

Speaking Notes
PADM 5502
January 30, 2019
Dr. Neubauer

WHERE WE ARE

- This is our third class meeting.

REVIEW

Last week I introduced the following concepts, among others.

- Survey research instrument
- Independent variable
- Dependent variable
- Hypothesis
- Descriptive statistics
- Demographic variables
- Correlation
- Causation
- Unit of analysis
- Visual modeling of a research domain

NEW NOTES

Focus initially on HYPOTHESES about possible CAUSAL RELATIONSHIPS between and among CONCEPTS. Your hypotheses should be informed by observations and prior research.

Say that you observe that some people who smoke also throw litter on the ground. You think about it and come up with a HYPOTHESIS like the following.

H1: The people who smoke tobacco products are more likely than people who do not smoke tobacco products to disrespect the environment.

Well, you have two CONCEPTS here – smoking and disrespecting the environment.

What do they mean? And how can you measure them using survey research?

Remember, the UNIT OF ANALYSIS is person for most of our purposes in this course. It is true that we are comparing groups, but we are observing, interviewing or surveying individual people.

There are other issues here, such as is “smoking” a simple dichotomous nominal variable (yes – no) or is it a variable that should be measured along some kind of a continuum (packs a day)? We will get into LEVELS OF MEASUREMENT in a few minutes.

I have provided you a sample SURVEY RESEARCH INSTRUMENT a student in this course prepared several years ago. It is not “perfect,” but it is useful. It is not necessary to always, “reinvent the wheel.”

In my opinion, it is not plagiarism to write an item on a survey instrument in a way someone else has. If you use someone else’s SCALE or INDEX (for example, the Templer Death Anxiety scale) you should give it proper ATTRIBUTION in a report or journal article.

This is a survey research instrument a student prepared for this course several years ago.

http://www.robertcat.net/fall2018/padm5502/site/sample_survey_move.pdf

Review the five usual DEMOGRAPHIC VARIABLES, which are usually used in research either as INDEPENDENT VARIABLES or as CONTROL VARIABLES.

A DEPENDENT VARIABLE is a concept that varies among people that we want to understand. We want to understand why different people vary in terms of the dependent variable.

WHAT APPEARS TO BE THE DEPENDENT VARIABLE IN THE SAMPLE SURVEY INSTRUMENT ABOVE?

(For some purposes, all we are interested in is DESCRIPTIVE STATISTICS. But this course must go beyond that and include the VISUAL MODELING of the research domain, the creation of HYPOTHESES, creation of a good SURVEY RESEARCH INSTRUMENT, SAMPLING, DATA COLLECTION, DATA CLEANING, DATA ENTRY, DATA “MANIPULATION,” use of proper STATISTICAL METHODS, HYPOTHESIS TESTING, and the reporting of the presence or absence of STATISTICAL SIGNIFICANCE between/among variables.

THREE LEVEL OF MEASUREMENT

- Nominal
- Ordinal
- Interval (including ratio)

Concepts become VARIABLES and variables have VALUES. One CONCEPT in a research project may be OPERATIONALIZED by used of multiple VARIABLES. In a sense, a VARIABLE is a question, and the VALUES OF THAT VARIABLE are the possible answers to that question.

The following is an example of a variable measured at the NOMINAL level of measurement.

xx. What is your religious affiliation?

- Jewish
- Catholic
- Protestant
- Muslim
- Buddhist
- Taoist
- Other: _____

- No religious affiliation

It is **NOMINAL** because the values are simply names of religious affiliations. There is no natural order of them, for purposes of research.

The following question is an **ORDINAL** variable.

What size vehicle do you usually drive?

- sub compact
- midsize
- full size

- not applicable

The variable is ordinal because the values have a natural order but there is no standard unit of measurement involved.

The following question is an **INTERVAL** (actually **RATIO-LEVEL**) variable.

What is your weight (in pounds)? _____ pounds

The variable is a **RATIO** level variable because a pound is a standard unit of measurement and there is a natural zero (although no one weights zero pounds).

MEASURES OF CENTRAL TENDENCY

Mean – the average

Median – the value of the one in the middle

Mode – the value most frequently scored

	Mean	Median	Mode
Nominal data	NO	NO	YES
Ordinal data	NO	YES	YES
Ratio data	YES	YES	YES

With RATIO-level data you can do any kind of statistical analysis including multiple regression analysis. You are much more limited in what can be done (properly) with ordinal and nominal level data. Most of the data we will be thinking about is ordinal or nominal. We will learn to test simple hypotheses using Chi-Square analysis.

http://en.wikipedia.org/wiki/Chi-square_statistic

Do not stress now. We are not going to get deep into statistics in this course.

We will learn to interpret Chi-square values (and related probabilities) generated using SPSS software. Chi-square analysis can be used with ordinal data. It can be used with nominal data *if there are only two values of the variable, such as "female" and, "male."*