Introduction to urban research – key topics

• What is research?

• What is urban?

  urban –

  urban place –

  city (municipality) –

  urbanized area –

  metropolitan statistical area –

  suburb –

  exurb –

  urban system –

• What is involved in urban research?
Physical –

Social –

Economic –
  public
  private
  special

Political –
Types of research and research ethics – key topics

- Some typologies

  Basic research –

  Applied research –

  Time and space

  Need for comparison

  Process-outcome relationship

  Exploratory research –

  Descriptive research –

  Explanatory research –

  Cross-sectional study –

  Longitudinal study –
• **Level of analysis**

  Neighborhood –

  City –

  Region –

  National system of cities –

  World system of cities –

• **Ethics in human subject research**

  Human subject –

  Ethical principles of the Belmont Report (1979)

    Informed Consent – Respect for Persons.

    Assessment of Risks and Benefits – Beneficence.

    Selection of Subjects – Justice.
• Planning a survey

1. Information needs and priority

2. Sample design

   Population or universe

   Sample unit

   Sample frame

   Sample size – the general rule

   When to go for large sample size

   When to go for small sample size

   Validity & reliability

   Confidence level

   Sample selection methods
   Random sampling

   Systematic sampling

   Stratified sampling

   Clustered sampling

   Convenience sampling

   Quota sampling

   Purposive sampling

   Snow-ball sampling
3. **Instrumentation**

Basic attributes of questions
Problematic questions
Sensitive and threatening questions
Response alternatives
Response scales
Response codes
Format codes

4. **Implementing a survey**

Mail data collection
Telephone interview
Personal interview

5. **Data processing**

*Level of measurement*
Nominal
Ordinal
Interval
Ratio
Mid-term Review

Ethics in human subject research
Informed Consent – Respect for Persons
Assessment of Risks and Benefits – Beneficence
Selection of Subjects – Justice

Proposition v. Hypothesis
Dependent variable v. Independent variable

Level of measurement
nominal
ordinal
interval
ratio

Planning a survey
information needs
sampling design
instrumentation
implementation
data processing

Sample design
Population or universe
Sample unit
Sample frame

Sample size – the general rule
When to go for large sample size
When to go for small sample size

Sample selection methods
Random sampling
Systematic sampling
Stratified sampling
Clustered sampling
Convenience sampling
Quota sampling
Purposive sampling
Snow-ball sampling

**Sample selection bias**

Basic attributes of questions
Problematic questions
Sensitive and threatening questions

Question recording format
Response alternatives
Response scales
Response codes

Building questionnaires – the organization
Format codes

**Implementing a survey**
Mail data collection
Telephone interview
Personal interview
Tips on using SPSS

To bring up the program
Log in on the computer
Find SPSS icon in Start, Program, SPSS for Windows and click on SPSS 11.0 for Windows
Worksheet will appear, and click on Cancel.

To set up worksheet
To define variables, double click on the top gray bar (marked with var) or click on variable view
on the bottom gray bar
Define all the ten attributes for each variable
In particular, this is how to enter value labels:
Under Value click to the right and a small square appears, then a new screen
Value – enter 1
Value Label – enter your first response alternative
Click on Add (you can also remove and change the labels afterwards)
In the window will show 1=’first response alternative’
Then complete with all your response alternatives
The labels will show up in the worksheet when you choose Value Labels under View
Column format (left, center, right) – for numbers use right

Fill in data using number keypad
Using the arrow will enter the data and move the cursor to the right

To insert a new variable
Highlight the variable before which you want to insert the new variable
Go to Data menu and choose Insert Variable
Define all the ten attributes for the new variable

To recode a variable
(Before you recode a variable, you may want to create a new variable to accommodate the
recoded values so that your original data are not lost.)
Go to Transform menu and choose Compute
In the Target Variable box enter the name of the new variable you have just created as above
In the Numeric Expression box enter a value or a mathematical formula
Click on If button
Click on Include if case satisfies condition:
Enter the condition in the box and click on Continue
Click on OK
To save the worksheet
Go to File menu
Choose Save As:
Enter filenames so it will be: name.sav
Re drives: pull down and find L:Usp\Public\Ursp313\yourname: and highlight it
Remember to put your file on in the folder with your name so you can find it next time
Click on OK

To print data
Highlight area of data and variable names
Click on the printer icon
Click on Selected
Click on OK
(You can do the same for variable view)

To create a syntax file
Go to Edit menu and choose Options
Click on Viewer and then click on Display commands in the log (a tick mark appears)
Click on OK
Do a calculation or recoding by using the steps described elsewhere in this tip sheet
Switch to the output file by clicking on it
Click on the commands and copy them
Go to File menu, choose New and then choose Syntax
Switch to the syntax file by clicking on it
Paste the commands that you have just copied
You can edit the syntax file just like a Word file
Save the syntax file in your folder

To run a syntax file
Go to File menu, choose Open and then choose Syntax
Open the syntax file you want to use
If you want to run the entire syntax file, go to Run menu and choose All
If you want to run part of the syntax file, highlight the part first then go to Run menu and choose Selection
A trick with running syntax files: if you are doing the same kind of calculations for different variables, you simply need to copy/paste the commands and just change the variable names.

To do data description
Go to Analyze menu, go to Descriptive Statistics, go to Frequencies
Highlight the variables you want to summarize in the left window
Click on > (variables appear in the right window)
Click on Statistics
Click on mean, median, mode, standard deviation, variance, range or any measure you want
Click on Continue
Click on Format
Click on Condensed
Click on Continue
Highlight pages to print on the output sheet
Click on printer icon
Click on Select
Click on OK

**To do crosstabs**
Pull down Analyze menu, choose Descriptive Statistics, then Crosstabs
Highlight the variable for row and click on >
Highlight the variable for column and click on >
Click on Statistics
Choose Chi square
Click on Continue
Click on Cell
Click on Observed, Percentages: rows, column, total
Click on Continue
Click on OK
Print out crosstabs results as outlined above

**To do ANOVA**
Pull down Analyze menu, choose Compare Means, then One-Way ANOVA
Highlight the continuous variable for the Dependent List and click on >
Highlight the categorical variable for the Factor and click on >
Click on Options
Choose Descriptive under Statistics
Click on Continue
Click on OK
Print out ANOVA results as outlined above

**To do correlation**
Pull down Analyze menu, choose Correlate, then Bivariate
Highlight the variables and click on >
Click on OK
Print results as outlined above

**To do regression**
Pull down Analyze menu, choose Regression, then Linear
Highlight the variable for dependent variable and click on >
Highlight the variable for independent variable and click on >
Click on OK
Print results as outlined above

**To do charts**
Pull down Graphs menu
Pick type
Click on Define
Highlight variables to graph (to do new graph, click on reset)
Click on Titles
Type in a title
Click on Continue
Click on OK
• Review for Quiz 2

Data entry in SPSS
Define variable attributes
Value labels
Missing values
Create and run a syntax file
Recode continuous data into categorical data
Identify data outliers

Data description – Univariate statistics
Frequencies

Central tendency – choose among mean, median, and mode

Standard deviation – what it tells you

Normal distribution of continuous data – what it looks like and what it means

Report data description

Association between variables – Bivariate statistics
Two types of association

Data requirement for different statistical tools (cross-tab, ANOVA, correlation, regression)

Statistical inference

Statistical significance and interpretation

Requirements for cross-tab and calculation of minimum expected cell frequency

ANOVA and requirements

Correlation – interpreting co-variation (r-square) and using correlation matrix

Simple, linear regression – what it does (two things), intercept, slope, and r-square
- **Focus groups**
  advantages and disadvantages
  identify and organize participant
  propose an agenda
  compose and prioritize questions
  select a moderator
  record discussions

- **Observations**
  advantages and disadvantages
  types of observation
  structured vs. unstructured observation
  participant vs. nonparticipant observation
  Hawthorne effect
  gaining entry
  content of field notes

- **Case study**
  when to use it
  limitations
  sources of evidence
  principles of data collection
Census data

Main page: http://www.census.gov (2000 Census on the main page)
1990 Census Lookup: http://homer.ssd.census.gov/cdrom/lookup

Find the following information on the sites above for the City of Richmond:

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<th>1990</th>
<th>2000</th>
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<tr>
<td>Asian</td>
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<tr>
<td>Others</td>
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<tr>
<td>Persons of Hispanic origin</td>
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<tr>
<td>Medium age (years)</td>
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</tr>
<tr>
<td>Average household size</td>
<td></td>
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</tr>
<tr>
<td>Means of transportation to work</td>
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<tr>
<td>Travel time to work</td>
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<tr>
<td>Educational attainment</td>
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Review for Final Exam – The Research Process

• Choosing the research problem and stating the hypothesis/proposition

  Research question(s)
  Proposition
  Hypothesis
  Variable
  Dependent variable
  Independent variable

• Formulating the research design

  Unit of analysis
  Population
  Operationalization
  Level of measurement
  Data source
  Ethics in human subject research

• Gathering the data

  Survey
    Planning a survey
    Sample design
    Sample selection methods and bias
    Constructing survey questionnaire
    Implementing a survey
  Interviews
  Focus groups
  Observation
  Case Study
  Secondary data
    Web
    Archive
    Census data

• Coding and analyzing the data

  Data entry in SPSS
Data description – Univariate statistics
  Frequency
  Mean/median/mode
  Standard deviation
  Normal distribution
Association between variables – Bivariate statistics
  Cross tabulation
  ANOVA
  Correlation
  Simple linear regression

• **Interpreting the results**

  Statistical inference
  Significance level
  Reporting statistics