

# Discussion paper statistical analysis



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Statistical Analysis – Data Collection Techniques Introduction: The importance of data and data collection lies in the need for data to provide answers to research problems. To provide the correct answers to these problems utmost attention needs to be paid to the data that is being collected, as also the sources from where the data is obtained. Inadequate attention to these factors could lead to inaccurate and insufficient data that no amount or depth used in the subsequent analysis can make up for. “ Statistics is a subject which stands on two legs: one is data collection and analysis, and the other is probability”. (Gibson, W., 1997).

#### Data Collection Techniques:

There are several data collection techniques, and the most commonly used data collection techniques are use of available information, observation, interviews, use of written questionnaires, and focus group discussions.

#### Use of Available Information:

There is a large amount of useful data that has already been collected by others, and this makes a useful starting point in the collection of data. It requires locating where the data is available, and identifying data that is useful and relevant to the current exercise, and retrieving it. Using such available data is an inexpensive means to collection of data, and still it may be difficult to get access to the relevant record and reports, and there is the added disadvantage that the data may not be accurate, and complete.

#### Observation:

Observation calls for the systematic selection, watching, and recording of the behavior and characteristics of living beings, objects or phenomena. It is a commonly used data collection technique in the study of human behavior. There are two ways in which observation can be done. In the first called

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participant observation, the observer is involved in the situation that is being observed. In the second called non-participant observation, the observer watches the situation either in an open manner, or in a concealed manner, and is not a participant in the situation. The advantage with observation is that it provides more accurate and substantial information, especially where studies of human behavior is concerned.

#### Interviews:

This data collection technique makes use of oral interviews either with a target group or individuals. The responses to the questions posed are recorded in writing, or by recording on a machine, or a combination of both methods may be used. Flexibility is a determining factor in interviews. High flexibility is used, when the researcher is unsure of the subject, or if the subject is sensitive. Low flexibility is used, when the researcher is well informed on the subject, or if the sample group is very large. Interviews are useful, as the response rate is usually much higher than written responses, but the presence of the interviewer is likely to have an impact on the answers, and as such on the data collected.

#### Written Questionnaires:

In this data collection technique a written questionnaire is used as the data collection tool, in which written questions are presented, and written answers are required from the respondents. The written questionnaires can be administered through the use of mail, gathering all the respondent at pre-determined places to answer the questionnaires, or by hand delivering the questionnaires, and collecting them back later. Written questionnaires are useful in that they are fairly inexpensive, and anonymity can be maintained, but has the drawback that it cannot be used on illiterates, and the response

rate is usually low.

#### Focus Group Discussions:

In this technique small groups of eight to twelve informants are allowed to discuss freely on a given subject, with a facilitator enabling the whole process. Notes are kept or the whole process is recorded to provide the data. The advantage of this technique is that it tends to provide quite accurate data, but the facilitator needs to be skilled in making the exercise a success.

#### Importance of the Examination of the Data Collected:

The data collected is the most significant factor in the data analysis that is to follow, and therefore it is necessary to examine the data collected for any flaws that might act significantly on the veracity of the findings of the study. Bias is a possibility depending on the data collection method, and can distort the accuracy of the data. Bias could occur as a result of defective tools like questionnaires that are used in data collection, observer bias, effect of the interview on the informant, and finally the information collected itself may be lacking in the required accuracy or details. For all these reasons it is necessary that the collected data be examined for such weaknesses before it is employed in data analysis. (OVERVIEW OF DATA COLLECTION TECHNIQUES).

#### Literary References

Gibson, W. (1997). Commercial and Industrial Statistics. London. Hodder Headline Plc.

OVERVIEW OF DATA COLLECTION TECHNIQUES. Retrieved June 8, 2006, from, International Development Research Centre. Web site: [http://www.idrc.ca/en/ev-56606-201-1-DO\\_TOPIC.html](http://www.idrc.ca/en/ev-56606-201-1-DO_TOPIC.html).