

Panel 1

Stats: Cost Time

Grades, web site, DyKnow, StatCrunch

Statistics: making sense of data

Population, sample, descriptive + inferential stats

Parameters, statistics

Types of variables:

- categorical
 - nominal
 - ordinal
- quantitative (numeric)

Panel 2

1. Which year did you enter Seton Hall University?	<input type="text" value="2010"/> <input type="text" value="2011"/> <input type="text" value="2012"/>	ordinal (or numeric)
2. Which year do you expect to graduate from Seton Hall University?	<input type="text" value="-11-"/>	-11-
3. Are you male or female?	<input type="radio"/> Male <input type="radio"/> Female	nominal
4. What is your age in years?	<input type="text"/>	numeric
5. What is your weight in pounds (enter number only)?	<input type="text"/>	#
6. What is your height in inches (enter number only)?	<input type="text"/>	#
7. How many CD's do you own (approximately)?	<input type="text"/>	#
8. Are you left or right handed?	<input type="radio"/> Left Handed <input type="radio"/> Right Handed <input type="radio"/> Ambidextrous	nominal

2

Panel 3

Quiz #1 Name: _____

① Because of Greece's economic problems, it is important to know if the Greek citizens want to remain in the EU. A random sample of 200 Greek citizens were selected and 120 of them want to remain in the EU. Identify:

Population:

Sample:

Statistics:

3

Panel 4

2) Below is a sample survey. How many variables does this survey define? Classify all variables as numerical, ordinal, or nominal.

Sample Survey

Enter your name: _____

What is your cholesterol level: _____

How often do you visit a doctor: Often
 Sometimes
 Rarely
 Never

4

Panel 5

Other categories for variables:

continuous: unlimited # of possibilities in every subinterval

discrete: you can count # of choices

Example

num. Age: / continuous
 num. Income: / discrete

0, 1, 2, 3, ..., 6: discrete
 3.777: cont.

ord. or (numeric) Opinion about today's lecture, from 0 (sad) to 6 (super)

nominal Who did you vote for: Obama McCain discrete

Panel 6

1. Which year did you enter Seton Hall University? discrete
2. Which year do you expect to graduate from Seton Hall University? -||-
3. Are you male or female? Male Female -||-
4. What is your age in years? cont.
5. What is your weight in pounds (enter number only)? +decimals cont.
6. What is your height in inches (enter number only)? cont.
7. How many CD's do you own (approximately)? discrete
8. Are you left or right handed? Left Handed Right Handed Ambixtertrous discrete

6

Panel 7

Dealing with Two Variables

Often deal with situation where we want to analyze two variables and their connections

Ex: Smoking vs. Lung Cancer.

One variable is called **dependent**, other one **independent**.

Often indep. is earlier in time (came first)

Ex: Age vs. Party Affiliation

Height vs. Weight

Smoking vs. Lung Cancer

Panel 8

Random Sample

Want to pick an "unbiased" sample to make conclusions about population.

Def: A random sample of size N is a sample

selected in such a way that every other sample of size N has the same chance of being selected

think "unbiased"

Panel 9

Example: Find average income of NYC residents.

can't ask everyone

stand on 5th Ave street, every 10th person in subway
with 200 people. Not random.

How?
pick 5 boroughs + pick random streets

pick random page in phone book, every 10th entry
McConnors Not random.

pick random entries from phone book.

Fridly secret

Panel 10

Ex: Last election I saw on TV at 9:45 pm:

Channel X: Candidate A - 44%
Candidate B - 52%
Margin of error: 3%

Channel Y: Candidate A - 50%
Candidate B - 48%
Margin of error - 2%

no overlap

What is wrong with this picture?
invalid random samples

Panel 11

Distribution: set of all values together with their frequencies.

Ex: Data regarding gender is: 1, 2, 1, 1, 2, 2, 2, 9

male, female, na

	count	frequency (%)	valid frequ. (%)
(1) male	3	3/8	3/7
(2) female	4	4/8	4/7
(9) missing	1	1/8	-
	8	1	1

11

Panel 12

Suppose you meet a random adult on the street. What is the chance that the person is male (or female)?

female!

12

Panel 13

Example: A variable records religious affiliation.

	(rel. valid.) frequency
protestant	20%
catholic	15%
jewish	5%
muslem	10%
none	20%
other	30%
	100%

Panel 14

Analyse the highest degree in GSS data.

a) how many have at least a BA ?

b) how many have at most a HS degree?

Frequency table results for HIGHEST DEGREE:

HIGHEST DEGREE	Frequency	Relative Frequency
0 - Less than HS	297	0.14688428
1 - High School	1003	0.49604353
2 - Junior College	173	0.085558854
3 - Bachelor	355	0.17556874
4 - Graduate	194	0.095944606

Handwritten notes: $12.5 + 9.6 = \underline{\underline{22.1}}\%$