Ordinal Logistic Regression or Proportional Odds Logistic Regression

Proposals success rate
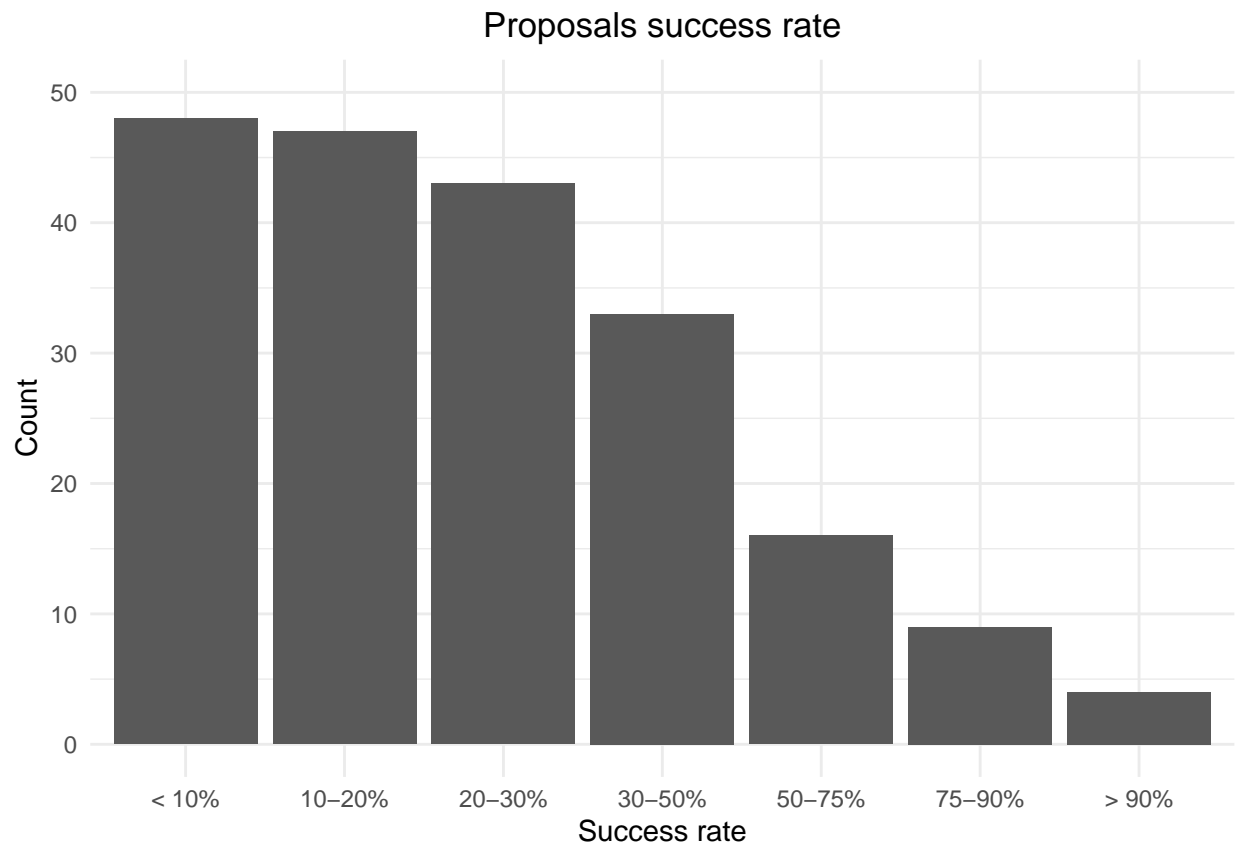
Model with NP1 as reference

```
## Call:
## polr(formula = SR ~ H + NP + AGR, data = lm_DF, Hess = TRUE)
##
## Coefficients:
##         Value Std. Error t value
## H     0.03022    0.01136   2.660
## NP2 -1.17515    0.30030  -3.913
## NP3 -1.67621    0.35967  -4.660
## AGR  0.12875    0.07446   1.729
##
## Intercepts:
##      Value   Std. Error t value
## 1|2 -1.1158  0.6206     -1.7980
## 2|3  0.0572  0.6153      0.0930
## 3|4  1.0939  0.6159      1.7761
## 4|5  2.1658  0.6314      3.4303
## 5|6  3.1580  0.6727      4.6944
## 6|7  4.4979  0.8080      5.5667
##
## Residual Deviance: 656.4648
## AIC: 676.4648


##              Value Std. Error    t value p value
## H       0.03021795 0.01136219  2.6595190  0.0078
## NP2 -1.17515338 0.30030186 -3.9132404  0.0001
## NP3 -1.67621355 0.35966858 -4.6604392  0.0000
## AGR  0.12875067 0.07445712  1.7291920  0.0838
## 1|2 -1.11583489 0.62058858 -1.7980268  0.0722
## 2|3  0.05724680 0.61525598  0.0930455  0.9259
## 3|4  1.09391898 0.61590937  1.7761038  0.0757
## 4|5  2.16577662 0.63137368  3.4302612  0.0006
## 5|6  3.15803065 0.67271871  4.6944296  0.0000
## 6|7  4.49785788 0.80799377  5.5666987  0.0000
```

Model with NP3 as reference

```
## Call:
## polr(formula = SR ~ H + NP + AGR, data = lm_DF, Hess = TRUE)
##
## Coefficients:
##        Value Std. Error t value
## H    0.03022    0.01136   2.660
## NP1 1.67622    0.35967   4.660
## NP2 0.50104    0.33399   1.500
## AGR 0.12876    0.07446   1.729
##
## Intercepts:
##     Value  Std. Error t value
## 1|2 0.5604 0.6166     0.9089
## 2|3 1.7335 0.6259     2.7696
## 3|4 2.7702 0.6422     4.3134
## 4|5 3.8420 0.6663     5.7665
## 5|6 4.8343 0.7102     6.8070
## 6|7 6.1741 0.8421     7.3315
##
## Residual Deviance: 656.4648
## AIC: 676.4648


##            Value Std. Error  t value p value
## H    0.03021781 0.01136214 2.659517  0.0078
## NP1 1.67621614 0.35966870 4.660445  0.0000
## NP2 0.50104241 0.33398963 1.500174  0.1336
## AGR 0.12875568 0.07445717 1.729258  0.0838
## 1|2 0.56042389 0.61658558 0.908915  0.3634
## 2|3 1.73349984 0.62589748 2.769623  0.0056
## 3|4 2.77017658 0.64222691 4.313392  0.0000
## 4|5 3.84203722 0.66626922 5.766494  0.0000
## 5|6 4.83431074 0.71019401 6.807028  0.0000
## 6|7 6.17412205 0.84213174 7.331539  0.0000
```

Model with all variables NP1, DWH5 and DS1 as reference

```
## Call:
## polr(formula = SR ~ H + AGR + NP + DWH + DS, data = lm_DF, Hess = TRUE)
##
## Coefficients:
##          Value Std. Error t value
## H      0.03627    0.01158   3.131
## AGR    0.16483    0.07633   2.159
## NP3   -1.70353    0.36759  -4.634
## NP2   -1.29382    0.30462  -4.247
## DWH1  -1.42103    1.13723  -1.250
## DWH2   3.65779    1.54308   2.370
## DWH3   1.59486    0.49723   3.207
## DWH4   0.63251    0.30971   2.042
## DS2   -1.26120    0.62887  -2.006
## DS3   -1.20579    0.62095  -1.942
##
## Intercepts:
##      Value   Std. Error t value
## 1|2 -1.7878  0.8570     -2.0861
## 2|3 -0.5420  0.8558     -0.6333
## 3|4  0.6054  0.8530      0.7097
## 4|5  1.8043  0.8561      2.1076
## 5|6  2.8757  0.8778      3.2758
## 6|7  4.3089  0.9752      4.4186
##
## Residual Deviance: 629.6451
## AIC: 661.6451


##               Value Std. Error     t value p value
## H       0.03626791 0.01158370   3.1309447  0.0017
## AGR     0.16483482 0.07633155   2.1594584  0.0308
## NP3    -1.70353120 0.36759206  -4.6342982  0.0000
## NP2    -1.29382432 0.30462446  -4.2472765  0.0000
## DWH1   -1.42102992 1.13723202  -1.2495515  0.2115
## DWH2    3.65779035 1.54308398   2.3704415  0.0178
## DWH3    1.59486115 0.49723204   3.2074786  0.0013
## DWH4    0.63251153 0.30970847   2.0422804  0.0411
## DS2    -1.26119967 0.62886757  -2.0055092  0.0449
## DS3    -1.20579288 0.62095395  -1.9418395  0.0522
## 1|2    -1.78783928 0.85702758  -2.0860931  0.0370
## 2|3    -0.54195358 0.85578906  -0.6332794  0.5266
## 3|4     0.60535210 0.85299699   0.7096767  0.4779
## 4|5     1.80428637 0.85609472   2.1075780  0.0351
## 5|6     2.87566729 0.87784157   3.2758386  0.0011
## 6|7     4.30886697 0.97517514   4.4185570  0.0000
```

Model with all variables, NP3, DWH1 and DS1 as reference

```
## Call:
## polr(formula = SR ~ H + AGR + NP + DWH + DS, data = lm_DF, Hess = TRUE)
##
## Coefficients:
##          Value Std. Error t value
## H      0.03626    0.01158   3.131
## AGR    0.16484    0.07633   2.160
## NP1    1.70353    0.36759   4.634
## NP2    0.40967    0.34362   1.192
## DWH5   1.42089    1.13722   1.249
## DWH2   5.07855    1.91215   2.656
## DWH3   3.01579    1.21837   2.475
## DWH4   2.05340    1.15590   1.776
## DS2   -1.26116    0.62887  -2.005
## DS3   -1.20570    0.62095  -1.942
##
## Intercepts:
##      Value   Std. Error t value
## 1|2  1.3367  1.3728     0.9737
## 2|3  2.5826  1.3888     1.8595
## 3|4  3.7299  1.4015     2.6613
## 4|5  4.9288  1.4113     3.4925
## 5|6  6.0002  1.4299     4.1963
## 6|7  7.4334  1.4979     4.9624
##
## Residual Deviance: 629.6451
## AIC: 661.6451


##              Value Std. Error    t value p value
## H      0.03626496 0.01158344   3.130758  0.0017
## AGR    0.16483975 0.07633156   2.159523  0.0308
## NP1    1.70352816 0.36759161   4.634296  0.0000
## NP2    0.40966554 0.34362434   1.192190  0.2332
## DWH5   1.42089384 1.13722194   1.249443  0.2115
## DWH2   5.07855444 1.91215363   2.655934  0.0079
## DWH3   3.01578561 1.21837448   2.475253  0.0133
## DWH4   2.05340171 1.15590398   1.776447  0.0757
## DS2   -1.26115642 0.62886816  -2.005438  0.0449
## DS3   -1.20570059 0.62095483  -1.941688  0.0522
## 1|2    1.33670028 1.37283466   0.973679  0.3302
## 2|3    2.58256730 1.38881439   1.859548  0.0629
## 3|4    3.72988173 1.40154711   2.661260  0.0078
## 4|5    4.92881468 1.41126492   3.492480  0.0005
## 5|6    6.00015997 1.42988445   4.196255  0.0000
## 6|7    7.43336969 1.49794871   4.962366  0.0000
```