SES DRC Correlation

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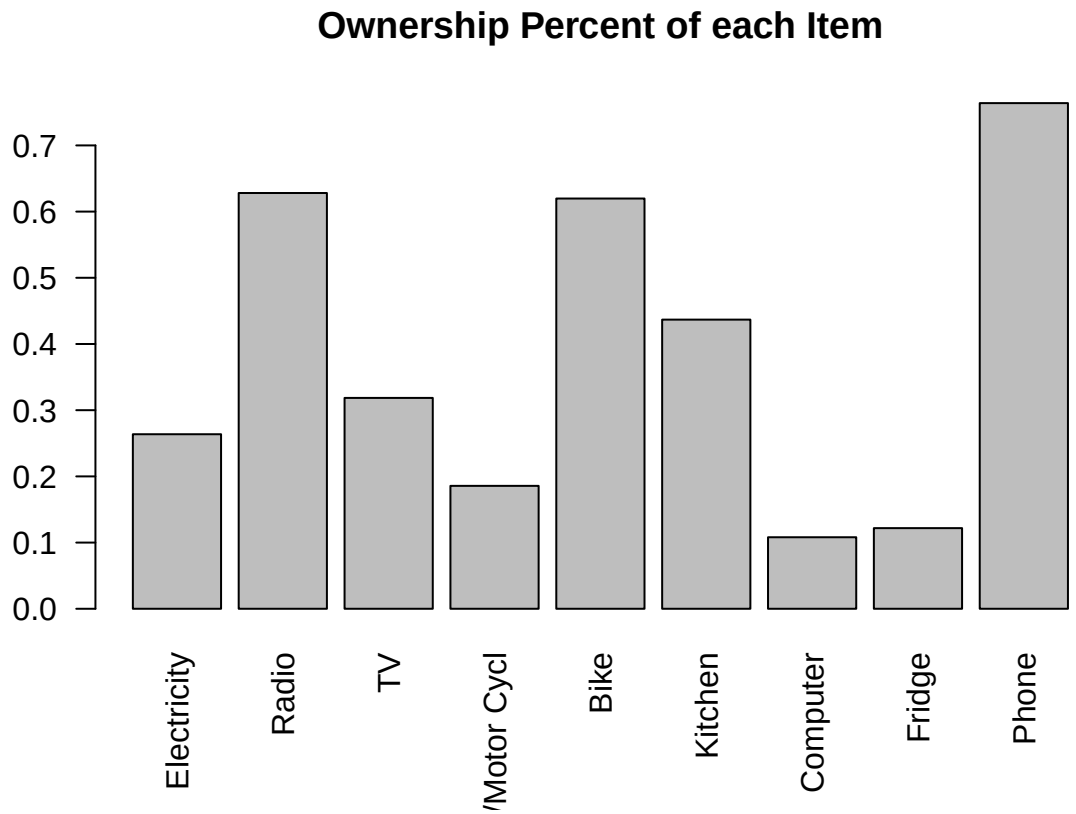
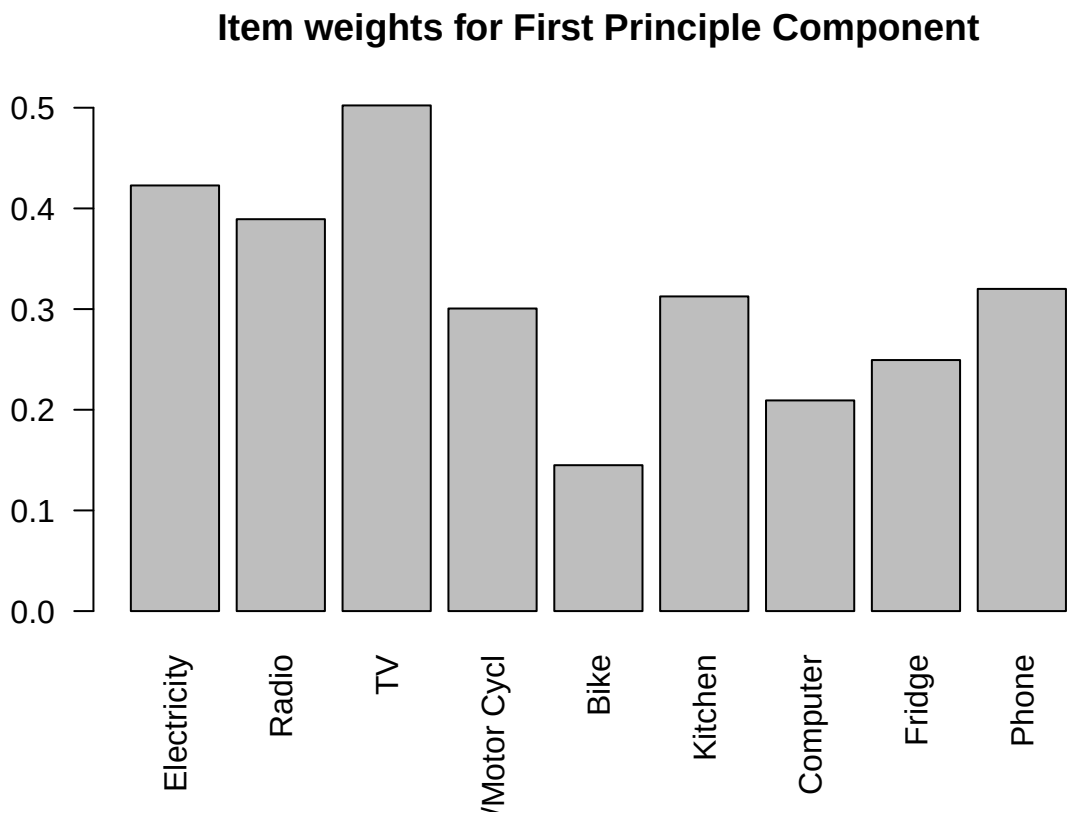
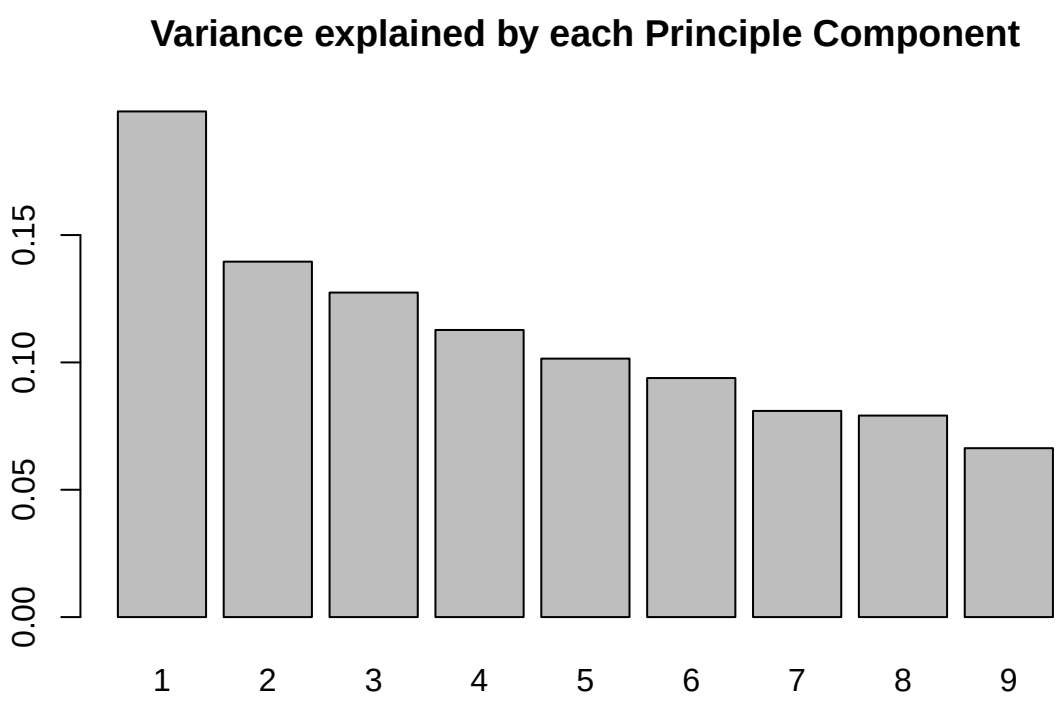
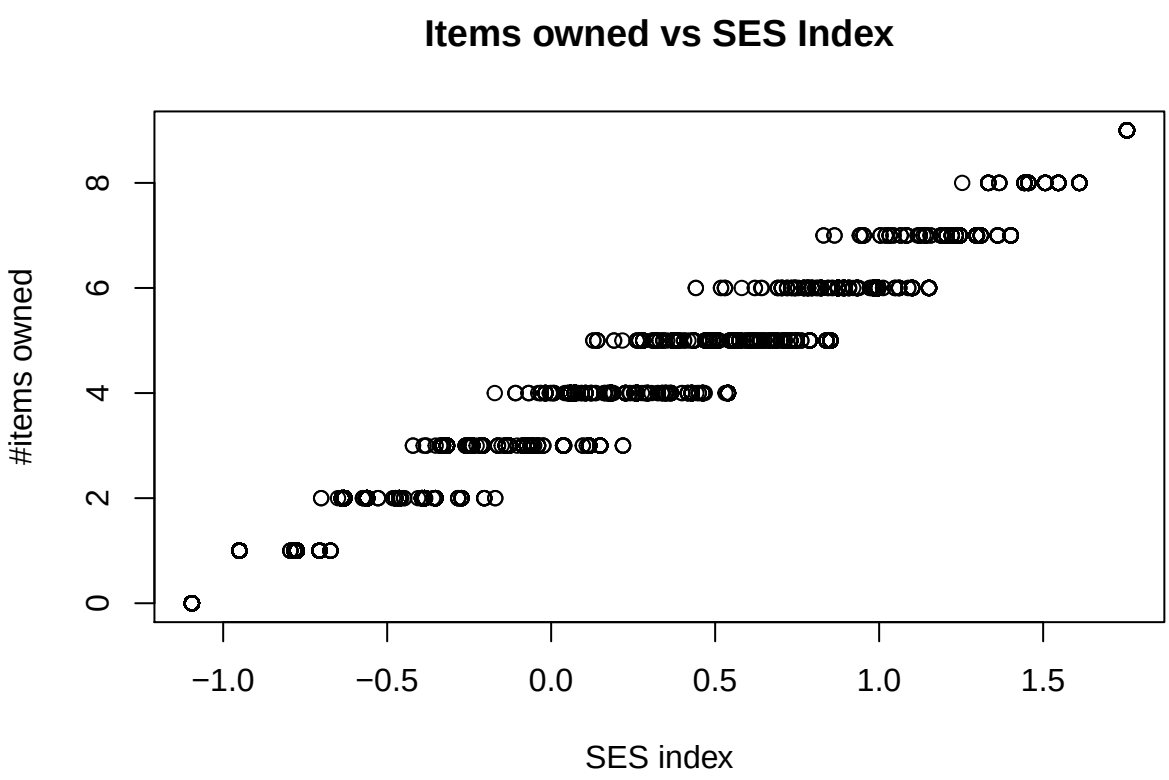
Coherence and Summary Statistics

First we will describe the percentage of the population which claims ownership of each asset.




Item weights for First Principle Component
0.5
0.4
0.3
0.2
0.1
0.0
Electricity
Radio
TV
/Motor Cycl
Bike
Kitchen
Computer
Fridge
Phone


Variance explained by each Principle Component
0.00
0.05
0.10
0.15
1
2
3
4
5
6
7
8
9



There are no students which were observed at two of baseline, midline or endline, meaning there is no opportunity for validating consistency of answers to SES questions.

```
length(unique(data$id[data$treat_phase==10]))+length(unique(data$id[data$treat_phase==11])) - length(uni
```

```
## [1] 0
```

```
length(unique(data$id[data$treat_phase==10]))+length(unique(data$id[data$treat_phase==12])) - length(uni
```

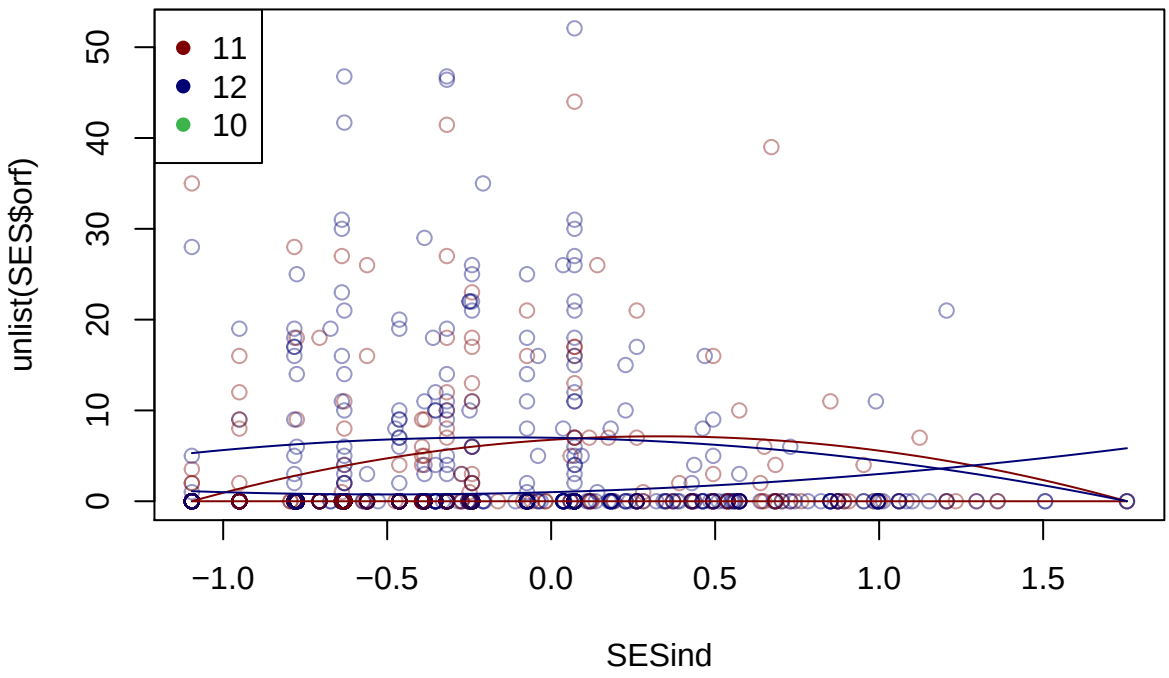
```
## [1] 0
```

```
length(unique(data$id[data$treat_phase==11]))+length(unique(data$id[data$treat_phase==12])) - length(uni
```

```
## [1] 0
```

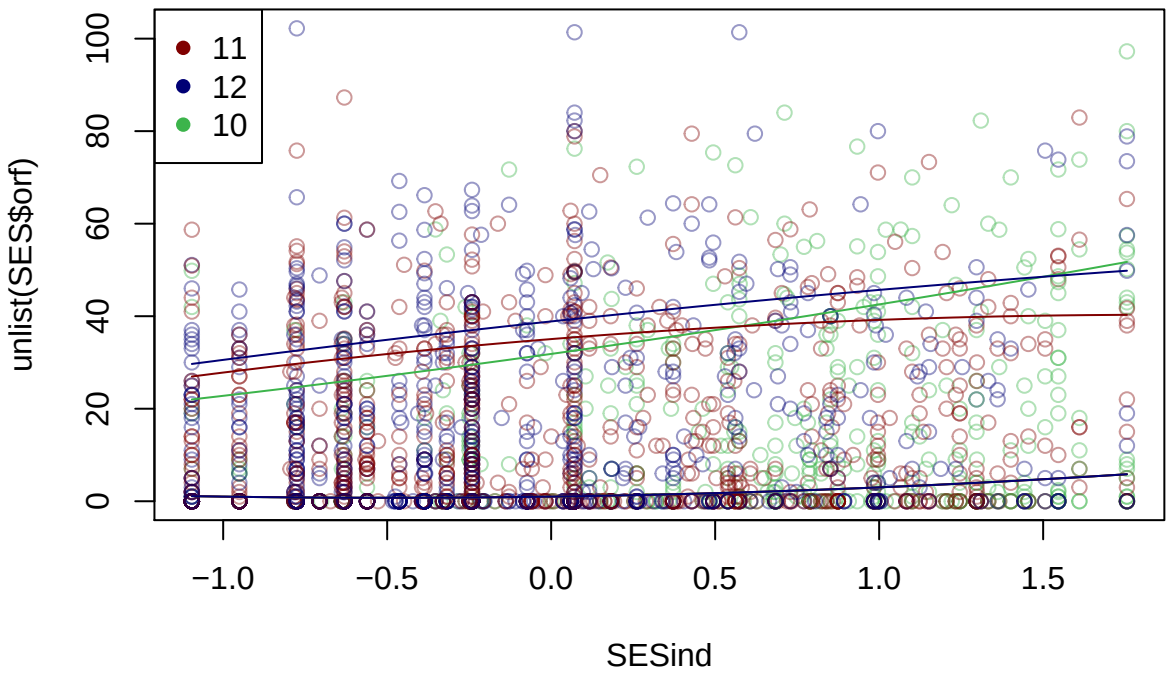
N-tile SES-index Analysis of Gini and Mean ORF

First we conduct quantile analysis, evaluating the Gini coefficient, mean ORF, CV, and percent zero for each of the 2,3,4-tiles of our SES index. We segment into subpopulations by language and grade, producing quantile regressions for It appears from the above analysis that the majority of change in MRF occurs in the lowest tertile of wealth.




```
## [1] "Treat phase 11 quantile regression tests:"
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.15, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.15
##
## Coefficients:
##   Value      Std. Error t value    Pr(>|t|)
## a          0          0 -664785188          0
## b          0          0  126896912          0
## c          0          0 1470633592          0
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.85, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.85
##
## Coefficients:
##   Value    Std. Error t value  Pr(>|t|)
## a -3.51751  1.72150   -2.04328  0.04172
## b  2.32138  1.50160    1.54593  0.12296
```

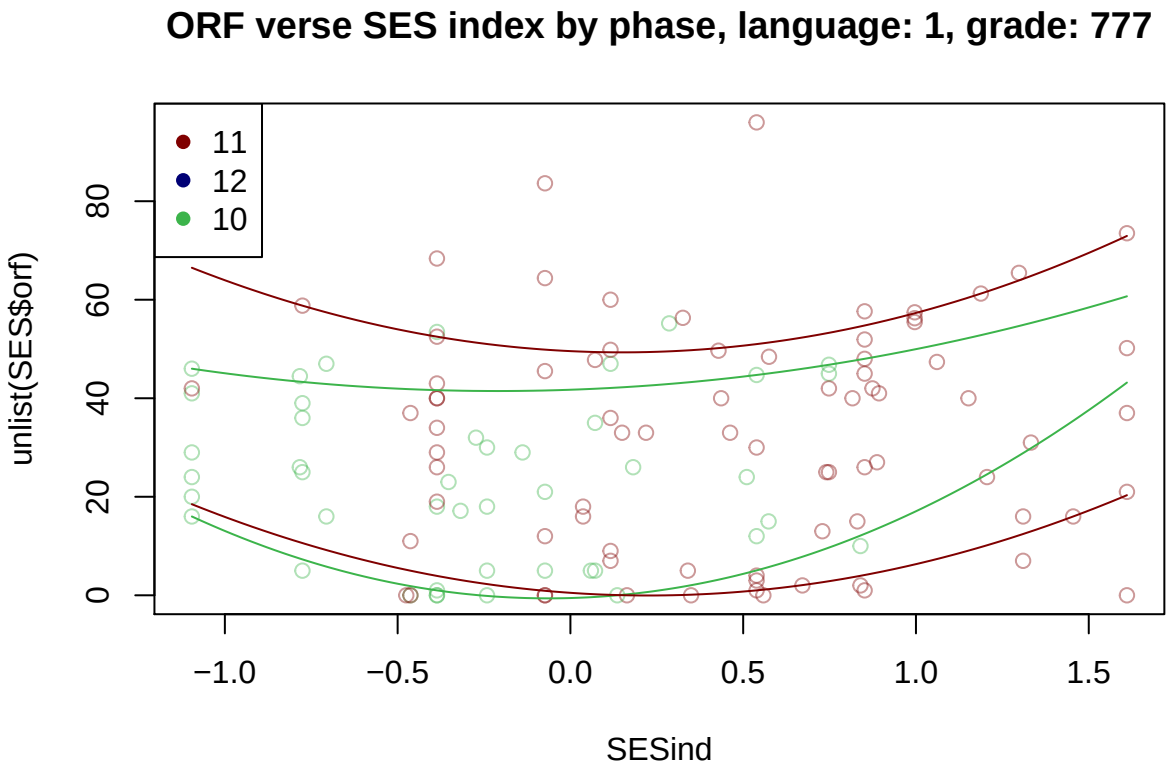
```
## c  6.76499  1.70466    3.96854  0.00009
## [1] "Treat phase 12 quantile regression tests:"
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.15, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.15
##
## Coefficients:
##   Value      Std. Error t value    Pr(>|t|)
## a          1          0  920743460          0
## b          1          0  541739165          0
## c          1          0 1324864611          0
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.85, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.85
##
## Coefficients:
##   Value    Std. Error t value  Pr(>|t|)
## a -1.93753  2.03515   -0.95203  0.34146
## b -0.58031  2.11284   -0.27466  0.78367
## c  6.99005  1.70622    4.09680  0.00005
```




```
## [1] "Treat phase 10 quantile regression tests:"
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.15, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.15
##
## Coefficients:
##   Value     Std. Error t value   Pr(>|t|)
## a         1         0  159800770         0
## b         1         0  543146786         0
## c         1         0  356025471         0
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.85, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.85
##
## Coefficients:
##   Value    Std. Error t value  Pr(>|t|)
## a  0.82294  2.86211    0.28753  0.77383
## b  9.88139  3.76223    2.62647  0.00890
```

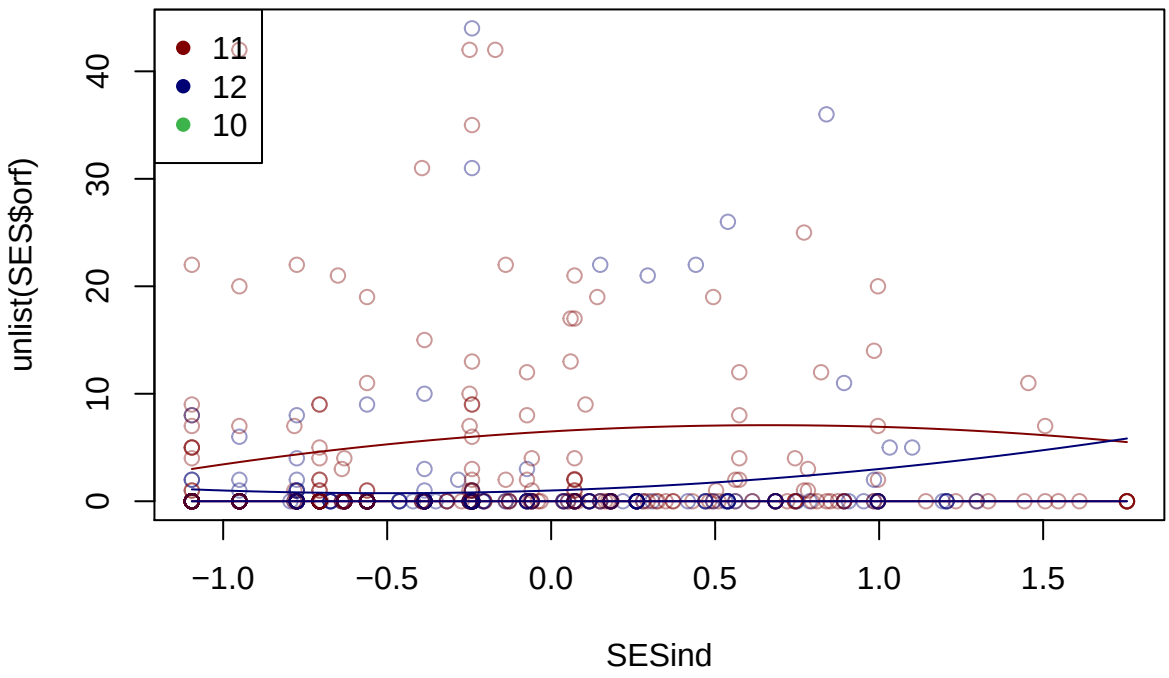
```
## c 31.84564  2.32000   13.72658  0.00000
## [1] "Treat phase 11 quantile regression tests:"
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.15, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.15
##
## Coefficients:
##   Value     Std. Error t value   Pr(>|t|)
## a         1         0  340213106         0
## b         1         0  397920792         0
## c         1         0  690797716         0
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.85, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.85
##
## Coefficients:
##   Value    Std. Error t value  Pr(>|t|)
## a -1.54352  2.25447   -0.68465  0.49372
## b  5.69362  2.05867    2.76567  0.00578
## c 35.05244  1.49235   23.48802  0.00000
## [1] "Treat phase 12 quantile regression tests:"
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.15, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.15
##
## Coefficients:
##   Value     Std. Error t value   Pr(>|t|)
## a         1         0  274652093         0
## b         1         0  236505718         0
## c         1         0  601268353         0
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.85, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.85
##
## Coefficients:
##   Value    Std. Error t value  Pr(>|t|)
## a -0.75139  3.37877   -0.22239  0.82407
## b  7.56326  2.33439    3.23993  0.00124
```

```
## c 38.86883  2.05050   18.95580  0.00000
```



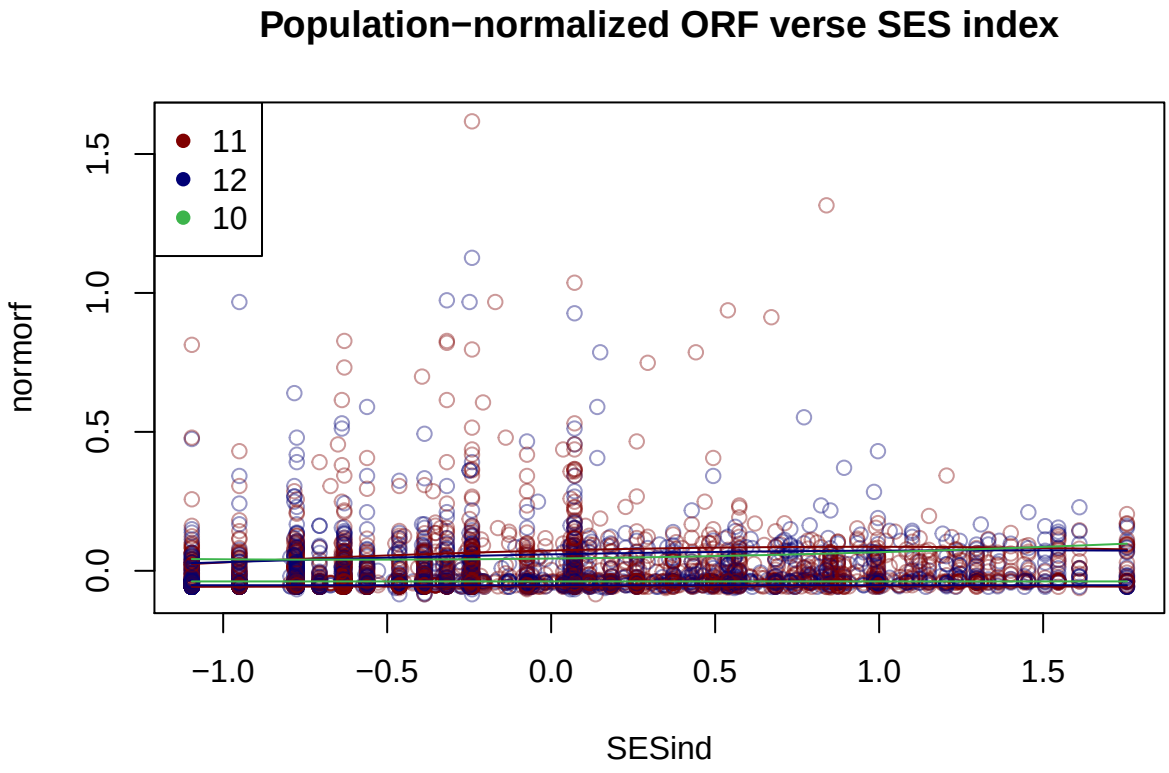

```
## [1] "Treat phase 10 quantile regression tests:"
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.15, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.15
##
## Coefficients:
##   Value    Std. Error t value  Pr(>|t|)
## a 15.62039  8.36927    1.86640  0.06915
## b  1.99883  7.34126    0.27227  0.78678
## c -0.55817  2.74030   -0.20369  0.83960
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.85, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.85
##
## Coefficients:
##   Value    Std. Error t value  Pr(>|t|)
```

```
## a  5.79471 14.35009    0.40381  0.68845
## b  2.44726 10.12305    0.24175  0.81018
## c 41.72613  7.89182    5.28726  0.00000
## [1] "Treat phase 11 quantile regression tests:"
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.15, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.15
##
## Coefficients:
##   Value    Std. Error t value  Pr(>|t|)
## a 10.61616  7.42947    1.42893  0.15712
## b -4.79249  9.15394   -0.52354  0.60212
## c  0.50002  3.79157    0.13188  0.89543
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.85, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.85
##
## Coefficients:
##   Value    Std. Error t value  Pr(>|t|)
## a 11.07440  7.99950    1.38439  0.17029
## b -3.31774  8.39967   -0.39498  0.69396
## c 49.56654  5.16818    9.59072  0.00000
```




```
## [1] "Treat phase 11 quantile regression tests:"
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.15, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.15
##
## Coefficients:
##   Value      Std. Error t value    Pr(>|t|)
## a          0          0 -113437338          0
## b          0          0  -24939603          0
## c          0          0  398212713          0
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.85, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.85
##
## Coefficients:
##   Value    Std. Error t value  Pr(>|t|)
## a -1.31827  1.75616   -0.75066  0.45339
## b  1.74773  1.47899    1.18171  0.23816
```

```
## c  6.49681  2.52530    2.57269  0.01052
## [1] "Treat phase 12 quantile regression tests:"
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.15, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.15
##
## Coefficients:
##   Value      Std. Error t value    Pr(>|t|)
## a          0          0 -152070997          0
## b          0          0 -250107216          0
## c          0          0 1404162210          0
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.85, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.85
##
## Coefficients:
##   Value   Std. Error t value Pr(>|t|)
## a 1.00000 1.15691    0.86437 0.38823
## b 1.00000 1.13854    0.87832 0.38063
## c 1.00000 0.38400    2.60417 0.00977
```




```
## [1] "Treat phase 11 quantile regression tests:"
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.15, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.15
##
## Coefficients:
##   Value      Std. Error t value    Pr(>|t|)
## a   -0.00065    0.00083   -0.78595    0.43200
## b    0.00071    0.00085    0.83754    0.40240
## c   -0.05604    0.00024 -236.28209    0.00000
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.85, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.85
##
## Coefficients:
##   Value    Std. Error t value  Pr(>|t|)
## a -0.01472  0.00851   -1.72922  0.08394
## b  0.02814  0.00727    3.87067  0.00011
```

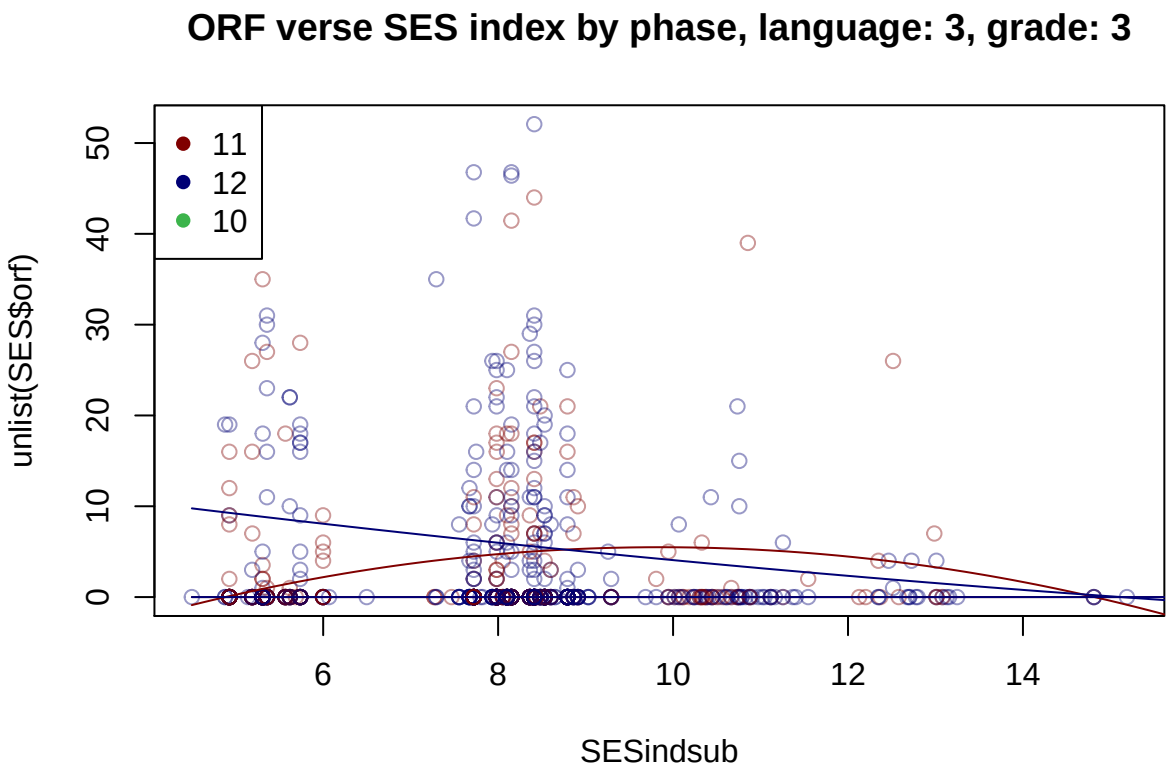
```
## c  0.07298  0.00708   10.31103  0.00000
## [1] "Treat phase 12 quantile regression tests:"
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.15, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.15
##
## Coefficients:
##   Value         Std. Error    t value       Pr(>|t|)
## a  0.000000e+00  0.000000e+00  1.929048e+04  0.000000e+00
## b  0.000000e+00  0.000000e+00 -8.918076e+03  0.000000e+00
## c -5.191000e-02  0.000000e+00 -2.769537e+09  0.000000e+00
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.85, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.85
##
## Coefficients:
##   Value    Std. Error t value  Pr(>|t|)
## a -0.00749  0.00944   -0.79386  0.42739
## b  0.02082  0.00598    3.47971  0.00051
## c  0.05929  0.00730    8.12547  0.00000
## [1] "Treat phase 10 quantile regression tests:"
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.15, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.15
##
## Coefficients:
##   Value         Std. Error    t value       Pr(>|t|)
## a  0.000000e+00  0.000000e+00  3.775676e+03  0.000000e+00
## b  0.000000e+00  0.000000e+00 -7.709434e+03  0.000000e+00
## c -3.812000e-02  0.000000e+00 -5.940381e+08  0.000000e+00
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.85, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.85
##
## Coefficients:
##   Value   Std. Error t value Pr(>|t|)
## a 0.01013 0.00869    1.16548 0.24436
## b 0.01279 0.01198    1.06732 0.28632
```

```
## c 0.04413 0.00575    7.67866 0.00000
##      X1  X2 X3                    X4    X5     X6                    X7     X8
##                language: 3, grade: 3             language: 1, grade: 5
##          Q# 10                    11    12     10                    11     12
##    Gini   1                   0.913 0.875  0.705                 0.682  0.696
##           2                   0.849 0.896  0.643                 0.674   0.64
##         All                   0.895 0.883  0.663                 0.677  0.675
##      CV   1                   3.088 2.524  1.436                 1.366  1.412
##           2                   2.267 2.807  1.244                 1.331  1.235
##         All                   2.818 2.641  1.309                 1.348  1.346
##      %0   1                   0.838 0.779  0.529                 0.444  0.494
##           2                   0.719 0.816  0.334                 0.436  0.405
##         All                   0.808 0.796   0.38                 0.438  0.457
##     MRF   1                   1.838 3.091  9.666                11.774 12.159
##           2                     3.5 2.336  16.57                14.024 17.607
##         All                   2.252 2.762 15.297                12.971 14.515
##  Counts                         381   607    482                  1007    836
##      X9                    X10 X11 X12                   X13   X14
##         language: 1, grade: 777         language: 2, grade: 3
##      10                     11  12  10                    11    12
##   0.405                  0.346                        0.905 0.959
##   0.435                  0.421                        0.831  0.94
##   0.411                  0.404                        0.884 0.953
##   0.698                  0.595                        3.026 5.153
##   0.743                  0.737                        2.062 3.455
##   0.709                  0.707                        2.712 4.337
##   0.143                  0.133                        0.783 0.871
##   0.062                  0.094                        0.664 0.881
##   0.114                  0.101                        0.749 0.874
##  22.896                 33.378                        2.257 0.859
##  24.795                 31.938                        2.711 1.821
##  23.587                 32.212                         2.36 1.186
##      44                     79                          339   247
##      X1  X2 X3                    X4    X5     X6                    X7     X8
##                language: 3, grade: 3             language: 1, grade: 5
##          Q# 10                    11    12     10                    11     12
##    Gini   1                   0.932 0.887  0.749                  0.69  0.708
##           2                   0.856 0.868  0.663                 0.686  0.682
##           3                   0.881 0.922  0.642                 0.661  0.611
##         All                   0.895 0.883  0.663                 0.677  0.675
##      CV   1                   3.452 2.654   1.58                 1.399   1.46
##           2                   2.318 2.451  1.307                 1.372  1.363
##           3                   2.616 3.054  1.242                 1.291  1.154
##         All                   2.818 2.641  1.309                 1.348  1.346
##      %0   1                   0.867 0.798  0.585                 0.451  0.505
##           2                    0.75 0.767  0.436                  0.46   0.47
##           3                   0.731 0.869  0.324                 0.408  0.363
##         All                   0.808 0.796   0.38                 0.438  0.457
##     MRF   1                   1.457 2.684  8.182                11.691 11.661
##           2                   3.329 3.361 13.444                12.673 14.521
##           3                   2.558 1.283 16.657                14.239 18.377
##         All                   2.252 2.762 15.297                12.971 14.515
##  Counts                         381   607    482                  1007    836
##      X9                    X10 X11 X12                   X13   X14
```

```
##         language: 1, grade: 777         language: 2, grade: 3
##      10                      11  12  10                    11    12
##   0.311                   0.599                       0.914 0.941
##    0.52                   0.389                       0.856 0.965
##    0.34                   0.406                       0.853 0.926
##   0.411                   0.404                       0.884 0.953
##    0.53                   0.991                       3.193 3.639
##   0.914                   0.671                       2.358 4.488
##   0.577                    0.71                       2.207 3.018
##   0.709                   0.707                       2.712 4.337
##   0.067                   0.333                       0.807 0.883
##    0.19                   0.115                       0.673  0.88
##       0                   0.064                       0.698 0.849
##   0.114                   0.101                       0.749 0.874
##  27.632                    24.8                       1.747 0.423
##  17.647                  33.347                       3.414 1.422
##  31.591                   32.53                        2.46 2.415
##  23.587                  32.212                        2.36 1.186
##      44                      79                         339   247
##      X1  X2 X3                    X4    X5     X6                    X7     X8
##               language: 3, grade: 3             language: 1, grade: 5
##         Q# 10                    11    12     10                    11     12
##    Gini   1                   0.941 0.887  0.809                 0.707  0.707
##           2                   0.896 0.869  0.651                 0.668   0.69
##           3                   0.825  0.88  0.669                 0.686  0.684
##           4                   0.905 0.971  0.635                 0.663  0.572
##         All                   0.895 0.883  0.663                 0.677  0.675
##      CV   1                   3.591 2.556  1.896                 1.438  1.469
##           2                   2.801 2.496  1.254                 1.327   1.38
##           3                   2.028 2.578  1.322                  1.37  1.361
##           4                   2.952 4.383  1.219                 1.296  1.067
##         All                   2.818 2.641  1.309                 1.348  1.346
##      %0   1                   0.879  0.82  0.644                 0.492  0.487
##           2                   0.806 0.756  0.461                 0.415  0.498
##           3                   0.689 0.786  0.418                 0.481  0.458
##           4                   0.771 0.927  0.304                 0.392   0.32
##         All                   0.808 0.796   0.38                 0.438  0.457
##     MRF   1                   1.537  2.68  6.262                11.102 11.301
##           2                   2.072 3.329 11.682                12.189 12.686
##           3                   4.148 2.772 14.898                  13.7 16.038
##           4                   2.371 0.745 17.179                14.343  20.13
##         All                   2.252 2.762 15.297                12.971 14.515
##  Counts                       381   607    482                  1007    836
##      X9                    X10 X11 X12                   X13   X14
##         language: 1, grade: 777         language: 2, grade: 3
##      10                      11  12  10                    11    12
##   0.258                   0.167                       0.908 0.923
##   0.567                   0.375                       0.903 0.971
##   0.501                   0.463                       0.856 0.955
##    0.36                   0.407                       0.812 0.936
##   0.411                   0.404                       0.884 0.953
##   0.438                   0.236                       3.123 3.173
##   1.007                   0.644                       2.837 4.926
##   0.854                     0.8                        2.21 3.784
```

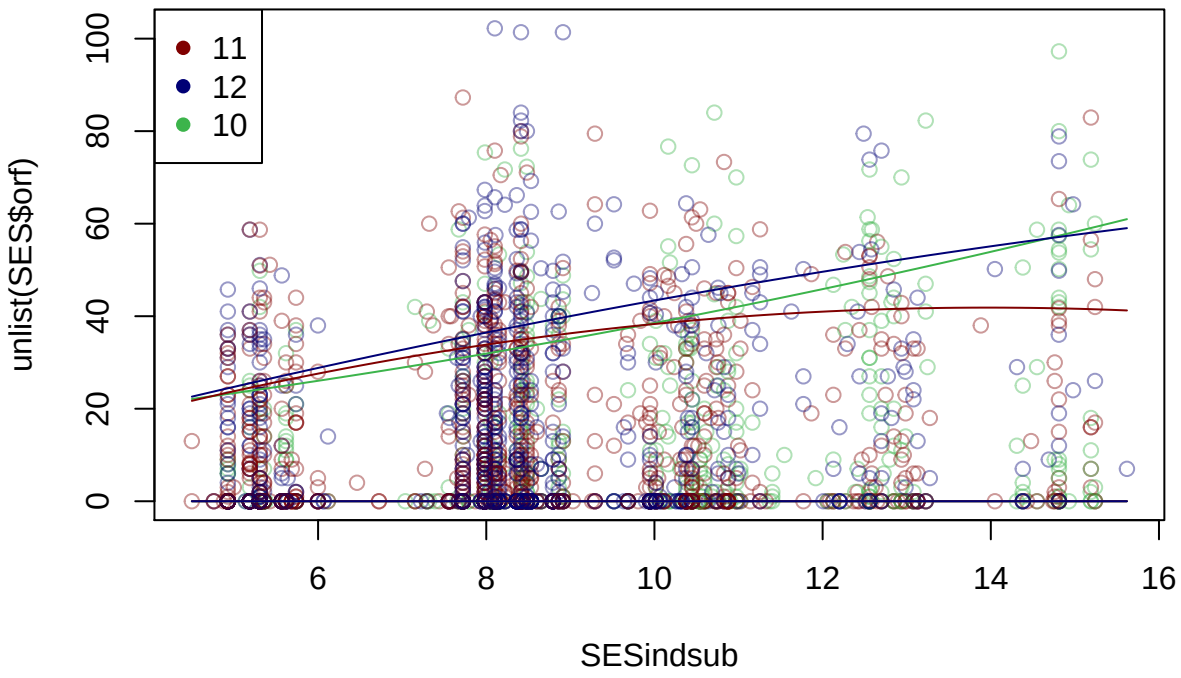
```
##   0.631                0.712                1.908 3.111
##   0.709                0.707                2.712 4.337
##       0                    0                0.795 0.848
##   0.286                0.154                0.768 0.893
##     0.1                0.174                0.694 0.918
##       0                0.049                0.622 0.829
##   0.114                0.101                0.749 0.874
##  29.606                 50.4                1.756 0.481
##  16.186               30.759                2.899 1.214
##   22.32               30.397                2.501 1.388
##  28.921               32.803                    3 2.429
##  23.587               32.212                 2.36 1.186
##      44                   79                  339   247
```

Linear Model Tables and Plots




```
## [1] "Treat phase 11 quantile regression tests:"
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.15, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.15
```

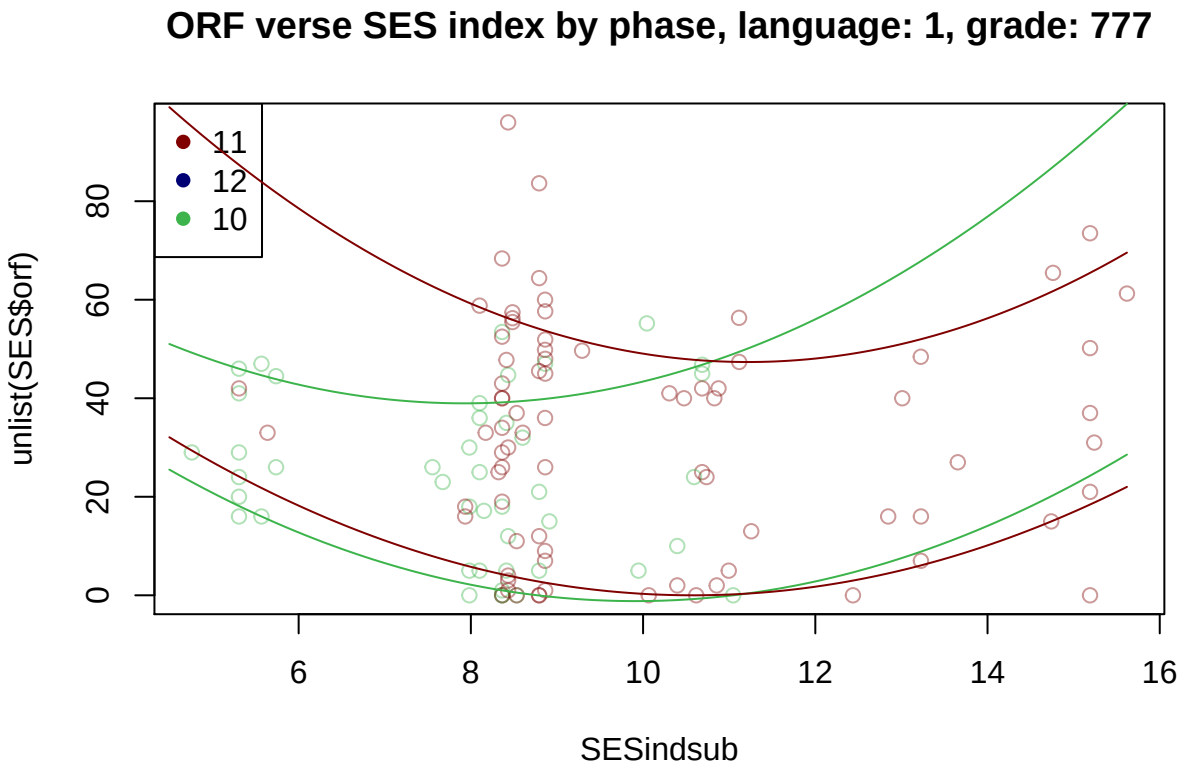
```
##
## Coefficients:
##   Value     Std. Error t value   Pr(>|t|)
## a         0         0   79096171         0
## b         0         0  -91769162         0
## c         0         0  178218504         0
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.85, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.85
##
## Coefficients:
##   Value     Std. Error t value   Pr(>|t|)
## a  -0.22243   0.22682   -0.98064   0.32740
## b   4.38208   3.61226    1.21311   0.22584
## c -16.09233  13.69248   -1.17527   0.24063
## [1] "Treat phase 12 quantile regression tests:"
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.15, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.15
##
## Coefficients:
##   Value     Std. Error t value   Pr(>|t|)
## a         0         0  123811883         0
## b         0         0  -92023234         0
## c         0         0  123872415         0
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.85, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.85
##
## Coefficients:
##   Value    Std. Error t value  Pr(>|t|)
## a  0.02269  0.21283    0.10660  0.91514
## b -1.36462  4.47415   -0.30500  0.76047
## c 15.44764 22.15879    0.69713  0.48599
```




```
## [1] "Treat phase 10 quantile regression tests:"
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.15, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.15
##
## Coefficients:
##   Value     Std. Error t value   Pr(>|t|)
## a         0          0   49131311         0
## b         0          0  -32304672         0
## c         0          0  115383853         0
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.85, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.85
##
## Coefficients:
##   Value    Std. Error t value  Pr(>|t|)
## a  0.09102  0.18215    0.49972  0.61750
## b  1.66430  3.63388    0.45799  0.64716
```

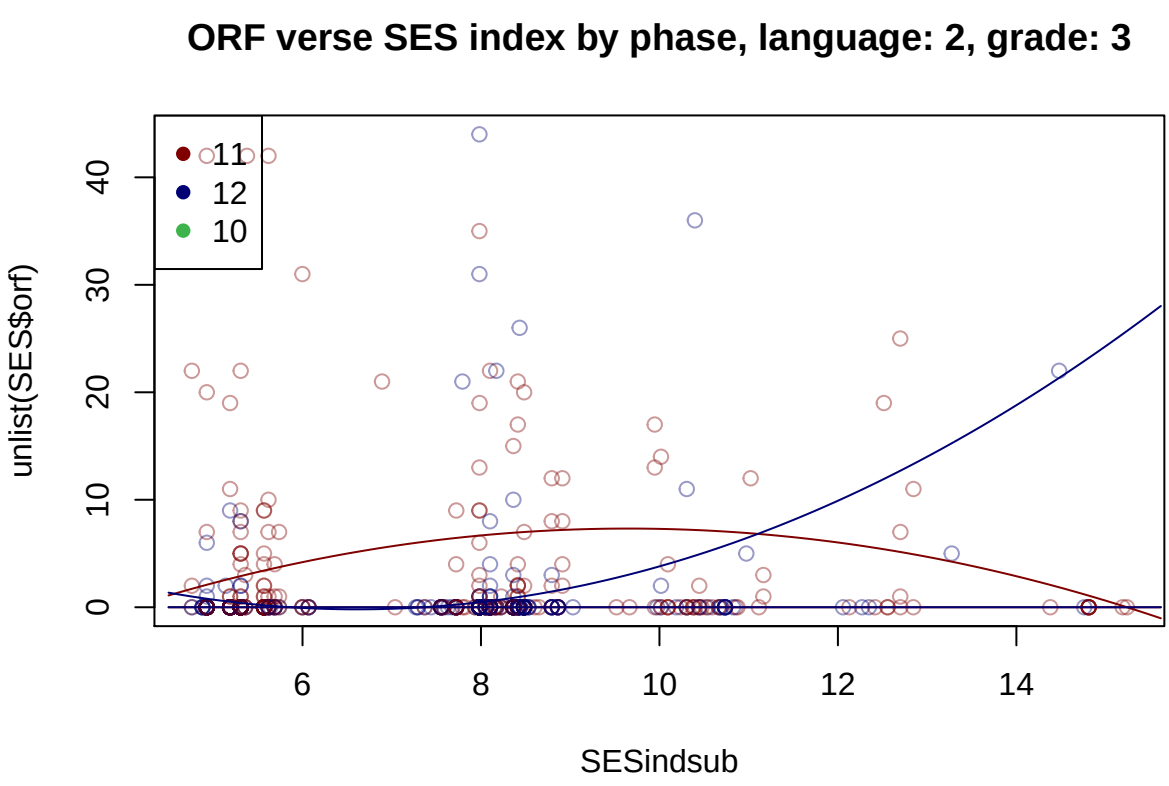
```
## c 12.77562 16.73327    0.76349  0.44555
## [1] "Treat phase 11 quantile regression tests:"
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.15, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.15
##
## Coefficients:
##   Value      Std. Error t value    Pr(>|t|)
## a          0          0   95974067          0
## b          0          0 -103158349          0
## c          0          0  280683168          0
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.85, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.85
##
## Coefficients:
##   Value    Std. Error t value  Pr(>|t|)
## a -0.22463  0.15945   -1.40883  0.15919
## b  6.27578  3.01733    2.07991  0.03779
## c -1.97941 13.62910   -0.14523  0.88456
## [1] "Treat phase 12 quantile regression tests:"
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.15, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.15
##
## Coefficients:
##   Value     Std. Error t value   Pr(>|t|)
## a         0          0   13381966         0
## b         0          0  -11674187         0
## c         0          0   25219504         0
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.85, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.85
##
## Coefficients:
##   Value    Std. Error t value  Pr(>|t|)
## a -0.08944  0.25482   -0.35101  0.72567
## b  5.07506  4.63866    1.09408  0.27424
```

```
## c  1.58517 21.04879    0.07531  0.93999
```



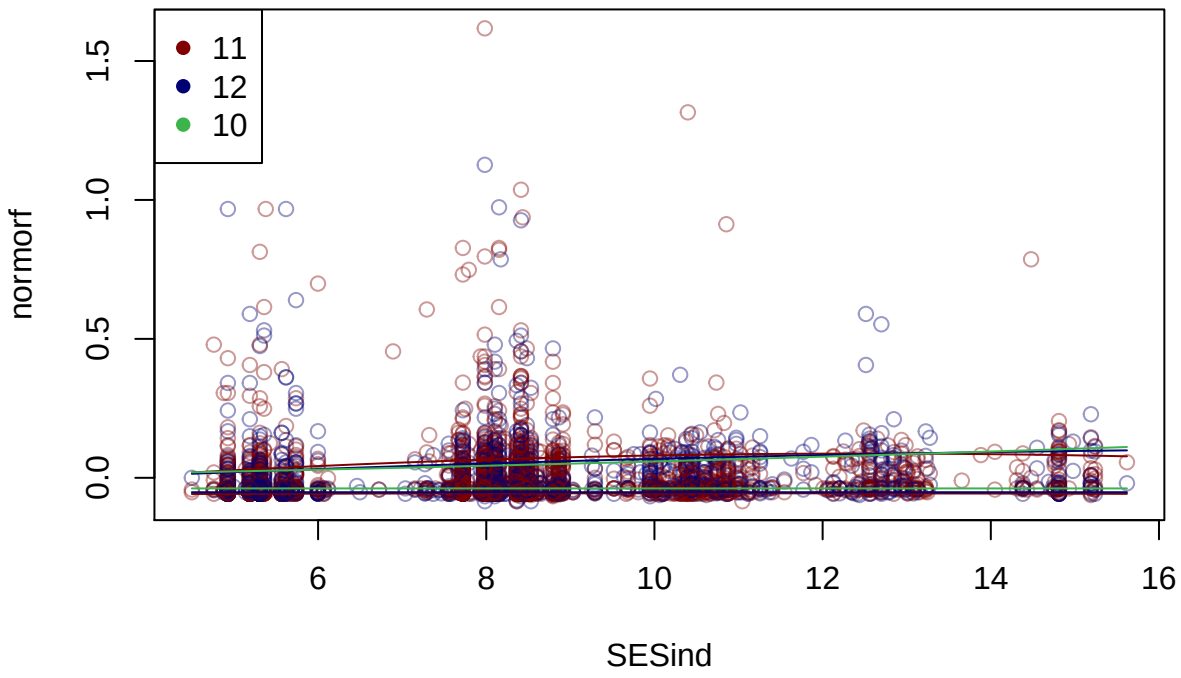

```
## [1] "Treat phase 10 quantile regression tests:"
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.15, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.15
##
## Coefficients:
##   Value     Std. Error t value   Pr(>|t|)
## a   0.91196   0.88055    1.03567   0.30643
## b -18.07230  12.68736   -1.42443   0.16189
## c  88.35552  44.01815    2.00725   0.05135
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.85, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.85
##
## Coefficients:
##   Value     Std. Error t value   Pr(>|t|)
```

```
## a   1.02683   1.14185    0.89927   0.37376
## b -16.27340  17.30879   -0.94018   0.35263
## c 103.44353  62.83870    1.64618   0.10737
## [1] "Treat phase 11 quantile regression tests:"
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.15, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.15
##
## Coefficients:
##   Value     Std. Error t value   Pr(>|t|)
## a   0.86719   0.46563    1.86239   0.06641
## b -18.35154   9.92847   -1.84838   0.06844
## c  97.08826  53.03661    1.83059   0.07108
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.85, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.85
##
## Coefficients:
##   Value     Std. Error t value   Pr(>|t|)
## a   1.14602   0.78485    1.46019   0.14836
## b -25.71006  17.86461   -1.43916   0.15421
## c 191.55234  97.03305    1.97409   0.05201
```




```
## [1] "Treat phase 11 quantile regression tests:"
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.15, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.15
##
## Coefficients:
##   Value     Std. Error t value   Pr(>|t|)
## a         0          0  -57855046         0
## b         0          0   58428913         0
## c         0          0  -30894895         0
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.85, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.85
##
## Coefficients:
##   Value     Std. Error t value   Pr(>|t|)
## a  -0.23434   0.18812   -1.24571   0.21374
## b   4.52311   3.31696    1.36363   0.17360
```

```
## c -14.50604  13.05459   -1.11118   0.26728
## [1] "Treat phase 12 quantile regression tests:"
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.15, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.15
##
## Coefficients:
##   Value     Std. Error t value   Pr(>|t|)
## a         0         0  -50008345         0
## b         0         0   63811714         0
## c         0         0  -50264723         0
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.85, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.85
##
## Coefficients:
##   Value    Std. Error t value  Pr(>|t|)
## a  0.34778  0.14221    2.44562  0.01517
## b -4.59781  1.92467   -2.38889  0.01766
## c 15.00170  6.44718    2.32686  0.02079
```




```
## [1] "Treat phase 11 quantile regression tests:"
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.15, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.15
##
## Coefficients:
##   Value     Std. Error t value   Pr(>|t|)
## a  -0.00007   0.00008   -0.91383   0.36093
## b   0.00148   0.00107    1.38257   0.16697
## c  -0.06335   0.00346  -18.33076   0.00000
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.85, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.85
##
## Coefficients:
##   Value    Std. Error t value  Pr(>|t|)
## a -0.00105  0.00048   -2.19261  0.02846
## b  0.02644  0.00932    2.83648  0.00461
```

```
## c -0.07861  0.04307   -1.82502  0.06816
## [1] "Treat phase 12 quantile regression tests:"
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.15, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.15
##
## Coefficients:
##   Value         Std. Error    t value       Pr(>|t|)
## a  0.000000e+00  0.000000e+00  1.974974e+01  0.000000e+00
## b  0.000000e+00  0.000000e+00 -2.423434e+01  0.000000e+00
## c -5.192000e-02  0.000000e+00 -5.828975e+07  0.000000e+00
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.85, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.85
##
## Coefficients:
##   Value    Std. Error t value  Pr(>|t|)
## a -0.00039  0.00076   -0.51211  0.60864
## b  0.01542  0.01320    1.16792  0.24300
## c -0.04688  0.05462   -0.85836  0.39081
## [1] "Treat phase 10 quantile regression tests:"
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.15, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.15
##
## Coefficients:
##   Value         Std. Error    t value       Pr(>|t|)
## a  0.000000e+00  0.000000e+00 -2.397745e+01  0.000000e+00
## b  0.000000e+00  0.000000e+00  2.360778e+01  0.000000e+00
## c -3.812000e-02  0.000000e+00 -1.624186e+08  0.000000e+00
##
## Call: nlrq(formula = quadrat, data = regdata, start = list(a = 1, b = 1,
##     c = 1), tau = 0.85, control = list(maxiter = 100, k = 2,
##     InitialStepSize = 1, big = 1e+20, eps = 1e-07, beta = 0.97),
##     trace = FALSE)
##
## tau: [1] 0.85
##
## Coefficients:
##   Value    Std. Error t value  Pr(>|t|)
## a  0.00019  0.00050    0.38220  0.70247
## b  0.00432  0.01057    0.40808  0.68338
```

```
## c -0.00338  0.05237   -0.06453  0.94858
##      X1  X2 X3                    X4    X5     X6                    X7     X8
##                language: 3, grade: 3             language: 1, grade: 5
##          Q# 10                    11    12     10                    11     12
##    Gini   1                   0.903 0.874  0.709                 0.688  0.705
##           2                   0.885 0.894  0.638                 0.665  0.633
##         All                   0.895 0.883  0.663                 0.677  0.675
##      CV   1                   2.898 2.507  1.474                 1.388  1.444
##           2                   2.669 2.798  1.229                 1.304  1.213
##         All                   2.818 2.641  1.309                 1.348  1.346
##      %0   1                   0.821 0.784   0.51                 0.455  0.506
##           2                   0.782 0.809   0.32                  0.42  0.396
##         All                   0.808 0.796   0.38                 0.438  0.457
##     MRF   1                   2.066   3.2 10.601                11.805  11.63
##           2                   2.637 2.278 17.439                  14.2 18.143
##         All                   2.252 2.762 15.297                12.971 14.515
##  Counts                         381   607    482                  1007    836
##      X9                    X10 X11 X12                   X13   X14
##         language: 1, grade: 777         language: 2, grade: 3
##      10                     11  12  10                    11    12
##   0.298                  0.285                        0.906 0.962
##   0.525                  0.418                        0.828 0.943
##   0.411                  0.404                        0.884 0.953
##   0.516                  0.474                        3.057 4.843
##   0.915                  0.733                        2.026 3.622
##   0.709                  0.707                        2.712 4.337
##   0.045                      0                        0.785 0.882
##   0.182                  0.111                         0.66 0.859
##   0.114                  0.101                        0.749 0.874
##  25.574                 33.467                        2.182     1
##  21.599                 31.704                        2.805  1.59
##  23.587                 32.212                         2.36 1.186
##      44                     79                          339   247
##      X1  X2 X3                    X4    X5     X6                    X7     X8
##                language: 3, grade: 3             language: 1, grade: 5
##          Q# 10                    11    12     10                    11     12
##    Gini   1                   0.925 0.866  0.692                 0.709  0.722
##           2                   0.877 0.878  0.671                 0.666  0.688
##           3                   0.892 0.919  0.645                  0.66  0.601
##         All                   0.895 0.883  0.663                 0.677  0.675
##      CV   1                   3.281 2.391  1.376                 1.462  1.486
##           2                   2.549 2.575  1.336                 1.317  1.396
##           3                   2.649 3.092  1.248                 1.284  1.124
##         All                   2.818 2.641  1.309                 1.348  1.346
##      %0   1                   0.846 0.769   0.51                  0.49  0.548
##           2                   0.787 0.788  0.411                 0.402  0.462
##           3                   0.763 0.849  0.321                 0.427  0.352
##         All                   0.808 0.796   0.38                 0.438  0.457
##     MRF   1                   1.621 3.372 10.308                10.824 10.319
##           2                    2.74 3.071 14.249                13.294 14.624
##           3                   2.661 1.302 17.473                14.555  19.03
##         All                   2.252 2.762 15.297                12.971 14.515
##  Counts                         381   607    482                  1007    836
##      X9                    X10 X11 X12                   X13   X14
```

```
##         language: 1, grade: 777         language: 2, grade: 3
##      10                      11  12  10                    11    12
##   0.215                   0.284                       0.907 0.967
##   0.523                   0.398                       0.886 0.953
##   0.473                   0.425                       0.823 0.932
##   0.411                   0.404                       0.884 0.953
##   0.373                   0.456                       3.095 4.947
##   0.907                   0.697                       2.594 4.038
##   0.807                   0.739                       1.965 3.136
##   0.709                   0.707                       2.712 4.337
##       0                       0                        0.78 0.919
##     0.2                    0.08                       0.736 0.847
##   0.091                   0.122                       0.677 0.816
##   0.114                   0.101                       0.749 0.874
##  29.806                   27.25                       2.194 0.477
##  18.816                  34.705                       2.363 1.592
##  24.909                  30.752                       2.855 2.211
##  23.587                  32.212                        2.36 1.186
##      44                      79                         339   247
##      X1  X2 X3                    X4    X5     X6                    X7     X8
##               language: 3, grade: 3             language: 1, grade: 5
##         Q# 10                    11    12     10                    11     12
##    Gini   1                   0.922 0.864  0.717                 0.718  0.745
##           2                   0.891 0.885  0.706                 0.663  0.676
##           3                   0.867 0.889  0.596                  0.68  0.665
##           4                   0.935 0.916  0.652                 0.654  0.596
##         All                   0.895 0.883  0.663                 0.677  0.675
##      CV   1                   3.161  2.32  1.478                 1.483  1.575
##           2                    2.69 2.649  1.452                 1.304  1.349
##           3                   2.431 2.707   1.11                 1.369  1.306
##           4                   3.325 2.921  1.266                 1.262  1.105
##         All                   2.818 2.641  1.309                 1.348  1.346
##      %0   1                   0.837 0.783  0.526                 0.516  0.587
##           2                   0.805 0.784  0.493                 0.399  0.451
##           3                   0.771 0.799  0.299                 0.432  0.439
##           4                   0.805 0.844  0.328                 0.412  0.343
##         All                   0.808 0.796   0.38                 0.438  0.457
##     MRF   1                   1.841 3.161  9.289                 9.956   8.79
##           2                   2.293 3.231 12.002                13.483 13.582
##           3                   2.855 2.554  16.85                13.139 17.521
##           4                   2.195 1.312 17.649                 14.97 18.911
##         All                   2.252 2.762 15.297                12.971 14.515
##  Counts                       381   607    482                  1007    836
##      X9                    X10 X11 X12                   X13   X14
##         language: 1, grade: 777         language: 2, grade: 3
##      10                      11  12  10                    11    12
##   0.215                   0.12                        0.907 0.961
##   0.438                   0.38                        0.915 0.945
##   0.561                  0.404                        0.808 0.973
##   0.509                  0.441                         0.86 0.915
##   0.411                  0.404                        0.884 0.953
##   0.373                   0.17                        3.075 4.371
##   0.727                  0.628                        2.988 3.598
##   0.973                  0.707                         1.89  4.62
```

```
##   0.844                0.763                2.197 2.705
##   0.709                0.707                2.712 4.337
##       0                    0                0.776 0.922
##   0.111                    0                0.809 0.818
##     0.2                0.095                0.592 0.902
##   0.143                0.133                0.729 0.778
##   0.114                0.101                0.749 0.874
##  29.806                 37.5                 2.27 0.311
##   19.46                31.45                1.956 2.076
##  19.279               34.653                 2.92 0.843
##  26.571               27.575                2.688     3
##  23.587               32.212                 2.36 1.186
##      44                   79                  339   247
```