

ARTICLES, PAPERS AND PUBLICATIONS OF ACTUARIAL INTEREST

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Population Studies, Vol. 10, No. 1, 1956

STOLNITZ, G. J. *A Century of International Mortality Trends*, II.

This is an extension of an earlier paper based on a wide collection of national life tables. The first two sections examine some past and prospective effects of mortality changes on potential size of the labour force and on net reproductivity. Sex differentials are reviewed. The suggestion that the ratio of persons in the main labour force age group to total numbers is practically constant in stationary populations is corroborated. Only limited support is found for the hypothesis that infant mortality is a sensitive indicator of mortality conditions in general. Common assumptions about the smallness of mortality changes at older ages are tested for their validity, and it is found necessary to add considerable qualification to some of them.

GHOSH, A. *The Trend of the Birth Rate in India, 1911-50*.

Using the method developed in an earlier paper for the correction of registered data on births and deaths, the author examines the data of several provinces and estimates the trends of all-India birth rates for the years 1911-50, reaching the conclusion that there has been no significant change during the period of review.

Bulletin of the Research Council of Israel,

Vol. 5, Nos. 2-3, March-June 1956

MUHSAM, H. V. *The Utilization of Alternative Population Forecasts in Planning*.

This article suggests that demographers would better satisfy the needs of planners if they could supply population forecasts in the form of a probability distribution, so that they could attach statements of probability to their 'high', 'best', or 'low' estimates. The planners could then compute the loss suffered if the population figures should differ by given amounts from the particular estimate introduced into their plans. A policy criterion could be agreed upon, i.e. a mode of behaviour could be established which would consistently take account of risks which should be minimized or avoided. In this way the utilization of alternative population forecasts is reduced to a problem of statistical decision. Practical applications of this method are given.

British Medical Journal, 1956, Vol. 2, p. 1071

DOLL, RICHARD AND BRADFORD HILL, A. *Lung Cancer and other Causes of Death in Relation to Smoking.*

A second report on a prospective mortality investigation covering 40,000 practitioners on the Medical Register. This report embraces a full account of methodology with a frank discussion of possible sources of bias and limitations of interpretation. The paper, which is a model of clear statistical presentation, makes a substantial contribution to the mounting weight of evidence of higher mortality in smokers as compared with non-smokers from lung cancer and some other causes.

ROYAL STATISTICAL SOCIETY

Journal, Series A (General), Vol. 119, Part 2, 1956

PEARSON, E. S. *Some Aspects of the Geometry of Statistics.*

This is a presidential inaugural address based on the theme that appropriate methods of visual presentation can play an important part in helping the statistician to understand the meaning of his arithmetical results, to avoid mistakes through lack of fit of his models and to provide what is often the best means of making clear his methods of analysis to the layman. Many varied examples are given.

DACEY, W. MANNING. *Banking Statistics.*

After pointing out that the Statistical Digest provides a convenient summary of banking statistics, the author states that 'it is only the more specialized student, requiring figures as soon as they are available to the public or wishing to extend his researches to years before 1945, who requires to go beyond the Digest to the original sources, or even to the financial press, for his information. These notes are therefore designed chiefly to provide some indication of the continuity of the available material and some guidance on points of interpretation.'

The notes are given under the following headings denoting the sources of the statistics: Bank of England, Committee of London Clearing Bankers, British Bankers' Association, Bankers' Clearing House, Central Statistical Office and Secondary Sources (mainly the financial press).

Applied Statistics, Vol. 5, No. 2, June 1956

FERBER, R. *Are Correlations any Guide to Predictive Value?*

When faced with the choice between various hypotheses purporting to explain the fluctuations of a certain variable, one is tempted to choose the hypothesis that shows the best correlation with known results in given circumstances and to use it to predict future fluctuations. The article shows that the coefficient of correlation is not a reliable measure for such a purpose and that there is no statistical substitute for *a priori* consideration of the adequacy of the basic hypothesis underlying a particular function.

Vol. 5, No. 3, November 1956

WILLIAMS, N. *The Allocation of Scarce Materials between Products.*

An outline of the principles of linear programming. A simplified example is worked out in detail to show how the method can be applied to problems of material allocation.

OXFORD ECONOMIC PAPERS

Vol. 8, No. 3, October 1956

DE JASNAY, A. E. *Liquidity Ratios and Funding in Monetary Control.*

The article describes the processes involved when the authorities control the money supply by operations directed at the cash ratio and the liquidity ratio. Both methods involve funding in the sense that eventually the commercial banks substitute 'investments' for Treasury bills. The fixing of a minimum liquidity ratio puts a limit to the amount of funding required to obtain a given reduction in the cash base.

ASSOCIATION OF INCORPORATED STATISTICIANS

Journal, Vol. 7, No. 1, May 1956

HOGBEN, LANCELOT. *The Present Crisis in Statistical Theory.*

The author commences with a brief critical survey of probability theory and its application from the time of Pascal to the present day. He points out that today the statisticians cannot agree about the foundations of their subject, his main evidence being the differences in the approach of Sir R. A. Fisher and that of E. S. Pearson and J. Neyman.

He examines very carefully the meaning of 'testing a statistical hypothesis' and of 'interval estimation' and he sets out what he considers to be the actual conditions under which these statistical methods provide the scientists with relevant and useful knowledge. These considerations lead Prof. Hogben to conclude that statistical theory has amply justified itself in experimental physics and genetics and that it has also provided an 'intelligible rationale for a disciplinary regimen when we have to deal with instrumental errors'. On the other hand he believes that in biology (other than genetics), in the social sciences and in questions of testimony the conclusions based on modern statistical testing and estimation are either irrelevant or useless.

Trabajos de Estadística (Madrid), Vol. 7, p. 160, 1956

TALACKO, JOSEPH. *Perks's Distributions and their Role in the Theory of Wiener's Stochastic Variables.*

This paper examines the distribution functions developed by W. Perks twenty-five years ago in an attempt to attribute probabilistic meaning to them. The author points out that it is well known that there exists a class of bell-shaped curves which differ from all known symmetrical distribu-

tions such as those of Gauss, Student and Cauchy. Perks's system provides a general formulation of such curves for unsymmetrical as well as symmetrical distributions, and one of the author's purposes is to make this known to statisticians. As an example, Levy's results for the conditional probabilities in the application of Wiener's stochastic variables for the study of the Brownian plane curve are shown to be merely one family of Perks's distributions.

PUBLICATIONS ISSUED BY HER MAJESTY'S STATIONERY OFFICE

Census 1951, England and Wales:

Report on Greater London and five other conurbations. (105s.)

The Report deals with population analysed by sex, age, marital condition, birthplace, etc., housing and household arrangements.

Report on usual residence and workplace. (65s.)

Classification of Occupations. (30s.)

Census 1951, Scotland. Volume V. Fertility of Marriage. (25s.)

Analyses of married women are given by size of family, age, duration of marriage, relative age of husband, etc.

The Income Tax (Purchased Life Annuities) Regulations, 1956. S.I. 1956 No. 1230. (4d.)

The Regulations lay down the procedure for exemption from tax of the capital element in a purchased life annuity. They prescribe the mortality tables to be used for computing the capital element and provide for reference to the Government Actuary where a case is outside the scope of these tables.

Report of the Interdepartmental Committee on Social and Economic Research. May 1956. (2s. 6d.)

The Report covers the work done in the last five years. The main function of the Committee is to advise on the potential research value of material in Government Departments and on making it available to research workers, etc.

Annual Abstract of Statistics, No. 93, 1956. (21s.)

A new table has been introduced giving estimated future populations of the United Kingdom by sex and age.

Index to Statutes in Force, covering the legislation to 31 December 1955.

In two volumes, not sold separately. (105s.)

Teachers (Superannuation) Act, 1956. (1s. 9d.)

The Act provides for increased contributions, actuarial inquiries, dealing with present and future deficiencies, amendment of basis of calculating superannuation allowances, provision for widows, etc., allocation of part of superannuation benefits to spouse or dependant, etc.

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Finance Act, 1956. (3s.)

Provisions are included relating to relief of taxation for certain premiums for retirement annuities, to taxation of assurance companies doing annuity business, to relief from tax for the capital element of purchased life annuities, etc.

House of Commons Members' Fund Report. H.C. 167/1955-56. (6d.)

A report by the Government Actuary on the general financial position of the Fund.

Report of the Ministry of Housing and Local Government for 1955. Cmd. 9876. (6s.)

Some paragraphs on local government superannuation, describing the principal features of the year, are included.