non-sampling error
are larger
↓

Sampling

sampling error
are larger
↓

A. non-probability sampling methods

B. probability sampling methods

1. convenience sampling

2. judgemental sampling

3. Quota sampling

4. Snowball sampling

1. SRS

2. systematic sampling

3. Stratified sampling

4. Cluster sampling

(A1)   Convenience Sampling

A	B	C	D	E
1	6	11	16	21
2	7	12	17	22
3	8	13	18	23
4	9	14	19	24
5	10	15	20	25

$N = 25$

$n = 5$

↑
most convinient

+ most convenient, least expensive and time consuming

− selection bias

(A2) Judgemental sampling

A	B	C	D	E
1	6	11	(16)	21
2	(7)	12	17	22
3	8	13	(18)	23
4	(5)	14	15	24
5	10	(15)	20	25

+ cost
conv.
time

– subjective bias

(A3) Quota Sampling

A	B	C	D	E
1	(6)	11	16	21
(2)	7	12	17	22
3	8	13	(18)	23
4	5	(14)	15	24
5	10	15	20	(25)

+ can control for certain charachter.

– selection bias
non representative

(A4) Snowball sampling

A	B	C	D	E
1	(6)	11	16	21
2	7	(12)	17	(22)
(3)	8	13	18	23
4	5	(14)	15	24
5	10	15	20	25

+ can estimate rare charachteristics

– Time-consuming

(B1) Simple Random Sampling
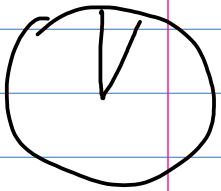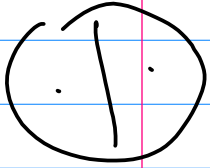
A	B	C	D	E	? representative
1	(6)	11	16	21	no selection bias
(2)	7	12	(17)	22	− difficult to choose sampling frame
3	8	13	18	(23)	lower precision
4	(5)	14	15	24	
5	10	15	20	25	no assurance of representative

(B2) Systematic Sampling

$N = 25$

$n = 5$

$i = 25/5$

~~A~~	~~B~~	~~C~~	~~D~~	~~E~~	+ more representative
1	6	11	16	21	
2	7	12	17	22	− possible decrease of representativeness
3	8	13	18	23	
(4)	(5)	(14)	(15)	(24)	if observations are cyclical
5	10	15	20	25	

(B3) Stratified Sampling

(A)	(B)	(C)	(D)	(E)	? need relevant stratification variable
1	6	(11)	16	21	
(2)	7	12	17	22	
3	8	13	18	(23)	+ precision
4	(5)	14	(15)	24	
5	10	15	20	25	− expensive

Cluster Sampling

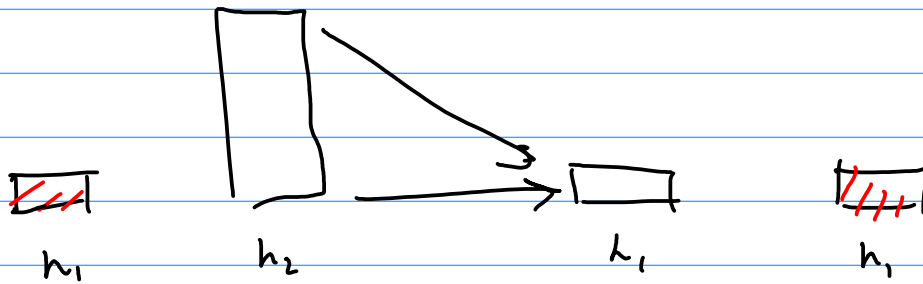| A	B	C	D	E
1	6	11	16	21
2	7	12	17	22
3	8	13	18	23
4	9	14	19	24
5	10	15	20	25

+ easier
cost-
effetive

− imprecise

Stratified sampling

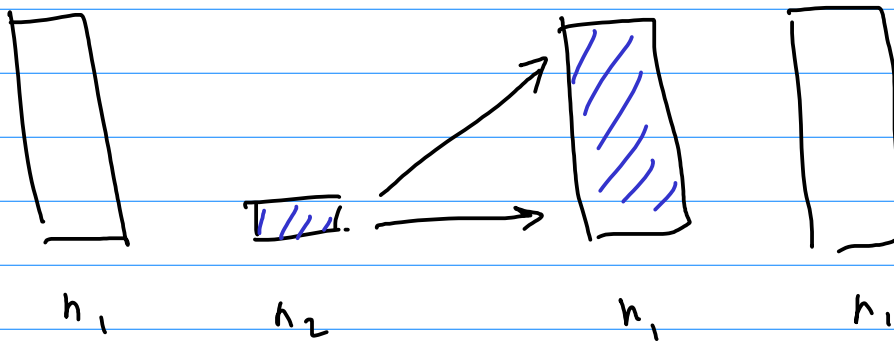clusters   are   heterogenous

obj in clusters are homogenous

Cluster sampling

cluster are homogenous

obj in clusters are heterogenous

Post Sampling

undersampling

h_1 h_2 h_1 h_1

oversampling

h_1 h_2 h_1 h_1

Undersampling

Tomek Links

Oversampling

SMOTE