Micro IV - APS3

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2022-10-10

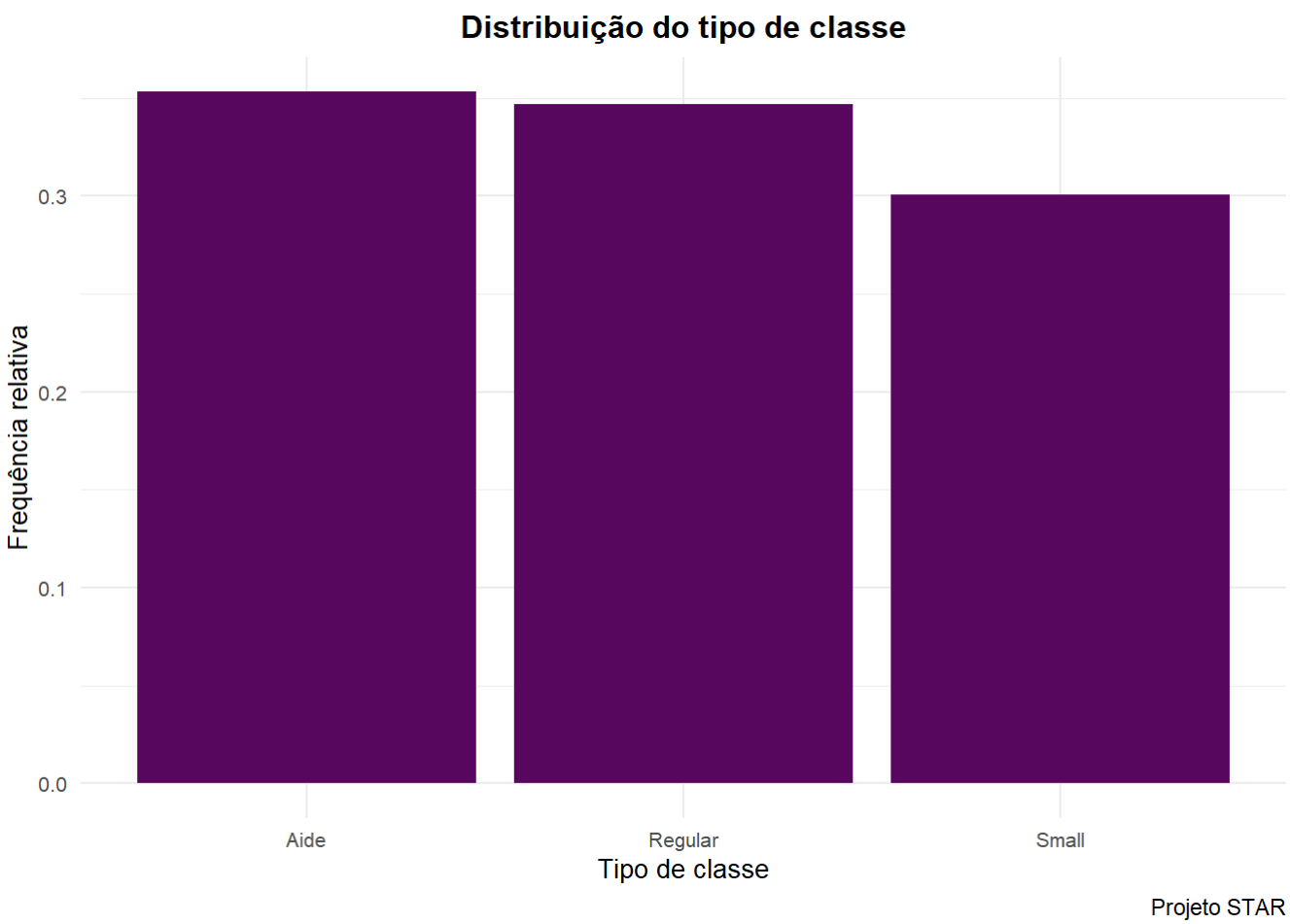

```
# carregando pacots
library(tidyverse)
library(lmtest)
library(plm)
library(pastecs)
library(haven)
library(AER)
library(magrittr)
library(RColorBrewer)
library(gridExtra)
library(stargazer)
```

```
dados <- read_dta('Star.dta')

dados %<>% mutate(
  class_type = case_when( # criando uma variável para cada tipo de classe para facilitar o trabalho com gráficos
    aide == 1 ~ 'Aide',
    regular == 1 ~ 'Regular',
    small == 1 ~ 'Small',
    TRUE ~ 'Other'),
    # transformando todas as colunas em categóricas para facilitar trabalho com dummies
    id = as_factor(id),
    schid = as_factor(schid),
    boy = as_factor(boy),
    white_asian = as_factor(white_asian),
    black = as_factor(black),
    tchwhite = as_factor(tchwhite),
    tchmasters = as_factor(tchmasters),
    freelunch = as_factor(freelunch),
    schurban = as_factor(schurban),
```

```
    schrural = as_factor(schrural),
    small = as_factor(small),
    regular = as_factor(regular),
    aide = as_factor(aide),
  )
```

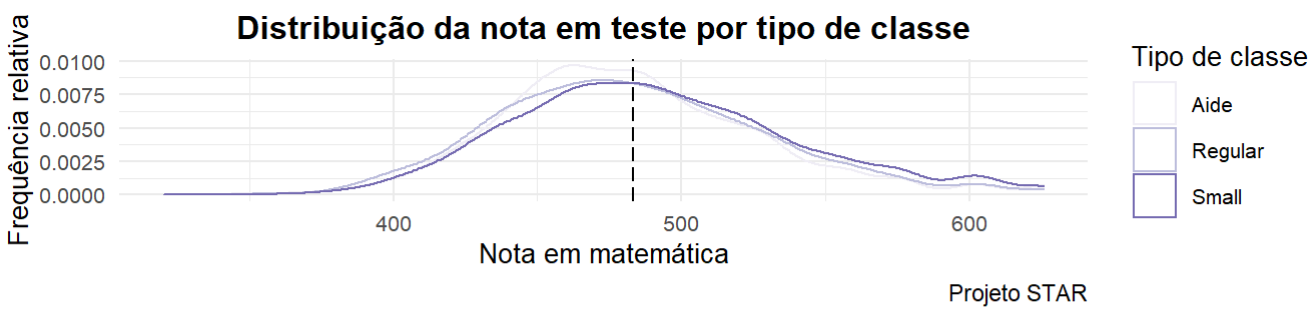
Descritivas

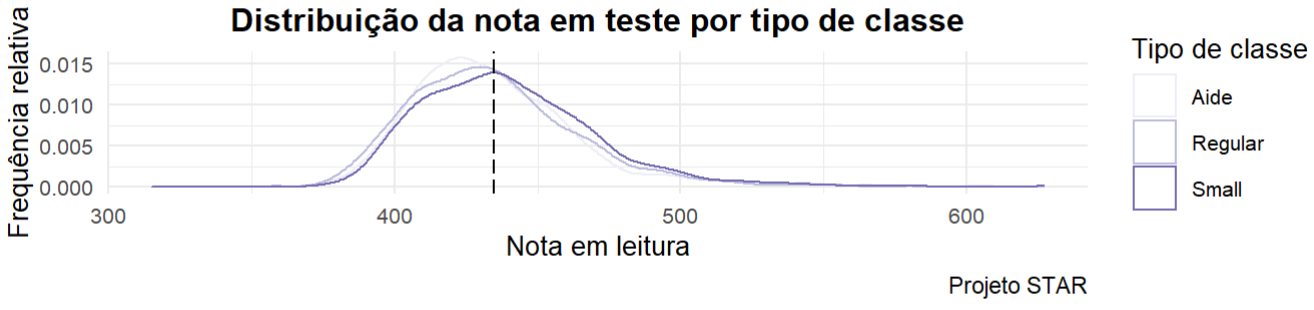
```
# distribuição do tipo de classe
dados %>%
  ggplot() +
  geom_bar(aes(class_type, y = ..count.. / sum(..count..)), fill = '#57075e') +
  theme_minimal() +
  labs(x = 'Tipo de classe',
       y = 'Frequência relativa',
       title = 'Distribuição do tipo de classe',
       caption = 'Projeto STAR') +
  theme(plot.title=element_text(size=12, face="bold", hjust = 0.5),
        legend.text=element_text(size=8),
        axis.text=element_text(size=8),
        axis.title = element_text(size = 10),
        legend.title = element_text(size = 10))
```

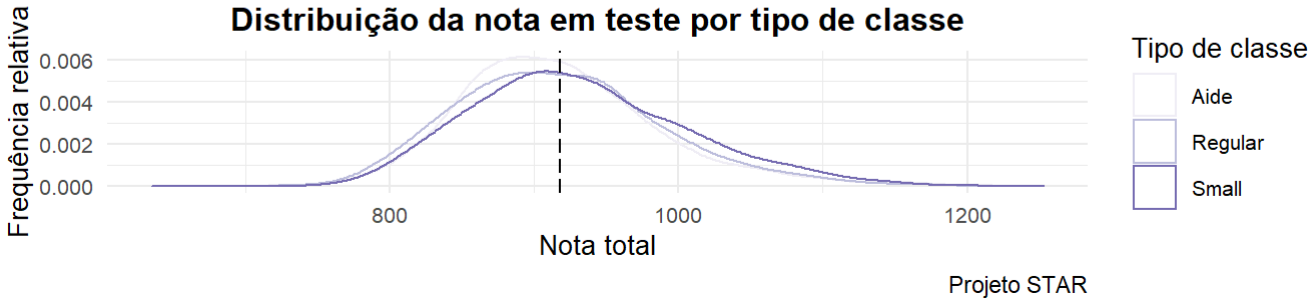



```
# gráficos de distribuição de cada nota entre os tipos de classe

## gráfico para teste de matemática
a <- dados %>%
  ggplot() +
  geom_density(aes(mathscore, colour = class_type), alpha = 0.1) +
  geom_vline(aes(xintercept = mean(mathscore[class_type == 'Regular'])), linetype = "longdash") +
  theme_minimal() +
  labs(x = 'Nota em matemática',
       y = 'Frequência relativa',
       title = 'Distribuição da nota em teste por tipo de classe',
       caption = 'Projeto STAR') +
  scale_colour_brewer(palette = 'Purples', name = "Tipo de classe") +
  theme(plot.title=element_text(size=12, face="bold", hjust = 0.5),
        legend.text=element_text(size=8),
```

```
        axis.text=element_text(size=8),
        axis.title = element_text(size = 10),
        legend.title = element_text(size = 10))


## gráfico para teste de leitura
b <- dados %>%
  ggplot() +
  geom_density(aes(readscore, colour = class_type), alpha = 0.1) +
  geom_vline(aes(xintercept = mean(readscore[class_type == 'Regular'])), linetype = "longdash") +
  theme_minimal() +
  labs(x = 'Nota em leitura',
       y = 'Frequência relativa',
       title = 'Distribuição da nota em teste por tipo de classe',
       caption = 'Projeto STAR') +
  scale_colour_brewer(palette = 'Purples', name = "Tipo de classe") +
  theme(plot.title=element_text(size=12, face="bold", hjust = 0.5),
        legend.text=element_text(size=8),
        axis.text=element_text(size=8),
        axis.title = element_text(size = 10),
        legend.title = element_text(size = 10))

# gráfico para notal geral
c <- dados %>%
  ggplot() +
  geom_density(aes(totalscore, colour = class_type), alpha = 0.1) +
  geom_vline(aes(xintercept = mean(totalscore[class_type == 'Regular'])), linetype = "longdash") +
  theme_minimal() +
  labs(x = 'Nota total',
       y = 'Frequência relativa',
       title = 'Distribuição da nota em teste por tipo de classe',
       caption = 'Projeto STAR') +
  scale_colour_brewer(palette = 'Purples', name = "Tipo de classe") +
  theme(plot.title=element_text(size=12, face="bold", hjust = 0.5),
        legend.text=element_text(size=8),
        axis.text=element_text(size=8),
        axis.title = element_text(size = 10),
        legend.title = element_text(size = 10))

grid.arrange(arrangeGrob(a,b,c, nrow = 3)) # unindo os três gráficos
```

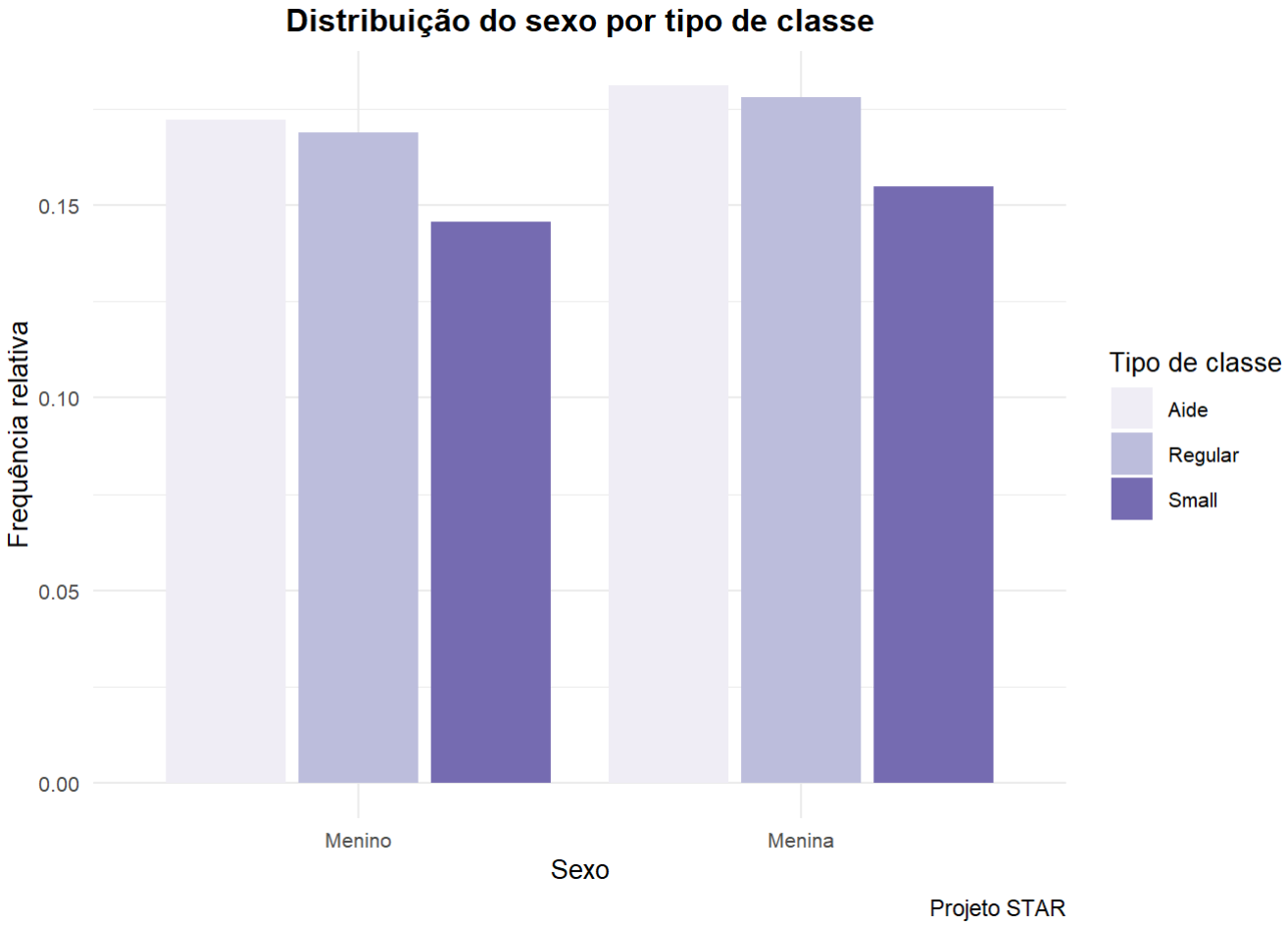






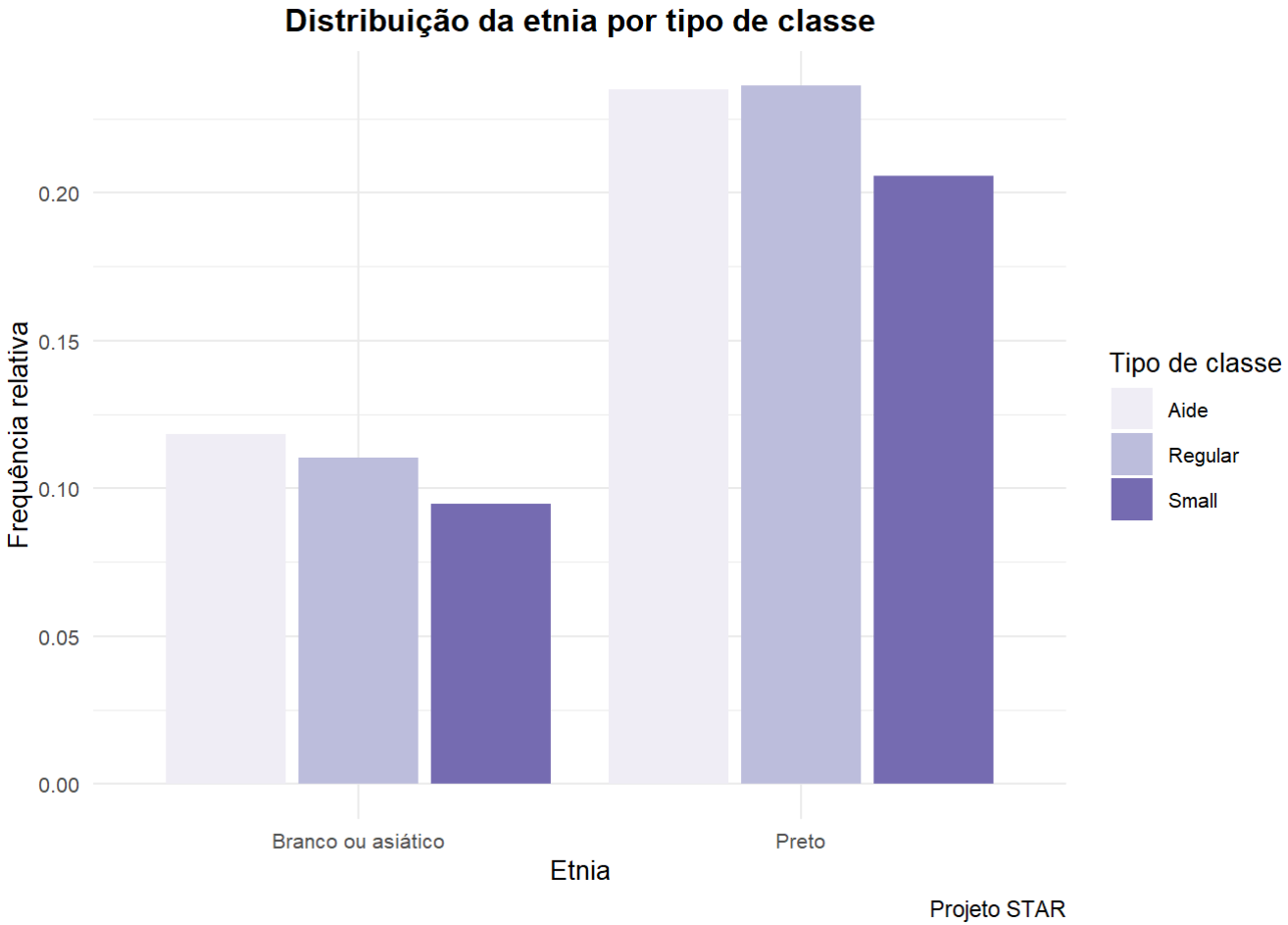

```
# distribuição do sexo dos alunos
dados %>%
  ggplot() +
  geom_bar(aes(as.factor(boy), y = ..count.. / sum(..count..),
               fill = class_type), position="dodge2") +
  theme_minimal() +
  labs(x = 'Sexo',
       y = 'Frequência relativa',
       title = 'Distribuição do sexo por tipo de classe',
       caption = 'Projeto STAR') +
  scale_x_discrete(labels = c('Menino', 'Menina')) +
  scale_fill_brewer(palette = 'Purples', name = "Tipo de classe") +
  theme(plot.title=element_text(size=12, face="bold", hjust = 0.5),
        legend.text=element_text(size=8),
        axis.text=element_text(size=8),
```

```
        axis.title = element_text(size = 10),
        legend.title = element_text(size = 10))
```



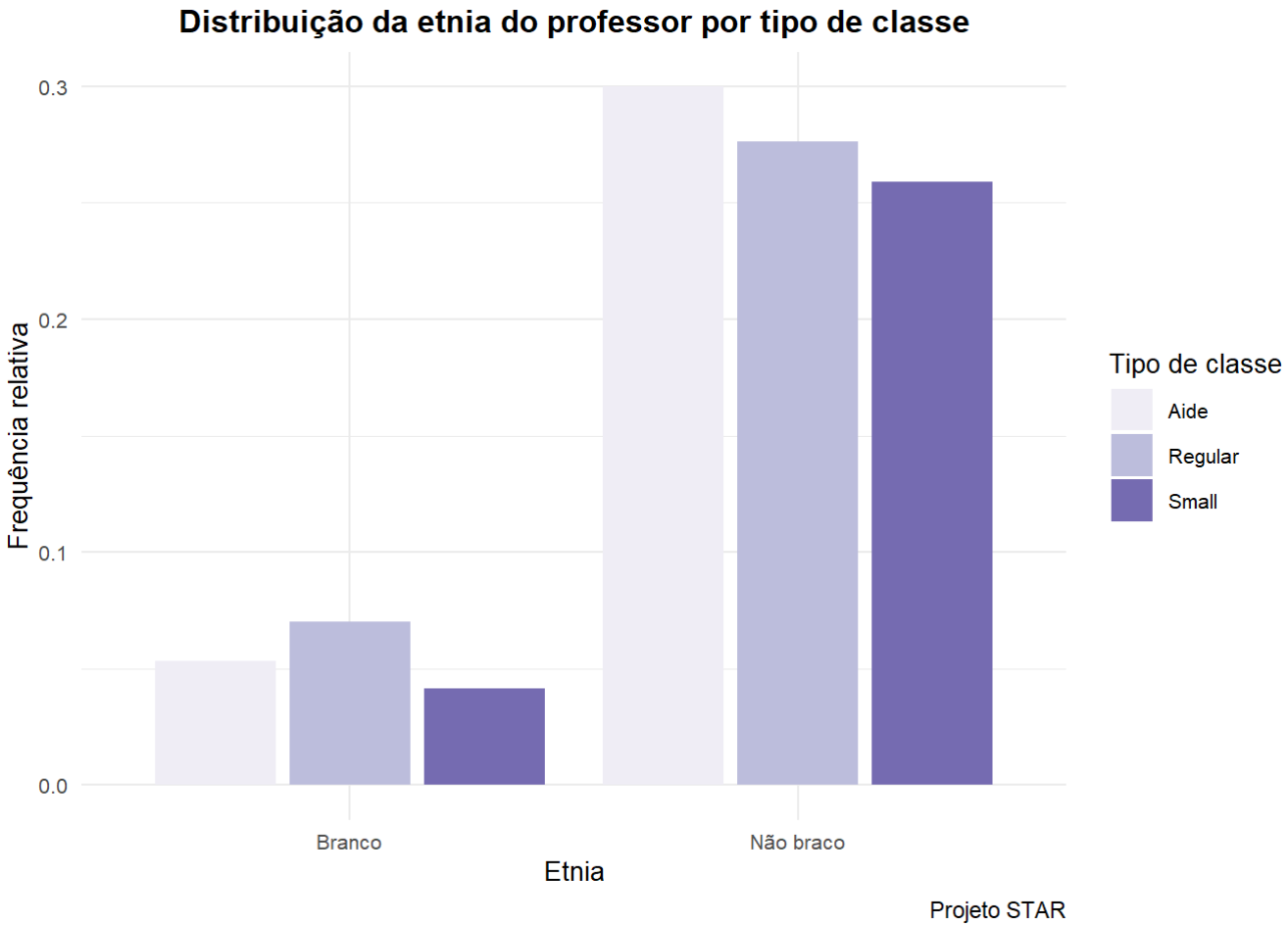

```
# distribuição da etnia dos alunos
dados %>%
  ggplot() +
  geom_bar(aes(as.factor(white_asian), y = ..count.. / sum(..count..),
               fill = class_type), position="dodge2") +
  theme_minimal() +
  labs(x = 'Etnia',
       y = 'Frequência relativa',
       title = 'Distribuição da etnia por tipo de classe',
       caption = 'Projeto STAR') +
  scale_x_discrete(labels = c('Branco ou asiático', 'Preto')) +
  scale_fill_brewer(palette = 'Purples', name = "Tipo de classe") +
```

```
  theme(plot.title=element_text(size=12, face="bold", hjust = 0.5),
        legend.text=element_text(size=8),
        axis.text=element_text(size=8),
        axis.title = element_text(size = 10),
        legend.title = element_text(size = 10))
```



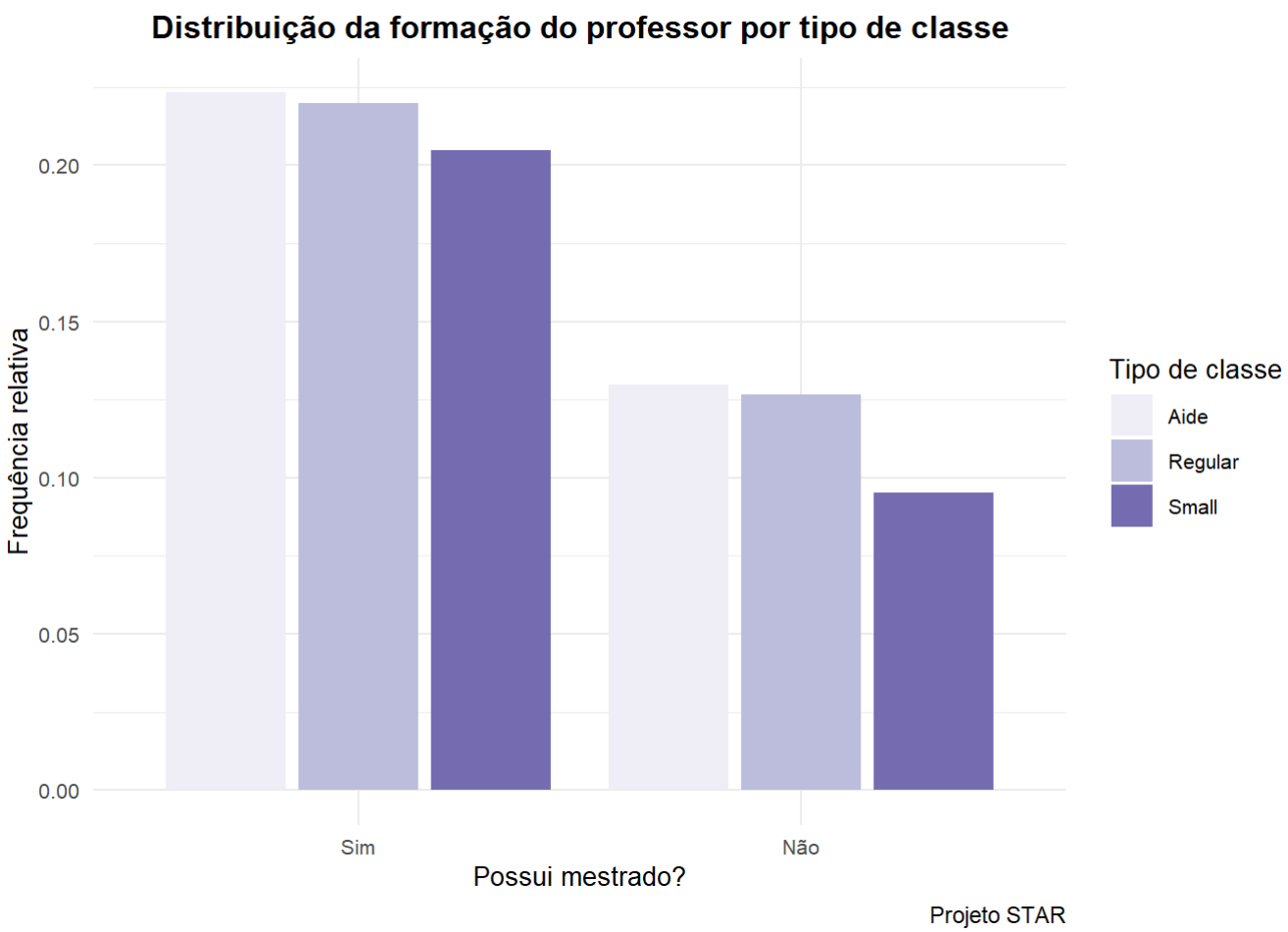

```
# distribuição da etnia dos professores
dados %>%
  ggplot() +
  geom_bar(aes(as.factor(tchwhite), y = ..count.. / sum(..count..),
               fill = class_type), position="dodge2") +
  theme_minimal() +
  labs(x = 'Etnia',
       y = 'Frequência relativa',
       title = 'Distribuição da etnia do professor por tipo de classe',
```

```
      caption = 'Projeto STAR') +
  scale_x_discrete(labels = c('Branco', 'Não braco')) +
  scale_fill_brewer(
    palette = 'Purples',
    name = "Tipo de classe") +
  theme(plot.title=element_text(size=12, face="bold", hjust = 0.5),
        legend.text=element_text(size=8),
        axis.text=element_text(size=8),
        axis.title = element_text(size = 10),
        legend.title = element_text(size = 10))
```




```
# distribuição de professores com mestrado
dados %>%
  ggplot() +
  geom_bar(aes(as.factor(tchmasters), y = ..count.. / sum(..count..),
```

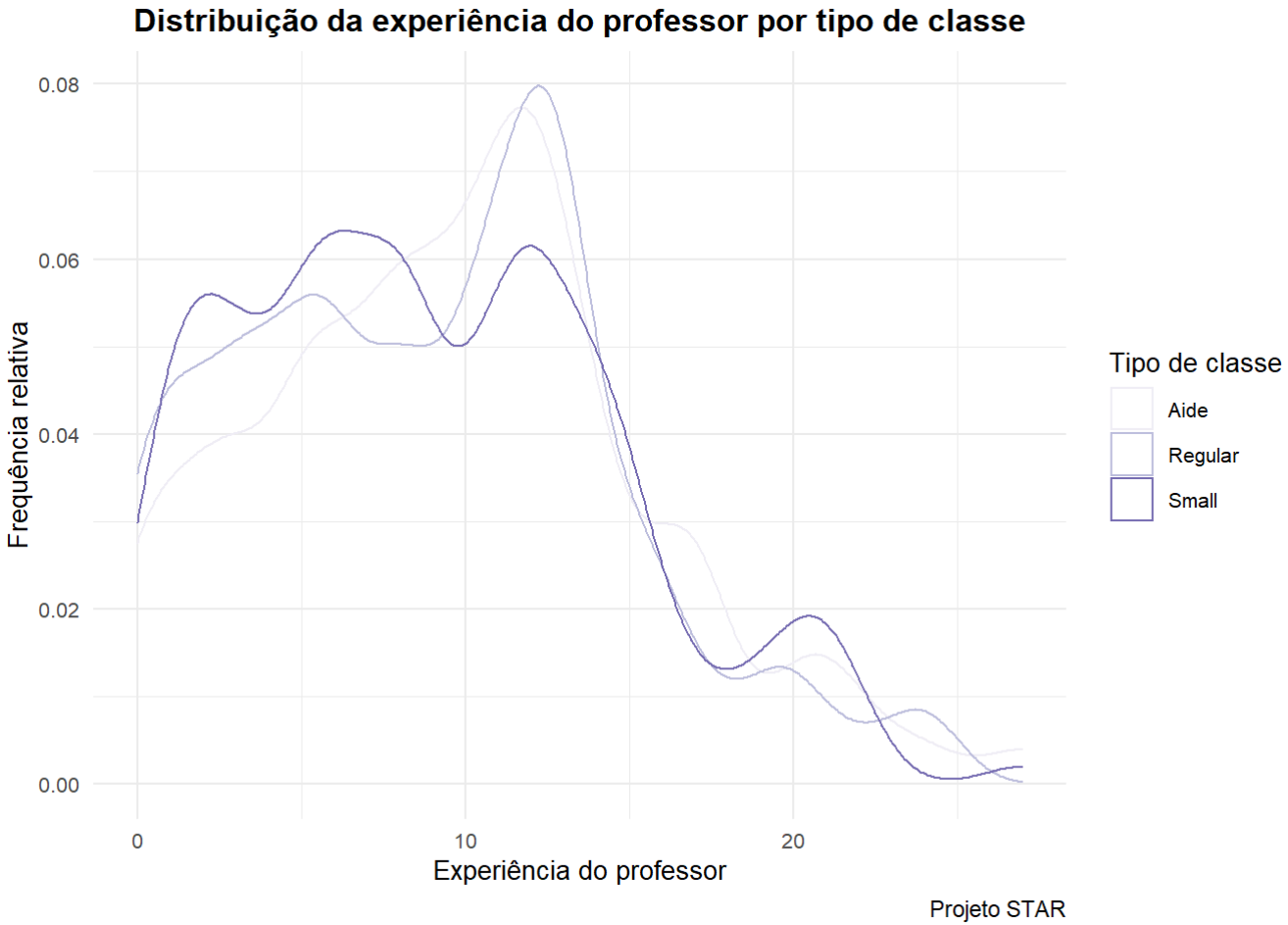
```
             fill = class_type), position="dodge2") +
theme_minimal() +
labs(x = 'Possui mestrado?',
     y = 'Frequência relativa',
     title = 'Distribuição da formação do professor por tipo de classe',
     caption = 'Projeto STAR') +
scale_x_discrete(
  labels = c('Sim', 'Não')) +
scale_fill_brewer(
  palette = 'Purples',
  name = "Tipo de classe") +
theme(plot.title=element_text(size=12, face="bold", hjust = 0.5),
      legend.text=element_text(size=8),
      axis.text=element_text(size=8),
      axis.title = element_text(size = 10),
      legend.title = element_text(size = 10))
```




```
# distribuição da experiência dos professores
dados %>%
  ggplot() +
  geom_density(
    aes(tchexper, colour = class_type),
    alpha = 0.1) +
  theme_minimal() +
  labs(x = 'Experiência do professor',
       y = 'Frequência relativa',
       title = 'Distribuição da experiência do professor por tipo de classe',
       caption = 'Projeto STAR') +
  scale_colour_brewer(
    palette = 'Purples',
    name = "Tipo de classe") +
  theme(plot.title=element_text(size=12, face="bold", hjust = 0.5),
```

```
        legend.text=element_text(size=8),
        axis.text=element_text(size=8),
        axis.title = element_text(size = 10),
        legend.title = element_text(size = 10))
```

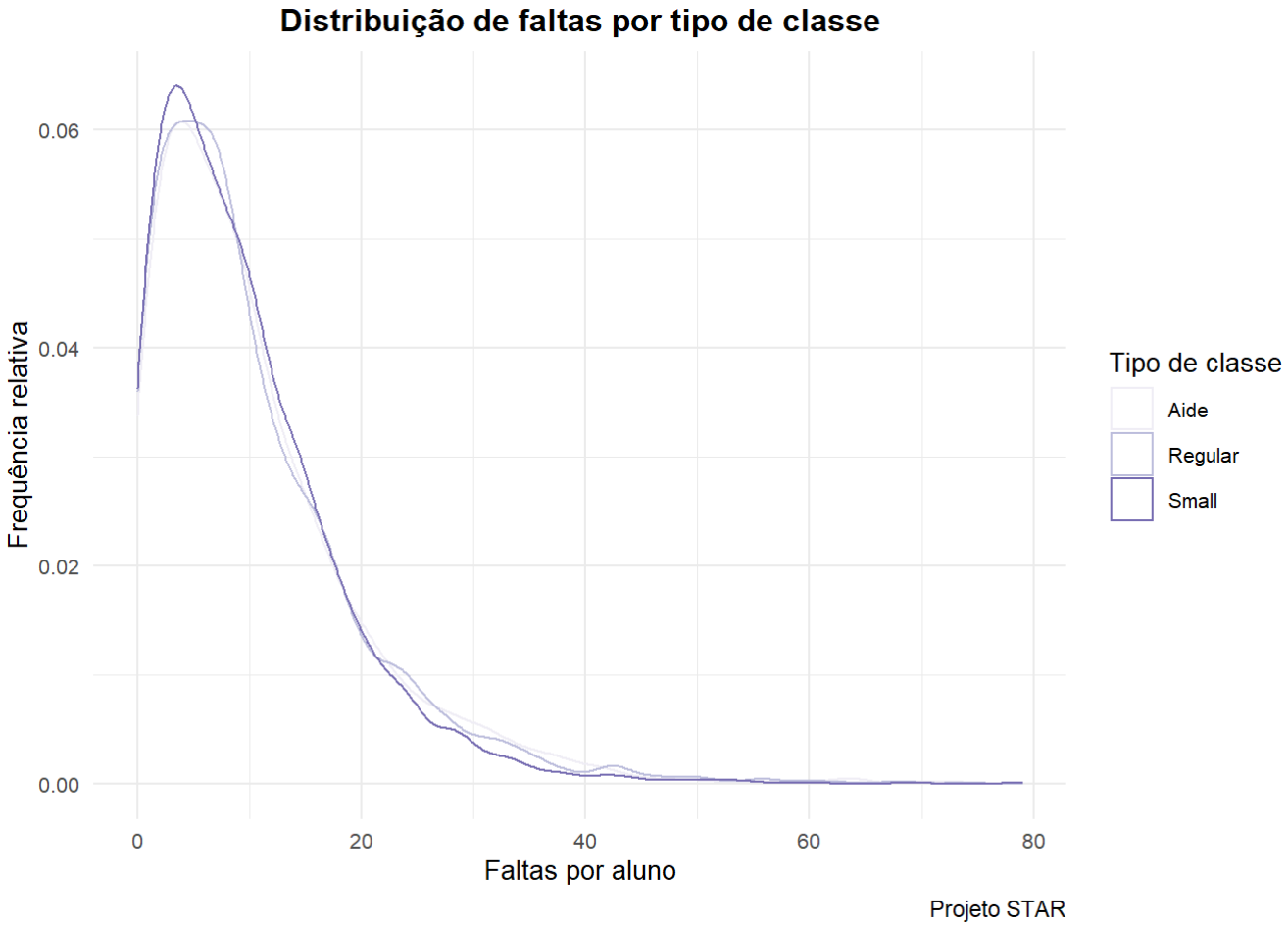
```
## Warning: Removed 20 rows containing non-finite values (stat_density).
```




```
# distribuição de faltas entre os alunos
dados %>%
  ggplot() +
  geom_density(aes(absent, colour = class_type), alpha = 0.5) +
  theme_minimal() +
  labs(x = 'Faltas por aluno',
       y = 'Frequência relativa',
```

```
      title = 'Distribuição de faltas por tipo de classe',
      caption = 'Projeto STAR') +
scale_colour_brewer(palette = 'Purples', name = "Tipo de classe") +
theme(plot.title=element_text(size=12, face="bold", hjust = 0.5),
      legend.text=element_text(size=8),
      axis.text=element_text(size=8),
      axis.title = element_text(size = 10),
      legend.title = element_text(size = 10))
```

```
## Warning: Removed 21 rows containing non-finite values (stat_density).
```



Regressão

```r
# regressão para teste de leitura
reg_1 <- lm(readscore ~
              small + tchexper + absent + boy + white_asian + tchwhite +
              tchmasters + freelunch + schurban,
            data = dados
)
summary(reg_1) # obtendo a tabela via console
```

```
##
## Call:
## lm(formula = readscore ~ small + tchexper + absent + boy + white_asian +
##     tchwhite + tchmasters + freelunch + schurban, data = dados)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -104.827  -19.689   -4.081   14.273  188.284
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  440.03329    1.65464 265.939  < 2e-16 ***
## small1         5.21331    0.86827   6.004 2.04e-09 ***
## tchexper       0.53038    0.07134   7.434 1.21e-13 ***
## absent        -0.28808    0.04366  -6.598 4.56e-11 ***
## boy1          -6.14506    0.79499  -7.730 1.26e-14 ***
## white_asian1   6.54708    1.17109   5.591 2.37e-08 ***
## tchwhite1     -1.61035    1.21123  -1.330   0.1837
## tchmasters1   -1.51374    0.86873  -1.742   0.0815 .
## freelunch1   -14.13348    0.90847 -15.558  < 2e-16 ***
## schurban1      1.97837    1.07350   1.843   0.0654 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 30.09 on 5735 degrees of freedom
##   (41 observations deleted due to missingness)
## Multiple R-squared:  0.1048, Adjusted R-squared:  0.1034
## F-statistic: 74.63 on 9 and 5735 DF,  p-value: < 2.2e-16
```

```r
# regressão para teste de matemática
reg_2 <- lm(mathscore ~
              small  + aide + tchexper + absent + boy + white_asian + tchwhite +
```

```
              tchmasters + freelunch + schurban,
            data = dados
)
summary(reg_2) # obtendo a tabela via console
```

```
##
## Call:
## lm(formula = mathscore ~ small + aide + tchexper + absent + boy +
##     white_asian + tchwhite + tchmasters + freelunch + schurban,
##     data = dados)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -148.471  -30.848   -4.668   26.091  161.776
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  494.82812    2.56178 193.158  < 2e-16 ***
## small1         8.16973    1.50028   5.445 5.38e-08 ***
## aide1          0.45948    1.44442   0.318 0.750417
## tchexper       0.65446    0.10806   6.056 1.48e-09 ***
## absent        -0.47065    0.06602  -7.129 1.13e-12 ***
## boy1          -7.89148    1.20197  -6.565 5.64e-11 ***
## white_asian1  10.19254    1.77140   5.754 9.17e-09 ***
## tchwhite1     -6.41598    1.83817  -3.490 0.000486 ***
## tchmasters1   -2.82597    1.31362  -2.151 0.031495 *
## freelunch1   -17.44375    1.37360 -12.699  < 2e-16 ***
## schurban1     -3.50295    1.62341  -2.158 0.030987 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 45.49 on 5734 degrees of freedom
##   (41 observations deleted due to missingness)
## Multiple R-squared:  0.09491,    Adjusted R-squared:  0.09333
## F-statistic: 60.12 on 10 and 5734 DF,  p-value: < 2.2e-16
```

```
# obtendo tabela em latex para as regressões de leitura e matemática
stargazer(reg_1, reg_2)
```

```
##
## % 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: qui, out 13, 2022 - 08:08:14
## \begin{table}[!htbp] \centering
##   \caption{}
##   \label{}
## \begin{tabular}{@{\extracolsep{5pt}}lcc}
## \\[-1.8ex]\hline
## \hline \\[-1.8ex]
##  & \multicolumn{2}{c}{\textit{Dependent variable:}} \\
## \cline{2-3}
## \\[-1.8ex] & readscore & mathscore \\
## \\[-1.8ex] & (1) & (2)\\
## \hline \\[-1.8ex]
##  small1 & 5.213$^{***}$ & 8.170$^{***}$ \\
##   & (0.868) & (1.500) \\
##   & & \\
##  aide1 &  & 0.459 \\
##   &  & (1.444) \\
##   & & \\
##  tchexper & 0.530$^{***}$ & 0.654$^{***}$ \\
##   & (0.071) & (0.108) \\
##   & & \\
##  absent & $-$0.288$^{***}$ & $-$0.471$^{***}$ \\
##   & (0.044) & (0.066) \\
##   & & \\
##  boy1 & $-$6.145$^{***}$ & $-$7.891$^{***}$ \\
##   & (0.795) & (1.202) \\
##   & & \\
##  white\_asian1 & 6.547$^{***}$ & 10.193$^{***}$ \\
##   & (1.171) & (1.771) \\
##   & & \\
##  tchwhite1 & $-$1.610 & $-$6.416$^{***}$ \\
##   & (1.211) & (1.838) \\
##   & & \\
##  tchmasters1 & $-$1.514$^{*}$ & $-$2.826$^{**}$ \\
##   & (0.869) & (1.314) \\
##   & & \\
##  freelunch1 & $-$14.133$^{***}$ & $-$17.444$^{***}$ \\
##   & (0.908) & (1.374) \\
##   & & \\
```

```
##  schurban1 & 1.978$^{*}$ & $-$3.503$^{**}$ \\
##   & (1.073) & (1.623) \\
##   & & \\
##  Constant & 440.033$^{***}$ & 494.828$^{***}$ \\
##   & (1.655) & (2.562) \\
##   & & \\
## \hline \\[-1.8ex]
## Observations & 5,745 & 5,745 \\
## R$^{2}$ & 0.105 & 0.095 \\
## Adjusted R$^{2}$ & 0.103 & 0.093 \\
## Residual Std. Error & 30.088 (df = 5735) & 45.490 (df = 5734) \\
## F Statistic & 74.632$^{***}$ (df = 9; 5735) & 60.125$^{***}$ (df = 10; 5734) \\
## \hline
## \hline \\[-1.8ex]
## \textit{Note:}  & \multicolumn{2}{r}{$^{*}$p$<$0.1; $^{**}$p$<$0.05; $^{***}$p$<$0.01} \\
## \end{tabular}
## \end{table}
```

```
# regressão de teste de leitura com efeito fixo de escola
reg_3 <- lm(readscore ~
              small + aide + tchexper + absent + boy + white_asian + tchwhite +
              tchmasters + freelunch + schurban + schid,
            data = dados)
summary(reg_3) # obtendo a tabela via console
```

```
##
## Call:
## lm(formula = readscore ~ small + aide + tchexper + absent + boy +
##     white_asian + tchwhite + tchmasters + freelunch + schurban +
##     schid, data = dados)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -102.115  -16.780   -2.933   12.475  199.869
##
## Coefficients: (1 not defined because of singularities)
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  443.13109    3.56156 124.420  < 2e-16 ***
## small1         6.39191    0.91660   6.974 3.44e-12 ***
## aide1          1.14266    0.88537   1.291 0.196898
## tchexper       0.29175    0.07293   4.001 6.40e-05 ***
```

```
## absent        -0.26256    0.04071  -6.449 1.22e-10 ***
## boy1          -5.43901    0.72701  -7.481 8.48e-14 ***
## white_asian1   8.59032    1.53964   5.579 2.52e-08 ***
## tchwhite1     -0.04695    1.43721  -0.033 0.973940
## tchmasters1   -0.73703    0.95578  -0.771 0.440661
## freelunch1   -13.92716    0.88764 -15.690  < 2e-16 ***
## schurban1    -29.42035    4.80431  -6.124 9.76e-10 ***
## schid123056  -17.56859    4.76712  -3.685 0.000231 ***
## schid128068  -14.58086    4.68758  -3.111 0.001877 **
## schid128076  -24.47796    4.56496  -5.362 8.55e-08 ***
## schid128079  -15.54143    4.55514  -3.412 0.000650 ***
## schid130085  -21.65228    4.33825  -4.991 6.19e-07 ***
## schid159171   17.51028    4.00375   4.373 1.24e-05 ***
## schid161176  -23.51278    4.20959  -5.586 2.44e-08 ***
## schid161183    4.43770    3.92579   1.130 0.258357
## schid162184  -14.59714    4.57294  -3.192 0.001420 **
## schid164198   -2.86172    4.73195  -0.605 0.545360
## schid165199   41.10476    5.43615   7.561 4.63e-14 ***
## schid166203   14.36943    5.10579   2.814 0.004905 **
## schid168211  -11.96047    4.05190  -2.952 0.003172 **
## schid168214    1.34116    4.64817   0.289 0.772948
## schid169219    5.00814    4.87938   1.026 0.304752
## schid169229    4.15853    3.72430   1.117 0.264215
## schid169231    5.64232    5.40253   1.044 0.296352
## schid169280    2.07971    4.71189   0.441 0.658958
## schid170295    3.44298    4.47265   0.770 0.441460
## schid173312   35.58896    4.62970   7.687 1.76e-14 ***
## schid176329    7.80013    4.45734   1.750 0.080181 .
## schid180344   23.41267    4.80100   4.877 1.11e-06 ***
## schid189378  -19.18926    4.35157  -4.410 1.05e-05 ***
## schid189382   -1.28055    4.48553  -0.285 0.775284
## schid189396  -20.58122    4.52814  -4.545 5.60e-06 ***
## schid191411    4.32069    5.08020   0.850 0.395086
## schid193422    4.63159    4.60165   1.007 0.314214
## schid193423   -8.08037    4.34418  -1.860 0.062931 .
## schid201449    6.34623    3.85826   1.645 0.100058
## schid203452   -4.69947    4.10643  -1.144 0.252499
## schid203457   15.26413    5.16076   2.958 0.003112 **
## schid205488   -7.51651    4.69445  -1.601 0.109400
## schid205489    0.05882    4.75463   0.012 0.990130
## schid205490    5.82364    5.28902   1.101 0.270908
## schid205491  -15.69722    4.37139  -3.591 0.000332 ***
```

```
## schid205492   10.50919    4.42635   2.374 0.017619 *
## schid208501  -12.04303    4.48523  -2.685 0.007273 **
## schid208503  -26.57666    4.61561  -5.758 8.96e-09 ***
## schid209510  -13.40395    4.05856  -3.303 0.000964 ***
## schid212522   23.57346    5.14080   4.586 4.63e-06 ***
## schid215533    3.06848    3.79576   0.808 0.418896
## schid216536  -14.63086    3.97769  -3.678 0.000237 ***
## schid218562   29.94803    5.33525   5.613 2.08e-08 ***
## schid221571  -33.12416    4.00416  -8.272  < 2e-16 ***
## schid221574  -22.66230    4.50973  -5.025 5.18e-07 ***
## schid225585  -20.57404    4.27567  -4.812 1.53e-06 ***
## schid228606   -5.74820    4.24716  -1.353 0.175974
## schid230612    6.81289    4.57889   1.488 0.136835
## schid231616   -5.19602    4.67190  -1.112 0.266106
## schid234628   -4.73926    4.00888  -1.182 0.237180
## schid244697   18.29640    4.80653   3.807 0.000142 ***
## schid244708   14.22142    4.78285   2.973 0.002957 **
## schid244723   13.98796    4.75818   2.940 0.003298 **
## schid244727   -3.05235    4.48221  -0.681 0.495904
## schid244728   18.51423    5.61132   3.299 0.000975 ***
## schid244736   38.91065    5.52929   7.037 2.19e-12 ***
## schid244745    2.64036    4.58876   0.575 0.565046
## schid244746   35.86255    5.41722   6.620 3.92e-11 ***
## schid244755   32.85141    4.69810   6.992 3.01e-12 ***
## schid244764   29.20929    6.28546   4.647 3.44e-06 ***
## schid244774   30.89675    4.86431   6.352 2.30e-10 ***
## schid244776   28.36907    4.65148   6.099 1.14e-09 ***
## schid244780   60.99465    5.32614  11.452  < 2e-16 ***
## schid244796   22.31049    5.47114   4.078 4.61e-05 ***
## schid244799  -12.83281    4.67517  -2.745 0.006072 **
## schid244801  -16.56291    4.34731  -3.810 0.000140 ***
## schid244806   50.95682    4.72314  10.789  < 2e-16 ***
## schid244818   16.53368    5.02011   3.293 0.000996 ***
## schid244831  -11.74103    4.79023  -2.451 0.014275 *
## schid244839    3.37478    4.51706   0.747 0.455023
## schid252885   -1.71685    4.40572  -0.390 0.696783
## schid253888  -10.79758    5.21703  -2.070 0.038528 *
## schid257899  -17.31747    3.99597  -4.334 1.49e-05 ***
## schid257905   40.42772    4.61446   8.761  < 2e-16 ***
## schid259915  -13.22773    4.68403  -2.824 0.004759 **
## schid261927   -7.37682    4.17854  -1.765 0.077549 .
## schid262937   15.54394    4.42864   3.510 0.000452 ***
```

```
## schid264945         NA         NA      NA       NA
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 27.34 on 5657 degrees of freedom
##   (41 observations deleted due to missingness)
## Multiple R-squared:  0.271,  Adjusted R-squared:  0.2598
## F-statistic: 24.18 on 87 and 5657 DF,  p-value: < 2.2e-16
```

```r
# regressão de teste de matemática com efeito fixo de escola
reg_4 <- lm(mathscore ~
              small + aide + tchexper + absent + boy + white_asian + tchwhite +
              tchmasters + freelunch + schurban + schid,
            data = dados
)
summary(reg_4) # obtendo a tabela via console
```

```
##
## Call:
## lm(formula = mathscore ~ small + aide + tchexper + absent + boy +
##     white_asian + tchwhite + tchmasters + freelunch + schurban +
##     schid, data = dados)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -132.518  -27.277   -2.421   23.780  163.105
##
## Coefficients: (1 not defined because of singularities)
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  492.74031    5.33506  92.359  < 2e-16 ***
## small1         9.09509    1.37302   6.624 3.82e-11 ***
## aide1          0.94723    1.32625   0.714 0.475125
## tchexper       0.41789    0.10924   3.825 0.000132 ***
## absent        -0.46598    0.06098  -7.641 2.51e-14 ***
## boy1          -6.69493    1.08903  -6.148 8.40e-10 ***
## white_asian1  18.37994    2.30631   7.969 1.91e-15 ***
## tchwhite1     -0.94925    2.15287  -0.441 0.659287
## tchmasters1   -2.19360    1.43171  -1.532 0.125540
## freelunch1   -18.72542    1.32964 -14.083  < 2e-16 ***
## schurban1    -35.00210    7.19665  -4.864 1.18e-06 ***
## schid123056  -24.21237    7.14093  -3.391 0.000702 ***
```

```
## schid128068  -26.73523    7.02178  -3.807 0.000142 ***
## schid128076  -33.73457    6.83810  -4.933 8.32e-07 ***
## schid128079  -37.10958    6.82340  -5.439 5.60e-08 ***
## schid130085  -23.71476    6.49851  -3.649 0.000265 ***
## schid159171   12.94445    5.99743   2.158 0.030944 *
## schid161176  -24.38780    6.30578  -3.868 0.000111 ***
## schid161183    8.08644    5.88066   1.375 0.169158
## schid162184   -8.45758    6.85006  -1.235 0.217004
## schid164198   -9.50982    7.08826  -1.342 0.179770
## schid165199   47.62373    8.14311   5.848 5.24e-09 ***
## schid166203   10.60025    7.64824   1.386 0.165810
## schid168211  -11.10258    6.06956  -1.829 0.067419 .
## schid168214    8.32849    6.96275   1.196 0.231688
## schid169219    4.85116    7.30909   0.664 0.506899
## schid169229   -6.06617    5.57884  -1.087 0.276927
## schid169231    2.08791    8.09274   0.258 0.796418
## schid169280  -17.13251    7.05820  -2.427 0.015242 *
## schid170295  -12.26788    6.69984  -1.831 0.067142 .
## schid173312   16.64060    6.93508   2.399 0.016450 *
## schid176329   14.16636    6.67690   2.122 0.033907 *
## schid180344   23.18923    7.19169   3.224 0.001269 **
## schid189378  -37.34160    6.51845  -5.729 1.06e-08 ***
## schid189382  -28.18596    6.71913  -4.195 2.77e-05 ***
## schid189396  -27.14254    6.78295  -4.002 6.37e-05 ***
## schid191411  -15.38267    7.60992  -2.021 0.043285 *
## schid193422   -0.44684    6.89306  -0.065 0.948316
## schid193423    4.62208    6.50739   0.710 0.477559
## schid201449    4.28920    5.77951   0.742 0.458034
## schid203452  -25.72326    6.15125  -4.182 2.94e-05 ***
## schid203457   -1.62587    7.73058  -0.210 0.833428
## schid205488  -22.38964    7.03209  -3.184 0.001461 **
## schid205489  -18.17240    7.12222  -2.552 0.010752 *
## schid205490   -9.71381    7.92271  -1.226 0.220223
## schid205491  -20.80873    6.54814  -3.178 0.001492 **
## schid205492   25.59146    6.63048   3.860 0.000115 ***
## schid208501  -11.84244    6.71868  -1.763 0.078019 .
## schid208503  -29.93026    6.91398  -4.329 1.52e-05 ***
## schid209510  -35.47043    6.07955  -5.834 5.70e-09 ***
## schid212522   35.35516    7.70070   4.591 4.50e-06 ***
## schid215533   15.66964    5.68588   2.756 0.005872 **
## schid216536  -11.47773    5.95840  -1.926 0.054116 .
## schid218562   33.76570    7.99197   4.225 2.43e-05 ***
```

```
## schid221571  -58.15759    5.99805  -9.696  < 2e-16 ***
## schid221574  -32.26054    6.75538  -4.776 1.84e-06 ***
## schid225585  -24.40181    6.40476  -3.810 0.000140 ***
## schid228606    3.17301    6.36205   0.499 0.617982
## schid230612   22.66666    6.85898   3.305 0.000957 ***
## schid231616    7.74091    6.99830   1.106 0.268725
## schid234628   -8.65109    6.00513  -1.441 0.149748
## schid244697    7.76336    7.19996   1.078 0.280968
## schid244708    8.71088    7.16450   1.216 0.224097
## schid244723   11.48438    7.12755   1.611 0.107178
## schid244727   -6.43223    6.71416  -0.958 0.338099
## schid244728    8.35024    8.40551   0.993 0.320546
## schid244736   67.18931    8.28263   8.112 6.05e-16 ***
## schid244745   18.21229    6.87376   2.650 0.008083 **
## schid244746   43.95527    8.11476   5.417 6.32e-08 ***
## schid244755   49.53843    7.03754   7.039 2.16e-12 ***
## schid244764   35.45360    9.41535   3.766 0.000168 ***
## schid244774   38.60766    7.28652   5.299 1.21e-07 ***
## schid244776   27.16107    6.96771   3.898 9.81e-05 ***
## schid244780  110.23234    7.97832  13.816  < 2e-16 ***
## schid244796   22.54882    8.19553   2.751 0.005954 **
## schid244799  -11.38071    7.00319  -1.625 0.104202
## schid244801   -5.58247    6.51207  -0.857 0.391343
## schid244806   63.16511    7.07506   8.928  < 2e-16 ***
## schid244818   16.49621    7.51990   2.194 0.028299 *
## schid244831   -7.59414    7.17555  -1.058 0.289948
## schid244839   38.37208    6.76636   5.671 1.49e-08 ***
## schid252885   -7.70990    6.59958  -1.168 0.242759
## schid253888   -5.83577    7.81488  -0.747 0.455245
## schid257899  -25.02714    5.98579  -4.181 2.94e-05 ***
## schid257905   19.30112    6.91226   2.792 0.005251 **
## schid259915   -9.37565    7.01646  -1.336 0.181526
## schid261927    1.86761    6.25927   0.298 0.765427
## schid262937   15.41161    6.63391   2.323 0.020206 *
## schid264945         NA         NA      NA       NA
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 40.95 on 5657 degrees of freedom
##   (41 observations deleted due to missingness)
## Multiple R-squared:  0.2764, Adjusted R-squared:  0.2652
## F-statistic: 24.83 on 87 and 5657 DF,  p-value: < 2.2e-16
```

```
# tabela em latex para regressões com efeito fixo de escola
stargazer(reg_3, reg_4)
```

```
##
## % 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: qui, out 13, 2022 - 08:08:16
## \begin{table}[!htbp] \centering
##   \caption{}
##   \label{}
## \begin{tabular}{@{\extracolsep{5pt}}lcc}
## \\[-1.8ex]\hline
## \hline \\[-1.8ex]
##  & \multicolumn{2}{c}{\textit{Dependent variable:}} \\
## \cline{2-3}
## \\[-1.8ex] & readscore & mathscore \\
## \\[-1.8ex] & (1) & (2)\\
## \hline \\[-1.8ex]
##  small1 & 6.392$^{***}$ & 9.095$^{***}$ \\
##   & (0.917) & (1.373) \\
##   & & \\
##  aide1 & 1.143 & 0.947 \\
##   & (0.885) & (1.326) \\
##   & & \\
##  tchexper & 0.292$^{***}$ & 0.418$^{***}$ \\
##   & (0.073) & (0.109) \\
##   & & \\
##  absent & $-$0.263$^{***}$ & $-$0.466$^{***}$ \\
##   & (0.041) & (0.061) \\
##   & & \\
##  boy1 & $-$5.439$^{***}$ & $-$6.695$^{***}$ \\
##   & (0.727) & (1.089) \\
##   & & \\
##  white\_asian1 & 8.590$^{***}$ & 18.380$^{***}$ \\
##   & (1.540) & (2.306) \\
##   & & \\
##  tchwhite1 & $-$0.047 & $-$0.949 \\
##   & (1.437) & (2.153) \\
##   & & \\
##  tchmasters1 & $-$0.737 & $-$2.194 \\
##   & (0.956) & (1.432) \\
```

```
##   & & \\
##  freelunch1 & $-$13.927$^{***}$ & $-$18.725$^{***}$ \\
##   & (0.888) & (1.330) \\
##   & & \\
##  schurban1 & $-$29.420$^{***}$ & $-$35.002$^{***}$ \\
##   & (4.804) & (7.197) \\
##   & & \\
##  schid123056 & $-$17.569$^{***}$ & $-$24.212$^{***}$ \\
##   & (4.767) & (7.141) \\
##   & & \\
##  schid128068 & $-$14.581$^{***}$ & $-$26.735$^{***}$ \\
##   & (4.688) & (7.022) \\
##   & & \\
##  schid128076 & $-$24.478$^{***}$ & $-$33.735$^{***}$ \\
##   & (4.565) & (6.838) \\
##   & & \\
##  schid128079 & $-$15.541$^{***}$ & $-$37.110$^{***}$ \\
##   & (4.555) & (6.823) \\
##   & & \\
##  schid130085 & $-$21.652$^{***}$ & $-$23.715$^{***}$ \\
##   & (4.338) & (6.499) \\
##   & & \\
##  schid159171 & 17.510$^{***}$ & 12.944$^{**}$ \\
##   & (4.004) & (5.997) \\
##   & & \\
##  schid161176 & $-$23.513$^{***}$ & $-$24.388$^{***}$ \\
##   & (4.210) & (6.306) \\
##   & & \\
##  schid161183 & 4.438 & 8.086 \\
##   & (3.926) & (5.881) \\
##   & & \\
##  schid162184 & $-$14.597$^{***}$ & $-$8.458 \\
##   & (4.573) & (6.850) \\
##   & & \\
##  schid164198 & $-$2.862 & $-$9.510 \\
##   & (4.732) & (7.088) \\
##   & & \\
##  schid165199 & 41.105$^{***}$ & 47.624$^{***}$ \\
##   & (5.436) & (8.143) \\
##   & & \\
##  schid166203 & 14.369$^{***}$ & 10.600 \\
##   & (5.106) & (7.648) \\
```

```
##   & & \\
##  schid168211 & $-$11.960$^{***}$ & $-$11.103$^{*}$ \\
##   & (4.052) & (6.070) \\
##   & & \\
##  schid168214 & 1.341 & 8.328 \\
##   & (4.648) & (6.963) \\
##   & & \\
##  schid169219 & 5.008 & 4.851 \\
##   & (4.879) & (7.309) \\
##   & & \\
##  schid169229 & 4.159 & $-$6.066 \\
##   & (3.724) & (5.579) \\
##   & & \\
##  schid169231 & 5.642 & 2.088 \\
##   & (5.403) & (8.093) \\
##   & & \\
##  schid169280 & 2.080 & $-$17.133$^{**}$ \\
##   & (4.712) & (7.058) \\
##   & & \\
##  schid170295 & 3.443 & $-$12.268$^{*}$ \\
##   & (4.473) & (6.700) \\
##   & & \\
##  schid173312 & 35.589$^{***}$ & 16.641$^{**}$ \\
##   & (4.630) & (6.935) \\
##   & & \\
##  schid176329 & 7.800$^{*}$ & 14.166$^{**}$ \\
##   & (4.457) & (6.677) \\
##   & & \\
##  schid180344 & 23.413$^{***}$ & 23.189$^{***}$ \\
##   & (4.801) & (7.192) \\
##   & & \\
##  schid189378 & $-$19.189$^{***}$ & $-$37.342$^{***}$ \\
##   & (4.352) & (6.518) \\
##   & & \\
##  schid189382 & $-$1.281 & $-$28.186$^{***}$ \\
##   & (4.486) & (6.719) \\
##   & & \\
##  schid189396 & $-$20.581$^{***}$ & $-$27.143$^{***}$ \\
##   & (4.528) & (6.783) \\
##   & & \\
##  schid191411 & 4.321 & $-$15.383$^{**}$ \\
##   & (5.080) & (7.610) \\
```

```
##   & & \\
##  schid193422 & 4.632 & $-$0.447 \\
##   & (4.602) & (6.893) \\
##   & & \\
##  schid193423 & $-$8.080$^{*}$ & 4.622 \\
##   & (4.344) & (6.507) \\
##   & & \\
##  schid201449 & 6.346 & 4.289 \\
##   & (3.858) & (5.780) \\
##   & & \\
##  schid203452 & $-$4.699 & $-$25.723$^{***}$ \\
##   & (4.106) & (6.151) \\
##   & & \\
##  schid203457 & 15.264$^{***}$ & $-$1.626 \\
##   & (5.161) & (7.731) \\
##   & & \\
##  schid205488 & $-$7.517 & $-$22.390$^{***}$ \\
##   & (4.694) & (7.032) \\
##   & & \\
##  schid205489 & 0.059 & $-$18.172$^{**}$ \\
##   & (4.755) & (7.122) \\
##   & & \\
##  schid205490 & 5.824 & $-$9.714 \\
##   & (5.289) & (7.923) \\
##   & & \\
##  schid205491 & $-$15.697$^{***}$ & $-$20.809$^{***}$ \\
##   & (4.371) & (6.548) \\
##   & & \\
##  schid205492 & 10.509$^{**}$ & 25.591$^{***}$ \\
##   & (4.426) & (6.630) \\
##   & & \\
##  schid208501 & $-$12.043$^{***}$ & $-$11.842$^{*}$ \\
##   & (4.485) & (6.719) \\
##   & & \\
##  schid208503 & $-$26.577$^{***}$ & $-$29.930$^{***}$ \\
##   & (4.616) & (6.914) \\
##   & & \\
##  schid209510 & $-$13.404$^{***}$ & $-$35.470$^{***}$ \\
##   & (4.059) & (6.080) \\
##   & & \\
##  schid212522 & 23.573$^{***}$ & 35.355$^{***}$ \\
##   & (5.141) & (7.701) \\
```

```
##   & & \\
##  schid215533 & 3.068 & 15.670$^{***}$ \\
##   & (3.796) & (5.686) \\
##   & & \\
##  schid216536 & $-$14.631$^{***}$ & $-$11.478$^{*}$ \\
##   & (3.978) & (5.958) \\
##   & & \\
##  schid218562 & 29.948$^{***}$ & 33.766$^{***}$ \\
##   & (5.335) & (7.992) \\
##   & & \\
##  schid221571 & $-$33.124$^{***}$ & $-$58.158$^{***}$ \\
##   & (4.004) & (5.998) \\
##   & & \\
##  schid221574 & $-$22.662$^{***}$ & $-$32.261$^{***}$ \\
##   & (4.510) & (6.755) \\
##   & & \\
##  schid225585 & $-$20.574$^{***}$ & $-$24.402$^{***}$ \\
##   & (4.276) & (6.405) \\
##   & & \\
##  schid228606 & $-$5.748 & 3.173 \\
##   & (4.247) & (6.362) \\
##   & & \\
##  schid230612 & 6.813 & 22.667$^{***}$ \\
##   & (4.579) & (6.859) \\
##   & & \\
##  schid231616 & $-$5.196 & 7.741 \\
##   & (4.672) & (6.998) \\
##   & & \\
##  schid234628 & $-$4.739 & $-$8.651 \\
##   & (4.009) & (6.005) \\
##   & & \\
##  schid244697 & 18.296$^{***}$ & 7.763 \\
##   & (4.807) & (7.200) \\
##   & & \\
##  schid244708 & 14.221$^{***}$ & 8.711 \\
##   & (4.783) & (7.164) \\
##   & & \\
##  schid244723 & 13.988$^{***}$ & 11.484 \\
##   & (4.758) & (7.128) \\
##   & & \\
##  schid244727 & $-$3.052 & $-$6.432 \\
##   & (4.482) & (6.714) \\
```

```
##   & & \\
##  schid244728 & 18.514$^{***}$ & 8.350 \\
##   & (5.611) & (8.406) \\
##   & & \\
##  schid244736 & 38.911$^{***}$ & 67.189$^{***}$ \\
##   & (5.529) & (8.283) \\
##   & & \\
##  schid244745 & 2.640 & 18.212$^{***}$ \\
##   & (4.589) & (6.874) \\
##   & & \\
##  schid244746 & 35.863$^{***}$ & 43.955$^{***}$ \\
##   & (5.417) & (8.115) \\
##   & & \\
##  schid244755 & 32.851$^{***}$ & 49.538$^{***}$ \\
##   & (4.698) & (7.038) \\
##   & & \\
##  schid244764 & 29.209$^{***}$ & 35.454$^{***}$ \\
##   & (6.285) & (9.415) \\
##   & & \\
##  schid244774 & 30.897$^{***}$ & 38.608$^{***}$ \\
##   & (4.864) & (7.287) \\
##   & & \\
##  schid244776 & 28.369$^{***}$ & 27.161$^{***}$ \\
##   & (4.651) & (6.968) \\
##   & & \\
##  schid244780 & 60.995$^{***}$ & 110.232$^{***}$ \\
##   & (5.326) & (7.978) \\
##   & & \\
##  schid244796 & 22.310$^{***}$ & 22.549$^{***}$ \\
##   & (5.471) & (8.196) \\
##   & & \\
##  schid244799 & $-$12.833$^{***}$ & $-$11.381 \\
##   & (4.675) & (7.003) \\
##   & & \\
##  schid244801 & $-$16.563$^{***}$ & $-$5.582 \\
##   & (4.347) & (6.512) \\
##   & & \\
##  schid244806 & 50.957$^{***}$ & 63.165$^{***}$ \\
##   & (4.723) & (7.075) \\
##   & & \\
##  schid244818 & 16.534$^{***}$ & 16.496$^{**}$ \\
##   & (5.020) & (7.520) \\
```

```
##   & & \\
##  schid244831 & $-$11.741$^{**}$ & $-$7.594 \\
##   & (4.790) & (7.176) \\
##   & & \\
##  schid244839 & 3.375 & 38.372$^{***}$ \\
##   & (4.517) & (6.766) \\
##   & & \\
##  schid252885 & $-$1.717 & $-$7.710 \\
##   & (4.406) & (6.600) \\
##   & & \\
##  schid253888 & $-$10.798$^{**}$ & $-$5.836 \\
##   & (5.217) & (7.815) \\
##   & & \\
##  schid257899 & $-$17.317$^{***}$ & $-$25.027$^{***}$ \\
##   & (3.996) & (5.986) \\
##   & & \\
##  schid257905 & 40.428$^{***}$ & 19.301$^{***}$ \\
##   & (4.614) & (6.912) \\
##   & & \\
##  schid259915 & $-$13.228$^{***}$ & $-$9.376 \\
##   & (4.684) & (7.016) \\
##   & & \\
##  schid261927 & $-$7.377$^{*}$ & 1.868 \\
##   & (4.179) & (6.259) \\
##   & & \\
##  schid262937 & 15.544$^{***}$ & 15.412$^{**}$ \\
##   & (4.429) & (6.634) \\
##   & & \\
##  schid264945 &  &  \\
##   &  &  \\
##   & & \\
##  Constant & 443.131$^{***}$ & 492.740$^{***}$ \\
##   & (3.562) & (5.335) \\
##   & & \\
## \hline \\[-1.8ex]
## Observations & 5,745 & 5,745 \\
## R$^{2}$ & 0.271 & 0.276 \\
## Adjusted R$^{2}$ & 0.260 & 0.265 \\
## Residual Std. Error (df = 5657) & 27.338 & 40.951 \\
## F Statistic (df = 87; 5657) & 24.176$^{***}$ & 24.834$^{***}$ \\
## \hline
## \hline \\[-1.8ex]
```

```
## \textit{Note:}  & \multicolumn{2}{r}{$^{*}$p$<$0.1; $^{**}$p$<$0.05; $^{***}$p$<$0.01} \\
## \end{tabular}
## \end{table}
```

Testes de significância

```
# regressão de readscore restrita
reg_3_r <- lm(readscore ~
              small + aide + tchexper + absent + boy + white_asian + tchwhite +
              tchmasters + freelunch + schurban,
            data = dados)

anova3 <- anova(reg_3_r, reg_3)
anova3 # obtendo o resultado via console
```

```
## Analysis of Variance Table
##
## Model 1: readscore ~ small + aide + tchexper + absent + boy + white_asian +
##     tchwhite + tchmasters + freelunch + schurban
## Model 2: readscore ~ small + aide + tchexper + absent + boy + white_asian +
##     tchwhite + tchmasters + freelunch + schurban + schid
##   Res.Df     RSS Df Sum of Sq      F    Pr(>F)
## 1   5734 5190612
## 2   5657 4227798 77    962814 16.731 < 2.2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
stargazer(anova3, summary = F) # obtendo a tabela anterior para LaTex
```

```
##
## % Table created by stargazer v.5.2.3 by Marek Hlavac, Social Policy Institute. E-mail: marek.hlavac at gmail.com
## % Date and time: qui, out 13, 2022 - 08:08:19
## \begin{table}[!htbp] \centering
##   \caption{}
##   \label{}
## \begin{tabular}{@{\extracolsep{5pt}} ccccccc}
## \\[-1.8ex]\hline
## \hline \\[-1.8ex]
```

```
##  & Res.Df & RSS & Df & Sum of Sq & F & Pr(\textgreater F) \\
## \hline \\[-1.8ex]
## 1 & $5,734$ & $5,190,612.000$ & $$ & $$ & $$ & $$ \\
## 2 & $5,657$ & $4,227,798.000$ & $77$ & $962,814.000$ & $16.731$ & $0$ \\
## \hline \\[-1.8ex]
## \end{tabular}
## \end{table}
```

```
# regressão restrita para mathscore
reg_4_r <- lm(mathscore ~
              small + aide + tchexper + absent + boy + white_asian + tchwhite +
              tchmasters + freelunch + schurban,
            data = dados)

anova4 <- anova(reg_4_r, reg_4)
anova4 # obtendo a tabela via console
```

```
## Analysis of Variance Table
##
## Model 1: mathscore ~ small + aide + tchexper + absent + boy + white_asian +
##     tchwhite + tchmasters + freelunch + schurban
## Model 2: mathscore ~ small + aide + tchexper + absent + boy + white_asian +
##     tchwhite + tchmasters + freelunch + schurban + schid
##   Res.Df      RSS Df Sum of Sq      F    Pr(>F)
## 1   5734 11865598
## 2   5657  9486636 77   2378963 18.423 < 2.2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
stargazer(anova4, summary = F) # obtendo a tabela anterior para LaTex
```

```
##
## % 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: qui, out 13, 2022 - 08:08:19
## \begin{table}[!htbp] \centering
##   \caption{}
##   \label{}
## \begin{tabular}{@{\extracolsep{5pt}} ccccccc}
```

```
## \\[-1.8ex]\hline
## \hline \\[-1.8ex]
##  & Res.Df & RSS & Df & Sum of Sq & F & Pr(\textgreater F) \\
## \hline \\[-1.8ex]
## 1 & $5,734$ & $11,865,598.000$ & $$ & $$ & $$ & $$ \\
## 2 & $5,657$ & $9,486,636.000$ & $77$ & $2,378,963.000$ & $18.423$ & $0$ \\
## \hline \\[-1.8ex]
## \end{tabular}
## \end{table}
```

```
# modelo MPL para verificação de aleatorização do experimento
reg_small <- lm(as.numeric(small) ~
              tchexper + absent + boy + white_asian + tchwhite +
              tchmasters + freelunch + schurban,
              data = dados)

summary(reg_small) # obtendo a tabela via console
```

```
##
## Call:
## lm(formula = as.numeric(small) ~ tchexper + absent + boy + white_asian +
##     tchwhite + tchmasters + freelunch + schurban, data = dados)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -0.3776 -0.3209 -0.2756  0.6547  0.8643
##
## Coefficients:
##                Estimate Std. Error t value Pr(>|t|)
## (Intercept)   1.3022649  0.0248435  52.419  < 2e-16 ***
## tchexper     -0.0019527  0.0010846  -1.800 0.071851 .
## absent       -0.0020574  0.0006634  -3.101 0.001937 **
## boy1         -0.0016982  0.0120894  -0.140 0.888293
## white_asian1  0.0030724  0.0178087   0.173 0.863032
## tchwhite1     0.0672954  0.0183977   3.658 0.000257 ***
## tchmasters1  -0.0511977  0.0131935  -3.881 0.000105 ***
## freelunch1   -0.0053054  0.0138148  -0.384 0.700964
## schurban1     0.0049469  0.0163245   0.303 0.761871
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
```

```
## Residual standard error: 0.4575 on 5736 degrees of freedom
##   (41 observations deleted due to missingness)
## Multiple R-squared:  0.007478,   Adjusted R-squared:  0.006093
## F-statistic: 5.402 on 8 and 5736 DF,  p-value: 8.5e-07
```

```
stargazer(reg_small) # obtendo a tabela anterior para LaTex
```

```
##
## % 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: qui, out 13, 2022 - 08:08:20
## \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] & as.numeric(small) \\
## \hline \\[-1.8ex]
##  tchexper & $-$0.002$^{*}$ \\
##   & (0.001) \\
##   & \\
##  absent & $-$0.002$^{***}$ \\
##   & (0.001) \\
##   & \\
##  boy1 & $-$0.002 \\
##   & (0.012) \\
##   & \\
##  white\_asian1 & 0.003 \\
##   & (0.018) \\
##   & \\
##  tchwhite1 & 0.067$^{***}$ \\
##   & (0.018) \\
##   & \\
##  tchmasters1 & $-$0.051$^{***}$ \\
##   & (0.013) \\
##   & \\
##  freelunch1 & $-$0.005 \\
##   & (0.014) \\
```

```
##   & \\
##  schurban1 & 0.005 \\
##   & (0.016) \\
##   & \\
##  Constant & 1.302$^{***}$ \\
##   & (0.025) \\
##   & \\
## \hline \\[-1.8ex]
## Observations & 5,745 \\
## R$^{2}$ & 0.007 \\
## Adjusted R$^{2}$ & 0.006 \\
## Residual Std. Error & 0.458 (df = 5736) \\
## F Statistic & 5.402$^{***}$ (df = 8; 5736) \\
## \hline
## \hline \\[-1.8ex]
## \textit{Note:}  & \multicolumn{1}{r}{$^{*}$p$<$0.1; $^{**}$p$<$0.05; $^{***}$p$<$0.01} \\
## \end{tabular}
## \end{table}
```