

Data Collection Techniques and Sampling

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Data Collection

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- Can we treat following as Data?
 - Sales Data from store of Puma
 - Sales, Profit After Tax, Current Assists and Bank overdraft of a company....
 - A picture captured at Kirana store or Milk Parlor.....
 - Report published in a tabloid
 - Tweet by any person or organisation
 - A particular page of Annual Accounts of company
 - Product placement in the movie
 - Interview of an Industrialist on News Channel
 - A video of making Bhaji Pav at Honest is
 - Observing activities of kids in KG section B in the playground

Picture is a data.....

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Different Sources of Data

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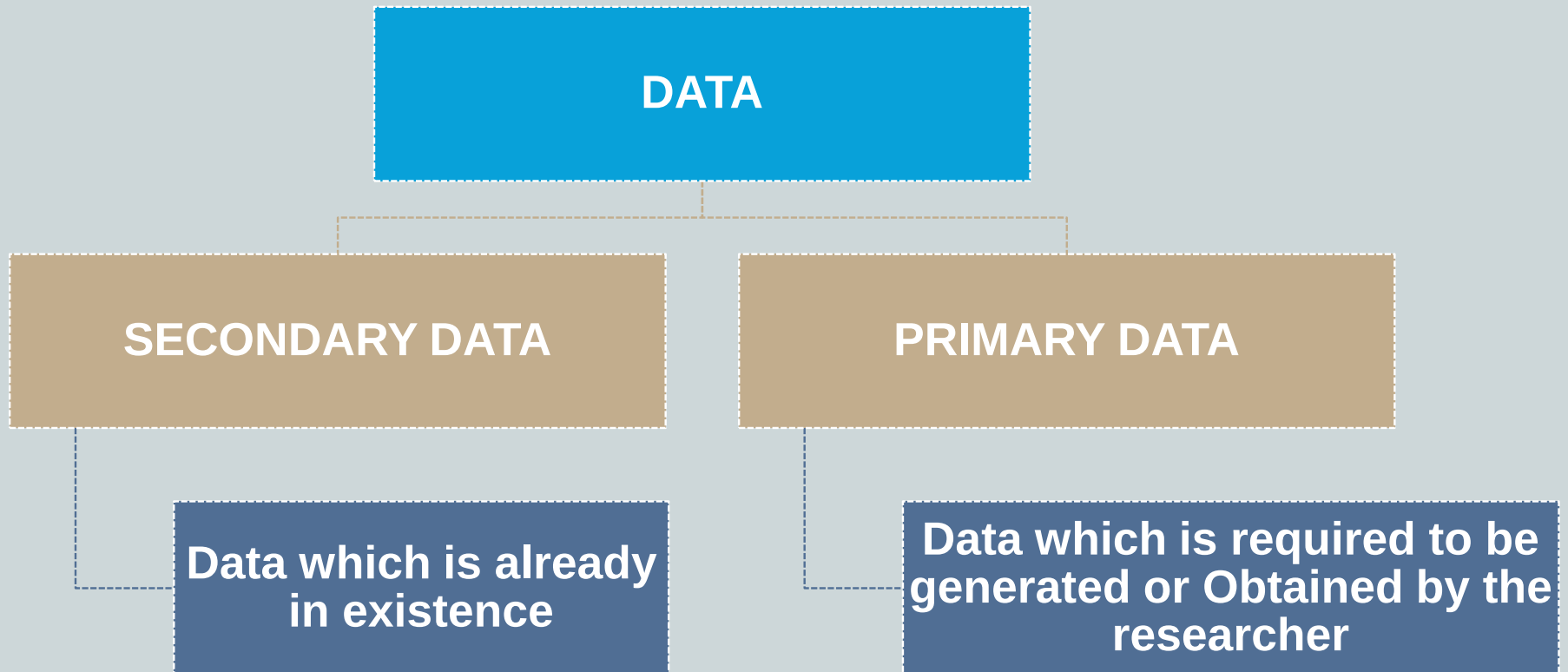
COMPARING
ADVERTISEMENTS

COMPARISON
OF WEBSITE



Classification of Data

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Secondary Data

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What is Secondary Data.....?

Data which is

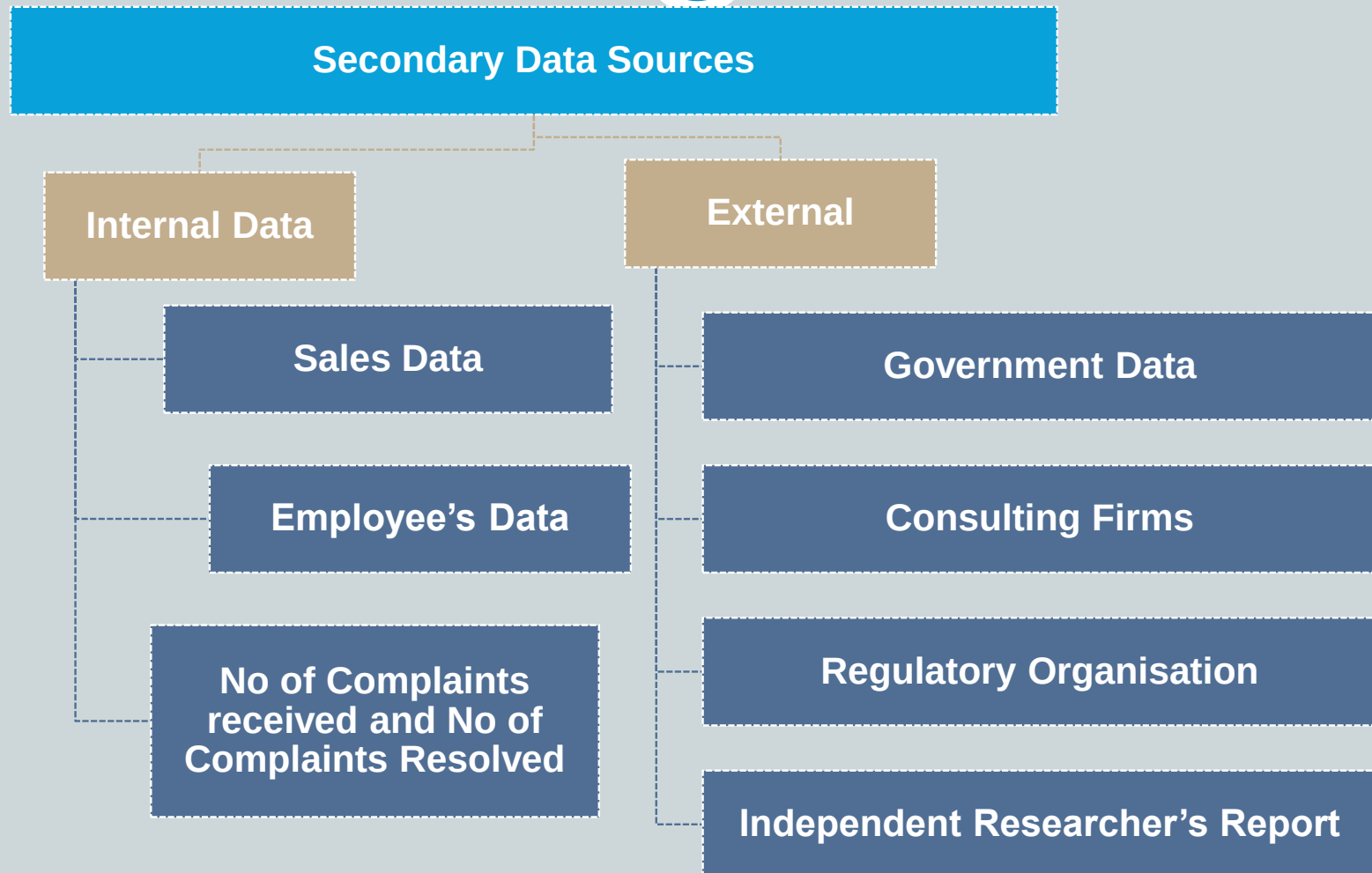
- already in **existence**
- generated by other researchers for *some other specific purpose*
- but we are going to **re-use** it for some other purpose
- either *with modification* or *without modification*.

Annual Reports of Company → **Statutory Requirement of companies act.**

- *Bankers are using to analyze credit worthiness of company.*
- *Investors are using same data to know profitability and Dividend policy*

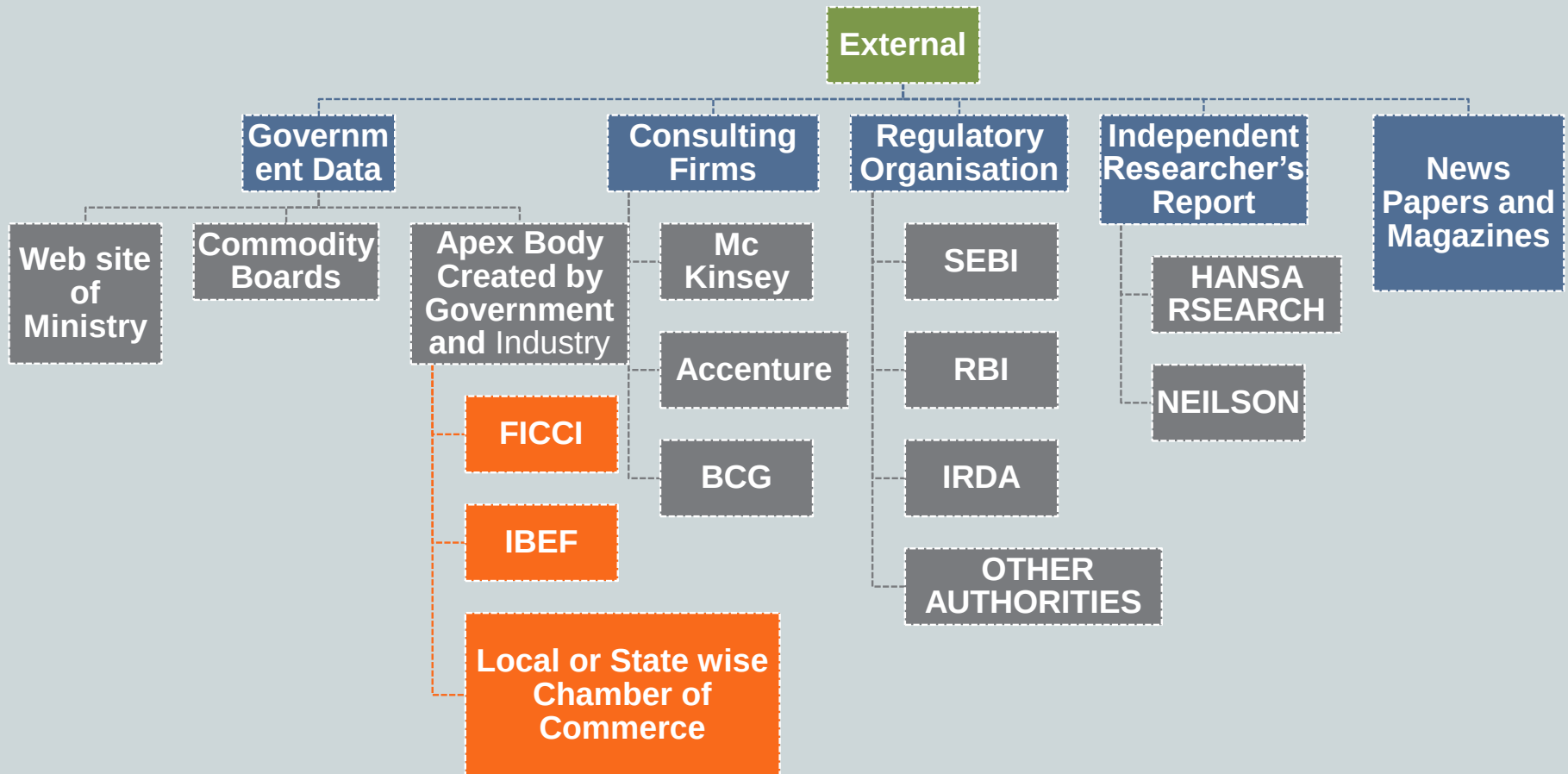
Sources of Secondary Data

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External Sources

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Case Let-1

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- You are preparing research paper having following title.....

Topic-----“Impact of “Loan Mafi” of Farmers on NPA of (Profitability) of selected PSU Banks”.

**MERGER OF VARIOUS
GOVT BANKS?**

Which Information is required to be Obtained	From Where
What Government Says.....(Who are eligible for getting relaxation)	Circular of RBI-from website of RBI
Which loan has been waived off.....(taken from PSU or Other also)	From Annual Report of RBI as well as Annual Report of PSU Banks
How much amount of Provision is Necessary for Banks to absorb the loss?	Banking Regulation rules as well as NPA norms of RBI

Case Let-2

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- You are preparing research paper having following title.....

Topic: *A study to know the youngster's preference for online entertainment channel in Western Ahmedabad*

Which Information is required	Sources of Information
Available options for online entertainment (Amazon Prime etc.... and their viewership)	Market share of different Online Platform (Mint)
Average Time spent by Youngsters on mobile for entertainment in Hours (Weekly)	Reports showing usage of Mobile in Hours (Marketing White Book)
Role of influencers (Friends as well as Different Platforms to attract youngsters)	Recent Practices of different Platforms (Referral code)

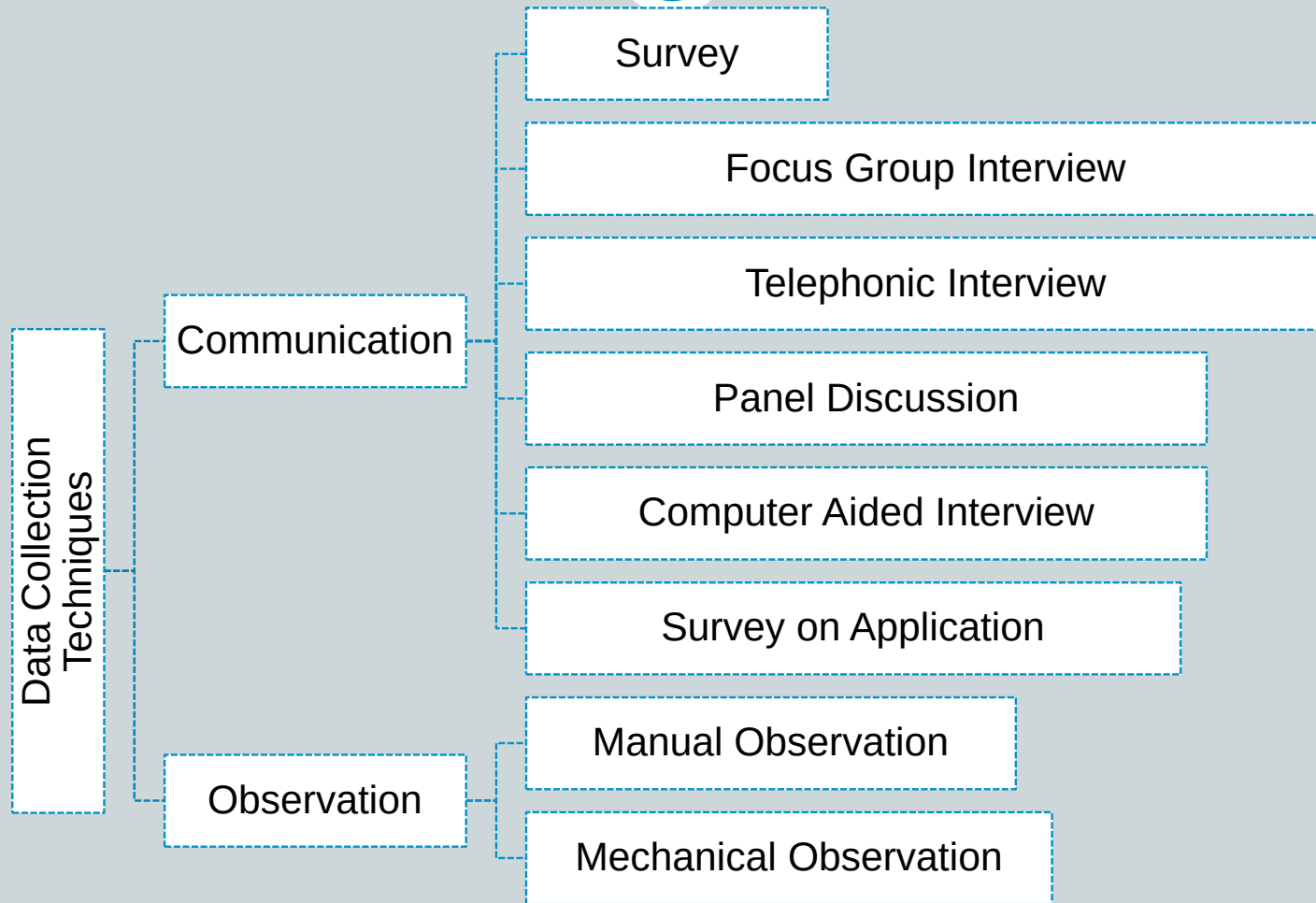
Primary Data

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- Data which is NOT in existence and researchers obtained it for specific purpose.
- Researchers need to determine primary data requirement on the basis of “Research Objectives”
- Information one seek----How to get that such information---from whom to get such-----when to get such information
 - An Opinion about experience of cinema hall quality for various shows
 - ✦ Cinema watchers.....Before entering into cinema hall....? No one is ready to answer Canteen.....Short Form.....

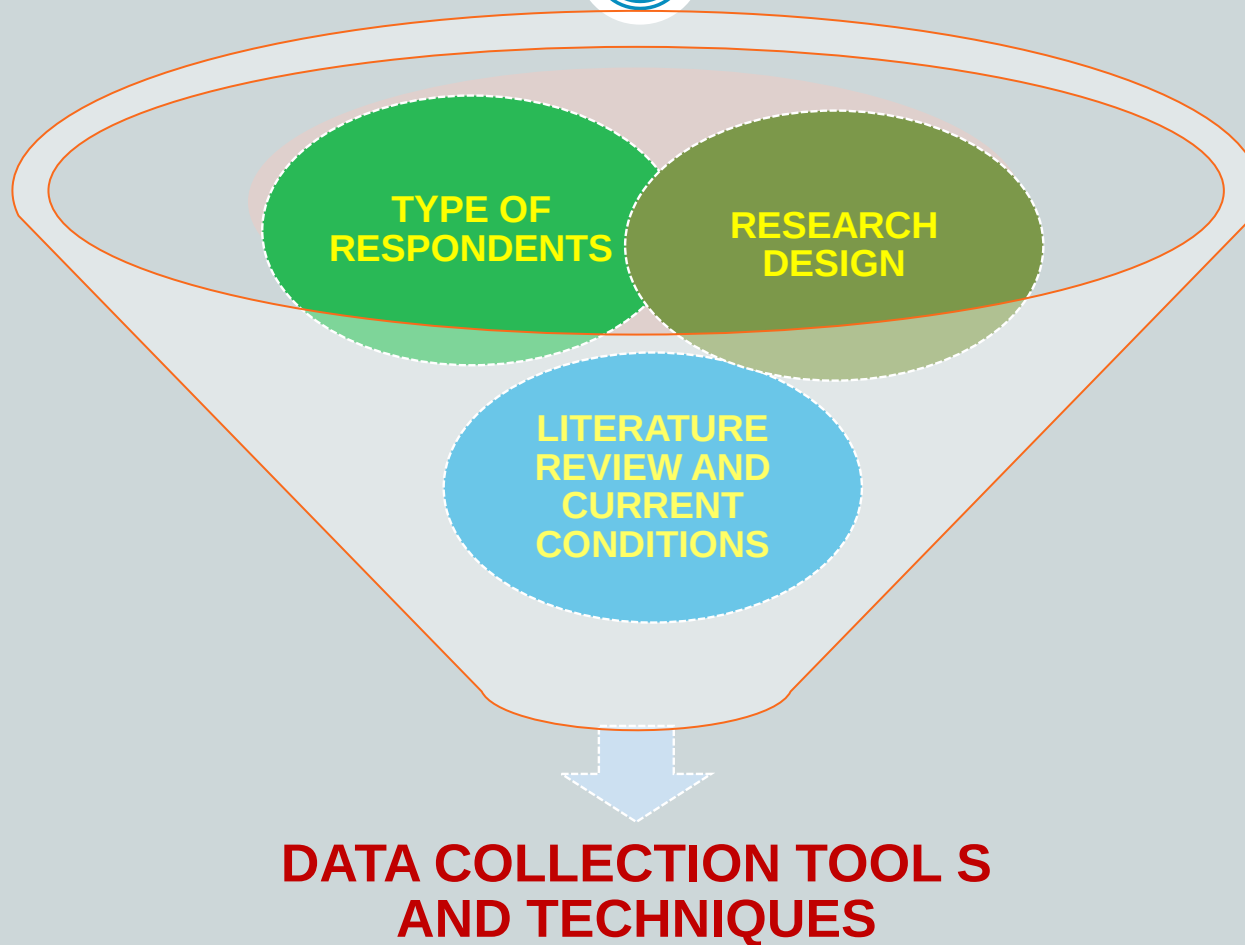
Sources of Primary Data Techniques and Tools

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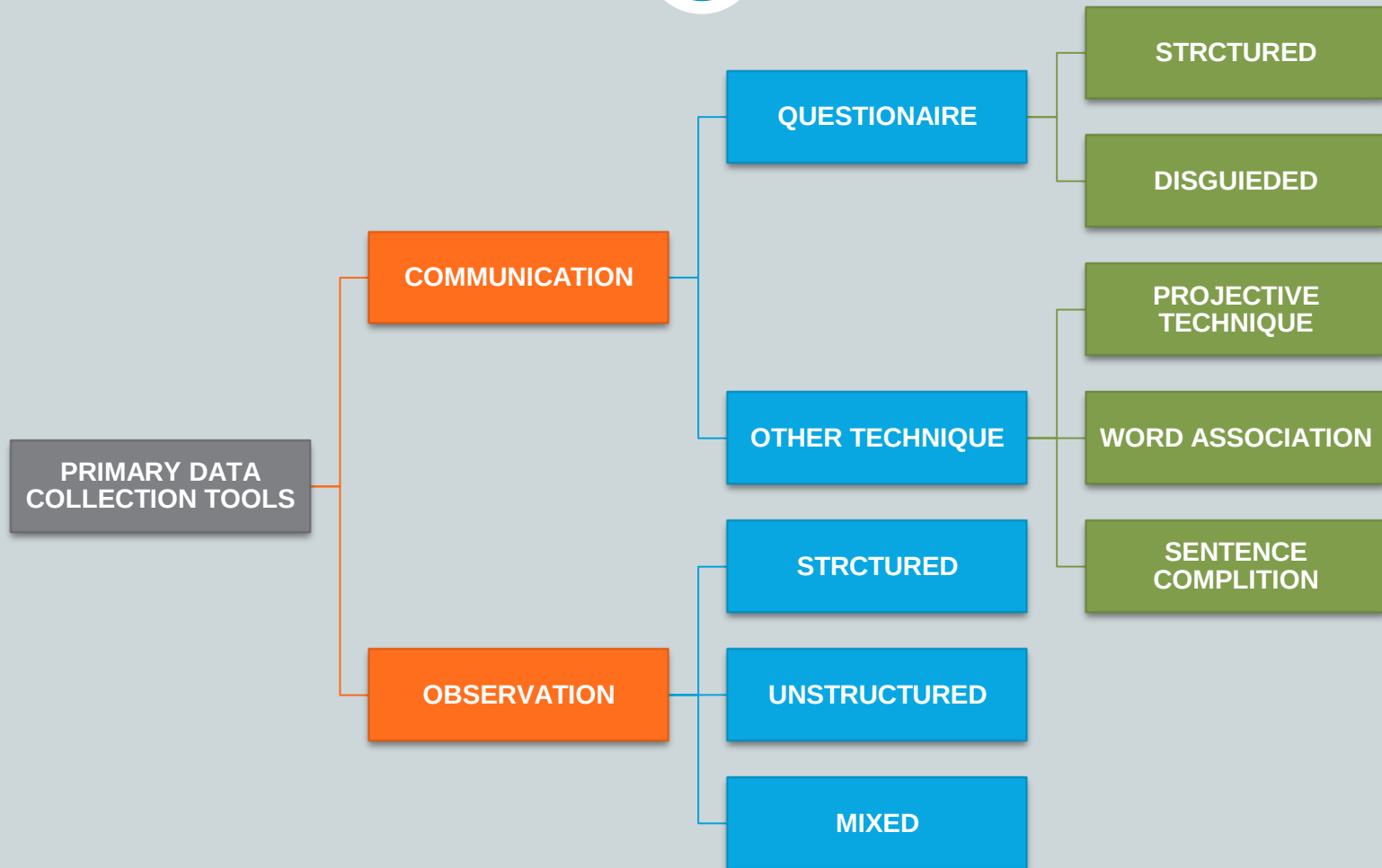
Factors affecting Data Collection

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Sources of Primary Data Techniques and Tools

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Observation

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- What is Observation

- Recording of Behavioural **patterns** of **people, objects**, and **events** in systematic manner to obtain information about the **phenomenon** on interest.
- **Observation** is the selection and recording of behaviors of people or organisation in their environment. It is very useful for generating in-depth descriptions of organizations or events.

- Why we Need Observation?

- To get the true information which may not be obtained from Survey

Case Let-3

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- As a HR Manager you would like to revise plan of resting your production department workers break time in shift of eight hours. You are not satisfied with the current break system. Looking to the situation or hardship of worker you strongly believe that if a small break of 15 minutes provided then it will increase efficiency.
- **Solution:** Trial Plan During Off Season
- **Observation:** Production and work activities with old system of break and with New system of Break

Different Types of Observation

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- **Structured observation**,
 - the researcher specifies in detail *what is to be observed*
 - how the measurements are to be recorded, *e.g., an auditor performing inventory analysis in a store.*
- **Unstructured observation**, the observer monitors all aspects of the phenomenon that seem relevant to the problem
e.g., observing children playing with new toys.

- **Disguised observation**, the respondents are unaware that they are being observed.

Disguise may be accomplished by CC TV Camera in the store. Consumers and /employees are being observed.

- ✓ *Very useful for quick decisions*
- ✓ *True Result is reflected*
- ✓ *Improvement in behaviour of employees can be obtained*
- ✓ *Very much effective for service providers*

Case Let-4

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- As a Departmental (Merchandise) Manager you would like to change or shift the place of selected items of store. You have three story building. You are in Need of following information:
 - In which section of store Maximum No of customers visit?
 - In which section customer ignore to visit?
 - In which section customer is deciding brand in shortest time?
 - In which section customers are watching brands in the eyesight level as well as at bottom level also?
 - After getting entry which side is most preferred by customer...(right or left)

Mechanical Observation

Observation Checklist for Store

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Main Criteria	Sub Criteria of Observation	Rank (1-Extremely Good, 2- Good, 3- OK, 4- Need Some Minor Changes, 5- Need to Change to Great Extent)				
		1	2	3	4	5
Retail store Basic Aspects	Store Location					
	Size of Store					
	Atmosphere					
	Personal Attitude of Cashier or Manager					
	Space for Movement in different sub-Department					
Detergent Powder	Visibility of Leading Brand					
	Availability of Different variants and Size					
	Display of Discount and Price with appropriate font size					
	Refilling of the rack in time					

Case Let-5

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- Application of Observation in case of Financial Reporting....
- A study of recent Trends in Financial Reporting of Private Sector Banks and Public Sector Banks.

<i>Criteria</i>	<i>Excellent</i>	<i>Good</i>	<i>O K</i>	<i>Need to be Improved little bit</i>	<i>Need to Improve lot</i>
Informative					
Innovative					
Precise					
Investor Centric Approach in Informal Presentation					

6 Ws (Department Store Project)

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- **Who:** Purchasers, browsers, males, females, parents with children, or children alone.
- **What:** Products/brands considered, products/brands purchased, size, price of package inspected, or influence of children or other family members.
- **When:** Day, hour, date of observation.
- **Where:** Inside the store, checkout counter, or type of department within the store.
- **Why:** Influence of price, brand name, package size, promotion, or family members on the purchase.
- **Way:** Personal observer disguised as sales clerk, undisguised personal observer, hidden camera, or obtrusive mechanical device.

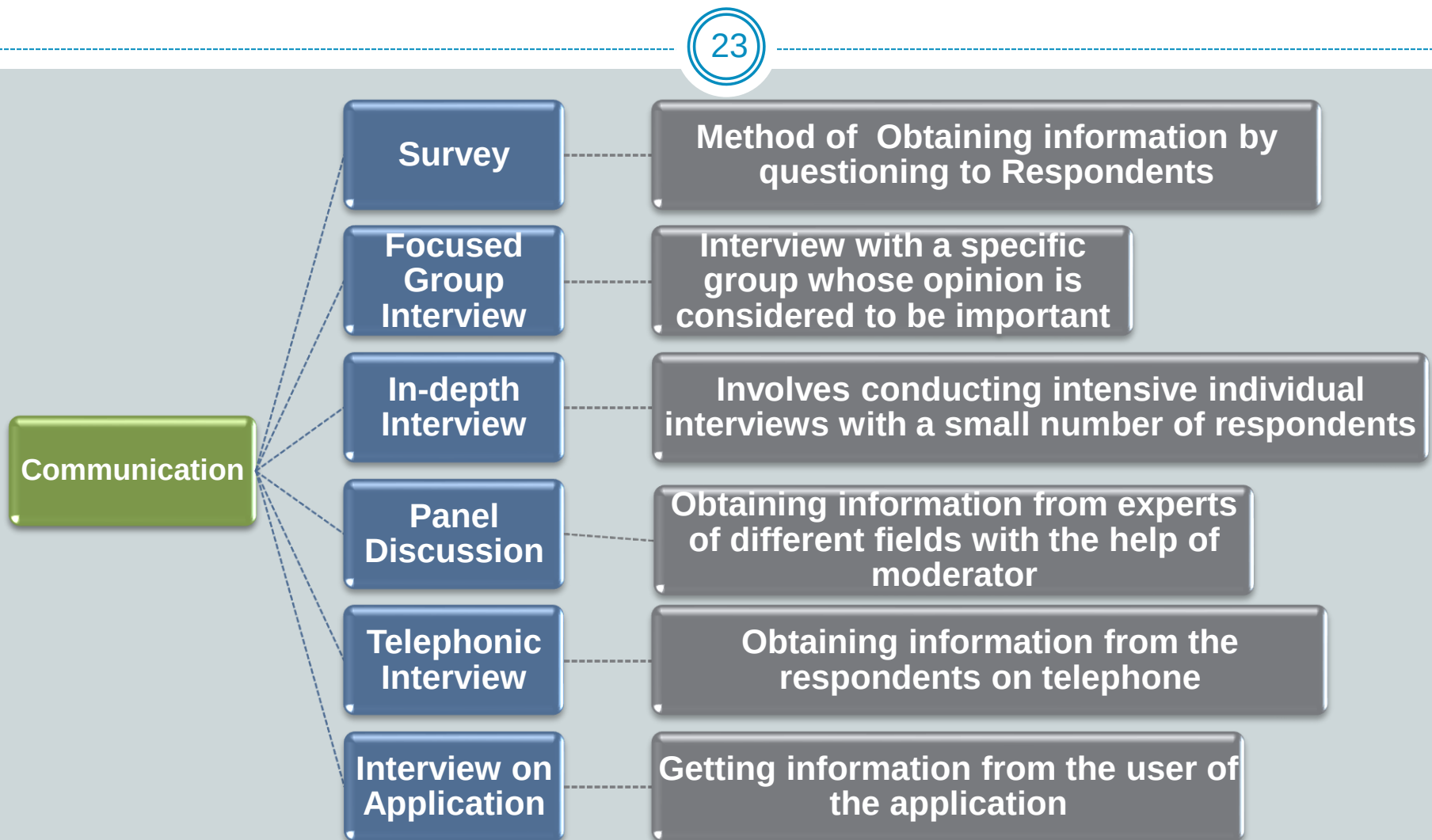
Comparative analysis of different Observation Methods

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Criteria	Personal Observation	Mechanical Observation	Audit Analysis	Content Analysis	Trace Analysis
Degree of structure	Low	Low to high	High	High	Medium
Degree of disguise	Medium	Low to high	Low	High	High
Ability to observe in natural setting	High	Low to high	High	Medium	Low
Observation bias	High	Low	Low	Medium	Medium
Analysis Bias	High	Low to Medium	Low	Low	Medium
General remarks	Most flexible	Can be intrusive	Expensive	Limited to communications	Method of last resort

Communicative Data Collection Technique

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Questionnaire

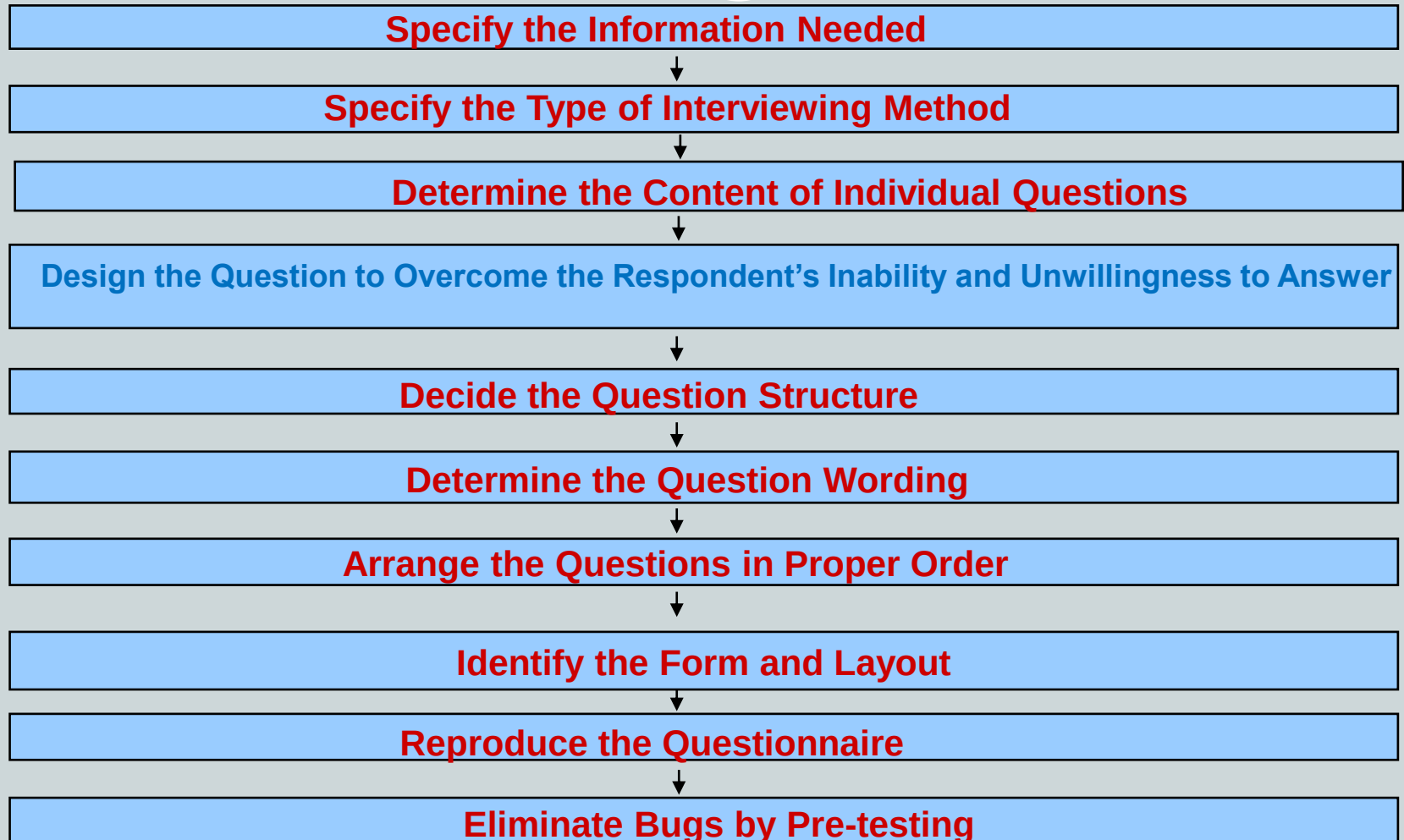
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What is Questionnaire?

1. A **questionnaire** is a **formalized set of questions** for obtaining information from respondents.
2. A questionnaire is a research device or instrument that is made up of a **series of questions** which may provide required information to the researcher.
3. A questionnaire is a research instrument consisting of a set of **standardized questions** to gather **statistically useful information** on some subject from one or more respondents.

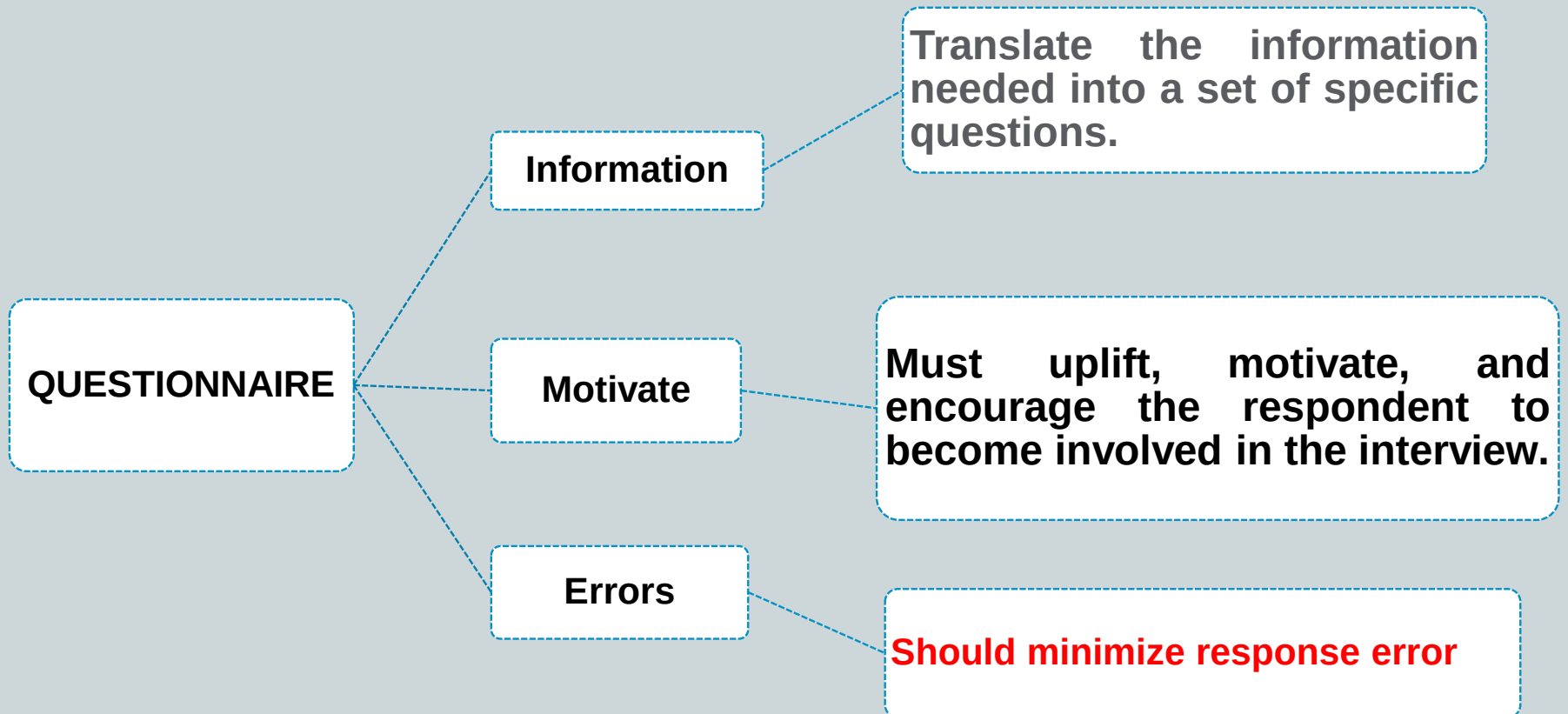
Process of Preparing Questionnaire

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Objectives of Questionnaire

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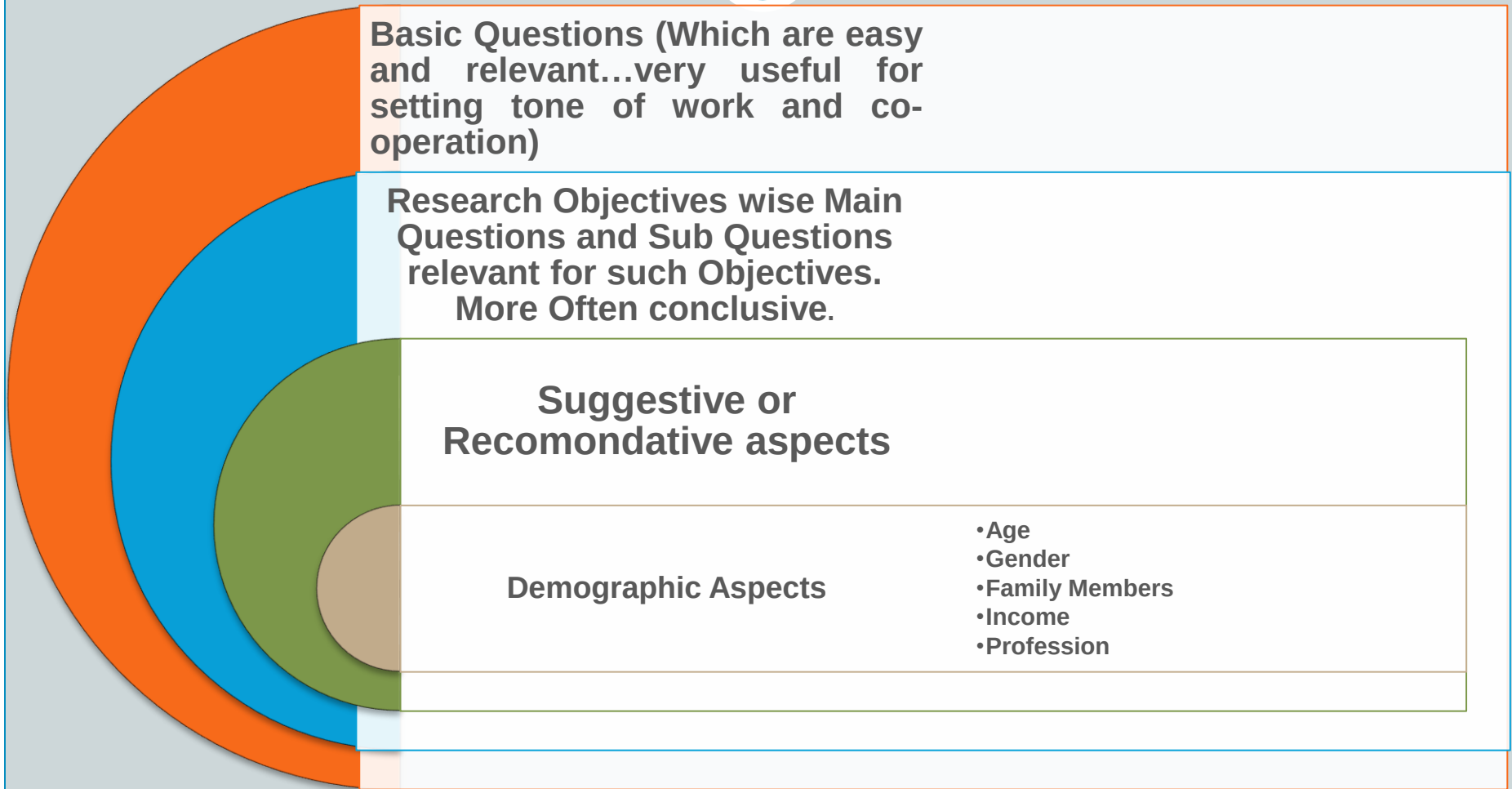
Data Collection Tool

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QUESTIONNAIRE

Structure of Questionnaire

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What should be avoided.....

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Individual Question Content — Are Several Questions Needed Instead of One?

Sometimes, several questions are needed to obtain the required information in an unambiguous manner. Consider the question:

“Do you think Coca-Cola is a tasty and refreshing soft drink?”
(Incorrect)

- Such a question is called a **double-barreled question**, because two or more questions are combined into one. To obtain the required information, two distinct questions should be asked:

“Do you think Coca-Cola is a tasty soft drink?” and
“Do you think Coca-Cola is a refreshing soft drink?” (Correct)

Negative Response is also part of Answer

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- Do you get an Assistance from your Insurance Agent/ store supervisor in departmental store?
 - Yes
 - No

Responsiveness of Insurance Agent Several Aspects	Excellent	Good	O K	Not Much Appreciable	Non- Cooperative	No Assistance at All
Reminder at the time of Renewal of Policy						
Guidance for the Revision of Sum Insured						
Guidance for mode of Payment						
Guidance at the time of Claim						

Avoid.....and Replace

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- **Unstructured questions** are open-ended questions that respondents answer in their own words.
 - *What is your occupation?*
 - *Who is your favorite actor?*
 - *What do you think about people who shop at high-end department stores?*
- **Structured questions** specify the set of response alternatives and the response format. A structured question may be multiple-choice, dichotomous, or a scale.
- Have u changed your Hair Oil Brand?
 - No
 - Yes

No or Yes cant provide you much more detail understanding

Choosing Right Structure of Question

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A **dichotomous question** has only two response alternatives: yes or no, agree or disagree, and so on.

- Often, the two alternatives of interest are supplemented by a neutral alternative, such as “no opinion,” “don't know,” “both,” or “none.”
- Such answers cant provide insight to researcher as well as one cant measure any qualitative aspects.

Do you intend to buy a new car within the next six months?

_____ Yes
_____ No
_____ Don't know

One should mention which type of New Car or New Technology offered or other options also

Choosing Right Structure of Question

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- Define the issue in terms of who, what, when, where, why, and way (the six Ws). Who, what, when, and where are particularly important.
- *Which brand of shampoo do you use?* (*Incorrect*)
- *Which brand or brands of shampoo have you use Now?* (*50:50:*)
- Have you changed your Brand of shampoo?
 - No
 - Yes
 - ✦ Due to Higher Price
 - ✦ Not available on Regular Basis
 - ✦ Better Option is available in market
 - ✦ Not available in Bottle Pack of 1 Lit.

(One should Use accompanying Question also)

Choosing Right Words in Answer

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In a typical month, how often do you shop in department stores?

- _____ Never
- _____ Occasionally
- _____ Sometimes
- _____ Often
- _____ Regularly

**One Cant Measure any thing
from this information**

(Incorrect)

In a typical month, how often do you shop in department stores?

- _____ Less than once
- _____ 1 or 2 times
- _____ 3 or 4 times
- _____ More than 4 times

**Frequency of Visit Determines Loyalty
of Store or Right Place of Store**

(Correct)

Assignment-1

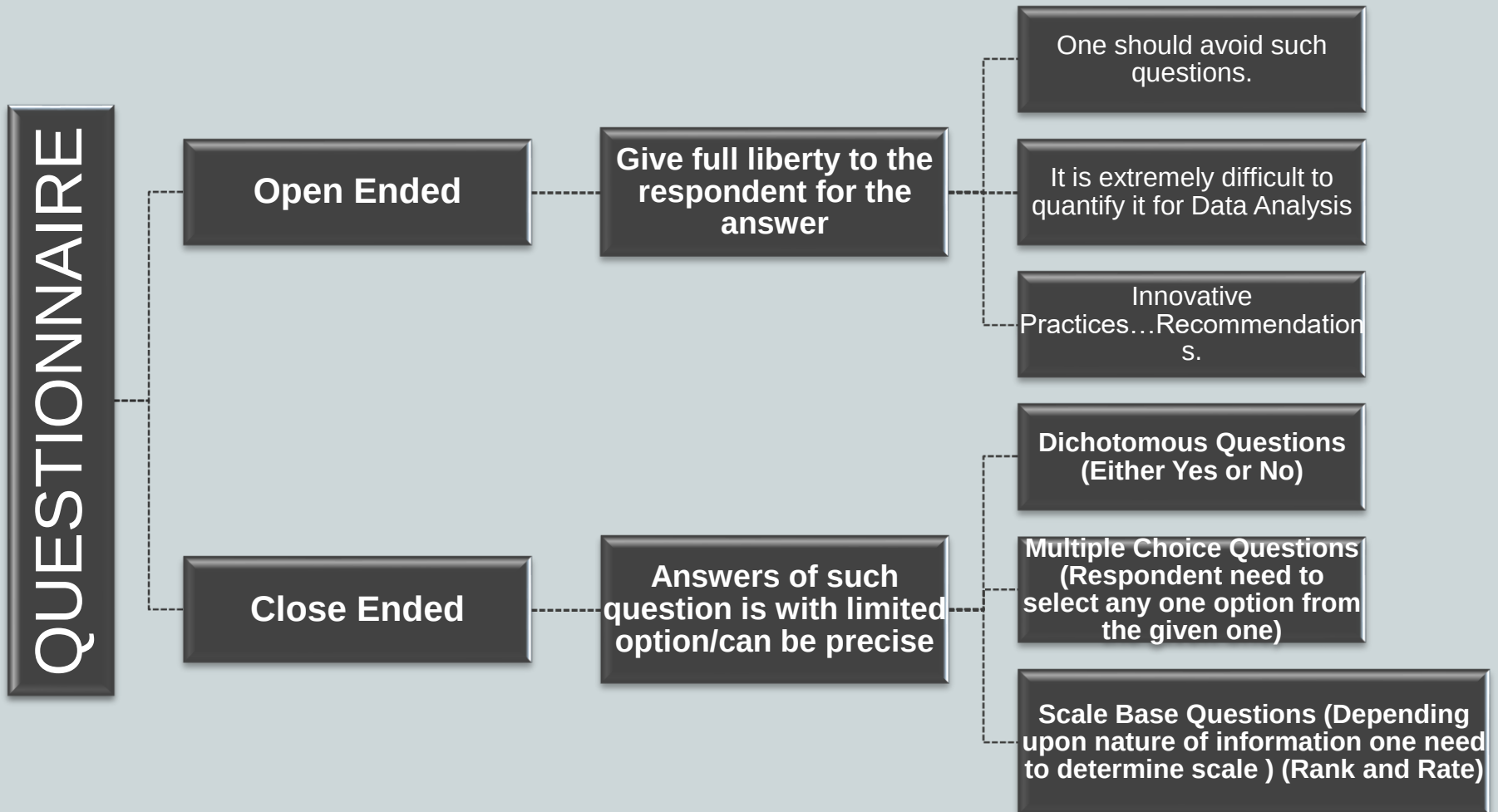
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Mr. Manu wants to open a new multiband Television showroom in your city. He would like to keep only five brands in his store. Before opening of such showroom he would like to know consumer behaviour of your city towards Television set.

You have been appointed as Marketing Consultant for Mr. Manu. You are required to prepare a questionnaire to know Consumer Behaviour for television.

Different Types of Questions

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Pretesting

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Pretesting refers to the testing of the questionnaire on a small sample of respondents to identify and eliminate potential problems.

- A questionnaire **should not be** used in the field survey without adequate pretesting.
- All aspects of the questionnaire should be tested, including question content, wording, sequence, form and layout, question difficulty, and instructions.
- Pretests are best done by **personal interviews**, even if the actual survey is to be conducted by mail, telephone, or electronic means, because interviewers can observe respondents' reactions and attitudes.
- Sensible Sampling is necessary in case of pretesting.

Pretesting

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- After the necessary changes have been made, **another pretest could be conducted by mail**, telephone, or electronic means if those methods are to be used in the actual survey. (Google Form)
- A variety of interviewers should be used for pretests.
- The pretest sample **size varies from 15 to 30** respondents for each wave.
- **Protocol analysis** and debriefing are two commonly used procedures in pretesting.
- Finally, the **responses obtained from the pretest should be coded and analyzed.** (Statically aspects

Process of Questionnaire Preparation at a Glance

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- **Step 1. Specify The Information Needed**
- **Step 2. Type of Interviewing Method**
- **Step 3. Individual Question Content**
- **Step 4. Overcome Inability and Unwillingness to Answer**
- **Step 5. Choose Question Structure**
- **Step 6. Choose Question Wording**
- **Step 7. Determine the Order of Questions**
- **Step 8. Form and Layout**
- **Step 9. Reproduce the Questionnaire**
- **Step 10. Pretest**

Some Basic Aspects in Sampling

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Study satisfaction of those who rides two wheeler in Ahmedabad City.

Universe: A place where study is proposed. In above case entire Ahmedabad City is Universe.

Population: It includes the whole frame of the units that are considered for study. It refers to any group of people or objects that from the subject of study in particular survey.

Two wheeler Riders of Ahmedabad City will be treated as population for the said research work. (NOT OWNER)

Census: An examination of each and every element of the population is called census or complete enumeration.

In above case if researcher contract each and every rider of two wheeler and collect data about satisfaction for two wheeler.

Some Basic Aspects in Sampling

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Sample: It is sub set of Population. It comprises only some elements of the population.

In above case if researcher collect data from two wheeler rider of Vastrapur than it is called sample. It is part of population.

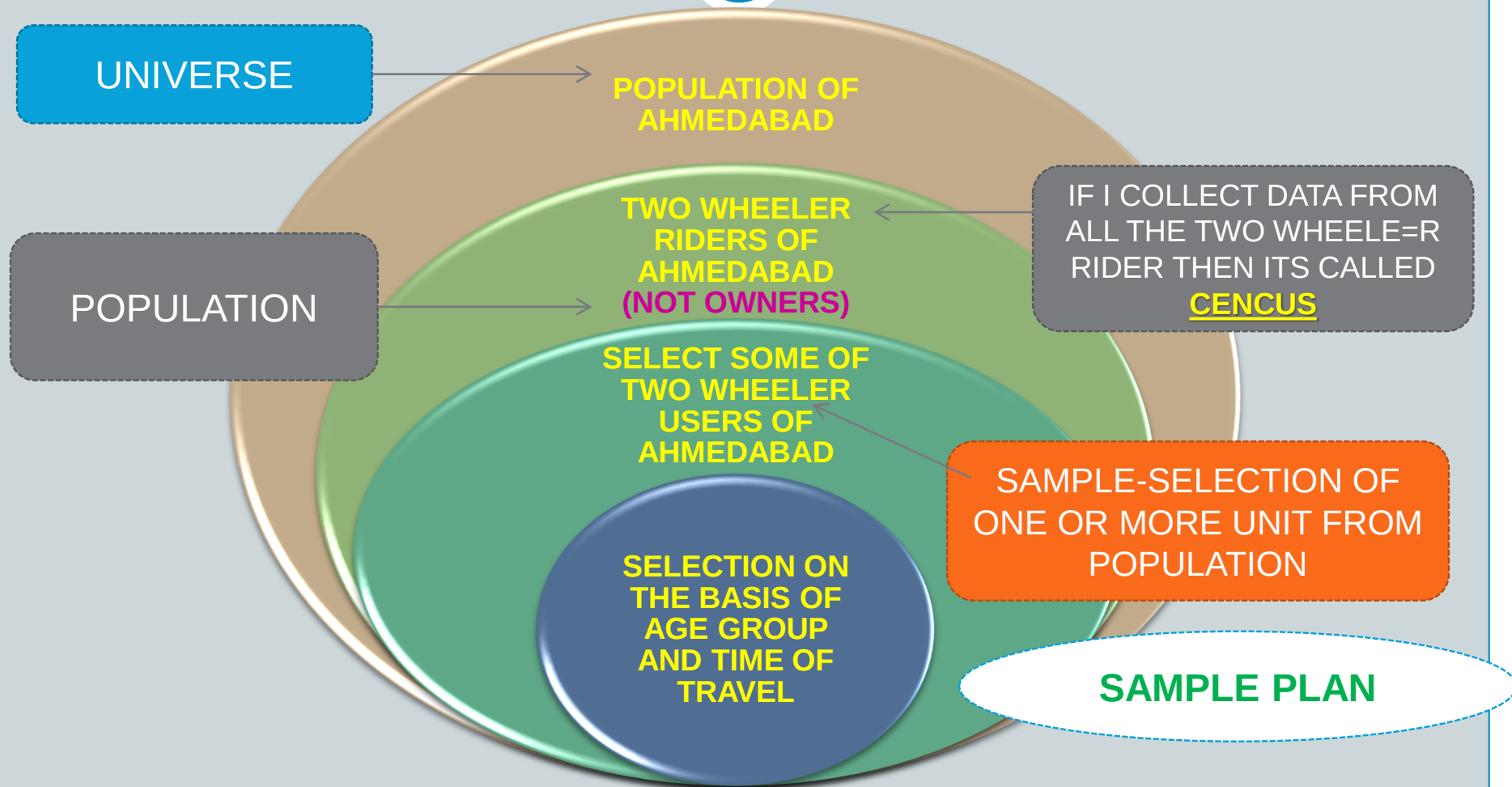
Sampling Unit: A sampling unit is a single member of the sample.

If 100 two wheeler riders have been selected then each of selected two wheeler is sampling Unit.

One need to select sample from the Population rather then going for census. Its costly and time consuming also.

Universe, Population and Sample

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Sampling

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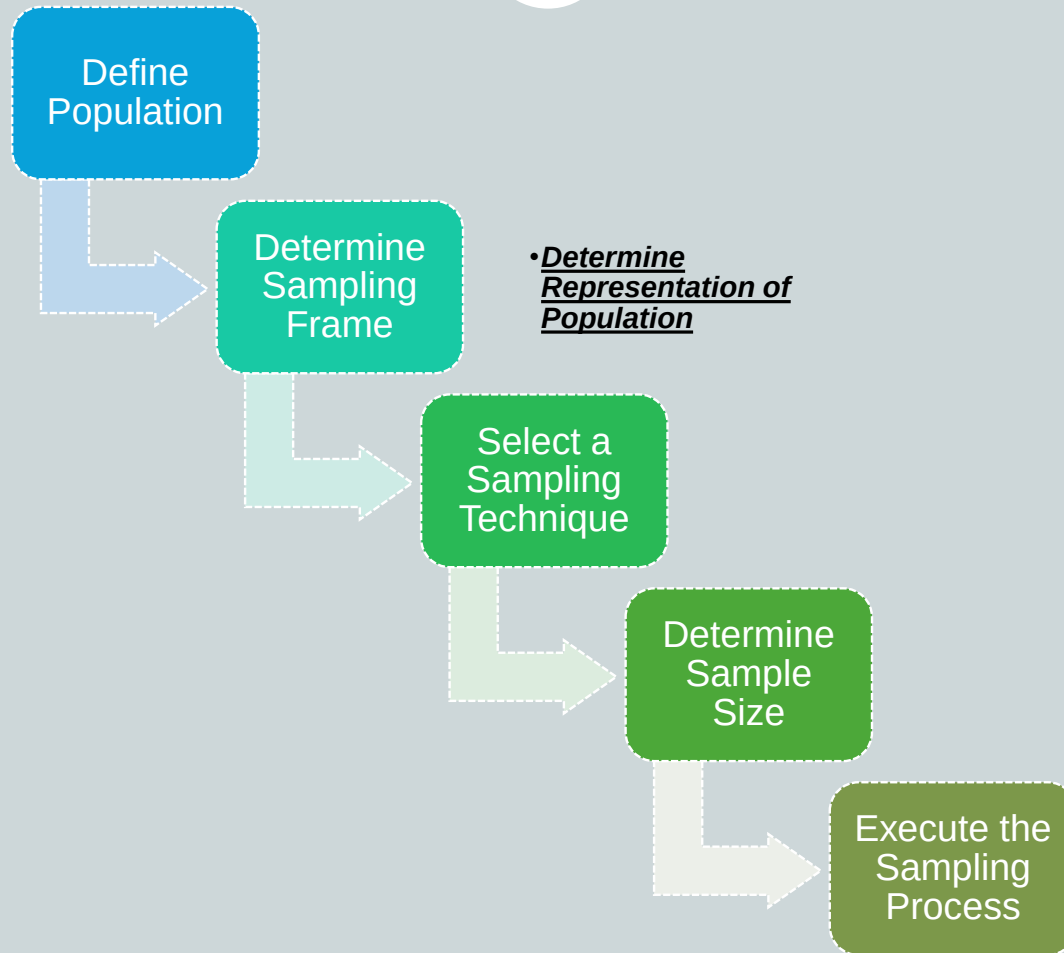
- Sampling is a
 - process
 - of selecting
 - an adequate number of
 - elements
 - from the population
 - so that the study of the sample will help in understanding population.

Selecting 10 Two wheeler riders from 15 different areas (covering entire city) during 9 to 6.

Over and above it also facilitates generalising the result.

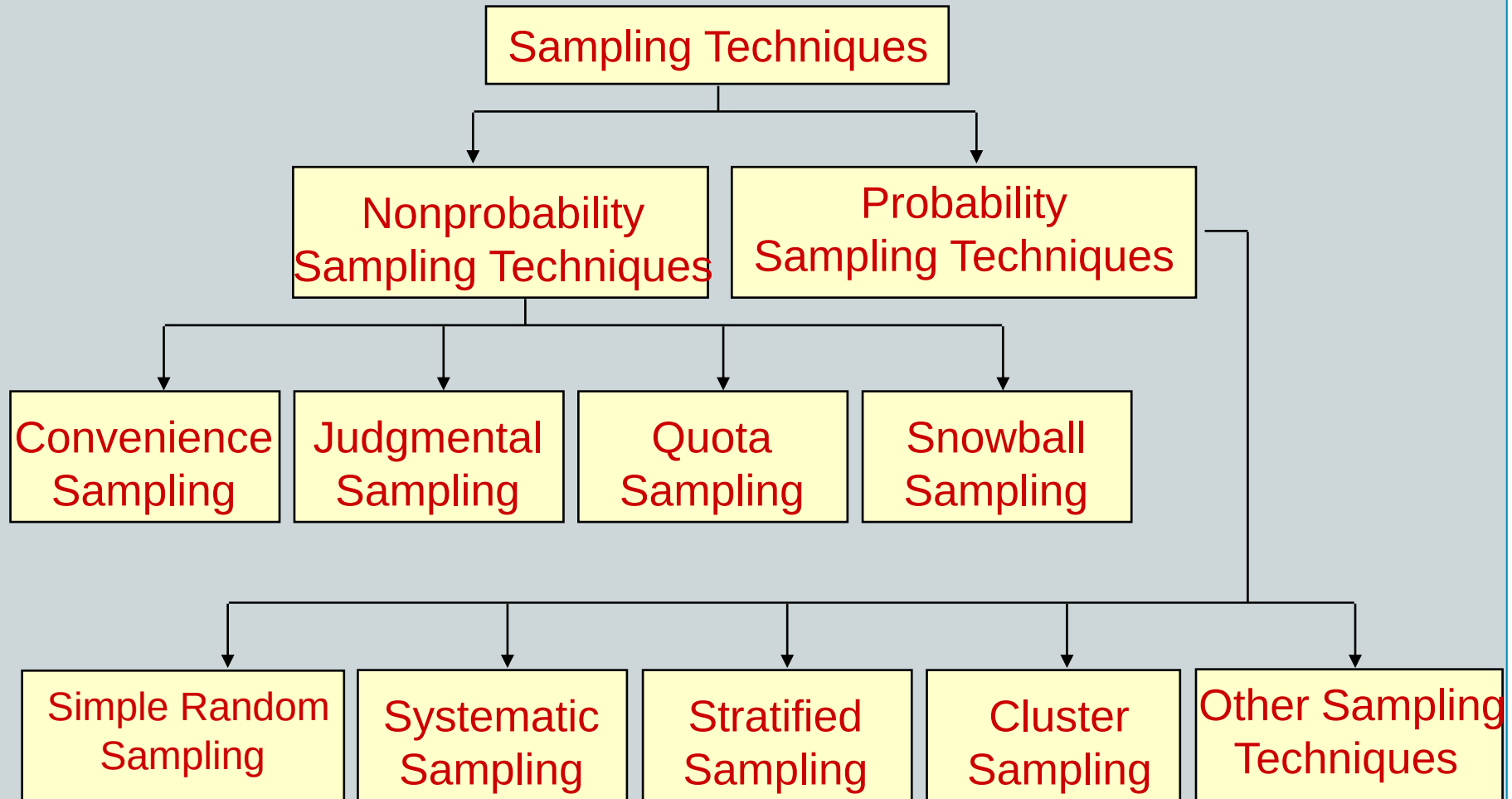
Sampling Design Process

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Classification of Sampling Techniques

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Simple Random Sampling

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- Just like a lottery system, selecting respondents randomly from telephone directory or even from list of customers by Vodafone for informing New Scheme of Data Usage
- Highly recommended for social science however its not useful to cover all types of respondents.
(Random selection of respondents may not cover respondents of all income class)
- Random is not “Poor” or “Inferior”.
- One cant reach to every one and its costly also
- You all are Good tester.....taster.....Bhajipuv.....
- One can use Random Sampling with Other Sampling Techniques

Systematic Random Sampling

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- Every class of respondent may not be covered in Simple Random Sampling but one can go for covering more classes through Systematic Random Sampling

The sample is chosen by selecting a random starting point and then picking every i th element in succession from the sampling frame

- Every 10th Consumer inside the store....Every 20th railway ticket buyer from Ticket Window. ***All class of Railway and All Income Group....Timings are important.***
- **On the basis of Selection of first sample other samples are determined. One should be extremely careful while selecting first one.**
- ***When population is wide spread this one is useful. (Opinion about public policy)***

Stratified Sampling

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- A two-step process in which the population is partitioned into subpopulations, or strata.

Reader's /Dine Out Preferred respondents of different Age	Male	Female	Total
15-25			40
26-35			40
36-50			50
51-60			50
Above 60			20
Total	120	80	200

Stratified Sampling

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- Strata-Group
- Exclusive Group to be created **but selected randomly**
- All the strata need to cover different types of respondents.
- From Each strata one need to select respondent on Simple Random Sampling way.
- Creation of “Strata” need to be on the basis of “Research Objectives”
- One need to determine maximum respondents from each strata on the basis of secondary data as well as guide’s opinion.

Cluster Sampling

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- Cluster –Quarantine
- Cluster means group of people
- Homogeneity is between the groups

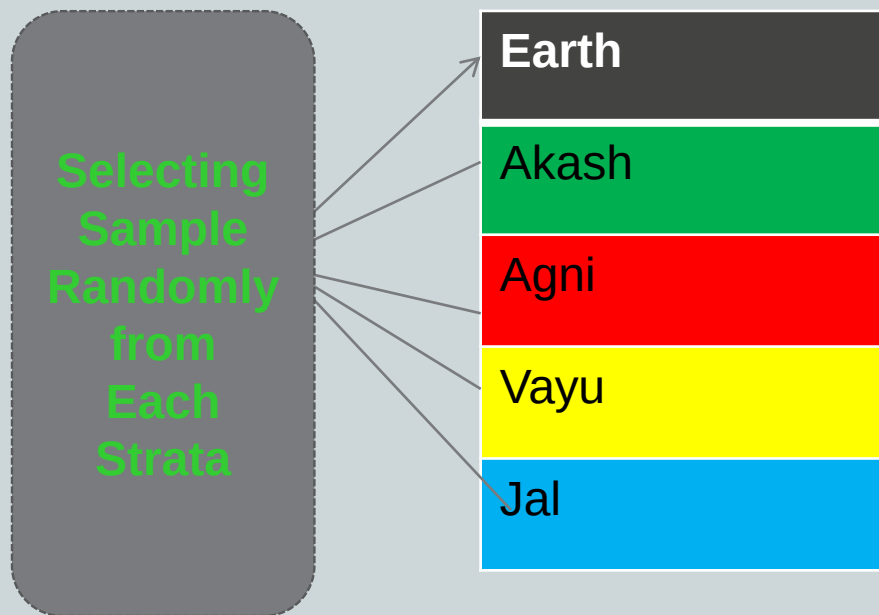
For example in case of Panel Discussion about Impact of Budget one would like to include every representative of affected class of society.

- Trade Association
- Local Manufacturing Association
- Economist (Independent)
- Economist involved in Policy Making
- RBI representative (who is controlling different activities)
- Banking (Who knows each and every sector)
- Sociologist
- Women Representative
- Other

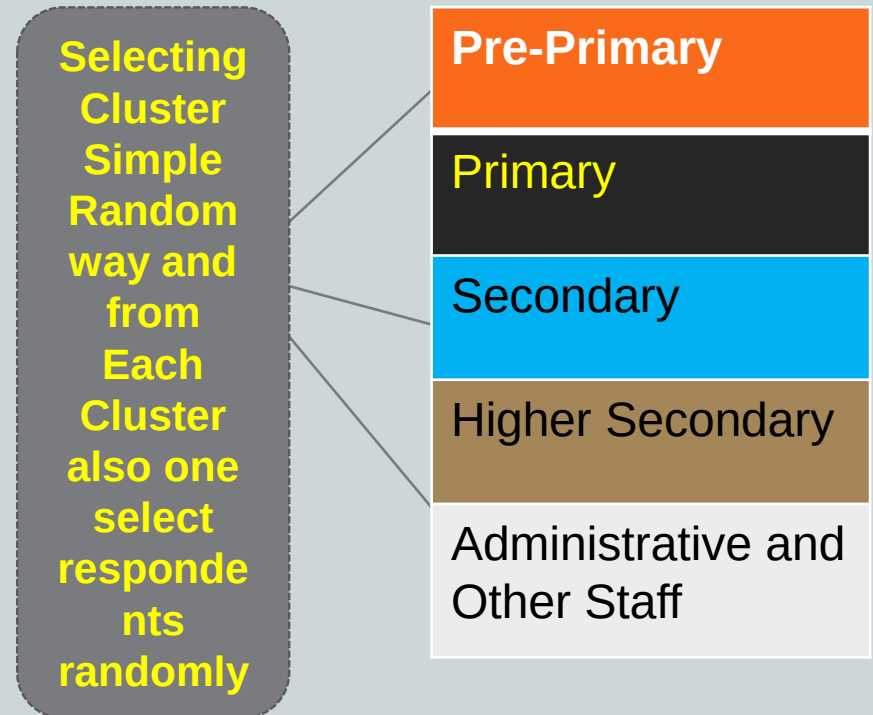
Difference between Stratified and Cluster Sampling

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Stratified



Cluster



Nonprobability Sampling

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- A sampling Technique in which each element of the population having unequal chance of being selected as respondent.
- In simple term we can say that we will ignore some portion of population for collecting data.
- When scope of research is very specific and one need to find out opinion or phenomena from particular class of respondents than its very important.
- Intensified Data collection

Convenience Sampling

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- **Convenience sampling** attempts to obtain a sample of convenient elements. Often, respondents are selected because they happen to be in the **right place** at the **right time**.
- Obtain information quickly and inexpensively.
- Researcher may not obtain data from all the class or from all elements of Population.
- Some time one can get biased data. One should be very precise for the sample framework.
- Diabetic Patients. (Morning Walk-----Gym)

Judgmental Sampling

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- **Judgmental sampling** is a form of convenience sampling in which the population elements are selected based on the judgment of the researcher.
- This approach may not produce satisfactory Result.
- Opinion of Budget
- “Judgment” is crucial and than ability of Judgment is important for getting effective result.
- Research must have experience of collecting data in this way.

When company want to launch New Product. May use judgmental sampling for selecting “experts” who have prior knowledge of experience of similar product.

Such selected person may not have such experience.

Quota Sampling

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- A sampling technique in which sample is selected on the basis of certain **demographic characteristics** of respondents like Income, Age, Occupation, Education etc.
- Quotas ensures the composition of sample is same as the composition of population. Thus quotas reflect **characteristics of Population.**
- While selecting sample unit one may **use convenient sampling.**
- Preference of UPI payment option adopted by Citizens of Ahmedabad. (Age Group wise Quota-Collection of Data on the basis of availability of respondent)
- Purposive sampling

Snow Ball Sampling

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- When it is difficult to identify the members of desired population then one need to use this method of sampling.
- In snowball sampling an initial group of respondents is selected, usually at random. After being interviewed, these representative are asked to identify others who belong to the target Population.

A study of Academic Reading habit of Faculty Members in college.

First stage: Get information from librarian and then one can ask to the respective faculty members. ONE cant consider all the faculty members for sample unit.

Strengths and Weaknesses of Basic Sampling Techniques

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Technique	Strengths	Weaknesses
<i>Nonprobability Sampling</i>		
Convenience sampling	Least expensive, least time-consuming, most convenient	Selection bias, sample not representative, not recommended for descriptive or causal research
Judgmental sampling	Low cost, convenient, not time-consuming	Does not allow generalization, subjective
Quota sampling	Sample can be controlled for certain characteristics	Selection bias, no assurance of representativeness
Snowball sampling	Can estimate rare characteristics	Time-consuming
<i>Probability sampling</i>		
Simple random sampling (SRS)	Easily understood, results projectable	Difficult to construct sampling frame, expensive, lower precision, no assurance of representativeness.
Systematic sampling	Can increase representativeness, easier to implement than SRS, sampling frame not necessary	Can decrease representativeness
Stratified sampling	Include all important subpopulations, precision	Difficult to select relevant stratification variables, not feasible to stratify on many variables, expensive
Cluster sampling	Easy to implement, cost effective	Imprecise, difficult to compute and interpret results

Sources of Information

58

- Chawla and Sondhi, 2016, Research Methodology, II Edition, Vikas Publishing House.
- Dash and Malhotra, 2017, Marketing Research, 7th Edition, Pearson Education.
- Sathyapriya, 2015, Marketing Research, Biztantra Publication.

Thanks

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HELLO, DO YOU HAVE ANY
OPINIONS THAT FIT INTO
OUR PRECONCEIVED
QUESTIONS?

THANK
YOU!

YES AND NO...

