

# CONTENTS

<i>List of Illustrations</i>	<i>xi</i>
<i>Acknowledgments</i>	<i>xvii</i>
<i>List of Contributors</i>	<i>xix</i>
<b>PART I</b>	
<b>Introduction</b>	<b>1</b>
1 Introduction <i>Luke Plonsky</i>	3
2 Why Bother Learning Advanced Quantitative Methods in L2 Research? <i>James Dean Brown</i>	9
<b>PART II</b>	
<b>Enhancing Existing Quantitative Methods</b>	<b>21</b>
3 Statistical Power, $p$ Values, Descriptive Statistics, and Effect Sizes: A “Back-to-Basics” Approach to Advancing Quantitative Methods in L2 Research <i>Luke Plonsky</i>	23
4 A Practical Guide to Bootstrapping Descriptive Statistics, Correlations, $t$ Tests, and ANOVAs <i>Geoffrey T. LaFlair, Jesse Egbert, and Luke Plonsky</i>	46

x Contents

5	Presenting Quantitative Data Visually <i>Thom Hudson</i>	78
6	Meta-analyzing Second Language Research <i>Luke Plonsky and Frederick L. Oswald</i>	106
<b>PART III</b>		
<b>Advanced and Multivariate Methods</b>		<b>129</b>
7	Multiple Regression <i>Eun Hee Jeon</i>	131
8	Mixed Effects Modeling and Longitudinal Data Analysis <i>Ian Cunnings and Ian Finlayson</i>	159
9	Exploratory Factor Analysis and Principal Components Analysis <i>Shawn Loewen and Talip Gonulal</i>	182
10	Structural Equation Modeling in L2 Research <i>Rob Schoonen</i>	213
11	Cluster Analysis <i>Shelley Staples and Douglas Biber</i>	243
12	Rasch Analysis <i>Ute Knoch and Tim McNamara</i>	275
13	Discriminant Analysis <i>John M. Norris</i>	305
14	Bayesian Informative Hypothesis Testing <i>Beth Mackey and Steven J. Ross</i>	329
	<i>Index</i>	347