

spss and regression analysis

SPSS and Regression Analysis: A Comprehensive Guide

Introduction:

Are you drowning in data, struggling to uncover meaningful relationships and make informed predictions? This comprehensive guide will equip you with the knowledge and practical skills to harness the power of SPSS and regression analysis. Whether you're a student tackling a research project, a market analyst seeking insights, or a data scientist striving for predictive accuracy, mastering SPSS and regression analysis is crucial. We'll delve into the fundamentals, explore various regression techniques, and guide you through the step-by-step process using real-world examples. By the end of this post, you'll be confidently conducting regression analyses in SPSS and interpreting your results to draw actionable conclusions.

1. Understanding the Fundamentals: What is Regression Analysis?

Regression analysis is a powerful statistical method used to model the relationship between a dependent variable (the outcome you're interested in) and one or more independent variables (predictors). It allows us to understand how changes in the independent variables affect the dependent variable. For instance, we might use regression analysis to predict house prices (dependent variable) based on factors like size, location, and age (independent variables). The goal is to find the best-fitting line or surface that describes this relationship, enabling us to make predictions and test hypotheses.

2. Introducing SPSS: Your Statistical Analysis Partner

SPSS (Statistical Package for the Social Sciences) is a leading statistical software package renowned for its user-friendly interface and powerful analytical capabilities. It simplifies complex statistical procedures, making them accessible to researchers and analysts across various disciplines. SPSS offers a wide array of statistical tests, including various regression analyses, making it an ideal tool for our purposes.

3. Types of Regression Analysis in SPSS

SPSS supports a variety of regression models, each tailored to different types of data and research questions:

Linear Regression: Used when the relationship between the dependent and independent

variables is linear. This is the most common type of regression analysis.

Multiple Linear Regression: Extends linear regression to include multiple independent variables, allowing for a more nuanced understanding of the relationship.

Polynomial Regression: Models non-linear relationships by including polynomial terms of the independent variables.

Logistic Regression: Used when the dependent variable is categorical (e.g., success/failure, yes/no). It predicts the probability of an event occurring.

Curvilinear Regression: Accounts for relationships that are not represented by a straight line.

4. Step-by-Step Guide to Performing Regression Analysis in SPSS

Let's walk through a practical example using multiple linear regression. Assume we have data on house prices, size, location (represented by a numerical score), and age. Here's a simplified step-by-step process:

1. **Data Entry:** Input your data into SPSS, ensuring each variable has the correct data type (numeric, categorical, etc.).
2. **Descriptive Statistics:** Examine summary statistics (mean, standard deviation, etc.) to understand your data.
3. **Correlation Analysis:** Check for correlations between variables to identify potential relationships.
4. **Regression Analysis:** Go to "Analyze" -> "Regression" -> "Linear." Specify your dependent variable (house price) and independent variables (size, location, age).
5. **Model Building:** SPSS will provide various output including the regression equation, R-squared (measure of goodness of fit), p-values (statistical significance), and coefficients for each independent variable.
6. **Interpretation:** Interpret the results to understand the strength and significance of the relationships between variables.

5. Interpreting SPSS Regression Output: Understanding Coefficients and p-values

The SPSS output will provide crucial information:

Regression Coefficients (B): These indicate the change in the dependent variable associated with a one-unit change in the independent variable, holding other variables constant.

Standardized Coefficients (Beta): These allow for comparisons of the relative importance of different independent variables.

p-values: These indicate the statistical significance of each independent variable. A p-value less than 0.05 generally suggests a statistically significant relationship.

R-squared: This value represents the proportion of variance in the dependent variable explained by the independent variables. A higher R-squared indicates a better model fit.

6. Advanced Techniques and Considerations

This section touches upon more advanced concepts:

Model Diagnostics: Assess the assumptions of regression analysis (linearity, normality, homoscedasticity) and address violations.

Variable Selection: Explore different methods for selecting the most relevant independent variables.

Interaction Effects: Investigate how the effect of one independent variable might depend on the level of another.

7. Real-World Applications of SPSS and Regression Analysis

Regression analysis finds applications in numerous fields:

Marketing: Predicting customer behavior, analyzing campaign effectiveness.

Finance: Forecasting stock prices, assessing risk.

Healthcare: Modeling disease progression, predicting patient outcomes.

Education: Analyzing student performance, identifying factors influencing success.

8. Troubleshooting Common Issues in SPSS Regression Analysis

Addressing common errors encountered during the process:

Multicollinearity: High correlation between independent variables can affect the stability of the model.

Outliers: Extreme data points can unduly influence the results.

Heteroscedasticity: Unequal variance of errors can violate regression assumptions.

9. Conclusion: Mastering SPSS and Regression Analysis for Data-Driven Decisions

This guide has provided a solid foundation in using SPSS for regression analysis. By understanding the different types of regression, interpreting the output, and addressing potential issues, you can effectively use this powerful tool to gain valuable insights from your data and make more informed decisions. Remember that continuous practice and exploration are key to mastering SPSS and unlocking the full potential of regression analysis.

Book Outline: "Unlocking the Power of SPSS and Regression Analysis"

Introduction: Overview of SPSS and regression analysis, its applications, and the book's structure.

Chapter 1: Fundamentals of Statistics: Review of essential statistical concepts, including descriptive statistics, probability, and hypothesis testing.

Chapter 2: Introduction to SPSS: Navigating the SPSS interface, data entry, and data manipulation techniques.

Chapter 3: Linear Regression: Detailed explanation of linear regression, model assumptions, and interpretation of results.

Chapter 4: Multiple Linear Regression: Extending linear regression to multiple predictors, dealing with multicollinearity, and model selection.

Chapter 5: Other Regression Techniques: Exploring logistic regression, polynomial regression, and other specialized techniques.

Chapter 6: Model Diagnostics and Troubleshooting: Identifying and addressing common issues like outliers, heteroscedasticity, and violations of assumptions.

Chapter 7: Real-World Applications and Case Studies: Illustrative examples from various fields showcasing the practical applications of regression analysis.

Conclusion: Summary of key concepts, future directions, and resources for further learning.

(Each chapter would then be elaborated upon in the full book, expanding on the points mentioned above.)

FAQs:

1. What is the difference between linear and multiple linear regression? Linear regression involves one independent variable, while multiple linear regression uses two or more.

1. How do I interpret the R-squared value in SPSS regression output? R-squared represents the proportion of variance in the dependent variable explained by the independent variables. A higher value indicates a better model fit.

1. What does a statistically significant p-value mean in regression analysis? A p-value less than 0.05 typically indicates that the relationship between the independent and dependent variable is statistically significant, meaning it's unlikely to be due to chance.

1. How do I handle multicollinearity in my regression model? Techniques include

removing highly correlated variables, using principal component analysis, or ridge regression.

1. What are the assumptions of linear regression? Key assumptions include linearity, independence of errors, normality of errors, and homoscedasticity (constant variance of errors).
1. How do I interpret regression coefficients? Coefficients represent the change in the dependent variable for a one-unit change in the independent variable, holding other variables constant.
1. What is the difference between B and Beta coefficients? B coefficients are unstandardized, while Beta coefficients are standardized, allowing for comparisons of the relative importance of different independent variables.
1. Can I use SPSS for other statistical analyses besides regression? Yes, SPSS offers a wide range of statistical procedures, including t-tests, ANOVA, chi-square tests, and more.
1. Where can I find more resources to learn about SPSS and regression analysis? Numerous online tutorials, books, and courses are available, as well as SPSS's own help documentation.

Related Articles:

1. A Beginner's Guide to SPSS: An introduction to the software's interface and basic functionalities.
2. Understanding Correlation in SPSS: Explaining correlation coefficients and their interpretation.
3. Hypothesis Testing in SPSS: A guide to conducting different hypothesis tests using SPSS.

4. Logistic Regression in SPSS: A Step-by-Step Tutorial: A detailed explanation of logistic regression and its implementation in SPSS.
5. Interpreting SPSS Output: A Comprehensive Guide: A guide to understanding various types of SPSS output.
6. Dealing with Missing Data in SPSS: Strategies for handling missing data in your datasets.
7. Advanced Regression Techniques in SPSS: Exploring more advanced regression methods like generalized linear models.
8. SPSS for Market Research: Applications of SPSS in analyzing market data and consumer behavior.
9. Regression Analysis for Predictive Modeling: Using regression to build predictive models for various applications.

spss and regression analysis: Regression Analysis by Example Samprit Chatterjee, Ali S. Hadi, 2015-02-25 Praise for the Fourth Edition: This book is . . . an excellent source of examples for regression analysis. It has been and still is readily readable and understandable. —Journal of the American Statistical Association Regression analysis is a conceptually simple method for investigating relationships among variables. Carrying out a successful application of regression analysis, however, requires a balance of theoretical results, empirical rules, and subjective judgment. Regression Analysis by Example, Fifth Edition has been expanded and thoroughly updated to reflect recent advances in the field. The emphasis continues to be on exploratory data analysis rather than statistical theory. The book offers in-depth treatment of regression diagnostics, transformation, multicollinearity, logistic regression, and robust regression. The book now includes a new chapter on the detection and correction of multicollinearity, while also showcasing the use of the discussed methods on newly added data sets from the fields of engineering, medicine, and business. The Fifth Edition also explores additional topics, including: Surrogate ridge regression Fitting nonlinear models Errors in variables ANOVA for designed experiments Methods of regression analysis are clearly demonstrated, and examples containing the types of irregularities commonly encountered in the real world are provided. Each example isolates one or two techniques and features detailed discussions, the required assumptions, and the evaluated success of each technique. Additionally, methods described throughout the book can be carried out with most of the currently available statistical software packages, such as the software package R. Regression Analysis by Example, Fifth Edition is suitable for anyone with an understanding of elementary statistics.

spss and regression analysis: SPSS Statistics for Data Analysis and Visualization Keith McCormick, Jesus Salcedo, 2017-05-01 Dive deeper into SPSS Statistics for more efficient, accurate, and sophisticated data analysis and visualization SPSS Statistics for Data Analysis and Visualization goes beyond the basics of SPSS Statistics to show you advanced techniques that exploit the full capabilities of SPSS. The authors explain when and why to use each technique, and then walk you through the execution with a pragmatic, nuts and bolts example. Coverage includes extensive, in-depth discussion of advanced statistical techniques, data visualization, predictive analytics, and SPSS programming, including automation and integration with other languages like R and Python.

You'll learn the best methods to power through an analysis, with more efficient, elegant, and accurate code. IBM SPSS Statistics is complex: true mastery requires a deep understanding of statistical theory, the user interface, and programming. Most users don't encounter all of the methods SPSS offers, leaving many little-known modules undiscovered. This book walks you through tools you may have never noticed, and shows you how they can be used to streamline your workflow and enable you to produce more accurate results. Conduct a more efficient and accurate analysis Display complex relationships and create better visualizations Model complex interactions and master predictive analytics Integrate R and Python with SPSS Statistics for more efficient, more powerful code These hidden tools can help you produce charts that simply wouldn't be possible any other way, and the support for other programming languages gives you better options for solving complex problems. If you're ready to take advantage of everything this powerful software package has to offer, SPSS Statistics for Data Analysis and Visualization is the expert-led training you need.

spss and regression analysis: A Quick and Easy Guide in Using SPSS for Linear Regression Analysis Jurex Gallo, 2019-08 This book is ideal for students and researchers who are new to SPSS and need a quick and easy guide in conducting linear regression analysis using the software. The book not only provides a step by step procedure in analyzing data using SPSS but also give insights on how to interpret results and incorporate the analysis into a research manuscript or report. This guide is helpful to researchers who are conducting research investigations in the field of education, psychology, sociology, engineering etc.

spss and regression analysis: Using SPSS for Windows Susan B. Gerber, Kristin Voelkl Finn, 2006-01-27 The second edition of this popular guide demonstrates the process of entering and analyzing data using the latest version of SPSS (12.0), and is also appropriate for those using earlier versions of SPSS. The book is easy to follow because all procedures are outlined in a step-by-step format designed for the novice user. Students are introduced to the rationale of statistical tests and detailed explanations of results are given through clearly annotated examples of SPSS output. Topics covered range from descriptive statistics through multiple regression analysis. In addition, this guide includes topics not typically covered in other books such as probability theory, interaction effects in analysis of variance, factor analysis, and scale reliability. Chapter exercises reinforce the text examples and may be performed for further practice, for homework assignments, or in computer laboratory sessions. This book can be used in two ways: as a stand-alone manual for students wishing to learn data analysis techniques using SPSS for Windows, or in research and statistics courses to be used with a basic statistics text. The book provides hands-on experience with actual data sets, helps students choose appropriate statistical tests, illustrates the meaning of results, and provides exercises to be completed for further practice or as homework assignments. Susan B. Gerber, Ph.D. is Research Assistant Professor of Education at State University of New York at Buffalo. She is director of the Educational Technology program and holds degrees in Statistics and Educational Psychology. Kristin Voelkl Finn, Ph.D. is Assistant Professor of Education at Canisius College. She teaches graduate courses in research methodology and conducts research on adolescent problem behavior.

spss and regression analysis: Essential First Steps to Data Analysis Carol S. Parke, 2012-12-13 Carol S. Parke's Essential First Steps to Data Analysis: Scenario-Based Examples Using SPSS provides instruction and guidance on preparing quantitative data sets prior to answering a study's research questions. Such preparation may involve data management and manipulation tasks, data organization, structural changes to the data files, or conducting preliminary analysis. Twelve research-based scenarios are used to present the content. Each scenario tells the story of a researcher who thoroughly examined their data and the decisions they made along the way. The scenario begins with a description of the researcher's study and his/her data file(s), then describes the issues the researcher must address, explains why they are important, shows how SPSS was used to address the issues and prepare data, and shares the researcher's reflections and any additional decision-making. Finally, each scenario ends with the researcher's written summary of the procedures and outcomes from the initial data preparation or analysis.

spss and regression analysis: *Regression Analysis and Linear Models* Richard B. Darlington, Andrew F. Hayes, 2016-08-22 Emphasizing conceptual understanding over mathematics, this user-friendly text introduces linear regression analysis to students and researchers across the social, behavioral, consumer, and health sciences. Coverage includes model construction and estimation, quantification and measurement of multivariate and partial associations, statistical control, group comparisons, moderation analysis, mediation and path analysis, and regression diagnostics, among other important topics. Engaging worked-through examples demonstrate each technique, accompanied by helpful advice and cautions. The use of SPSS, SAS, and STATA is emphasized, with an appendix on regression analysis using R. The companion website (www.afhayes.com) provides datasets for the book's examples as well as the RLM macro for SPSS and SAS. Pedagogical Features: *Chapters include SPSS, SAS, or STATA code pertinent to the analyses described, with each distinctively formatted for easy identification. *An appendix documents the RLM macro, which facilitates computations for estimating and probing interactions, dominance analysis, heteroscedasticity-consistent standard errors, and linear spline regression, among other analyses. *Students are guided to practice what they learn in each chapter using datasets provided online. *Addresses topics not usually covered, such as ways to measure a variable's importance, coding systems for representing categorical variables, causation, and myths about testing interaction.

spss and regression analysis: *A Conceptual Guide to Statistics Using SPSS* Elliot T. Berkman, Steven P. Reise, 2012 This book helps students develop a conceptual understanding of a variety of statistical tests by linking the statistics with the computational steps and output from SPSS. Learning how statistical ideas map onto computation in SPSS will help students build a better understanding of both. For example, seeing exactly how the concept of variance is used in SPSS-how it is converted into a number based on real data, which other concepts it is associated with, and where it appears in various statistical tests-will not only help students understand how to use statistical tests in SPSS and how to interpret their output, but will also teach them about the concept of variance itself. Each chapter begins with a student-friendly explanation of the concept behind each statistical test and how the test relates to that concept. The authors then walk through the steps to compute the test in SPSS and the output, pointing out wherever possible how the SPSS procedure and output connects back to the conceptual underpinnings of the test. Each of the steps is accompanied by annotated screen shots from SPSS, and relevant components of output are highlighted in both the text and in the figures. Sections explain the conceptual machinery underlying the statistical tests. In contrast to merely presenting the equations for computing the statistic, these sections describe the idea behind each test in plain language and help students make the connection between the ideas and SPSS procedures. These include extensive treatment of custom hypothesis testing in ANOVA, MANOVA, ANCOVA, and regression, and an entire chapter on the advanced matrix algebra functions available only through syntax in SPSS. The book will be appropriate for both advanced undergraduate and graduate level courses in statistics.

spss and regression analysis: Multivariate Methods and Forecasting with IBM® SPSS® Statistics Abdulkader Aljandali, 2017-07-06 This is the second of a two-part guide to quantitative analysis using the IBM SPSS Statistics software package; this volume focuses on multivariate statistical methods and advanced forecasting techniques. More often than not, regression models involve more than one independent variable. For example, forecasting methods are commonly applied to aggregates such as inflation rates, unemployment, exchange rates, etc., that have complex relationships with determining variables. This book introduces multivariate regression models and provides examples to help understand theory underpinning the model. The book presents the fundamentals of multivariate regression and then moves on to examine several related techniques that have application in business-orientated fields such as logistic and multinomial regression. Forecasting tools such as the Box-Jenkins approach to time series modeling are introduced, as well as exponential smoothing and naïve techniques. This part also covers hot topics such as Factor Analysis, Discriminant Analysis and Multidimensional Scaling (MDS).

spss and regression analysis: Data Analysis with SPSS for Survey-based Research Saiyidi Mat

Roni, Hadrian Geri Djajadikerta, 2021-06-21 This book is written for research students and early-career researchers to quickly and easily learn how to analyse data using SPSS. It follows commonly used logical steps in data analysis design for research. The book features SPSS screenshots to assist rapid acquisition of the techniques required to process their research data. Rather than using a conventional writing style to discuss fundamentals of statistics, this book focuses directly on the technical aspects of using SPSS to analyse data. This approach allows researchers and research students to spend more time on interpretations and discussions of SPSS outputs, rather than on the mundane task of actually processing their data.

spss and regression analysis: Data Analysis in Management with SPSS Software J.P. Verma, 2012-12-13 This book provides readers with a greater understanding of a variety of statistical techniques along with the procedure to use the most popular statistical software package SPSS. It strengthens the intuitive understanding of the material, thereby increasing the ability to successfully analyze data in the future. The book provides more control in the analysis of data so that readers can apply the techniques to a broader spectrum of research problems. This book focuses on providing readers with the knowledge and skills needed to carry out research in management, humanities, social and behavioural sciences by using SPSS.

spss and regression analysis: SPSS Data Analysis for Univariate, Bivariate, and Multivariate Statistics Daniel J. Denis, 2018-09-25 Enables readers to start doing actual data analysis fast for a truly hands-on learning experience This concise and very easy-to-use primer introduces readers to a host of computational tools useful for making sense out of data, whether that data come from the social, behavioral, or natural sciences. The book places great emphasis on both data analysis and drawing conclusions from empirical observations. It also provides formulas where needed in many places, while always remaining focused on concepts rather than mathematical abstraction. SPSS Data Analysis for Univariate, Bivariate, and Multivariate Statistics offers a variety of popular statistical analyses and data management tasks using SPSS that readers can immediately apply as needed for their own research, and emphasizes many helpful computational tools used in the discovery of empirical patterns. The book begins with a review of essential statistical principles before introducing readers to SPSS. The book then goes on to offer chapters on: Exploratory Data Analysis, Basic Statistics, and Visual Displays; Data Management in SPSS; Inferential Tests on Correlations, Counts, and Means; Power Analysis and Estimating Sample Size; Analysis of Variance – Fixed and Random Effects; Repeated Measures ANOVA; Simple and Multiple Linear Regression; Logistic Regression; Multivariate Analysis of Variance (MANOVA) and Discriminant Analysis; Principal Components Analysis; Exploratory Factor Analysis; and Non-Parametric Tests. This helpful resource allows readers to: Understand data analysis in practice rather than delving too deeply into abstract mathematical concepts Make use of computational tools used by data analysis professionals. Focus on real-world application to apply concepts from the book to actual research Assuming only minimal, prior knowledge of statistics, SPSS Data Analysis for Univariate, Bivariate, and Multivariate Statistics is an excellent “how-to” book for undergraduate and graduate students alike. This book is also a welcome resource for researchers and professionals who require a quick, go-to source for performing essential statistical analyses and data management tasks.

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spss and regression analysis: Applications of Regression Models in Epidemiology Erick Suárez, Cynthia M. Pérez, Roberto Rivera, Melissa N. Martínez, 2017-02-28 A one-stop guide for public health students and practitioners learning the applications of classical regression models in epidemiology This book is written for public health professionals and students interested in applying regression models in the field of epidemiology. The academic material is usually covered in public health courses including (i) Applied Regression Analysis, (ii) Advanced Epidemiology, and (iii) Statistical Computing. The book is composed of 13 chapters, including an introduction chapter that covers basic concepts of statistics and probability. Among the topics covered are linear regression model, polynomial regression model, weighted least squares, methods for selecting the best regression equation, and generalized linear models and their applications to different epidemiological study designs. An example is provided in each chapter that applies the theoretical aspects presented in that chapter. In addition, exercises are included and the final chapter is devoted to the solutions of these academic exercises with answers in all of the major statistical software packages, including STATA, SAS, SPSS, and R. It is assumed that readers of this book have a basic course in biostatistics, epidemiology, and introductory calculus. The book will be of interest to anyone looking to understand the statistical fundamentals to support quantitative research in public health. In addition, this book:

- Is based on the authors' course notes from 20 years teaching regression modeling in public health courses
- Provides exercises at the end of each chapter
- Contains a solutions chapter with answers in STATA, SAS, SPSS, and R
- Provides real-world public health applications of the theoretical aspects contained in the chapters

Applications of Regression Models in Epidemiology is a reference for graduate students in public health and public health practitioners. ERICK SUÁREZ is a Professor of the Department of Biostatistics and Epidemiology at the University of Puerto Rico School of Public Health. He received a Ph.D. degree in Medical Statistics from the London School of Hygiene and Tropical Medicine. He has 29 years of experience teaching biostatistics. CYNTHIA M. PÉREZ is a Professor of the Department of Biostatistics and Epidemiology at the University of Puerto Rico School of Public Health. She received an M.S. degree in Statistics and a Ph.D. degree in Epidemiology from Purdue University. She has 22 years of experience teaching epidemiology and biostatistics. ROBERTO RIVERA is an Associate Professor at the College of Business at the University of Puerto Rico at Mayaguez. He received a Ph.D. degree in Statistics from the University of California in Santa Barbara. He has more than five years of experience teaching statistics courses at the undergraduate and graduate levels. MELISSA N. MARTÍNEZ is an Account Supervisor at Havas Media International. She holds an MPH in Biostatistics from the University of Puerto Rico and an MSBA from the National University in San Diego, California. For the past seven years, she has been performing analyses for the biomedical research and media advertising fields.

spss and regression analysis: Data Analysis with IBM SPSS Statistics Kenneth Stehlik-Barry, Anthony J. Babinec, 2017-09-22 Master data management & analysis techniques with IBM SPSS Statistics 24 About This Book Leverage the power of IBM SPSS Statistics to perform efficient statistical analysis of your data Choose the right statistical technique to analyze different types of data and build efficient models from your data with ease Overcome any hurdle that you might come across while learning the different SPSS Statistics concepts with clear instructions, tips and tricks Who This Book Is For This book is designed for analysts and researchers who need to work with data to discover meaningful patterns but do not have the time (or inclination) to become programmers. We assume a foundational understanding of statistics such as one would learn in a basic course or two on statistical techniques and methods. What You Will Learn Install and set up SPSS to create a working environment for analytics Techniques for exploring data visually and statistically, assessing data quality and addressing issues related to missing data How to import different kinds of data and work with it Organize data for analytical purposes (create new data elements, sampling, weighting, subsetting, and restructure your data) Discover basic relationships among data elements (bivariate data patterns, differences in means, correlations) Explore multivariate relationships Leverage the offerings to draw accurate insights from your research, and

benefit your decision-making In Detail SPSS Statistics is a software package used for logical batched and non-batched statistical analysis. Analytical tools such as SPSS can readily provide even a novice user with an overwhelming amount of information and a broad range of options for analyzing patterns in the data. The journey starts with installing and configuring SPSS Statistics for first use and exploring the data to understand its potential (as well as its limitations). Use the right statistical analysis technique such as regression, classification and more, and analyze your data in the best possible manner. Work with graphs and charts to visualize your findings. With this information in hand, the discovery of patterns within the data can be undertaken. Finally, the high level objective of developing predictive models that can be applied to other situations will be addressed. By the end of this book, you will have a firm understanding of the various statistical analysis techniques offered by SPSS Statistics, and be able to master its use for data analysis with ease. Style and approach Provides a practical orientation to understanding a set of data and examining the key relationships among the data elements. Shows useful visualizations to enhance understanding and interpretation. Outlines a roadmap that focuses the process so decision regarding how to proceed can be made easily.

spss and regression analysis: *Regression with Dummy Variables* Melissa A. Hardy, 1993-02-25 It is often necessary for social scientists to study differences in groups, such as gender or race differences in attitudes, buying behavior, or socioeconomic characteristics. When the researcher seeks to estimate group differences through the use of independent variables that are qualitative, dummy variables allow the researcher to represent information about group membership in quantitative terms without imposing unrealistic measurement assumptions on the categorical variables. Beginning with the simplest model, Hardy probes the use of dummy variable regression in increasingly complex specifications, exploring issues such as: interaction, heteroscedasticity, multiple comparisons and significance testing, the use of effects or contrast coding, testing for curvilinearity, and estimating a piecewise linear regression.

spss and regression analysis: *Performing Data Analysis Using IBM SPSS* Lawrence S. Meyers, Glenn C. Gamst, A. J. Guarino, 2013-08-12 Features easy-to-follow insight and clear guidelines to perform data analysis using IBM SPSS® *Performing Data Analysis Using IBM SPSS®* uniquely addresses the presented statistical procedures with an example problem, detailed analysis, and the related data sets. Data entry procedures, variable naming, and step-by-step instructions for all analyses are provided in addition to IBM SPSS point-and-click methods, including details on how to view and manipulate output. Designed as a user's guide for students and other interested readers to perform statistical data analysis with IBM SPSS, this book addresses the needs, level of sophistication, and interest in introductory statistical methodology on the part of readers in social and behavioral science, business, health-related, and education programs. Each chapter of *Performing Data Analysis Using IBM SPSS* covers a particular statistical procedure and offers the following: an example problem or analysis goal, together with a data set; IBM SPSS analysis with step-by-step analysis setup and accompanying screen shots; and IBM SPSS output with screen shots and narrative on how to read or interpret the results of the analysis. The book provides in-depth chapter coverage of: IBM SPSS statistical output Descriptive statistics procedures Score distribution assumption evaluations Bivariate correlation Regressing (predicting) quantitative and categorical variables Survival analysis t Test ANOVA and ANCOVA Multivariate group differences Multidimensional scaling Cluster analysis Nonparametric procedures for frequency data *Performing Data Analysis Using IBM SPSS* is an excellent text for upper-undergraduate and graduate-level students in courses on social, behavioral, and health sciences as well as secondary education, research design, and statistics. Also an excellent reference, the book is ideal for professionals and researchers in the social, behavioral, and health sciences; applied statisticians; and practitioners working in industry.

spss and regression analysis: *A Concise Guide to Market Research* Marko Sarstedt, Erik Mooi, 2014-07-29 This accessible, practice-oriented and compact text provides a hands-on introduction to market research. Using the market research process as a framework, it explains how to collect and

describe data and presents the most important and frequently used quantitative analysis techniques, such as ANOVA, regression analysis, factor analysis and cluster analysis. The book describes the theoretical choices a market researcher has to make with regard to each technique, discusses how these are converted into actions in IBM SPSS version 22 and how to interpret the output. Each chapter concludes with a case study that illustrates the process using real-world data. A comprehensive Web appendix includes additional analysis techniques, datasets, video files and case studies. Tags in the text allow readers to quickly access Web content with their mobile device. The new edition features: Stronger emphasis on the gathering and analysis of secondary data (e.g., internet and social networking data) New material on data description (e.g., outlier detection and missing value analysis) Improved use of educational elements such as learning objectives, keywords, self-assessment tests, case studies, and much more Streamlined and simplified coverage of the data analysis techniques with more rules-of-thumb Uses IBM SPSS version 22

spss and regression analysis: IBM SPSS Statistics 27 Step by Step Darren George, Paul Mallery, 2021-12-29 IBM SPSS Statistics 27 Step by Step: A Simple Guide and Reference, seventeenth edition, takes a straightforward, step-by-step approach that makes SPSS software clear to beginners and experienced researchers alike. Extensive use of four-color screen shots, clear writing, and step-by-step boxes guide readers through the program. Output for each procedure is explained and illustrated, and every output term is defined. Exercises at the end of each chapter support students by providing additional opportunities to practice using SPSS. This book covers the basics of statistical analysis and addresses more advanced topics such as multidimensional scaling, factor analysis, discriminant analysis, measures of internal consistency, MANOVA (between- and within-subjects), cluster analysis, Log-linear models, logistic regression, and a chapter describing residuals. The end sections include a description of data files used in exercises, an exhaustive glossary, suggestions for further reading, and a comprehensive index. IBM SPSS Statistics 27 Step by Step is distributed in 85 countries, has been an academic best seller through most of the earlier editions, and has proved an invaluable aid to thousands of researchers and students. New to this edition: Screenshots, explanations, and step-by-step boxes have been fully updated to reflect SPSS 27 A new chapter on a priori power analysis helps researchers determine the sample size needed for their research before starting data collection.

spss and regression analysis: SPSS Regression Models 13.0 SPSS Inc, 2004

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spss and regression analysis: The SAGE Handbook of Regression Analysis and Causal Inference Henning Best, Christof Wolf, 2013-12-20 The editors of the new SAGE Handbook of Regression Analysis and Causal Inference have assembled a wide-ranging, high-quality, and timely collection of articles on topics of central importance to quantitative social research, many written by leaders in the field. Everyone engaged in statistical analysis of social-science data will find

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Categorical Data Analysis With SAS(R) and SPSS Applications features: *detailed programs and outputs of all examples illustrated in the book using SAS(R) 8.02 and SPSS on the book's CD; *detailed coverage of topics often ignored in other books, such as one-way classification (ch. 3), the analysis of doubly classified data (ch. 11), and generalized estimating equations (ch. 12); and *coverage of SAS(R) PROC FREQ, GENMOD, LOGISTIC, PROBIT, and CATMOD, as well as SPSS PROC CROSSTABS, GENLOG, LOGLINEAR, PROBIT, LOGISTIC, NUMREG, and PLUM. This book is ideal for upper-level undergraduate or graduate-level courses on categorical data analysis taught in departments of biostatistics, statistics, epidemiology, psychology, sociology, political science, and education. A prerequisite of one year of calculus and statistics is recommended. The book has been class tested by graduate students in the department of biometry and epidemiology at the Medical University of South Carolina.

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applications, with greater attention to real data both in the examples and exercises. The mathematics is still downplayed, in particular probability, which is all too often a stumbling block for students. On the other hand, the text is not a cookbook. Reliance on an overly simplistic recipe-based approach to statistics is not the route to good statistical practice. Changes in the Fourth Edition: Since the first edition, the increase in computer power coupled with the continued improvement and accessibility of statistical software has had a major impact on the way social scientists analyze data. Because of this, this book does not cover the traditional shortcut hand-computational formulas and approximations. The presentation of computationally complex methods, such as regression, emphasizes interpretation of software output rather than the formulas for performing the analysis. The text contains numerous sample printouts, mainly in the style of SPSS and occasionally SAS, both in chapter text and homework problems. This edition also has an appendix explaining how to apply SPSS and SAS to conduct the methods of each chapter and a website giving links to information about other software.

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statistics course as background. Multiple regression asks how a dependent variable is related to, or predicted by, a set of independent variables. The book includes many interesting example analyses and interpretations, along with exercises. Each dataset used for the examples and exercises is small enough for readers to easily grasp the entire dataset and its analysis with respect to the specific statistical techniques covered. A website for the book at <https://edge.sagepub.com/roberts1e> includes SPSS, Stata, SAS, and R code and commands for each type of analysis or recoding of variables in the book. Solutions to two of the end-of-chapter exercise types are also available for students to practice. The instructor side of the site contains editable PowerPoint slides, other solutions, and a test bank.

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