

Poisson and Negative Binomial Regressions: Applications

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What type of data? (e.g. occurrence of events, integer rates)

- Number of times lightning strikes...
- Number of kids you have...
- How many times a dog will bite people...
- Three point shots made in a game...
- Number of years to complete dissertation...
- Number of students in a cohort...
- Number of spouses (throughout a lifetime)...
- How many job offers you receive...
- How many publications you have by year...
- How many entrees you order at Panda...

Terrorism Event Dataset

- Global Terrorism Database
- 1970-2011
- 100,000+ Terrorism Events
- All countries of the world
- Details about event
(e.g. number killed, number of perps, precise location, etc.)

Trimming the Dataset

- **104,681 Events:**
- **104,681 Events:** 1970-2011
- **2,878 Events:** United States, Mexico, Canada
- **422 Events:** At least one fatality
- 42 years per country, 126 observations

When to use?

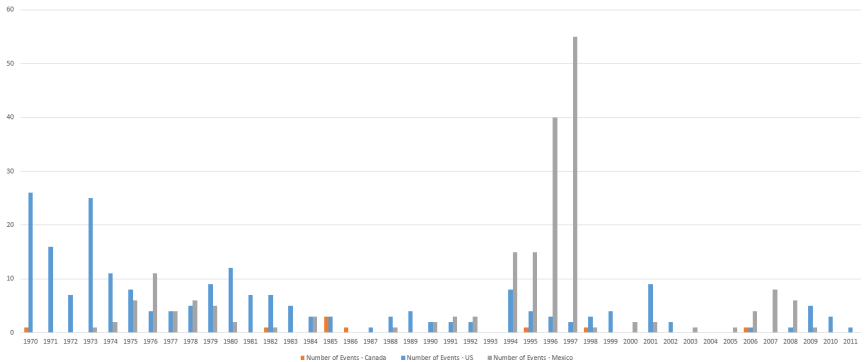
Data

About the data

What we are going to do?

Dependent variable

Number of Fatal Terrorist Events - by country



What we are going to do?

- ① Run OLS regression.
- ② Show why OLS may be inappropriate for count data.
- ③ Run Poisson regression.
- ④ Show why a Poisson regression may be inappropriate for count data.
- ⑤ Run Negative Binomial regression.
- ⑥ Have Dave, using my set of knowledge as a practical example, show us why running regressions in Stata can be dangerous.