

## V. APPLICATIONS

5.1 Hyde's

5.2 Relation

## TABLE OF CONTENTS

Effects

	Page
ACKNOWLEDGMENTS . . . . .	ii
LIST OF TABLES . . . . .	v
LIST OF ILLUSTRATIONS . . . . .	vii
Chapter	
BETA FUNCTION . . . . .	
I. STRENGTH OF ASSOCIATION . . . . .	1
1.1 Introduction . . . . .	1
1.2 Alternatives to Significance Testing . . . . .	7
1.3 The Problem . . . . .	18
II. REVIEW OF THE LITERATURE . . . . .	23
2.1 Introduction . . . . .	23
2.2 Historical Background . . . . .	26
2.3 Cross-Classifications . . . . .	30
2.4 Ordinal Measures of Association . . . . .	35
2.5 Measures of Strength of Association and Linear Models . . . . .	37
2.6 The $\omega^2$ -like measures of Strength of Association . . . . .	45
2.7 Summary . . . . .	64
III. THE DISTRIBUTION AND MOMENTS OF W: THE CENTRAL CASE	67
3.1 Introduction . . . . .	67
3.2 Probability Density Function . . . . .	70
3.3 Cumulative Distribution Function . . . . .	78
3.4 Moments of the Distribution of W . . . . .	84
3.5 Applications . . . . .	89
3.6 Summary . . . . .	108
IV. THE DISTRIBUTION AND MOMENTS OF W: THE NONCENTRAL CASE . . . . .	110
4.1 Introduction . . . . .	110
4.2 Probability Density Function . . . . .	114
4.3 The Distribution Function . . . . .	126
4.4 The Moments of the Distribution of W . . . . .	131
4.5 Applications . . . . .	133
4.6 Confidence Intervals . . . . .	163

V. APPLICATIONS . . . . .	175
5.1 Hyde's Data . . . . .	175
5.2 Relationship Between W and Effect-size . .	190
VI. SUMMARY AND CONCLUSIONS . . . . .	196
A. TECHNICAL APPENDIX . . . . .	206
A.1 Conditional Expectation . . . . .	206
A.2 The Gamma and Beta Functions . . . . .	210
A.3 The Hypergeometric Series . . . . .	214
B. APPROXIMATIONS OF THE INCOMPLETE BETA FUNCTION . .	217
B.1 Introduction . . . . .	217
B.2 Approximation Methods . . . . .	218
C. 95 PERCENT CONFIDENCE INTERVALS . . . . .	223
BIBLIOGRAPHY . . . . .	226