

# ministersNor: An R package with data and description for Norwegian ministers

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## Abstract

To come

*Keywords:* Cox Proportional Hazard models, negative binomial models, Norwegian ministers, R.

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## 1. Data

The ministers data set is an unbalanced dataset with Norwegian ministers from 1945 to 2013 as units.

## 2. Variables

**nsd\_id** Id used in the minister archives of Norsk Samfunnsvitenskapelig Datatjeneste.

**election\_year** Year of election.

**start** Date of tenure start for the minister.

**end** Date of tenure end for the minister.

**cabinet\_name** Name of the cabinet.

**last\_name** Minister surname

**first\_name** Minister first name

**party** Party of the minister

**election\_date** Date of the parliamentary election the minister sits under

**cause** Cause of resignation (only recorded where the reason is obvious)

**reshuffle** Was the minister reshuffled in this cabinet (1=yes, 0=no)

**prime\_minister** Is this the Prime Minister? (1=yes, 0=no)

**gender** The gender of the minister

**education** Highest education achieved by the minister

**duration** Tenure length of the minister

**birth** Birth year of the minister

**pre45\_exp** Days in cabinet before World War II

**CabinetType** Cabinet type (majority/minority)

**structure** Cabinet structure (single-party/coalition)

**From** Date the cabinet started

**To** Date the cabinet ended

**cabinet\_duration** Number of days the cabinet lasted

**CabinetPartiesNor** Cabinet party composition

**year\_start** Starting year of the minister

**year\_end** Ending year of the minister

**resigcalls** Number of resignation calls (pooled) for the minister in the current post

**resigcalls\_cum** Cumulative resignation calls for the minister

**rc\_cum\_lag** Lagged cumulative resignation calls for the minister

**rc\_opposition** Number of resignation calls from the opposition against the minister in the current post

**rc\_paper** Number of resignation calls from the newspaper against the minister in the current post

**rc\_organization** Number of resignation calls from organizations against the minister in the current post

**rc\_party** Number of resignation calls from own party against the minister in the current post

**rc\_expert** Number of resignation calls from experts against the minister in the current post

**rc\_citizens** Number of resignation calls from citizens against the minister in the current post

**rc\_voteofconf** Votes of confidence against the minister in the current post

**parl\_start** Date of parliament start (inaccurate)

**parlTen\_cum** Days spent in parliament by the minister before entering the cabinet

**youthCen** Does the minister have experience from central youth party organization? (1=yes, 0=no)

**youthLoc** Does the minister have experience from local youth party organization? (1=yes, 0=no)

**minister\_exp\_cum\_y\_lag** Number of years the minister has previously been in cabinet

**parlTen\_dum** Has the minister occupied a seat in parliament? (yes=1, no=0)

**start\_year** Starting year of the minister

**age** Age of the minister at entering cabinet

**age\_cen** Age centered at the mean

**pm\_name** Name of the cabinet's Prime Minister

**education\_dum** Dummy of the minister's education (higher/lower)

**dur\_start** Difference in days between cabinet start and minister start

**dur\_end** Difference in days between cabinet end and minister end

**leave** Did the minister exit the cabinet because of a leave of absence? (1=yes, 0=no)

**event2** Was the minister fired? (1=yes, 0=no(right-censored))

**jurisdiction** Categorization of department the minister headed

**rc\_paper\_dum** Did the minister receive resignation calls from a newspaper? (1=yes, 0=no)

**rc\_party\_dum** Did the minister receive resignation calls from her own party? (1=yes, 0=no)

**rc\_organization\_dum** Did the minister receive resignation calls from an organization? (1=yes, 0=no)

### 3. Ministerial durability

```

R> #install_github(martigso/ministersNor)
R> library(ministersNor)
R> data("ministers")
R> head(ministers[,c(6,7,3,4,8)])
##      last_name      first_name      start      end party
## 1  Andersen Magnus Kristoffersen 1963-09-25 1965-10-11  DNA
## 2  Andersen Magnus Kristoffersen 1972-01-24 1972-10-17  DNA
## 3  Andreassen           Harriet 1980-10-03 1981-02-03  DNA
## 4  Andreassen           Harriet 1981-02-04 1981-10-13  DNA
## 5   Angelsen           Peter 1997-10-17 2000-01-21   Sp
## 6      Aune           Leif J  yr  gen 1973-10-16 1976-01-14  DNA

```

### Pooled resignation call model:

```

R> library(survival)
R>
R> model_1<-coxph(Surv(dur_start, dur_end, event2) ~ resigcalls + age_cen +
+               factor(gender) + factor(youthCen) + factor(youthLoc) +
+               minister_exp_cum_y_lag + factor(parlTen_dum) +
+               factor(education_dum) + factor(reshuffle) +
+               factor(CabinetType) + factor(structure) +
+               frailty(jurisdiction),
+               data=ministers, subset=prime_minister==0 & nsd_id!=299)
R>
R> round(summary(model_1)$coefficients, digits=3)
##              coef se(coef)   se2  Chisq   DF    p
## resigcalls      0.247   0.074 0.074 11.097 1.000 0.001
## age_cen         0.059   0.016 0.015 14.274 1.000 0.000
## factor(gender)Female 0.338   0.258 0.250  1.716 1.000 0.190
## factor(youthCen)1   -0.641   0.540 0.537  1.408 1.000 0.235
## factor(youthLoc)1    0.845   0.378 0.375  4.994 1.000 0.025
## minister_exp_cum_y_lag 0.114   0.041 0.040  7.742 1.000 0.005
## factor(parlTen_dum)1  -0.658   0.271 0.268  5.892 1.000 0.015
## factor(education_dum)Lowe 0.003   0.280 0.273  0.000 1.000 0.993
## factor(reshuffle)1   -0.371   0.490 0.486  0.575 1.000 0.448
## factor(CabinetType)Majori 0.150   0.221 0.219  0.459 1.000 0.498
## factor(structure)Coalitio -0.261   0.259 0.258  1.016 1.000 0.313
## frailty(jurisdiction)      NA      NA   NA 14.957 6.962 0.036

```

### Actor based resignation call model:

```

R> model_2<-coxph(Surv(dur_start, dur_end, event2) ~ rc_opposition_dum*timeint +
+               rc_paper_dum*timeint + rc_party_dum*timeint +
+               age_cen + factor(gender) + factor(youthCen) +
+               factor(youthLoc) + minister_exp_cum_y_lag +
+               factor(parlTen_dum) + factor(education_dum) +
+               factor(reshuffle) + factor(CabinetType) +
+               factor(structure) + frailty(jurisdiction),
+               data=ministers, subset=prime_minister==0 & nsd_id!=299)
R>
R> round(summary(model_2)$coefficients, digits=3)
##               coef se(coef)   se2 Chisq   DF    p
## rc_opposition_dum      0.909   0.790 0.784  1.322 1.000 0.250
## timeint             -0.170   0.082 0.081  4.352 1.000 0.037
## rc_paper_dum         -0.458   0.751 0.744  0.373 1.000 0.542
## rc_party_dum          0.982   1.605 1.577  0.375 1.000 0.540
## age_cen              0.059   0.016 0.016 13.343 1.000 0.000
## factor(gender)Female  0.300   0.280 0.269  1.142 1.000 0.285
## factor(youthCen)1    -0.662   0.553 0.549  1.429 1.000 0.232
## factor(youthLoc)1     0.915   0.387 0.382  5.598 1.000 0.018
## minister_exp_cum_y_lag 0.124   0.042 0.041  8.862 1.000 0.003
## factor(parlTen_dum)1  -0.672   0.271 0.268  6.145 1.000 0.013
## factor(education_dum)Lowe -0.002   0.281 0.276  0.000 1.000 0.994
## factor(reshuffle)1    -0.381   0.491 0.486  0.601 1.000 0.438
## factor(CabinetType)Majori -0.202   0.266 0.264  0.577 1.000 0.447
## factor(structure)Coalitio 0.025   0.304 0.303  0.007 1.000 0.934
## frailty(jurisdiction)      NA      NA   NA 16.740 7.335 0.023
## rc_opposition_dum*timeint -0.321   0.226 0.223  2.021 1.000 0.155
## timeint:rc_paper_dum     0.421   0.219 0.217  3.683 1.000 0.055
## timeint:rc_party_dum    -0.131   0.448 0.440  0.086 1.000 0.770

```

### 3.1. Robustness models

#### Resignation calls per year model:

```

R> ministers3<-ministers %>%
+   group_by(nsd_id) %>%
+   arrange(start) %>%
+   mutate(age_first=age[1])
R>
R> ministers3$rc_per<-ministers3$resigcalls/((as.numeric(ministers3$end-ministers3$start))
R>
R> rcper_reg<-coxph(Surv(dur_start, dur_end, event2) ~ rc_per + age_cen +
+               factor(gender) + factor(youthCen) + factor(youthLoc) +

```

```

+           minister_exp_cum_y_lag + factor(parlTen_dum) +
+           factor(education_dum) + factor(reshuffle) +
+           factor(CabinetType) + factor(structure) + frailty(jurisdiction),
+           data=ministers3, subset=prime_minister==0 & rc_per<5)
R>
R> round(summary(rcper_reg)$coefficients, digits=3)
##              coef se(coef)   se2 Chisq   DF    p
## rc_per          0.725   0.117 0.116 38.372 1.000 0.000
## age_cen          0.063   0.015 0.015 16.715 1.000 0.000
## factor(gender)Female 0.348   0.252 0.245  1.907 1.000 0.167
## factor(youthCen)1   -0.505   0.549 0.546  0.847 1.000 0.358
## factor(youthLoc)1    0.719   0.383 0.380  3.526 1.000 0.060
## minister_exp_cum_y_lag 0.114   0.040 0.039  8.202 1.000 0.004
## factor(parlTen_dum)1  -0.628   0.267 0.264  5.553 1.000 0.018
## factor(education_dum)Lowe 0.067   0.281 0.276  0.057 1.000 0.812
## factor(reshuffle)1   -0.791   0.535 0.531  2.186 1.000 0.139
## factor(CabinetType)Majori 0.181   0.221 0.219  0.673 1.000 0.412
## factor(structure)Coalitio -0.321   0.260 0.258  1.526 1.000 0.217
## frailty(jurisdiction)      NA      NA   NA   8.411 4.926 0.130

```

### Age as polynomial model:

```

R> polyage_reg<-agefirst_reg<-coxph(Surv(dur_start, dur_end, event2) ~ resigcalls +
+           poly(age_cen, 2, raw=TRUE) + factor(gender) +
+           factor(youthCen) + factor(youthLoc) +
+           minister_exp_cum_y_lag + factor(parlTen_dum) +
+           factor(education_dum) + factor(reshuffle) +
+           factor(CabinetType) + factor(structure) +
+           frailty(jurisdiction),
+           data=ministers3, subset=prime_minister==0)
R>
R> round(summary(polyage_reg)$coefficients, digits=3)
##              coef se(coef)   se2 Chisq   DF    p
## resigcalls          0.197   0.067 0.066  8.683 1.000 0.003
## poly(age_cen, 2, raw = TR 0.056   0.016 0.016 12.875 1.000 0.000
## poly(age_cen, 2, raw = TR 0.000   0.001 0.001  0.081 1.000 0.775
## factor(gender)Female 0.348   0.253 0.245  1.884 1.000 0.170
## factor(youthCen)1   -0.648   0.542 0.539  1.426 1.000 0.232
## factor(youthLoc)1    0.836   0.375 0.372  4.957 1.000 0.026
## minister_exp_cum_y_lag 0.127   0.040 0.039 10.156 1.000 0.001
## factor(parlTen_dum)1  -0.653   0.268 0.265  5.926 1.000 0.015
## factor(education_dum)Lowe -0.015   0.278 0.272  0.003 1.000 0.958
## factor(reshuffle)1   -0.423   0.488 0.484  0.751 1.000 0.386
## factor(CabinetType)Majori 0.192   0.219 0.218  0.768 1.000 0.381
## factor(structure)Coalitio -0.250   0.258 0.256  0.941 1.000 0.332

```

```
## frailty(jurisdiction)          NA          NA          NA 14.662 6.873 0.038
```

## 4. Resignation calls

```
R> library(dplyr)
R>
R> #Restructure the data
R> ministers2<-ministers %>%
+   group_by(cabinet_name, nsd_id) %>%
+   summarize(resigcalls=sum(resigcalls),
+             rc_cum_lag=rc_cum_lag[1],
+             duration=sum(duration),
+             gender=gender[1],
+             age=age[1],
+             minister_exp_cum_y_lag=minister_exp_cum_y_lag[1],
+             parlTen_dum=parlTen_dum[1],
+             education_dum=education_dum[1],
+             jurisdiction=jurisdiction[1],
+             youthLoc=youthLoc[1],
+             youthCen=youthCen[1],
+             CabinetType=CabinetType[1],
+             structure=structure[1]) %>%
+   mutate(dur_cen=duration-mean(duration),
+           dur_cen_y=dur_cen/365.25,
+           age_cen=age-mean(age),
+           gender=factor(gender, levels=c("Male", "Female")),
+           CabinetType=factor(CabinetType, levels=c("Minority", "Majority")),
+           structure=factor(structure, levels=c("Single-party", "Coalition")))
R>
R>
R> #Negative binomial count model
R>
R> rc_reg<-glm.nb(resigcalls~rc_cum_lag + dur_cen_y + factor(gender) + age_cen +
+               minister_exp_cum_y_lag + factor(parlTen_dum) +
+               factor(education_dum) + factor(youthCen) + factor(youthLoc) +
+               factor(CabinetType) + factor(structure), data=ministers2)
R>
R> round(summary(rc_reg)$coefficients, digits=3)
##               Estimate Std. Error z value Pr(>|z|)
## (Intercept)      -1.046      0.161  -6.490   0.000
## rc_cum_lag         0.156      0.051   3.051   0.002
## dur_cen_y         0.406      0.114   3.562   0.000
## factor(gender)Female  0.481      0.174   2.764   0.006
```

```
## age_cen 0.004 0.011 0.327 0.744
## minister_exp_cum_y_lag 0.019 0.032 0.589 0.556
## factor(parlTen_dum)1 0.212 0.195 1.085 0.278
## factor(education_dum)Lower -0.533 0.219 -2.432 0.015
## factor(youthCen)1 0.040 0.282 0.142 0.887
## factor(youthLoc)1 0.392 0.237 1.650 0.099
## factor(CabinetType)Majority 0.176 0.165 1.062 0.288
## factor(structure)Coalition 0.105 0.175 0.600 0.549
R> #Percentage increase function
R> percincrease(coef(rc_reg), 1)
## (Intercept) rc_cum_lag
## -64.8677725 16.8592297
## dur_cen_y factor(gender)Female
## 50.0117444 61.7536096
## age_cen minister_exp_cum_y_lag
## 0.3594102 1.9264236
## factor(parlTen_dum)1 factor(education_dum)Lower
## 23.6014479 -41.2944616
## factor(youthCen)1 factor(youthLoc)1
## 4.0789409 47.9532630
## factor(CabinetType)Majority factor(structure)Coalition
## 19.2138922 11.0864457
```

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