SAMPLE SIZE DETERMINATION IN SIMPLE ANALYTICAL SURVEYS (Abstract)

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The primary purpose of an "analytic" sample survey is to compare various sectors (strata, groups) of some population. Considering the case where the units are classified by only one variable, the comparisons can be made in many ways. If one can sample independently within each of the groups, a survey may be designed which ensures that the selected form of comparison will be made in some "best" manner.

If it is impossible to sample independently in each of the groups which are to be compared, an analytic survey may still be designed to make the same sort of comparisons as in the straight-forward case. A double sampling procedure which provides that the comparisons will be made with a specified precision "on the average" may be devised. A sequential sampling scheme is also available. It is required that the variance of the difference for each pair of group means be no larger than a specified constant. The probability that the precision specifications are satisfied by stage n in the sampling is determined.

THE LIFE TABLE FROM THE STANDPOINT OF STATISTICAL ANALYSIS (Abstract)

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In this paper, attention is given to the form of the life table from the standpoint of its usefulness in an analytic rather than actuarial context. The points made in the paper revolve around a new measure, the mean length of time spent within an age interval by those who die within that interval, symbolized by ${}_na_x$. Use of this measure yields a solution to the paedagogical problems posed by the conventional life table. The life table columns are examined from the standpoint of their relationships to the standard statistical procedures for representing a frequency distribution of ages at death. By employment of ${}_na_x$, the network of formal relationships among various mortality and stationary population elements is able to be presented in elementary algebraic form. On the basis of an examination of the research purposes of the life table, a case is made for using ${}_nm_x$ rather than ${}_nq_x$, and for deleting ${}_nd_x$, ${}_np_x$, and e_x. The most convenient mode of manufacture of the life table is based on data for ${}_nm_x$ and data or assumptions about ${}_na_x$. Sources of error in the former are discussed from the standpoint of the basic data. Modes of summarization of mortality are discussed from the standpoint of separating the amount and the time components of mortality, and distinguishing the positive and the negative forms of statement. The paper is concluded with some suggestions for simple construction of a life table.