

CHAPTER 4 - DESIGNING STUDIES

4.1 Sampling

Population: ALL of the individuals we are interested in.

Sample: the PART of the population we actually collect data from.

Census: attempts to contact EVERY individual in the entire population

why measure a sample instead of an entire population?

- time
- money
- physical difficulties
- population may change
- sometimes more accurate

Bad ways to take a sample:

1. Convenience Sample - choosing individuals who are easiest to reach
 ex: ask students in library how long they spend doing H.W.
2. Voluntary Response Sample: choose people who choose to respond
 ex: restaurant survey

these sampling methods are bad because:

Bias: systematically favors certain outcomes

* overestimate or underestimate
 ex: see p.210

Good ways to take a sample

* Randomness should be involved

Simple Random Sample (SRS): every possible sample has an equal chance to be chosen

ex: put all names in a hat, draw out a handful

ex: use calculator to generate random #'s
 use table of random digits

Table of random Digits (table D at back of textbook)

1. Give each member of population a numerical label of the same # of digits

ex: pop. - students in our class

use 2 digits 01-24
 assign #'s to each student in alphabetical order

2. State which #'s to skip

skip 25-99, 00
 skip duplicates

3. read groups (of 2) digits from table

start at line 126

4. identify which are chosen

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