# Online Appendix for 'Industrial Agglomeration and Infrastructure Investment Prioritisation: Evidence from Peruvian Firm-Level Data'

## -Standard logit and GMM spatial logit results-

Pedro Herrera-Catalán[‡]

*Autonomous University of Madrid*

July 27, 2021

**Abstract**

This is the supplemental material to the paper titled " Industrial Agglomeration and Infrastructure Investment Prioritisation: Evidence from Peruvian Firm-Level Data." It includes regression results for the full sample of 34 localised Peruvian manufacturing industries.

**Keywords:** Industrial agglomeration; spatial prioritisation; high-return areas; distance-based methods; GMM spatial logit model

**JEL Classification:** L11, L52, L60, R12, R30

**Running Head:** Industrial Agglomeration and Investment Prioritisation

[‡] Faculty of Economics and Business Administration, Autonomous University of Madrid. C/ Francisco Tomás y Valiente, 5, 28049 Madrid, Spain. Email: pedro.herrera@predoc.uam.es

R version 4.0.5 (2021-03-31) -- "Shake and Throw"
Copyright (C) 2021 The R Foundation for Statistical Computing
Platform: x86_64-w64-mingw32/x64 (64-bit)

R es un software libre y viene sin GARANTIA ALGUNA.
Usted puede redistribuirlo bajo ciertas circunstancias.
Escriba 'license()' o 'licence()' para detalles de distribucion.

R es un proyecto colaborativo con muchos contribuyentes.
Escriba 'contributors()' para obtener más información y
'citation()' para saber cómo citar R o paquetes de R en publicaciones.

Escriba 'demo()' para demostraciones, 'help()' para el sistema on-line de ayuda,
o 'help.start()' para abrir el sistema de ayuda HTML con su navegador.
Escriba 'q()' para salir de R.

> setwd("C:/Pedro/logit peru")
> library(McSpatial)
Loading required package: lattice
Loading required package: locfit
locfit 1.5-9.4    2020-03-24
Loading required package: maptools
Loading required package: sp
Checking rgeos availability: TRUE
Loading required package: quantreg
Loading required package: SparseM

Attaching package: 'SparseM'

The following object is masked from 'package:base':

    backsolve

Loading required package: RANN
> library(readxl)
> library(foreign)
> library(ellipsis)
> library(carData)
> library(rgdal)
rgdal: version: 1.5-23, (SVN revision 1121)
Geospatial Data Abstraction Library extensions to R successfully loaded
Loaded GDAL runtime: GDAL 3.2.1, released 2020/12/29
Path to GDAL shared files: C:/Users/alecc/OneDrive/Documentos/R/win-library/4.0/rgdal/gdal
GDAL binary built with GEOS: TRUE
Loaded PROJ runtime: Rel. 7.2.1, January 1st, 2021, [PJ_VERSION: 721]
Path to PROJ shared files: C:/Users/alecc/OneDrive/Documentos/R/win-library/4.0/rgdal/proj
PROJ CDN enabled: FALSE
Linking to sp version:1.4-5
To mute warnings of possible GDAL/OSR exportToProj4() degradation,
use options("rgdal_show_exportToProj4_warnings"="none") before loading rgdal.
Overwritten PROJ_LIB was C:/Users/alecc/OneDrive/Documentos/R/win-library/4.0/rgdal/proj
> library(vctrs)
> library(Hmisc)
Loading required package: survival

Attaching package: 'survival'

The following object is masked from 'package:quantreg':

    untangle.specials

Loading required package: Formula
Loading required package: ggplot2

Attaching package: 'Hmisc'

The following object is masked from 'package:quantreg':

    latex

The following object is masked from 'package:maptools':

    label

The following objects are masked from 'package:base':

    format.pval, units

```
> library(writexl)
> library(broom)
> memory.limit(size = 33000)
[1] 33000
>
>
> cmap <- readOGR ("Distrito_Total.shp")
OGR data source with driver: ESRI Shapefile
Source: "C:\Pedro\logit peru\Distrito_Total.shp", layer: "Distrito_Total"
with 1868 features
It has 20 fields
Integer64 fields read as strings:  OBJECTID OID_ OBJECTID_1 LM COSTA_NORT COSTA_CENT COSTA_SUR SI
ERRA_NOR SIERRA_CEN SIERRA_SUR SELVA
> #queen
> bookw <- makew(cmap)$wmat
Loading required package: spData
Loading required package: sf
Linking to GEOS 3.9.0, GDAL 3.2.1, PROJ 7.2.1
> empresas<-read_excel("DataGMMSplogit v.30.06.2021.xlsx")
-/                                                                    >
> #modelos logit
> ################
>
> demoslogit1544<- splogit(SIC_1544 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
    Min      1Q    Median      3Q      Max
-0.9946   0.0000   0.0000   0.0000   3.0131

Coefficients:
                                Estimate Std. Error z value Pr(>|z|)
(Intercept)                   -108.85305 1578.23521  -0.069  0.94501
Water_supply                    -0.25720    0.10365  -2.482  0.01308 *
Sewerage_service                 0.21469    0.11196   1.918  0.05517 .
Electricity_supply               0.91909    0.33842   2.716  0.00661 **
Education                       -0.03208    0.03172  -1.011  0.31197
Bank_credit_percapita_dummy     21.35385 1577.91454   0.014  0.98920
Travel_times                     0.11683    0.12574   0.929  0.35280
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 155.069  on 1867  degrees of freedom
Residual deviance:  65.954  on 1861  degrees of freedom
AIC: 79.954

Number of Fisher Scoring iterations: 23

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                                Estimate Std. Error   z-value Pr(>|z|)
(Intercept)                   -108.88764    1.66285 -65.48253  0.00000
Water_supply                    -0.25912    0.00148 -175.28925  0.00000
Sewerage_service                 0.21797    0.00355  61.46042  0.00000
Electricity_supply               0.91987    0.00156 590.30261  0.00000
Education                       -0.02243    0.01065  -2.10538  0.03526
```

```
Bank_credit_percapita_dummy    21.50617      0.09039  237.92162  0.00000
Travel_times                    0.11578      0.01313    8.81957  0.00000
WXB                             0.31196      0.44584    0.69970  0.48412
Number of observations =  1868
Warning message:
glm.fit: fitted probabilities numerically 0 or 1 occurred
> logit1544<-cbind(demoslogit1544$coef,demoslogit1544$se)
> write.table(logit1544, file = "splog1544.csv", sep = ",", col.names = NA)
>
> demoslogit1552<- splogit(SIC_1552 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
    Min        1Q    Median       3Q       Max
-1.1059   -0.0677   -0.0231   -0.0087    3.6417

Coefficients:
                              Estimate Std. Error z value Pr(>|z|)
(Intercept)                   -21.43594    6.15524  -3.483 0.000497 ***
Water_supply                   -0.04552    0.02881  -1.580 0.114100
Sewerage_service                0.05073    0.02904   1.747 0.080652 .
Electricity_supply              0.16017    0.07236   2.214 0.026858 *
Education                       0.02806    0.01690   1.660 0.096959 .
Bank_credit_percapita_dummy     2.91512    1.05337   2.767 0.005650 **
Travel_times                    0.06535    0.04815   1.357 0.174712
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 347.75  on 1867  degrees of freedom
Residual deviance: 198.40  on 1861  degrees of freedom
AIC: 212.4

Number of Fisher Scoring iterations: 10

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                              Estimate Std. Error    z-value Pr(>|z|)
(Intercept)                   -21.52756    1.10221 -19.53133  0.00000
Water_supply                   -0.04863    0.00330 -14.71388  0.00000
Sewerage_service                0.05666    0.00507  11.17148  0.00000
Electricity_supply              0.16466    0.00327  50.39158  0.00000
Education                       0.02880    0.01022   2.81732  0.00484
Bank_credit_percapita_dummy     3.43358    0.19473  17.63287  0.00000
Travel_times                    0.07284    0.01534   4.74976  0.00000
WXB                             0.37182    0.28884   1.28731  0.19799
Number of observations =  1868
> logit1552<-cbind(demoslogit1552$coef,demoslogit1552$se)
> write.table(logit1552, file = "splog1552.csv", sep = ",", col.names = NA)
>
> demoslogit1711<- splogit(SIC_1711 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
    Min        1Q    Median       3Q       Max
-1.8461   -0.0713   -0.0274   -0.0111    3.7153

Coefficients:
                              Estimate Std. Error z value Pr(>|z|)
(Intercept)                    -8.29455    4.44636  -1.865 0.062116 .
Water_supply                   -0.06874    0.02587  -2.658 0.007867 **
Sewerage_service                0.07125    0.02709   2.631 0.008521 **
Electricity_supply              0.03918    0.05517   0.710 0.477575
```

```
Education                              0.04409      0.01664    2.650 0.008041 **
Bank_credit_percapita_dummy  2.65037      0.78997    3.355 0.000794 ***
Travel_times                        -0.40526      0.11193   -3.621 0.000294 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 467.88  on 1867  degrees of freedom
Residual deviance: 212.51  on 1861  degrees of freedom
AIC: 226.51

Number of Fisher Scoring iterations: 9

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                             Estimate Std. Error   z-value Pr(>|z|)
(Intercept)                  -8.18507    0.69126 -11.84083  0.00000
Water_supply                 -0.07339    0.00326 -22.50313  0.00000
Sewerage_service              0.07779    0.00432  17.98565  0.00000
Electricity_supply            0.04068    0.00260  15.66157  0.00000
Education                     0.04518    0.01156   3.90943  0.00009
Bank_credit_percapita_dummy   3.11146    0.19758  15.74749  0.00000
Travel_times                 -0.41378    0.00782 -52.94284  0.00000
WXB                           0.31460    0.18403   1.70952  0.08736
Number of observations =  1868
> logit1711<-cbind(demoslogit1711$coef,demoslogit1711$se)
> write.table(logit1711, file = "splog1711.csv", sep = ",", col.names = NA)
>
> demoslogit1712<- splogit(SIC_1712 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-1.7385  -0.0427  -0.0091  -0.0022   3.7039

Coefficients:
                             Estimate Std. Error z value Pr(>|z|)
(Intercept)                  -21.72994    7.35174  -2.956 0.003119 **
Water_supply                  -0.10326    0.02994  -3.449 0.000562 ***
Sewerage_service               0.07835    0.03013   2.600 0.009311 **
Electricity_supply             0.19368    0.08503   2.278 0.022744 *
Education                      0.03169    0.01847   1.716 0.086249 .
Bank_credit_percapita_dummy    3.66826    1.17489   3.122 0.001795 **
Travel_times                  -0.29657    0.10902  -2.720 0.006523 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 446.25  on 1867  degrees of freedom
Residual deviance: 185.58  on 1861  degrees of freedom
AIC: 199.58

Number of Fisher Scoring iterations: 10

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                             Estimate Std. Error   z-value Pr(>|z|)
(Intercept)                  -21.88682    0.72543 -30.17076  0.00000
Water_supply                  -0.10827    0.00323 -33.52529  0.00000
Sewerage_service               0.08436    0.00463  18.21783  0.00000
Electricity_supply             0.19719    0.00301  65.61442  0.00000
Education                      0.03435    0.01121   3.06409  0.00218
Bank_credit_percapita_dummy    4.10635    0.21947  18.71045  0.00000
Travel_times                  -0.30156    0.01064 -28.33835  0.00000
WXB                            0.29128    0.18748   1.55364  0.12027
```

```
Number of observations =  1868
Warning message:
glm.fit: fitted probabilities numerically 0 or 1 occurred
> logit1712<-cbind(demoslogit1712$coef,demoslogit1712$se)
> write.table(logit1712, file = "splog1712.csv", sep = ",", col.names = NA)
>
> demoslogit1729<- splogit(SIC_1729 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
    Min       1Q    Median       3Q       Max
-2.1317  -0.0421  -0.0096  -0.0022    3.9150

Coefficients:
                              Estimate Std. Error z value Pr(>|z|)
(Intercept)                   -26.59614    6.71346  -3.962 7.44e-05 ***
Water_supply                   -0.06882    0.02857  -2.409 0.016015 *
Sewerage_service                0.05000    0.02849   1.755 0.079256 .
Electricity_supply              0.23515    0.07632   3.081 0.002064 **
Education                       0.05445    0.01902   2.863 0.004194 **
Bank_credit_percapita_dummy     3.81723    1.07504   3.551 0.000384 ***
Travel_times                   -0.20950    0.08086  -2.591 0.009578 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 590.61  on 1867  degrees of freedom
Residual deviance: 215.32  on 1861  degrees of freedom
AIC: 229.32

Number of Fisher Scoring iterations: 10

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                              Estimate Std. Error    z-value Pr(>|z|)
(Intercept)                   -26.81829    0.58513 -45.83284  0.00000
Water_supply                   -0.07235    0.00302 -23.97038  0.00000
Sewerage_service                0.05451    0.00472  11.54344  0.00000
Electricity_supply              0.23905    0.00329  72.69238  0.00000
Education                       0.05825    0.01093   5.32717  0.00000
Bank_credit_percapita_dummy     4.32107    0.19084  22.64283  0.00000
Travel_times                   -0.20894    0.01546 -13.51087  0.00000
WXB                             0.31023    0.14664   2.11550  0.03439
Number of observations =  1868
Warning message:
glm.fit: fitted probabilities numerically 0 or 1 occurred
> logit1729<-cbind(demoslogit1729$coef,demoslogit1729$se)
> write.table(logit1729, file = "splog1729.csv", sep = ",", col.names = NA)
>
> demoslogit1730<- splogit(SIC_1730 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
    Min       1Q    Median       3Q       Max
-1.6325  -0.0576  -0.0182  -0.0056    3.7949

Coefficients:
                              Estimate Std. Error z value Pr(>|z|)
(Intercept)                   -18.73447    6.91073  -2.711  0.00671 **
Water_supply                   -0.06669    0.02922  -2.283  0.02246 *
Sewerage_service                0.07647    0.03091   2.474  0.01335 *
Electricity_supply              0.14849    0.08141   1.824  0.06815 .
Education                       0.02542    0.01737   1.464  0.14328
```

```
Bank_credit_percapita_dummy   2.33123     0.78868    2.956  0.00312 **
Travel_times                 -0.25167     0.10180   -2.472  0.01343 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 446.25  on 1867  degrees of freedom
Residual deviance: 199.96  on 1861  degrees of freedom
AIC: 213.96

Number of Fisher Scoring iterations: 10

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                            Estimate Std. Error   z-value Pr(>|z|)
(Intercept)                -18.60845    0.75666 -24.59292  0.00000
Water_supply                -0.07080    0.00319 -22.21879  0.00000
Sewerage_service             0.08457    0.00475  17.81341  0.00000
Electricity_supply           0.15094    0.00317  47.56329  0.00000
Education                    0.02611    0.01097   2.37939  0.01734
Bank_credit_percapita_dummy  2.67075    0.21193  12.60211  0.00000
Travel_times                -0.25243    0.01623 -15.55547  0.00000
WXB                          0.37411    0.19390   1.92937  0.05369
Number of observations =  1868
Warning message:
glm.fit: fitted probabilities numerically 0 or 1 occurred
> logit1730<-cbind(demoslogit1730$coef,demoslogit1730$se)
> write.table(logit1730, file = "splog1730.csv", sep = ",", col.names = NA)
>
> demoslogit1810<- splogit(SIC_1810 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
    Min      1Q   Median      3Q      Max
-2.3522  -0.1204  -0.0462  -0.0177   4.1590

Coefficients:
                            Estimate Std. Error z value Pr(>|z|)
(Intercept)                -14.34056    2.94568  -4.868 1.13e-06 ***
Water_supply                -0.05278    0.01561  -3.381 0.000723 ***
Sewerage_service             0.05426    0.01600   3.392 0.000695 ***
Electricity_supply           0.10995    0.03531   3.114 0.001847 **
Education                    0.05684    0.01458   3.898 9.72e-05 ***
Bank_credit_percapita_dummy  2.76290    0.42652   6.478 9.31e-11 ***
Travel_times                -0.15532    0.05054  -3.073 0.002120 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 912.24  on 1867  degrees of freedom
Residual deviance: 380.33  on 1861  degrees of freedom
AIC: 394.33

Number of Fisher Scoring iterations: 9

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                            Estimate Std. Error   z-value Pr(>|z|)
(Intercept)                -15.50313    0.70522 -21.98345  0.00000
Water_supply                -0.05816    0.00429 -13.54519  0.00000
Sewerage_service             0.06068    0.00619   9.80153  0.00000
Electricity_supply           0.11691    0.00715  16.34047  0.00000
Education                    0.06151    0.01160   5.30367  0.00000
Bank_credit_percapita_dummy  3.25307    0.26776  12.14929  0.00000
Travel_times                -0.16202    0.02074  -7.81304  0.00000
```

```
WXB                                  0.04680    0.12462   0.37558   0.70723
Number of observations =  1868
> logit1810<-cbind(demoslogit1810$coef,demoslogit1810$se)
> write.table(logit1810, file = "splog1810.csv", sep = ",", col.names = NA)
>
> demoslogit1912<- splogit(SIC_1912 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
     Min        1Q     Median        3Q        Max
-1.22243   -0.00003    0.00000    0.00000    2.84131

Coefficients:
                               Estimate Std. Error z value Pr(>|z|)
(Intercept)                    -58.54037 1296.44951  -0.045    0.9640
Water_supply                    -0.14479    0.06483  -2.233    0.0255 *
Sewerage_service                 0.16940    0.07168   2.363    0.0181 *
Electricity_supply               0.38076    0.17326   2.198    0.0280 *
Education                       -0.01084    0.02285  -0.475    0.6351
Bank_credit_percapita_dummy     18.84378 1296.36125   0.015    0.9884
Travel_times                    -0.11909    0.13093  -0.910    0.3631
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 290.80  on 1867  degrees of freedom
Residual deviance: 119.24  on 1861  degrees of freedom
AIC: 133.24

Number of Fisher Scoring iterations: 22

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                               Estimate Std. Error   z-value Pr(>|z|)
(Intercept)                    -58.66641    0.96836 -60.58344  0.00000
Water_supply                    -0.14752    0.00177 -83.23862  0.00000
Sewerage_service                 0.17579    0.00381  46.17759  0.00000
Electricity_supply               0.38139    0.00201 189.52408  0.00000
Education                       -0.00609    0.01037  -0.58682  0.55733
Bank_credit_percapita_dummy     19.13170    0.11916 160.54866  0.00000
Travel_times                    -0.12160    0.01570  -7.74555  0.00000
WXB                              0.28522    0.25125   1.13520  0.25629
Number of observations =  1868
Warning message:
glm.fit: fitted probabilities numerically 0 or 1 occurred
> logit1912<-cbind(demoslogit1912$coef,demoslogit1912$se)
> write.table(logit1912, file = "splog1912.csv", sep = ",", col.names = NA)
>
> demoslogit2102<- splogit(SIC_2102 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
    Min       1Q    Median        3Q       Max
-1.2587   -0.0176   -0.0029   -0.0004    3.4767

Coefficients:
                               Estimate Std. Error z value Pr(>|z|)
(Intercept)                    -26.60157   12.71225  -2.093   0.03639 *
Water_supply                    -0.11945    0.04223  -2.829   0.00468 **
Sewerage_service                 0.08291    0.03908   2.121   0.03389 *
Electricity_supply               0.27875    0.14429   1.932   0.05337 .
Education                       -0.02937    0.02301  -1.277   0.20176
Bank_credit_percapita_dummy      2.84921    1.31942   2.159   0.03082 *
```

```
Travel_times                     -0.87970    0.33388  -2.635  0.00842 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 239.17  on 1867  degrees of freedom
Residual deviance: 108.23  on 1861  degrees of freedom
AIC: 122.23

Number of Fisher Scoring iterations: 11

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                           Estimate Std. Error    z-value Pr(>|z|)
(Intercept)               -26.74708    1.03337  -25.88333  0.00000
Water_supply               -0.12417    0.00280  -44.39490  0.00000
Sewerage_service            0.08914    0.00441   20.19480  0.00000
Electricity_supply          0.28093    0.00265  106.11894  0.00000
Education                  -0.02533    0.01090   -2.32410  0.02012
Bank_credit_percapita_dummy 3.09466    0.17512   17.67159  0.00000
Travel_times               -0.89135    0.00566 -157.37111  0.00000
WXB                         0.25681    0.27087    0.94807  0.34309
Number of observations =  1868
Warning message:
glm.fit: fitted probabilities numerically 0 or 1 occurred
> logit2102<-cbind(demoslogit2102$coef,demoslogit2102$se)
> write.table(logit2102, file = "splog2102.csv", sep = ",", col.names = NA)
>
> demoslogit2109<- splogit(SIC_2109 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
    Min       1Q    Median       3Q      Max
-1.7918  -0.0563  -0.0142  -0.0035   3.7607

Coefficients:
                           Estimate Std. Error z value Pr(>|z|)
(Intercept)               -24.82359    6.64550  -3.735 0.000187 ***
Water_supply               -0.08684    0.02623  -3.311 0.000929 ***
Sewerage_service            0.07059    0.02676   2.638 0.008330 **
Electricity_supply          0.22612    0.07618   2.968 0.002995 **
Education                   0.03230    0.01734   1.862 0.062582 .
Bank_credit_percapita_dummy 2.88189    0.83366   3.457 0.000546 ***
Travel_times               -0.15122    0.08008  -1.888 0.058982 .
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 503.12  on 1867  degrees of freedom
Residual deviance: 216.65  on 1861  degrees of freedom
AIC: 230.65

Number of Fisher Scoring iterations: 10

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                           Estimate Std. Error    z-value Pr(>|z|)
(Intercept)               -24.63103    0.78067  -31.55121  0.00000
Water_supply               -0.09169    0.00336  -27.32747  0.00000
Sewerage_service            0.07668    0.00471   16.27616  0.00000
Electricity_supply          0.23102    0.00362   63.82411  0.00000
Education                   0.03322    0.01137    2.92092  0.00349
Bank_credit_percapita_dummy 3.30692    0.22038   15.00558  0.00000
Travel_times               -0.14949    0.01952   -7.65887  0.00000
WXB                         0.42871    0.18553    2.31068  0.02085
```

```
Number of observations =  1868
Warning message:
glm.fit: fitted probabilities numerically 0 or 1 occurred
> logit2109<-cbind(demoslogit2109$coef,demoslogit2109$se)
> write.table(logit2109, file = "splog2109.csv", sep = ",", col.names = NA)
>
> demoslogit2211<- splogit(SIC_2211 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
    Min      1Q   Median       3Q      Max
-1.9319  -0.0436  -0.0115  -0.0032   3.7010

Coefficients:
                             Estimate Std. Error z value Pr(>|z|)
(Intercept)                 -21.60657    6.82776  -3.165  0.00155 **
Water_supply                 -0.09399    0.02883  -3.260  0.00111 **
Sewerage_service              0.09636    0.03258   2.958  0.00310 **
Electricity_supply            0.16414    0.08102   2.026  0.04278 *
Education                     0.07651    0.01903   4.021 5.79e-05 ***
Bank_credit_percapita_dummy   2.32264    0.82908   2.801  0.00509 **
Travel_times                 -0.06397    0.07265  -0.881  0.37856
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 482.09  on 1867  degrees of freedom
Residual deviance: 185.26  on 1861  degrees of freedom
AIC: 199.26

Number of Fisher Scoring iterations: 10

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                             Estimate Std. Error    z-value Pr(>|z|)
(Intercept)                 -22.37596    0.77699 -28.79808  0.00000
Water_supply                 -0.09879    0.00334 -29.59373  0.00000
Sewerage_service              0.10444    0.00532  19.64349  0.00000
Electricity_supply            0.16702    0.00375  44.52406  0.00000
Education                     0.08415    0.01085   7.75917  0.00000
Bank_credit_percapita_dummy   2.64323    0.20914  12.63878  0.00000
Travel_times                 -0.06484    0.01467  -4.42064  0.00001
WXB                           0.14288    0.19665   0.72660  0.46747
Number of observations =  1868
> logit2211<-cbind(demoslogit2211$coef,demoslogit2211$se)
> write.table(logit2211, file = "splog2211.csv", sep = ",", col.names = NA)
>
> demoslogit2222<- splogit(SIC_2222 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
    Min      1Q   Median       3Q      Max
-1.8652  -0.0464  -0.0106  -0.0015   3.6549

Coefficients:
                             Estimate Std. Error z value Pr(>|z|)
(Intercept)                 -34.90389    7.95434  -4.388 1.14e-05 ***
Water_supply                 -0.02623    0.02947  -0.890 0.373414
Sewerage_service              0.01946    0.02645   0.736 0.461821
Electricity_supply            0.31747    0.08882   3.574 0.000351 ***
Education                     0.03052    0.01822   1.675 0.093973 .
Bank_credit_percapita_dummy   3.43196    1.05828   3.243 0.001183 **
Travel_times                 -0.14031    0.07844  -1.789 0.073662 .
```

```
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 516.95  on 1867  degrees of freedom
Residual deviance: 206.09  on 1861  degrees of freedom
AIC: 220.09

Number of Fisher Scoring iterations: 10

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                              Estimate Std. Error   z-value Pr(>|z|)
(Intercept)                  -35.57597    0.69720 -51.02702  0.00000
Water_supply                  -0.02901    0.00320  -9.06674  0.00000
Sewerage_service               0.02477    0.00539   4.59704  0.00000
Electricity_supply             0.32162    0.00335  95.96920  0.00000
Education                      0.03341    0.01116   2.99224  0.00277
Bank_credit_percapita_dummy    3.91493    0.20709  18.90414  0.00000
Travel_times                  -0.14200    0.01594  -8.90589  0.00000
WXB                            0.19284    0.16872   1.14296  0.25306
Number of observations =  1868
Warning message:
glm.fit: fitted probabilities numerically 0 or 1 occurred
> logit2222<-cbind(demoslogit2222$coef,demoslogit2222$se)
> write.table(logit2222, file = "splog2222.csv", sep = ",", col.names = NA)
>
> demoslogit2413<- splogit(SIC_2413 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
   Min      1Q  Median      3Q     Max
-1.547   0.000   0.000   0.000   2.853

Coefficients:
                              Estimate Std. Error z value Pr(>|z|)
(Intercept)                  -26.34282 1788.02203  -0.015 0.988245
Water_supply                  -0.21183    0.06876  -3.081 0.002065 **
Sewerage_service               0.21390    0.07238   2.955 0.003124 **
Electricity_supply             0.04699    0.15213   0.309 0.757425
Education                     -0.01435    0.02283  -0.629 0.529459
Bank_credit_percapita_dummy   22.88321 1787.97857   0.013 0.989789
Travel_times                  -1.55798    0.43361  -3.593 0.000327 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 363.47  on 1867  degrees of freedom
Residual deviance: 105.11  on 1861  degrees of freedom
AIC: 119.11

Number of Fisher Scoring iterations: 23

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                              Estimate Std. Error    z-value Pr(>|z|)
(Intercept)                  -26.94607    0.69672  -38.67547  0.00000
Water_supply                  -0.21505    0.00201 -106.95436  0.00000
Sewerage_service               0.21953    0.00392   55.99262  0.00000
Electricity_supply             0.04713    0.00156   30.21122  0.00000
Education                     -0.00824    0.01069   -0.77108  0.44066
Bank_credit_percapita_dummy   23.18185    0.13147  176.33107  0.00000
Travel_times                  -1.57016    0.00517 -303.49014  0.00000
WXB                            0.11666    0.18602    0.62712  0.53058
Number of observations =  1868
```

```
Warning message:
glm.fit: fitted probabilities numerically 0 or 1 occurred
> logit2413<-cbind(demoslogit2413$coef,demoslogit2413$se)
> write.table(logit2413, file = "splog2413.csv", sep = ",", col.names = NA)
>
> demoslogit2422<- splogit(SIC_2422 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
     Min        1Q      Median        3Q         Max
-1.17244  -0.00004    0.00000    0.00000     2.85072

Coefficients:
                                  Estimate Std. Error z value Pr(>|z|)
(Intercept)                      -53.53433 1406.51691  -0.038  0.96964
Water_supply                      -0.13080    0.04848  -2.698  0.00698 **
Sewerage_service                   0.13158    0.05056   2.602  0.00926 **
Electricity_supply                 0.34934    0.13403   2.607  0.00915 **
Education                         -0.02596    0.02086  -1.245  0.21319
Bank_credit_percapita_dummy       19.46330 1406.46929   0.014  0.98896
Travel_times                      -0.06531    0.09773  -0.668  0.50399
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 315.60  on 1867  degrees of freedom
Residual deviance: 146.85  on 1861  degrees of freedom
AIC: 160.85

Number of Fisher Scoring iterations: 22

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                                  Estimate Std. Error    z-value Pr(>|z|)
(Intercept)                      -53.64092    0.94750 -56.61317  0.00000
Water_supply                      -0.13385    0.00224 -59.85685  0.00000
Sewerage_service                   0.13763    0.00388  35.44592  0.00000
Electricity_supply                 0.35096    0.00245 143.50170  0.00000
Education                         -0.02193    0.01067  -2.05513  0.03987
Bank_credit_percapita_dummy       19.84407    0.13234 149.94208  0.00000
Travel_times                      -0.06677    0.01462  -4.56533  0.00000
WXB                                0.30661    0.24861   1.23328  0.21747
Number of observations =  1868
Warning message:
glm.fit: fitted probabilities numerically 0 or 1 occurred
> logit2422<-cbind(demoslogit2422$coef,demoslogit2422$se)
> write.table(logit2422, file = "splog2422.csv", sep = ",", col.names = NA)
>
> demoslogit2423<- splogit(SIC_2423 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
    Min        1Q     Median        3Q         Max
-1.5903  -0.0160   -0.0024   -0.0003     3.5219

Coefficients:
                                  Estimate Std. Error z value Pr(>|z|)
(Intercept)                      -26.99698   11.74408  -2.299  0.02152 *
Water_supply                      -0.13500    0.03929  -3.436  0.00059 ***
Sewerage_service                   0.09943    0.03821   2.602  0.00926 **
Electricity_supply                 0.26512    0.13388   1.980  0.04766 *
Education                          0.01792    0.02214   0.809  0.41831
Bank_credit_percapita_dummy        3.43346    1.39132   2.468  0.01360 *
```

```
Travel_times                     -0.68179    0.22544  -3.024  0.00249 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 363.47  on 1867  degrees of freedom
Residual deviance: 125.93  on 1861  degrees of freedom
AIC: 139.93

Number of Fisher Scoring iterations: 11

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                            Estimate Std. Error    z-value Pr(>|z|)
(Intercept)                -26.54829    0.75893  -34.98136  0.00000
Water_supply                -0.13939    0.00308  -45.18971  0.00000
Sewerage_service             0.10523    0.00486   21.64985  0.00000
Electricity_supply           0.26683    0.00232  114.94204  0.00000
Education                    0.02117    0.01046    2.02382  0.04299
Bank_credit_percapita_dummy  3.67459    0.18202   20.18833  0.00000
Travel_times                -0.68889    0.00588 -117.05907  0.00000
WXB                          0.42287    0.19628    2.15445  0.03121
Number of observations =   1868
Warning message:
glm.fit: fitted probabilities numerically 0 or 1 occurred
> logit2423<-cbind(demoslogit2423$coef,demoslogit2423$se)
> write.table(logit2423, file = "splog2423.csv", sep = ",", col.names = NA)
>
> demoslogit2424<- splogit(SIC_2424 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
   Min      1Q   Median      3Q      Max
-1.536   0.000    0.000   0.000    3.624

Coefficients:
                            Estimate Std. Error z value Pr(>|z|)
(Intercept)                -49.82766 1405.86499  -0.035  0.97173
Water_supply                -0.14036    0.04365  -3.216  0.00130 **
Sewerage_service             0.11917    0.04592   2.595  0.00946 **
Electricity_supply           0.31319    0.11734   2.669  0.00761 **
Education                    0.01649    0.01945   0.848  0.39647
Bank_credit_percapita_dummy 19.81977 1405.82901   0.014  0.98875
Travel_times                -0.05622    0.08423  -0.668  0.50445
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 386.64  on 1867  degrees of freedom
Residual deviance: 160.65  on 1861  degrees of freedom
AIC: 174.65

Number of Fisher Scoring iterations: 22

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                            Estimate Std. Error    z-value Pr(>|z|)
(Intercept)                -49.81560    0.86095  -57.86088  0.00000
Water_supply                -0.14361    0.00239  -59.97327  0.00000
Sewerage_service             0.12481    0.00426   29.31755  0.00000
Electricity_supply           0.31551    0.00306  102.94523  0.00000
Education                    0.01948    0.01043    1.86753  0.06183
Bank_credit_percapita_dummy 20.24053    0.15493  130.64481  0.00000
Travel_times                -0.05448    0.01596   -3.41265  0.00064
WXB                          0.35389    0.21325    1.65953  0.09701
```

```
Number of observations =  1868
Warning message:
glm.fit: fitted probabilities numerically 0 or 1 occurred
> logit2424<-cbind(demoslogit2424$coef,demoslogit2424$se)
> write.table(logit2424, file = "splog2424.csv", sep = ",", col.names = NA)
>
> demoslogit2429<- splogit(SIC_2429 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
    Min        1Q    Median        3Q       Max
-1.5290   -0.1106   -0.0450   -0.0212    3.7534

Coefficients:
                               Estimate Std. Error z value Pr(>|z|)
(Intercept)                   -10.34909    3.59871  -2.876  0.00403 **
Water_supply                   -0.05732    0.02069  -2.770  0.00560 **
Sewerage_service                0.05016    0.02130   2.355  0.01851 *
Electricity_supply              0.06961    0.04386   1.587  0.11251
Education                       0.03319    0.01470   2.258  0.02395 *
Bank_credit_percapita_dummy     2.62950    0.64572   4.072 4.66e-05 ***
Travel_times                   -0.22984    0.07958  -2.888  0.00387 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 503.12  on 1867  degrees of freedom
Residual deviance: 273.44  on 1861  degrees of freedom
AIC: 287.44

Number of Fisher Scoring iterations: 9

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                               Estimate Std. Error   z-value Pr(>|z|)
(Intercept)                    -9.85929    0.97572 -10.10465  0.00000
Water_supply                   -0.06254    0.00433 -14.43662  0.00000
Sewerage_service                0.05537    0.00635   8.72499  0.00000
Electricity_supply              0.07409    0.00625  11.85037  0.00000
Education                       0.03002    0.01048   2.86532  0.00417
Bank_credit_percapita_dummy     3.21203    0.28197  11.39146  0.00000
Travel_times                   -0.23323    0.01204 -19.36380  0.00000
WXB                             0.46154    0.21067   2.19079  0.02847
Number of observations =  1868
> logit2429<-cbind(demoslogit2429$coef,demoslogit2429$se)
> write.table(logit2429, file = "splog2429.csv", sep = ",", col.names = NA)
>
> demoslogit2519<- splogit(SIC_2519 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
    Min        1Q    Median        3Q       Max
-1.1735   -0.0471   -0.0155   -0.0051    3.7361

Coefficients:
                               Estimate Std. Error z value Pr(>|z|)
(Intercept)                   -8.616636   6.503807  -1.325  0.18522
Water_supply                  -0.081163   0.028032  -2.895  0.00379 **
Sewerage_service               0.104119   0.031876   3.266  0.00109 **
Electricity_supply             0.043914   0.079942   0.549  0.58278
Education                     -0.003753   0.017524  -0.214  0.83042
Bank_credit_percapita_dummy    2.380343   0.840914   2.831  0.00465 **
Travel_times                  -0.612343   0.172652  -3.547  0.00039 ***
```

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 363.47  on 1867  degrees of freedom
Residual deviance: 169.97  on 1861  degrees of freedom
AIC: 183.97

Number of Fisher Scoring iterations: 10

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES

|  | Estimate | Std. Error | z-value | Pr(>\|z\|) |
|---|---|---|---|---|
| (Intercept) | -8.86579 | 0.81743 | -10.84598 | 0.00000 |
| Water_supply | -0.08643 | 0.00303 | -28.56822 | 0.00000 |
| Sewerage_service | 0.11364 | 0.00470 | 24.19391 | 0.00000 |
| Electricity_supply | 0.04500 | 0.00198 | 22.72327 | 0.00000 |
| Education | -0.00255 | 0.01045 | -0.24440 | 0.80692 |
| Bank_credit_percapita_dummy | 2.68608 | 0.21485 | 12.50193 | 0.00000 |
| Travel_times | -0.62385 | 0.00651 | -95.90213 | 0.00000 |
| WXB | 0.21269 | 0.21453 | 0.99143 | 0.32148 |

Number of observations =  1868
Warning message:
glm.fit: fitted probabilities numerically 0 or 1 occurred
> logit2519<-cbind(demoslogit2519$coef,demoslogit2519$se)
> write.table(logit2519, file = "splog2519.csv", sep = ",", col.names = NA)
>
> demoslogit2520<- splogit(SIC_2520 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
    Min      1Q   Median      3Q      Max
-1.871   0.000    0.000   0.000    3.788

Coefficients:

|  | Estimate | Std. Error | z value | Pr(>\|z\|) |  |
|---|---|---|---|---|---|
| (Intercept) | -45.69877 | 872.95645 | -0.052 | 0.958250 | |
| Water_supply | -0.13694 | 0.03470 | -3.947 | 7.92e-05 | *** |
| Sewerage_service | 0.09871 | 0.03440 | 2.869 | 0.004116 | ** |
| Electricity_supply | 0.29540 | 0.08867 | 3.331 | 0.000864 | *** |
| Education | 0.01506 | 0.01810 | 0.832 | 0.405501 | |
| Bank_credit_percapita_dummy | 19.70468 | 872.92324 | 0.023 | 0.981991 | |
| Travel_times | -0.17470 | 0.08363 | -2.089 | 0.036714 | * |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 523.82  on 1867  degrees of freedom
Residual deviance: 200.84  on 1861  degrees of freedom
AIC: 214.84

Number of Fisher Scoring iterations: 21

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES

|  | Estimate | Std. Error | z-value | Pr(>\|z\|) |
|---|---|---|---|---|
| (Intercept) | -45.10754 | 0.70984 | -63.54583 | 0.00000 |
| Water_supply | -0.14018 | 0.00290 | -48.36190 | 0.00000 |
| Sewerage_service | 0.10222 | 0.00436 | 23.43157 | 0.00000 |
| Electricity_supply | 0.29867 | 0.00388 | 77.01514 | 0.00000 |
| Education | 0.01497 | 0.01097 | 1.36451 | 0.17241 |
| Bank_credit_percapita_dummy | 20.25592 | 0.17491 | 115.80514 | 0.00000 |
| Travel_times | -0.17060 | 0.02022 | -8.43579 | 0.00000 |
| WXB | 0.52545 | 0.16592 | 3.16688 | 0.00154 |

Number of observations =  1868

```
Warning message:
glm.fit: fitted probabilities numerically 0 or 1 occurred
> logit2520<-cbind(demoslogit2520$coef,demoslogit2520$se)
> write.table(logit2520, file = "splog2520.csv", sep = ",", col.names = NA)
>
> demoslogit2710<- splogit(SIC_2710 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
    Min       1Q    Median        3Q       Max
-1.5669   -0.0634   -0.0187   -0.0050    3.6914

Coefficients:
                                Estimate Std. Error z value Pr(>|z|)
(Intercept)                     -22.30956    6.97859  -3.197  0.00139 **
Water_supply                     -0.06798    0.02804  -2.424  0.01533 *
Sewerage_service                  0.05333    0.02803   1.903  0.05709 .
Electricity_supply                0.20595    0.08018   2.569  0.01021 *
Education                         0.01697    0.01730   0.980  0.32691
Bank_credit_percapita_dummy       2.55960    0.80830   3.167  0.00154 **
Travel_times                     -0.27425    0.10441  -2.627  0.00862 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 431.62  on 1867  degrees of freedom
Residual deviance: 202.62  on 1861  degrees of freedom
AIC: 216.62

Number of Fisher Scoring iterations: 10

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                                Estimate Std. Error    z-value Pr(>|z|)
(Intercept)                     -21.80572    0.84073 -25.93675  0.00000
Water_supply                     -0.07258    0.00341 -21.27982  0.00000
Sewerage_service                  0.05913    0.00526  11.23554  0.00000
Electricity_supply                0.21042    0.00285  73.71334  0.00000
Education                         0.01641    0.01075   1.52743  0.12666
Bank_credit_percapita_dummy       2.95309    0.22092  13.36727  0.00000
Travel_times                     -0.27630    0.00863 -32.02194  0.00000
WXB                               0.49176    0.21122   2.32820  0.01990
Number of observations =  1868
Warning message:
glm.fit: fitted probabilities numerically 0 or 1 occurred
> logit2710<-cbind(demoslogit2710$coef,demoslogit2710$se)
> write.table(logit2710, file = "splog2710.csv", sep = ",", col.names = NA)
>
> demoslogit2732<- splogit(SIC_2732 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
   Min       1Q   Median        3Q       Max
-1.178    0.000    0.000    0.000     3.347

Coefficients:
                                Estimate Std. Error z value Pr(>|z|)
(Intercept)                     -36.89682 1343.19730  -0.027  0.97809
Water_supply                     -0.13901    0.05271  -2.637  0.00836 **
Sewerage_service                  0.15921    0.05562   2.862  0.00421 **
Electricity_supply                0.16095    0.12675   1.270  0.20417
Education                        -0.03517    0.02185  -1.609  0.10753
Bank_credit_percapita_dummy      20.21894 1343.15776   0.015  0.98799
```

```
Travel_times                        -0.41160    0.16829  -2.446  0.01445 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 290.80  on 1867  degrees of freedom
Residual deviance: 131.97  on 1861  degrees of freedom
AIC: 145.97

Number of Fisher Scoring iterations: 22

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                          Estimate Std. Error   z-value Pr(>|z|)
(Intercept)              -37.67461    1.00066 -37.64960  0.00000
Water_supply              -0.14261    0.00199 -71.55328  0.00000
Sewerage_service           0.16637    0.00383  43.38807  0.00000
Electricity_supply         0.16174    0.00222  72.80165  0.00000
Education                 -0.03057    0.01110  -2.75507  0.00587
Bank_credit_percapita_dummy 20.60045  0.13643 151.00002  0.00000
Travel_times              -0.42044    0.00689 -61.04668  0.00000
WXB                        0.09020    0.26227   0.34392  0.73091
Number of observations =  1868
Warning message:
glm.fit: fitted probabilities numerically 0 or 1 occurred
> logit2732<-cbind(demoslogit2732$coef,demoslogit2732$se)
> write.table(logit2732, file = "splog2732.csv", sep = ",", col.names = NA)
>
> demoslogit2891<- splogit(SIC_2891 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-1.2622  -0.0489  -0.0159  -0.0049   3.6141

Coefficients:
                          Estimate Std. Error z value Pr(>|z|)
(Intercept)              -9.27940    6.49666  -1.428 0.153196
Water_supply             -0.10351    0.02792  -3.708 0.000209 ***
Sewerage_service          0.11367    0.03097   3.671 0.000242 ***
Electricity_supply        0.05795    0.07953   0.729 0.466177
Education                -0.00945    0.01835  -0.515 0.606561
Bank_credit_percapita_dummy 2.53173  0.93955   2.695 0.007047 **
Travel_times             -0.53271    0.17283  -3.082 0.002055 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 307.4  on 1867  degrees of freedom
Residual deviance: 157.1  on 1861  degrees of freedom
AIC: 171.1

Number of Fisher Scoring iterations: 10

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                          Estimate Std. Error   z-value Pr(>|z|)
(Intercept)              -9.30535    0.96643  -9.62862  0.00000
Water_supply             -0.10933    0.00373 -29.32403  0.00000
Sewerage_service          0.12268    0.00507  24.20970  0.00000
Electricity_supply        0.05957    0.00212  28.09318  0.00000
Education                -0.00862    0.00987  -0.87308  0.38262
Bank_credit_percapita_dummy 2.86217  0.19574  14.62262  0.00000
Travel_times             -0.54399    0.00682 -79.73044  0.00000
WXB                        0.27425    0.25770   1.06424  0.28722
```

```
Number of observations =  1868
Warning message:
glm.fit: fitted probabilities numerically 0 or 1 occurred
> logit2891<-cbind(demoslogit2891$coef,demoslogit2891$se)
> write.table(logit2891, file = "splog2891.csv", sep = ",", col.names = NA)
>
> demoslogit2893<- splogit(SIC_2893 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
 -1.426    0.000    0.000    0.000    2.700

Coefficients:
                                Estimate Std. Error z value Pr(>|z|)
(Intercept)                    -88.11116 1654.78937  -0.053  0.95754
Water_supply                    -0.23019    0.08143  -2.827  0.00470 **
Sewerage_service                 0.23167    0.08910   2.600  0.00932 **
Electricity_supply               0.69685    0.23387   2.980  0.00289 **
Education                       -0.07756    0.02824  -2.747  0.00602 **
Bank_credit_percapita_dummy     21.78466 1654.65675   0.013  0.98950
Travel_times                    -0.21491    0.19154  -1.122  0.26185
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 239.169  on 1867  degrees of freedom
Residual deviance:  90.601  on 1861  degrees of freedom
AIC: 104.6

Number of Fisher Scoring iterations: 23

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                                Estimate Std. Error    z-value Pr(>|z|)
(Intercept)                    -86.66715    1.25054  -69.30402  0.00000
Water_supply                    -0.23216    0.00168 -137.86490  0.00000
Sewerage_service                 0.23647    0.00369   64.01310  0.00000
Electricity_supply               0.69675    0.00140  498.40572  0.00000
Education                       -0.07647    0.01068   -7.16204  0.00000
Bank_credit_percapita_dummy     21.96817    0.10337  212.52672  0.00000
Travel_times                    -0.21608    0.00722  -29.91576  0.00000
WXB                              0.68953    0.32499    2.12170  0.03386
Number of observations =  1868
Warning message:
glm.fit: fitted probabilities numerically 0 or 1 occurred
> logit2893<-cbind(demoslogit2893$coef,demoslogit2893$se)
> write.table(logit2893, file = "splog2893.csv", sep = ",", col.names = NA)
>
> demoslogit2899<- splogit(SIC_2899 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
 -2.2067  -0.1466  -0.0619  -0.0273   4.1185

Coefficients:
                                Estimate Std. Error z value Pr(>|z|)
(Intercept)                    -13.55250    2.91884  -4.643 3.43e-06 ***
Water_supply                    -0.04739    0.01559  -3.040  0.00236 **
Sewerage_service                 0.05264    0.01612   3.265  0.00110 **
Electricity_supply               0.09919    0.03524   2.815  0.00488 **
Education                        0.05412    0.01350   4.009 6.09e-05 ***
```

```
Bank_credit_percapita_dummy   2.01262      0.38795     5.188 2.13e-07 ***
Travel_times                 -0.07619      0.04681    -1.628  0.10358
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 797.18  on 1867  degrees of freedom
Residual deviance: 386.24  on 1861  degrees of freedom
AIC: 400.24

Number of Fisher Scoring iterations: 8

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                            Estimate Std. Error    z-value Pr(>|z|)
(Intercept)                -13.86708     0.83593 -16.58881  0.00000
Water_supply                -0.05231     0.00406 -12.88409  0.00000
Sewerage_service             0.05862     0.00607   9.65205  0.00000
Electricity_supply           0.10752     0.00707  15.19882  0.00000
Education                    0.05589     0.01139   4.90734  0.00000
Bank_credit_percapita_dummy  2.40494     0.27656   8.69593  0.00000
Travel_times                -0.07112     0.02491  -2.85455  0.00431
WXB                          0.33786     0.15032   2.24767  0.02460
Number of observations =   1868
> logit2899<-cbind(demoslogit2899$coef,demoslogit2899$se)
> write.table(logit2899, file = "splog2899.csv", sep = ",", col.names = NA)
>
> demoslogit2915<- splogit(SIC_2915 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
   Min      1Q  Median      3Q     Max
-1.192   0.000   0.000   0.000   2.376

Coefficients:
                            Estimate Std. Error z value Pr(>|z|)
(Intercept)                -45.44275 2167.66717  -0.021   0.9833
Water_supply                -0.39465    0.18071  -2.184   0.0290 *
Sewerage_service             0.36611    0.19713   1.857   0.0633 .
Electricity_supply           0.16701    0.31727   0.526   0.5986
Education                    0.01649    0.03346   0.493   0.6223
Bank_credit_percapita_dummy 29.46731 2167.49762   0.014   0.9892
Travel_times                -1.59771    0.94566  -1.690   0.0911 .
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 145.068  on 1867  degrees of freedom
Residual deviance:  53.505  on 1861  degrees of freedom
AIC: 67.505

Number of Fisher Scoring iterations: 24

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                            Estimate Std. Error     z-value Pr(>|z|)
(Intercept)                -43.65367    1.65411  -26.39095  0.00000
Water_supply                -0.39566    0.00141 -281.44298  0.00000
Sewerage_service             0.36763    0.00331  110.97269  0.00000
Electricity_supply           0.16640    0.00090  184.45281  0.00000
Education                    0.02300    0.01101    2.08816  0.03678
Bank_credit_percapita_dummy 29.54265    0.08344  354.03990  0.00000
Travel_times                -1.60066    0.00374 -427.75706  0.00000
WXB                          0.76575    0.43690    1.75270  0.07965
Number of observations =   1868
```

```
Warning message:
glm.fit: fitted probabilities numerically 0 or 1 occurred
> logit2915<-cbind(demoslogit2915$coef,demoslogit2915$se)
> write.table(logit2915, file = "splog2915.csv", sep = ",", col.names = NA)
>
> demoslogit2919<- splogit(SIC_2919 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
    Min       1Q    Median        3Q       Max
-1.5377   -0.0854   -0.0323   -0.0131    4.1805

Coefficients:
                             Estimate Std. Error z value Pr(>|z|)
(Intercept)                 -12.22030    4.26088  -2.868 0.004130 **
Water_supply                 -0.07017    0.02252  -3.117 0.001830 **
Sewerage_service              0.09168    0.02490   3.683 0.000231 ***
Electricity_supply            0.06737    0.05280   1.276 0.201945
Education                     0.03271    0.01496   2.186 0.028785 *
Bank_credit_percapita_dummy   2.22591    0.65342   3.407 0.000658 ***
Travel_times                 -0.09420    0.06766  -1.392 0.163860
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 489.14  on 1867  degrees of freedom
Residual deviance: 250.26  on 1861  degrees of freedom
AIC: 264.26

Number of Fisher Scoring iterations: 9

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                             Estimate Std. Error    z-value Pr(>|z|)
(Intercept)                 -12.82872    0.92425 -13.88017  0.00000
Water_supply                 -0.07580    0.00329 -23.04331  0.00000
Sewerage_service              0.10199    0.00574  17.76545  0.00000
Electricity_supply            0.07053    0.00603  11.69716  0.00000
Education                     0.03349    0.01061   3.15516  0.00160
Bank_credit_percapita_dummy   2.62945    0.27764   9.47079  0.00000
Travel_times                 -0.09584    0.01908  -5.02238  0.00000
WXB                           0.17006    0.19984   0.85096  0.39479
Number of observations =  1868
> logit2919<-cbind(demoslogit2919$coef,demoslogit2919$se)
> write.table(logit2919, file = "splog2919.csv", sep = ",", col.names = NA)
>
> demoslogit2924<- splogit(SIC_2924 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
    Min       1Q    Median        3Q       Max
-1.1910   -0.0425   -0.0137   -0.0044    3.6560

Coefficients:
                             Estimate Std. Error z value Pr(>|z|)
(Intercept)                  -9.25567    6.16543  -1.501 0.133299
Water_supply                 -0.10404    0.03059  -3.401 0.000671 ***
Sewerage_service              0.10573    0.03302   3.202 0.001366 **
Electricity_supply            0.04539    0.07592   0.598 0.549946
Education                     0.01962    0.01781   1.102 0.270637
Bank_credit_percapita_dummy   3.28630    1.28194   2.564 0.010361 *
Travel_times                 -0.42522    0.15362  -2.768 0.005641 **
---
```

Signif. codes:  0 `***' 0.001 `**' 0.01 `*' 0.05 `.' 0.1 ` ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 315.6  on 1867  degrees of freedom
Residual deviance: 156.2  on 1861  degrees of freedom
AIC: 170.2

Number of Fisher Scoring iterations: 10

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES

|  | Estimate | Std. Error | z-value | Pr(>\|z\|) |
|---|---|---|---|---|
| (Intercept) | -8.97959 | 0.95883 | -9.36513 | 0.00000 |
| Water_supply | -0.10894 | 0.00349 | -31.22136 | 0.00000 |
| Sewerage_service | 0.11269 | 0.00510 | 22.09884 | 0.00000 |
| Electricity_supply | 0.04657 | 0.00191 | 24.36486 | 0.00000 |
| Education | 0.02145 | 0.01026 | 2.09177 | 0.03646 |
| Bank_credit_percapita_dummy | 3.66750 | 0.18705 | 19.60704 | 0.00000 |
| Travel_times | -0.43323 | 0.00695 | -62.36342 | 0.00000 |
| WXB | 0.35921 | 0.25352 | 1.41688 | 0.15652 |

Number of observations =  1868
Warning message:
glm.fit: fitted probabilities numerically 0 or 1 occurred
> logit2924<-cbind(demoslogit2924$coef,demoslogit2924$se)
> write.table(logit2924, file = "splog2924.csv", sep = ",", col.names = NA)
>
> demoslogit2929<- splogit(SIC_2929 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
     Min        1Q      Median        3Q        Max
-1.48509  -0.00002   0.00000   0.00000    2.90599

Coefficients:

|  | Estimate | Std. Error | z value | Pr(>\|z\|) | |
|---|---|---|---|---|---|
| (Intercept) | -42.86430 | 1213.58296 | -0.035 | 0.97182 | |
| Water_supply | -0.17951 | 0.05722 | -3.137 | 0.00171 | ** |
| Sewerage_service | 0.13919 | 0.05625 | 2.475 | 0.01334 | * |
| Electricity_supply | 0.26388 | 0.14639 | 1.803 | 0.07145 | . |
| Education | -0.01118 | 0.02206 | -0.507 | 0.61218 | |
| Bank_credit_percapita_dummy | 20.75559 | 1213.52055 | 0.017 | 0.98635 | |
| Travel_times | -0.73995 | 0.24468 | -3.024 | 0.00249 | ** |

---
Signif. codes:  0 `***' 0.001 `**' 0.01 `*' 0.05 `.' 0.1 ` ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 323.73  on 1867  degrees of freedom
Residual deviance: 119.56  on 1861  degrees of freedom
AIC: 133.56

Number of Fisher Scoring iterations: 22

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES

|  | Estimate | Std. Error | z-value | Pr(>\|z\|) |
|---|---|---|---|---|
| (Intercept) | -42.81774 | 0.82523 | -51.88557 | 0.00000 |
| Water_supply | -0.18304 | 0.00211 | -86.78133 | 0.00000 |
| Sewerage_service | 0.14421 | 0.00435 | 33.15372 | 0.00000 |
| Electricity_supply | 0.26497 | 0.00236 | 112.08903 | 0.00000 |
| Education | -0.00787 | 0.01032 | -0.76200 | 0.44606 |
| Bank_credit_percapita_dummy | 21.08888 | 0.15850 | 133.05437 | 0.00000 |
| Travel_times | -0.74896 | 0.00604 | -123.91596 | 0.00000 |
| WXB | 0.30537 | 0.21226 | 1.43863 | 0.15025 |

Number of observations =  1868
Warning message:

```
glm.fit: fitted probabilities numerically 0 or 1 occurred
> logit2929<-cbind(demoslogit2929$coef,demoslogit2929$se)
> write.table(logit2929, file = "splog2929.csv", sep = ",", col.names = NA)
>
> demoslogit3190<- splogit(SIC_3190 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
    Min       1Q    Median       3Q       Max
-1.7840  -0.0602  -0.0165  -0.0043    3.8265

Coefficients:
                               Estimate Std. Error z value Pr(>|z|)
(Intercept)                   -23.98921    6.76967  -3.544 0.000395 ***
Water_supply                   -0.06904    0.02709  -2.548 0.010824 *
Sewerage_service                0.08242    0.02932   2.811 0.004937 **
Electricity_supply              0.19927    0.07876   2.530 0.011406 *
Education                       0.03501    0.01706   2.052 0.040144 *
Bank_credit_percapita_dummy     1.96529    0.66276   2.965 0.003024 **
Travel_times                   -0.09041    0.07265  -1.244 0.213347
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 496.15  on 1867  degrees of freedom
Residual deviance: 216.36  on 1861  degrees of freedom
AIC: 230.36

Number of Fisher Scoring iterations: 10

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                               Estimate Std. Error    z-value Pr(>|z|)
(Intercept)                   -24.79069    0.71714 -34.56864  0.00000
Water_supply                   -0.07419    0.00281 -26.36721  0.00000
Sewerage_service                0.09272    0.00467  19.86110  0.00000
Electricity_supply              0.20318    0.00290  70.04795  0.00000
Education                       0.03792    0.01163   3.26010  0.00111
Bank_credit_percapita_dummy     2.26363    0.22823   9.91836  0.00000
Travel_times                   -0.09068    0.01369  -6.62507  0.00000
WXB                             0.14863    0.18228   0.81540  0.41484
Number of observations =  1868
> logit3190<-cbind(demoslogit3190$coef,demoslogit3190$se)
> write.table(logit3190, file = "splog3190.csv", sep = ",", col.names = NA)
>
> demoslogit3311<- splogit(SIC_3311 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
    Min        1Q    Median        3Q       Max
-1.50535  -0.00003   0.00000   0.00000   2.60691

Coefficients:
                               Estimate Std. Error z value Pr(>|z|)
(Intercept)                   -59.03422 1293.17517  -0.046  0.96359
Water_supply                   -0.15333    0.05652  -2.713  0.00668 **
Sewerage_service                0.14400    0.06130   2.349  0.01882 *
Electricity_supply              0.40447    0.15943   2.537  0.01118 *
Education                       0.01040    0.02210   0.471  0.63783
Bank_credit_percapita_dummy    19.36096 1293.09932   0.015  0.98805
Travel_times                   -0.11994    0.11859  -1.011  0.31183
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 347.75  on 1867  degrees of freedom
Residual deviance: 128.53  on 1861  degrees of freedom
AIC: 142.53

Number of Fisher Scoring iterations: 22

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                              Estimate Std. Error   z-value Pr(>|z|)
(Intercept)                   -58.09465    0.88470 -65.66619  0.00000
Water_supply                   -0.15532    0.00200 -77.60911  0.00000
Sewerage_service                0.14846    0.00382  38.81935  0.00000
Electricity_supply              0.40515    0.00237 171.29933  0.00000
Education                       0.01359    0.01083   1.25498  0.20948
Bank_credit_percapita_dummy    19.64411    0.11821 166.17617  0.00000
Travel_times                   -0.11767    0.01467  -8.02055  0.00000
WXB                             0.58466    0.23299   2.50936  0.01209
Number of observations =   1868
Warning message:
glm.fit: fitted probabilities numerically 0 or 1 occurred
> logit3311<-cbind(demoslogit3311$coef,demoslogit3311$se)
> write.table(logit3311, file = "splog3311.csv", sep = ",", col.names = NA)
>
> demoslogit3693<- splogit(SIC_3693 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
   Min      1Q  Median      3Q     Max
-1.103   0.000   0.000   0.000   2.497

Coefficients:
                              Estimate Std. Error z value Pr(>|z|)
(Intercept)                   -97.64872 1503.24844  -0.065   0.9482
Water_supply                   -0.28666    0.11890  -2.411   0.0159 *
Sewerage_service                0.19771    0.12063   1.639   0.1012
Electricity_supply              0.83633    0.39612   2.111   0.0347 *
Education                      -0.02527    0.03327  -0.760   0.4475
Bank_credit_percapita_dummy    22.06941 1502.79642   0.015   0.9883
Travel_times                   -0.26831    0.38876  -0.690   0.4901
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 145.068  on 1867  degrees of freedom
Residual deviance:  57.232  on 1861  degrees of freedom
AIC: 71.232

Number of Fisher Scoring iterations: 23

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                              Estimate Std. Error    z-value Pr(>|z|)
(Intercept)                   -97.89139    1.52138 -64.34402  0.00000
Water_supply                   -0.28863    0.00185 -155.65627  0.00000
Sewerage_service                0.20017    0.00323  61.93285  0.00000
Electricity_supply              0.83682    0.00183 456.25465  0.00000
Education                      -0.01463    0.01136  -1.28767  0.19786
Bank_credit_percapita_dummy    22.20339    0.10308 215.40815  0.00000
Travel_times                   -0.27362    0.00347 -78.87723  0.00000
WXB                             0.23673    0.40187   0.58906  0.55582
Number of observations =   1868
Warning message:
glm.fit: fitted probabilities numerically 0 or 1 occurred
```

```
> logit3693<-cbind(demoslogit3693$coef,demoslogit3693$se)
> write.table(logit3693, file = "splog3693.csv", sep = ",", col.names = NA)
>
> demoslogit3694<- splogit(SIC_3694 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
     Min        1Q     Median        3Q       Max
-0.93245  -0.00001    0.00000    0.00000    2.70913

Coefficients:
                                Estimate Std. Error z value Pr(>|z|)
(Intercept)                    -2.526e+01  1.797e+03  -0.014    0.9888
Water_supply                   -2.324e-01  1.408e-01  -1.651    0.0988 .
Sewerage_service                1.884e-01  1.457e-01   1.293    0.1961
Electricity_supply              6.262e-02  2.576e-01   0.243    0.8079
Education                       6.508e-03  3.168e-02   0.205    0.8372
Bank_credit_percapita_dummy     2.122e+01  1.797e+03   0.012    0.9906
Travel_times                   -1.763e+00  1.059e+00  -1.665    0.0959 .
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 124.547  on 1867  degrees of freedom
Residual deviance:  54.329  on 1861  degrees of freedom
AIC: 68.329

Number of Fisher Scoring iterations: 23

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                                Estimate Std. Error    z-value Pr(>|z|)
(Intercept)                    -22.75253    2.00914  -11.32451  0.00000
Water_supply                    -0.23367    0.00152 -154.17170  0.00000
Sewerage_service                 0.18971    0.00320   59.23876  0.00000
Electricity_supply               0.06232    0.00126   49.63504  0.00000
Education                        0.01126    0.01136    0.99131  0.32154
Bank_credit_percapita_dummy     21.33546    0.09748  218.87328  0.00000
Travel_times                    -1.76650    0.00457 -386.56412  0.00000
WXB                              0.95686    0.53349    1.79359  0.07288
Number of observations =  1868
Warning message:
glm.fit: fitted probabilities numerically 0 or 1 occurred
> logit3694<-cbind(demoslogit3694$coef,demoslogit3694$se)
> write.table(logit3694, file = "splog3694.csv", sep = ",", col.names = NA)
>
> demoslogit3699<- splogit(SIC_3699 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
    Min       1Q    Median       3Q       Max
-1.9918  -0.1044   -0.0328  -0.0106    3.2029

Coefficients:
                                Estimate Std. Error z value Pr(>|z|)
(Intercept)                    -18.735591   3.841838  -4.877 1.08e-06 ***
Water_supply                    -0.089101   0.017932  -4.969 6.74e-07 ***
Sewerage_service                 0.085291   0.019228   4.436 9.17e-06 ***
Electricity_supply               0.156346   0.045311   3.450 0.000560 ***
Education                        0.055383   0.014666   3.776 0.000159 ***
Bank_credit_percapita_dummy      2.056500   0.470225   4.373 1.22e-05 ***
Travel_times                     0.003751   0.044456   0.084 0.932764
---
```

```
Signif. codes:  0 `***' 0.001 `**' 0.01 `*' 0.05 `.' 0.1 ` ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 709.52  on 1867  degrees of freedom
Residual deviance: 314.11  on 1861  degrees of freedom
AIC: 328.11

Number of Fisher Scoring iterations: 9

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                             Estimate Std. Error   z-value Pr(>|z|)
(Intercept)                 -19.28710    0.74251 -25.97565  0.00000
Water_supply                 -0.09657    0.00450 -21.45555  0.00000
Sewerage_service              0.09372    0.00652  14.37467  0.00000
Electricity_supply            0.16535    0.00539  30.66684  0.00000
Education                     0.05827    0.01109   5.25336  0.00000
Bank_credit_percapita_dummy   2.41365    0.28529   8.46022  0.00000
Travel_times                  0.01132    0.02346   0.48269  0.62932
WXB                           0.28712    0.15356   1.86976  0.06152
Number of observations =  1868
> logit3699<-cbind(demoslogit3699$coef,demoslogit3699$se)
> write.table(logit3699, file = "splog3699.csv", sep = ",", col.names = NA)
>
> demoslogit3720<- splogit(SIC_3720 ~ Water_supply + Sewerage_service + Electricity_supply + Educ
ation + Bank_credit_percapita_dummy + Travel_times , wmat=bookw, data=empresas, minp=.0001)

Call:
glm(formula = form, family = binomial(link = "logit"), data = data)

Deviance Residuals:
    Min       1Q    Median       3Q      Max
-1.1351  -0.0366  -0.0086  -0.0019   3.2981

Coefficients:
                             Estimate Std. Error z value Pr(>|z|)
(Intercept)                 -27.074379   9.286713  -2.915  0.00355 **
Water_supply                 -0.095122   0.033239  -2.862  0.00421 **
Sewerage_service              0.093852   0.035189   2.667  0.00765 **
Electricity_supply            0.237659   0.106542   2.231  0.02570 *
Education                     0.003213   0.019148   0.168  0.86674
Bank_credit_percapita_dummy   2.973941   1.182901   2.514  0.01193 *
Travel_times                 -0.123219   0.103327  -1.193  0.23306
---
Signif. codes:  0 `***' 0.001 `**' 0.01 `*' 0.05 `.' 0.1 ` ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 323.73  on 1867  degrees of freedom
Residual deviance: 161.57  on 1861  degrees of freedom
AIC: 175.57

Number of Fisher Scoring iterations: 11

STANDARD LOGIT ESTIMATES
LINEARIZED GMM LOGIT ESTIMATES
                             Estimate Std. Error   z-value Pr(>|z|)
(Intercept)                 -26.70336    1.00897 -26.46601  0.00000
Water_supply                 -0.09948    0.00278 -35.83107  0.00000
Sewerage_service              0.10168    0.00558  18.21744  0.00000
Electricity_supply            0.24030    0.00249  96.53905  0.00000
Education                     0.00356    0.01061   0.33581  0.73702
Bank_credit_percapita_dummy   3.31856    0.18398  18.03762  0.00000
Travel_times                 -0.12254    0.01652  -7.41561  0.00000
WXB                           0.44472    0.26494   1.67859  0.09323
Number of observations =  1868
Warning message:
glm.fit: fitted probabilities numerically 0 or 1 occurred
> logit3720<-cbind(demoslogit3720$coef,demoslogit3720$se)
```

```
> write.table(logit3720, file = "splog3720.csv", sep = ",", col.names = NA)
>
```