



## Chapter 2

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# Collection of Data




## Definition of Measurement (page 21)

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Definition 2.1.

**Measurement** is the process of determining the value or label of the variable based on what has been observed.



## Example (page 21)

### Variable: Educational Attainment

Scale 1 – International Standard  
Classification of Education designed  
by UNESCO

- 0 – pre-primary
- 1 – primary
- 2 – lower secondary
- 3 – upper secondary
- 4 – post-secondary non-tertiary
- 5 – 1<sup>st</sup> stage tertiary
- 6 – 2<sup>nd</sup> stage tertiary

Scale 2 –

- 0 – Nursery/Kinder/Prep
- 1 – Grade 1 to 2
- 2 – Grade 3 to 4
- 3 – Grade 5 to 7
- 4 – 1<sup>st</sup> to 2<sup>nd</sup> year H.S.
- 5 – 3<sup>rd</sup> to 4<sup>th</sup> year H.S.
- 6 – 1<sup>st</sup> to 2<sup>nd</sup> year college
- 7 – 3<sup>rd</sup> to 4<sup>th</sup> year college
- 8 – 5<sup>th</sup> or upper college
- 9 – Masters degree
- 10 – PhD

Chapter 2. Collection of Data



## Levels of Measurement (pages 22-27)

- Nominal
- Ordinal
- Interval
- Ratio

### Notes:

- a. It is important to know the level of measurement used to measure a variable to help us in the interpretation of the value that the variable takes on.
- b. Knowing the level of measurement helps us decide on the appropriate statistical tool to analyze the data.

Chapter 2. Collection of Data



## Definition of Ratio Level of Measurement (page 22)

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Definition 2.2.

The **ratio** level of measurement has ALL of the following properties:

- The numbers in the measurement system are used to classify an element into distinct, nonoverlapping and exhaustive categories.
- The system arranges the categories according to magnitude.
- The system has a fixed unit of measurement representing a set size throughout the scale.
- The system has an absolute zero.

Chapter 2. Collection of Data



## Examples of Ratio Level of Measurement (page 22)

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- weekly allowance of a student in pesos
- distance traveled by an airplane in kms
- speed of a car in kilometers/hour

Chapter 2. Collection of Data



Which of the properties stated in the definition of the ratio level are not satisfied by the following scale?

Variable: Faculty rank

Measuring system:

- 1 – Instructor
- 2 – Assistant professor
- 3 – Associate professor
- 4 – Professor

Chapter 2. Collection of Data



## Definition of Interval Level of Measurement (page 24)

Definition 2.3.

The level of measurement is said to be interval if and only if it satisfies the following properties:

- The numbers in the measurement system are used to classify an element into distinct, nonoverlapping and exhaustive categories
- The system arranges the categories according to magnitude.
- The system has a fixed unit of measurement representing a set size throughout the scale.
- The system has NO true zero. (A zero in the scale does not mean the absence of the characteristic.)

Chapter 2. Collection of Data




## Examples of Interval Level of Measurement (pages 24-25)

- Temperature readings in degrees centigrade/ Fahrenheit
- Intelligence quotient
- Calendar dates whether Gregorian, Hebrew, or Islamic

Note: Since there is no true zero in the system then the ratios of measurements taken using the scale are not interpretable.

Question: What is the level of measurement of thermodynamic temperature reading in Kelvin (which is proportional to the molecular activity or thermal energy of matter)?

Chapter 2. Collection of Data



## Definition of Ordinal Level of Measurement (page 25)

Definition 2.4.

The level of measurement is said to be ordinal if and only if it satisfies the following properties:

- The numbers in the measurement system are used to classify an element into distinct, nonoverlapping and exhaustive categories.
- The system arranges the categories according to magnitude.
- The system has NO fixed unit of measurement representing a set size throughout the scale.
- The system has NO true zero.

Chapter 2. Collection of Data




## Examples of Ordinal Level of Measurement: (pages 25-26)

- size of shirt: 1-small 2-medium 3-large 4-extra large
- Faculty rank: 1-Instructor 2-Assistant professor 3-Associate professor 4-Professor

Note: Since the system has NO fixed unit of measurement and has NO true zero then the differences and ratios of measurements taken using the scale are not interpretable.

Chapter 2. Collection of Data



Question: Which of the following systems' level of measurement is ordinal?

Variable: size of shirt


System 1

- 1 – Small
- 2 – Extra large
- 3 – Medium
- 4 - Large

System 2

- 1 – Extra large
- 2 – Large
- 3 – Medium
- 4 - Small

Chapter 2. Collection of Data



## Definition of Nominal Level of Measurement (page 26)

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The level of measurement is said to be nominal if and only if it satisfies the following properties:

- The numbers in the measurement system are used to classify an element into distinct, nonoverlapping and exhaustive categories
- The categories in the measurement system are NOT arranged according to magnitude.
- The system has NO fixed unit of measurement representing a set size throughout the scale.
- The system has NO true zero.

Chapter 2. Collection of Data



## Examples of Nominal Level of Measurement: (pages 26-27)

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- Religious affiliation: 1-Catholic 2-Protestant 3-Muslim 4-Iglesia ni Kristo 5-Others
- Type of movie: 1-romance 2-adventure 3-horror 4-others

Note: The nominal level is the weakest level of measurement since we use symbols or numbers for the sole purpose of classifying an individual/object into two or more categories. We can only count the number of observations per category and compute for proportions and percentages.

Chapter 2. Collection of Data



## Categorical Data (page 27)

Observations measured using the nominal or the ordinal levels of measurement are usually referred to as ***categorical data***.

Special type of analysis is used for categorical data because of the restrictions in the system.

(Stat 132: Nonparametric Inferential Statistics and Stat 149: Introduction to Categorical Data Analysis will focus on techniques used to analyze categorical data.)

Chapter 2. Collection of Data



## Exercise #1 (page 27)

State the level of measurement used to measure the following variables:

- b) Performance rating of an employee as excellent, very good, good, fair, and bad
- d) Ranking of a student in class
- f) Annual salary of employee
- h) Letter grade (A, B, C, and D) of a pre-school student
- j) Classification of heavy equipment as bulldozer, excavator, loader, and roller

Chapter 2. Collection of Data



## Exercise #2 (page 28)

Observe the use of the number seven in the following statements. Classify each statement according to the level of measurement used to get the value 7.

- a) Mark is in the 7th grade.
- c) Mark has a score of 7 in the Math quiz.
- e) Mark's shoe size is 7.

Chapter 2. Collection of Data

## Shoe Size Guide

System	Sizes																System		
Europe	35	35½	36	37	37½	38	38½	39	40	41	42	43	44	45	46½	48½	Europe		
Mexico						4.5	5	5.5	6	6.5	7	7.5	9	10	11	12.5	Mexico		
Japan	M	21.5	22	22.5	23	23.5	24	24.5	25	25.5	26	26.5	27.5	28.5	29.5	30.5	31.5	Japan	M
	W	21	21.5	22	22.5	23	23.5	24	24.5	25	25.5	26	27	28	29	30	31	Japan	W
U.K.	M	3	3½	4	4½	5	5½	6	6½	7	7½	8	8½	10	11	12	13½	U.K.	M
	W	2½	3	3½	4	4½	5	5½	6	6½	7	7½	8	9½	10½	11½	13	U.K.	W
Australia	M	3	3½	4	4½	5	5½	6	6½	7	7½	8	8½	10	11	12	13½	Australia	M
	W	3½	4	4½	5	5½	6	6½	7	7½	8	8½	9	10½	11½	12½	14	Australia	W
U.S. & Canada	M	3½	4	4½	5	5½	6	6½	7	7½	8	8½	9	10	10½	12	14	U.S. & Canada	M
	W	5	5½	6	6½	7	7½	8	8½	9	9½	10	10.5	12	13	14	15.5	U.S. & Canada	W
Russia & Ukraine*	W	33½	34	35	36	37	38	39									Russia & Ukraine	W	
Korea (mm.)		228	231	235	238	241	245	248	251	254	257	260	267	273	279	286	292	Korea	
Inches		9	9½	9¾	9¾	9¾	9¾	9¾	9¾	10	10½	10¾	10¾	10¾	11	11¼	11½	Inches	
Centimeters		22.8	23.1	23.5	23.8	24.1	24.5	24.8	25.1	25.4	25.7	26	26.7	27.3	27.9	28.6	29.2	Centimeters	
Mondopoint		228	231	235	238	241	245	248	251	254	257	260	267	273	279	286	292	Mondopoint	

Chapter 2. Collection of Data



## Common Methods of Data Collection

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- Use of Documented Data (pages 29 – 30)
- Survey method (pages 31 – 37)
- Experiment (pages 37 – 39)
- Observation method (pages 39 -42)
- Other methods (page 42)
  - Use of internal data
  - Registration
  - Computer simulation

Chapter 2. Collection of Data



## Use of Documented Data (page 29)

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- The researcher can obtain documented data from previous studies of individuals or private, government, non-government agencies.
- The researcher may find documented data in published or written reports, unpublished documents, periodicals, and others.

Chapter 2. Collection of Data




## Possible Source of Documented Data (Example 2.1, page 29)

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- a) The **National Statistics Office** is a major collector of data for both private and government needs. It provides the public with basic data on various subject matters such as household income and expenditure, housing, education, health, employment, and others.

Chapter 2. Collection of Data



## Classification of Documented Data by Source (page 30)

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Definition 2.6.

1. Primary Data

**Primary data** are data documented by the primary source. The data collectors themselves documented this data.

2. Secondary Data

**Secondary data** are data documented by a secondary source. An individual/agency, other than the data collectors, documented this data.

Chapter 2. Collection of Data




## Examples of Sources of Primary Data (Example 2.2, page 30)

- a) **Central Bank** (CB) is a primary source of data on banking and finance.
- b) **National Statistics Office** (NSO) is a primary source of data on population, housing, and establishments.
- c) **Pulse Asia** is a primary source of data on opinions or sentiments of the people on current issues.
- d) **Bureau of Agricultural Statistics** (BAS) is a primary source of data on agriculture and livestock.

Reading Assignment: Read on the structure and products of the Philippine Statistical System (PSS) in pages 66-69 and at [www.nscb.gov.ph/pss](http://www.nscb.gov.ph/pss)

Chapter 2. Collection of Data



## Examples of Secondary Data (Example 2.3, page 24)

- a) The United Nations' compiled data for its yearbook, which were originally gathered by government statistical agencies of different countries;
- b) A medical researcher's documented data for his research paper, which were originally collected by the Department of Health;
- c) The documented data of the research team of a congressman for its report, which were originally collected by the Department of Education and Commission on Higher Education; and
- d) The documented data of a student for his thesis, which were originally collected by the Department of Labor and Employment.

Chapter 2. Collection of Data



## Advantages of Primary over Secondary Data (page 30)

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- The primary source frequently provides vital information that are crucial in assessing the applicability and accuracy of the collected data. This includes the definitions of terms and statistical units used in the survey, methodology including a copy of the questionnaire and a discussion of the sampling design or experimental design.
- The primary data are usually more comprehensive. Secondary data have already been filtered by secondary source to address their purpose.
- The secondary data may contain mistakes due to errors in transcription made when the figures were copied from the primary source.

Chapter 2. Collection of Data



## Assignment 2:

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Exercises for section 2.4: (pages 69-70)

#3 a, b, c

#4 c, d

Chapter 2. Collection of Data




## Survey Method: Definition of Terms (page 31)

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- The **survey method** is a method of collecting data by asking people questions. (Definition 2.7)
- When the data came from asking all the people in the population, then the study is called a **census**. On the other hand, when the data came from asking a sample of people selected from a well-defined population, then the study is called a **sample survey**.
- The people who answer the questions in a survey are called **respondents**.
- The **questionnaire** contains all the questions asked in a survey.

Note: The success of the survey as a data collection method relies on the honesty of the respondents and their capability to give truthful answers.

Chapter 2. Collection of Data




## Example of Survey (Example 2.4, page 31)

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- a) Pulse Asia conducted a sample survey on voter response to political ads in the May 2004 election. Its respondents were selected registered voters who intend to vote in the 2004 election.

Chapter 2. Collection of Data




## Common Methods of Communicating to Respondents (page 31)

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- **Personal interview** : interviewers personally ask the respondents and record their answers on the questionnaire
- **Telephone interview** : interviewers ask the respondents through the telephone
- **Using self-administered questionnaires** : respondents fill up the questionnaires themselves without any assistance from an interviewer
- **On-line surveys** : respondent reads the questions and sends his responses via the internet or e-mail
- **Focus group discussions (FGD)** : a moderator follows a focus group discussion guide to direct a freewheeling discussion among a small group of people

Chapter 2. Collection of Data



## Considerations in Choosing the Method of Communicating the Questions in a Survey (page 32)

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- Ability to secure the type of data needed
- Cost
- Speed
- Accuracy of data obtained/Quality of response

PLUS

- Response rate
- Geographic flexibility
- Availability of good interviewers and field supervisors
- Population coverage

Chapter 2. Collection of Data

## Comparison of the Different Methods of Communication (Table 2.1, page 37)

Factor	Method of Communication			
	Self-Administered Questionnaire	Telephone Interview	Online Survey	Personal Interview
Type of information	Limited	Limited	Limited	Wide-ranging
Cost	Inexpensive	Quite expensive	Quite expensive	Very Expensive
Speed	Time-consuming	Fast	Moderately Fast	Time-consuming
Response rate	Poor	Average	Average	Very Good
Geographic flexibility	Very good	Good	Good	Poor
Interviewer bias	None	Likely	None	Highly likely
Interviewer supervision	None	Simple	None	Difficult
Quality of response	May be vague	Good	May be vague	Very good
Population coverage	Limited	Limited	Very limited	Best

## Experiment: Definition of terms (page 37)

- The **experiment** is a method of collecting data where there is direct human intervention on the conditions that may affect the values of the variable of interest. (Definition 2.8)
- The **explanatory variable/s** are the variables in the study whose values are believed to have an effect on the value of the **response variable/s**.
- The **treatments** or **factor levels** are the values or categories of the explanatory variable that are being considered in the study.
- The **extraneous variable/s** are those variables that may have an effect on the response variable but their effects are not of interest in the study.





## Example: Mongo Experiment

(page 37-38)

- Objective: To determine the effect of sunlight on the height of a mongo plant
- Response variable: Height of plant
- Explanatory variable: Amount of sunlight
- Treatments: 1 – Exposed to sunlight  
2 – No sunlight
- Extraneous variables: Amount of water  
Type of soil

Chapter 2. Collection of Data



## Example 2.8a (page 38)

A researcher wishes to study the effect of Minoxidil on male baldness. The subjects are balding male patients from ages 40 to 45 years old and weighing between 135 to 145 pounds. He randomly assigns the male patients into one of two groups. The first group of male patients applies Minoxidil on their heads daily for three months. The control group is the group that does not receive the treatment of Minoxidil. After three months, they measure the male patients' hair length and compare it with the length of hair before the application of Minoxidil.

Chapter 2. Collection of Data



## Distinct Feature of Experiments: (page 38)

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The researcher intervenes by controlling the conditions that may affect the response variable by:

- i. using a randomization mechanism in assigning the treatments
- ii. Controlling the identified extraneous variables.

By doing so, the researcher can isolate the effects of the explanatory variable on the response variable and clarify the direction and strength of their relationship. (Through randomization of the assignment of treatments, the effects of all other extraneous factors that the experimenter failed to control are expected to cancel each other out.) This is why, unlike surveys, the experiment is a more effective method of data collection in establishing cause-and-effect.

Chapter 2. Collection of Data



## Degree of Closure

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The extent to which the investigator can control the extraneous variables is called the ***degree of closure***. In a physical science experiment, the researcher has a relatively high degree of closure by creating an artificial environment in the laboratory. On the other hand, social scientists will more likely deal with human subjects, control over whom is often restricted by ethical, moral, and legal considerations.

Chapter 2. Collection of Data



## Experiments: Advantages and Disadvantages (page 39)

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### Advantage:

- most effective method in establishing cause-and-effect

### Disadvantages:

- not always feasible to randomize the assignment of treatments
- difficult to assess the reliability of inferences about a well-defined population if experimental units were not selected through a randomization mechanism
- results may be different when applied to the natural setting (since we perform experiments in a controlled environment)

Chapter 2. Collection of Data



## Definition of Observation Method (page 39)

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### Definition 2.9.

The **observation method** is a method of collecting data on the phenomenon of interest by recording the observations made about the phenomenon as it actually happens.

Chapter 2. Collection of Data



## Examples of Data Collected Using the Observation Method (page 40)

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- Behaviour patterns in panic situations a big fire, Mt. Pinatubo eruption, and the collapse of the World Trade Center in New York
- Behaviour of animals in their natural habitat
- Behaviour of newborn babies in the nursery
- Growth and other characteristics of plants in farms that grow organic produce and those that do not (Note: There should have been no human interference on assignment of treatments.)
- the adjustment of college freshmen to campus life by observing the behaviour of freshmen in various settings.

Chapter 2. Collection of Data



## Notes on Observation Method (pages 39-40)

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- The observation method requires the observation of the element in its natural setting, recording as observations what the researchers see and hear. Sometimes the researchers would have to wait for a long time for the phenomenon of interest to occur.
- It is practical to use when elements cannot verbalize their answers because they cannot speak (e.g., studies on animal behaviour since we cannot administer a questionnaire to animals).
- The data collected are usually the subjective perceptions and interpretations of the researcher on the event under study. Usually, the researchers give a qualitative narrative of what they have observed about the phenomenon of interest. This type of data is difficult to analyze using formal statistical techniques.
- However, it is still possible to collect objective quantitative data using the observation method.

Chapter 2. Collection of Data



## Examples of Specially-Designed Measuring Instruments (page 40)

- For traffic studies: distance-measuring devices, traffic-counting devices, speed-measuring devices
- For meteorological studies: special devices to measure temperature, humidity, and precipitation
- For media research: attach special devices on tv sets to monitor tv viewing habits of individual household members

Chapter 2. Collection of Data



## Methods of Collecting Quantitative Data using the Observation Method (page 40)

- 1. Duration Recording**

The researcher records the duration of time a particular kind of behaviour lasts. A stopwatch keeps track of the duration of the behaviour. For example, we may record how long a student uses the cell phone.
- 2. Frequency-count Recording**

The researcher records the number of times a particular behaviour occurs in a given time period. Usually, the researcher has a list of behaviour types and then he counts every time a particular behaviour occurs. This procedure is preferred when the duration of the behaviour is from one to five seconds. For example, researcher counts how many times the teacher says the word "OK" in a one and 1/2 hour class.
- 3. Interval Recording**

The researcher partitions time into fixed time intervals and counts the number of time intervals where the behaviour occurred. For example, the 1 1/2 hour class is divided into 5-minute intervals and the researcher counts how many 5-minute intervals when the teacher says the word "OK".
- 4. Latency Recording**

The researcher measures the length of time between the stimulus and the first occurrence of the behaviour of interest. For example, a researcher records how long before a patient goes to sleep after taking a sleeping pill.
- 5. Time Sampling**

The researcher records the phenomenon of interest or presence/absence of behavior under study at every specified time schedule. For example, the nurse measures the temperature of a patient every 15 minutes.

Chapter 2. Collection of Data




## Participant versus Non-participant (page 41)

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- **Participant observation:** the observer joins the group under study as a participating member, whether actively or passively. (Example, a researcher may study the norms and culture of a fraternity by becoming its member.) This approach may introduce biases in the results of the study when the observer becomes emotionally involved with the members and the organization itself.
- **Nonparticipant observation:** observer does not join the group but simply observes from the outside. The role of the observer here is to act as a complete observer, simply recording his observations and remaining detached from the group. This usually provides unbiased results but the observer might not be able to capture the behavior that he is studying completely.

Chapter 2. Collection of Data



## Observation Method: Advantages and Disadvantages (page 41)

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### Advantages:

- practical to use when elements cannot speak or do not have representatives to speak for them
- more successful than surveys in collecting data on behavior that respondents can easily forget or are ashamed of
- more successful than experiments in collecting realistic data in the natural setting (although designs where elements are aware of the presence of an observer may also fail to achieve this)

### Disadvantages:

- use is limited to collecting data that can be observed (cannot use to collect data on opinions, beliefs, and certain emotions)
- may be difficult to penetrate certain environments
- difficult to assess the reliability of inferences about a well-defined population since elements are usually not selected through a randomization mechanism
- Cannot be used to establish cause-and-effect since there is no attempt to control extraneous factors

Chapter 2. Collection of Data

## Comparison of Experiment, Survey and Observation Methods

(Table 2.2, page 42)

Aspect	Data Collection Method		
	Survey	Experiment	Observation
Assessing the reliability of generalizations about a well-defined population	Generally possible	Sometimes difficult	Oftentimes difficult
Ability to establish cause-and-effect	Poor	Superior	Poor
Realism of data	Realistic	Least realistic	Most realistic

Chapter 2. Collection of Data

## Exercise 1. (pages 42-43)

Classify the method of data collection (survey, experiment, or observation.)

- A local TV network asked voters to indicate whom they voted as they exited the polling booth.
- A private hospital divides terminally ill patients into two groups, with one group receiving medication A and the other group receiving medication B. After a month, they measured each subject's improvement.
- A researcher investigates the level of pollution in key points in Metro Manila by setting up pollution measuring devices at selected intersections.
- The school administration asked students whether they are willing to have an increase in laboratory fees if there is an upgrade of computers.

Chapter 2. Collection of Data



## Exercise 2: (page 43)

What method of data collection is most appropriate for the following cases? Give a brief explanation for your choice.

- a) Studying two groups of patients and determining if exercise lowers the blood pressure.
- b) The Department of Health monitors and evaluates the benefits of the family planning methods given to a certain community.

Chapter 2. Collection of Data



## Other Methods of Data Collection (page 42)

- **Use internal data.** These are data generated from the operation and administration of the researcher's company. These data are possible by-products of the administrative and management functions of the company. (Ex: personnel records, financial statements of the company, inventory reports, production and sales reports, purchasing reports, and payroll)
- **Use registration data.** These are data generated by other agencies/organizations through the process of registration, as required by some law, regulation or usual custom. (Ex: data on the birth, death, and marriage of all individuals in the country from civil registry documents of NSO, data on motor vehicles registered at the Land Transportation Office, data on students registered at the University Registrar). Registration data will not always be complete such as the data on eligible voters in the Philippines from COMELEC.
- **Computer simulation.** This makes use of a special kind of a mathematical formula called a statistical model that computes for values of the variable of interest by incorporating the use of a randomization mechanism.

Chapter 2. Collection of Data





## Two Types of Questionnaires (page 44)

- **Self-administered Questionnaire**

The respondent himself reads the questions and writes his responses on the self-administered questionnaire. Questionnaire is mailed or handed to the respondent with minimum explanation, or it can also be inserted in a magazine, uploaded in the internet or sent via e-mail for online surveys. This allows administration to a large group simultaneously.

- **Interview Schedule**

An interviewer asks the questions and records the responses of the respondent on an interview schedule. Administration is to one person at a time for personal or telephone interviews or to one group at a time for focus group discussions.

Chapter 2. Collection of Data



## Advantages of Interview Schedule over Self-Administered Questionnaires

- The use of the interview schedule is flexible and adaptable. It can be used to handle different types of persons, such as those who are illiterate or too young to read and write. It also allows for probing and clarification of responses to achieve specific and more accurate responses.
- Obtained information is usually ample since the interviewer and the interviewee are both present. The interview schedule can be adapted in person-to-person or person-to-group situation wherein respondent/s can clarify questions or interviewer can request for a clarification. Its use is more appropriate for revealing information about complex, emotionally laden topics or for probing sentiments underlying an expressed opinion.
- Interviewer may note nonverbal as well as verbal behaviour in face-to-face interviews.
- Use of interviewers may result in a much higher response rate than the use of self-administered questionnaires, especially for topics that concern personal qualities or negative feelings. Furthermore, through callbacks and persistence, interviewers can convince reluctant respondents to participate in the survey.

Chapter 2. Collection of Data




## Advantages of Self-Administered Questionnaire over Interview Schedule

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- Does not require the use of interviewers who may potentially increase errors in measurement through biased or fabricated responses when interviewers are poorly-trained and dishonest.
- With the absence of an interviewer, respondents feel freer to express views on sensitive issues.
- Respondents are not pressured to answer immediately so that they can think more carefully (check records, if necessary) about their responses.

Chapter 2. Collection of Data



## Two General Types of Questions (Definition 2.10, page 46)

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- ***Closed-ended question:*** a type of question that includes a list of response categories from which the respondent will select his answer.
- ***Open-ended question:*** a type of question that does not include response categories.

Chapter 2. Collection of Data



## Example of Closed-Ended and Open-ended Question

### ■ Closed-ended Question

How do you spend your allowance?

- books
- supplies
- food
- movies
- clothes
- Others, please specify

### ■ Open-ended Question

How do you spend your allowance?

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Chapter 2. Collection of Data



## Advantages (pages 47-49)

### Closed-ended Questions

- facilitates tabulation of responses
- easy to code and analyze
- saves time and money
- high response rate since it is simple and quick to answer
- response categories make questions easy to understand
- can repeat the study and easily make comparisons
- avoids irrelevant or inadequate responses
- respondents need not be articulate

### Open-ended Questions

- respondent can freely answer
- can elicit feelings and emotions of the respondent
- can reveal new ideas and views that the researcher might not have considered
- good for complex issues
- good for questions whose possible responses are unknown
- allows respondent to clarify answers
- gets detailed answers
- shows how respondents think

Chapter 2. Collection of Data



## Disadvantages (pages 47-49)

### Closed-ended Questions

- increases respondent burden when there are too many or too limited response categories
- bias responses against categories excluded in the list of choices
- difficult to detect if respondent misinterpreted the question

### Open-ended Questions

- difficult to tabulate and code
- high refusal rate because it requires more time and effort on the respondent
- respondent needs to be articulate
- responses can be inappropriate or vague especially when a self-administered questionnaire was used
- may threaten respondent
- responses have different levels of detail

Chapter 2. Collection of Data



## Variations of Closed-Ended Questions (pages 50-52)

- **Two-way question:** provides only two alternative answers from which the respondent can choose

Did you attend any religious service in the past week?

Yes       No

- **Multiple-choice question:** provides more than two alternatives from which the respondent can choose only one

What is your total monthly income?

less than P 3,000.00  
 P 3,000.00 to less than P 5,000.00  
 P 5,000.00 to less than P 10,000.00  
 P10,000.00 or more

Chapter 2. Collection of Data



## Variations of Closed-Ended Questions (continued)

- **Checklist question:** provides more than two alternatives from which the respondent can choose as many responses that apply to him

What type/types of music would you like to listen to?

- classical
- acoustics
- hip hop
- popular
- rock
- jazz
- Others, please specify \_\_\_\_\_
- None. I don't like to listen to any type of music.

Chapter 2. Collection of Data



## Variations of Closed-Ended Questions (continued)

- **Ranking question:** provides categories that the respondents have to either arrange from highest to lowest or vice versa depending upon a particular criterion.

Below is a list of some of the ways people go about finding jobs. Please rank them in order of effectiveness by placing the number (1) beside the method you think would be most helpful, a (2) beside the method you think would be the second most helpful, and so on.

- Mailing out resumes
- Newspaper or Magazine Ads
- Private Placement Service
- Direct Contact with Employers
- Checking with Friends

Chapter 2. Collection of Data



## Variations of Closed-Ended Questions (continued)

- **Rating scale question:** provides a graded scale showing all the possible directions and intensity of attitude of a respondent on a particular question or statement. The respondent simply ticks or checks the scale that best reflects his attitude or judgment.

**Example:** Indicate your satisfaction with the cafeteria service on the third floor by encircling the appropriate number on the scale below.

- 1 Very satisfied
- 2 Satisfied
- 3 Neutral
- 4 Dissatisfied
- 5 Very dissatisfied

Chapter 2. Collection of Data




## Variations of Closed-Ended Questions (continued)

- **Matrix questions:** various questions with the same set of response categories are put together

**Example :**

For each of the following statements, please indicate with a checkmark whether you agree with it or disagree with it.

	Agree	Disagree
Work for a common goal.		
Work as if you are the owner.		
Go the extra mile when you work.		
Work to live, not live to work.		



## Basic Steps in Constructing a Questionnaire (page 45)

- Step 1.** Decide on the type of questionnaire, whether self-administered or an interview schedule.
- Step 2.** Write the questions. Decide on the type of question, wording of the question and the response categories for those questions that include a list of response options from which the respondents will choose their answers.
- Step 3.** Put together all the questions formed in Step 2 and decide on their ordering.
- Step 4.** Write an introductory statement or cover letter.
- Step 5.** Write the special instructions to interviewers or respondents that will appear on the questionnaire.
- Step 6.** Create and design the form. Consider a layout that makes it easy to understand the questions and easy to record the answers. The design of the form should also facilitate easy data entry into the computer.
- Step 7.** If it is a nationwide study, translate the questionnaire to other major languages. Let someone else translate the translated questionnaire back into the original language. Compare it with the original questionnaire and check that there had been no changes in the meanings of all the questions.
- Step 8.** Pretest the questionnaire to a few respondents to detect and correct errors in the questionnaire.

Chapter 2. Collection of Data



## Exercise #3 (page 66)

Evaluate the following self-administered questionnaire. Discuss the strong and weak points of each item.

Name: _____ Age: _____ Sex: _____
Resident address: _____
Number of dependents: _____
Educational Attainment: _____
Economic Status: (Please check one among the following)
<input type="checkbox"/> Low status <input type="checkbox"/> Middle status <input type="checkbox"/> Average status <input type="checkbox"/> High status
Questions for Coastal Resource Users:
1. Are you an immigrant to this place?
<input type="checkbox"/> No <input type="checkbox"/> Yes
2. How long have you been using this coastal resource? _____
3. Why were you forced to live in this coastal resource? _____
4. What particular kinds of resources are you engaged to harvest or extract for your living? Please check the most appropriate answer.
<input type="checkbox"/> fuel mangrove <input type="checkbox"/> mineral resources, etc.
<input type="checkbox"/> coral reefs <input type="checkbox"/> kaingin
<input type="checkbox"/> wildlife <input type="checkbox"/> fishery
<input type="checkbox"/> terrestrial forest
5. To whom did you deal your harvest or products? Please check the right one.
<input type="checkbox"/> to the market <input type="checkbox"/> to the big time retailers outside the island
6. How much is your harvest per day in terms of money value? _____

Chapter 2. Collection of Data