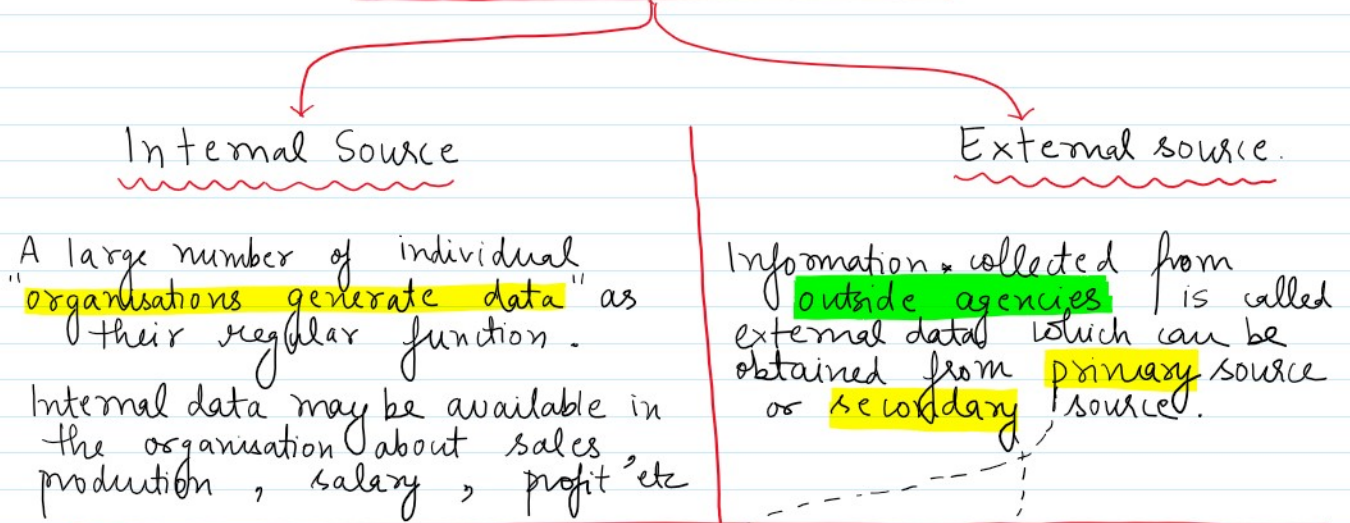==CH-3== (IMP)

Collection of Primary and Secondary data

✳ WHAT IS STATISTICAL ENQUIRY? ✳

→ Statistical enquiry means statistical ==investigation== or statistical survey. The Person who conducts this type of enquiry is called investigator.

→ ==Respondents== are those from whom the statistical information is collected.

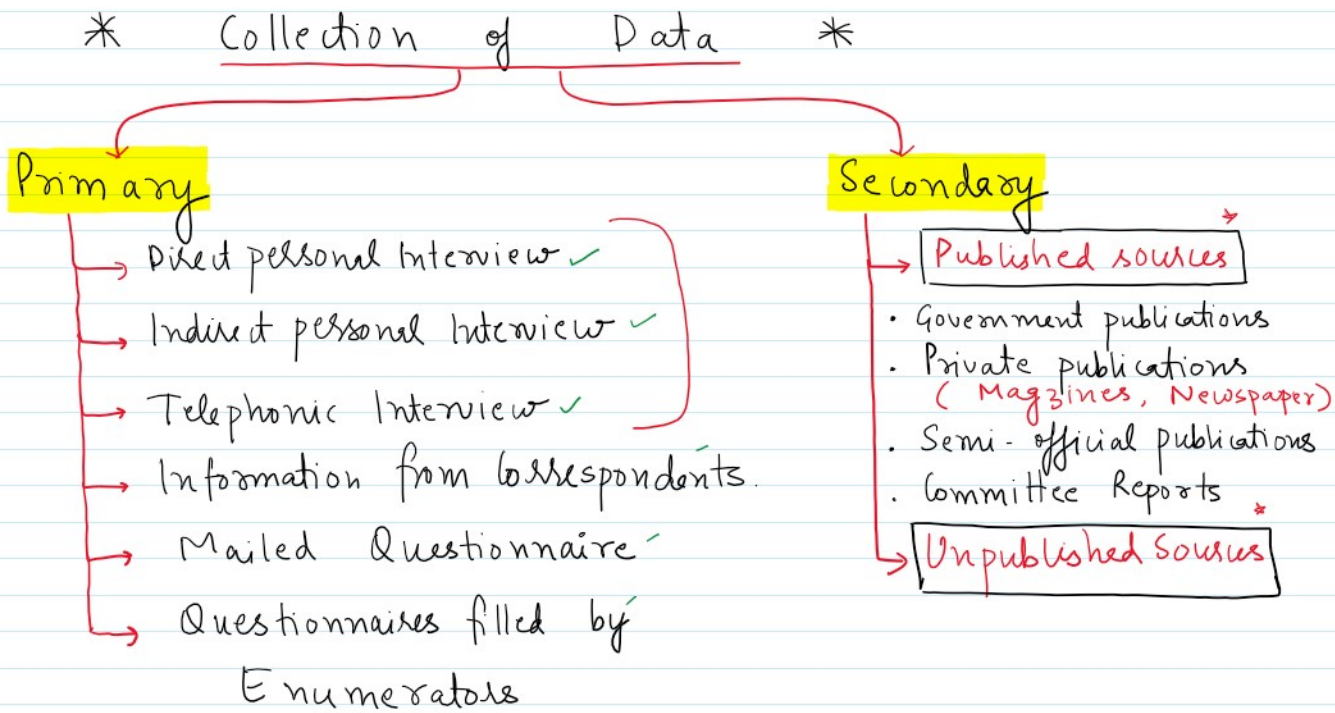→ ==Survey== is a method of collecting information from individuals.

✳ SOURCES OF DATA ✳

Internal Source

A large number of individual "==organisations generate data==" as their regular function.

Internal data may be available in the organisation about sales, production, salary, profit etc

External source.

Information collected from ==outside agencies== is called external data which can be obtained from ==primary== source or ==secondary== source.

3/4M. ✳ Basis	==PRIMARY== DATA	==SECONDARY== DATA
Orginality	Primary data is original because it is collected by investigator from the source of origin.	Secondary data is not original as the investigator uses the data collected by some other person.
TIME	Primary data takes more time for collection.	Collection of secondary data involves less time

TIME	Primary data takes more time for collection.	Collection of secondary data involves less time.
COST	Primary data is costly + more efforts are involved	Secondary data is cheaper + very less efforts are involved.
Suitability	Primary data is reliable and suitable as investigator himself collects the data for specific purpose.	Secondary data ==may not suit== the specific purpose of investigator.

*   Collection   of   Data   *

==Primary==

→ Direct personal Interview ✓
→ Indirect personal Interview ✓
→ Telephonic Interview ✓
→ Information from Correspondents.
→ Mailed Questionnaire
→ Questionnaires filled by Enumerators

==Secondary==

→ Published sources
- Government publications
- Private publications (Magazines, Newspaper)
- Semi-official publications
- Committee Reports
→ Unpublished Sources

I.   DIRECT PERSONAL INTERVIEW

→ According to this method, data is collected by the investigator personally from persons who are the subject of enquiry.

MERITS	DEMERITS
1. ==Original== data is collected	1. This method can be used only when the field of enquiry is ==small==
2. There is ==uniformity==	
3. there is ==flexibility== in enquiry since investigator	2. It is "==time consuming==" & ==costly==

3. There is ==flexibility== in enquiry since investigator is personally present.	2. It is "==time consuming== & ==costly=="
4. Results obtained are ==reliable== & ==accurate==	3. Investigators need to be ==trained== ⊛
	4. Personal ==Bias== can be there

2. INDIRECT PERSONAL INTERVIEW

→ Direct personal enquiry cannot be used in the ==case of refusal or of reluctance== of the persons who are to be interviewed. In such situations, indirect personal interview can be conducted to get necessary information.

→ For eg :- In case of Accident.

IMP ⊛ In this method a [precaution] is necessary in <u>selecting the informants.</u>

☞ Informant should "==not be biased=="

☞ He must "==Know the facts==" of a problem.

☞ He must be ==capable of answering== correctly

MERITS	DEMERITS
1. This method covers ==wide area== of investigation.	1. The DATA ==lacks== <u>Originality</u> ⊛
2. It is more or less ==free from bias==	2. The information collected is comparatively ==less accurate.== ⊛
3. It ==saves== labour, time and money	

3. Telephonic Interview

→ the investigator ask questions over telephone, calls or sms.

→ The investigator ask questions over telephone, calls or sms.

MERITS	DEMERITS
1. Telephonic Interviews ==save== time, money & labour.	1. Information cannot be obtained from the people "who do not have phones." ⊛
2. This method covers ==large area.== ⊛	
3. Sometimes respondents are ==reluctant to answer== the question in personal interview, in such cases telephonic interviews are better.	2. ==Reactions== of respondents on certain issues ==cannot be judged.==

4. Information from Correspondents

→ In this method, local agents or correspondents are trained and appointed in ==different parts== of the investigation area.

MERITS	DEMERITS
1. this method is ==economical== in terms of time, money and resources involved.	1. In this method, data is ==not original==
2. It gives result easily and ==on regular basis==	2. The data collected by this method is ==less accurate==
3. It covers ==wide area== under investigation	3. Correspondents need ==training== ⓐ & there can be ==bias== as well

5. MAILED QUESTIONNAIRES

→ A ==list of questions== relating to an inquiry is called Questionnaire.

→ Questionnaire (along with cover letter) are sent to

Questionnaire

→ Questionnaire (along with cover letter) are sent to informants by ==email== and requests them to answer the same within specified time.

MERITS	DEMERITS
1. This method is ==econominal== i.e. saves time, money & efforts.	1. The informants must be ==educated==.
2. We can obtain ==original data==	2. There may be "==non responses==" or delay in responses
3. It is ==free from Bias==	3. Data acquired ==cannot be verified==.
4. It covers ==wide area==	

6. Questionnaire sent by enumerators

→ The investigator helps the ==informants to understand== the questions and record their answers.

→ The investigator should be honest, well trained, unbiased, polite & diligent.

MERITS	DEMERITS
1. It covers ==wide area==	1. It is an ==expensive== method. ⊛
2. True & ==reliable== answers can be obtained.	2. This method is ==time consuming== ⊛
3. Results obtained are ==free from bias.==	3. Enumerators need to be ==trained== ⊛
4. This method can be adopted even if informants ==are illterate.==	

✻ HOW TO DRAFT QUESTIONNAIRE ?? (IMP.)

Following are the basic principles of drafting Questionnaire :-

Following are the basic principles of drafting Questionnaire :-

(i) **Covering Letter** - The person conducting survey must introduce himself and make objectives of the enquiry clear to informants.

(ii) **Number of Questions** - The informants should be made comfortable by asking minimum number of questions related to objectives & scope of enquiry

(iii) **Personal Questions** should be avoided.

(iv) The questions should be ==simple & clear==.

(v) The questions should be ==arranged logically==

(vi) Give ==instructions== to the informants.

(vii) Use ==multiple choice Questions==

(viii) (Open question) should be minimum

(ix) Avoid leading questions
→ Do you like Nescafe coffee ? ⊗

(x) Attractive layout.

(xi) Cross checks
eg (Age) ✓ (DOB) ✓

×——×——×——×——×——×——×——×

✳ **C E N S U S   V S   S A M P L I N G**

universe (8 items) — All selected | universe (8 items) — Some selected
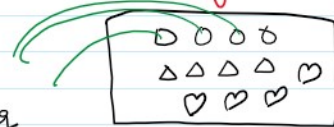
	CENSUS	SAMPLING
COVERAGE	there is ==extensive== coverage	There is ==limited== coverage
Nature of⊛ items	Census method is suitable when items are ==heterogeneous== in nature	Sampling method is suitable when items are ==Homogeneous== in nature

Nature of items	Census method is suitable when items are ==heterogeneous== in nature	Sampling method is suitable when items are ==Homogeneous== in nature
ECONOMICAL	Census method is ==Costlier== in terms of time & money	Sampling method requires ==less== time & money.
Reliability	Census method is ==highly== reliable	Sampling method is ==less== reliable.
Accuracy	Census method is ==highly== accurate	Sampling method is ==less== accurate
Suitability	Census method is suitable when area of investigation is ==small==	Sampling method is suitable when area of invest-igation is ==large==.
Verification of information	Verification of information involves ==huge expense== and is genually ==not possible==.	verification of information can be ==easily== done

$*$ Methods of Sampling $*$

Random Sampling   Non-Random Sampling   Q P. Bias

Non-Random Sampling:
- ⑤ Judgment Sampling
- ⑥ "Quota" Sampling
- ⑦ Convenience Sampling

Random Sampling:
- ① ==Simple== (or Unrestricted) Random sampling   (✓)
- ==Restricted== Random Sampling
  - Stratified ② Sampling
  - Systemmatic ③ Sampling
  - Cluster ④ Sampling (or Multi Stage sampling)

①   SIMPLE Random Sampling

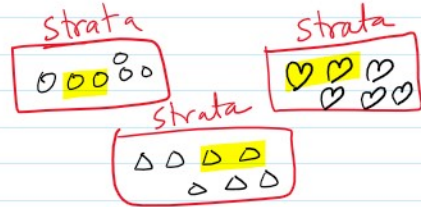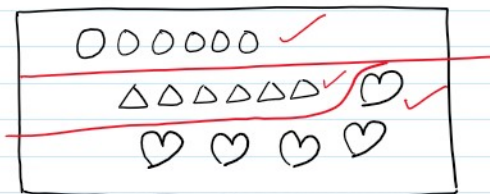→ In this method, an item is selected at Random i.e each item has equal chance of being selected.

→ Eg :- Lottery method, Table of Random Numbers like Tippett's Random sampling numbers
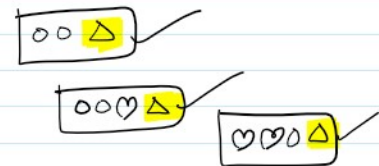
MERITS	DEMERITS

MERITS	DEMERITS
• Less Individual Bias	• Where distribution between items is very large, it becomes difficult to use this method.
• More economical	
• It is more representative	

② STRATIFIED SAMPLING

→ In this method, the universe is divided into strata or homonegenous groups and an equal sample is drawn from each strata at random.
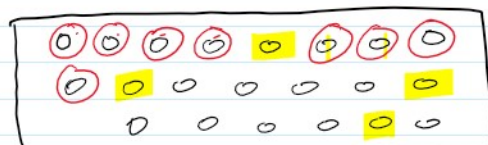

MERITS	DEMERITS
1. The sample taken under this method is more representative.	1. If proper stratification is not done, the sample will have an effect of Bias.
2. It ensures greater accuracy	

3. Systemmatic Sampling (or Quasi-Random Sampling)

→ This method is a simpler and more convenient method, in which a complete list of population is available and items are selected in a systemmatic manner. For eg :- Every nth item

universe   Random
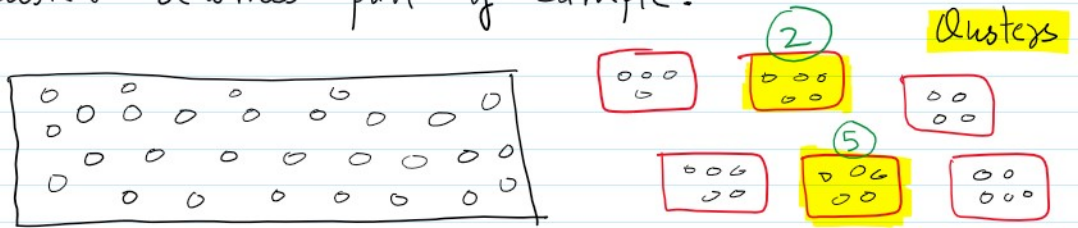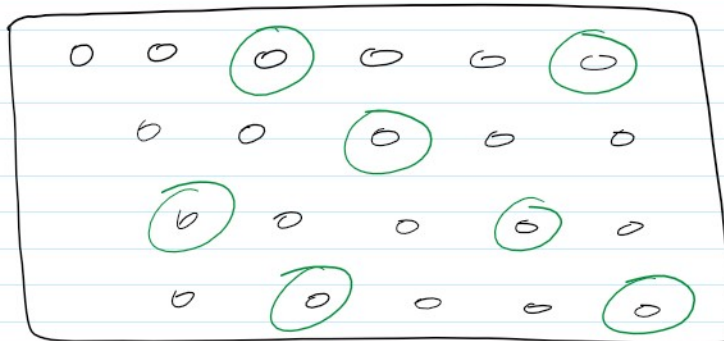every ⑤th student

every (5th) student

MERITS	DEMERITS
1. It is simple & quick	1. Only the first item is selected on the Basis of random sampling.
2. It is economical in terms of time & labour	2. Results may be misleading.

4. **CLUSTER Sampling** (or Multi Stage Sampling)

→ In this method, the universe is divided into groups or clusters and out of these clusters, a given number of clusters are randomly selected.

→ In this method all the items in the selected cluster becomes part of Sample.

Clusters

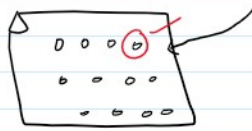| MERITS	DEMERITS
1. This method is very helpful in large scale surveys	1. This method requires trained investigators to structure the clusters.

All selected
↓
Census.

किसी भी
5 select

5. **Judgement Sampling**

5. |Judgement sampling|

→ In this method individual items of sampling are selected by investigator ==using his judgement==

→ This is also called (purposive) or (deliberate) sampling

→ Judgement sampling is suitable :-
  a) When [small] sized sample is to be drawn
  b) In case of ==pilot survey== *

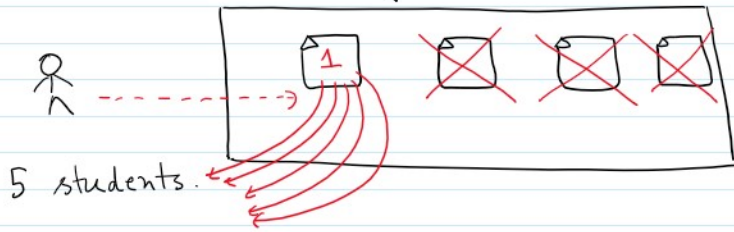| MERITS	DEMERITS
1. It is economical	1. Personal Bias
IMP. ⊛ 2. This method is of great significance where all units of universe are ==not homogeneous==	2. Lacks accuracy

6. |Quota Sampling|

→ Investigators are (alloted definite quotas) of the universe and they are required to interview a certain number from their Quota.

→ this method saves time and cost and is commonly used in " ==surveys of political== ", religious or social opinion.

MERITS	DEMERITS
1. It is not an expensive method	1. PERSONAL BIAS
2. Results are likely to be [reliable].	

7.   CONVENIENCE SAMPLING

→ The portion of universe is selected purely on
the basis of convenience.

5 students.

MERITS	DEMERITS
1. Economical in terms of time, money & effort	1. Personal Bias
	2. Results may lack Accuracy.

*   Misc. Questions   *

Q1 :- What are the advantages of Sampling ? (3 Marks)

Ans :- (i) Economy of time - Time is saved not only in the collection of data but also in analysing the data because of its small size.

(ii) Economy of cost - Sampling involves less cost as compared to census.

(iii) Follow up - Smaller size of data and employment of trained investigators in sampling makes it possible to cross check the reliability of data.

Q2 :- What are the limitations of sampling method ? (3 Marks)

Sol:- (i) Lack of Accuracy - The results drawn from sampling lacks accuracy because samples some times do not represent the population.

(ii) Chances of Biased results - If the investigator is biased, then there are high chances that samples are not representative of population.

samples are not representative of population.

(iii) ┃Lack of trained investigators┃ - Sampling requires trained investigators and in case of absence of trained investigators the results may be ==unsatisfactory.==

Q3 :- What are the various sources for collection of secondary data ? (3 Marks)

Sol:- ┃1. PUBLISHED SOURCES┃

(a) Government publications - Different ministries of State & central government regularly publishes the information.

(b) International Organisations - Some publications are made by organisations like WHO, UN, World Bank etc.

(c) Semi Official publications - Local Bodies like District Boards, Municipal corporations etc also publishes periodical reports.

2. ┃Unpublished┃

→ Research institutes, universities etc collect data but they are '==not published== anywhere.

Q4 - What are the limitations of Secondary data ? (3 Marks)

Ans (i) The data (may) have been influenced by ==bias== of investigator.

(ii) It (may) be ==obsolete== and not suitable for present period.

(iii) It (may) not satisfy a reasonable standard of accuracy & specific purpose.

Q5 - What are the precautions we can make before using secondary data ? (3 Marks)

Ans:- The investigator should consider the following points before using the secondary data :-

Ans:- The investigator should consider the following points before using the secondary data :-

a) Are the data reliable ??

b) Are the data adequate ?

c) Are the data collected by proper method ?

d) Who has collected the data ?

Q6 ⊛ Write short Note on ==Census of India== (3 Marks)

Ans:- ① The Census of India provides the most complete and continous demographic record of population.

② It is published by office of the Registrar General and Census commissioner, India under the ministry of ==Home affairs==, Government of India

③ Information of ==demographic characteristics== include birth , death, sex , age composition , literacy etc

④ [First census] was done in ==1881== & thereafter it is done every 10 years. (Last census in 2011)

Q7 - Write short note on ==NSSO== ? (3 Marks)

Ans:- ① NSSO is a government organisation under the Ministry of statistics & programme Implementation. It was initiated in ==1950== on the basis of proposal by Prof. ==P. C. Mahalanobis==

② Functions of NSSO :-

a) Collection of data on ==Socio-Economic== conditions
b) Collection of data relating to ==Industrial sector==
c) ==Supervision== of surveys conducted in agricultural sector.

③ Its Quarterly Journal is Known as ==SARVEKSHANA==
(every 3 months)

☞ NATIONAL Sample Survey ORGANISATION

x —— x —— x —— x —— x —— x —— x