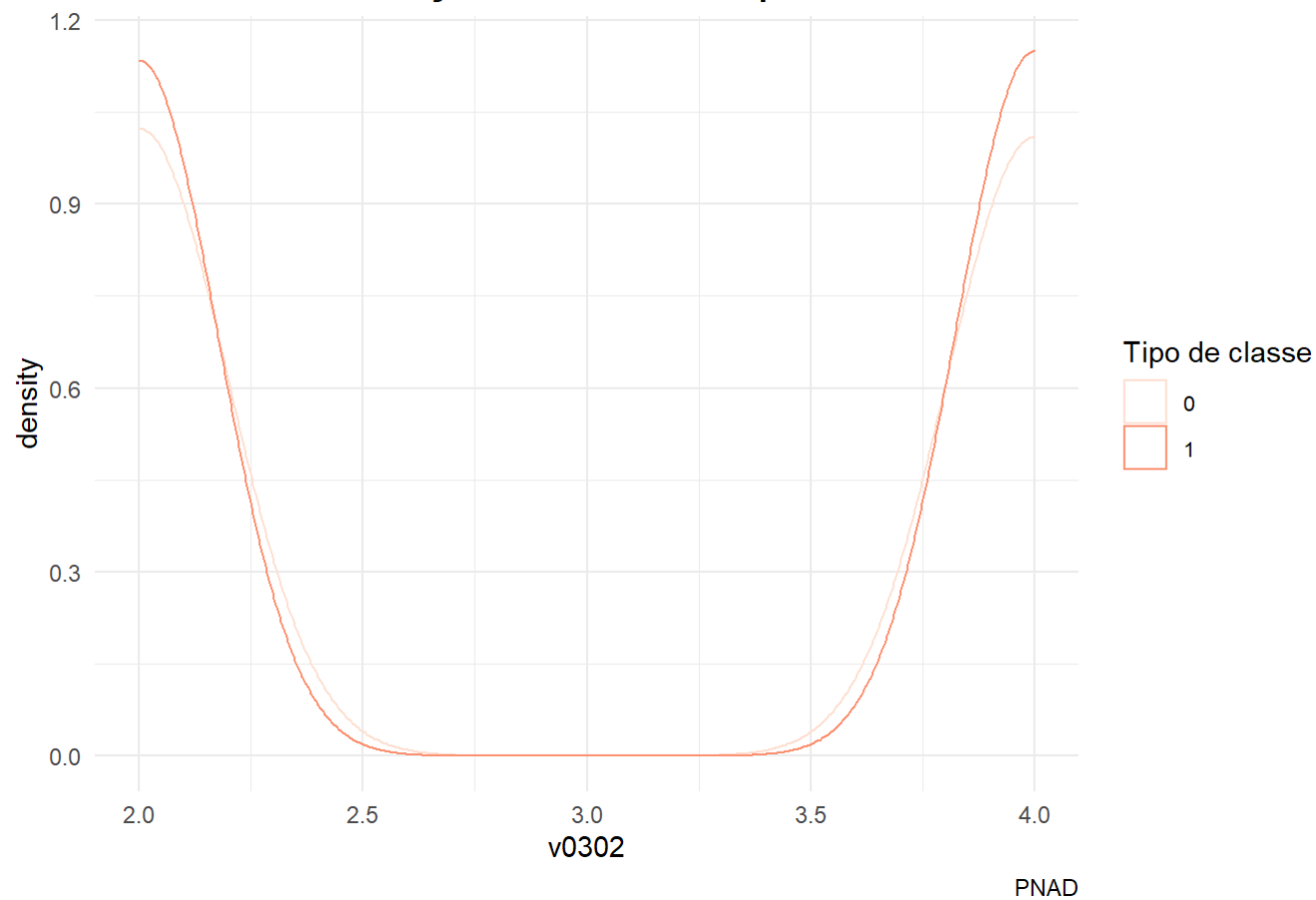
Peso da pessoa 2009



2006

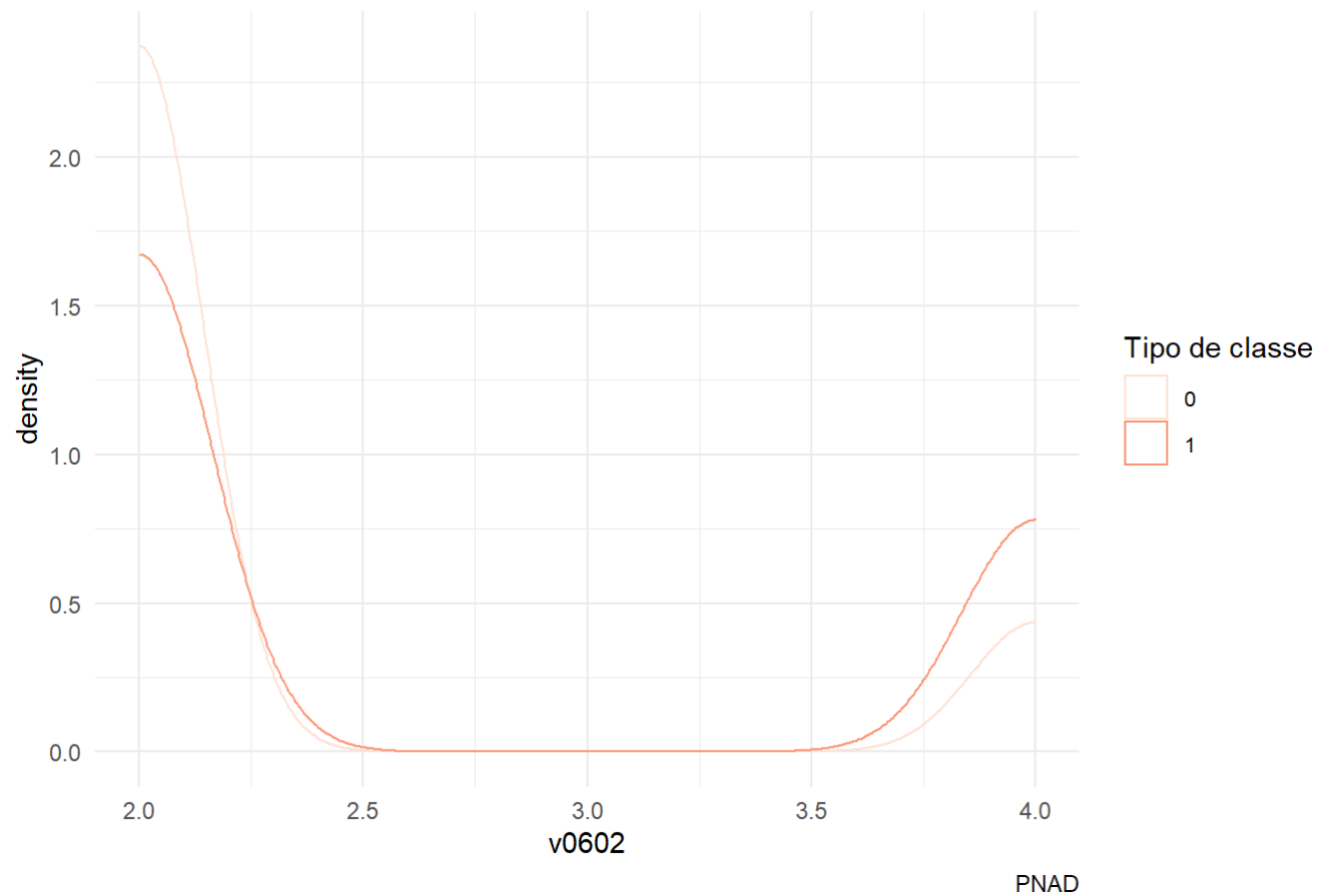
```
pnad2006_filtrada %>%  
  ggplot()+  
  geom_density(aes(v0302, stat(density), color = factor(tratamento)))+  
  theme_minimal() +  
  labs(title = 'Distribuição de Sexos Por Grupo 2006',  
        caption = 'PNAD') +  
  scale_colour_brewer(palette = 'Reds', name = "Tipo de classe") +  
  theme(plot.title=element_text(size=12, face="bold", hjust = 0.5),  
        legend.text=element_text(size=8))
```


Distribuição de Sexos Por Grupo 2006



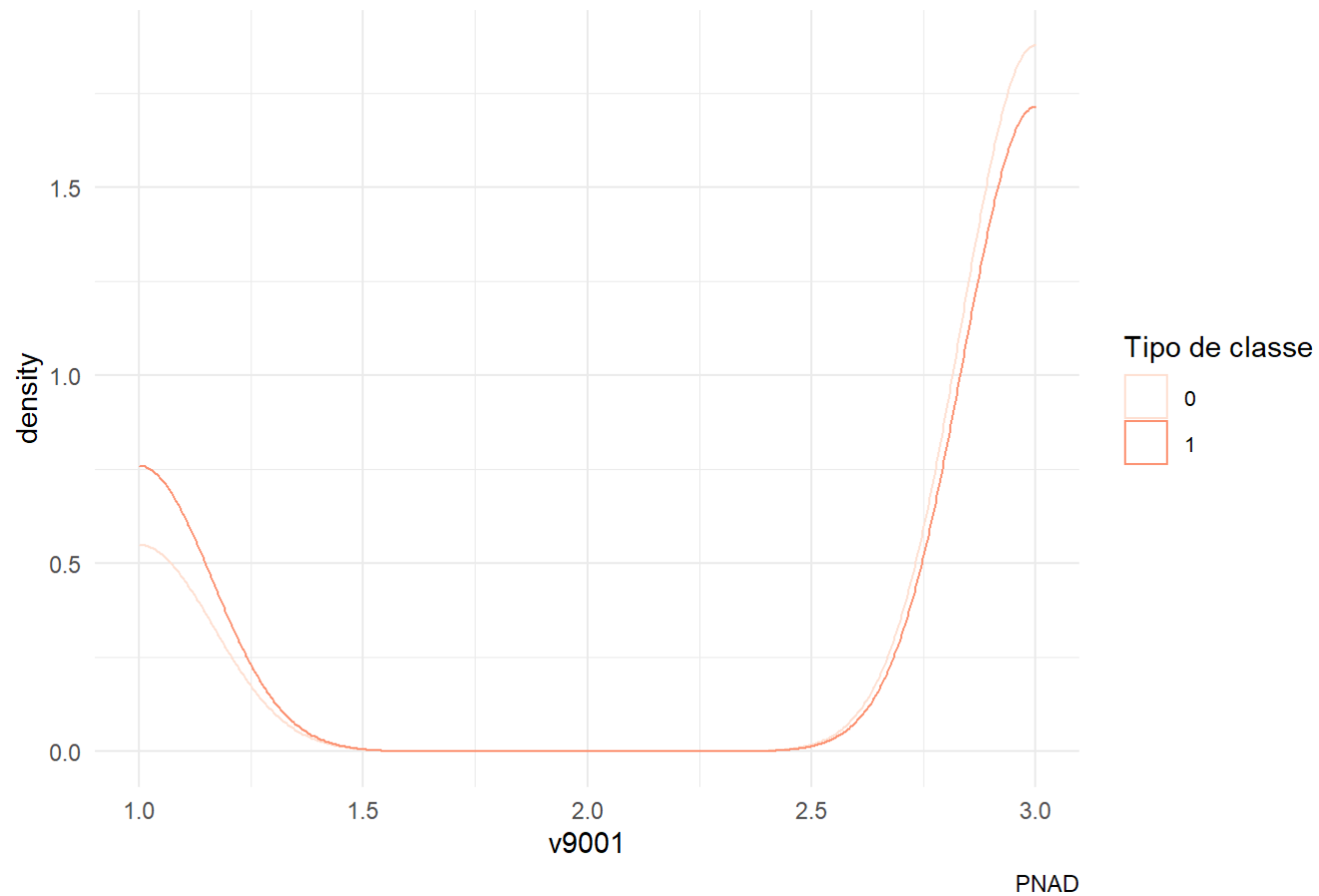
```
pnad2006_filtrada %>%  
  ggplot()+  
  geom_density(aes(v0602, stat(density), color = factor(tratamento)))+  
  theme_minimal() +  
  labs(title = 'Frequência Escola ou Creche 2006',  
        caption = 'PNAD') +  
  scale_colour_brewer(palette = 'Reds', name = "Tipo de classe") +  
  theme(plot.title=element_text(size=12, face="bold", hjust = 0.5),  
        legend.text=element_text(size=8))
```

Frequência Escola ou Creche 2006



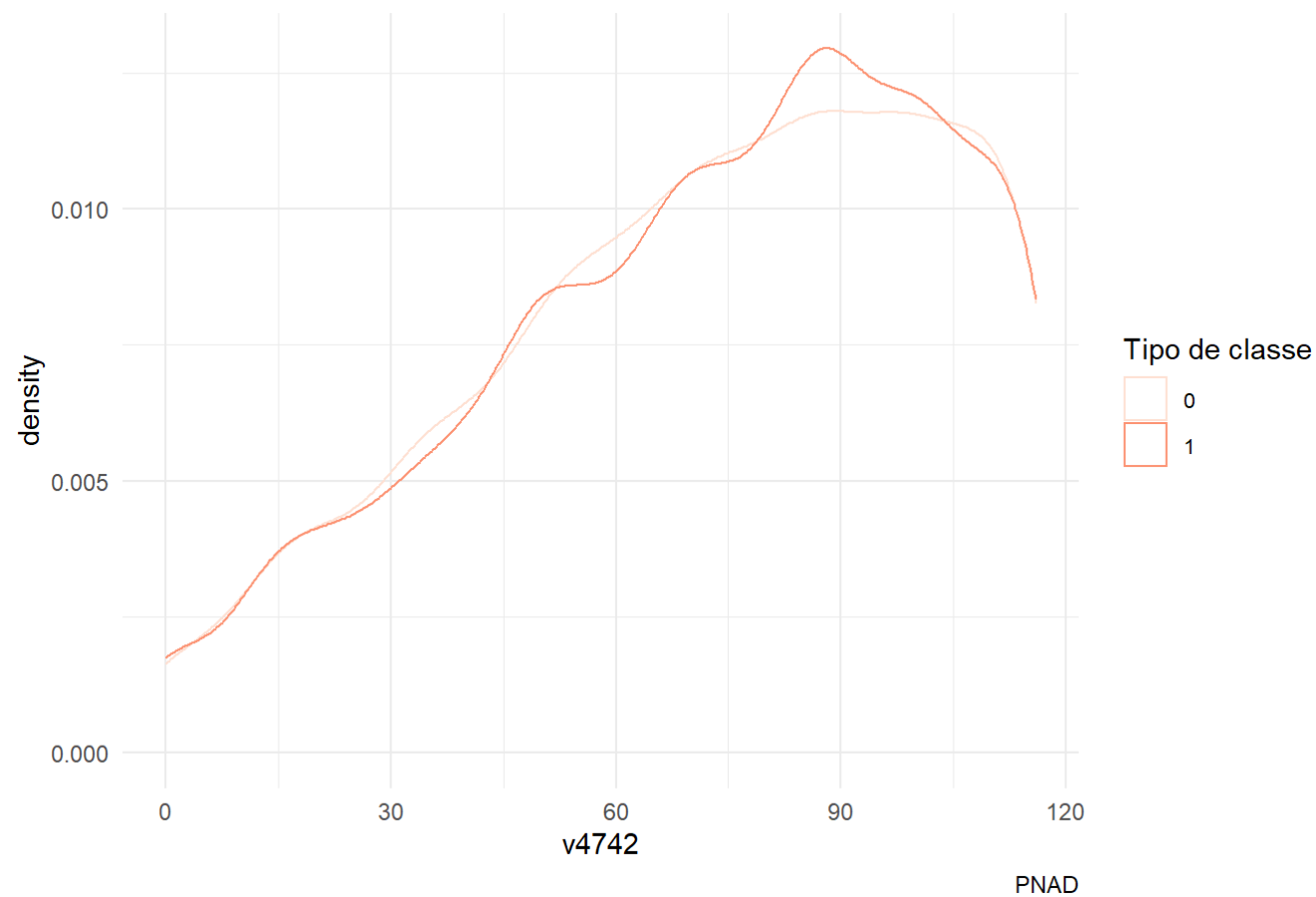
```
pnad2006_filtrada %>%
  ggplot()+
  geom_density(aes(v9001, stat(density), color = factor(tratamento)))+
  theme_minimal() +
  labs(title = 'Trabalhou na semana de referência 2006',
        caption = 'PNAD') +
  scale_colour_brewer(palette = 'Reds', name = "Tipo de classe") +
  theme(plot.title=element_text(size=12, face="bold", hjust = 0.5),
        legend.text=element_text(size=8))
```

Trabalhou na semana de referência 2006



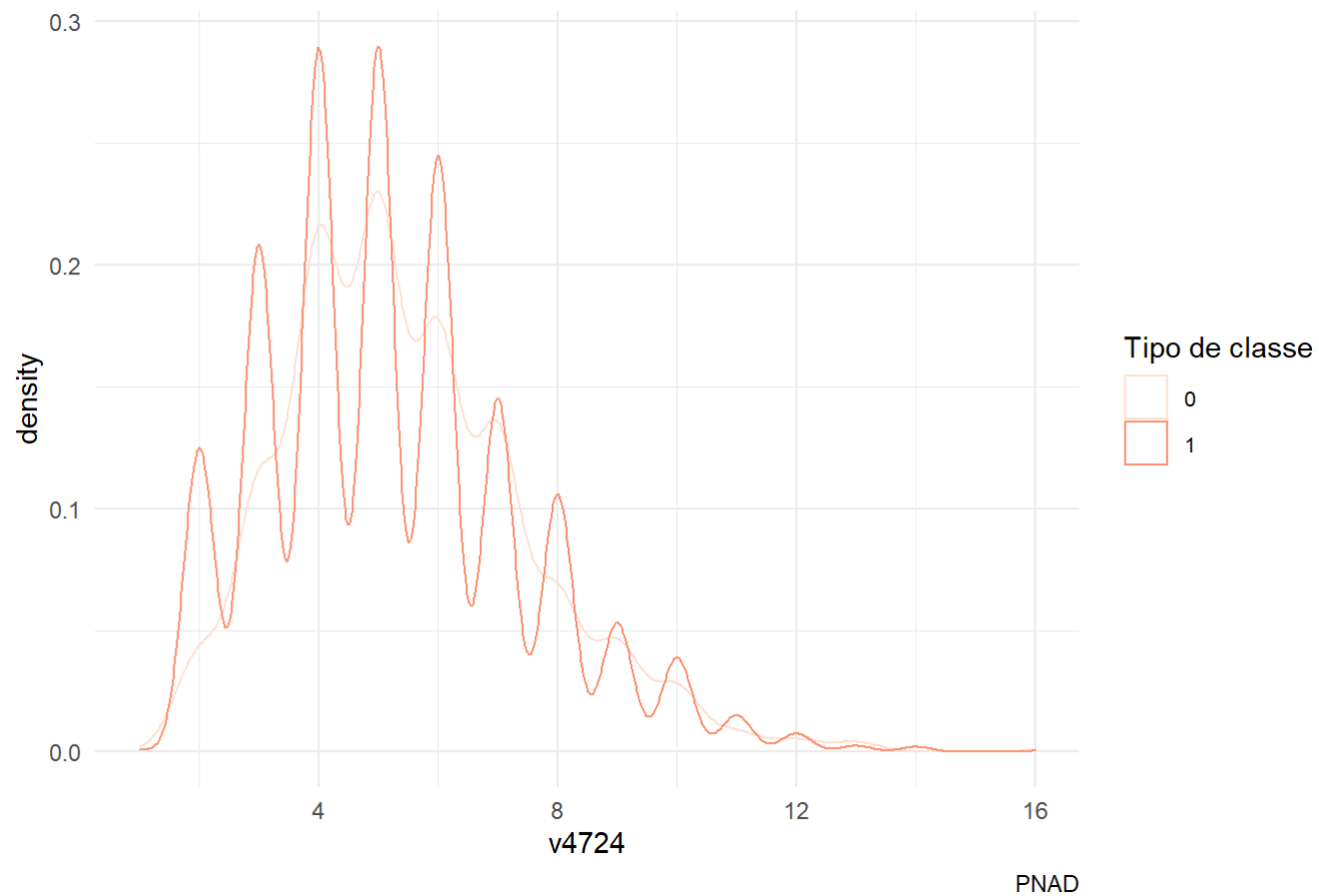
```
pnad2006_filtrada %>%  
  ggplot()+  
  geom_density(aes(v4742, stat(density), color = factor(tratamento)))+  
  theme_minimal() +  
  labs(title = 'Rendimento mensal domiciliar per capita 2006',  
        caption = 'PNAD') +  
  scale_colour_brewer(palette = 'Reds', name = "Tipo de classe") +  
  theme(plot.title=element_text(size=12, face="bold", hjust = 0.5),  
        legend.text=element_text(size=8))
```

Rendimento mensal domiciliar per capita 2006



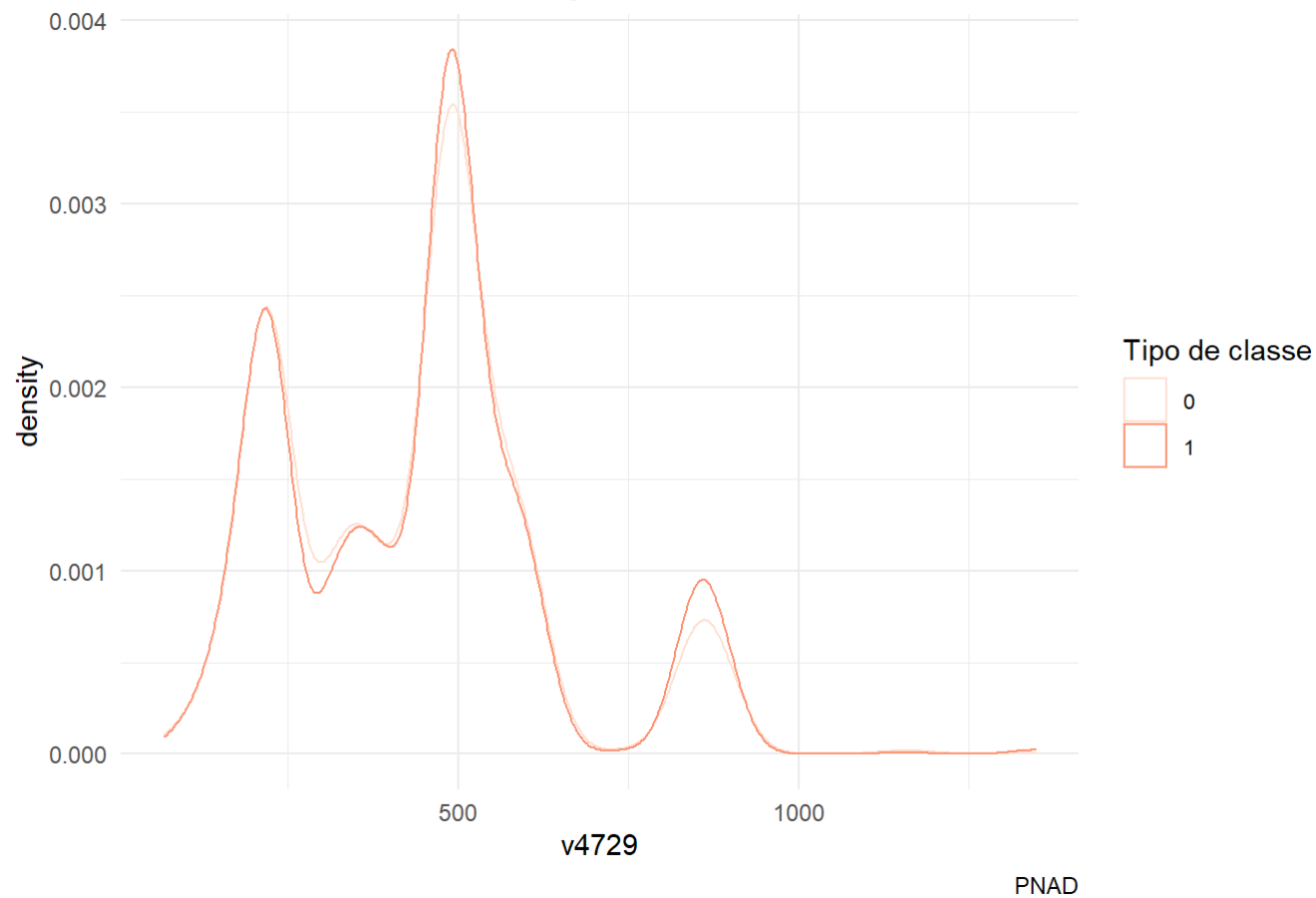
```
pnad2006_filtrada %>%  
  ggplot()+  
  geom_density(aes(v4724, stat(density), color = factor(tratamento)))+  
  theme_minimal() +  
  labs(title = 'Número de componentes da família 2006',  
        caption = 'PNAD') +  
  scale_colour_brewer(palette = 'Reds', name = "Tipo de classe") +  
  theme(plot.title=element_text(size=12, face="bold", hjust = 0.5),  
        legend.text=element_text(size=8))
```

Número de componentes da família 2006



```
pnad2006_filtrada %>%
  ggplot()+
  geom_density(aes(v4729, stat(density), color = factor(tratamento)))+
  theme_minimal() +
  labs(title = 'Peso da pessoa 2006',
        caption = 'PNAD') +
  scale_colour_brewer(palette = 'Reds', name = "Tipo de classe") +
  theme(plot.title=element_text(size=12, face="bold", hjust = 0.5),
        legend.text=element_text(size=8))
```

Peso da pessoa 2006



```
summary(pnad2006_filtrada)
```

```
##      v0101      uf      v0102      v0103
## Min.   :2006   Min.   :11.00   Min.   :11000015   Length:5664
## 1st Qu.:2006   1st Qu.:22.00   1st Qu.:22000909   Class :character
## Median :2006   Median :26.00   Median :26004220   Mode  :character
## Mean   :2006   Mean   :27.29   Mean   :27302215
## 3rd Qu.:2006   3rd Qu.:31.00   3rd Qu.:31003476
## Max.   :2006   Max.   :53.00   Max.   :53602390
##
##      v0301      v0302      v3031      v3032
## Min.    : 1.00   Min.    :2.000   Min.    : 0.00   Min.    : 1.000
## 1st Qu.: 3.00   1st Qu.:2.000   1st Qu.: 8.00   1st Qu.: 4.000
## Median : 3.00   Median :4.000   Median :15.00   Median : 7.000
## Mean    : 3.69   Mean    :3.002   Mean    :15.25   Mean    : 6.684
```

```

##      3rd Qu.: 4.00      3rd Qu.:4.000      3rd Qu.:23.00      3rd Qu.:10.000
##      Max.      :16.00      Max.      :4.000      Max.      :31.00      Max.      :20.000
##
##      v3033      v8005      v0401      v0402      v0403
##      Min.      : 15      Min.      :15.00      Min.      :1.000      Min.      :1.000      Min.      :1.000
##      1st Qu.:1989      1st Qu.:15.00      1st Qu.:3.000      1st Qu.:3.000      1st Qu.:1.000
##      Median :1990      Median :16.00      Median :3.000      Median :3.000      Median :1.000
##      Mean      :1969      Mean      :15.96      Mean      :3.049      Mean      :2.936      Mean      :1.073
##      3rd Qu.:1991      3rd Qu.:17.00      3rd Qu.:3.000      3rd Qu.:3.000      3rd Qu.:1.000
##      Max.      :1991      Max.      :17.00      Max.      :5.000      Max.      :5.000      Max.      :6.000
##
##      v0404      v0405      v0406      v0407
##      Min.      :0.000      Min.      :1.00      Min.      :2.000      Min.      : 1.000
##      1st Qu.:2.000      1st Qu.:1.00      1st Qu.:2.000      1st Qu.: 1.000
##      Median :8.000      Median :1.00      Median :2.000      Median : 2.000
##      Mean      :6.078      Mean      :1.05      Mean      :2.281      Mean      : 1.748
##      3rd Qu.:8.000      3rd Qu.:1.00      3rd Qu.:2.000      3rd Qu.: 2.000
##      Max.      :8.000      Max.      :5.00      Max.      :4.000      Max.      :14.000
##      NA's      :129      NA's      :907
##      v0408      v0501      v0502      v5030
##      Min.      :2.000      Min.      :1.000      Min.      :2.000      Min.      :11.00
##      1st Qu.:2.000      1st Qu.:1.000      1st Qu.:2.000      1st Qu.:21.00
##      Median :2.000      Median :1.000      Median :2.000      Median :27.00
##      Mean      :2.004      Mean      :1.437      Mean      :2.668      Mean      :29.61
##      3rd Qu.:2.000      3rd Qu.:1.000      3rd Qu.:4.000      3rd Qu.:35.00
##      Max.      :4.000      Max.      :3.000      Max.      :4.000      Max.      :98.00
##      NA's      :4427      NA's      :5251
##      v0504      v0505      v5061      v5062      v5063
##      Min.      :2.000      Min.      :1.000      Min.      :2      Min.      :0.000      Min.      :4
##      1st Qu.:4.000      1st Qu.:1.000      1st Qu.:2      1st Qu.:1.000      1st Qu.:4
##      Median :4.000      Median :1.000      Median :2      Median :2.000      Median :4
##      Mean      :3.926      Mean      :1.023      Mean      :2      Mean      :1.994      Mean      :4
##      3rd Qu.:4.000      3rd Qu.:1.000      3rd Qu.:2      3rd Qu.:3.000      3rd Qu.:4
##      Max.      :4.000      Max.      :3.000      Max.      :2      Max.      :4.000      Max.      :4
##      NA's      :413      NA's      :5058      NA's      :5489      NA's      :5489      NA's      :5511
##      v5064      v5065      v0507      v5080      v5090
##      Min.      :5.000      Min.      :6      Min.      :1.000      Min.      :11.00      Min.      :11.0
##      1st Qu.:6.000      1st Qu.:6      1st Qu.:3.000      1st Qu.:25.00      1st Qu.:22.0
##      Median :7.000      Median :6      Median :3.000      Median :32.00      Median :29.0
##      Mean      :6.915      Mean      :6      Mean      :2.543      Mean      :31.86      Mean      :31.2
##      3rd Qu.:8.000      3rd Qu.:6      3rd Qu.:3.000      3rd Qu.:35.00      3rd Qu.:35.0
##      Max.      :9.000      Max.      :6      Max.      :3.000      Max.      :98.00      Max.      :98.0

```

##	NA's :5511	NA's :5393	NA's :5489	NA's :5529	NA's :5065
##	v0510	v0511	v5121	v5122	v5123
##	Min. :2.000	Min. :1.000	Min. :2	Min. :0.000	Min. :4
##	1st Qu.:2.000	1st Qu.:3.000	1st Qu.:2	1st Qu.:1.000	1st Qu.:4
##	Median :2.000	Median :3.000	Median :2	Median :2.000	Median :4
##	Mean :2.011	Mean :2.612	Mean :2	Mean :1.884	Mean :4
##	3rd Qu.:2.000	3rd Qu.:3.000	3rd Qu.:2	3rd Qu.:3.000	3rd Qu.:4
##	Max. :4.000	Max. :3.000	Max. :2	Max. :4.000	Max. :4
##	NA's :7	NA's :39	NA's :5310	NA's :5310	NA's :5423
##	v5124	v5125	v0601	v0602	v6002
##	Min. :5.000	Min. :6	Min. :1.000	Min. :2.000	Min. :2.000
##	1st Qu.:5.000	1st Qu.:6	1st Qu.:1.000	1st Qu.:2.000	1st Qu.:2.000
##	Median :6.000	Median :6	Median :1.000	Median :2.000	Median :2.000
##	Mean :6.631	Mean :6	Mean :1.064	Mean :2.519	Mean :2.028
##	3rd Qu.:8.000	3rd Qu.:6	3rd Qu.:1.000	3rd Qu.:4.000	3rd Qu.:2.000
##	Max. :9.000	Max. :6	Max. :3.000	Max. :4.000	Max. :4.000
##	NA's :5423	NA's :5169			NA's :1470
##	v0603	v0604	v0605	v0606	
##	Min. :1.000	Min. :2.000	Min. :1.00	Min. :2.000	
##	1st Qu.:1.000	1st Qu.:2.000	1st Qu.:2.00	1st Qu.:2.000	
##	Median :1.000	Median :2.000	Median :5.00	Median :2.000	
##	Mean :1.399	Mean :2.569	Mean :4.67	Mean :2.056	
##	3rd Qu.:2.000	3rd Qu.:4.000	3rd Qu.:7.00	3rd Qu.:2.000	
##	Max. :6.000	Max. :4.000	Max. :8.00	Max. :4.000	
##	NA's :1470	NA's :5548	NA's :1518	NA's :4194	
##	v0607	v0608	v0609	v0610	
##	Min. : 4.000	Min. :2.000	Min. :1.000	Min. :1.00	
##	1st Qu.: 4.000	1st Qu.:2.000	1st Qu.:1.000	1st Qu.:4.00	
##	Median : 4.000	Median :2.000	Median :1.000	Median :5.00	
##	Mean : 4.117	Mean :2.006	Mean :1.092	Mean :4.77	
##	3rd Qu.: 4.000	3rd Qu.:2.000	3rd Qu.:1.000	3rd Qu.:6.00	
##	Max. :10.000	Max. :4.000	Max. :3.000	Max. :8.00	
##	NA's :4235	NA's :4244	NA's :4248	NA's :4313	
##	v0611	v1901	v1902	v1903	
##	Min. :1.000	Min. :1.000	Min. : 1.00	Min. :1.000	
##	1st Qu.:3.000	1st Qu.:1.000	1st Qu.: 1.00	1st Qu.:1.000	
##	Median :3.000	Median :5.000	Median : 2.00	Median :1.000	
##	Mean :2.811	Mean :3.893	Mean : 1.81	Mean :1.519	
##	3rd Qu.:3.000	3rd Qu.:5.000	3rd Qu.: 2.00	3rd Qu.:3.000	
##	Max. :3.000	Max. :5.000	Max. :13.00	Max. :3.000	
##	NA's :4309		NA's :1598		
##	v1904	v1905	v1961	v1962	

##	Min. :2.000	Min. :1.000	Min. :2.000	Min. : 1.000	
##	1st Qu.:2.000	1st Qu.:1.000	1st Qu.:2.000	1st Qu.: 2.000	
##	Median :2.000	Median :3.000	Median :2.000	Median : 3.000	
##	Mean :2.684	Mean :2.172	Mean :2.775	Mean : 5.419	
##	3rd Qu.:4.000	3rd Qu.:3.000	3rd Qu.:2.000	3rd Qu.: 5.000	
##	Max. :6.000	Max. :3.000	Max. :8.000	Max. :88.000	
##	NA's :1470	NA's :1470	NA's :3927	NA's :3927	
##	v1977	v1908	v1909	v1970	
##	Min. : 1.000	Min. :2.000	Min. :1.000	Min. : 1.000	
##	1st Qu.: 9.000	1st Qu.:2.000	1st Qu.:1.000	1st Qu.: 4.000	
##	Median : 9.000	Median :2.000	Median :1.000	Median :11.000	
##	Mean : 8.336	Mean :2.444	Mean :1.456	Mean : 9.396	
##	3rd Qu.:10.000	3rd Qu.:2.000	3rd Qu.:1.000	3rd Qu.:11.000	
##	Max. :13.000	Max. :4.000	Max. :3.000	Max. :16.000	
##	NA's :3927	NA's :1470	NA's :2401	NA's :4194	
##	v1911	v1912	v0701	v0702	v0703
##	Min. :1.000	Min. :2.000	Min. : NA	Min. : NA	Min. : NA
##	1st Qu.:1.000	1st Qu.:2.000	1st Qu.: NA	1st Qu.: NA	1st Qu.: NA
##	Median :3.000	Median :2.000	Median : NA	Median : NA	Median : NA
##	Mean :2.004	Mean :2.858	Mean :NaN	Mean :NaN	Mean :NaN
##	3rd Qu.:3.000	3rd Qu.:4.000	3rd Qu.: NA	3rd Qu.: NA	3rd Qu.: NA
##	Max. :3.000	Max. :4.000	Max. : NA	Max. : NA	Max. : NA
##	NA's :4194	NA's :4932	NA's :5664	NA's :5664	NA's :5664
##	v0704	v0705	v7060	v7070	v0708
##	Min. : NA	Mode:logical	Mode:logical	Mode:logical	Mode:logical
##	1st Qu.: NA	NA's:5664	NA's:5664	NA's:5664	NA's:5664
##	Median : NA				
##	Mean :NaN				
##	3rd Qu.: NA				
##	Max. : NA				
##	NA's :5664				
##	v7090	v7100	v0711	v7121	v7122
##	Min. : NA	Min. : NA	Min. : NA	Mode:logical	Mode:logical
##	1st Qu.: NA	1st Qu.: NA	1st Qu.: NA	NA's:5664	NA's:5664
##	Median : NA	Median : NA	Median : NA		
##	Mean :NaN	Mean :NaN	Mean :NaN		
##	3rd Qu.: NA	3rd Qu.: NA	3rd Qu.: NA		
##	Max. : NA	Max. : NA	Max. : NA		
##	NA's :5664	NA's :5664	NA's :5664		
##	v7123	v7124	v7125	v7126	v7127
##	Mode:logical	Mode:logical	Mode:logical	Mode:logical	Mode:logical
##	NA's:5664	NA's:5664	NA's:5664	NA's:5664	NA's:5664

```

##
##
##
##
##
## v7128 v0713 v0714 v0715 v9001
## Mode:logical Min. : NA Min. : NA Min. : NA Min. :1.000
## NA's:5664 1st Qu.: NA 1st Qu.: NA 1st Qu.: NA 1st Qu.:1.000
## Median : NA Median : NA Median : NA Median :3.000
## Mean :NaN Mean :NaN Mean :NaN Mean :2.444
## 3rd Qu.: NA 3rd Qu.: NA 3rd Qu.: NA 3rd Qu.:3.000
## Max. : NA Max. : NA Max. : NA Max. :3.000
## NA's :5664 NA's :5664 NA's :5664
## v9002 v9003 v9004 v9005 v9906
## Min. :2.000 Min. :1.000 Min. :2.000 Min. :1.000 Min. :2391
## 1st Qu.:4.000 1st Qu.:3.000 1st Qu.:4.000 1st Qu.:1.000 1st Qu.:5211
## Median :4.000 Median :3.000 Median :4.000 Median :1.000 Median :6229
## Mean :3.994 Mean :2.921 Mean :3.998 Mean :1.042 Mean :6072
## 3rd Qu.:4.000 3rd Qu.:3.000 3rd Qu.:4.000 3rd Qu.:1.000 3rd Qu.:6239
## Max. :4.000 Max. :3.000 Max. :4.000 Max. :5.000 Max. :9921
## NA's :1575 NA's :1587 NA's :1749 NA's :3912 NA's :3912
## v9907 v9008 v9009 v9010 v9011
## Min. : 1101 Min. : 2.00 Min. :1.000 Min. :4 Min. :1.000
## 1st Qu.: 1109 1st Qu.:11.00 1st Qu.:3.000 1st Qu.:4 1st Qu.:1.000
## Median : 1208 Median :11.00 Median :3.000 Median :4 Median :1.000
## Mean :29012 Mean :10.19 Mean :2.852 Mean :4 Mean :1.066
## 3rd Qu.:53101 3rd Qu.:12.00 3rd Qu.:3.000 3rd Qu.:4 3rd Qu.:1.000
## Max. :99888 Max. :13.00 Max. :3.000 Max. :4 Max. :3.000
## NA's :3912 NA's :4705 NA's :5637 NA's :5634 NA's :5543
## v9012 v9013 v9014 v9151 v9152
## Mode:logical Min. :1.000 Mode:logical Mode:logical Mode:logical
## NA's:5664 1st Qu.:3.000 NA's:5664 NA's:5664 NA's:5664
## Median :3.000
## Mean :2.987
## 3rd Qu.:3.000
## Max. :3.000
## NA's :5513
## v9153 v9154 v9155 v9156 v9157
## Mode:logical Mode:logical Mode:logical Mode:logical Mode:logical
## NA's:5664 NA's:5664 NA's:5664 NA's:5664 NA's:5664
##
##

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##
##
##
##   v9158      v9159      v9160      v9161      v9162
## Mode:logical Mode:logical Mode:logical Mode:logical Mode:logical
## NA's:5664    NA's:5664    NA's:5664    NA's:5664    NA's:5664
##
##
##
##
##   v9163      v9164      v9165      v9016      v9017
## Mode:logical Mode:logical Mode:logical Min.   : NA    Mode:logical
## NA's:5664    NA's:5664    NA's:5664    1st Qu.: NA    NA's:5664
##                                     Median : NA
##                                     Mean   :NaN
##                                     3rd Qu.: NA
##                                     Max.   : NA
##                                     NA's   :5664
##
##   v9018      v9019      v9201      v9202      v9203
## Min.   : NA    Min.   : NA    Min.   :2     Min.   : 1.00    Min.   :1.000
## 1st Qu.: NA    1st Qu.: NA    1st Qu.:2     1st Qu.: 1.75    1st Qu.:1.000
## Median : NA    Median : NA    Median :2     Median : 3.00    Median :1.000
## Mean   :NaN    Mean   :NaN    Mean   :2     Mean   : 44.25    Mean   :1.375
## 3rd Qu.: NA    3rd Qu.: NA    3rd Qu.:2     3rd Qu.: 19.25    3rd Qu.:1.250
## Max.   : NA    Max.   : NA    Max.   :2     Max.   :285.00    Max.   :3.000
## NA's   :5664    NA's   :5664    NA's   :5656    NA's   :5656    NA's   :5656
##   v9204      v9205      v9206      v9207      v9208
## Min.   : 3025    Min.   :4.0     Mode:logical Mode:logical Mode:logical
## 1st Qu.: 4023    1st Qu.:4.0     NA's:5664    NA's:5664    NA's:5664
## Median : 7510    Median :4.5
## Mean   : 8703    Mean   :4.5
## 3rd Qu.:10000    3rd Qu.:5.0
## Max.   :24200    Max.   :5.0
## NA's   :5656    NA's   :5656
##   v9209      v9210      v9211      v9212      v9213
## Mode:logical Mode:logical Mode:logical Mode:logical Mode:logical
## NA's:5664    NA's:5664    NA's:5664    NA's:5664    NA's:5664
##
##
##
##

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##
##   v9214          v9215          v9021          v9022          v9023
## Mode:logical    Mode:logical    Min.   :1.00    Min.   :2.0    Mode:logical
## NA's:5664       NA's:5664       1st Qu.:4.00    1st Qu.:2.5    NA's:5664
##                                     Median :4.00    Median :3.0
##                                     Mean    :3.75    Mean    :3.0
##                                     3rd Qu.:4.00    3rd Qu.:3.5
##                                     Max.     :5.00    Max.     :4.0
##                                     NA's      :5648    NA's      :5662
##
##   v9024          v9025          v9026          v9027          v9028
## Min.   :2.000    Min.   :1.000    Min.   :1.000    Min.   :1.00    Min.   :2
## 1st Qu.:4.000    1st Qu.:1.000    1st Qu.:4.000    1st Qu.:1.00    1st Qu.:2
## Median :4.000    Median :1.000    Median :5.000    Median :3.00    Median :2
## Mean   :3.625    Mean   :1.375    Mean   :4.231    Mean   :2.25    Mean   :2
## 3rd Qu.:4.000    3rd Qu.:1.000    3rd Qu.:5.000    3rd Qu.:3.00    3rd Qu.:2
## Max.   :4.000    Max.   :3.000    Max.   :6.000    Max.   :3.00    Max.   :2
## NA's   :5648     NA's   :5648     NA's   :5651     NA's   :5648     NA's   :5658
##
##   v9029          v9030          v9031          v9032
## Min.   :1.000    Min.   :2.000    Min.   :1.000    Min.   :2.000
## 1st Qu.:1.000    1st Qu.:2.000    1st Qu.:3.000    1st Qu.:2.000
## Median :2.000    Median :2.000    Median :3.000    Median :2.000
## Mean   :2.338    Mean   :2.076    Mean   :2.833    Mean   :2.152
## 3rd Qu.:3.000    3rd Qu.:2.000    3rd Qu.:3.000    3rd Qu.:2.000
## Max.   :7.000    Max.   :4.000    Max.   :3.000    Max.   :4.000
## NA's   :4871     NA's   :5348     NA's   :5652     NA's   :5348
##
##   v9033          v9034          v9035          v9036          v9037
## Min.   :1.000    Min.   :4        Min.   :3        Min.   :2.00    Min.   :1.000
## 1st Qu.:3.000    1st Qu.:4        1st Qu.:3        1st Qu.:4.00    1st Qu.:1.000
## Median :3.000    Median :4        Median :3        Median :4.00    Median :1.000
## Mean   :3.583    Mean   :4        Mean   :3        Mean   :3.79    Mean   :1.019
## 3rd Qu.:5.000    3rd Qu.:4        3rd Qu.:3        3rd Qu.:4.00    3rd Qu.:1.000
## Max.   :5.000    Max.   :4        Max.   :3        Max.   :4.00    Max.   :3.000
## NA's   :5640     NA's   :5660     NA's   :5640     NA's   :5454     NA's   :5454
##
##   v9038          v9039          v9040          v9041          v9042
## Min.   :1.000    Min.   :2.00     Min.   :2.000    Min.   :1.000    Min.   :2.000
## 1st Qu.:5.000    1st Qu.:2.25     1st Qu.:4.000    1st Qu.:1.000    1st Qu.:4.000
## Median :6.000    Median :2.50     Median :4.000    Median :1.000    Median :4.000
## Mean   :5.389    Mean   :2.50     Mean   :4.781    Mean   :1.835    Mean   :3.956
## 3rd Qu.:6.000    3rd Qu.:2.75     3rd Qu.:6.000    3rd Qu.:3.000    3rd Qu.:4.000
## Max.   :7.000    Max.   :3.00     Max.   :8.000    Max.   :8.000    Max.   :4.000
## NA's   :5456     NA's   :5662     NA's   :5372     NA's   :5197     NA's   :4987
##
##   v9043          v9044          v9045          v9046          v9047

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##	Min. :1.000	Min. :2.00	Min. :2.000	Min. :1.000
##	1st Qu.:3.000	1st Qu.:2.00	1st Qu.:3.00	1st Qu.:4.000
##	Median :3.000	Median :4.00	Median :3.00	Median :4.000
##	Mean :2.861	Mean :3.27	Mean :2.82	Mean :3.982
##	3rd Qu.:3.000	3rd Qu.:4.00	3rd Qu.:3.00	3rd Qu.:4.000
##	Max. :3.000	Max. :4.00	Max. :3.00	Max. :4.000
##	NA's :4987	NA's :4987	NA's :4987	NA's :4987
##	v9048	v9049	v9050	v9051
##	Min. : NA	Min. :1.000	Min. :2.000	Min. :1.000
##	1st Qu.: NA	1st Qu.:3.000	1st Qu.:2.000	1st Qu.:3.000
##	Median : NA	Median :3.000	Median :2.000	Median :3.000
##	Mean :NaN	Mean :2.889	Mean :2.286	Mean :2.986
##	3rd Qu.: NA	3rd Qu.:3.000	3rd Qu.:2.000	3rd Qu.:3.000
##	Max. : NA	Max. :3.000	Max. :4.000	Max. :3.000
##	NA's :5664	NA's :5538	NA's :5657	NA's :5522
##	v9531	v9532	v9533	v9534
##	Min. :1	Min. : 5.0	Min. :1.000	Mode:logical
##	1st Qu.:1	1st Qu.: 50.0	1st Qu.:1.000	NA's:5664
##	Median :1	Median :100.0	Median :1.000	NA's:5664
##	Mean :1	Mean :116.6	Mean :1.209	
##	3rd Qu.:1	3rd Qu.:150.0	3rd Qu.:1.000	
##	Max. :1	Max. :600.0	Max. :3.000	
##	NA's :4852	NA's :4852	NA's :4852	
##	v9536	v9537	v9054	v9055
##	Mode:logical	Min. :5	Min. :1.000	Min. :1.000
##	TRUE:1	1st Qu.:5	1st Qu.:2.000	1st Qu.:1.000
##	NA's:5663	Median :5	Median :2.000	Median :3.000
##		Mean :5	Mean :2.621	Mean :2.204
##		3rd Qu.:5	3rd Qu.:4.000	3rd Qu.:3.000
##		Max. :5	Max. :8.000	Max. :3.000
##		NA's :5658	NA's :4151	NA's :4626
##	v9057	v9058	v9059	v9060
##	Min. :1.000	Min. : 1.00	Min. :1.000	Min. :2
##	1st Qu.:1.000	1st Qu.:16.00	1st Qu.:3.000	1st Qu.:2
##	Median :1.000	Median :24.00	Median :3.000	Median :2
##	Mean :1.509	Mean :27.37	Mean :2.979	Mean :2
##	3rd Qu.:1.000	3rd Qu.:40.00	3rd Qu.:3.000	3rd Qu.:2
##	Max. :7.000	Max. :80.00	Max. :3.000	Max. :2
##	NA's :4701	NA's :3912	NA's :3912	NA's :5646
##	v9611	v9612	v9062	v9063
##	Min. : 0.000	Min. : 0.000	Min. :2.000	Min. :1.000
##	1st Qu.: 0.000	1st Qu.: 0.000	1st Qu.:2.000	1st Qu.:1.000

##	Median : 2.000	Median : 0.000	Median : 4.000	Median : 1.000
##	Mean : 2.686	Mean : 1.955	Mean : 3.445	Mean : 1.403
##	3rd Qu.: 5.000	3rd Qu.: 3.000	3rd Qu.: 4.000	3rd Qu.: 1.000
##	Max. : 12.000	Max. : 11.000	Max. : 4.000	Max. : 5.000
##	NA's : 3912	NA's : 3912	NA's : 5145	NA's : 5520
##	v9064	v9065	v9066	v9067
##	Min. : 0.00	Min. : 1.000	Min. : 4	Min. : 1.00
##	1st Qu.: 2.00	1st Qu.: 3.000	1st Qu.: 4	1st Qu.: 3.00
##	Median : 4.00	Median : 3.000	Median : 4	Median : 3.00
##	Mean : 4.59	Mean : 2.966	Mean : 4	Mean : 2.75
##	3rd Qu.: 7.00	3rd Qu.: 3.000	3rd Qu.: 4	3rd Qu.: 3.00
##	Max. : 11.00	Max. : 3.000	Max. : 4	Max. : 3.00
##	NA's : 5520	NA's : 5606	NA's : 5663	NA's : 1752
##	v9069	v9070	v9971	v9972
##	Min. : 1.000	Min. : 2.00	Min. : 2516	Min. : 1101
##	1st Qu.: 3.000	1st Qu.: 2.00	1st Qu.: 5126	1st Qu.: 1112
##	Median : 3.000	Median : 2.00	Median : 6210	Median : 50030
##	Mean : 2.997	Mean : 2.14	Mean : 5899	Mean : 47192
##	3rd Qu.: 3.000	3rd Qu.: 2.00	3rd Qu.: 6229	3rd Qu.: 95000
##	Max. : 3.000	Max. : 6.00	Max. : 9511	Max. : 99888
##	NA's : 2260	NA's : 5151	NA's : 5065	NA's : 5065
##	v9074	v9075	v9076	v9077
##	Min. : 4	Min. : 3	Min. : 2.00	Min. : 1.000
##	1st Qu.: 4	1st Qu.: 3	1st Qu.: 2.75	1st Qu.: 1.000
##	Median : 4	Median : 3	Median : 3.50	Median : 2.000
##	Mean : 4	Mean : 3	Mean : 3.50	Mean : 1.691
##	3rd Qu.: 4	3rd Qu.: 3	3rd Qu.: 4.25	3rd Qu.: 2.000
##	Max. : 4	Max. : 3	Max. : 5.00	Max. : 7.000
##	NA's : 5659	NA's : 5657	NA's : 5662	NA's : 5260
##	v9079	v9080	v9081	v9082
##	Min. : 1.000	Min. : 4	Min. : 3	Min. : 2.000
##	1st Qu.: 2.000	1st Qu.: 4	1st Qu.: 3	1st Qu.: 4.000
##	Median : 5.000	Median : 4	Median : 3	Median : 4.000
##	Mean : 3.545	Mean : 4	Mean : 3	Mean : 3.865
##	3rd Qu.: 5.000	3rd Qu.: 4	3rd Qu.: 3	3rd Qu.: 4.000
##	Max. : 5.000	Max. : 4	Max. : 3	Max. : 4.000
##	NA's : 5653	NA's : 5661	NA's : 5653	NA's : 5501
##	v9084	v9085	v9861	v9862
##	Min. : 2.0	Min. : 1.00	Min. : 0.000	Min. : 0.000
##	1st Qu.: 3.5	1st Qu.: 3.00	1st Qu.: 0.000	1st Qu.: 1.000
##	Median : 4.0	Median : 3.00	Median : 0.000	Median : 3.000
##	Mean : 3.5	Mean : 2.94	Mean : 0.768	Mean : 3.215

##	3rd Qu.:4.0	3rd Qu.:3.00	3rd Qu.: 0.000	3rd Qu.: 5.000	
##	Max. :4.0	Max. :3.00	Max. :99.000	Max. :99.000	
##	NA's :5648	NA's :5065	NA's :5065	NA's :5065	
##	v9087	v9088	v9891	v9892	v9990
##	Min. :1.000	Min. :2	Min. :1.000	Min. : 5.00	Min. :2625
##	1st Qu.:3.000	1st Qu.:2	1st Qu.:2.000	1st Qu.:10.00	1st Qu.:6229
##	Median :3.000	Median :2	Median :2.000	Median :12.00	Median :6229
##	Mean :2.995	Mean :2	Mean :2.089	Mean :12.15	Mean :6284
##	3rd Qu.:3.000	3rd Qu.:2	3rd Qu.:3.000	3rd Qu.:15.00	3rd Qu.:6239
##	Max. :3.000	Max. :2	Max. :3.000	Max. :99.00	Max. :8413
##	NA's :3399	NA's :5658	NA's :3399	NA's :3399	NA's :5630
##	v9991	v9092	v9093	v9094	v9095
##	Min. : 1101	Min. :1.000	Min. :1.000	Mode:logical	Mode:logical
##	1st Qu.: 1108	1st Qu.:1.000	1st Qu.:1.000	NA's:5664	NA's:5664
##	Median : 1201	Median :5.000	Median :1.000		
##	Mean :21104	Mean :3.647	Mean :1.182		
##	3rd Qu.:51326	3rd Qu.:5.000	3rd Qu.:1.000		
##	Max. :91092	Max. :5.000	Max. :3.000		
##	NA's :5630	NA's :5630	NA's :5653		
##	v9096	v9097	v9981	v9982	v9983
##	Mode:logical	Min. :3	Min. :2	Min. : 20.00	Min. :1.000
##	NA's:5664	1st Qu.:3	1st Qu.:2	1st Qu.: 25.00	1st Qu.:1.000
##		Median :3	Median :2	Median : 60.00	Median :1.000
##		Mean :3	Mean :2	Mean : 68.64	Mean :1.091
##		3rd Qu.:3	3rd Qu.:2	3rd Qu.: 62.50	3rd Qu.:1.000
##		Max. :3	Max. :2	Max. :300.00	Max. :2.000
##		NA's :5653	NA's :5653	NA's :5653	NA's :5653
##	v9984	v9985	v9986	v9987	v9099
##	Mode:logical	Mode:logical	Mode:logical	Min. : NA	Min. :3
##	NA's:5664	NA's:5664	TRUE:1	1st Qu.: NA	1st Qu.:3
##			NA's:5663	Median : NA	Median :3
##				Mean :NaN	Mean :3
##				3rd Qu.: NA	3rd Qu.:3
##				Max. : NA	Max. :3
##				NA's :5664	NA's :5630
##	v9100	v9101	v1021	v1022	v1023
##	Min. : NA	Min. : 3.00	Min. :2	Min. :30	Min. :1
##	1st Qu.: NA	1st Qu.:12.00	1st Qu.:2	1st Qu.:30	1st Qu.:1
##	Median : NA	Median :15.00	Median :2	Median :30	Median :1
##	Mean :NaN	Mean :14.79	Mean :2	Mean :30	Mean :1
##	3rd Qu.: NA	3rd Qu.:20.00	3rd Qu.:2	3rd Qu.:30	3rd Qu.:1
##	Max. : NA	Max. :24.00	Max. :2	Max. :30	Max. :1

##	NA's :5664	NA's :5630	NA's :5663	NA's :5663	NA's :5663
##	v1024	v1025	v1026	v1027	v1028
##	Min. : NA	Min. : NA	Min. : NA	Mode:logical	Mode:logical
##	1st Qu.: NA	1st Qu.: NA	1st Qu.: NA	NA's:5664	NA's:5664
##	Median : NA	Median : NA	Median : NA		
##	Mean :NaN	Mean :NaN	Mean :NaN		
##	3rd Qu.: NA	3rd Qu.: NA	3rd Qu.: NA		
##	Max. : NA	Max. : NA	Max. : NA		
##	NA's :5664	NA's :5664	NA's :5664		
##	v9103	v9104	v9105	v9106	v9107
##	Min. :3	Min. : NA	Min. : 4.00	Min. :2.000	Min. :1.000
##	1st Qu.:3	1st Qu.: NA	1st Qu.: 6.00	1st Qu.:4.000	1st Qu.:3.000
##	Median :3	Median : NA	Median : 8.00	Median :4.000	Median :3.000
##	Mean :3	Mean :NaN	Mean :10.67	Mean :3.868	Mean :2.996
##	3rd Qu.:3	3rd Qu.: NA	3rd Qu.:14.00	3rd Qu.:4.000	3rd Qu.:3.000
##	Max. :3	Max. : NA	Max. :20.00	Max. :4.000	Max. :3.000
##	NA's :5661	NA's :5664	NA's :5661	NA's :2265	NA's :2490
##	v9108	v1091	v1092	v9910	
##	Min. :2.000	Min. : 1.000	Min. : 0.000	Min. :3331	
##	1st Qu.:4.000	1st Qu.: 1.000	1st Qu.: 0.000	1st Qu.:5121	
##	Median :4.000	Median : 2.000	Median : 0.000	Median :5162	
##	Mean :3.998	Mean : 2.506	Mean : 2.651	Mean :5608	
##	3rd Qu.:4.000	3rd Qu.: 2.000	3rd Qu.: 4.000	3rd Qu.:6229	
##	Max. :4.000	Max. :99.000	Max. :99.000	Max. :9999	
##	NA's :2497	NA's :5429	NA's :5429	NA's :5451	
##	v9911	v9112	v9113	v9114	v9115
##	Min. : 1101	Min. :1.000	Min. :3.0	Min. :2.000	Min. :1.000
##	1st Qu.:45999	1st Qu.:1.000	1st Qu.:3.0	1st Qu.:4.000	1st Qu.:3.000
##	Median :80090	Median :2.000	Median :3.0	Median :4.000	Median :3.000
##	Mean :62582	Mean :2.601	Mean :3.1	Mean :3.994	Mean :2.747
##	3rd Qu.:95000	3rd Qu.:3.000	3rd Qu.:3.0	3rd Qu.:4.000	3rd Qu.:3.000
##	Max. :99999	Max. :9.000	Max. :9.0	Max. :9.000	Max. :3.000
##	NA's :5451	NA's :5451	NA's :5604	NA's :5504	
##	v9116	v9117	v9118	v9119	
##	Min. :2.000	Min. :1.000	Min. :2.000	Min. :0.000	
##	1st Qu.:4.000	1st Qu.:3.000	1st Qu.:4.000	1st Qu.:1.000	
##	Median :4.000	Median :3.000	Median :4.000	Median :2.000	
##	Mean :3.945	Mean :2.962	Mean :3.925	Mean :3.361	
##	3rd Qu.:4.000	3rd Qu.:3.000	3rd Qu.:4.000	3rd Qu.:6.000	
##	Max. :4.000	Max. :3.000	Max. :4.000	Max. :8.000	
##	NA's :716	NA's :851	NA's :943	NA's :4544	
##	v9120	v9121	v9921	v9122	v9123

##	Min.	:2.000	Min.	:1.000	Min.	:1.00	Min.	:4	Min.	:1.000
##	1st Qu.:	4.000	1st Qu.:	1.000	1st Qu.:	7.00	1st Qu.:	4	1st Qu.:	3.000
##	Median	:4.000	Median	:1.000	Median	:13.00	Median	:4	Median	:3.000
##	Mean	:3.998	Mean	:1.581	Mean	:15.14	Mean	:4	Mean	:2.998
##	3rd Qu.:	4.000	3rd Qu.:	3.000	3rd Qu.:	20.00	3rd Qu.:	4	3rd Qu.:	3.000
##	Max.	:4.000	Max.	:3.000	Max.	:99.00	Max.	:4	Max.	:3.000
##					NA's	:1645				
##	v9124		v1251		v1252		v1253		v1254	
##	Min.	:2.000	Min.	: NA	Min.	: NA	Min.	: NA	Min.	:2
##	1st Qu.:	4.000	1st Qu.:	NA	1st Qu.:	NA	1st Qu.:	NA	1st Qu.:	2
##	Median	:4.000	Median	: NA	Median	: NA	Median	: NA	Median	:2
##	Mean	:3.926	Mean	:NaN	Mean	:NaN	Mean	:NaN	Mean	:2
##	3rd Qu.:	4.000	3rd Qu.:	NA	3rd Qu.:	NA	3rd Qu.:	NA	3rd Qu.:	2
##	Max.	:4.000	Max.	: NA	Max.	: NA	Max.	: NA	Max.	:2
##	NA's	:6	NA's	:5664	NA's	:5664	NA's	:5664	NA's	:5658
##	v1255		v1256		v1257		v1258		v1259	
##	Min.	: 45.0	Min.	:1.000	Min.	:3	Min.	: 40.0	Min.	:1.00
##	1st Qu.:	63.0	1st Qu.:	1.000	1st Qu.:	3	1st Qu.:	117.5	1st Qu.:	1.25
##	Median	:126.5	Median	:1.000	Median	:3	Median	:195.0	Median	:1.50
##	Mean	:173.8	Mean	:1.333	Mean	:3	Mean	:195.0	Mean	:1.50
##	3rd Qu.:	296.5	3rd Qu.:	1.750	3rd Qu.:	3	3rd Qu.:	272.5	3rd Qu.:	1.75
##	Max.	:350.0	Max.	:2.000	Max.	:3	Max.	:350.0	Max.	:2.00
##	NA's	:5658	NA's	:5658	NA's	:5662	NA's	:5662	NA's	:5662
##	v1260		v1261		v1262		v1263		v1264	
##	Min.	:4	Min.	: 20	Min.	:1.000	Mode:logical		Mode:logical	
##	1st Qu.:	4	1st Qu.:	60	1st Qu.:	1.000	NA's:5664		NA's:5664	
##	Median	:4	Median	: 80	Median	:1.000				
##	Mean	:4	Mean	: 98	Mean	:1.167				
##	3rd Qu.:	4	3rd Qu.:	100	3rd Qu.:	1.000				
##	Max.	:4	Max.	:350	Max.	:2.000				
##	NA's	:5640	NA's	:5640	NA's	:5640				
##	v1265		v1266		v1267		v1268		v1269	
##	Mode:logical		Min.	: NA	Min.	: NA	Min.	: NA	Min.	:7
##	NA's:5664		1st Qu.:	NA	1st Qu.:	NA	1st Qu.:	NA	1st Qu.:	7
##			Median	: NA	Median	: NA	Median	: NA	Median	:7
##			Mean	:NaN	Mean	:NaN	Mean	:NaN	Mean	:7
##			3rd Qu.:	NA	3rd Qu.:	NA	3rd Qu.:	NA	3rd Qu.:	7
##			Max.	: NA	Max.	: NA	Max.	: NA	Max.	:7
##			NA's	:5664	NA's	:5664	NA's	:5664	NA's	:5612
##	v1270		v1271		v1272		v1273			
##	Min.	: 15.00	Min.	:1.000	Min.	:8	Min.	: 10.00		
##	1st Qu.:	30.00	1st Qu.:	1.000	1st Qu.:	8	1st Qu.:	25.00		

##	Median : 50.00	Median :1.000	Median : 8	Median : 65.00	
##	Mean : 73.02	Mean :1.077	Mean :8	Mean : 76.17	
##	3rd Qu.:100.00	3rd Qu.:1.000	3rd Qu.:8	3rd Qu.: 65.00	
##	Max. :500.00	Max. :3.000	Max. :8	Max. :350.00	
##	NA's :5612	NA's :5612	NA's :5527	NA's :5527	
##	v1274	v1275	v1101	v1141	v1142
##	Min. :1.000	Min. :1.000	Min. :0.00	Min. :0.00	Min. :0.000
##	1st Qu.:1.000	1st Qu.:1.000	1st Qu.:3.00	1st Qu.:0.00	1st Qu.:0.000
##	Median :1.000	Median :1.000	Median :3.00	Median :1.00	Median :0.000
##	Mean :1.088	Mean :1.023	Mean :2.72	Mean :0.54	Mean :0.505
##	3rd Qu.:1.000	3rd Qu.:1.000	3rd Qu.:3.00	3rd Qu.:1.00	3rd Qu.:1.000
##	Max. :2.000	Max. :2.000	Max. :3.00	Max. :2.00	Max. :3.000
##	NA's :5527	NA's :5448	NA's :2828	NA's :5268	NA's :5268
##	v1151	v1152	v1153	v1154	v1161
##	Min. :0.000	Min. :0.000	Mode:logical	Mode:logical	Min. :0.000
##	1st Qu.:0.000	1st Qu.:0.000	NA's:5664	NA's:5664	1st Qu.:0.000
##	Median :0.000	Median :0.000			Median :0.000
##	Mean :0.056	Mean :0.035			Mean :0.008
##	3rd Qu.:0.000	3rd Qu.:0.000			3rd Qu.:0.000
##	Max. :2.000	Max. :2.000			Max. :1.000
##	NA's :5268	NA's :5268			NA's :5268
##	v1162	v1163	v1164	v1107	v1181
##	Min. :0.00	Mode:logical	Mode:logical	Min. :1.000	Min. : 1.00
##	1st Qu.:0.00	NA's:5664	NA's:5664	1st Qu.:1.000	1st Qu.: 4.00
##	Median :0.00			Median :1.000	Median : 6.00
##	Mean :0.01			Mean :1.934	Mean : 6.51
##	3rd Qu.:0.00			3rd Qu.:3.000	3rd Qu.: 9.00
##	Max. :1.00			Max. :3.000	Max. :99.00
##	NA's :5268			NA's :5268	NA's :5268
##	v1182	v1109	v1110	v1111	v1112
##	Min. :2000	Min. :1.00	Min. :2.000	Min. :0.000	Min. :0.000
##	1st Qu.:2005	1st Qu.:1.00	1st Qu.:4.000	1st Qu.:1.000	1st Qu.:0.000
##	Median :2005	Median :1.00	Median :4.000	Median :1.000	Median :0.000
##	Mean :2025	Mean :1.02	Mean :3.994	Mean :0.857	Mean :0.143
##	3rd Qu.:2006	3rd Qu.:1.00	3rd Qu.:4.000	3rd Qu.:1.000	3rd Qu.:0.000
##	Max. :9999	Max. :3.00	Max. :4.000	Max. :1.000	Max. :1.000
##	NA's :5268	NA's :5268	NA's :2829	NA's :5657	NA's :5657
##	v1113	v1114	v2301	v2302	
##	Min. :5	Min. :7	Min. :0.000	Min. : 1.000	
##	1st Qu.:5	1st Qu.:7	1st Qu.:1.000	1st Qu.: 1.000	
##	Median :5	Median :7	Median :5.000	Median : 2.000	
##	Mean :5	Mean :7	Mean :3.871	Mean : 1.813	

##	3rd Qu.:5	3rd Qu.:7	3rd Qu.:5.000	3rd Qu.:2.000
##	Max. :5	Max. :7	Max. :5.000	Max. :13.000
##	NA's :5663	NA's :5663		NA's :1628
##	v2303	v2304	v2305	v2306
##	Min. : 5.000	Min. :1.000	Min. :1.000	Min. :2.000
##	1st Qu.: 7.000	1st Qu.:3.000	1st Qu.:1.000	1st Qu.:2.000
##	Median :10.000	Median :4.000	Median :1.000	Median :4.000
##	Mean : 8.807	Mean :3.542	Mean :1.486	Mean :3.293
##	3rd Qu.:10.000	3rd Qu.:4.000	3rd Qu.:1.000	3rd Qu.:4.000
##	Max. :10.000	Max. :9.000	Max. :9.000	Max. :9.000
##	NA's :1	NA's :4845	NA's :3912	NA's :3399
##	v2307	v2308	v2309	v2310
##	Min. :1.000	Min. :2.000	Min. : 1.000	Min. :2.000
##	1st Qu.:3.000	1st Qu.:2.000	1st Qu.: 7.000	1st Qu.:2.000
##	Median :3.000	Median :2.000	Median : 9.000	Median :2.000
##	Mean :2.886	Mean :2.961	Mean : 8.256	Mean :2.775
##	3rd Qu.:3.000	3rd Qu.:4.000	3rd Qu.: 9.000	3rd Qu.:4.000
##	Max. :3.000	Max. :8.000	Max. :11.000	Max. :4.000
##	NA's :3399	NA's :5535	NA's :5535	NA's :5535
##	v8811	v8812	v2312	v4701
##	Min. :0.000	Min. : 0.000	Min. :2.000	Min. : 2.00
##	1st Qu.:0.000	1st Qu.: 2.000	1st Qu.:2.000	1st Qu.: 8.00
##	Median :0.000	Median : 4.000	Median :2.000	Median :10.00
##	Mean :0.443	Mean : 5.684	Mean :2.961	Mean :10.17
##	3rd Qu.:0.000	3rd Qu.: 8.000	3rd Qu.:4.000	3rd Qu.:14.00
##	Max. :7.000	Max. :21.000	Max. :4.000	Max. :15.00
##	NA's :5585	NA's :5585	NA's :5535	NA's :1470
##	v4702	v4703	v4704	v4705
##	Min. :2.000	Min. : 1.00	Min. :1.000	Min. :1.000
##	1st Qu.:4.000	1st Qu.: 5.00	1st Qu.:1.000	1st Qu.:1.000
##	Median :4.000	Median : 7.00	Median :2.000	Median :1.000
##	Mean :4.548	Mean : 7.02	Mean :1.597	Mean :1.232
##	3rd Qu.:6.000	3rd Qu.: 9.00	3rd Qu.:2.000	3rd Qu.:1.000
##	Max. :6.000	Max. :17.00	Max. :2.000	Max. :2.000
##	NA's :1470			NA's :3384
##	v4706	v4707	v4808	v4809
##	Min. : 1.000	Min. :1.00	Min. :1.000	Min. : 1.000
##	1st Qu.: 4.000	1st Qu.:2.00	1st Qu.:1.000	1st Qu.: 1.000
##	Median :11.000	Median :2.00	Median :1.000	Median : 1.000
##	Mean : 9.263	Mean :2.34	Mean :1.453	Mean : 3.598
##	3rd Qu.:13.000	3rd Qu.:3.00	3rd Qu.:2.000	3rd Qu.: 5.000
##	Max. :13.000	Max. :5.00	Max. :2.000	Max. :13.000

##	NA's :3912	NA's :3912	NA's :3912	NA's :3912	
##	v4810	v4711	v4812	v4713	v4714
##	Min. :2.000	Min. :1.00	Min. :1.000	Min. :1.000	Min. :1.000
##	1st Qu.:6.000	1st Qu.:2.00	1st Qu.:1.000	1st Qu.:1.000	1st Qu.:1.000
##	Median :7.000	Median :2.00	Median :1.000	Median :2.000	Median :1.000
##	Mean :6.531	Mean :1.99	Mean :1.499	Mean :1.504	Mean :1.193
##	3rd Qu.:7.000	3rd Qu.:2.00	3rd Qu.:2.000	3rd Qu.:2.000	3rd Qu.:1.000
##	Max. :8.000	Max. :2.00	Max. :2.000	Max. :2.000	Max. :2.000
##	NA's :3912	NA's :3912	NA's :3399		NA's :2857
##	v4715	v4816	v4817	v4718	
##	Min. : 1.000	Min. : 1.000	Min. :2.000	Min. : 0.00	
##	1st Qu.: 4.000	1st Qu.: 1.000	1st Qu.:5.000	1st Qu.: 0.00	
##	Median : 9.000	Median : 1.000	Median :7.000	Median : 0.00	
##	Mean : 8.209	Mean : 3.974	Mean :6.463	Mean : 54.12	
##	3rd Qu.:11.000	3rd Qu.: 6.000	3rd Qu.:7.000	3rd Qu.: 81.00	
##	Max. :13.000	Max. :13.000	Max. :8.000	Max. :600.00	
##	NA's :3399	NA's :3399	NA's :3399	NA's :3912	
##	v4719	v4720	v4721	v4722	
##	Min. : 0.00	Min. : 0.00	Min. : 0	Min. : 0.0	
##	1st Qu.: 0.00	1st Qu.: 0.00	1st Qu.: 275	1st Qu.: 230.0	
##	Median : 0.00	Median : 0.00	Median : 400	Median : 370.0	
##	Mean : 54.57	Mean : 20.06	Mean : 425	Mean : 383.7	
##	3rd Qu.: 85.25	3rd Qu.: 0.00	3rd Qu.: 550	3rd Qu.: 500.0	
##	Max. :600.00	Max. :600.00	Max. :1895	Max. :1411.0	
##	NA's :3912				
##	v4723	v4724	v4725	v4726	
##	Min. : 1.000	Min. : 1.000	Min. : 1.000	Min. : 0.0	
##	1st Qu.: 3.000	1st Qu.: 4.000	1st Qu.: 4.000	1st Qu.: 230.0	
##	Median : 4.000	Median : 5.000	Median : 5.000	Median : 370.0	
##	Mean : 4.608	Mean : 5.327	Mean : 5.319	Mean : 383.3	
##	3rd Qu.: 6.000	3rd Qu.: 7.000	3rd Qu.: 7.000	3rd Qu.: 500.0	
##	Max. :10.000	Max. :16.000	Max. :16.000	Max. :1411.0	
##			NA's :9	NA's :9	
##	v4727	v4728	v4729	v4732	
##	Min. :1.000	Min. :1.000	Min. : 68.0	Min. : 68.0	
##	1st Qu.:1.000	1st Qu.:1.000	1st Qu.: 229.0	1st Qu.: 229.0	
##	Median :3.000	Median :1.000	Median : 480.0	Median : 480.0	
##	Mean :2.353	Mean :3.304	Mean : 441.7	Mean : 441.7	
##	3rd Qu.:3.000	3rd Qu.:8.000	3rd Qu.: 533.0	3rd Qu.: 533.0	
##	Max. :3.000	Max. :8.000	Max. :1348.0	Max. :1348.0	
##					
##	v4735	v4738	v6502	v4740	v4741

```
## Min. :0.0000 Min. :1.000 Min. :1 Min. :1.000 Min. : 1.00
## 1st Qu.:1.0000 1st Qu.:3.000 1st Qu.:1 1st Qu.: 2.000 1st Qu.: 4.00
## Median :1.0000 Median :3.000 Median :1 Median : 3.000 Median : 6.00
## Mean :0.9989 Mean :3.145 Mean :1 Mean : 2.763 Mean : 5.98
## 3rd Qu.:1.0000 3rd Qu.:4.000 3rd Qu.:1 3rd Qu.: 4.000 3rd Qu.: 7.00
## Max. :1.0000 Max. :7.000 Max. :1 Max. :11.000 Max. :19.00
## NA's :2827
## v4742 v9993 id_dom tratamento
## Min. : 0.0 Min. :20120827 Min. :2.006e+14 Min. :0.0000
## 1st Qu.: 50.0 1st Qu.:20120827 1st Qu.:2.006e+14 1st Qu.:0.0000
## Median : 76.0 Median :20120827 Median :2.006e+14 Median :1.0000
## Mean : 72.5 Mean :20120827 Mean :2.006e+14 Mean :0.6412
## 3rd Qu.: 98.0 3rd Qu.:20120827 3rd Qu.:2.006e+14 3rd Qu.:1.0000
## Max. :116.0 Max. :20120827 Max. :2.007e+14 Max. :1.0000
##
## educ ano
## Min. :0.0000 Min. :0
## 1st Qu.:0.0000 1st Qu.:0
## Median :1.0000 Median :0
## Mean :0.7405 Mean :0
## 3rd Qu.:1.0000 3rd Qu.:0
## Max. :1.0000 Max. :0
##
```

Regressões

PSM

```
psm <- glm(tratamento~v8005+v0403+v4803+v9001+v4724+v4742+educ,
  family = binomial(link="probit"),
  data = pnad2009_filtrada, weights = v4729)
```

```
## Warning: glm.fit: algoritmo não convergiu
```

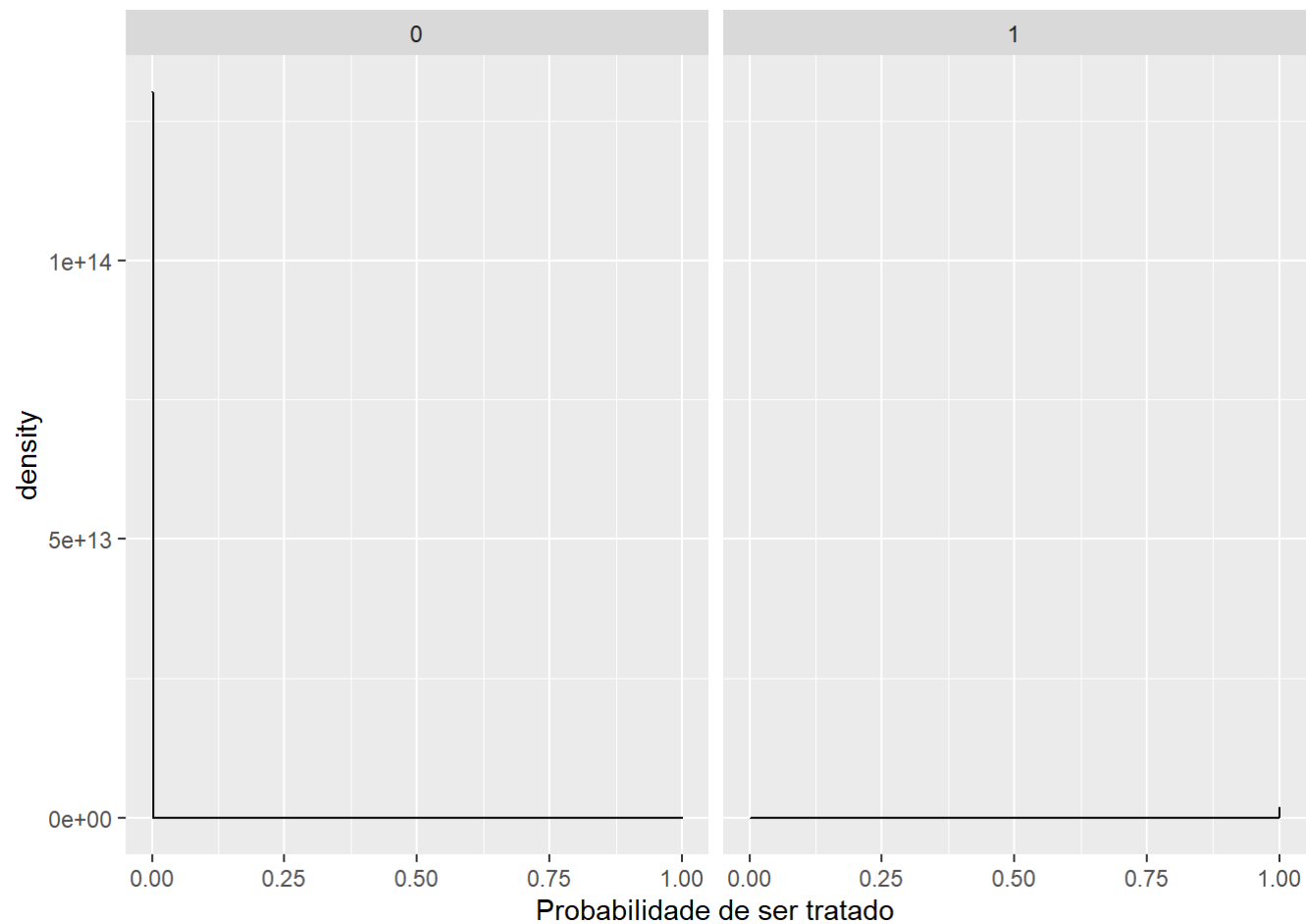
```
## Warning: glm.fit: probabilidades ajustadas numericamente 0 ou 1 ocorreu
```

```
pscore <- predict(psm, type = "response")
summary(pscore)
```

```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
## 0.0000  0.0000  1.0000  0.6284  1.0000  1.0000
```

```
# Suporte Comum
# Usamos type="response" para que predict nos devolva  $P(Y=1|X)$ 

ggplot(pnad2009_filtrada, mapping=aes(x=pscore)) +
  geom_density() +
  facet_wrap(~tratamento) +
  xlab("Probabilidade de ser tratado")
```



```
stargazer(psm)
```

```

##
## % Table created by stargazer v.5.2.3 by Marek Hlavac, Social Policy Institute. E-mail: marek.hlavac at gmail.c
om
## % Date and time: seg, out 31, 2022 - 07:27:24
## \begin{table}[!htbp] \centering
##   \caption{}
##   \label{}
## \begin{tabular}{@{\extracolsep{5pt}}lc}
## \[-1.8ex]\hline
## \hline \[-1.8ex]
## & \multicolumn{1}{c}{\textit{Dependent variable:}} \\\
## \cline{2-2}
## \[-1.8ex] & tratamento \\\
## \hline \[-1.8ex]
## v8005 & 14.174 \\\
## & (196.073) \\\
## & \\\
## v0403 & 0.001 \\\
## & (235.890) \\\
## & \\\
## v4803 & $-$0.003 \\\
## & (25.351) \\\
## & \\\
## v9001 & $-$0.002 \\\
## & (70.366) \\\
## & \\\
## v4724 & $-$0.004 \\\
## & (31.827) \\\
## & \\\
## v4742 & $-$0.00002 \\\
## & (1.368) \\\
## & \\\
## educ & 0.058 \\\
## & (160.120) \\\
## & \\\
## Constant & $-$219.867 \\\
## & (3,150.730) \\\
## & \\\
## \hline \[-1.8ex]
## Observations & 5,665 \\\
## Log Likelihood & $-$0.00000 \\\
## Akaike Inf. Crit. & 16.000 \\\

```

```
## \hline
## \hline \[-1.8ex]
## \textit{Note:} & \multicolumn{1}{r}{ $\alpha^*$   $p < \$0.1$ ;  $\alpha^{**}$   $p < \$0.05$ ;  $\alpha^{***}$   $p < \$0.01$ } \\
## \end{tabular}
## \end{table}
```

ATT

```
df_match <- poad2009_filtrada %>%
  mutate(u=runif(length(tratamiento),0,1)) %>%
  arrange(u)

match_ATT <- matchit(tratamiento~v8005+v0403+v4803+v9001+v4724+v4742+educ,
  data = df_match,
  link = "probit",
  replace = T)
```

```
## Warning: glm.fit: algoritmo não convergiu
```

```
ATT_reg <- lm(educ~tratamento,
              data = df_match,
              weights = v4729)
```

```
summary(ATT_reg)
```

```
##  
## Call:  
## lm(formula = educ ~ tratamento, data = df_match, weights = v4729)  
##  
## Weighted Residuals:  
##      Min      1Q  Median      3Q      Max  
## -30.457  1.813   3.083   4.940   8.661  
##  
## Coefficients:  
##              Estimate Std. Error t value Pr(>|t|)  
## (Intercept)  0.883198   0.008322 106.130  <2e-16 ***  
## tratamento  -0.104549   0.010514  -9.944  <2e-16 ***  
## ---  
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```



```
##  
## Residual standard error: 8.231 on 5663 degrees of freedom  
## Multiple R-squared: 0.01716, Adjusted R-squared: 0.01699  
## F-statistic: 98.87 on 1 and 5663 DF, p-value: < 2.2e-16
```

```
stargazer(ATT_reg)
```

```
##  
## % Table created by stargazer v.5.2.3 by Marek Hlavac, Social Policy Institute. E-mail: marek.hlavac at gmail.c  
om  
## % Date and time: seg, out 31, 2022 - 07:27:30  
## \begin{table}[!htbp] \centering  
## \caption{}  
## \label{}  
## \begin{tabular}{@{\extracolsep{5pt}}lc}  
## \[-1.8ex]\hline  
## \hline \[-1.8ex]  
## & \multicolumn{1}{c}{\textit{Dependent variable:}} \\  
## \cline{2-2}  
## \[-1.8ex] & educ \\  
## \hline \[-1.8ex]  
## tratamento &  $-\$0.105^{***}$  \\  
## & (0.011) \\  
## & \\  
## Constant &  $0.883^{***}$  \\  
## & (0.008) \\  
## & \\  
## \hline \[-1.8ex]  
## Observations & 5,665 \\  
##  $R^2$  & 0.017 \\  
## Adjusted  $R^2$  & 0.017 \\  
## Residual Std. Error & 8.231 (df = 5663) \\  
## F Statistic &  $98.873^{***}$  (df = 1; 5663) \\  
## \hline  
## \hline \[-1.8ex]  
## \textit{Note:} & \multicolumn{1}{r}{ $^*$   $p < 0.1$ ;  $^{**}$   $p < 0.05$ ;  $^{***}$   $p < 0.01$ } \\  
## \end{tabular}  
## \end{table}
```

Diff in Diff

Teste de médias

```
# Teste para grupo de controle
t.test(pnad2006_filtrada$educ[pnad2006_filtrada$tratamento==0],
       pnad2009_filtrada$educ[pnad2009_filtrada$tratamento==0])
```

```
##
##  Welch Two Sample t-test
##
## data:  pnad2006_filtrada$educ[pnad2006_filtrada$tratamento == 0] and pnad2009_filtrada$educ[pnad2009_filtrada
$tratamento == 0]
## t = -3.628, df = 4037.5, p-value = 0.0002891
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.05950558 -0.01775469
## sample estimates:
## mean of x mean of y
## 0.8449803 0.8836105
```

```
# Teste para grupo de tratamento
t.test(pnad2006_filtrada$educ[pnad2006_filtrada$tratamento==1],
       pnad2009_filtrada$educ[pnad2009_filtrada$tratamento==1])
```

```
##
##  Welch Two Sample t-test
##
## data:  pnad2006_filtrada$educ[pnad2006_filtrada$tratamento == 1] and pnad2009_filtrada$educ[pnad2009_filtrada
$tratamento == 1]
## t = -8.7762, df = 7136.6, p-value < 2.2e-16
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.1120627 -0.0711415
## sample estimates:
## mean of x mean of y
## 0.6819934 0.7735955
```

```

controle_antes <- mean(pnad2006_filtrada$educ[pnad2006_filtrada$tratamento==0])
controle_depois <- mean(pnad2009_filtrada$educ[pnad2009_filtrada$tratamento==0])
tratamento_antes <- mean(pnad2006_filtrada$educ[pnad2006_filtrada$tratamento==1])
tratamento_depois <- mean(pnad2009_filtrada$educ[pnad2009_filtrada$tratamento==1])

```

```

(tratamento_depois - tratamento_antes) - (controle_depois - controle_antes) # diferença em diferenças

```

```
## [1] 0.05297198
```

Regressão diff in diff

```

did <- lm(educ~tratamento+ano+(ano*tratamento)+
          v8005+v0403+v9001+v4724+v4742,
          data = base)
summary(did)

```

```

##
## Call:
## lm(formula = educ ~ tratamento + ano + (ano * tratamento) + v8005 +
##     v0403 + v9001 + v4724 + v4742, data = base)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.98492  0.06723  0.13685  0.23381  1.45380
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    2.5764607   0.1434647   17.959 < 2e-16 ***
## tratamento      0.0245083   0.0177964    1.377  0.16849
## ano             0.0246303   0.0126077    1.954  0.05077 .
## v8005           -0.1108509   0.0093647  -11.837 < 2e-16 ***
## v0403           -0.2599951   0.0133746  -19.440 < 2e-16 ***
## v9001            0.0430040   0.0043246    9.944 < 2e-16 ***
## v4724            0.0101682   0.0019155    5.308 1.13e-07 ***
## v4742            0.0005144   0.0001002    5.135 2.86e-07 ***
## tratamento:ano   0.0418111   0.0154673    2.703  0.00688 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##

```

```
## Residual standard error: 0.3961 on 11320 degrees of freedom
## Multiple R-squared: 0.09379, Adjusted R-squared: 0.09315
## F-statistic: 146.4 on 8 and 11320 DF, p-value: < 2.2e-16
```

```
stargazer(did)
```

```
##
## % Table created by stargazer v.5.2.3 by Marek Hlavac, Social Policy Institute. E-mail: marek.hlavac at gmail.c
om
## % Date and time: seg, out 31, 2022 - 07:27:31
## \begin{table}[!htbp] \centering
## \caption{}
## \label{}
## \begin{tabular}{@{\extracolsep{5pt}}lc}
## \[-1.8ex]\hline
## \hline \[-1.8ex]
## & \multicolumn{1}{c}{\textit{Dependent variable:}} \\\
## \cline{2-2}
## \[-1.8ex] & educ \\\
## \hline \[-1.8ex]
## tratamento & 0.025 \\\
## & (0.018) \\\
## & \\\
## ano & 0.025$^{*}$ \\\
## & (0.013) \\\
## & \\\
## v8005 & $-$0.111$^{***}$ \\\
## & (0.009) \\\
## & \\\
## v0403 & $-$0.260$^{***}$ \\\
## & (0.013) \\\
## & \\\
## v9001 & 0.043$^{***}$ \\\
## & (0.004) \\\
## & \\\
## v4724 & 0.010$^{***}$ \\\
## & (0.002) \\\
## & \\\
## v4742 & 0.001$^{***}$ \\\
## & (0.0001) \\\
## & \\\
```

```

## tratamento:ano & 0.042 $^{***}$ $ \\\
## & (0.015) \\\
## & \\\
## Constant & 2.576 $^{***}$ $ \\\
## & (0.143) \\\
## & \\\
## \hline \\\[-1.8ex]
## Observations & 11,329 \\\
## R $^2$ $ & 0.094 \\\
## Adjusted R $^2$ $ & 0.093 \\\
## Residual Std. Error & 0.396 (df = 11320) \\\
## F Statistic & 146.443 $^{***}$ $ (df = 8; 11320) \\\
## \hline
## \hline \\\[-1.8ex]
## \textit{Note:} & \multicolumn{1}{r}{ $^{*}$ $p$<$0.1;  $^{**}$ $p$<$0.05;  $^{***}$ $p$<$0.01} \\\
## \end{tabular}
## \end{table}

```