# Statistics In Social Science Research



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ALTHOUGH much research has been done in the past on the socio-economic development of Bangladesh, the results have not always been utilized in economic decision making. In many cases this is due to the quality of the research itself and in some cases due to other reasons. But often the research is not made adequately known to the individuals and organizations responsible for decision making. Although information concerning social science is often incomplete and imperfect, it does provide useful indicators of social conditions; it will become additionally valuable as the statistics improve. The question may be raised, can we improve the quality of information by standardizing research methodology and what will be the role of statistics in translating these information into a meaningful report.

The main purpose of this article is to identify the critical gaps in this area. The points I am raising may not be exhaustive but will provide some clues as to how to overcome the present problems. It should be mentioned here that no definite claim can be made in any such appraisal of the state of knowledge in a scientific field.

A critical review of research works in Bangladesh suggests that a large body of research works has been dominated by academic discussions without giving details of research methodology. For instance, design of questionnaire, data collection procedure, interviewing procedure size of the sample and hypotheses to be tested. Standardization of research methodology may be phased out in different stages of research project and in particular the need for theoretical formation and its relationship with study design. In many researches, section on research methodology receives very little attention. They fail to discuss many aspects of research design. Survey designs should be carefully studied before adoption. Collection procedure and interviewing procedure should also be precisely reported. The design of a questionnaire and the problems in the construction of questionnaire should also be examined before adopting it. A wording of a questionnaire—if it is not clearly understandable to the investigator and to the respondent—may yield spurious answers. Further, we have a lot of data set but in analyzing the data we are particularly poor. When dealing with a large volume of data, the use of computer becomes essential. In many instances, for want of computer facilities, the handling of a large volume of data by manual tabulation produces undesired results.

The role of statistics is important in the presentation of results in any social science research. A carefully constructed chart or table may eliminate many unnecessary things from the presentation. Thus knowledge of statistics is essential in social science research. Statistical methods should be adopted so that meaningful report comes out. In order to do that, basic concept of statistics and its application is necessary. Unless social scientists have the necessary background and basic knowledge in mathematics and statistics, the application of statistics in social science may lead to false conclusions. While applying the statistics in aggregate study one should differentiate aggregate effect from the individual effect. If we cannot separate out the two effects, the findings would be misleading because individual behaviour is not the same as the aggregate behaviour. For this reason in most surveys of fertility and family planning one collects data from both households and individuals.

Thus the use of statistical tool needs guidance and proper training. The application of statistics is important but perhaps more important is the interpretation of statistical results.

Without statistical tool we can explain our results by reasoning as it is done in logic by explaining inductive and deductive ways. Learning methodology and knowledge of statistics are important in social science research but more important are their appropriate use and application. This needs guidance, training and skill.

In many instances mathematics and statistics are considered to be very difficult subjects and therefore the training in these subjects should be approached in easier way so that researchers from other disciplines can understand it and use it. In the universities although statistics teaching is given to the students of many disciplines but the training we provide is not enough to help them utilize their knowledge in research in practical situation. Thus basic foundation of knowledge in the subject may be given at the initial level and after that, training facilities should be available. In order to do this, there should be some set rules for research and this should be improved gradually with accumulated knowledge and field experiences.

In some instances, large scale sample survey (nationally representative sample) may not produce expected results and this should be substantiated by more in-depth anthropological case study. The findings from case studies may not represent the population in study but case studies or anthropological type studies have their own merit and help to understand the problem and social interactions very easily.

The involvement of errors in the sample survey needs careful attention while presenting the results. Unless these are taken into account the findings may lead to false conclusion. Generally two types of errors arise in any survey: sampling errors, which occur at random because the data are for a sample and not the entire population; and non sampling errors, which occur because respondents give inaccurate or unclear answers to questions. It may occur because interviewers and data processors make errors in recording and coding. Sampling errors, which can be measured statistically are the discrepancy between a figure for the surveyed sample and the comparable figure for the entire population. Non sampling errors may arise in a number of ways. Respondents may deliberately misstate their actual condition, practice or opinion. They may interpret questions differently. Additionally, nonsampling error can result if those who do not answer the questionnaire differ consistently from those who do. Sampling error depends largely on the size of the sample and can be reduced substantially only by increasing the respondents interviewed. Careful design of the questionnaire and thorough training and supercision of interviewers, however can help prevent nonsampling errors to a large extent.