

INFS 321

Research Methodology

Session 10 – Data Collection

Lecturer: Dr. Emmanuel Adjei; Department of Information Studies
Contact Information: eadjei@ug.edu.gh



UNIVERSITY OF GHANA

College of Education

School of Continuing and Distance Education

2014/2015 – 2016/2017

Session Overview



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Session Overview

Once again I welcome to Session 10 which discusses the various means of collecting research data. After the researcher has defined his problem and purpose of the study, stated his hypotheses or research questions and has determined the research design, the next logical steps in the research process involve the choice of the method for collecting data and for selecting and developing a tool which he will use to collect the data.

Session Overview

Data collection, therefore, refers to the ways and means by which a researcher obtains relevant information regarding the major ideas of the hypothesis of the study so that he can demonstrate whether or not the hypothesis could be verified. (Alreck and Seatle, 1985; Descombe, 1989). What the researcher uses to collect data is known as instrument.

Session Overview

Literature on research methods identifies a variety of methods or instruments for collecting data. The most commonly used in scholarly research in the social sciences are the **Questionnaire**, the **Interview**, **Observation** and **Documents**. All researchers use at least one and sometimes two or more of these methods in a particular piece of research. Before I discuss these one after the other, it is important to emphasise that researchers do not collect data just for collection sake.

Session Overview

Research data must have a direct relationship to the hypotheses and/or research questions which are derived from the problem of the study. This means that data which are not related to the study should not be collected no matter how interesting or how easily available they may be.

Session Overview

In this Session, I shall discuss the following popular instruments of data collection in social science research which I have already listed as the Questionnaire, Interview, and Observation.



Session Objectives

Objectives

After completing this Session the student should be able to:

1. Identify the different types of data collection instrument.
2. Distinguish between the different types of data collection instrument.
3. Describe the processes of designing and administering each instrument.
4. Discuss the advantages and disadvantages of the different types of instrument.

Session Outline

The key topics to be covered in the session are as follows:

1. Topic One: The Questionnaire
2. Topic Two: The Interview
3. Topic Three: Observation

Reading List

1. Pickard, AJ. (2007) *Research Methods in Information*, London, Facet Publishing.
2. Powell, RR. (2004) *Basic Research Methods for Librarians*, (4th ed.) Westport, Connecticut, Libraries Unlimited.



TOPIC ONE

THE QUESTIONNAIRE



Data collection

The questionnaire

- Any formally organised list of questions which are presented in a uniform manner to a number of persons is a questionnaire



Data collection

Types of Questionnaire

The questionnaire is classified according to:

(1) The nature of information being sought

(i) **Facts** and

(ii) **Opinion.**

(2) The nature or format of questions which are used.

(i) **CLOSED-ENDED Questions**

(ii) **Open-Ended Questions.**



Data collection

Nature of Information being sought

(i) Factual information

- Does not require much in the way of judgement or personal attitudes on the part of the respondent.
- It just requires respondents to reveal information honestly and accurately.

(ii) Opinion:

- This relates to: interest, attitudes, perceptions, behaviours, knowledge, beliefs, expectations, views, experiences and so on. These can be investigated using questionnaires.



Data collection

(2) The nature of questions used or question format

(a). CLOSE-ENDED Questions:

- (i). Two way questions
- (ii). Checklist
- (iii). Multiple-choice questions
- (iv). Ranking scales

(b). Open-Ended Questions



Data collection

CLOSE-ENDED Questions

Two-way questions

- Offer a choice between two responses as shown below:

Please tick which is applicable

(i) Male (ii) Female

- A **true/false** or an **agree /disagree** as well as **yes/no** option can also be offered as in the following example:



Data collection

Question

1. You depend only on lecture notes. You don't read reference material prescribed by your lecturer.

True

False

2. There are too many commercials on television

3. Did you tape the president's speech?

Agree

Disagree

Please tick one

Yes

No



Data collection

CLOSE-ENDED Questions

Do you have a dog as a pet?	Yes	No
Mark your answer in the appropriate box:		

Do you have a driver's license?	Yes	No
Mark your answer in the appropriate box		

Do you collect social security benefits?	Yes	No
Mark your answer in the appropriate box		

What is your gender?	Male	Female
Mark your answer in the appropriate box		

The questionnaire

CLOSE-ENDED Questions

Checklist

Provide respondents with a list of responses from which to select.

They can **tick** as many items or statements as they think are applicable.

Below is an example of a checklist.

Q. Please compare the applicant with others you have known during your professional career. For each of the categories below, check the appropriate box.



The questionnaire

Which of the following courses did you read at level 100 ?

1. CRITICAL THINKING
2. INTRODUCTION TO SOCIOLOGY
3. ACADEMIC WRITING
4. SCIENCE AND TECHNOLOGY
5. LIBERAL AND AFRICAN STUDIES
6. NUMERACY SKILLS
7. INTRODUCTION TO INFORMATION MANAGEMENT
8. PUBLIC RELATIONS



The questionnaire

CLOSE-ENDED Questions

Multiple choices

Is another format used in questionnaires. This offers respondents a list of responses, normally in the form of statements from which they can select the most applicable to them. The following is an example:

Circle the letter of the correct answer to the question.

Q. Which of the following Level 200 courses is your favourite?

- (A) Information Management
- (B) Introduction to Information Technology
- (C) Principles of Management
- (D) Introduction to Computing



The questionnaire

CLOSE-ENDED Questions

Rank-Order Responses

- Another format of questioning is the ranking question in which respondents must arrange all the given alternatives in an order corresponding to some specified criteria.

Example:

- **Please rank the following courses according to your degree of liking for each. Assign 1 to your most preferred course and 4 to your least preferred course.**
- _____ Information Management
- _____ Introduction to Information Technology
- _____ Principles of Management
- _____ Introduction to Computing



The questionnaire

Some strengths and weakness of CLOSE-ENDED questions:

- They are difficult to construct but easy to administer and analyse. With CLOSE-ENDED questions, the researcher needs only to tabulate the number of responses to each alternative in order to gain some understanding about what the sample as a whole thinks about an issue.
- CLOSE-ENDED questions are generally more efficient than open-ended questions because a respondent is normally able to complete more CLOSE-ENDED than open-ended questions in a given amount of time. Respondents may be less willing to compose a written response than to simply check off or circle the appropriate alternative.



The questionnaire

- Questionnaires are very cost effective when compared to face-to-face interviews. This is especially true for studies involving large sample sizes and large geographic areas.
- Questionnaires are familiar to most people. Nearly everyone has had some experience completing questionnaires and they generally do not make people apprehensive.
-



The questionnaire

Open-Ended Questions

- The Open form of questionnaire contains questions to which the subjects can reply as he likes and where he is not limited to a single alternative. Open-ended questions are not followed by any kind of choice and the answers have to be supplied and written by the respondent when researchers do not have all the answers to a question. Further when the researcher, wants to obtain respondents' views, they can formulate an open-ended question as in the examples below:



The questionnaire

- **Open-Ended Questions**

Examples:

- (a). Please indicate below the main factors that contribute to job satisfaction.....
.....
- b. What do you like most about your Senior Tutor?.....
..... c. What is your favourite television programme? Explain why it is your favourite programme.....

The questionnaire

Strengths and Weaknesses

Strengths

- Respondents are allowed space to express themselves in their own way unlike in the case of CLOSE-ENDED questions.
- Open-ended questions are often easier to phrase than closed questions but they may be more difficult to answer.

Weaknesses

- Respondents may find it difficult to reply without the help of clues to guide their thinking, or if the questionnaire is designed to seek information about a subject with which they are unfamiliar, or seek their opinions on an issue on which they have no views.

The questionnaire

Administration of questionnaire

- (1). Postal / mailed questionnaire
- (2). Group questionnaire
- (3). Personal presentation of questionnaire to individual respondents
- Electronic questionnaires

The questionnaire

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The questionnaire

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TOPIC TWO

THE INTERVIEW



The interview

What is interviewing?

- Interviewing is another method used by researchers to collect data. It is a very useful means of obtaining qualitative data. The purpose of interviewing people is to find out what is on their mind; what they think or how they feel about something.



The interview



The interview

Types of interview

- (1) Structured
- (2) Semi Structured
- (3) Unstructured



The interview

Structured Interview

- The researcher determines in advance of the interview the procedure he would like to follow.
- The same questions are presented in the same manner and order to each respondent, and the wording of the instructions to the respondent specified.
- The interviewer must adhere strictly to the procedure
- No freedom to rephrase questions, add extra ones or change the order in which they are presented.



The interview

Unstructured interviews

- **Unstructured** conversations between interviewer and respondent.
- The respondent has as much influence over the course of the interview as the interviewer.
- Technique is more flexible.
- The interviewer develops a framework called the **interview guide** with which to conduct the interview.



The interview

Semi-structured

- Between the structured and unstructured interview is the **semi-structured** where the researcher designs set of key questions to be raised before the interview takes place. The researcher has the opportunity to include additional topics. This makes the semi-structured interview more flexible.



The interview

Ways of conducting interviews

(1). Personal interviews

When personal interviews are used to collect data, respondents are usually contacted in their homes or offices or on the street or other public places and trained interviewers conduct the interview.



The interview

2). Focused group interview

The focused group or focused interview is done in a group setting.

The researcher questions a group of respondents at the same time. The interview takes the form of discussions in which the researcher learns from respondents more about the phenomenon being investigated. The goal is to obtain a qualitative description of the ideas that emerge from the group discussion.

(3). Telephone interviews

Interview can also be conducted by telephone.

The interview

Recording of interview data

Interview can be recorded by:

1. Taking written notes of the responses
2. The use of a tape recorder



TOPIC THREE

OBSERVATION



Observation

What is observation?

Observation seeks to ascertain what people think and do by watching them in action as they express themselves in various actions and situations.

Observation offers the social researcher a distinct way of collecting research data. It does not rely on what people say they do, or what they say they think instead it is based on the premise that, for certain purposes, it is best to observe what happens (Fraenkel and Wallen, 2000).



Observation



Observation

When to use observation

- Appropriate in situations where full and / or accurate information cannot be collected by questioning, because respondents either are not co-operative or are unaware of the answers.
- Observation is frequently used when researchers are more interested in the behaviour than in the perceptions of individuals, or
- When subjects are unable to provide objective information about the subject under investigation. (Kumar,1996)



Observation

Types of observation

1. Non-participant observer

The researcher can collect the data in the role of a pure researcher without trying to become part of the situation being observed.

2. Participant observer

Here, the researcher enters the organisation or the research setting. He becomes a part of the situation under investigation.



Observation

Structured and unstructured observational studies

Structured observational study

Observer has a predetermined set of categories of activities or phenomena that he plans to study. Observation forms for the purpose could be specially designed.

Unstructured observational study

The observer has no definite ideas of the particular aspects that he wants to focus on in the observation. He records practically everything that is observed.



Observation

Recording observational data

1. Recording on mechanical devices

- The use of video tape and sound recorders and other mechanical devices allows behaviour to be recorded and to be reproduced so that the nature of behaviour may be more accurately analysed.



Observation

2. Check lists

A check list or a schedule consists of a list of items which are thought by the researcher to be relevant to the problem being investigated. After the name of each item, a space is provided for the observer to indicate the presence or absence of the item. This check list draws the attention of the researcher to relevant factors and enables him to record the data quickly, and in a systematic way.



Observation

	EX	AAV	AV	BA	No opportunity to observe
• Analytical ability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Quantitative ability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Command of field of study	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Written English	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Oral English	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Interpersonal skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Maturity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Motivation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Observation

3. Rating scales

Close ended questions with answer options that measure gradations in opinion, attitude and behaviour.



Observation

Q4 How do you rate the following?

	<i>Very poor</i>	<i>Poor</i>	<i>OK</i>	<i>Good</i>	<i>Very good</i>
Q4a Service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q4b Cleanliness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q4c Parking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q4d Quality of Food	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q4e Choice of Food	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Observation

Advantages

- Observation may provide access to groups that would otherwise be difficult to observe or examine. For example, a questionnaire sent to a group of prostitutes or gangsters is not likely to have a high return rate. An observer, however, may be able to establish enough mutual trust with such a group to persuade them to respond to sensitive questioning.

Observation

- Observation is usually inexpensive. In most cases, writing materials or a small tape recorder will suffice. Expenses increase if the problem under study requires a large number of observers, extensive travel, or special equipment such as video recording machines.
- Observation takes place in the natural setting of the activity being observed and can thus provide detailed data.

Observation

- When individuals or groups become aware that they are being observed, they may change their behaviour. Depending upon the situation, this change could be positive or negative – it may increase or decrease, for example, their productivity – and may occur for a number of reasons. When a change in the behaviour of persons or groups is attributed to their being observed it is known as the Hawthorne Effect.

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Observation

Disadvantages

- When individuals or groups become aware that they are being observed, they may change their behaviour. Depending upon the situation, this change could be positive or negative – it may increase or decrease
- There is always the possibility of observer bias. If an observer is biased, he can easily introduce bias and there is no easy way to verify the observations and the inferences drawn from them.

Observation

- The interpretations drawn from observations may vary from observer to observer.
- There is the possibility of incomplete observation, which varies with the method of recording. An observer may watch keenly but at the expense of detailed recording. The opposite problem may occur when the observer takes detailed notes but in doing so, misses some of the interaction.

