

RECENT ADVANCES IN SAMPLE SURVEY THEORY AND METHODS¹

BY TORE DALENIUS

University of Stockholm and The Catholic University of America

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I. INTRODUCTION

A. Sample surveys and random experiments. The development of statistical theory and methods has, to a large extent, taken place in response to demands for tools to cope with the problem of uncertainty which arises when one is dealing with observations exhibiting "variability", "indeterminism", etc. The research thus initiated has been guided by two basic considerations:

1. The necessity of being able to *measure* the degree of uncertainty;
and
2. The desirability of being able to *regulate* the degree of uncertainty.

In certain fields of application, the problem of *measuring* the degree of uncer-

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