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The Statistical Method in
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Philosophy and Scientific Method

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The Statistical Method in Economics and Political Science

A Treatise on the Quantitative and Institutional
Approach to Social and Industrial Problems

By

P. SARGANT FLORENCE

*M.A. (Cambridge), Ph.D. (Columbia), Professor of Commerce
in the University of Birmingham, late University Lecturer in
Economics and Politics at Cambridge University, Author of
'Economics of Fatigue and Urean,' 'Overpopulation,' 'Economics
and Human Behaviour,' etc.*

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PREFACE

THIS treatise on "the quantitative and institutional approach to social and industrial problems" is addressed to all students of economics and political science who find theories unsatisfactory without the test of fact; and to all students of statistics who find figures or mathematical technique barren without application to life. These students may be just general readers pursuing their interests for interest's sake; they may be learners and apprentices in research wanting additional training in theory and technique; or they may already be specialists or teachers who find the survey and solution of social questions impossible without recourse to statistical exposition.

In appealing to such a wide audience two courses were open. The more congenial plan was to assume optimistically that those interested in statistics were also familiar with economic and political theory, and that those interested in economics and politics were also familiar with statistical technique, and to confine myself, accordingly, to working out the possibilities of co-operation between theory and technique. This plan has in fact been followed in devoting a special part of the book, entitled *Statistical Fieldwork*, to a systematic and somewhat original statement in general terms of the principles and methods of applied statistics.

But experience in teaching advanced students, and in reviewing works of those in later life, has shown me the necessity of facing the fact that statistical technique and economic and political theory have traditionally been taught apart. I have, therefore, taken little allied knowledge, either mathematical, economic or political for granted, and have left no technical term or method, no theoretical conception or law unexplained or unillustrated.

Such a comprehensive policy, I am well aware, runs two proverbial dangers: that of teaching grandmothers to suck eggs, and that of breaking the camel's back.

To save the grandmothers I have separated into Parts II, III and IV, respectively, the methods of statistical measurement; the principles to be followed and fallacies to be avoided in applying these measures to economic and political fields; and the resultant

construction of a statistical economics and politics. Grandmothers at home in statistical measurement may thus, if they choose, concentrate upon economic and political applications; and grandmothers at home in economic or political theories may devote themselves to the statistical groundwork. Moreover, in teaching the methods of statistical measurement—the egg most often sucked—I have not attempted to go beyond the minimum requirements. I am concerned that the economist and political student shall not miss the wood for the trees, and I make no attempt to compete with (and indeed constantly cite) the many excellent textbooks detailing the mathematical theory of statistics that have recently appeared in England and America.

On the camel's behalf, I have tried to lighten load by illustrating the methods of statistical measurement with instances relevant to the economic and political theory discussed later; and to shorten time by ample cross-referencing. This treatise may, in fact, be used as an introductory manual of realistic economics, administrative science and comparative politics. All the various subjects that are statistically approached are indexed not only in the usual alphabetical order, but also systematically in order of logical development. And all the more elementary statistical terms and methods used are brought together for brief definition and illustration in a statistical glossary.¹

Apart from developing methods of fieldwork and attempting to present within the covers of one book a balanced synthesis of fieldwork, statistical measurement, and realistic applications, this treatise attempts to break new ground in the direction indicated by the Economics and Political Science of its title. The "and" is not a mere additive symbol. It refers to the conception, set forth in Chapters III and IV, of an organic relationship between the two sciences, that involves functional analysis, institutional interpretation, and a more workmanlike approach to questions of organization such as division of labour and the control of industry. Humble students of business administration and industrial or commercial organization, will be agreeably surprised to discover the terms upon which their subject is admitted into the intimate circle of the orthodox social sciences.

It is with the utmost gratitude that I record the generous cooperation of old colleagues at Cambridge. Early chapters were read and criticized most helpfully by the late Mr. Frederick Lavington and the late Mrs. Dorothea Braithwaite; by Mr. Maurice Dobb, Mr. G. F. Shove, and Mr. R. B. Braithwaite; and the final manuscript most thoroughly overhauled by Mr. J. L. Cohen, Mr. Austin

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Robinson and Mrs. Joan Robinson. What good friends could do, they did; they are not responsible for my many conscious, and perhaps unconscious, heresies. I also owe a special debt of gratitude to Miss Portia Holman for her aid in systematizing text, tables, and glossary. And at many a moment of crisis my wife has stepped in to lend a hand, typing, preparing manuscript for the printers, correcting punctuation, yea, and even spelling.

P. SARGANT FLORENCE.

THE UNIVERSITY,
● BIRMINGHAM.

¹ The table of CONTENTS, also, outlines the argument of each chapter section and indicates the page where any given section is to be found.

The following abbreviations have been used in references to periodicals :

Ec. Jl. Journal of the Royal Economic Society.
 J.R.S.S. Journal of the Royal Statistical Society.
 J.A.S.A. Quarterly Publication, later called Journal, of the American
 Statistical Association.

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In the pursuit of knowledge, the primary function of statistics is to describe item facts summarily. Such descriptions may substitute experience for the assumptions all too prevalent in economic and political thought, particularly as to the actual workings of social institutions. But statistical methods also aspire to verify the generalizations of economic and political theory, or to suggest pertinent generalizations of their own for theory to interpret. The supposed inferiority of the statistical approach compared to deductive reasoning as an education in mental discipline is questionable, and on the score of practical interest its realism justifies a place for applied statistics in all university curricula.

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