

THE QUALITY OF OBSERVATIONAL DATA*

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I AM DEEPLY SENSIBLE of the honour that the members of the Statistics Section of the Indian Science Congress Association have done me by asking me to preside over the Section this year. It is customary on such occasions to review one of the fields in which one is working or to dwell on problems of general interest or to express oneself on the related philosophical questions. I propose to try a combination of these several alternatives and deal with a question which is the very basis of all our statistical activities and which has concerned me and also vexed me over the last many years. I wish to speak on the quality of observational data in statistics.

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The last three decades have witnessed rapid advance in statistical theory and statistical techniques : multivariate analysis, construction and analysis of experimental designs, sampling theory and applications, sequential analysis, linear programming, information theory, queuing theory, spectral analysis of time series, to name only a few of the recent developments. Simultaneously with the growth of techniques the foundations of statistics are also being critically examined as is evidenced by the discussions on the general theory of inference and the theory of finite sampling in particular. All this churning of thought over the basic formulations is in a sense inevitable. During the last thirty years the use of statistical methods both at primitive as well as highly sophisticated level, has spread to diverse realms of knowledge, realms even like political science where the application of statistical methods was unheard of before (see e.g. Deutch, 1963). It is true that the statistician is not yet 'admired' nor 'understood' by the poet who therefore classifies him with

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