PSCI2300 The Study of Politics
Univariate Analysis I

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March 24, 2011
Univariate Data Analysis and Descriptive Statistics

- The data matrix
- Univariate data analysis – distribution of observed values for a single variable
- We use PASW (Predictive Analytic SoftWare) formally known as SPSS (Statistical Package for the Social Sciences).
Is country democratic?

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Democracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>2010</td>
<td>1</td>
</tr>
<tr>
<td>Canada</td>
<td>2010</td>
<td>1</td>
</tr>
<tr>
<td>North Korea</td>
<td>2010</td>
<td>0</td>
</tr>
<tr>
<td>Iran</td>
<td>2010</td>
<td>0</td>
</tr>
<tr>
<td>Japan</td>
<td>2010</td>
<td>1</td>
</tr>
<tr>
<td>Thailand</td>
<td>2010</td>
<td>1</td>
</tr>
<tr>
<td>Sweden</td>
<td>2010</td>
<td>1</td>
</tr>
<tr>
<td>Germany</td>
<td>2010</td>
<td>1</td>
</tr>
<tr>
<td>Sudan</td>
<td>2010</td>
<td>0</td>
</tr>
<tr>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

Most information is numeric.

Value 0 = not democratic; 1 = democratic.
Go to http://www.psci.unt.edu/~tmatsubayashi/
Click “Teaching” on the top menu
Open ”Comparative Data”
Data View and Variable View
Open Comparative data Codebook
The unit of analysis is a country.
What is missing data?
We use a frequency table and/or graph to display the form and characteristics of the variable’s distribution.

A Frequency table is simply a table that shows the number of observations for each value of a variable.

A Bar Chart and Pie Chart for nominal-level and ordinal-level (non-continuous) variables.

A Histogram for interval/ratio-level (continuous) variables.
<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Democratic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Democratic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Frequency Tables

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Democratic</td>
<td>4</td>
<td>40%</td>
</tr>
<tr>
<td>Democratic</td>
<td>6</td>
<td>60%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
Produce a Frequency Table

- Use Var9: Developmental status of nation

1. Open a syntax editor
2. Type `freq var var9.` (Do not forget a period at the end of the command!)
3. Highlight the command
4. Click a triangle button on the menu
Bar Chart

Proportion

1.0
0.8
0.6
0.4
0.2
0.0

1 2 3 4
Produce a Bar Chart and Pie Chart

- Use var6: Political Rights. This index measures the degree of freedom in the electoral process, political pluralism, participation, and functioning of government. The scale runs from 1 to 7, with 1 representing most freedom and 7 least freedom.

- Bar chart
  
  ```
  graph
  /bar(simple)=pct by Var6.
  ```

- Pie chart
  
  ```
  graph
  /pie=pct by Var6.
  ```
- The height and area of the bars are proportional to the frequencies in each category of a continuous variable.
- Divide the variable into intervals or bins.
Make a Histogram

- Use Variable 5: Gross Domestic Product per capita, 2005. (GNP)

```plaintext
graph
/ histogram=var5.
```