

Stats Ch 4.1A 1, 3, 5, 7, 9, 11

① Pop: Business in book
Sample: 73 returned questionnaire

③ Pop: 1000 env.
Sample: 40 selected

⑤ response bias - only those with strong opinions will call

⑦ response bias ↗

⑨ a) Convenience

b) biased toward those who arrive early. Not representative of all students.

7.2 too high = those not getting enough sleep will be running late

7.2 too low = they have to wake up earlier - less sleep.

* Did you say why?

⑪ a) # students 1 to 40, pick a random starting place to

take numbers from table D as 2 digit #'s to select 5 students without repeat (unique numbers 1 to 40)

b) 20 11 38 31 7
John. Dras. Wash. Rider Call.

(17) a) Difficult to know the numbering 1 to 1000 for the phones

b) not representative of total day production

* Not on SRS

c) each phone does not have an ^{equal prob.} ~~chance~~ of being selected.

use this phrase
↓

(19) Method 1: Number students 01 to 30 alpha.
select students first using 2 digit numbers until 4 unique students selected
results: 08 15 07 27 (line 123)

then number faculty 0-9 alpha.

select using 1-digit numbers until 2 unique faculty selected
results: 1 and 0 starting where students left off.

Method 2: 0-9 faculty 10-40 students

select 2 digit #'s until 4 students & 2 faculty selected

(21) a) 3 types of seats are strata

b) Easier because random would be all over stadium & cluster would find a grouping to survey in some area section #'s could serve this purpose.

(23) No - although each person has a $\frac{1}{10}$ chance of being selected, there are combos of employees that are not possible such as 250 women.

(25) a) Cluster

b) calculator AP STAT program to select 5 random #'s from 65

(27) NO phone or phonebook = not in study

(28) Same

(29) a) not sampling high price tax \neq people might lie about money spent

b) Sampling error - frame too small

(31) a) response $\frac{5029}{45956} = 10.9\%$ NON-response: 89.1%

b) nonresponse could be due to people not being at home.

these people likely drive more than those at home more.

the average obtained is likely too low

* Did you A.T.Q.?

(33) more than 171 because they would lie about breaking the law if they were breaking the law

(35) a) ^{clear but} biased - people will say yes (listed dangers)

b) ^{clear but} ~~biased~~ - people will say yes (listed benefits)

c) biased - too much jargon
- slanted toward recycling

Stats Ch 4.2 D 37-42, 45, 47, 49, 51, 53

37 c

38 d

cluster is for groups so spread out that it is very difficult to locate elements selected randomly

39 d

40 c

41 e

42 c

(45) a) obs. no treatment

b) exp - choc. resp - temperment

c) no - observ. & lurking variable could be present

(47) a) exp treatment is book/comp.

b) good design - exp - conclude comp. more effective.

(49) type of school and money could impact both class size & learning

(51) units: trees

expl.: sun

treatment: shade → full, 25%, and 15%

resp: growth, weight

(53) subjects: people called

expl.: words used, offering results

treatments:

1) name (N)	N - U - R	- N - U - R
2) unit (U)	N U - R	- N U - R
3) results (R)	N - U R	- N - U R
	N U R	- N U R

Resp: completion

(57) No Control

(63) a) Dr. ability
condition of patient (poor = non-surgery)

Describe treatment?

b) Roll Die for each patient, even = surgery odd = non-sur.
at end compare.

(65) a) not randomly assigned
stronger players may stick w/ lifting ...

ATQ?

b) coach should use more types of upper body strength measures.

(67) a) Control: ~~group not getting daycare~~ ^{compare to treatment group}

Random: ~~yes~~ avoid selection bias

Replication: repeat enough so that the diff. is due to treatment
and not chance variation.

b) Control: group not getting daycare.

Random: yes

Replication: 111 children

Stats 4.2 EIF

69, 71, 73, 25
E F

(Combine with E)

- 69 a) harmless leaf
b) what they thought impacted the result
- 71 researchers knew who was meditating and may have treated them different (favourably)
- 73 Control: not getting accup.
a) Random: randomly assigned
Replication: 160 people
b) due to treatment, not chance variation
c) women knew which treatment they received this could impact results.
- 75 a) put all names in hat, draw out a set number to receive the yawn seed, others don't.
b) If the number of seeds varies to create the ~~the~~ histogram then 10 is a common number. It is usual. DO NOT conclude the seed created the yawn. Not contagious

72) double blind: neither subjects nor researchers know who has what treatment
randomized: subjects selected randomly for placebo or test.
ques. plac. cont.: some will receive placebo

79) a) blocks: diff. conditions (asthma...) The condition matters.
b) the experience of subjects might differ - due to the type of condition
blocking decreases the variability in responses due to condition

use this phrase

79) a) blocking dec. var. ^{on yield} due to soil fertility

b) rows since the rows have equal soil fertility

c)

1-A	} roll a die and assign based on number ignoring 6 and repeats.
2-B	
3-C	
4-D	
5-E	
6-ignore	

Start at row 1 ~~with~~ working L to R until full and repeat for each row

or
Names in a hat

81) the impact of ~~weight~~ ^{diet A & B} on weight gain cannot be compared

a) because the litter 1 will gain more weight due to being healthier
therefore the litter confounds the results.

b) block based on litter and designate 5 from each to use diet A & 5 diet B.
randomize the process of selection using table D
number rats in litter 1 from 0 to 9. the first 5 #'s use A
the remaining use B. repeat for block 2/litter 2

85) Number subjects 01 to 20 and use the calc. random feature to select
a) numbers between 1 & 20. The first 10 #'s will be assigned 70°. the remaining to 90°.

b) each subject performs at each temp. randomly assign which temp. they use first.

91 c

* 92 a

SRS is for smaller group from pop.

93 b

94 d

95 c

96 d

97 c

* 98 b

Control, Random, Replication
blinding not always possible
placebo/control group not always possible
block not always nec.

102

random selection - inf. about pop.
random assign. - inf about cause & eff.

103

random assign ∴ cause & effect OK Foster Care better

104

i - i Frozen better

105

not random select → cannot infer about gen. pop.
not random assign → cannot infer cause & effect.

106

random selec. → infer to gen pop.
not random assign → NO cause & effect

107

might reduce effectiveness if every one had them
as people would get used to them.

108

no randomization
not comparable groups or activities.