regressions 2

Chenoa Schatzki-McClain

April 19, 2018

```
library(dplyr)
```

```
## Warning: package 'dplyr' was built under R version 3.4.3
```

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

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

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

```
library(sampleSelection)
```

```
## Warning: package 'sampleSelection' was built under R version 3.4.4
```

```
## Loading required package: maxLik
```

```
## Warning: package 'maxLik' was built under R version 3.4.4
```

```
## Loading required package: miscTools
```

```
## Warning: package 'miscTools' was built under R version 3.4.4
```

```
##
## Please cite the 'maxLik' package as:
## Henningsen, Arne and Toomet, Ott (2011). maxLik: A package for maximum likelihood estimation in R. C
##
## If you have questions, suggestions, or comments regarding the 'maxLik' package, please use a forum o
## https://r-forge.r-project.org/projects/maxlik/
```

```
library(ggplot2)
```

```
## Warning: package 'ggplot2' was built under R version 3.4.3
```

```
library(plm)
```

```
## Warning: package 'plm' was built under R version 3.4.4
```

```
## Loading required package: Formula
```

```
##
## Attaching package: 'plm'
```

```
## The following objects are masked from 'package:dplyr':
##
##     between, lag, lead
```

```
library(tidyr)
```

```
## Warning: package 'tidyr' was built under R version 3.4.3
```

```
library(scales)
```

```
## Warning: package 'scales' was built under R version 3.4.3
```

```
library(stringr)
```

```
## Warning: package 'stringr' was built under R version 3.4.3
```

```
library(grDevices)
library(qwraps2)
```

```
## Warning: package 'qwraps2' was built under R version 3.4.4
```

```
library(stargazer)
```

```
## Warning: package 'stargazer' was built under R version 3.4.3
```

```
##
## Please cite as:
```

```
##  Hlavac, Marek (2018). stargazer: Well-Formatted Regression and Summary Statistics Tables.
```

```
##  R package version 5.2.1. https://CRAN.R-project.org/package=stargazer
```

```
library(extrafont)
```

```
## Warning: package 'extrafont' was built under R version 3.4.3
```

```
## Registering fonts with R
```

```
#library(Cairo)
```

```
font_import()
```

```
## Importing fonts may take a few minutes, depending on the number of fonts and the speed of the system
## Continue? [y/n]
```

```
## Exiting.
```

```
n#mainfont <- "Garamond"
```

```
## function ()
## {
##     abort("This function should not be called directly")
## }
## <environment: namespace:dplyr>
```

```
#CairoFonts(regular = paste(mainfont,"style=Regular",sep=":"),
#             bold = paste(mainfont,"style=Bold",sep=":"),
#             italic = paste(mainfont,"style=Italic",sep=":"),
#             bolditalic = paste(mainfont,"style=Bold Italic,BoldItalic",sep=":"))
#pdf <- CairoPDF
#png <- CairoPNG
```

```
rm(list=ls())
```

```
#load data
clean <- read.csv("C:/Users/cheno/Desktop/IFLS_all/DATA/R datasets/IFLS_4_5_clean.csv")

#region should be factor
clean$sc_code <- as.factor(clean$sc_code)
```

```r
#jl_year should be factor
clean$jl_year_fired <- as.factor(clean$jl_year_fired)

#consider wage rather than monthly income
clean$wage_rate <- (clean$wage_prof/4)/clean$tk22a
clean$wage_rate_H <- (clean$wage_prof_H/4)/clean$tk22a_H
```

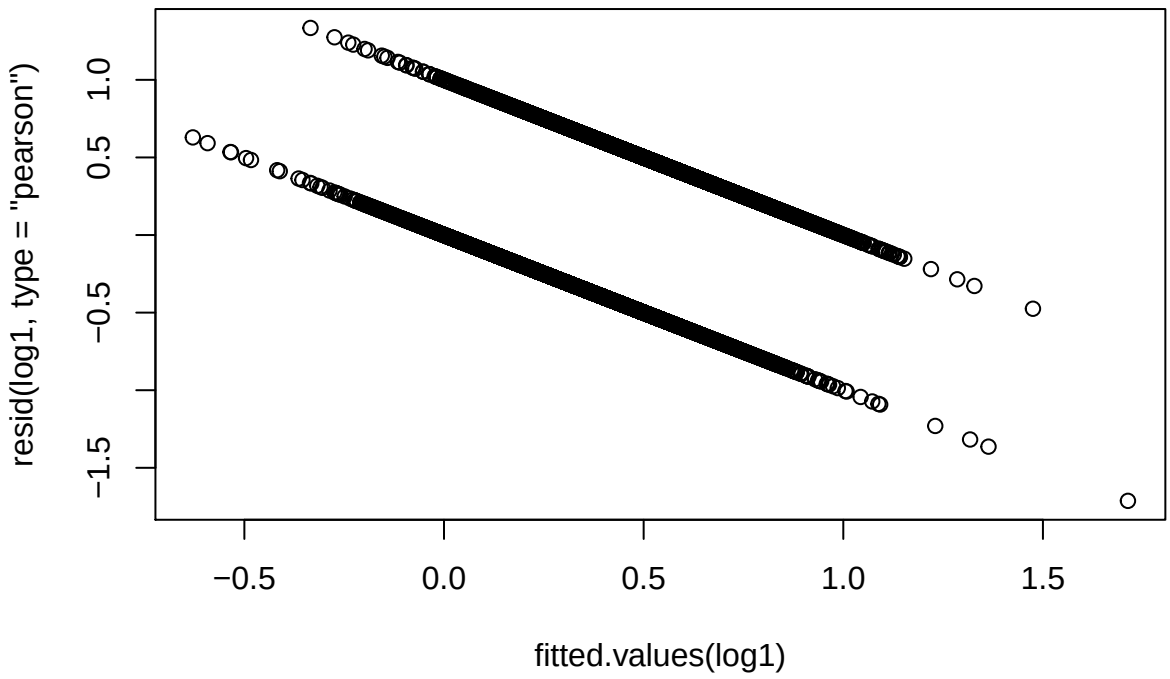
```r
data1 <- clean %>%
            select(employed2, jl_2,  age, age_sq, dl06, job_cat_H, dependents_young, dependents_old, wo
            drop_na()

log1 <- glm(employed2 ~ .,  data = data1)
summary(log1)
```

```
##
## Call:
## glm(formula = employed2 ~ ., data = data1)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.7129  -0.3677  -0.1466   0.4337   1.3344
##
## Coefficients:
##                                     Estimate Std. Error t value Pr(>|t|)
## (Intercept)                        -7.020e-01  4.895e-02 -14.341  < 2e-16
## jl_2                                8.706e-02  1.974e-02   4.409 1.04e-05
## age                                 3.989e-02  1.792e-03  22.255  < 2e-16
## age_sq                             -4.619e-04  2.137e-05 -21.620  < 2e-16
## dl062:elementary                    3.930e-02  1.506e-02   2.609 0.009099
## dl063:juniorH                       4.840e-02  1.648e-02   2.936 0.003328
## dl064:seniorH                       7.431e-02  1.650e-02   4.504 6.70e-06
## dl065:higher                        3.157e-01  1.847e-02  17.090  < 2e-16
## job_cat_H2:self-employed           -1.640e-01  1.115e-02 -14.702  < 2e-16
## job_cat_H3:informal business owner -1.718e-01  2.253e-02  -7.627 2.52e-14
## job_cat_H4:government               -2.583e-02  1.600e-02  -1.615 0.106429
## job_cat_H5:private                  -1.424e-02  1.173e-02  -1.214 0.224576
## job_cat_H6:casual                   -2.538e-02  1.403e-02  -1.809 0.070460
## dependents_young                    -7.138e-02  5.876e-03 -12.147  < 2e-16
## dependents_old                      -1.549e-03  4.539e-03  -0.341 0.732848
## working_dependents                   2.808e-02  2.924e-02   0.960 0.336967
## other_HHM                           -5.841e-02  1.772e-03 -32.953  < 2e-16
## other_working                        1.224e-01  3.022e-03  40.501  < 2e-16
## sc_code13                            5.992e-02  1.930e-02   3.105 0.001908
## sc_code14                           -6.598e-02  3.849e-02  -1.714 0.086495
## sc_code15                           -1.935e-01  1.348e-01  -1.435 0.151192
## sc_code16                           -7.318e-02  1.887e-02  -3.878 0.000106
## sc_code18                           -5.554e-02  1.920e-02  -2.893 0.003819
## sc_code19                           -2.536e-02  4.098e-02  -0.619 0.536125
## sc_code21                            6.059e-02  8.361e-02   0.725 0.468708
## sc_code31                            2.642e-02  1.763e-02   1.499 0.133893
## sc_code32                            7.202e-03  1.500e-02   0.480 0.631172
## sc_code33                            8.472e-02  1.541e-02   5.497 3.91e-08
## sc_code34                            8.724e-02  1.874e-02   4.655 3.27e-06
## sc_code35                            3.961e-02  1.507e-02   2.628 0.008587
```

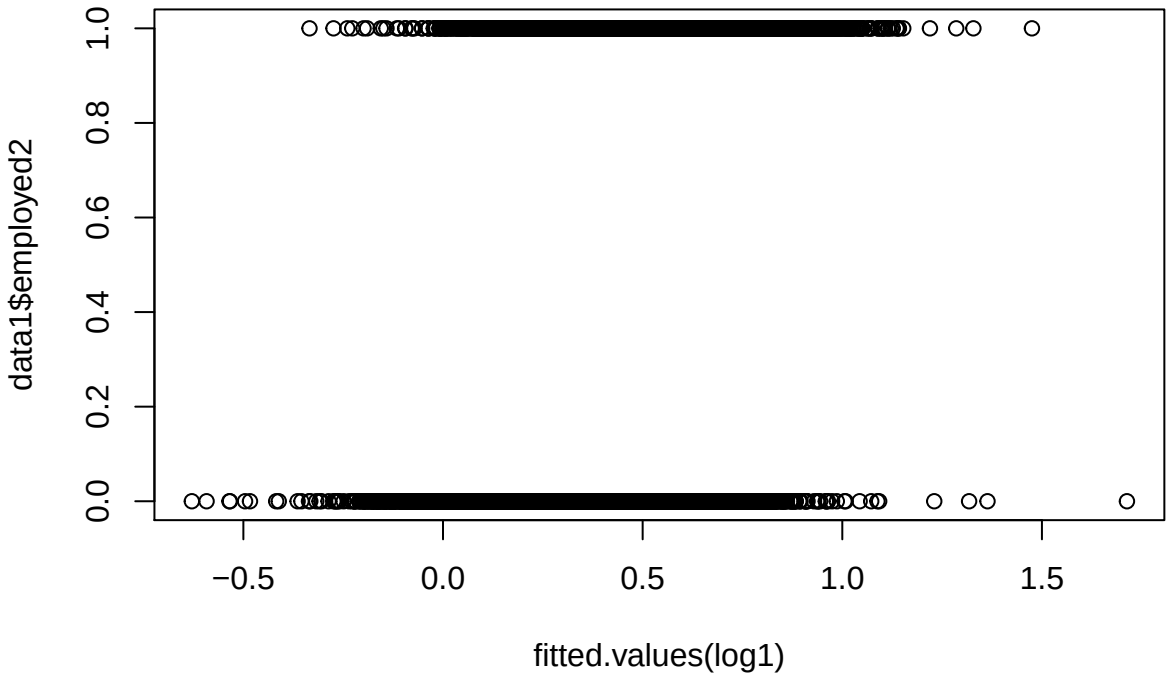
```
## sc_code36                           5.875e-02  2.067e-02   2.843 0.004477
## sc_code51                           1.540e-01  1.876e-02   8.206 2.43e-16
## sc_code52                          -9.286e-03  1.749e-02  -0.531 0.595408
## sc_code61                           4.092e-01  3.150e-01   1.299 0.193969
## sc_code62                           7.101e-02  8.996e-02   0.789 0.429931
## sc_code63                          -4.460e-02  1.910e-02  -2.336 0.019517
## sc_code64                           1.029e-01  6.551e-02   1.570 0.116367
## sc_code71                          -1.535e-02  4.452e-01  -0.034 0.972504
## sc_code73                           6.892e-03  1.920e-02   0.359 0.719606
## sc_code76                           3.033e-02  7.235e-02   0.419 0.675036
## sc_code91                           4.646e-01  4.453e-01   1.043 0.296785
## wave                                6.001e-02  6.527e-03   9.195  < 2e-16
##
## (Intercept)                        ***
## jl_2                               ***
## age                                ***
## age_sq                             ***
## dl062:elementary                   **
## dl063:juniorH                      **
## dl064:seniorH                      ***
## dl065:higher                       ***
## job_cat_H2:self-employed           ***
## job_cat_H3:informal business owner ***
## job_cat_H4:government
## job_cat_H5:private
## job_cat_H6:casual                  .
## dependents_young                   ***
## dependents_old
## working_dependents
## other_HHM                          ***
## other_working                      ***
## sc_code13                          **
## sc_code14                          .
## sc_code15
## sc_code16                          ***
## sc_code18                          **
## sc_code19
## sc_code21
## sc_code31
## sc_code32
## sc_code33                          ***
## sc_code34                          ***
## sc_code35                          **
## sc_code36                          **
## sc_code51                          ***
## sc_code52
## sc_code61
## sc_code62
## sc_code63                          *
## sc_code64
## sc_code71
## sc_code73
## sc_code76
## sc_code91
```

```
## wave                                ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.1979856)
##
##     Null deviance: 4748.4  on 19560  degrees of freedom
## Residual deviance: 3864.5  on 19519  degrees of freedom
## AIC: 23875
##
## Number of Fisher Scoring iterations: 2
```

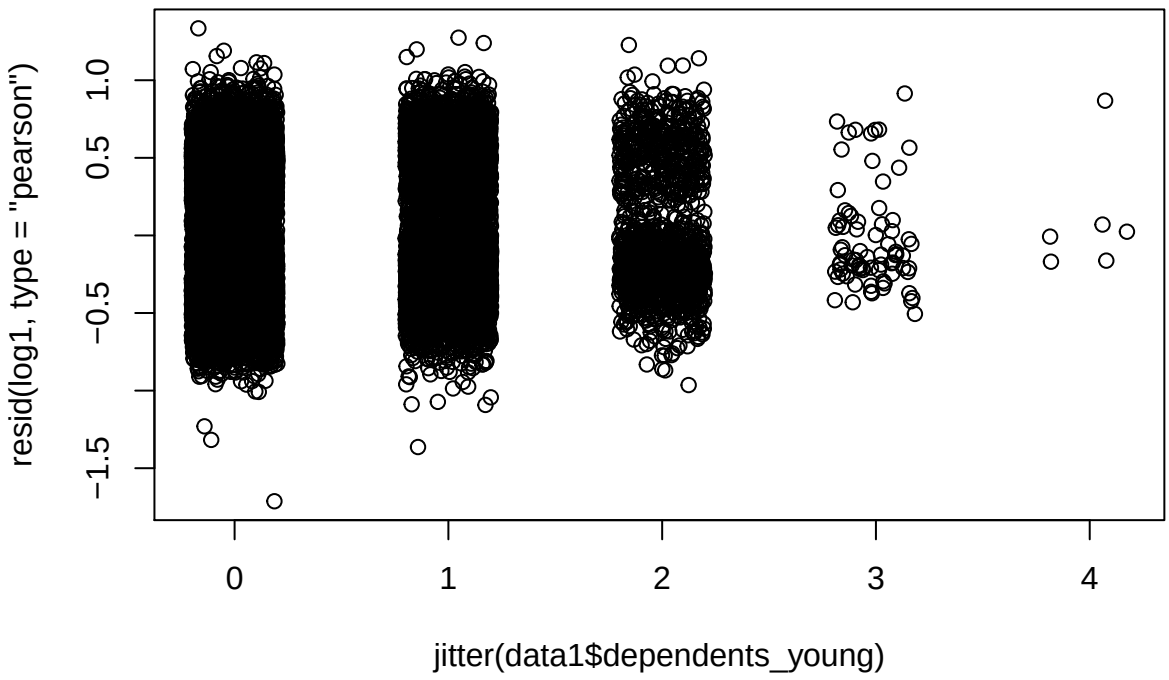
```
options(scipen = 999)
wave1<- as.character(round(summary(log1)$coefficients["wave", 4], 18))
options(scipen = 0)

#test for normality, homoskedasticity
plot(resid(log1, type = "pearson")~fitted.values(log1))
```



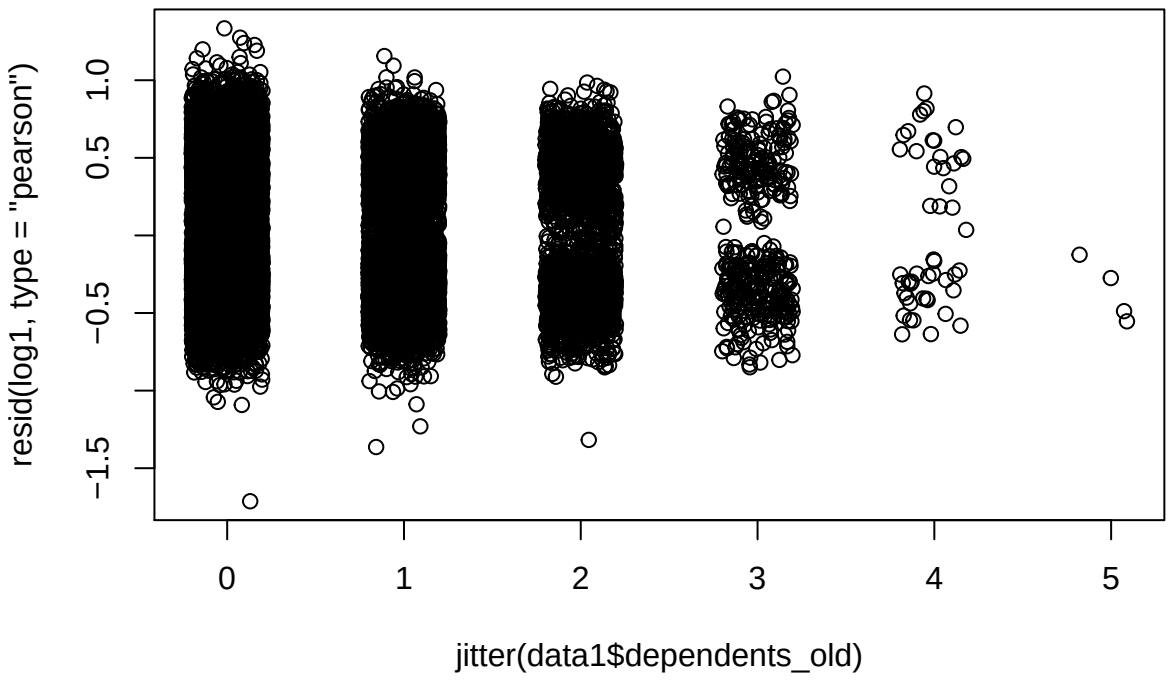

```
plot(data1$employed2~fitted.values(log1))
```



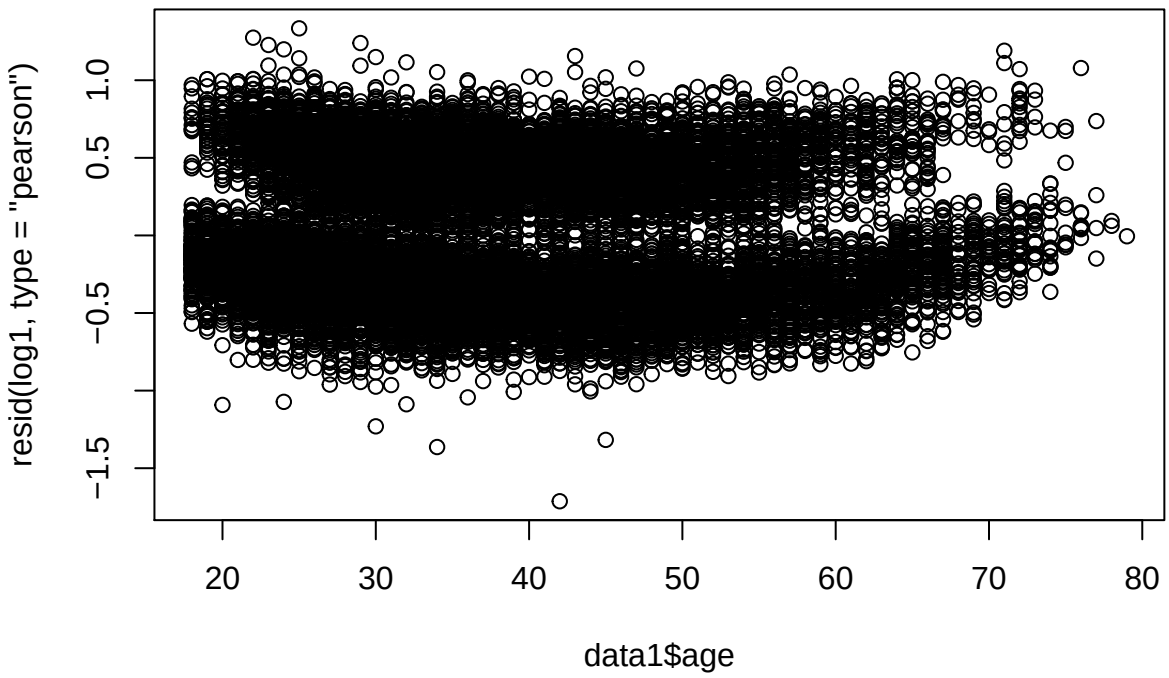

```
plot(resid(log1, type = "pearson") ~ jitter(data1$dependents_young))
```

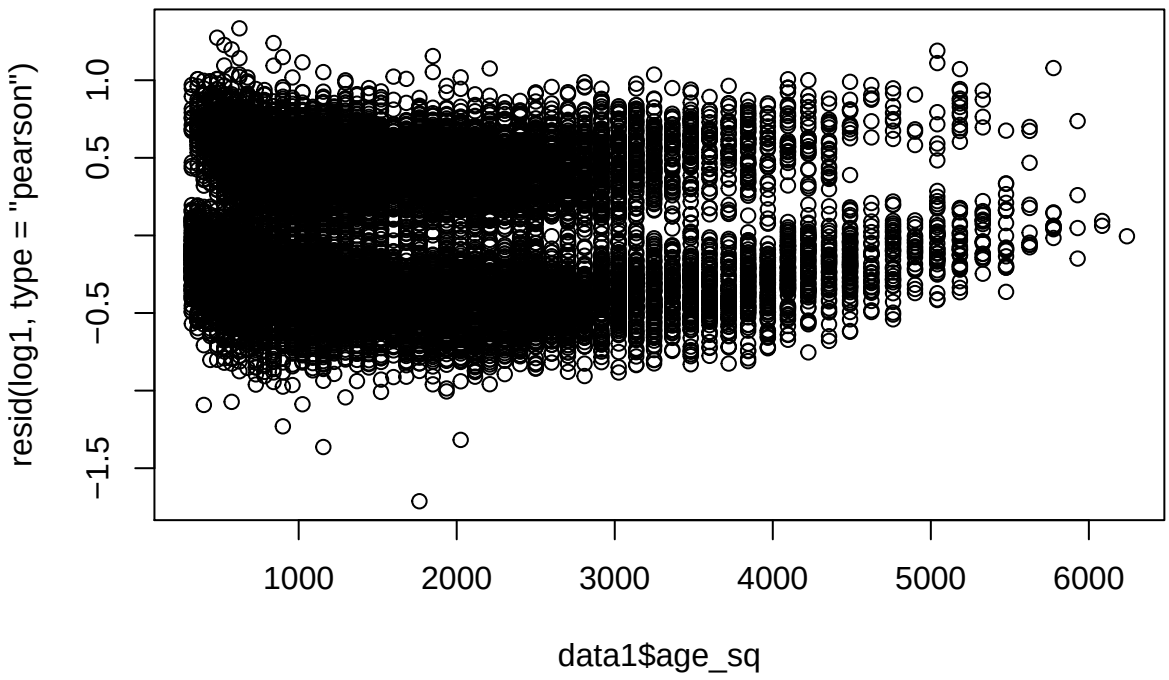



```
plot(resid(log1, type = "pearson") ~ jitter(data1$dependents_old))
```

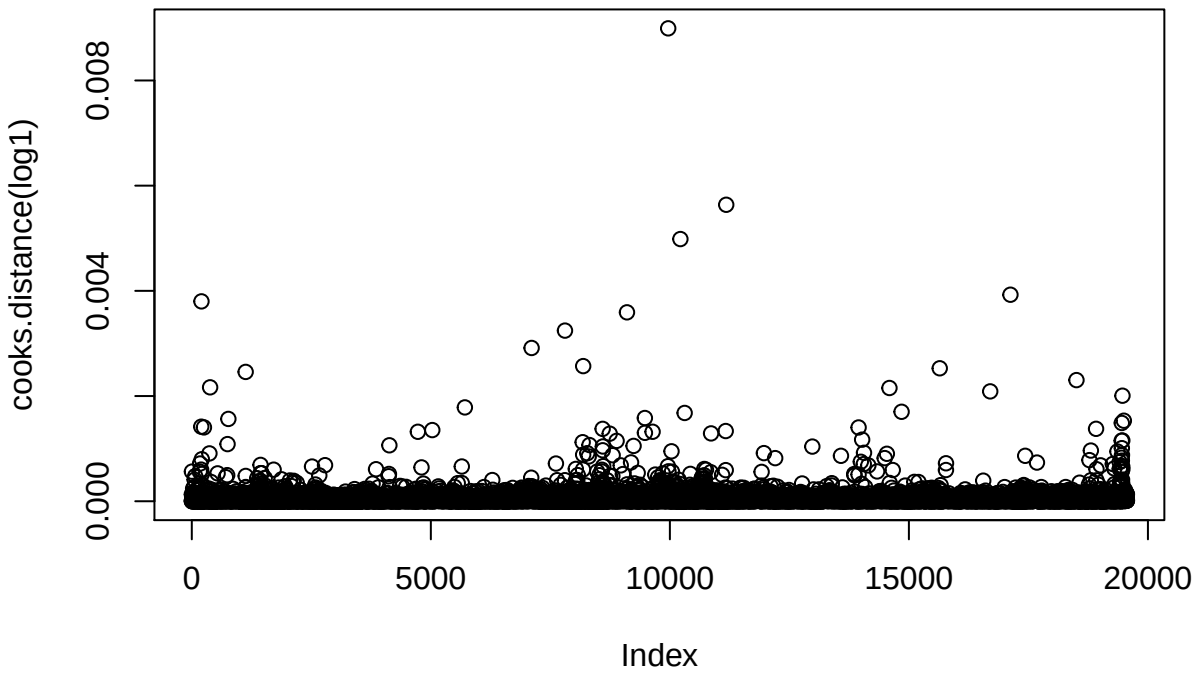



```
plot(resid(log1, type = "pearson") ~ (data1$age + data1$age_sq))
```


resid(log1, type = "pearson")
1.0
0.5
−0.5
−1.5
20
30
40
50
60
70
80
data1$age




```
#look for outliers
plot(cooks.distance(log1))
abline(h=1)
```




```
coeff_jl_2 <- exp(log1$coefficients["jl_2"])-1

coeff_dependents_young <- exp(log1$coefficients["dependents_young"]) - 1
coeff_dependents_working <- exp(log1$coefficients["dependents_young"]) - 1

log1b <- glm(employed2 ~ .- sc_code,  data = data1)
summary(log1b)
```

```
##
## Call:
## glm(formula = employed2 ~ . - sc_code, data = data1)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.8406  -0.3722  -0.1565   0.4414   1.2772
##
## Coefficients:
##                                  Estimate Std. Error t value Pr(>|t|)
## (Intercept)                    -6.883e-01  4.706e-02 -14.627  < 2e-16
## jl_2                            8.420e-02  1.985e-02   4.242 2.22e-05
## age                             4.119e-02  1.799e-03  22.891  < 2e-16
## age_sq                         -4.732e-04  2.146e-05 -22.043  < 2e-16
## dl062:elementary                2.984e-02  1.502e-02   1.987   0.0469
## dl063:juniorH                   4.031e-02  1.641e-02   2.456   0.0141
## dl064:seniorH                   6.933e-02  1.629e-02   4.255 2.10e-05
## dl065:higher                    3.128e-01  1.834e-02  17.060  < 2e-16
```

```
## job_cat_H2:self-employed           -1.701e-01  1.115e-02 -15.260  < 2e-16
## job_cat_H3:informal business owner -1.624e-01  2.264e-02  -7.174 7.53e-13
## job_cat_H4:government              -2.664e-02  1.604e-02  -1.661   0.0968
## job_cat_H5:private                 -9.432e-03  1.178e-02  -0.801   0.4231
## job_cat_H6:casual                  -1.967e-02  1.405e-02  -1.400   0.1615
## dependents_young                   -7.397e-02  5.866e-03 -12.609  < 2e-16
## dependents_old                     -4.196e-03  4.540e-03  -0.924   0.3554
## working_dependents                  3.237e-02  2.941e-02   1.101   0.2710
## other_HHM                          -6.044e-02  1.767e-03 -34.204  < 2e-16
## other_working                       1.260e-01  3.017e-03  41.766  < 2e-16
## wave                                5.804e-02  6.548e-03   8.864  < 2e-16
##
## (Intercept)                        ***
## jl_2                               ***
## age                                ***
## age_sq                             ***
## dl062:elementary                   *
## dl063:juniorH                      *
## dl064:seniorH                      ***
## dl065:higher                       ***
## job_cat_H2:self-employed           ***
## job_cat_H3:informal business owner ***
## job_cat_H4:government              .
## job_cat_H5:private
## job_cat_H6:casual
## dependents_young                   ***
## dependents_old
## working_dependents
## other_HHM                          ***
## other_working                      ***
## wave                               ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.2006315)
##
##     Null deviance: 4748.4  on 19560  degrees of freedom
## Residual deviance: 3920.7  on 19542  degrees of freedom
## AIC: 24112
##
## Number of Fisher Scoring iterations: 2
```

```
anova1 <- anova(log1b, log1, test = "LRT")
anova1
```

```
## Analysis of Deviance Table
##
## Model 1: employed2 ~ (jl_2 + age + age_sq + dl06 + job_cat_H + dependents_young +
##     dependents_old + working_dependents + other_HHM + other_working +
##     sc_code + wave) - sc_code
## Model 2: employed2 ~ jl_2 + age + age_sq + dl06 + job_cat_H + dependents_young +
##     dependents_old + working_dependents + other_HHM + other_working +
##     sc_code + wave
##   Resid. Df Resid. Dev Df Deviance  Pr(>Chi)
## 1     19542     3920.7
```

```
## 2     19519     3864.5 23   56.261 < 2.2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
data2 <- clean %>%
            select(employed2, jl_year_fired, age, age_sq, dl06, job_cat_H, dependents_young, dependents
            drop_na()

log2 <- glm(employed2 ~ .,  data = data2)
summary(log2)
```

```
##
## Call:
## glm(formula = employed2 ~ ., data = data2)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.7132  -0.3671  -0.1469   0.4335   1.3325
##
## Coefficients:
##                                      Estimate Std. Error t value Pr(>|t|)
## (Intercept)                         -6.983e-01  4.895e-02 -14.265  < 2e-16
## jl_year_fired1                       5.436e-02  4.343e-02   1.251 0.210791
## jl_year_fired2                       1.108e-01  4.997e-02   2.217 0.026661
## jl_year_fired3                       1.406e-01  5.815e-02   2.418 0.015624
## jl_year_fired4                       1.010e-01  7.053e-02   1.433 0.152008
## jl_year_fired5                       1.304e-02  8.007e-02   0.163 0.870675
## age                                  3.991e-02  1.793e-03  22.260  < 2e-16
## age_sq                              -4.623e-04  2.137e-05 -21.630  < 2e-16
## dl062:elementary                     3.927e-02  1.507e-02   2.606 0.009161
## dl063:juniorH                        4.857e-02  1.649e-02   2.946 0.003221
## dl064:seniorH                        7.426e-02  1.650e-02   4.500 6.85e-06
## dl065:higher                         3.155e-01  1.848e-02  17.071  < 2e-16
## job_cat_H2:self-employed            -1.642e-01  1.116e-02 -14.718  < 2e-16
## job_cat_H3:informal business owner -1.725e-01  2.253e-02  -7.657 1.99e-14
## job_cat_H4:government               -2.635e-02  1.600e-02  -1.647 0.099615
## job_cat_H5:private                  -1.332e-02  1.173e-02  -1.136 0.256094
## job_cat_H6:casual                   -2.537e-02  1.403e-02  -1.807 0.070716
## dependents_young                    -7.119e-02  5.879e-03 -12.109  < 2e-16
## dependents_old                      -1.617e-03  4.541e-03  -0.356 0.721724
## working_dependents                   2.820e-02  2.925e-02   0.964 0.335056
## other_HHM                           -5.841e-02  1.773e-03 -32.942  < 2e-16
## other_working                        1.224e-01  3.023e-03  40.494  < 2e-16
## sc_code13                            5.991e-02  1.930e-02   3.103 0.001916
## sc_code14                           -6.536e-02  3.850e-02  -1.698 0.089572
## sc_code15                           -1.942e-01  1.349e-01  -1.440 0.149984
## sc_code16                           -7.298e-02  1.888e-02  -3.865 0.000111
## sc_code18                           -5.562e-02  1.920e-02  -2.896 0.003781
## sc_code19                           -2.493e-02  4.100e-02  -0.608 0.543147
## sc_code21                            5.918e-02  8.365e-02   0.707 0.479288
## sc_code31                            2.746e-02  1.763e-02   1.557 0.119396
## sc_code32                            7.808e-03  1.501e-02   0.520 0.602815
## sc_code33                            8.533e-02  1.542e-02   5.535 3.15e-08
## sc_code34                            8.830e-02  1.875e-02   4.710 2.49e-06
## sc_code35                            4.011e-02  1.508e-02   2.661 0.007801
```

```
## sc_code36                           5.885e-02  2.067e-02   2.847 0.004423
## sc_code51                           1.542e-01  1.877e-02   8.218  < 2e-16
## sc_code52                          -9.199e-03  1.749e-02  -0.526 0.598959
## sc_code61                           4.083e-01  3.151e-01   1.296 0.195061
## sc_code62                           7.394e-02  8.998e-02   0.822 0.411247
## sc_code63                          -4.393e-02  1.910e-02  -2.300 0.021454
## sc_code64                           1.034e-01  6.555e-02   1.577 0.114774
## sc_code71                          -1.607e-02  4.453e-01  -0.036 0.971210
## sc_code73                           7.398e-03  1.920e-02   0.385 0.700079
## sc_code76                           2.973e-02  7.237e-02   0.411 0.681209
## sc_code91                           4.646e-01  4.454e-01   1.043 0.296833
## wave                                5.922e-02  6.524e-03   9.078  < 2e-16
##
## (Intercept)                        ***
## jl_year_fired1
## jl_year_fired2                     *
## jl_year_fired3                     *
## jl_year_fired4
## jl_year_fired5
## age                                ***
## age_sq                             ***
## dl062:elementary                   **
## dl063:juniorH                      **
## dl064:seniorH                      ***
## dl065:higher                       ***
## job_cat_H2:self-employed           ***
## job_cat_H3:informal business owner ***
## job_cat_H4:government               .
## job_cat_H5:private
## job_cat_H6:casual                  .
## dependents_young                   ***
## dependents_old
## working_dependents
## other_HHM                          ***
## other_working                      ***
## sc_code13                          **
## sc_code14                          .
## sc_code15
## sc_code16                          ***
## sc_code18                          **
## sc_code19
## sc_code21
## sc_code31
## sc_code32
## sc_code33                          ***
## sc_code34                          ***
## sc_code35                          **
## sc_code36                          **
## sc_code51                          ***
## sc_code52
## sc_code61
## sc_code62
## sc_code63                          *
## sc_code64
```

```
## sc_code71
## sc_code73
## sc_code76
## sc_code91
## wave                               ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.1980794)
##
##     Null deviance: 4748.4  on 19560  degrees of freedom
## Residual deviance: 3865.5  on 19515  degrees of freedom
## AIC: 23889
##
## Number of Fisher Scoring iterations: 2
```

```
#coefficients

coeff_jl_year2 <- exp(log2$coefficients["jl_year_fired2"])-1
coeff_jl_year3 <- exp(log2$coefficients["jl_year_fired3"])-1
```

```
log2b <- glm(employed2 ~ .-sc_code,  data = data2)
summary(log2b)
```

```
##
## Call:
## glm(formula = employed2 ~ . - sc_code, data = data2)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.8409  -0.3725  -0.1569   0.4415   1.2767
##
## Coefficients:
##                                     Estimate Std. Error t value Pr(>|t|)
## (Intercept)                       -6.842e-01  4.706e-02 -14.540  < 2e-16
## jl_year_fired1                     5.231e-02  4.370e-02   1.197   0.2313
## jl_year_fired2                     1.100e-01  5.027e-02   2.187   0.0287
## jl_year_fired3                     1.249e-01  5.850e-02   2.135   0.0327
## jl_year_fired4                     8.540e-02  7.097e-02   1.203   0.2288
## jl_year_fired5                     6.394e-03  8.056e-02   0.079   0.9367
## age                                4.122e-02  1.800e-03  22.901  < 2e-16
## age_sq                            -4.736e-04  2.147e-05 -22.058  < 2e-16
## dl062:elementary                   2.985e-02  1.502e-02   1.987   0.0469
## dl063:juniorH                      4.056e-02  1.642e-02   2.471   0.0135
## dl064:seniorH                      6.940e-02  1.630e-02   4.258 2.07e-05
## dl065:higher                       3.127e-01  1.834e-02  17.046  < 2e-16
## job_cat_H2:self-employed          -1.704e-01  1.115e-02 -15.281  < 2e-16
## job_cat_H3:informal business owner -1.632e-01  2.264e-02  -7.206 5.99e-13
## job_cat_H4:government              -2.724e-02  1.605e-02  -1.698   0.0896
```

```
## job_cat_H5:private                 -8.476e-03  1.177e-02  -0.720   0.4716
## job_cat_H6:casual                  -1.970e-02  1.406e-02  -1.402   0.1610
## dependents_young                   -7.382e-02  5.869e-03 -12.578  < 2e-16
## dependents_old                     -4.284e-03  4.542e-03  -0.943   0.3455
## working_dependents                  3.237e-02  2.942e-02   1.100   0.2712
## other_HHM                          -6.045e-02  1.768e-03 -34.196  < 2e-16
## other_working                       1.260e-01  3.018e-03  41.758  < 2e-16
## wave                                5.722e-02  6.545e-03   8.743  < 2e-16
##
## (Intercept)                        ***
## jl_year_fired1
## jl_year_fired2                     *
## jl_year_fired3                     *
## jl_year_fired4
## jl_year_fired5
## age                                ***
## age_sq                             ***
## dl062:elementary                   *
## dl063:juniorH                      *
## dl064:seniorH                      ***
## dl065:higher                       ***
## job_cat_H2:self-employed           ***
## job_cat_H3:informal business owner ***
## job_cat_H4:government              .
## job_cat_H5:private
## job_cat_H6:casual
## dependents_young                   ***
## dependents_old
## working_dependents
## other_HHM                          ***
## other_working                      ***
## wave                               ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.2007335)
##
##     Null deviance: 4748.4  on 19560  degrees of freedom
## Residual deviance: 3921.9  on 19538  degrees of freedom
## AIC: 24126
##
## Number of Fisher Scoring iterations: 2
```

```
anova2 <- anova(log2, log2b, test = "LRT")
anova2
```

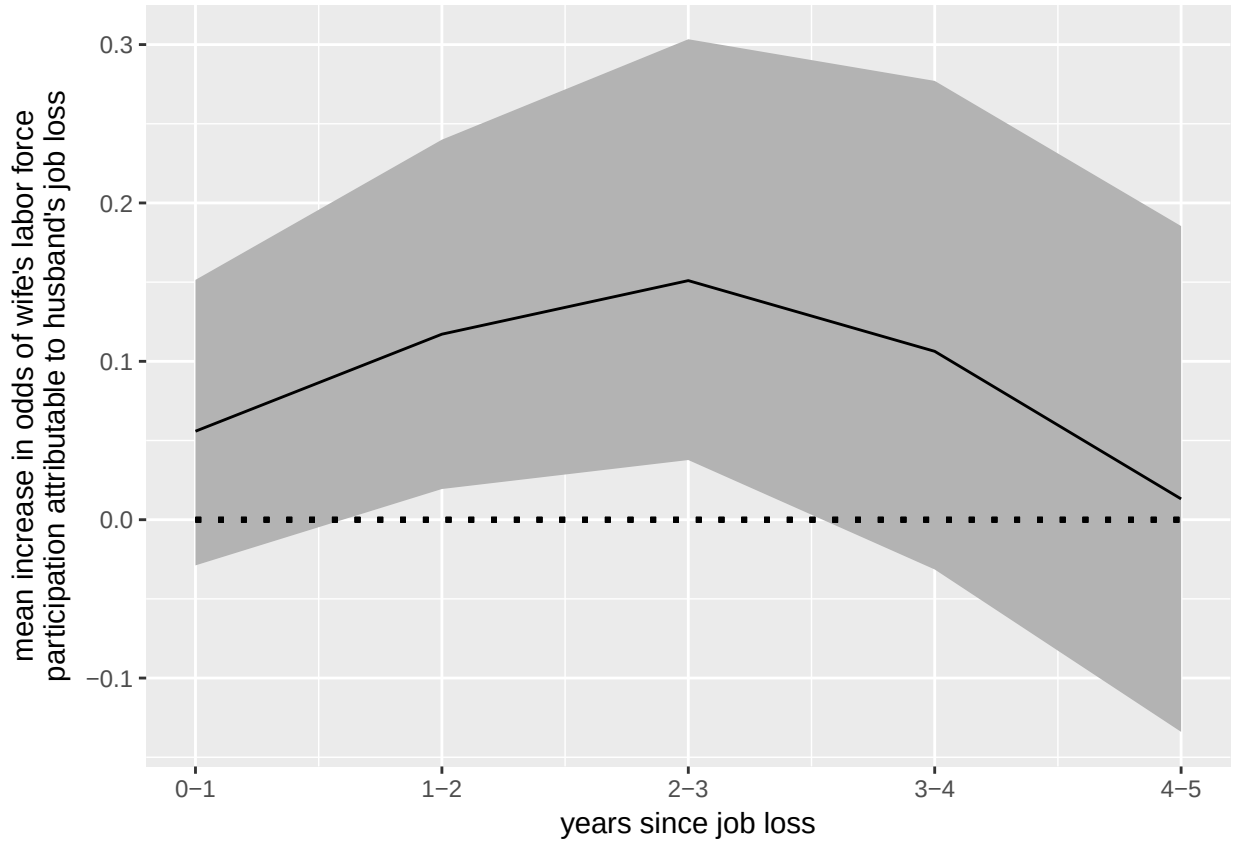
```
## Analysis of Deviance Table
##
## Model 1: employed2 ~ jl_year_fired + age + age_sq + dl06 + job_cat_H +
##     dependents_young + dependents_old + working_dependents +
##     other_HHM + other_working + sc_code + wave
## Model 2: employed2 ~ (jl_year_fired + age + age_sq + dl06 + job_cat_H +
##     dependents_young + dependents_old + working_dependents +
##     other_HHM + other_working + sc_code + wave) - sc_code
##   Resid. Df Resid. Dev  Df Deviance  Pr(>Chi)
```

```
## 1     19515     3865.5
## 2     19538     3921.9 -23  -56.412 < 2.2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
coeff_jl_1 <- exp(log2$coefficients["jl_year_fired1"])-1
coeff_jl_2 <- exp(log2$coefficients["jl_year_fired2"])-1
coeff_jl_3 <- exp(log2$coefficients["jl_year_fired3"])-1
coeff_jl_4 <- exp(log2$coefficients["jl_year_fired4"])-1
coeff_jl_5 <- exp(log2$coefficients["jl_year_fired5"])-1

#confidence intervals

qt(.025, 12607)
```

```
## [1] -1.960152
```

```
se_jl_1 <- coef(summary(log2))[, "Std. Error"]["jl_year_fired1"]
se_jl_2 <- coef(summary(log2))[, "Std. Error"]["jl_year_fired2"]
se_jl_3 <- coef(summary(log2))[, "Std. Error"]["jl_year_fired3"]
se_jl_4 <- coef(summary(log2))[, "Std. Error"]["jl_year_fired4"]
se_jl_5 <- coef(summary(log2))[, "Std. Error"]["jl_year_fired5"]

#pred_y1 <- predict(log2, newdata = list(jl_year_fired = seq(1,5, len = 300)), type = "link", se.fit =

lower_jl_1 <- exp(coeff_jl_1 + qt(.025, 12607)*se_jl_1)-1
upper_jl_1 <- exp(coeff_jl_1 + qt(.975, 12607)*se_jl_1)-1
lower_jl_2 <- exp(coeff_jl_2 + qt(.025, 12607)*se_jl_2)-1
upper_jl_2 <- exp(coeff_jl_2 + qt(.975, 12607)*se_jl_2)-1
lower_jl_3 <- exp(coeff_jl_3 + qt(.025, 12607)*se_jl_3)-1
upper_jl_3 <- exp(coeff_jl_3 + qt(.975, 12607)*se_jl_3)-1
lower_jl_4 <- exp(coeff_jl_4 + qt(.025, 12607)*se_jl_4)-1
upper_jl_4 <- exp(coeff_jl_4 + qt(.975, 12607)*se_jl_4)-1
lower_jl_5 <- exp(coeff_jl_5 + qt(.025, 12607)*se_jl_5)-1
upper_jl_5 <- exp(coeff_jl_5 + qt(.975, 12607)*se_jl_5)-1

all_upper <- c(upper_jl_1, upper_jl_2, upper_jl_3, upper_jl_4, upper_jl_5)
all_lower <- c(lower_jl_1, lower_jl_2, lower_jl_3, lower_jl_4, lower_jl_5)
all_mid <- c(coeff_jl_1, coeff_jl_2, coeff_jl_3, coeff_jl_4, coeff_jl_5)
year <- 1:5

all_estimates <- data.frame(all_upper, all_lower, all_mid, year)

#all_estimates <- all_estimates %>%
#                      gather(value = "estimate", key = "key", -year)

ggplot(all_estimates, aes(x = year)) +
          geom_ribbon(aes(ymin = all_lower, ymax = all_upper), fill = "grey70") +
          geom_line(aes(y = all_mid)) +
          geom_segment(aes(x = 1, y = 0, xend = 5, yend = 0), linetype = "dotted", color = "black", size
          xlab("years since job loss")+
          ylab("mean increase in odds of wife's labor force\nparticipation attributable to husband's job
          scale_x_continuous(breaks = year, labels = paste0(year - 1, "-", year))
```




```
#hours not corrected for selection bias

data_hours <- clean %>%
                select( tk23a2y, jl_2, jl_year_fired, age, age_sq, job_cat, dl06, dependents_young, dep
                drop_na(- c(wage_prof, tk22a, job_cat, tk23a2y, wage_rate))



hours1 <- lm(tk22a ~ .- jl_year_fired -wage_rate, data = data_hours)
summary(hours1)
```

```
##
## Call:
## lm(formula = tk22a ~ . - jl_year_fired - wage_rate, data = data_hours)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -48.800 -15.871  -0.694  12.152  91.105
##
## Coefficients:
##                                Estimate Std. Error t value Pr(>|t|)
## (Intercept)                   3.523e+01  4.551e+00   7.741 1.11e-14
## tk23a2y                      -3.265e-02  3.288e-02  -0.993 0.320733
## jl_2                         -1.395e-01  1.456e+00  -0.096 0.923646
## age                           4.929e-01  1.752e-01   2.813 0.004926
## age_sq                       -8.133e-03  2.107e-03  -3.860 0.000114
```

```
## job_cat3:informal business owner  9.390e-01  1.948e+00   0.482 0.629730
## job_cat4:government               -7.298e+00  1.125e+00  -6.486 9.35e-11
## job_cat5:private                  -4.990e+00  6.419e-01  -7.774 8.56e-15
## job_cat6:casual                   -1.262e+01  9.410e-01 -13.407  < 2e-16
## dl062:elementary                   3.679e+00  1.341e+00   2.743 0.006096
## dl063:juniorH                      4.589e+00  1.459e+00   3.145 0.001665
## dl064:seniorH                      4.005e+00  1.452e+00   2.759 0.005817
## dl065:higher                      -1.596e+00  1.573e+00  -1.014 0.310553
## dependents_young                  -4.977e-01  5.126e-01  -0.971 0.331561
## dependents_old                    -3.370e-01  3.648e-01  -0.924 0.355564
## working_dependents                 5.428e+00  2.229e+00   2.436 0.014893
## other_HHM                         -3.298e-01  1.571e-01  -2.100 0.035777
## other_working                      1.043e+00  2.774e-01   3.759 0.000172
## sc_code13                          1.238e+00  1.563e+00   0.792 0.428376
## sc_code14                          6.280e+00  3.687e+00   1.703 0.088546
## sc_code15                          3.309e+00  1.343e+01   0.246 0.805364
## sc_code16                         -5.872e+00  1.789e+00  -3.283 0.001032
## sc_code18                          2.777e+00  1.756e+00   1.581 0.113879
## sc_code19                          5.791e+00  3.513e+00   1.648 0.099364
## sc_code21                          6.633e+00  5.901e+00   1.124 0.260980
## sc_code31                          5.162e+00  1.459e+00   3.537 0.000407
## sc_code32                          1.488e+00  1.273e+00   1.168 0.242715
## sc_code33                          1.527e+00  1.262e+00   1.210 0.226417
## sc_code34                          1.803e+00  1.465e+00   1.231 0.218439
## sc_code35                          3.531e+00  1.268e+00   2.784 0.005381
## sc_code36                          4.235e+00  1.719e+00   2.463 0.013783
## sc_code51                          3.217e-01  1.433e+00   0.225 0.822334
## sc_code52                          3.209e+00  1.514e+00   2.119 0.034086
## sc_code61                          1.894e+00  1.644e+01   0.115 0.908268
## sc_code62                          2.984e+00  6.528e+00   0.457 0.647601
## sc_code63                         -3.857e+00  1.686e+00  -2.288 0.022149
## sc_code64                          4.028e+00  4.761e+00   0.846 0.397578
## sc_code73                          4.394e-01  1.680e+00   0.262 0.793703
## sc_code76                         -2.897e-01  6.078e+00  -0.048 0.961976
## sc_code91                          2.394e+01  2.321e+01   1.031 0.302519
## wave                              -3.848e-01  5.431e-01  -0.708 0.478671
## wage_prof                         -1.499e-08  1.984e-08  -0.755 0.449983
##
## (Intercept)                       ***
## tk23a2y
## jl_2
## age                               **
## age_sq                            ***
## job_cat3:informal business owner
## job_cat4:government                ***
## job_cat5:private                   ***
## job_cat6:casual                    ***
## dl062:elementary                   **
## dl063:juniorH                      **
## dl064:seniorH                      **
## dl065:higher
## dependents_young
## dependents_old
## working_dependents                 *
```

```
## other_HHM                         *
## other_working                     ***
## sc_code13
## sc_code14                         .
## sc_code15
## sc_code16                         **
## sc_code18
## sc_code19                         .
## sc_code21
## sc_code31                         ***
## sc_code32
## sc_code33
## sc_code34
## sc_code35                         **
## sc_code36                         *
## sc_code51
## sc_code52                         *
## sc_code61
## sc_code62
## sc_code63                         *
## sc_code64
## sc_code73
## sc_code76
## sc_code91
## wave
## wage_prof
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 23.17 on 7871 degrees of freedom
##   (11701 observations deleted due to missingness)
## Multiple R-squared:  0.05911,    Adjusted R-squared:  0.05421
## F-statistic: 12.06 on 41 and 7871 DF,  p-value: < 2.2e-16
```

```
hours2 <- lm(tk22a ~ .- jl_year_fired - wage_rate, data = data_hours)
summary(hours2)
```

```
##
## Call:
## lm(formula = tk22a ~ . - jl_year_fired - wage_rate, data = data_hours)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -48.800 -15.871  -0.694  12.152  91.105
##
## Coefficients:
##                                   Estimate Std. Error t value Pr(>|t|)
## (Intercept)                       3.523e+01  4.551e+00   7.741 1.11e-14
## tk23a2y                          -3.265e-02  3.288e-02  -0.993 0.320733
## jl_2                             -1.395e-01  1.456e+00  -0.096 0.923646
## age                               4.929e-01  1.752e-01   2.813 0.004926
## age_sq                           -8.133e-03  2.107e-03  -3.860 0.000114
## job_cat3:informal business owner  9.390e-01  1.948e+00   0.482 0.629730
## job_cat4:government              -7.298e+00  1.125e+00  -6.486 9.35e-11
## job_cat5:private                 -4.990e+00  6.419e-01  -7.774 8.56e-15
```

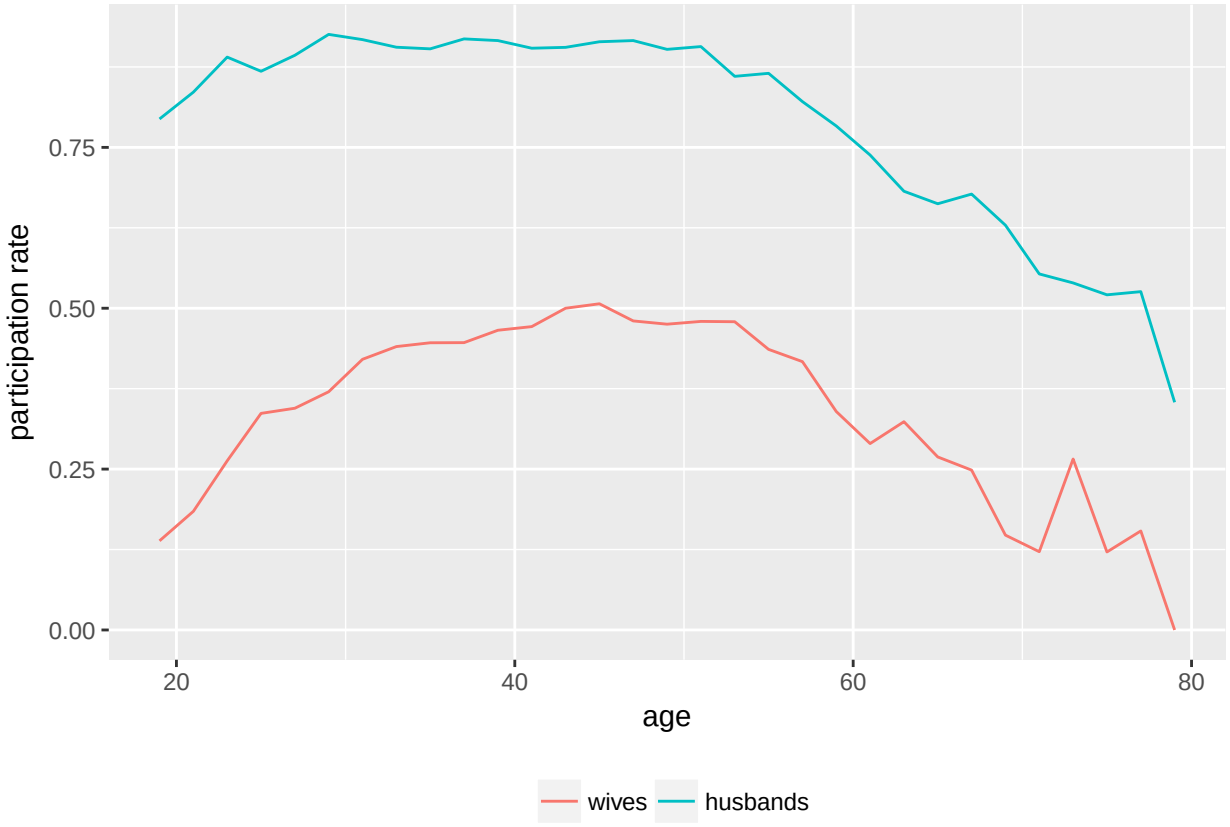
```
## job_cat6:casual                  -1.262e+01  9.410e-01 -13.407  < 2e-16
## dl062:elementary                  3.679e+00  1.341e+00   2.743 0.006096
## dl063:juniorH                     4.589e+00  1.459e+00   3.145 0.001665
## dl064:seniorH                     4.005e+00  1.452e+00   2.759 0.005817
## dl065:higher                     -1.596e+00  1.573e+00  -1.014 0.310553
## dependents_young                 -4.977e-01  5.126e-01  -0.971 0.331561
## dependents_old                   -3.370e-01  3.648e-01  -0.924 0.355564
## working_dependents                5.428e+00  2.229e+00   2.436 0.014893
## other_HHM                        -3.298e-01  1.571e-01  -2.100 0.035777
## other_working                     1.043e+00  2.774e-01   3.759 0.000172
## sc_code13                         1.238e+00  1.563e+00   0.792 0.428376
## sc_code14                         6.280e+00  3.687e+00   1.703 0.088546
## sc_code15                         3.309e+00  1.343e+01   0.246 0.805364
## sc_code16                        -5.872e+00  1.789e+00  -3.283 0.001032
## sc_code18                         2.777e+00  1.756e+00   1.581 0.113879
## sc_code19                         5.791e+00  3.513e+00   1.648 0.099364
## sc_code21                         6.633e+00  5.901e+00   1.124 0.260980
## sc_code31                         5.162e+00  1.459e+00   3.537 0.000407
## sc_code32                         1.488e+00  1.273e+00   1.168 0.242715
## sc_code33                         1.527e+00  1.262e+00   1.210 0.226417
## sc_code34                         1.803e+00  1.465e+00   1.231 0.218439
## sc_code35                         3.531e+00  1.268e+00   2.784 0.005381
## sc_code36                         4.235e+00  1.719e+00   2.463 0.013783
## sc_code51                         3.217e-01  1.433e+00   0.225 0.822334
## sc_code52                         3.209e+00  1.514e+00   2.119 0.034086
## sc_code61                         1.894e+00  1.644e+01   0.115 0.908268
## sc_code62                         2.984e+00  6.528e+00   0.457 0.647601
## sc_code63                        -3.857e+00  1.686e+00  -2.288 0.022149
## sc_code64                         4.028e+00  4.761e+00   0.846 0.397578
## sc_code73                         4.394e-01  1.680e+00   0.262 0.793703
## sc_code76                        -2.897e-01  6.078e+00  -0.048 0.961976
## sc_code91                         2.394e+01  2.321e+01   1.031 0.302519
## wave                             -3.848e-01  5.431e-01  -0.708 0.478671
## wage_prof                        -1.499e-08  1.984e-08  -0.755 0.449983
##
## (Intercept)                      ***
## tk23a2y
## jl_2
## age                              **
## age_sq                           ***
## job_cat3:informal business owner
## job_cat4:government               ***
## job_cat5:private                  ***
## job_cat6:casual                   ***
## dl062:elementary                  **
## dl063:juniorH                     **
## dl064:seniorH                     **
## dl065:higher
## dependents_young
## dependents_old
## working_dependents                *
## other_HHM                         *
## other_working                     ***
## sc_code13
```

```
## sc_code14                         .
## sc_code15
## sc_code16                         **
## sc_code18
## sc_code19                         .
## sc_code21
## sc_code31                         ***
## sc_code32
## sc_code33
## sc_code34
## sc_code35                         **
## sc_code36                         *
## sc_code51
## sc_code52                         *
## sc_code61
## sc_code62
## sc_code63                         *
## sc_code64
## sc_code73
## sc_code76
## sc_code91
## wave
## wage_prof
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 23.17 on 7871 degrees of freedom
##   (11701 observations deleted due to missingness)
## Multiple R-squared:  0.05911,    Adjusted R-squared:  0.05421
## F-statistic: 12.06 on 41 and 7871 DF,  p-value: < 2.2e-16
```

```
participation_plot <- clean %>%
                          select(employed2, employed2_H, age, age_H) %>%
                          gather(key = "gender", value = "work_status", cols = 1:2) %>%
                          mutate(age_edit = ifelse(gender == "employed2_H", age_H, age))%>%
                          select(-c(age, age_H)) %>%
                          mutate(age = age_edit) %>%
                          select(-c(age_edit)) %>%
                          mutate(age_bin = floor(age/2)*2+1) %>%
                          group_by(age_bin, gender) %>%
                          summarize(emp_rate = mean(work_status, na.rm = TRUE))
```

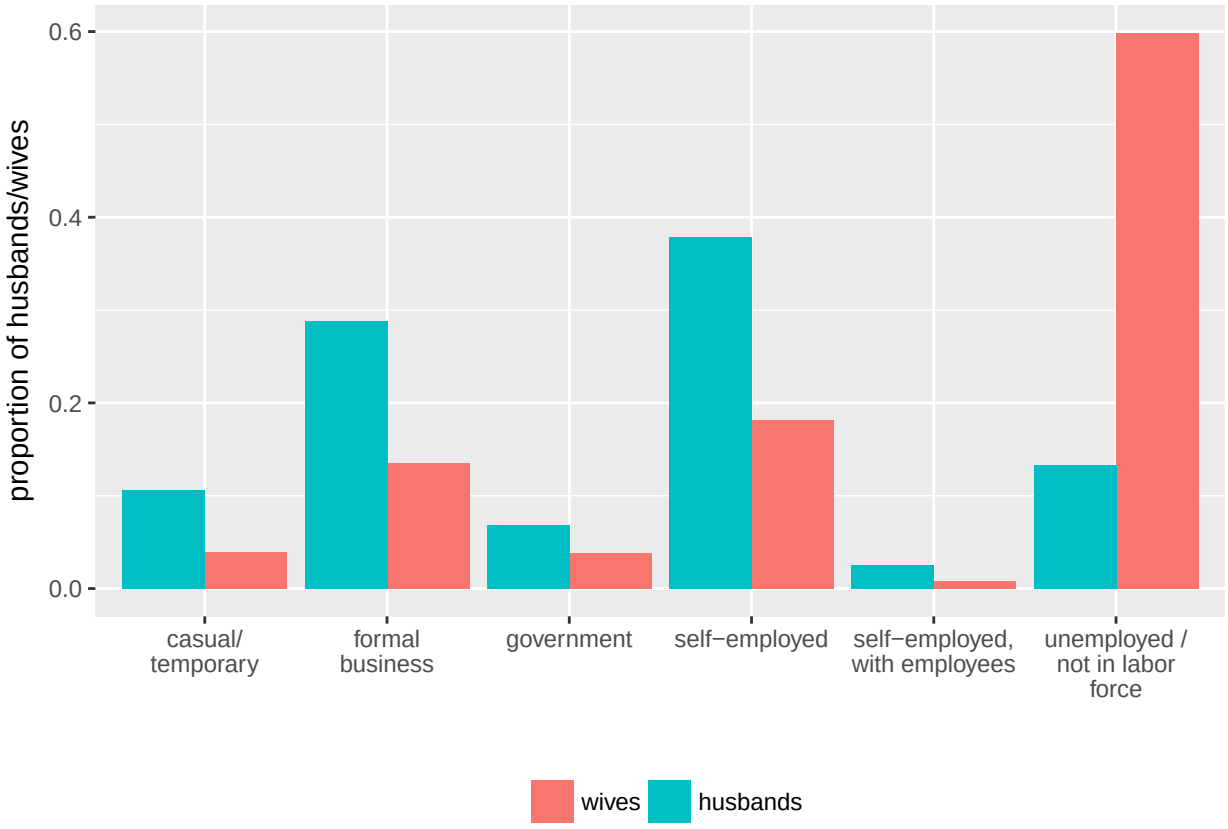
```
## Warning: package 'bindrcpp' was built under R version 3.4.3
```

```
age_participation_plot <- ggplot(participation_plot, aes(x = age_bin, y = emp_rate, color = gender)) +
                              geom_line()+
                              xlab("age")+
                              ylab("participation rate")+
                              scale_color_discrete(name="", breaks=c("employed2", "employed2_H"), labels
                              theme(legend.position = "bottom")



age_participation_plot
```

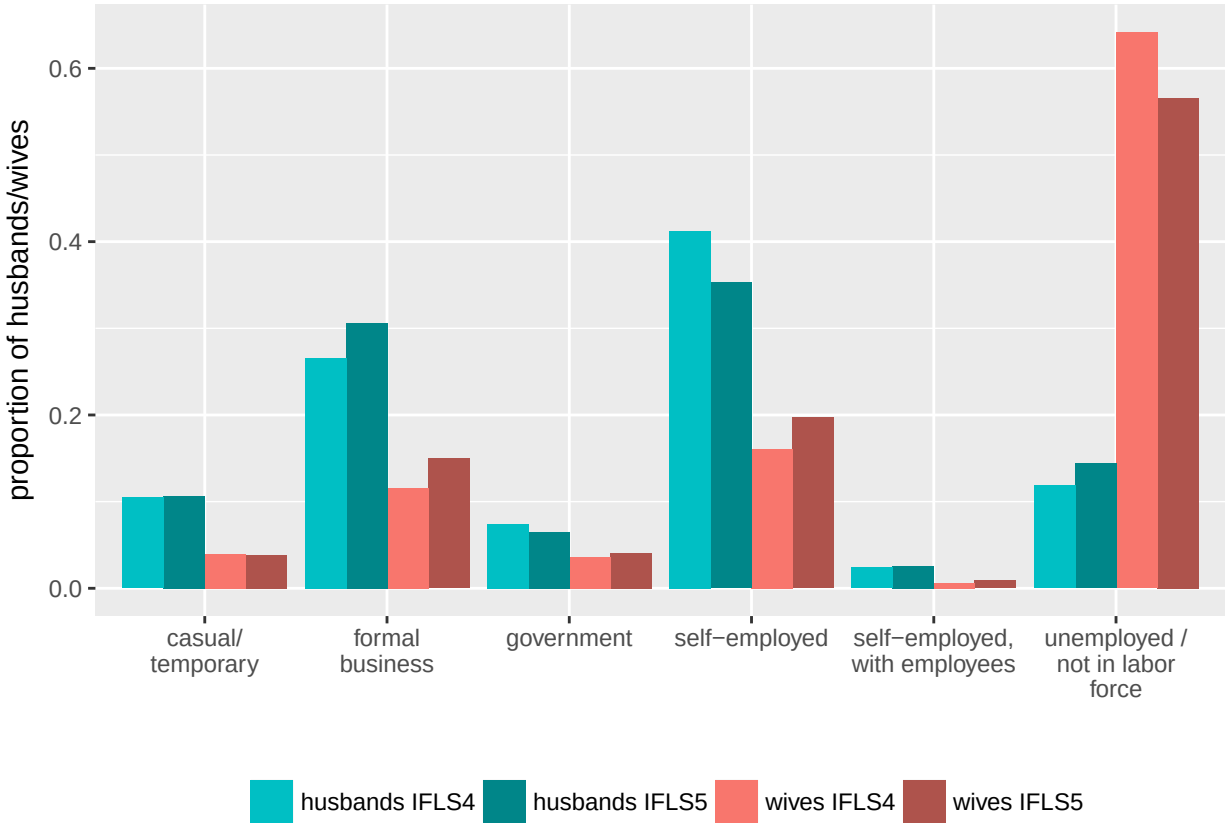



```
work_plot <- clean %>%  select(tk22a, tk22a_H, job_cat, job_cat_H, wage_rate, wage_rate_H, wave) %>%
                        gather(key = "gender", value = "hours", cols = 1:2)%>%
                        mutate(wage = ifelse(gender == "tk22a", wage_rate, wage_rate_H)) %>%
                        mutate(job_type = ifelse(gender == "tk22a", job_cat, job_cat_H)) %>%
                        mutate(gender = ifelse(gender == "tk22a", "wife", "husband")) %>%
                        select(-c(wage_rate, wage_rate_H, job_cat, job_cat_H)) %>%
                        filter(!(is.na(job_type)))

industries <- c("unemployed / not in labor force", "self-employed", "self-employed, with employees", "g

work_plot$job_type <- industries[work_plot$job_type]

work_plot_2 <- work_plot %>%
                group_by(job_type, gender) %>%
                summarize(count = n()) %>%
                ungroup() %>%
                group_by(gender) %>%
                mutate(proportion = count/sum(count))

#distribution of men and women across industries
gender_industry <- ggplot(work_plot_2, aes(x = job_type, y = proportion, fill = gender)) +
                        geom_bar(stat="identity", position="dodge")+
                        scale_x_discrete(labels = function(job_type) str_wrap(job_type, width  = 14))+
                         theme(legend.position = "bottom")+
                        scale_fill_manual(name = "", breaks=c("wife", "husband"), labels=c("wives", "hus
                        xlab("")+
```

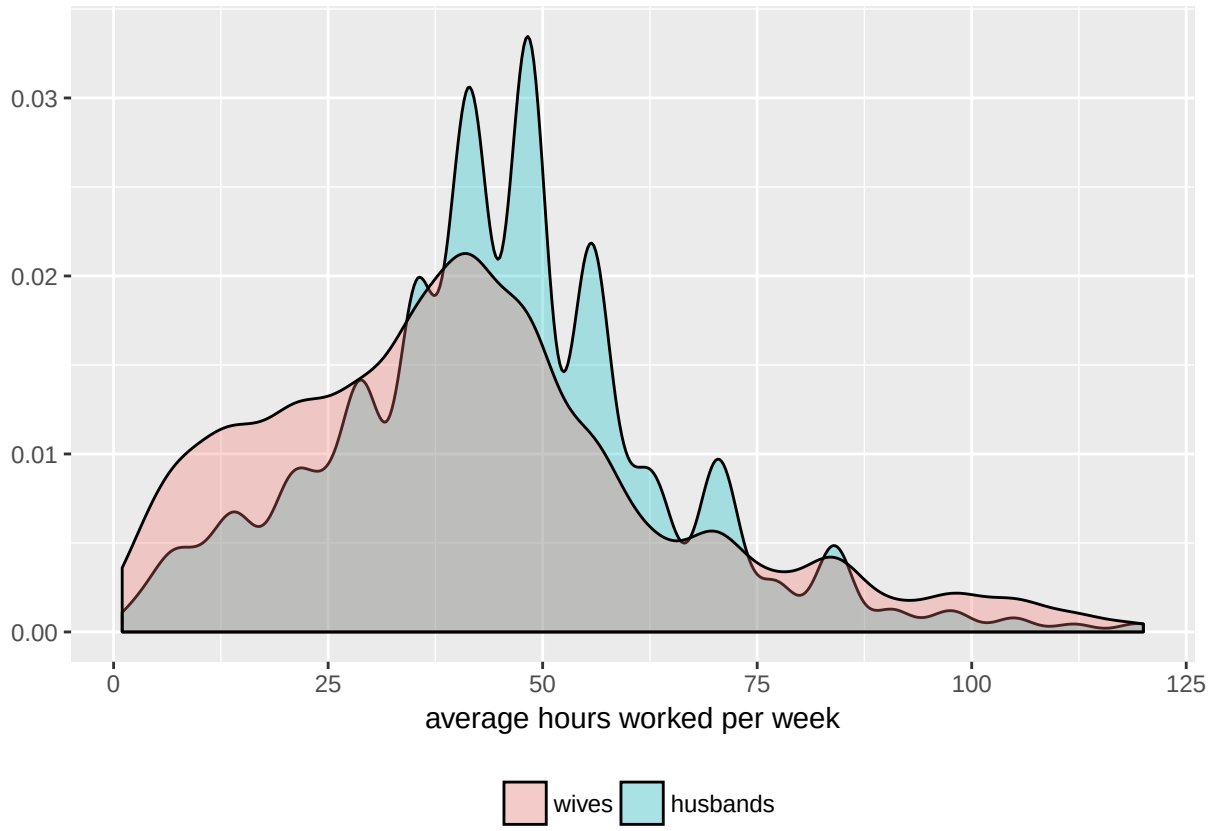
```
                      ylab("proportion of husbands/wives")

gender_industry
```



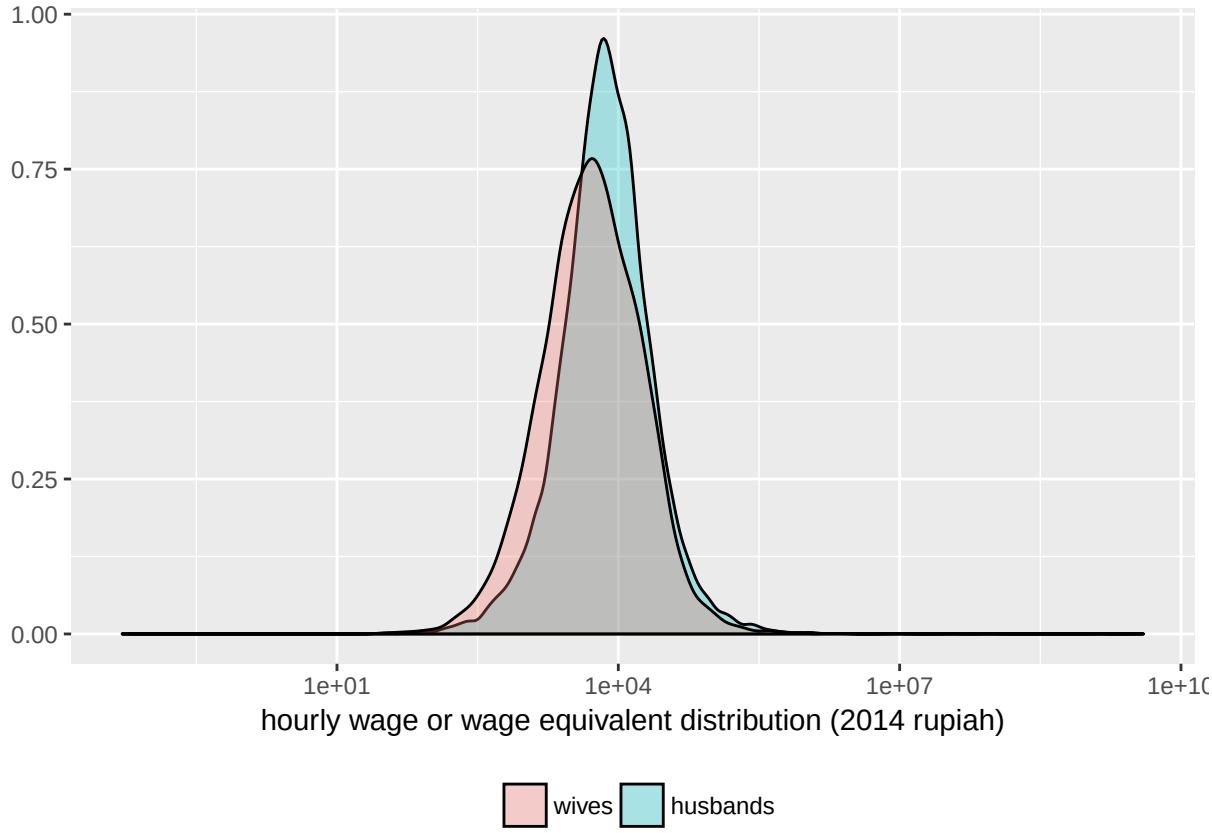

```
work_plot_3 <- work_plot %>%
                group_by(job_type, gender, wave) %>%
                summarize(count = n()) %>%
                ungroup() %>%
                group_by(gender, wave) %>%
                mutate(proportion = count/sum(count)) %>%
                mutate(gender_wave = paste0(gender, " IFLS", wave))

#distribution of men and women across industries
gender_industry_wave <- ggplot(work_plot_3, aes(x = job_type, y = proportion, fill = gender_wave)) +
                        geom_bar(stat="identity", position="dodge")+
                        scale_fill_manual(name = "", breaks=c( "husband IFLS4", "husband IFLS5", "wife
                        scale_x_discrete(labels = function(job_type) str_wrap(job_type, width  = 14))+
                         theme(legend.position = "bottom")+
                        xlab("")+
                        ylab("proportion of husbands/wives")

gender_industry_wave
```




```
work_plot <- work_plot %>%
                  filter(wage != 0, hours != 0)



hours_dist <- ggplot(work_plot, aes(x = hours)) +
                  geom_density(aes(fill = gender), alpha = .3) +
                  scale_fill_manual(name = "", breaks=c("wife", "husband"), labels=c("wives", "husbands
                  xlab("average hours worked per week")+
                  ylab("")+
                  theme(legend.position = "bottom")

#add log scale
wage_dist <- ggplot(work_plot, aes(x = wage)) +
                  geom_density(aes(fill = gender), alpha = .3) +
                  scale_fill_manual(name = "", breaks=c("wife", "husband"), labels=c("wives", "husbands
                  scale_x_log10()+
                  xlab("hourly wage or wage equivalent distribution (2014 rupiah)")+
                  ylab("")+
                  theme(legend.position = "bottom")


hours_dist
```

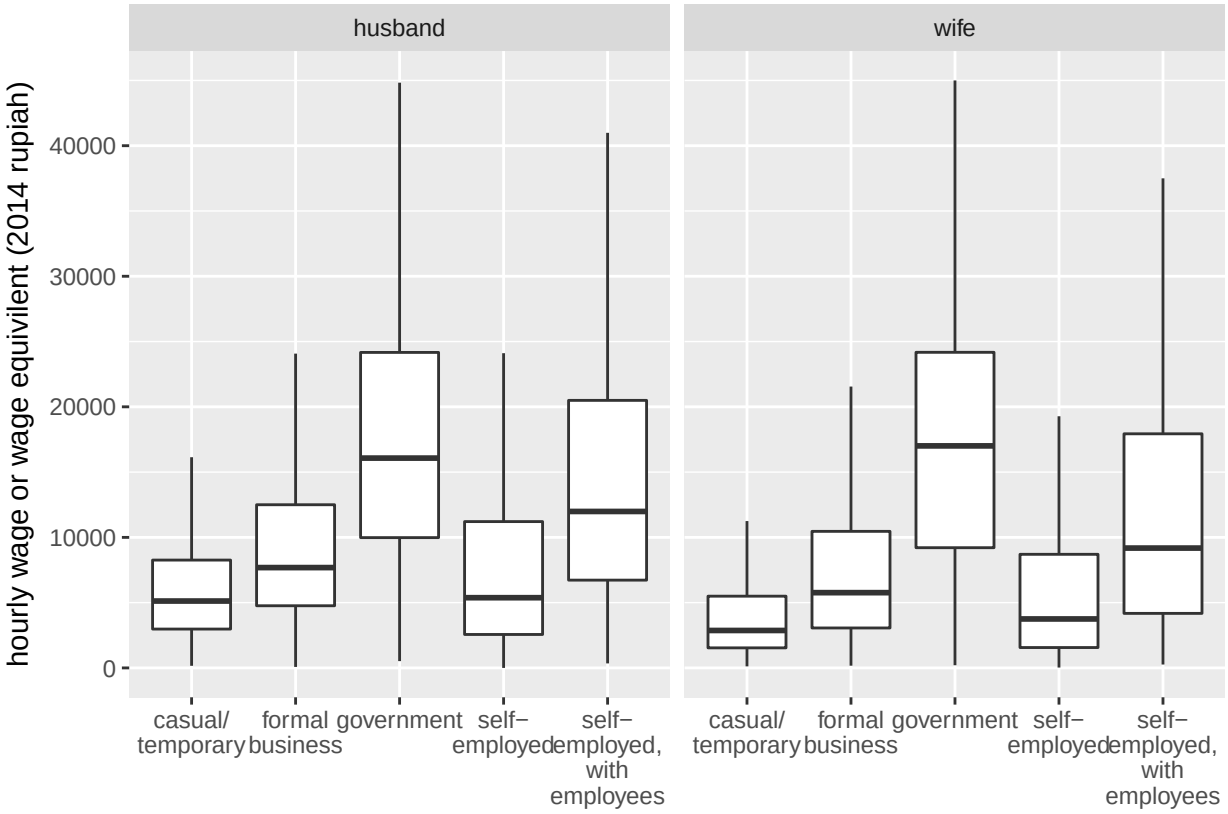

0.03
0.02
0.01
0.00
0
25
50
75
100
125
average hours worked per week
wives
husbands

```
wage_dist
```

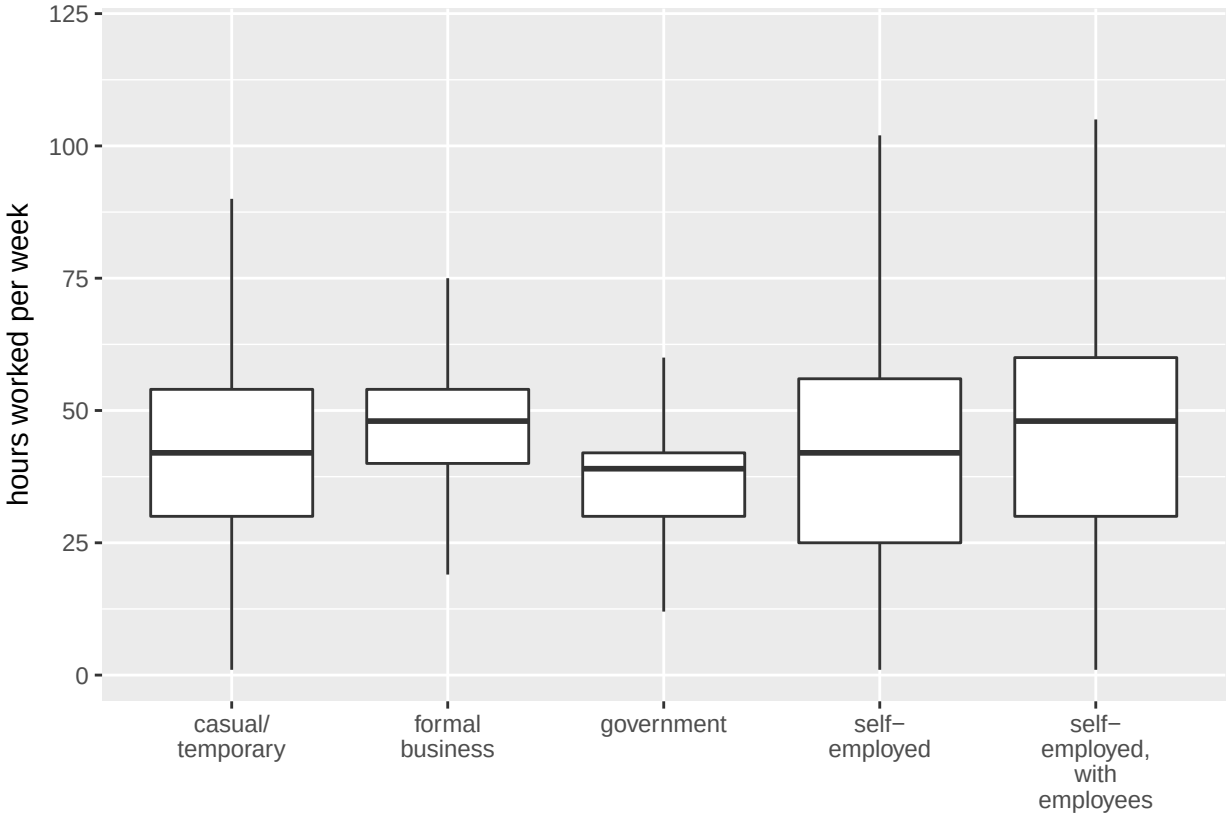



```
#wages by industry
wage_industry <- ggplot(work_plot, aes(y=wage, x = job_type, group = job_type)) +
                      geom_boxplot(outlier.shape = NA)+
                      ylim(0, 45000)+
                      scale_x_discrete(labels = function(job_type) str_wrap(job_type, width  = 10))+
                      xlab("")+
                      ylab("hourly wage or wage equivilent (2014 rupiah)") +
                      facet_wrap(~gender)

wage_industry
```

```
## Warning: Removed 975 rows containing non-finite values (stat_boxplot).
```




```
hours_industry <- ggplot(work_plot, aes(y=hours, x = job_type, group = job_type)) +
                      geom_boxplot(outlier.shape = NA)+
                      #ylim(0, 45000)+
                      scale_x_discrete(labels = function(job_type) str_wrap(job_type, width  = 10))+
                      xlab("")+
                      ylab("hours worked per week")

hours_industry
```




```
summary(work_plot$wage)
```

```
##       Min.    1st Qu.     Median       Mean    3rd Qu.       Max.
## 0.000e+00 3.202e+03 6.668e+03 2.486e+05 1.345e+04 3.968e+09
```

```
summary(work_plot$hours[which(work_plot$gender == "wife" & work_plot$wave == 4)])
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    1.00   26.00   42.00   41.72   54.00  120.00
```

```
summary(work_plot$hours[which(work_plot$gender == "wife" & work_plot$wave == 5)])
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    1.00   24.00   40.00   41.34   54.00  119.00
```

```
summary(work_plot$hours[which(work_plot$gender == "husband" & work_plot$wave == 4)])
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    1.00   35.00   45.00   45.36   56.00  120.00
```

```
summary(work_plot$hours[which(work_plot$gender == "husband" & work_plot$wave == 5)])
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    1.00   35.00   42.00   44.63   56.00  120.00
```

```
data_heck <- clean %>%
               select(jl_2, jl_year_fired, employed2, job_cat_H, age, age_sq, wage_prof, wage_rate,  d
               drop_na(- c(wage_prof, wage_rate, tk22a, job_cat, tk23a2y))

data_prob <- data_heck %>%
```

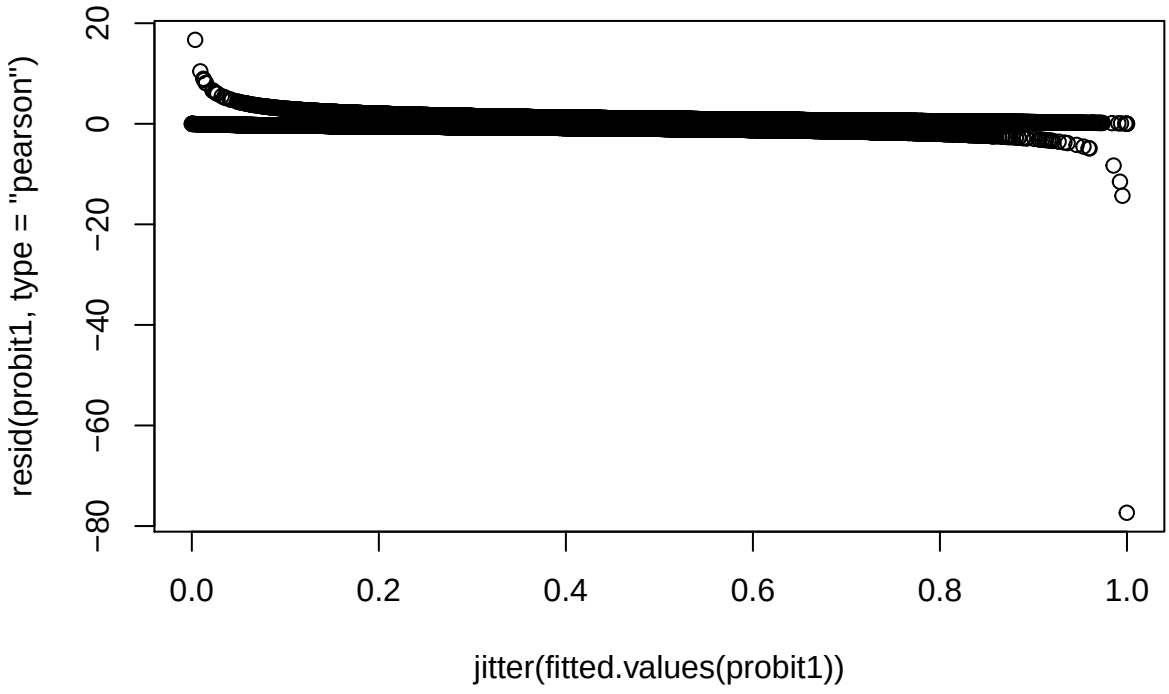
```
            select(-c(wage_prof, wage_rate, tk22a, job_cat, tk23a2y))

probit1 <- glm(employed2 ~ . - jl_year_fired, family = binomial (link = "probit"), data = data_prob)
summary(probit1)
```

```
##
## Call:
## glm(formula = employed2 ~ . - jl_year_fired, family = binomial(link = "probit"),
##     data = data_prob)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -4.1706  -0.9248  -0.5527   1.0370   3.3567
##
## Coefficients:
##                                     Estimate Std. Error z value Pr(>|z|)
## (Intercept)                       -3.758e+00  1.558e-01 -24.121  < 2e-16
## jl_2                               2.597e-01  5.927e-02   4.381 1.18e-05
## job_cat_H2:self-employed          -4.890e-01  3.412e-02 -14.333  < 2e-16
## job_cat_H3:informal business owner -5.333e-01  6.970e-02  -7.651 2.00e-14
## job_cat_H4:government              -7.753e-02  4.842e-02  -1.601  0.10937
## job_cat_H5:private                 -4.285e-02  3.545e-02  -1.209  0.22682
## job_cat_H6:casual                  -7.646e-02  4.227e-02  -1.809  0.07049
## age                                1.286e-01  5.875e-03  21.880  < 2e-16
## age_sq                            -1.494e-03  7.084e-05 -21.096  < 2e-16
## dl062:elementary                   1.231e-01  4.635e-02   2.655  0.00792
## dl063:juniorH                      1.525e-01  5.061e-02   3.013  0.00259
## dl064:seniorH                      2.334e-01  5.053e-02   4.619 3.85e-06
## dl065:higher                       9.366e-01  5.691e-02  16.455  < 2e-16
## dependents_young                  -2.184e-01  1.815e-02 -12.034  < 2e-16
## dependents_old                    -1.033e-02  1.376e-02  -0.750  0.45306
## working_dependents                 8.294e-02  8.613e-02   0.963  0.33553
## other_HHM                         -1.805e-01  5.980e-03 -30.183  < 2e-16
## other_working                      3.717e-01  1.002e-02  37.098  < 2e-16
## sc_code13                          1.769e-01  5.831e-02   3.034  0.00241
## sc_code14                         -2.000e-01  1.210e-01  -1.654  0.09820
## sc_code15                         -5.583e-01  4.182e-01  -1.335  0.18194
## sc_code16                         -2.532e-01  5.936e-02  -4.266 1.99e-05
## sc_code18                         -1.659e-01  5.946e-02  -2.789  0.00528
## sc_code19                         -1.046e-01  1.275e-01  -0.820  0.41220
## sc_code21                          1.666e-01  2.501e-01   0.666  0.50550
## sc_code31                          7.642e-02  5.342e-02   1.431  0.15255
## sc_code32                          1.814e-02  4.558e-02   0.398  0.69059
## sc_code33                          2.469e-01  4.651e-02   5.308 1.11e-07
## sc_code34                          2.475e-01  5.645e-02   4.384 1.17e-05
## sc_code35                          1.138e-01  4.557e-02   2.498  0.01250
## sc_code36                          1.685e-01  6.226e-02   2.706  0.00682
## sc_code51                          4.438e-01  5.671e-02   7.826 5.03e-15
## sc_code52                         -3.554e-02  5.348e-02  -0.664  0.50637
## sc_code61                          3.863e+00  2.583e+01   0.150  0.88108
## sc_code62                          1.859e-01  2.812e-01   0.661  0.50853
## sc_code63                         -1.316e-01  5.856e-02  -2.247  0.02462
## sc_code64                          3.087e-01  1.945e-01   1.587  0.11248
## sc_code71                         -2.716e+00  3.657e+01  -0.074  0.94081
```

```
## sc_code73                           1.533e-02  5.901e-02   0.260  0.79505
## sc_code76                           8.038e-02  2.179e-01   0.369  0.71225
## sc_code91                           4.014e+00  3.657e+01   0.110  0.91261
## wave                                1.816e-01  1.987e-02   9.142  < 2e-16
##
## (Intercept)                        ***
## jl_2                               ***
## job_cat_H2:self-employed           ***
## job_cat_H3:informal business owner ***
## job_cat_H4:government
## job_cat_H5:private
## job_cat_H6:casual                  .
## age                                ***
## age_sq                             ***
## dl062:elementary                   **
## dl063:juniorH                      **
## dl064:seniorH                      ***
## dl065:higher                       ***
## dependents_young                   ***
## dependents_old
## working_dependents
## other_HHM                          ***
## other_working                      ***
## sc_code13                          **
## sc_code14                          .
## sc_code15
## sc_code16                          ***
## sc_code18                          **
## sc_code19
## sc_code21
## sc_code31
## sc_code32
## sc_code33                          ***
## sc_code34                          ***
## sc_code35                          *
## sc_code36                          **
## sc_code51                          ***
## sc_code52
## sc_code61
## sc_code62
## sc_code63                          *
## sc_code64
## sc_code71
## sc_code73
## sc_code76
## sc_code91
## wave                               ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 26547  on 19560  degrees of freedom
## Residual deviance: 22527  on 19519  degrees of freedom
```

```
## AIC: 22611
##
## Number of Fisher Scoring iterations: 9
```

```
#one extreme outlier??
plot(resid(probit1, type = "pearson") ~ jitter(fitted.values(probit1)))
```




```
probit2 <- glm(employed2 ~ . - jl_2, family = binomial (link = "probit"), data = data_prob)
summary(probit2)
```

```
##
## Call:
## glm(formula = employed2 ~ . - jl_2, family = binomial(link = "probit"),
##     data = data_prob)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -4.1700  -0.9247  -0.5542   1.0379   3.3498
##
## Coefficients:
##                                 Estimate Std. Error z value Pr(>|z|)
## (Intercept)                   -3.745e+00  1.557e-01 -24.051  < 2e-16
## jl_year_fired1                 1.689e-01  1.303e-01   1.296  0.19488
## jl_year_fired2                 3.207e-01  1.510e-01   2.124  0.03367
## jl_year_fired3                 4.195e-01  1.781e-01   2.355  0.01853
## jl_year_fired4                 2.900e-01  2.120e-01   1.368  0.17136
## jl_year_fired5                 5.973e-02  2.417e-01   0.247  0.80480
```

```
## job_cat_H2:self-employed           -4.899e-01  3.412e-02 -14.356  < 2e-16
## job_cat_H3:informal business owner -5.355e-01  6.971e-02  -7.682 1.57e-14
## job_cat_H4:government              -7.935e-02  4.842e-02  -1.639  0.10125
## job_cat_H5:private                 -4.007e-02  3.544e-02  -1.131  0.25824
## job_cat_H6:casual                  -7.661e-02  4.228e-02  -1.812  0.06997
## age                                 1.286e-01  5.875e-03  21.887  < 2e-16
## age_sq                             -1.495e-03  7.083e-05 -21.108  < 2e-16
## dl062:elementary                    1.229e-01  4.635e-02   2.652  0.00800
## dl063:juniorH                       1.531e-01  5.061e-02   3.025  0.00249
## dl064:seniorH                       2.332e-01  5.053e-02   4.615 3.93e-06
## dl065:higher                        9.356e-01  5.691e-02  16.439  < 2e-16
## dependents_young                   -2.178e-01  1.815e-02 -11.999  < 2e-16
## dependents_old                     -1.049e-02  1.376e-02  -0.762  0.44584
## working_dependents                  8.359e-02  8.617e-02   0.970  0.33203
## other_HHM                          -1.804e-01  5.980e-03 -30.169  < 2e-16
## other_working                       3.716e-01  1.002e-02  37.089  < 2e-16
## sc_code13                           1.768e-01  5.831e-02   3.031  0.00243
## sc_code14                          -1.982e-01  1.209e-01  -1.638  0.10134
## sc_code15                          -5.600e-01  4.182e-01  -1.339  0.18060
## sc_code16                          -2.520e-01  5.935e-02  -4.247 2.17e-05
## sc_code18                          -1.660e-01  5.946e-02  -2.792  0.00524
## sc_code19                          -1.026e-01  1.275e-01  -0.805  0.42111
## sc_code21                           1.623e-01  2.501e-01   0.649  0.51650
## sc_code31                           7.956e-02  5.341e-02   1.490  0.13632
## sc_code32                           2.011e-02  4.557e-02   0.441  0.65905
## sc_code33                           2.488e-01  4.650e-02   5.350 8.81e-08
## sc_code34                           2.509e-01  5.644e-02   4.445 8.78e-06
## sc_code35                           1.155e-01  4.556e-02   2.534  0.01127
## sc_code36                           1.688e-01  6.227e-02   2.711  0.00671
## sc_code51                           4.451e-01  5.671e-02   7.849 4.21e-15
## sc_code52                          -3.531e-02  5.348e-02  -0.660  0.50910
## sc_code61                           3.861e+00  2.582e+01   0.150  0.88115
## sc_code62                           1.945e-01  2.818e-01   0.690  0.49012
## sc_code63                          -1.295e-01  5.856e-02  -2.211  0.02703
## sc_code64                           3.098e-01  1.945e-01   1.593  0.11115
## sc_code71                          -2.718e+00  3.657e+01  -0.074  0.94076
## sc_code73                           1.707e-02  5.901e-02   0.289  0.77234
## sc_code76                           7.878e-02  2.179e-01   0.362  0.71771
## sc_code91                           4.014e+00  3.657e+01   0.110  0.91260
## wave                                1.790e-01  1.985e-02   9.019  < 2e-16
##
## (Intercept)                        ***
## jl_year_fired1
## jl_year_fired2                     *
## jl_year_fired3                     *
## jl_year_fired4
## jl_year_fired5
## job_cat_H2:self-employed           ***
## job_cat_H3:informal business owner ***
## job_cat_H4:government
## job_cat_H5:private
## job_cat_H6:casual                  .
## age                                ***
## age_sq                             ***
```

```
## dl062:elementary                    **
## dl063:juniorH                       **
## dl064:seniorH                       ***
## dl065:higher                        ***
## dependents_young                    ***
## dependents_old
## working_dependents
## other_HHM                           ***
## other_working                       ***
## sc_code13                           **
## sc_code14
## sc_code15
## sc_code16                           ***
## sc_code18                           **
## sc_code19
## sc_code21
## sc_code31
## sc_code32
## sc_code33                           ***
## sc_code34                           ***
## sc_code35                           *
## sc_code36                           **
## sc_code51                           ***
## sc_code52
## sc_code61
## sc_code62
## sc_code63                           *
## sc_code64
## sc_code71
## sc_code73
## sc_code76
## sc_code91
## wave                                ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 26547  on 19560  degrees of freedom
## Residual deviance: 22533  on 19515  degrees of freedom
## AIC: 22625
##
## Number of Fisher Scoring iterations: 9
```

```
#add mills ratios to data
data_heck$mills1 <- invMillsRatio(probit1)$IMR1
data_heck$mills2 <- invMillsRatio(probit2)$IMR1

#filter to remove unemployed
data_heck <- data_heck %>%
               filter(as.numeric(job_cat) != 1)
```

```
heckit1 <- lm(tk22a ~ . -wage_rate + log(wage_rate)- jl_year_fired - employed2 - job_cat_H - mills2 - wa
summary(heckit1)
```

```
##
## Call:
## lm(formula = tk22a ~ . - wage_rate + log(wage_rate) - jl_year_fired -
##     employed2 - job_cat_H - mills2 - wage_prof - dependents_young -
##     dependents_old - working_dependents - other_HHM - other_working,
##     data = data_heck)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -60.388 -15.124  -0.166  11.805  90.778
##
## Coefficients:
##                                  Estimate Std. Error t value Pr(>|t|)
## (Intercept)                     89.275941   5.052651  17.669  < 2e-16
## jl_2                            -1.019851   1.356175  -0.752 0.452071
## age                              0.676555   0.163693   4.133 3.62e-05
## age_sq                          -0.009532   0.001937  -4.920 8.83e-07
## dl062:elementary                 4.085783   1.244236   3.284 0.001029
## dl063:juniorH                    6.773528   1.355044   4.999 5.89e-07
## dl064:seniorH                    8.210637   1.358120   6.046 1.56e-09
## dl065:higher                     5.928919   1.555801   3.811 0.000140
## tk23a2y                          0.102494   0.030614   3.348 0.000818
## job_cat3:informal business owner  7.721124   1.814943   4.254 2.12e-05
## job_cat4:government              -2.732188   1.048213  -2.607 0.009164
## job_cat5:private                 -3.235483   0.596006  -5.429 5.85e-08
## job_cat6:casual                 -14.108173   0.870721 -16.203  < 2e-16
## sc_code13                        1.072705   1.447984   0.741 0.458821
## sc_code14                        9.039062   3.414528   2.647 0.008131
## sc_code15                        7.148947  12.423131   0.575 0.565000
## sc_code16                       -4.092715   1.664485  -2.459 0.013960
## sc_code18                        0.864026   1.628098   0.531 0.595644
## sc_code19                        8.589663   3.248403   2.644 0.008203
## sc_code21                       12.126986   5.458753   2.222 0.026341
## sc_code31                        7.927279   1.350071   5.872 4.49e-09
## sc_code32                        1.575750   1.174390   1.342 0.179712
## sc_code33                       -1.865056   1.179519  -1.581 0.113872
## sc_code34                       -0.680907   1.365956  -0.498 0.618157
## sc_code35                        1.929455   1.168162   1.652 0.098635
## sc_code36                        7.402620   1.593315   4.646 3.44e-06
## sc_code51                        1.013007   1.356564   0.747 0.455240
## sc_code52                        2.538302   1.397536   1.816 0.069367
## sc_code61                       10.960284  15.224553   0.720 0.471603
## sc_code62                        8.456658   6.039286   1.400 0.161471
## sc_code63                       -2.572249   1.557404  -1.652 0.098651
## sc_code64                        6.124591   4.409046   1.389 0.164843
## sc_code73                       -0.522530   1.553433  -0.336 0.736600
## sc_code76                       -5.630611   5.622348  -1.001 0.316631
## sc_code91                       26.298731  21.479847   1.224 0.220859
## wave                             1.639636   0.517766   3.167 0.001547
## mills1                          -2.191702   0.945508  -2.318 0.020474
## log(wage_rate)                  -8.149801   0.222468 -36.634  < 2e-16
##
## (Intercept)                     ***
## jl_2
```

```
## age                               ***
## age_sq                            ***
## dl062:elementary                  **
## dl063:juniorH                     ***
## dl064:seniorH                     ***
## dl065:higher                      ***
## tk23a2y                           ***
## job_cat3:informal business owner ***
## job_cat4:government               **
## job_cat5:private                  ***
## job_cat6:casual                   ***
## sc_code13
## sc_code14                         **
## sc_code15
## sc_code16                         *
## sc_code18
## sc_code19                         **
## sc_code21                         *
## sc_code31                         ***
## sc_code32
## sc_code33
## sc_code34
## sc_code35                         .
## sc_code36                         ***
## sc_code51
## sc_code52                         .
## sc_code61
## sc_code62
## sc_code63                         .
## sc_code64
## sc_code73
## sc_code76
## sc_code91
## wave                              **
## mills1                            *
## log(wage_rate)                    ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 21.43 on 7871 degrees of freedom
##   (206 observations deleted due to missingness)
## Multiple R-squared:  0.1949, Adjusted R-squared:  0.1911
## F-statistic:  51.5 on 37 and 7871 DF,  p-value: < 2.2e-16
```

```
heckit1_interact <- lm(tk22a ~ . + (job_cat * log(wage_rate))-wage_rate + log(wage_rate)- jl_year_fired
summary(heckit1)
```

```
##
## Call:
## lm(formula = tk22a ~ . - wage_rate + log(wage_rate) - jl_year_fired -
##     employed2 - job_cat_H - mills2 - wage_prof - dependents_young -
##     dependents_old - working_dependents - other_HHM - other_working,
##     data = data_heck)
##
## Residuals:
```

```
##     Min      1Q  Median      3Q     Max
## -60.388 -15.124  -0.166  11.805  90.778
##
## Coefficients:
##                                   Estimate Std. Error t value Pr(>|t|)
## (Intercept)                      89.275941   5.052651  17.669  < 2e-16
## jl_2                             -1.019851   1.356175  -0.752 0.452071
## age                               0.676555   0.163693   4.133 3.62e-05
## age_sq                           -0.009532   0.001937  -4.920 8.83e-07
## dl062:elementary                  4.085783   1.244236   3.284 0.001029
## dl063:juniorH                     6.773528   1.355044   4.999 5.89e-07
## dl064:seniorH                     8.210637   1.358120   6.046 1.56e-09
## dl065:higher                      5.928919   1.555801   3.811 0.000140
## tk23a2y                           0.102494   0.030614   3.348 0.000818
## job_cat3:informal business owner  7.721124   1.814943   4.254 2.12e-05
## job_cat4:government              -2.732188   1.048213  -2.607 0.009164
## job_cat5:private                 -3.235483   0.596006  -5.429 5.85e-08
## job_cat6:casual                 -14.108173   0.870721 -16.203  < 2e-16
## sc_code13                         1.072705   1.447984   0.741 0.458821
## sc_code14                         9.039062   3.414528   2.647 0.008131
## sc_code15                         7.148947  12.423131   0.575 0.565000
## sc_code16                        -4.092715   1.664485  -2.459 0.013960
## sc_code18                         0.864026   1.628098   0.531 0.595644
## sc_code19                         8.589663   3.248403   2.644 0.008203
## sc_code21                        12.126986   5.458753   2.222 0.026341
## sc_code31                         7.927279   1.350071   5.872 4.49e-09
## sc_code32                         1.575750   1.174390   1.342 0.179712
## sc_code33                        -1.865056   1.179519  -1.581 0.113872
## sc_code34                        -0.680907   1.365956  -0.498 0.618157
## sc_code35                         1.929455   1.168162   1.652 0.098635
## sc_code36                         7.402620   1.593315   4.646 3.44e-06
## sc_code51                         1.013007   1.356564   0.747 0.455240
## sc_code52                         2.538302   1.397536   1.816 0.069367
## sc_code61                        10.960284  15.224553   0.720 0.471603
## sc_code62                         8.456658   6.039286   1.400 0.161471
## sc_code63                        -2.572249   1.557404  -1.652 0.098651
## sc_code64                         6.124591   4.409046   1.389 0.164843
## sc_code73                        -0.522530   1.553433  -0.336 0.736600
## sc_code76                        -5.630611   5.622348  -1.001 0.316631
## sc_code91                        26.298731  21.479847   1.224 0.220859
## wave                              1.639636   0.517766   3.167 0.001547
## mills1                           -2.191702   0.945508  -2.318 0.020474
## log(wage_rate)                   -8.149801   0.222468 -36.634  < 2e-16
##
## (Intercept)                      ***
## jl_2
## age                              ***
## age_sq                           ***
## dl062:elementary                 **
## dl063:juniorH                    ***
## dl064:seniorH                    ***
## dl065:higher                     ***
## tk23a2y                          ***
## job_cat3:informal business owner ***
```

```
## job_cat4:government              **
## job_cat5:private                 ***
## job_cat6:casual                  ***
## sc_code13
## sc_code14                        **
## sc_code15
## sc_code16                        *
## sc_code18
## sc_code19                        **
## sc_code21                        *
## sc_code31                        ***
## sc_code32
## sc_code33
## sc_code34
## sc_code35                        .
## sc_code36                        ***
## sc_code51
## sc_code52                        .
## sc_code61
## sc_code62
## sc_code63                        .
## sc_code64
## sc_code73
## sc_code76
## sc_code91
## wave                             **
## mills1                           *
## log(wage_rate)                   ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 21.43 on 7871 degrees of freedom
##   (206 observations deleted due to missingness)
## Multiple R-squared:  0.1949, Adjusted R-squared:  0.1911
## F-statistic:  51.5 on 37 and 7871 DF,  p-value: < 2.2e-16
```

```
#heckit1_logged <- lm(tk22a ~ . - wage_rate + log(wage_rate) - jl_year_fired - employed2 - job_cat_H - m
#summary(heckit1_logged)

#seems like log wage is a good fit
#plot((data_heck$wage_rate[which(!(is.na(data_heck$wage_rate))& !(is.na(data_heck$tk23a2y)))]), resid(h

#plot((data_heck$wage_rate[which(!(is.na(data_heck$wage_rate))& !(is.na(data_heck$tk23a2y)))]), resid(h


#heckit1_interact <- lm(tk22a ~ . + (job_cat * wage_rate) - jl_year_fired - employed2 - job_cat_H - mil
#summary(heckit1_interact)

#heckit1_logged_interact <- lm(tk22a ~ . - wage_rate + log(wage_rate) + (job_cat * log(wage_rate)) - jl
#summary(heckit1_logged_interact)

#heckit1_logged_interact_no_dep <- lm(tk22a ~ . - wage_rate + log(wage_rate) + (job_cat * log(wage_rate
#summary(heckit1_logged_interact_no_dep)
```

```r
#heckit1b <- lm(tk22a ~ . - sc_code - jl_year_fired - employed2 - job_cat_H - mills2 -wage_prof, data =
#summary(heckit1b)

#anova_heck1 <- anova(heckit1, heckit1b, test = "LRT")

#options(scipen = 999)
#anova_heck_p1 <- as.character(round(anova_heck1$`Pr(>Chi)`[2],6))
#options(scipen = 0)

heckit2 <- lm(tk22a ~ . -wage_rate + log(wage_rate)- jl_2 - employed2 - job_cat_H - mills1 - wage_prof -
summary(heckit2)
```

```
##
## Call:
## lm(formula = tk22a ~ . - wage_rate + log(wage_rate) - jl_2 -
##     employed2 - job_cat_H - mills1 - wage_prof - dependents_young -
##     dependents_old - working_dependents - other_HHM - other_working,
##     data = data_heck)
##
## Residuals:
##    Min     1Q Median     3Q    Max
## -60.36 -15.12  -0.16  11.81  90.81
##
## Coefficients:
##                                   Estimate Std. Error t value Pr(>|t|)
## (Intercept)                      89.114465   5.044631  17.665  < 2e-16
## jl_year_fired1                   -1.241442   3.023231  -0.411 0.681352
## jl_year_fired2                    1.107321   3.289323   0.337 0.736396
## jl_year_fired3                   -1.234592   3.762789  -0.328 0.742841
## jl_year_fired4                   -0.019603   4.815814  -0.004 0.996752
## jl_year_fired5                   -4.752953   5.971591  -0.796 0.426098
## age                               0.676408   0.163735   4.131 3.65e-05
## age_sq                           -0.009532   0.001938  -4.919 8.90e-07
## dl062:elementary                  4.086716   1.244584   3.284 0.001029
## dl063:juniorH                     6.767571   1.355273   4.994 6.06e-07
## dl064:seniorH                     8.221060   1.358586   6.051 1.50e-09
## dl065:higher                      5.947902   1.556248   3.822 0.000133
## tk23a2y                           0.103581   0.030638   3.381 0.000726
## job_cat3:informal business owner  7.729741   1.815200   4.258 2.08e-05
## job_cat4:government              -2.736223   1.048579  -2.609 0.009086
## job_cat5:private                 -3.250167   0.596355  -5.450 5.19e-08
## job_cat6:casual                 -14.109550   0.871009 -16.199  < 2e-16
## sc_code13                         1.095393   1.448424   0.756 0.449513
## sc_code14                         9.064029   3.416253   2.653 0.007989
## sc_code15                         7.163116  12.425781   0.576 0.564313
## sc_code16                        -4.088307   1.665230  -2.455 0.014106
## sc_code18                         0.866429   1.628744   0.532 0.594768
## sc_code19                         8.532945   3.250623   2.625 0.008681
## sc_code21                        12.159061   5.459818   2.227 0.025975
## sc_code31                         7.946450   1.350794   5.883 4.20e-09
## sc_code32                         1.590652   1.175054   1.354 0.175876
## sc_code33                        -1.858158   1.180368  -1.574 0.115477
## sc_code34                        -0.698588   1.366731  -0.511 0.609269
## sc_code35                         1.937774   1.168783   1.658 0.097369
```

```
## sc_code36                          7.450375   1.595566   4.669 3.07e-06
## sc_code51                          1.031895   1.357376   0.760 0.447150
## sc_code52                          2.573682   1.398241   1.841 0.065710
## sc_code61                         11.013824  15.227757   0.723 0.469534
## sc_code62                          8.475861   6.040697   1.403 0.160619
## sc_code63                         -2.589623   1.557792  -1.662 0.096479
## sc_code64                          6.177287   4.415895   1.399 0.161890
## sc_code73                         -0.507885   1.554223  -0.327 0.743845
## sc_code76                         -5.599793   5.623508  -0.996 0.319386
## sc_code91                         26.345334  21.484331   1.226 0.220138
## wave                               1.661084   0.516915   3.213 0.001317
## mills2                            -2.174469   0.945054  -2.301 0.021424
## log(wage_rate)                    -8.147900   0.222520 -36.616  < 2e-16
##
## (Intercept)                       ***
## jl_year_fired1
## jl_year_fired2
## jl_year_fired3
## jl_year_fired4
## jl_year_fired5
## age                               ***
## age_sq                            ***
## dl062:elementary                  **
## dl063:juniorH                     ***
## dl064:seniorH                     ***
## dl065:higher                      ***
## tk23a2y                           ***
## job_cat3:informal business owner  ***
## job_cat4:government               **
## job_cat5:private                  ***
## job_cat6:casual                   ***
## sc_code13
## sc_code14                         **
## sc_code15
## sc_code16                         *
## sc_code18
## sc_code19                         **
## sc_code21                         *
## sc_code31                         ***
## sc_code32
## sc_code33
## sc_code34
## sc_code35                         .
## sc_code36                         ***
## sc_code51
## sc_code52                         .
## sc_code61
## sc_code62
## sc_code63                         .
## sc_code64
## sc_code73
## sc_code76
## sc_code91
## wave                              **
```

```
## mills2                          *
## log(wage_rate)                  ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 21.44 on 7867 degrees of freedom
##   (206 observations deleted due to missingness)
## Multiple R-squared:  0.195,  Adjusted R-squared:  0.1908
## F-statistic: 46.47 on 41 and 7867 DF,  p-value: < 2.2e-16
```

```
#heckit2b <- lm(tk22a ~ . - sc_code - jl_2 - employed2 - job_cat_H - mills1 -wage_prof, data = data_hec
#summary(heckit2b)

#anova_heck2 <- anova(heckit2, heckit2b, test = "LRT")

#options(scipen = 999)
#anova_heck_p2 <- as.character(round(anova_heck2$`Pr(>Chi)`[2],6))
#options(scipen = 0)
```

```
stargazer(log1, log2, title="Results", align=TRUE, no.space=TRUE, style = "aer",
              add.lines = list(c("region fixed effects", "***","***"), c("survey wave fixed effects", "
```

```
##
## % Table created by stargazer v.5.2 by Marek Hlavac, Harvard University. E-mail: hlavac at fas.harvar
## % Date and time: Tue, May 01, 2018 - 10:01:38 AM
## % Requires LaTeX packages: dcolumn
## \begin{table}[!htbp] \centering
##   \caption{Results}
##   \label{}
## \begin{tabular}{@{\extracolsep{5pt}}lD{.}{.}{-3} D{.}{.}{-3} }
## \\[-1.8ex]\hline
## \hline \\[-1.8ex]
## \\[-1.8ex] & \multicolumn{2}{c}{employed2} \\
## \\[-1.8ex] & \multicolumn{1}{c}{(1)} & \multicolumn{1}{c}{(2)}\\
## \hline \\[-1.8ex]
##  jl\_2 & 0.087^{***} &  \\
##   & (0.020) &  \\
##   jl\_year\_fired1 &  & 0.054 \\
##   &  & (0.043) \\
##   jl\_year\_fired2 &  & 0.111^{**} \\
##   &  & (0.050) \\
##   jl\_year\_fired3 &  & 0.141^{**} \\
##   &  & (0.058) \\
##   jl\_year\_fired4 &  & 0.101 \\
##   &  & (0.071) \\
##   jl\_year\_fired5 &  & 0.013 \\
##   &  & (0.080) \\
##   age & 0.040^{***} & 0.040^{***} \\
##   & (0.002) & (0.002) \\
##   age\_sq & -0.000^{***} & -0.000^{***} \\
##   & (0.000) & (0.000) \\
##   dl062:elementary & 0.039^{***} & 0.039^{***} \\
##   & (0.015) & (0.015) \\
##   dl063:juniorH & 0.048^{***} & 0.049^{***} \\
##   & (0.016) & (0.016) \\
```

```
##   dl064:seniorH & 0.074^{***} & 0.074^{***} \\
##   & (0.016) & (0.017) \\
##   dl065:higher & 0.316^{***} & 0.315^{***} \\
##   & (0.018) & (0.018) \\
##   job\_cat\_H2:self-employed & -0.164^{***} & -0.164^{***} \\
##   & (0.011) & (0.011) \\
##   job\_cat\_H3:informal business owner & -0.172^{***} & -0.173^{***} \\
##   & (0.023) & (0.023) \\
##   job\_cat\_H4:government & -0.026 & -0.026^{*} \\
##   & (0.016) & (0.016) \\
##   job\_cat\_H5:private & -0.014 & -0.013 \\
##   & (0.012) & (0.012) \\
##   job\_cat\_H6:casual & -0.025^{*} & -0.025^{*} \\
##   & (0.014) & (0.014) \\
##   dependents\_young & -0.071^{***} & -0.071^{***} \\
##   & (0.006) & (0.006) \\
##   dependents\_old & -0.002 & -0.002 \\
##   & (0.005) & (0.005) \\
##   working\_dependents & 0.028 & 0.028 \\
##   & (0.029) & (0.029) \\
##   other\_HHM & -0.058^{***} & -0.058^{***} \\
##   & (0.002) & (0.002) \\
##   other\_working & 0.122^{***} & 0.122^{***} \\
##   & (0.003) & (0.003) \\
##   sc\_code13 & 0.060^{***} & 0.060^{***} \\
##   & (0.019) & (0.019) \\
##   sc\_code14 & -0.066^{*} & -0.065^{*} \\
##   & (0.038) & (0.039) \\
##   sc\_code15 & -0.194 & -0.194 \\
##   & (0.135) & (0.135) \\
##   sc\_code16 & -0.073^{***} & -0.073^{***} \\
##   & (0.019) & (0.019) \\
##   sc\_code18 & -0.056^{***} & -0.056^{***} \\
##   & (0.019) & (0.019) \\
##   sc\_code19 & -0.025 & -0.025 \\
##   & (0.041) & (0.041) \\
##   sc\_code21 & 0.061 & 0.059 \\
##   & (0.084) & (0.084) \\
##   sc\_code31 & 0.026 & 0.027 \\
##   & (0.018) & (0.018) \\
##   sc\_code32 & 0.007 & 0.008 \\
##   & (0.015) & (0.015) \\
##   sc\_code33 & 0.085^{***} & 0.085^{***} \\
##   & (0.015) & (0.015) \\
##   sc\_code34 & 0.087^{***} & 0.088^{***} \\
##   & (0.019) & (0.019) \\
##   sc\_code35 & 0.040^{***} & 0.040^{***} \\
##   & (0.015) & (0.015) \\
##   sc\_code36 & 0.059^{***} & 0.059^{***} \\
##   & (0.021) & (0.021) \\
##   sc\_code51 & 0.154^{***} & 0.154^{***} \\
##   & (0.019) & (0.019) \\
##   sc\_code52 & -0.009 & -0.009 \\
##   & (0.017) & (0.017) \\
```

```
##   sc\_code61 & 0.409 & 0.408 \\
##   & (0.315) & (0.315) \\
##   sc\_code62 & 0.071 & 0.074 \\
##   & (0.090) & (0.090) \\
##   sc\_code63 & -0.045^{**} & -0.044^{**} \\
##   & (0.019) & (0.019) \\
##   sc\_code64 & 0.103 & 0.103 \\
##   & (0.066) & (0.066) \\
##   sc\_code71 & -0.015 & -0.016 \\
##   & (0.445) & (0.445) \\
##   sc\_code73 & 0.007 & 0.007 \\
##   & (0.019) & (0.019) \\
##   sc\_code76 & 0.030 & 0.030 \\
##   & (0.072) & (0.072) \\
##   sc\_code91 & 0.465 & 0.465 \\
##   & (0.445) & (0.445) \\
##   wave & 0.060^{***} & 0.059^{***} \\
##   & (0.007) & (0.007) \\
##   Constant & -0.702^{***} & -0.698^{***} \\
##   & (0.049) & (0.049) \\
##  region fixed effects & *** & *** \\
## survey wave fixed effects & *** & *** \\
## Observations & \multicolumn{1}{c}{19,561} & \multicolumn{1}{c}{19,561} \\
## Log Likelihood & \multicolumn{1}{c}{-11,895.720} & \multicolumn{1}{c}{-11,898.350} \\
## Akaike Inf. Crit. & \multicolumn{1}{c}{23,875.430} & \multicolumn{1}{c}{23,888.690} \\
## \hline \\[-1.8ex]
## \textit{Notes:} & \multicolumn{2}{l}{$^{***}$Significant at the 1 percent level.} \\
##  & \multicolumn{2}{l}{$^{**}$Significant at the 5 percent level.} \\
##  & \multicolumn{2}{l}{$^{*}$Significant at the 10 percent level.} \\
## \end{tabular}
## \end{table}
```

```
labels1 <-   c("husband's job loss: past five years", "husband's job loss: past year", "husband's job l
```

```
stargazer(probit1, probit2, title="Probit Estimation for Selection into Employment", align=TRUE, no.spa
              add.lines = list(c("region fixed effects", "***","***"), c("survey wave fixed effects", "
```

```
##
## % Table created by stargazer v.5.2 by Marek Hlavac, Harvard University. E-mail: hlavac at fas.harvar
## % Date and time: Tue, May 01, 2018 - 10:01:45 AM
## % Requires LaTeX packages: dcolumn
## \begin{table}[!htbp] \centering
##   \caption{Probit Estimation for Selection into Employment}
##   \label{}
## \begin{tabular}{@{\extracolsep{5pt}}lD{.}{.}{-3} D{.}{.}{-3} }
## \\[-1.8ex]\hline
## \hline \\[-1.8ex]
## \\[-1.8ex] & \multicolumn{2}{c}{employed2} \\
## \\[-1.8ex] & \multicolumn{1}{c}{(1)} & \multicolumn{1}{c}{(2)}\\
## \hline \\[-1.8ex]
##  husband's job loss: past five years & 0.260^{***}$ $(0.059) &  \\
```

```
##   husband's job loss: past year &  & 0.169$ $(0.130) \\
##   husband's job loss: 1-2 years ago &  & 0.321^{**}$ $(0.151) \\
##   husband's job loss: 2-3 years ago &  & 0.420^{**}$ $(0.178) \\
##   husband's job loss: 3-4 years ago &  & 0.290$ $(0.212) \\
##   husband's job loss: 4-5 years ago &  & 0.060$ $(0.242) \\
##   wife's age & -0.489^{***}$ $(0.034) & -0.490^{***}$ $(0.034) \\
##   wife's age squared & -0.533^{***}$ $(0.070) & -0.536^{***}$ $(0.070) \\
##   wife's education : elementary & -0.078$ $(0.048) & -0.079$ $(0.048) \\
##   wife's education : junior high & -0.043$ $(0.035) & -0.040$ $(0.035) \\
##   wife's education : senior high & -0.076^{*}$ $(0.042) & -0.077^{*}$ $(0.042) \\
##   wife's education : advanced degree & 0.129^{***}$ $(0.006) & 0.129^{***}$ $(0.006) \\
##   husband's job: self-employed & -0.001^{***}$ $(0.000) & -0.001^{***}$ $(0.000) \\
##   husband's job: self-employed, with employees & 0.123^{***}$ $(0.046) & 0.123^{***}$ $(0.046) \\
##   husband's job: government & 0.153^{***}$ $(0.051) & 0.153^{***}$ $(0.051) \\
##   husband's job: formal business & 0.233^{***}$ $(0.051) & 0.233^{***}$ $(0.051) \\
##   husband's job: casual/temporary & 0.937^{***}$ $(0.057) & 0.936^{***}$ $(0.057) \\
##   number of dependents (age $\leq$ 5) & -0.218^{***}$ $(0.018) & -0.218^{***}$ $(0.018) \\
##   number of dependents (6 $\leq$ age $\leq$ 14) & -0.010$ $(0.014) & -0.010$ $(0.014) \\
##   number of employed dependents (age $\leq$ 14) & 0.083$ $(0.086) & 0.084$ $(0.086) \\
##   number of other household members & -0.181^{***}$ $(0.006) & -0.180^{***}$ $(0.006) \\
##   number of other employed household members & 0.372^{***}$ $(0.010) & 0.372^{***}$ $(0.010) \\
##   sc\_code13 & 0.177^{***}$ $(0.058) & 0.177^{***}$ $(0.058) \\
##   sc\_code14 & -0.200^{*}$ $(0.121) & -0.198$ $(0.121) \\
##   sc\_code15 & -0.558$ $(0.418) & -0.560$ $(0.418) \\
##   sc\_code16 & -0.253^{***}$ $(0.059) & -0.252^{***}$ $(0.059) \\
##   sc\_code18 & -0.166^{***}$ $(0.059) & -0.166^{***}$ $(0.059) \\
##   sc\_code19 & -0.105$ $(0.128) & -0.103$ $(0.128) \\
##   sc\_code21 & 0.167$ $(0.250) & 0.162$ $(0.250) \\
##   sc\_code31 & 0.076$ $(0.053) & 0.080$ $(0.053) \\
##   sc\_code32 & 0.018$ $(0.046) & 0.020$ $(0.046) \\
##   sc\_code33 & 0.247^{***}$ $(0.047) & 0.249^{***}$ $(0.047) \\
##   sc\_code34 & 0.247^{***}$ $(0.056) & 0.251^{***}$ $(0.056) \\
##   sc\_code35 & 0.114^{**}$ $(0.046) & 0.115^{**}$ $(0.046) \\
##   sc\_code36 & 0.168^{***}$ $(0.062) & 0.169^{***}$ $(0.062) \\
##   sc\_code51 & 0.444^{***}$ $(0.057) & 0.445^{***}$ $(0.057) \\
##   sc\_code52 & -0.036$ $(0.053) & -0.035$ $(0.053) \\
##   sc\_code61 & 3.863$ $(25.825) & 3.861$ $(25.825) \\
##   sc\_code62 & 0.186$ $(0.281) & 0.194$ $(0.282) \\
##   sc\_code63 & -0.132^{**}$ $(0.059) & -0.129^{**}$ $(0.059) \\
##   sc\_code64 & 0.309$ $(0.195) & 0.310$ $(0.194) \\
##   sc\_code71 & -2.716$ $(36.573) & -2.718$ $(36.573) \\
##   sc\_code73 & 0.015$ $(0.059) & 0.017$ $(0.059) \\
##   sc\_code76 & 0.080$ $(0.218) & 0.079$ $(0.218) \\
##   sc\_code91 & 4.014$ $(36.573) & 4.014$ $(36.573) \\
##   wave & 0.182^{***}$ $(0.020) & 0.179^{***}$ $(0.020) \\
##   Constant & -3.758^{***}$ $(0.156) & -3.745^{***}$ $(0.156) \\
##  region fixed effects & *** & *** \\
## survey wave fixed effects & *** & *** \\
## Observations & \multicolumn{1}{c}{19,561} & \multicolumn{1}{c}{19,561} \\
## Log Likelihood & \multicolumn{1}{c}{-11,263.590} & \multicolumn{1}{c}{-11,266.290} \\
## Akaike Inf. Crit. & \multicolumn{1}{c}{22,611.180} & \multicolumn{1}{c}{22,624.580} \\
## \hline \\[-1.8ex]
## \textit{Notes:} & \multicolumn{2}{l}{$^{***}$Significant at the 1 percent level.} \\
##  & \multicolumn{2}{l}{$^{**}$Significant at the 5 percent level.} \\
```

```
##  & \multicolumn{2}{l}{$^{*}$Significant at the 10 percent level.} \\
## \end{tabular}
## \end{table}
```

```
#labels
labels2 <- c("husband's job loss: past five years", "husband's job loss: past year", "husband's job loss

stargazer(heckit1, heckit1_interact, heckit2, title="Estimation of Hours with Heckman Correction", cova
```

```
##
## % Table created by stargazer v.5.2 by Marek Hlavac, Harvard University. E-mail: hlavac at fas.harvar
## % Date and time: Tue, May 01, 2018 - 10:01:46 AM
## % Requires LaTeX packages: dcolumn
## \begin{table}[!htbp] \centering
##   \caption{Estimation of Hours with Heckman Correction}
##   \label{}
## \begin{tabular}{@{\extracolsep{5pt}}lD{.}{.}{-3} D{.}{.}{-3} D{.}{.}{-3} }
## \\[-1.8ex]\hline
## \hline \\[-1.8ex]
## \\[-1.8ex] & \multicolumn{3}{c}{} \\
## \\[-1.8ex] & \multicolumn{1}{c}{(1)} & \multicolumn{1}{c}{(2)} & \multicolumn{1}{c}{(3)}\\
## \hline \\[-1.8ex]
##  husband's job loss: past five years & -1.020 & -0.679 &  \\
##   & (1.356) & (1.343) &  \\
##   husband's job loss: past year &  &  & -1.241 \\
##   &  &  & (3.023) \\
##   husband's job loss: 1-2 years ago &  &  & 1.107 \\
##   &  &  & (3.289) \\
##   husband's job loss: 2-3 years ago &  &  & -1.235 \\
##   &  &  & (3.763) \\
##   husband's job loss: 3-4 years ago &  &  & -0.020 \\
##   &  &  & (4.816) \\
##   husband's job loss: 4-5 years ago &  &  & -4.753 \\
##   &  &  & (5.972) \\
##   wife's age & 0.677^{***} & 0.631^{***} & 0.676^{***} \\
##   & (0.164) & (0.162) & (0.164) \\
##   wife's age squared & -0.010^{***} & -0.009^{***} & -0.010^{***} \\
##   & (0.002) & (0.002) & (0.002) \\
##   wife's education : elementary & 4.086^{***} & 3.805^{***} & 4.087^{***} \\
##   & (1.244) & (1.232) & (1.245) \\
##   wife's education : junior high & 6.774^{***} & 6.111^{***} & 6.768^{***} \\
##   & (1.355) & (1.343) & (1.355) \\
##   wife's education : senior high & 8.211^{***} & 7.219^{***} & 8.221^{***} \\
##   & (1.358) & (1.347) & (1.359) \\
##   wife's education : advanced degree & 5.929^{***} & 3.472^{**} & 5.948^{***} \\
##   & (1.556) & (1.554) & (1.556) \\
##   job tenure (in years) & 0.102^{***} & 0.068^{**} & 0.104^{***} \\
##   & (0.031) & (0.030) & (0.031) \\
##   wife's job: self-employed, with employees & 7.721^{***} & -49.737^{***} & 7.730^{***} \\
##   & (1.815) & (12.464) & (1.815) \\
##   wife's job: government & -2.732^{***} & -66.687^{***} & -2.736^{***} \\
##   & (1.048) & (8.466) & (1.049) \\
##   wife's job: formal business & -3.235^{***} & -50.334^{***} & -3.250^{***} \\
##   & (0.596) & (4.457) & (0.596) \\
##   wife's job: casual/temporary & -14.108^{***} & -35.308^{***} & -14.110^{***} \\
```

```
##   & (0.871) & (6.280) & (0.871) \\
##   sc\_code13 & 1.073 & 0.806 & 1.095 \\
##   & (1.448) & (1.434) & (1.448) \\
##   sc\_code14 & 9.039^{***} & 8.307^{**} & 9.064^{***} \\
##   & (3.415) & (3.381) & (3.416) \\
##   sc\_code15 & 7.149 & 8.105 & 7.163 \\
##   & (12.423) & (12.298) & (12.426) \\
##   sc\_code16 & -4.093^{**} & -4.396^{***} & -4.088^{**} \\
##   & (1.664) & (1.648) & (1.665) \\
##   sc\_code18 & 0.864 & 0.908 & 0.866 \\
##   & (1.628) & (1.612) & (1.629) \\
##   sc\_code19 & 8.590^{***} & 8.818^{***} & 8.533^{***} \\
##   & (3.248) & (3.216) & (3.251) \\
##   sc\_code21 & 12.127^{**} & 12.358^{**} & 12.159^{**} \\
##   & (5.459) & (5.404) & (5.460) \\
##   sc\_code31 & 7.927^{***} & 7.133^{***} & 7.946^{***} \\
##   & (1.350) & (1.338) & (1.351) \\
##   sc\_code32 & 1.576 & 1.418 & 1.591 \\
##   & (1.174) & (1.163) & (1.175) \\
##   sc\_code33 & -1.865 & -1.601 & -1.858 \\
##   & (1.180) & (1.169) & (1.180) \\
##   sc\_code34 & -0.681 & -0.550 & -0.699 \\
##   & (1.366) & (1.353) & (1.367) \\
##   sc\_code35 & 1.929^{*} & 2.022^{*} & 1.938^{*} \\
##   & (1.168) & (1.157) & (1.169) \\
##   sc\_code36 & 7.403^{***} & 6.312^{***} & 7.450^{***} \\
##   & (1.593) & (1.581) & (1.596) \\
##   sc\_code51 & 1.013 & 1.030 & 1.032 \\
##   & (1.357) & (1.343) & (1.357) \\
##   sc\_code52 & 2.538^{*} & 3.306^{**} & 2.574^{*} \\
##   & (1.398) & (1.386) & (1.398) \\
##   sc\_code61 & 10.960 & 6.123 & 11.014 \\
##   & (15.225) & (15.079) & (15.228) \\
##   sc\_code62 & 8.457 & 6.062 & 8.476 \\
##   & (6.039) & (5.982) & (6.041) \\
##   sc\_code63 & -2.572^{*} & -2.427 & -2.590^{*} \\
##   & (1.557) & (1.542) & (1.558) \\
##   sc\_code64 & 6.125 & 5.399 & 6.177 \\
##   & (4.409) & (4.365) & (4.416) \\
##   sc\_code73 & -0.523 & -0.311 & -0.508 \\
##   & (1.553) & (1.538) & (1.554) \\
##   sc\_code76 & -5.631 & -5.051 & -5.600 \\
##   & (5.622) & (5.566) & (5.624) \\
##   sc\_code91 & 26.299 & 27.321 & 26.345 \\
##   & (21.480) & (21.263) & (21.484) \\
##   wave & 1.640^{***} & 1.505^{***} & 1.661^{***} \\
##   & (0.518) & (0.513) & (0.517) \\
##   mills1 & -2.192^{**} & -2.087^{**} &  \\
##   & (0.946) & (0.936) &  \\
##   mills2 &  &  & -2.174^{**} \\
##   &  &  & (0.945) \\
##   log(wage\_rate) & -8.150^{***} & -9.950^{***} & -8.148^{***} \\
##   & (0.222) & (0.266) & (0.223) \\
##   job\_cat3:informal business owner:log(wage\_rate) &  & 6.388^{***} &  \\
```

```
##   &  & (1.325) &  \\
##   job\_cat4:government:log(wage\_rate) &  & 7.048^{***} &  \\
##   &  & (0.887) &  \\
##   job\_cat5:private:log(wage\_rate) &  & 5.548^{***} &  \\
##   &  & (0.520) &  \\
##   job\_cat6:casual:log(wage\_rate) &  & 2.545^{***} &  \\
##   &  & (0.775) &  \\
##   Constant & 89.276^{***} & 106.917^{***} & 89.114^{***} \\
##   & (5.053) & (5.207) & (5.045) \\
##  Observations & \multicolumn{1}{c}{7,909} & \multicolumn{1}{c}{7,909} & \multicolumn{1}{c}{7,909} \\
## R$^{2}$ & \multicolumn{1}{c}{0.195} & \multicolumn{1}{c}{0.211} & \multicolumn{1}{c}{0.195} \\
## Adjusted R$^{2}$ & \multicolumn{1}{c}{0.191} & \multicolumn{1}{c}{0.207} & \multicolumn{1}{c}{0.191}
## Residual Std. Error & \multicolumn{1}{c}{21.434 (df = 7871)} & \multicolumn{1}{c}{21.218 (df = 7867)}
## F Statistic & \multicolumn{1}{c}{51.500$^{***}$ (df = 37; 7871)} & \multicolumn{1}{c}{51.464$^{***}$
## \hline \\[-1.8ex]
## \textit{Notes:} & \multicolumn{3}{l}{$^{***}$Significant at the 1 percent level.} \\
##  & \multicolumn{3}{l}{$^{**}$Significant at the 5 percent level.} \\
##  & \multicolumn{3}{l}{$^{*}$Significant at the 10 percent level.} \\
## \end{tabular}
## \end{table}
```

```
#summary of job losses

jl_data <- clean %>%
                  select(wave, jl)%>%
                  group_by(wave, jl) %>%
                  summarize(count = n())

jl_data_2 <- clean %>%
                  select(wave, jl_2)%>%
                  group_by(wave, jl_2) %>%
                  summarize(count = n())

jl_year_data <- clean %>%
                  select(wave, jl_year, jl_year_fired)%>%
                  group_by(wave, jl_year) %>%
                  summarize(count = n(), fired = sum(jl_year_fired != 0)) %>%
                  ungroup() %>%
                  filter(jl_year != 0) %>%
                  gather(key = stat, value = jobs, cols = 3:4) %>%
                  mutate(wave_stat = paste0("wave", wave, " - ", stat))%>%
                  select( -c(wave, stat))%>%
                  spread(wave_stat, jobs)

jl_year_data <- jl_year_data %>%
                  rbind(c("total", colSums(jl_year_data[,2:5])))

stargazer(jl_year_data, summary = FALSE, rownames = FALSE)
```

```
##
## % Table created by stargazer v.5.2 by Marek Hlavac, Harvard University. E-mail: hlavac at fas.harvar
## % Date and time: Tue, May 01, 2018 - 10:01:47 AM
## \begin{table}[!htbp] \centering
##   \caption{}
##   \label{}
```

```
## \begin{tabular}{@{\extracolsep{5pt}} ccccc}
## \\[-1.8ex]\hline
## \hline \\[-1.8ex]
## jl\_year & wave4 - count & wave4 - fired & wave5 - count & wave5 - fired \\
## \hline \\[-1.8ex]
## 1 & 140 & 44 & 290 & 64 \\
## 2 & 117 & 40 & 207 & 40 \\
## 3 & 82 & 30 & 133 & 31 \\
## 4 & 79 & 23 & 109 & 18 \\
## 5 & 47 & 16 & 93 & 16 \\
## total & 465 & 153 & 832 & 169 \\
## \hline \\[-1.8ex]
## \end{tabular}
## \end{table}
```

```
labor_stats <- clean %>%
                  select(wave, employed2, employed2_H, tk22a, tk22a_H, wage_rate, wage_rate_H)%>%
                  gather(key = var, value = value, cols = 2:7) %>%
                  group_by(wave, var) %>%
                  filter(!(is.na(value))) %>%
                  summarize(mean = round(mean(as.numeric(value)),4), sd = round(sd(value),4)) %>%
                  gather(key = stat, value = value, cols = 3:4) %>%
                  mutate(wave_stat = paste0("wave", wave, " - ", stat)) %>%
                  ungroup() %>%
                  select( -c(wave, stat)) %>%
                  spread(wave_stat, value)



stargazer(labor_stats, summary = FALSE, rownames = FALSE)
```

```
##
## % Table created by stargazer v.5.2 by Marek Hlavac, Harvard University. E-mail: hlavac at fas.harvar
## % Date and time: Tue, May 01, 2018 - 10:01:47 AM
## \begin{table}[!htbp] \centering
##   \caption{}
##   \label{}
## \begin{tabular}{@{\extracolsep{5pt}} ccccc}
## \\[-1.8ex]\hline
## \hline \\[-1.8ex]
## var & wave4 - mean & wave4 - sd & wave5 - mean & wave5 - sd \\
## \hline \\[-1.8ex]
## employed2 & 0.3585 & 0.4796 & 0.4345 & 0.4957 \\
## employed2\_H & 0.8814 & 0.3233 & 0.8558 & 0.3513 \\
## tk22a & 38.6727 & 22.2036 & 38.8595 & 24.8547 \\
## tk22a\_H & 44.5729 & 18.6461 & 43.7957 & 19.8792 \\
## wage\_rate & 48558.8279 & 1729893.1626 & 15635.0557 & 121256.4511 \\
## wage\_rate\_H & 187210.3814 & 15359977.4905 & 439999.4074 & 40938113.5022 \\
## \hline \\[-1.8ex]
## \end{tabular}
## \end{table}
```

```
dependents_sum <- clean %>%
                        select(dependents_young, dependents_old, working_dependents, other_HHM, other_w
```

```
stargazer(dependents_sum, summary.stat = c("mean", "sd"))
```

```
##
## % Table created by stargazer v.5.2 by Marek Hlavac, Harvard University. E-mail: hlavac at fas.harvar
## % Date and time: Tue, May 01, 2018 - 10:01:47 AM
## \begin{table}[!htbp] \centering
##   \caption{}
##   \label{}
## \begin{tabular}{@{\extracolsep{5pt}}lcc}
## \\[-1.8ex]\hline
## \hline \\[-1.8ex]
## Statistic & \multicolumn{1}{c}{Mean} & \multicolumn{1}{c}{St. Dev.} \\
## \hline \\[-1.8ex]
## dependents\_young & 0.508 & 0.642 \\
## dependents\_old & 0.617 & 0.795 \\
## working\_dependents & 0.009 & 0.110 \\
## other\_HHM & 5.004 & 3.200 \\
## other\_working & 2.962 & 1.838 \\
## \hline \\[-1.8ex]
## \end{tabular}
## \end{table}
```