Chapter 2: The original output from the R studio program

R version 4.1.0 (2021-05-18) -- "Camp Pontanezen"
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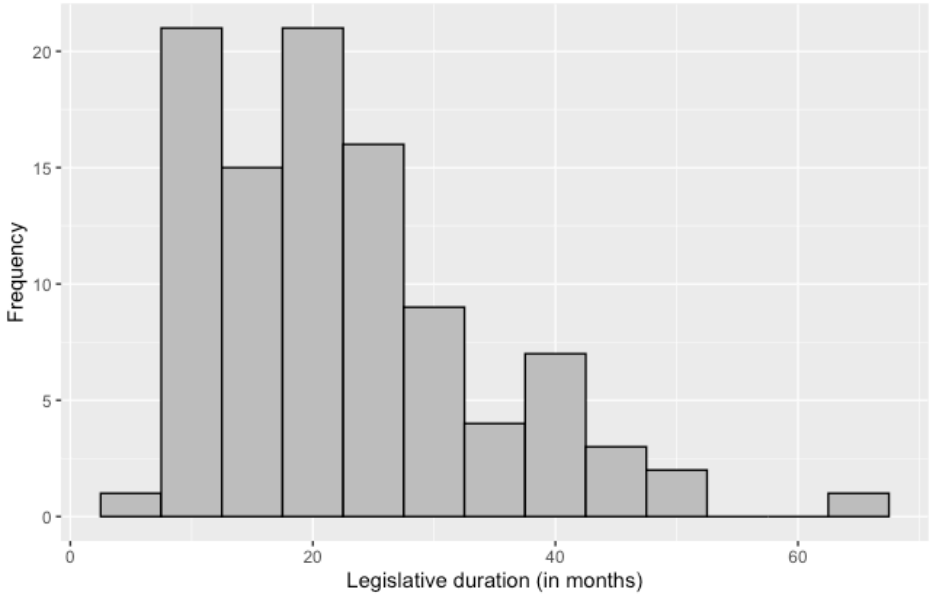
Platform: x86_64-apple-darwin17.0 (64-bit)

Chapter 2 The influence of different stakeholders on the legislative duration in the initial stage of decision-making process
1. Load the dataset:
#Displaying the distribution of legislative duration



descriptive statistics

```
> # descriptive statistics
> summary(data2_1)
  deu_duration      duration       hetero.sta       sta.sup.num      sta.opp.num       sta.sup          sta.opp
 Min.   : 214.0   Min.   : 7.00   Min.   :-0.5400   Min.   :  3.00   Min.   :  5.00   Min.   :0.1000   Min.   :0.1000
 1st Qu.: 402.2   1st Qu.:13.75   1st Qu.: 0.0150   1st Qu.: 26.25   1st Qu.: 19.75   1st Qu.:0.3250   1st Qu.:0.4800
 Median : 590.5   Median :20.00   Median : 0.1450   Median : 44.00   Median : 32.50   Median :0.4100   Median :0.5450
 Mean   : 674.7   Mean   :22.53   Mean   : 0.1430   Mean   : 54.95   Mean   : 37.73   Mean   :0.4024   Mean   :0.5399
 3rd Qu.: 847.5   3rd Qu.:28.00   3rd Qu.: 0.3025   3rd Qu.: 71.00   3rd Qu.: 52.25   3rd Qu.:0.4800   3rd Qu.:0.6400
 Max.   :1937.0   Max.   :65.00   Max.   : 0.7500   Max.   :212.00   Max.   :139.00   Max.   :0.7600   Max.   :0.8500
 hetero.interest   hetero.nonstate      density         diversity      typeact          Dir              Reg              Dec
 Min.   :-1.0000   Min.   :-0.8600   Min.   : 12.00   Min.   :1.00   Min.   :1.00   Min.   :0.00   Min.   :0.00   Min.   :0.00
 1st Qu.:-0.0400   1st Qu.:-0.1850   1st Qu.: 49.75   1st Qu.:3.00   1st Qu.:1.00   1st Qu.:0.00   1st Qu.:0.00   1st Qu.:0.00
 Median : 0.1250   Median : 0.1100   Median : 90.50   Median :4.00   Median :2.00   Median :0.00   Median :0.00   Median :0.00
 Mean   : 0.1262   Mean   : 0.1376   Mean   : 99.56   Mean   :4.06   Mean   :1.59   Mean   :0.46   Mean   :0.49   Mean   :0.05
 3rd Qu.: 0.3225   3rd Qu.: 0.5125   3rd Qu.:146.25   3rd Qu.:5.00   3rd Qu.:2.00   3rd Qu.:1.00   3rd Qu.:1.00   3rd Qu.:0.00
 Max.   : 0.7800   Max.   : 1.0000   Max.   :315.00   Max.   :7.00   Max.   :3.00   Max.   :1.00   Max.   :1.00   Max.   :1.00
    novelty       transparent     complexity
 Min.   : 0.00   Min.   :0.00   Min.   :0.00
 1st Qu.: 1.00   1st Qu.:0.00   1st Qu.:1.00
 Median : 3.00   Median :0.00   Median :2.00
 Mean   : 4.91   Mean   :0.34   Mean   :2.16
 3rd Qu.: 6.00   3rd Qu.:1.00   3rd Qu.:3.00
 Max.   :47.00   Max.   :1.00   Max.   :6.00
> sd(data2_1$duration)
[1] 11.30786
> var(data2_1$duration)
[1] 127.8678
```

correlation matrix

```
> # correlation matrix
> cor(data2_1, method='pearson')
               deu_duration    duration  hetero.sta sta.sup.num  sta.opp.num     sta.sup     sta.opp hetero.interest hetero.nonstate
deu_duration      1.00000000  0.99970097  0.23014700  0.15096549  0.048556312 -0.23870870  0.11071991     -0.08488087     0.128213960
duration          0.99970097  1.00000000  0.22907667  0.15471109  0.051074336 -0.23811067  0.11089009     -0.08568682     0.128797908
hetero.sta        0.23014700  0.22907667  1.00000000  0.45517148 -0.249958706 -0.83571700  0.81950611      0.48168268     0.291380879
sta.sup.num       0.15096549  0.15471109  0.45517148  1.00000000  0.623381841 -0.37704405  0.45920320      0.31184333     0.262415564
sta.opp.num       0.04855631  0.05107434 -0.24995871  0.62338184  1.000000000  0.28049249 -0.11678930     -0.05516025     0.001830258
sta.sup          -0.23870870 -0.23811067 -0.83571700 -0.37704405  0.280492490  1.00000000 -0.50037777     -0.43786040    -0.424781589
sta.opp           0.11071991  0.11089009  0.81950611  0.45920320 -0.116789304 -0.50037777  1.00000000      0.38353321     0.133210212
hetero.interest  -0.08488087 -0.08568682  0.48168268  0.31184333 -0.055160250 -0.43786040  0.38353321      1.00000000     0.107276736
hetero.nonstate   0.12821396  0.12879791  0.29138088  0.26241556  0.001830258 -0.42478159  0.13321021      0.10727674     1.000000000
density           0.16736435  0.17077141  0.19213102  0.90538341  0.796139218 -0.26602117  0.12205908      0.20673675     0.257405477
diversity         0.33724977  0.33789358  0.02153657  0.08314617  0.142952514 -0.04100311 -0.13626968      0.04294466     0.160111522
typeact          -0.25930217 -0.26185565 -0.22437257 -0.05961759  0.124329596  0.25528491 -0.07707333     -0.03823119    -0.265924927
Dir               0.28442199  0.28643473  0.22324881  0.05926790 -0.134075430 -0.26044393  0.06189760      0.05768249     0.277107691
Reg              -0.26383408 -0.26486071 -0.18271186 -0.04844612  0.121919247  0.22072099 -0.03327211     -0.07030003    -0.241502959
Dec              -0.04526159 -0.04750956 -0.09144042 -0.02441331  0.026958274  0.08931687 -0.06523151      0.02933851    -0.079756081
novelty           0.11926936  0.11984234  0.03708134  0.20417343  0.217361186 -0.16521312 -0.03225729     -0.01188918     0.040796293
transparent       0.03873386  0.03748745  0.10610524  0.11538233  0.021961830 -0.15475214  0.08500731      0.10324934     0.090200043
complexity        0.48754041  0.48828991  0.15999025  0.15322425  0.048048659 -0.15402097  0.12271972     -0.06480518     0.208541774
                     density    diversity       typeact          Dir          Reg          Dec       novelty transparent  complexity
deu_duration     0.167364349  0.337249770 -0.2593021706  0.284421988 -0.263834077 -0.04526159  0.1192693613  0.03873386  0.48754041
duration         0.170771412  0.337893577 -0.2618556489  0.286434727 -0.264860707 -0.04750956  0.1198423393  0.03748745  0.48828991
hetero.sta       0.192131021  0.021536566 -0.2243725680  0.223248810 -0.182711856 -0.09144042  0.0370813364  0.10610524  0.15999025
sta.sup.num      0.905383410  0.083146173 -0.0596175930  0.059267903 -0.048446118 -0.02441331  0.2041734316  0.11538233  0.15322425
sta.opp.num      0.796139218  0.142952514  0.1243295963 -0.134075430  0.121919247  0.02695827  0.2173611861  0.02196183  0.04804866
sta.sup         -0.266021165 -0.041003106  0.2552849116 -0.260443925  0.220720995  0.08931687 -0.1652131212 -0.15475214 -0.15402097
sta.opp          0.122059080 -0.136269681 -0.0770733282  0.061897601 -0.033272112 -0.06523151 -0.0322572909  0.08500731  0.12271972
hetero.interest  0.206736753  0.042944657 -0.0382311926  0.057682491 -0.070300033  0.02933851 -0.0118891822  0.10324934 -0.06480518
hetero.nonstate  0.257405477  0.160111522 -0.2659249266  0.277107691 -0.241502959 -0.07975608  0.0407962933  0.09020004  0.20854177
density          1.000000000  0.135711479 -0.0184167536  0.009776808  0.002046834 -0.02705246  0.3149085765  0.10436500  0.14177377
diversity        0.135711479  1.000000000  0.0073156722  0.060452626 -0.129098828  0.15787046  0.0594066692  0.09736799  0.23329819
typeact         -0.018416754  0.007315672  1.0000000000 -0.931289051  0.687301447  0.55321349  0.0008153328 -0.14657674 -0.23946207
Dir              0.009776808  0.060452626 -0.9312890512  1.000000000 -0.904679997 -0.21174113 -0.0489384421  0.18467124  0.22304405
Reg              0.002046834 -0.129098828  0.6873014471 -0.904679997  1.000000000 -0.22487240  0.0966290169 -0.19678472 -0.16465371
Dec             -0.027052465  0.157870461  0.5532134900 -0.211741134 -0.224872398  1.00000000 -0.1097251899  0.02905782 -0.13239213
novelty          0.314908576  0.059406669  0.0008153328 -0.048938442  0.096629017 -0.10972519  1.0000000000  0.23394059  0.12663030
transparent      0.104365000  0.097367991 -0.1465767395  0.184671241 -0.196784715  0.02905782  0.2339405918  1.00000000  0.18529845
complexity       0.141773766  0.233298187 -0.2394620708  0.223044053 -0.164653710 -0.13239213  0.1266302981  0.18529845  1.00000000
>
```

Multilevel negative binomial regression (Table 2.1)

Model 1 main explanatory variables

```
> summary(model1)

Call:
glm(formula = pre.congruence ~ neg.interest + salience + eulegactor +
    actcom + actboepcou + actcou + contestation + leg.duration +
    novelty + policy.change + complexity, family = "binomial")

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-3.7386  -0.5252   0.0003   0.5496   1.7602

Coefficients:
               Estimate Std. Error z value Pr(>|z|)
(Intercept)    1.257e+01  1.363e+03   0.009   0.9926
neg.interest   2.515e-02  1.208e-02   2.082   0.0374 *
salience       3.017e-02  4.943e-03   6.104 1.04e-09 ***
eulegactor    -5.995e-02  3.782e-02  -1.585   0.1129
actcom        -1.612e+01  1.363e+03  -0.012   0.9906
actboepcou    -1.566e+01  1.363e+03  -0.011   0.9908
actcou        -1.535e+01  1.363e+03  -0.011   0.9910
contestation   1.371e-01  2.202e-01   0.622   0.5336
leg.duration  -1.016e+00  5.177e-01  -1.962   0.0497 *
novelty       -4.549e-01  5.402e-01  -0.842   0.3997
policy.change -7.750e-02  5.015e-02  -1.545   0.1223
complexity    -4.445e-03  1.699e-01  -0.026   0.9791
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 231.51  on 166  degrees of freedom
Residual deviance: 122.20  on 155  degrees of freedom
AIC: 146.2

Number of Fisher Scoring iterations: 15
```

Model 2 consultation related control variables

```
> model2<-glm.nb(duration~hetero.sta+sta.sup.num+sta.opp.num+hetero.interest+hetero.nonstate+density+diversity, data=data2_1)
> summary(model2)

Call:
glm.nb(formula = duration ~ hetero.sta + sta.sup.num + sta.opp.num +
    hetero.interest + hetero.nonstate + density + diversity,
    data = data2_1, init.theta = 7.956484773, link = log)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-2.1620  -0.8734  -0.1753   0.5537   2.3834

Coefficients:
                Estimate Std. Error z value Pr(>|z|)
(Intercept)     2.318811   0.173919  13.333  < 2e-16 ***
hetero.sta      0.935638   0.321515   2.910 0.003613 **
sta.sup.num    -0.005673   0.003155  -1.798 0.072181 .
sta.opp.num    -0.001189   0.003760  -0.316 0.751836
hetero.interest -0.472128   0.166567  -2.834 0.004590 **
hetero.nonstate -0.034426   0.102660  -0.335 0.737369
density         0.004681   0.002221   2.108 0.035045 *
diversity       0.144392   0.039834   3.625 0.000289 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

(Dispersion parameter for Negative Binomial(7.9565) family taken to be 1)

    Null deviance: 136.43  on 99  degrees of freedom
Residual deviance: 100.21  on 92  degrees of freedom
AIC: 732.12

Number of Fisher Scoring iterations: 1


              Theta:  7.96
          Std. Err.:  1.52

 2 x log-likelihood:  -714.116
>
```

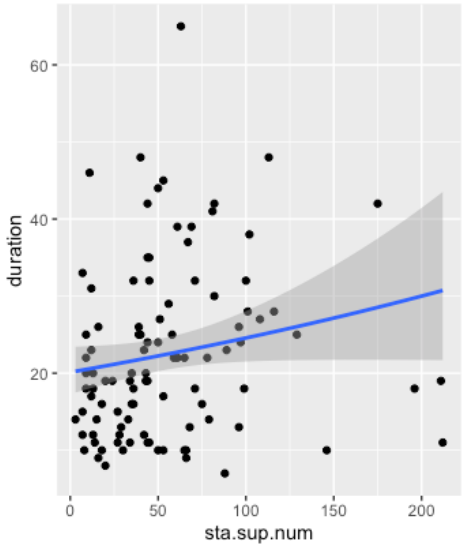
Model 3 legislation related control variables

```
> model3<-glm.nb(duration~hetero.sta+sta.sup.num+sta.opp.num+hetero.interest+hetero.nonstate+Dir+Reg+Dec+novelty+transparent+complexity, data=da
ta2_1)
> summary(model3)

Call:
glm.nb(formula = duration ~ hetero.sta + sta.sup.num + sta.opp.num +
    hetero.interest + hetero.nonstate + Dir + Reg + Dec + novelty +
    transparent + complexity, data = data2_1, init.theta = 9.532510084,
    link = log)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-2.1493  -0.7500  -0.1660   0.4425   2.5332

Coefficients: (1 not defined because of singularities)
                Estimate Std. Error z value Pr(>|z|)
(Intercept)     2.680917   0.199194  13.459  < 2e-16 ***
hetero.sta      0.706656   0.299971   2.356   0.0185 *
sta.sup.num    -0.002140   0.002009  -1.065   0.2868
sta.opp.num     0.004593   0.003044   1.509   0.1313
hetero.interest -0.186069   0.157571  -1.181   0.2377
hetero.nonstate -0.022568   0.094064  -0.240   0.8104
Dir             0.015893   0.191860   0.083   0.9340
Reg            -0.189211   0.190160  -0.995   0.3197
Dec                  NA         NA      NA       NA
novelty         0.006742   0.006366   1.059   0.2896
transparent    -0.100644   0.087765  -1.147   0.2515
complexity      0.161410   0.031614   5.106  3.3e-07 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

(Dispersion parameter for Negative Binomial(9.5325) family taken to be 1)

    Null deviance: 155.098  on 99  degrees of freedom
Residual deviance:  99.435  on 89  degrees of freedom
AIC: 724.62

Number of Fisher Scoring iterations: 1


              Theta:  9.53
          Std. Err.:  1.91

 2 x log-likelihood:  -700.615
>
```

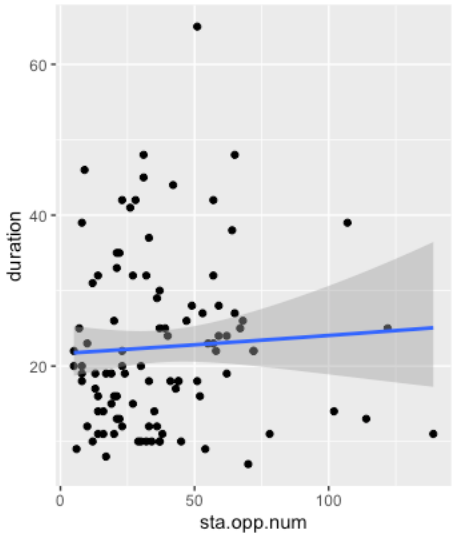
Model 4 all control variables

```
> model4<-glm.nb(duration~hetero.sta+sta.sup.num+sta.opp.num+hetero.interest+hetero.nonstate+density+diversity+Dir+Reg+Dec+novelty+transparent+complexity, data=data2_1)
> summary(model4)

Call:
glm.nb(formula = duration ~ hetero.sta + sta.sup.num + sta.opp.num +
    hetero.interest + hetero.nonstate + density + diversity +
    Dir + Reg + Dec + novelty + transparent + complexity, data = data2_1,
    init.theta = 11.66773886, link = log)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-2.0795  -0.7757  -0.1221   0.5290   2.3574

Coefficients: (1 not defined because of singularities)
                 Estimate Std. Error z value Pr(>|z|)
(Intercept)      2.1795481  0.2448464   8.902  < 2e-16 ***
hetero.sta       0.7263859  0.2883856   2.519  0.01178 *
sta.sup.num     -0.0057555  0.0028735  -2.003  0.04518 *
sta.opp.num     -0.0008093  0.0033431  -0.242  0.80872
hetero.interest -0.2912418  0.1489107  -1.956  0.05049 .
hetero.nonstate -0.1169024  0.0929805  -1.257  0.20865
density          0.0044407  0.0020821   2.133  0.03294 *
diversity        0.1080547  0.0365277   2.958  0.00309 **
Dir              0.1122500  0.1836495   0.611  0.54106
Reg             -0.0785764  0.1827173  -0.430  0.66716
Dec                     NA         NA      NA       NA
novelty          0.0016746  0.0063730   0.263  0.79273
transparent     -0.0837529  0.0820662  -1.021  0.30747
complexity       0.1416193  0.0302900   4.675 2.93e-06 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

(Dispersion parameter for Negative Binomial(11.6677) family taken to be 1)

    Null deviance: 177.593  on 99  degrees of freedom
Residual deviance:  99.356  on 87  degrees of freedom
AIC: 715.18

Number of Fisher Scoring iterations: 1


              Theta:  11.67
          Std. Err.:  2.51

 2 x log-likelihood:  -687.185
```

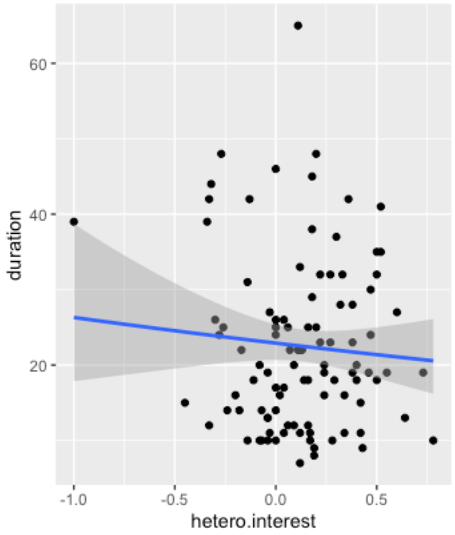
#Figure 2.1 Predicted counts for Preference heterogeneity among stakeholders
#pdf("./plots/pdf/figure 2.1.pdf",width=9,height=6)
#png("./plots/png/figure 2.1.png",width=1100, height=800, res=120)



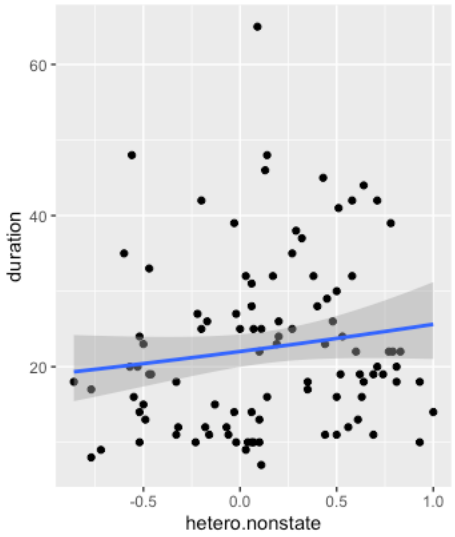
#Figure 2.3 Predicted counts for Stakeholders opposition
#pdf("./plots/pdf/figure 2.3.pdf",width=9,height=6)
#png("./plots/png/figure 2.3.png",width=1100, height=800, res=120)



#Figure 2.4 Predicted counts for Preference heterogeneity among EU interest groups
#pdf("./plots/pdf/figure 2.4.pdf",width=9,height=6)
#png("./plots/png/figure 2.4.png",width=1100, height=800, res=120)



#Figure 2.5 Predicted counts for Preference heterogeneity among non-state groups
#pdf("./plots/pdf/figure 2.5.pdf",width=9,height=6)
#png("./plots/png/figure 2.5.png",width=1100, height=800, res=120)



Alternative model specifications (Table C2 in Appendix)

Model A main explanatory variables (different measurement for explanatory variables)

```
> modela=glm(deu_duration~hetero.sta+sta.sup+sta.opp+hetero.interest+hetero.nonstate,quasipoisson, data2_1)
> summary(modela)

Call:
glm(formula = deu_duration ~ hetero.sta + sta.sup + sta.opp +
    hetero.interest + hetero.nonstate, family = quasipoisson,
    data = data2_1)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-21.663   -9.360   -3.035    6.463   40.944

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)      6.86126    0.35787  19.172   <2e-16 ***
hetero.sta       0.88508    0.59512   1.487   0.1403
sta.sup         -0.20086    0.79105  -0.254   0.8001
sta.opp         -0.67434    0.61221  -1.101   0.2735
hetero.interest -0.35613    0.16617  -2.143   0.0347 *
hetero.nonstate  0.02537    0.11885   0.213   0.8314
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

(Dispersion parameter for quasipoisson family taken to be 158.1554)

    Null deviance: 15755  on 99  degrees of freedom
Residual deviance: 13857  on 94  degrees of freedom
AIC: NA

Number of Fisher Scoring iterations: 4
```

Model B consultation related control variables (different measurement for explanatory variables)

```
> modelb=glm(deu_duration~hetero.sta+sta.sup+sta.opp+hetero.interest+hetero.nonstate+density+diversity,quasipoisson, data2_1)
> summary(modelb)

Call:
glm(formula = deu_duration ~ hetero.sta + sta.sup + sta.opp +
    hetero.interest + hetero.nonstate + density + diversity,
    family = quasipoisson, data = data2_1)

Deviance Residuals:
     Min        1Q    Median        3Q       Max
-20.3905   -9.2350   -0.9134    6.0586   30.3449

Coefficients:
                 Estimate Std. Error t value Pr(>|t|)
(Intercept)      5.9890690  0.4021264  14.893  < 2e-16 ***
hetero.sta       0.3582541  0.5664796   0.632 0.528680
sta.sup         -0.6486928  0.7472415  -0.868 0.387589
sta.opp          0.0628007  0.5999885   0.105 0.916866
hetero.interest -0.4503883  0.1573804  -2.862 0.005215 **
hetero.nonstate -0.0576632  0.1139939  -0.506 0.614175
density          0.0008737  0.0007310   1.195 0.235043
diversity        0.1601433  0.0449544   3.562 0.000585 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

(Dispersion parameter for quasipoisson family taken to be 133.1285)

    Null deviance: 15755  on 99  degrees of freedom
Residual deviance: 11814  on 92  degrees of freedom
AIC: NA

Number of Fisher Scoring iterations: 4
```

Model C legislation related control variables (different measurement for explanatory variables)

```
> modelc=glm(deu_duration~hetero.sta+sta.sup+sta.opp+hetero.interest+hetero.nonstate+density+diversity+Dir+Reg+Dec+novelty+transparent+complexit
y,quasipoisson, data2_1)
> summary(modelc)

Call:
glm(formula = deu_duration ~ hetero.sta + sta.sup + sta.opp +
    hetero.interest + hetero.nonstate + density + diversity +
    Dir + Reg + Dec + novelty + transparent + complexity, family = quasipoisson,
    data = data2_1)

Deviance Residuals:
     Min        1Q    Median        3Q       Max
-18.7509   -6.7218   -0.8656    4.8769   24.4823

Coefficients: (1 not defined because of singularities)
                 Estimate Std. Error t value Pr(>|t|)
(Intercept)     5.8205760  0.4408615  13.203  < 2e-16 ***
hetero.sta      0.1044536  0.5220319   0.200  0.84188
sta.sup        -0.6723823  0.6822835  -0.985  0.32712
sta.opp         0.1135240  0.5588886   0.203  0.83951
hetero.interest -0.3031002  0.1458899  -2.078  0.04069 *
hetero.nonstate -0.1396978  0.1044457  -1.338  0.18454
density         0.0007026  0.0006919   1.015  0.31270
diversity       0.1262527  0.0423050   2.984  0.00369 **
Dir             0.1430870  0.2044216   0.700  0.48582
Reg            -0.0622279  0.2044034  -0.304  0.76152
Dec                    NA         NA      NA       NA
novelty         0.0037791  0.0065080   0.581  0.56295
transparent    -0.0993912  0.0889513  -1.117  0.26691
complexity      0.1358528  0.0326774   4.157 7.52e-05 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

(Dispersion parameter for quasipoisson family taken to be 105.5476)

    Null deviance: 15755.3  on 99  degrees of freedom
Residual deviance:  9079.8  on 87  degrees of freedom
AIC: NA

Number of Fisher Scoring iterations: 4
```

Model D all control variables (different measurement for explanatory variables)

```
> modeld=glm(deu_duration~hetero.sta+sta.sup+sta.opp+hetero.interest+hetero.nonstate+Dir+Reg+Dec+novelty+transparent+complexity,quasipoisson, da
ta2_1)
> summary(modeld)

Call:
glm(formula = deu_duration ~ hetero.sta + sta.sup + sta.opp +
    hetero.interest + hetero.nonstate + Dir + Reg + Dec + novelty +
    transparent + complexity, family = quasipoisson, data = data2_1)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-19.012   -7.891   -2.207    5.123   26.915

Coefficients: (1 not defined because of singularities)
                Estimate Std. Error t value Pr(>|t|)
(Intercept)     6.574508   0.390032  16.856  < 2e-16 ***
hetero.sta      0.557008   0.527789   1.055    0.294
sta.sup        -0.318174   0.707997  -0.449    0.654
sta.opp        -0.523006   0.542775  -0.964    0.338
hetero.interest -0.211569   0.148833  -1.422    0.159
hetero.nonstate -0.083050   0.106943  -0.777    0.439
Dir             0.001039   0.212032   0.005    0.996
Reg            -0.181279   0.212965  -0.851    0.397
Dec                   NA         NA      NA       NA
novelty         0.006011   0.006778   0.887    0.378
transparent    -0.087464   0.094517  -0.925    0.357
complexity      0.164890   0.033324   4.948 3.52e-06 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

(Dispersion parameter for quasipoisson family taken to be 119.2321)

    Null deviance: 15755  on 99  degrees of freedom
Residual deviance: 10159  on 89  degrees of freedom
AIC: NA

Number of Fisher Scoring iterations: 4
```

Negative binomial regression for actor types (Table C2)
interest groups versus non-state groups
Model E heterogenity of EU interest groups

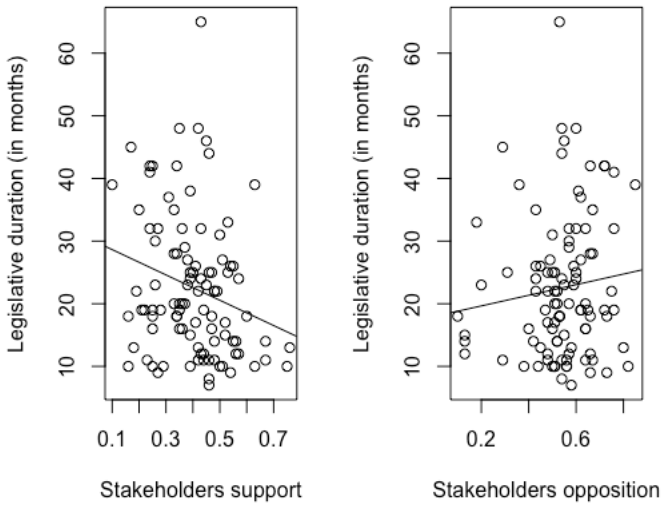
```
> View(modelB1)
> modele=glm(duration~hetero.sta+sta.sup.num+sta.opp.num+hetero.interest,quasipoisson, data2_1)
> summary(modele)

Call:
glm(formula = duration ~ hetero.sta + sta.sup.num + sta.opp.num +
    hetero.interest, family = quasipoisson, data = data2_1)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-4.1044  -1.6699  -0.4009   1.1191   7.2552

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)     2.925918   0.106460  27.484   <2e-16 ***
hetero.sta      0.914519   0.362095   2.526   0.0132 *
sta.sup.num    -0.001499   0.002439  -0.615   0.5403
sta.opp.num     0.004573   0.003728   1.227   0.2229
hetero.interest -0.358354   0.167059  -2.145   0.0345 *
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

(Dispersion parameter for quasipoisson family taken to be 5.161573)

    Null deviance: 524.15  on 99  degrees of freedom
Residual deviance: 460.49  on 95  degrees of freedom
AIC: NA

Number of Fisher Scoring iterations: 4
```

Model F heterogenity of non-state groups

```
> modelf=glm(duration~hetero.sta+sta.sup.num+sta.opp.num+hetero.nonstate,quasipoisson, data2_1)
> summary(modelf)

Call:
glm(formula = duration ~ hetero.sta + sta.sup.num + sta.opp.num +
    hetero.nonstate, family = quasipoisson, data = data2_1)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-4.0963  -1.6642  -0.3108   1.0925   7.2422

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)     2.907886   0.110065  26.420   <2e-16 ***
hetero.sta      0.806489   0.377710   2.135   0.0353 *
sta.sup.num    -0.002450   0.002484  -0.986   0.3266
sta.opp.num     0.005448   0.003834   1.421   0.1586
hetero.nonstate  0.077199   0.114871   0.672   0.5032
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

(Dispersion parameter for quasipoisson family taken to be 5.390473)

    Null deviance: 524.15  on 99  degrees of freedom
Residual deviance: 480.30  on 95  degrees of freedom
AIC: NA

Number of Fisher Scoring iterations: 4
```

Figure A2. Plots of the bivariate relationship between legislative duration and main explanatory factors

```
> # Figure A2. Plots of the bivariate relationship between legislative duration and main explanatory factors
> par(mfrow=c(1,2))
> par(mar=c(5,5,2,1))
> # png(file="Figure A2.png", width=600,height=400, res=200)
> reg<-lm(duration~hetero.interest, data2_1)
> summary(reg)

Call:
lm(formula = duration ~ hetero.interest, data = data2_1)

Residuals:
    Min      1Q  Median      3Q     Max
-15.551  -9.636  -2.104   6.189  42.414

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)       22.965      1.242  18.488   <2e-16 ***
hetero.interest   -3.444      4.045  -0.851    0.397
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 11.32 on 98 degrees of freedom
Multiple R-squared:  0.007342,  Adjusted R-squared:  -0.002787
F-statistic: 0.7249 on 1 and 98 DF,  p-value: 0.3966

> summary(reg)$r.squared
[1] 0.007342232
> cor(data2_1$duration, data2_1$hetero.interest)^2
[1] 0.007342232
> summary(reg)$r.squared == cor(data2_1$duration, data2_1$hetero.interest)^2
[1] FALSE
```



###THE END