SOC 5050: Week 06 Commands Quick Reference

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***Review**: Using Stata's Calculator*

All of the functions for the binomial, Poisson, and normal distributions can be paired the `display` command to output the probability under that distribution given the specified parameters:

```
display equation
```

Binomial Distribution

For the binomial distribution, let:
n = number of independent trials
k = number of successes
p = probability of success in each trial

Probability of k Successes

```
display binomialp(n,k,p)
```

Probability of k or Fewer Successes

```
display binomial(n,k,p)
```

Probability of k or More Successes

```
display binomialtail(n,k,p)
```

Poisson Distribution

For the Poisson distribution, let:
$m = \lambda$
k = number of successes

Probability of k Successes

```
display poissonp(m,k)
```

Probability of k or Fewer Successes

```
display poisson(m,k)
```

Probability of k or More Successes

```
display poissontail(m,k)
```

Normal Distribution

For the normal distribution, let:
z = standardized score

Cumulative Probability

```
display normal(z)
```

Normality Testing

Descriptive Statistics - Skew and Kurtosis [1]

```
summarize varname, detail
tabstat varname, statistics(skew kurtosis)
```

Diagnostic Plots [2]

`histogram varname, frequency normal` - overlay normal distribution
`pnorm varname` - normal probability (p-p) plot
`qnorm varname` - quantile-quantile (q-q) plot

Hypothesis Tests

```
swilk varname
sfrancia varname
```

[1] If you spend time on Google, you may come across the command `sktest`. Follow Stata's documentation and avoid using it to adjudicate normality in distributions.

[2] You should use all of the standard plot options with these graphs.

Document Details

Document produced by Christopher Prener, Ph.D. for the Saint Louis University course SOC 5050 - QUANTITATIVE ANALYSIS: APPLIED INFERENTIAL STATISTICS. See the course wiki and the repository `README.md` file for additional details.