

International Multidisciplinary Research Journal

Golden Research Thoughts

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USING SPSS AN INTERACTIVE HANDS-ON APPROACH : BOOK REVIEW

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ABSTRACT

This practical book can be used as a supplementary text or as a self-help guide through which the reader can learn to use SPSS on their own, and at their own pace. The book uses statistics to teach SPSS, by interacting with the software and learning by inquiry and discovery. The book includes 23 chapters, covering statistical concepts, models and both parametric and non-parametric statistical techniques.

KEYWORDS: self-help guide through , statistics, and building graphs.

INTRODUCTION –

The book starts with simple topics for beginners, such as how to start with SPSS, how to create and work with data files, how to identify variables, enter values and work with data. The book covers descriptive statistics, inferential statistics, and building graphs. It



contains Preface / First Encounters / Navigating in SPSS / Getting Data in and out of SPSS / Levels of Measurement / Entering Variables and Data and Validating Data / Working with Data and Variables / Using the SPSS Help Menu / Creating Basic Graphs and Charts / Editing and Embellishing Graphs and Charts / Printing Data Files and Output Files / Basic Descriptive Statistics / One-Sample t-Test and Nonparametric Binomial Test of Equality / Independent Samples t-Test and Nonparametric Mann-Whitney Test / Paired Samples t-test and Nonparametric Wilcoxon Test / One-Way ANOVA and Nonparametric Kruskal-Wallis Test / Two-Way

(Factorial) ANOVA / ANOVA Repeated Measures and Nonparametric Friedman Test / Analysis of Covariance (ANCOVA) / Pearson Correlation and Nonparametric Spearman Correlation / Single Linear Regression / Multiple Linear Regression / Chi-Square Goodness of Fit / Chi-Square Test of Independence / Appendices / Index.

The target readers of Using SPSS include researchers, graduate students and final year undergraduate students. Its main objective is to help readers who are new to the popular statistical analysis software SPSS (Statistical Package for Social Science) to use it

effectively. This book does not only explain how to use the SPSS software, it also explains the basic statistical concepts to readers. It aims to help readers comprehend various functions provided by SPSS and help them interpret the results correctly. The authors also guide readers on how to use the software to analyse data via various tests.

The details about the chapters are as follows: Chapter 1. First Encounters: how to enter variable name and data, how to generate table of statistical and a graph y summarizing those statistic are described in very easy manner. Chapter 2- Navigating in SPSS provides basic introduction to navigate the variable view and data view screen. How to enter the data in variable view screen and data view screen is illustrated with screen shots. Introduction to boxes and windows for entering information

regarding variables, including name, type, width, decimals, label, values, missing, columns align and measure is made clearly. One good feature to investigate the main menu and the data editor toolbar and the options available for each of these mentioned in this chapter. From this chapter onwards, Field uses screen images of SPSS to accompany examples and explanations. In Chapter 3- Getting Data in and out of SPSS, how to save and open data file and output files is explained. Where the sample files are located in SPSS and how to open it, how to export files from SPSS to other applications is clearly mentioned with step by step application and icons.

Data set for the exercises to type, save and open has been given for the practice for the beginner. In the next chapter 4 - Levels of Measurement, the book describe level of measurement, including nominal, ordinal and interval and the necessity of carefully data using for level of measurement. The opportunity to categories the data into nominal, ordinal, and scale levels of measurement is very effectively presented in this chapter. It emphasized on importance for researcher to understand that the level of measurement selected for variable that determines the type of statistical analysis that will be applied on data. It was evidently written that one would be that never calculate the mean and SD for data measured at the nominal or ordinal levels. The basic validation procedure for variables measured at the nominal, ordinal and scale levels has been presented in chapter 5 - Entering Variables and Data and Validating Data. One can easily learn how to enter the variables and their attributes in the variable view screen. Further, its association with the data view screen is linked. The actual data set displayed in this chapter to take the practical understanding and step by step process of correctly entering the variables, attributes and data and its assigned attributes to each variable.

The chapter 6 working with data and variables dealt with the how to work with variables and data that have already been entered into SPSS. Recoding a new variable measuring at to scale level into a string variable, this operation for making data more specific for the analysis is described. Other than that the use of various SPSS command to compute and recode data, which result in the creation of a new variable is explained briefly. How to insert new variables and new cases into an existing database learnt from this chapter. Hand on experience in using the various help features of SPSS for the quick reference is presented in chapter 7- Using the SPSS Help Menu; it is part of the program that was installed when installed in the computer. Other line sites and links are also presented in the chapter. The clear cut picture of all ten available options in help menu included: topics, tutorial, case studies, statistics coach, command syntax reference, SPSS development central, algorithms, SPSS home, check for updates and product registration all mentioned with details information. Chapter 8 - Creating Basic Graphs and Charts, very use full chapter for the research report presentation in graphical manner. How to create the basic graphs using two legacy dialog and chart builder is focused. The presenting data in other chart like bar diagram and pie chart is discussed with limited dimension. The next chapter 9- Editing and Embellishing Graphs and Charts dealt with the polishing the chart types and exporting the chart in the other application like M S Office or Notepad etc. Creating more sophisticated graphs to better display of data and their purpose is mainly highlighted in the chapter. Technique of ensuring the highly preventative data that make more appealing and engaging all viewers is the mainly focused area of the chapter. Chapter 10- Printing Data Files and Output Files, the printing data from variable view screen, data view, all variable information, variable values for the class survey database has been presented with the screen shot that allows the easily understandable command. Chapter 11 - Basic Descriptive Statistics, the measures of central tendency (Mean, Median and Mode), measures of dispersion (SD, RANGE, SE) are the major component of any analysis in the research. The shape of distribution and the normality of data to represent in form of graph/shape is described in the chapter. In this chapter necessary concepts of statistics and background information of SPSS have been introduced, Field sets out to explain how to explore data e.g., screening data, exploring groups of data and testing for homogeneity of variance, and then running data on SPSS been launched.

Chapter 12- One-Sample t-Test and Nonparametric Binomial Test of Equality, it was the first time that author direly address the inferential statistics technique known as hypothesis testing. Detailed explanation of the procedure of specific hypothesis testing the one sample t-test and binomial test of equality has been presented in the chapter. The examples of writing the research question and its null hypothesis were provided. Chapter 13. Independent Samples t-Test and Nonparametric Mann-Whitney Test Chapter 14. Paired Samples t-test and Nonparametric Wilcoxon Test starts off with methods of comparing two means and statistical

procedures for analyzing data of this kind, i.e. the independent t-test for independent designs and the related t-test for repeated-measures designs. The nonparametric test for two or more related samples was explained in details with the pre and post blood pressure data.

Chapter 15. One-Way ANOVA and Nonparametric Kruskal-Wallis Test are devoted to statistical methods that compare several means. The appropriate test for three or more means is the ANOVA, an acronym for analysis of variance. The understanding of the comparing the means of various groups made very concise before the screen shots of the data entering on this particular test. Via the calculation of the F statistic the significant difference between three or more means are compared and process of the same has been described in the chapter. The alternative test for the testing the non parametric data – Kruskal –Wallis test defined and performed well with the window of the result arrived after performing the test. After reviewing the comparison of the three or more means the Chapter 16 – Two-Way (Factorial) ANOVA provided example of various groups and different variables to compare. Two independent variables with any number of groups in each the two way ANOVA provide the perfect results. The clear description with the use of Factorial ANOVA that it permits the evaluation of each independent variable effect on dependant variable. 2x2 factorial example with the research question and null hypothesis used in the technique made good impact on knowledge of reader. This chapter expanded the concept of one way ANOVA by permitting the investigator the latitude of examine multiple independent variable. The extremely complex design of factorial ANOVA and result of the test with the all titles were made easy to understand.

Chapter 17- ANOVA Repeated Measures and Nonparametric Friedman Test explain the concept of the repeated measures ANOVA and comparison between t-test and the RM-ANOVA. The repeat of variable more than two times the RM- ANOVA is best test to perform. Chapter 18 dealt with Analysis of Covariance (ANCOVA) - essentially test whether the certain factors have an effect on the dependent variable after removing the variance accounted for by the covariate. The simplest way to understand the experiment in terms of the results that came after employing the ANCOVA written in this chapter. The understanding of the pre test and post test with the providing training between the two tests made more interesting the topic of chapter. More over the explanation of extension of ANOVA to ANCOVA is made very effective with the comparison of end results of the both test. Chapter 19 written on correlation (pearson's and speraman's). The quest to find the association with two variables defined very well. The function of both parametric and non parametric correlation coefficients is to determine the strength and direction of relationship between two variables and the application process is simply narrated in this chapter. Chapter 20 single liner regression and chapter 21 multiple linear regressions dealt with the regression equation development for the one, two or more than variables that used for the prediction purpose.

Chapter 22. Chi-Square Goodness of Fit is devoted to categorical data and the chi-square test, which is used for this type of data. To determine whether the observed occurrence of a single variable is consistent with expected frequencies the chi-square use is elaborated in good manner. Chapter 23. Chi-Square Test of Independence is nonparametric test designed to determine whether two variables are independent or related. How to interpret the output, decision whether reject of fail to reject null hypothesis based on the result are clearly made to facilitate the reader.

Appendix A – data set to practice, Appendix B – Basic Interferential statistics, Appendix C – Statistical Tests and Appendix D – Analysis of covariance: test for homogeneity of regression slopes at the end of the last chapter, where authors made good attempt to brief the idea of the more complex and used phenomenas. The book complete it's journey with the index of topics.

This book is the best blend that a book in statistics and a manual on SPSS. It is a balanced composite of both topics, using SPSS to illustrate important statistical material and, through graphics, to make visible important approaches to data analysis. There are many places in the book where excellent style engages the reader and makes reading about statistics fun. This book is very appealing to the students of statistics as well as to the subjects, who apply the statistical test to the other fields like psychology, management and other social sciences.

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