

Contents

Preface

v

I. SOME BASIC THEORY

- 0. Introduction 1
- 1. The Mathematical Framework 1
- 2. The Neyman-Pearson Lemma 5
- 3. Most Powerful Tests 14
- 4. Uniformly Most Powerful Tests 35
- 5. Invariance and Unbiasedness 46
- Problems 49

II. BASIC DISTRIBUTIONS AND MONOTONIC PROPERTIES

- 0. Introduction 63
- 1. Joint Distributions of Second Order Statistics (Mean Zero) 63
- 2. Density Functions of Sample Correlation Coefficients
(Mean Zero) 69
- 3. Distributions of Hermitian Forms 70
- 4. Distributions of Ratios of Hermitian Forms 75
- 5. Joint Distributions of First and Second Order Statistics 77
- 6. Monotonic Properties of Ratios of Special Functions 82
- Problems 86

III. INVARIANCE AND UNBIASEDNESS

- 0. Introduction 103
- 1. Maximal Invariants 103
- 2. Invariance of the Problem 109
- 3. Tests of Mean and Variance 112
- 4. Tests of the Correlation Coefficient 116
- 5. Tests of the Modulus of the Correlation Coefficient 120

vii

6. Unbiasedness	125
7. Relationship of Unbiasedness to Invariance	127

IV. THE MULTIPLE CELL PROBLEM

0. Introduction	129
1. Tests of the Mean	132
2. Tests of the Variances	137
3. Test of the Covariance Matrix	142
4. An Invariant Test of Variances	148
5. Some Invariant Tests of Covariances	161

References	173
-------------------	------------

Index	175
--------------	------------