

1. Why is it problematic to analyze count variables using OLS?
2. Describe the logic behind the Poisson model. Discuss the limitations of this model.
3. What is meant by over-dispersion? How does it affect the results from a Poisson model?
4. Describe how the negative-binomial overcomes dispersion problems.
5. Table 2 shows the estimates of a Poisson regression analysis of political assassination counts. The predictors include whether a country had a civilian regime, size of the military, an interaction between civilian regime and the size of the military, the number of riots, the number of government crises, and the logged value of per capita GDP. Provide an interpretation of the effect of size of the military.
6. Calculate the predicted probability of zero assassinations in a civilian regime with an average sized military, setting all other predictors at the mean, from Table 2.
7. Based on Table 2, does it appear that there is overdispersion?

Table 1: Descriptive Stats

Variable	Mean	SD	Min	Max
Assassinations	.190	.986	0	25
Civilian Regime	.844	.363	0	1
Size of Military	186.525	535.868	0	4750
Riots	.665	2.246	0	55
Govt Crises	.269	.682	0	7
GDP/capita (log)	2.678	.590	1.322	4.447

Table 2: Poisson and Negative Binomial Estimates

Predictor	Poisson β	Poisson SE	Neg. Bin. β	Neg. Bin. SE
Civilian Regime	-.449*	.255	-.589**	.229
Size of Military	.002	.001	.001	.001
CR*Military	-.002*	.001	-.001	.001
Riots	.086**	.023	.270**	.063
Govt Crises	.449**	.043	.440	.085
GDP/capita (log)	.538**	.209	.447***	.196
Constant	-3.093**	.556	-2.973**	.511
α			7.411	1.418