

**STATISTICS FOR THE AVERAGE  
CRIMINOLOGY STUDENT**



# Statistics for the Average Criminology Student

A Guide to Criminological Data Analysis  
and Interpretation

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CAROLINA ACADEMIC PRESS  
Durham, North Carolina

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LIBRARY OF CONGRESS CATALOGING-IN-PUBLICATION DATA

Names: Hart, Timothy C., author.

Title: Statistics for the average criminology student : a guide to criminological data analysis and interpretation / Timothy C. Hart.

Description: Durham, North Carolina : Carolina Academic Press, [2024] | Includes bibliographical references and index.

Identifiers: LCCN 2023048713 | ISBN 9781531028121 (paperback) | ISBN 9781531028138 (ebook)

Subjects: LCSH: Criminal statistics.

Classification: LCC HV7415 .H37 2023 | DDC 364.02/1--dc23/eng/20231103

LC record available at <https://lcn.loc.gov/2023048713>

Carolina Academic Press  
700 Kent Street  
Durham, North Carolina 27701  
(919) 489-7486  
[www.cap-press.com](http://www.cap-press.com)

Printed in the United States of America

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# Acknowledgments

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As I sit down to write the acknowledgments for this textbook, I am overwhelmed by a profound sense of gratitude. This journey has been long and fulfilling, and I could not have accomplished it without the support and encouragement of numerous individuals who have touched my life in various ways.

First and foremost, I would like to express my heartfelt gratitude to my wife, Jennifer. Your unwavering support, patience, and understanding throughout the development of this textbook have been nothing short of remarkable. You have been my rock, my sounding board, and my confidant during the highs and lows of this project. I cherish our late-night discussions, where your keen insights and suggestions helped shape the contents of this book. I am eternally grateful for your love and companionship, and I cannot imagine navigating the challenges of writing a textbook without you by my side.

To my son, Ellis, and my daughter, Josilynn, thank you for being my constant source of inspiration and motivation. Your curiosity, enthusiasm, and endless quest for knowledge remind me of the power of education and the impact it can have on the lives of young minds. Your understanding and patience when I was immersed in my work have not gone unnoticed, and I appreciate the sacrifices you have made. I hope this book serves as a testament to the importance of perseverance and the value of lifelong learning.

I would also like to extend my deepest gratitude to my past professors who introduced me to the fascinating world of statistics during my college years. Patrick Gartin, David Forde, and John Cochran, you each played a pivotal role in shaping my academic journey and fostering my passion for statistics. Your exemplary teaching methods, dedication to your students, and unwavering commitment to the field have left an indelible mark on my life. I am honored to have had the opportunity to learn from you and proud to carry forward the knowledge you imparted to me.

My time at the Bureau of Justice Statistics (BJS) was a period of immense professional growth, and I am grateful for the support and camaraderie of my colleagues there. Brian Reaves, Callie Rennison, and Michael Rand, your mentorship and collaboration have had a lasting impact on my career. Your collective wisdom, expertise, and passion for the field of statistics have been invaluable in shaping my understanding of the subject and, in turn, this textbook. I am privileged to have had the opportunity to work alongside you and learn from your experiences.

A special mention must be made of my dear friend and colleague, Terrance Mithel. Terry, your friendship, guidance, and support have been instrumental in the development of this textbook. Your keen eye for detail, sharp analytical skills, and ability to communicate complex statistical concepts in a clear and concise manner have an immeasurable impact on my writing. I am grateful for our conversations, brainstorming sessions, and moments of childish humor, which have made this journey for me that much easier and rewarding. I am proud to have you as a colleague and friend.

I would also like to acknowledge the countless researchers, statisticians, and educators whose work has informed and enriched the contents of this textbook. Your dedication to advancing the field of statistics and sharing your knowledge with others has paved the way for books like this one. I am grateful for your contributions and hope that *Statistics for the Average Criminology Student* can stand on the shoulders of the giants who have come before it.

To the editorial and production team at Carolina Academic Press, thank you for your tireless efforts to bring this textbook to fruition. Your keen eye for detail, creative input, and unwavering commitment to producing a high-quality book have been invaluable. I am grateful for your professionalism, expertise, and enthusiasm.



# Preface

---

I was hired as a Statistician (GS-1530) by the Bureau of Justice Statistics (BJS) during the summer of 1997, entering the Federal government through the Presidential Management Fellowship program. Given my interest in survey research and statistics, working at BJS seemed to be a good fit for me. I always enjoyed math classes in high school, and I found research methods and statistics courses in college particularly interesting. While pursuing my undergraduate degree in criminology and criminal justice at the University of Florida, figuring out the “correct” answer to a stats problem was more appealing to me than offering my subjective interpretation of the strengths and weaknesses of various criminological theories. Despite my interest in methods and stats, I never planned on becoming a statistician.

After leaving the federal government and completing my PhD, my research areas focused on research methodology and applied statistics. So, most of the classes I taught when I began my career in academia were stats and methods courses. More than 25 years after first becoming a statistician and more than 15 years after teaching my first undergraduate course in statistics, I decided to take my combined knowledge and understanding about statistics, and my knowledge and understanding about how best to teach statistics, and write a statistics textbook.

Statistics is a crucial component of criminology research. It allows criminologists to analyze and understand complex data sets, identify patterns, and develop evidence-based policies and interventions. However, statistics can be daunting for the average criminology student, who may lack prior experience in mathematics or statistics or who is “bad at math.”

In *Statistics for the Average Criminology Student*, I present an undergraduate textbook that provides students with a comprehensive overview of statistical concepts and techniques so that they can gain a solid foundation of the fundamental principles of statistics, and then build on this knowledge with more advanced topics as they progress through the text. One way I do this is by providing practical examples and exercises throughout the book that are relevant to criminology research.

The textbook covers a wide range of statistical topics, starting with an introduction to the scientific process, data reduction, and visualization. It then moves on to cover measures of central tendency and dispersion, probability and sampling distributions, point estimates, confidence intervals, and hypothesis testing. The textbook also covers more advanced topics such as chi-square tests for independence, t-tests,

analysis of variance (ANOVA), correlation and regression, multivariate linear regression, and non-parametric alternatives to parametric tests.

Throughout the textbook, emphasis is placed on the relevance of statistics to criminology research. Examples and real-world data are used to illustrate statistical concepts and techniques, including the interpretation of analytic findings. This allows the average student to see how statistics can be used to analyze criminology data, understand the effectiveness of interventions, and evaluate policy outcomes.

The textbook also includes practical exercises and problems that allow students to apply the concepts they have learned. These exercises are designed to develop students' skills in data analysis, interpretation, and communication. They provide opportunities for students to practice using SPSS, one of the most commonly used statistical software packages in criminology research.

One of the unique features of this textbook is its focus on non-parametric alternatives to parametric tests. Non-parametric tests are often more appropriate for criminology research because they do not make assumptions about the distribution of data. This makes them more robust and less likely to produce erroneous results when applied to real-world data sets. Few statistics textbooks in our discipline include these tests.

It's also worth noting that the textbook is written in a clear and accessible style, with a minimum amount of technical jargon. I was able to draw upon my experiences at the Bureau of Justice Statistics, and the technical reports I wrote while, to create a textbook that is engaging, practical, and relevant for the average criminology student.

In summary, *Statistics for the Average Criminology Student* is an undergraduate textbook that provides a comprehensive introduction to statistics for criminology students. It is designed to be accessible, practical, and relevant to the needs of most students who may have limited prior experience with mathematics or statistics. It is an ideal textbook for the average student who wants to develop a solid foundation in statistical concepts and techniques that are relevant to criminology research, without being overwhelmed by the complexities associated with statistics, probability, and hypothesis testing.