

AN INVESTIGATION AND IMPLEMENTATION OF
NONPARAMETRIC STATISTICAL TESTS ON
A DIGITAL COMPUTER

by *GJR*

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Chapter 1

INTRODUCTION

In recent years, statistical analysis has come into widespread use, primarily because the digital computer has taken the burden of laborious computation out of man's hands. The areas in which statistical analysis has been applied have been broadened because the digital computer has reduced the time and labor needed for adequate statistical analysis of the great quantity of data being produced today. The computer has also taken a good deal of the boredom out of statistics, boredom with the tedious and error prone arithmetical computations involved.

Statisticians have had the nature of their work changed by the computer. With a computer available, the statistician can develop complex experimental designs without sacrificing anything merely to insure computational simplicity. These more complex designs yield more information for the experimenter with greater accuracy than has ever been possible before. But in order to perform complex statistical analysis, programs must be available that will process the data in the desired manner.

Many programs have been written to perform statistical computations in many different ways. Initially, programs were written to perform only a single function (often only for a particular experiment). This led to much duplication of effort on the part of many statisticians and programmers. The result was many programs to do the same thing, sometimes with identical