BOOK REVIEW – COMPREHENSIVE RESEARCH METHODOLOGY (FOCUSED ON MARKETING & APPLIED RESEARCH)

Dr. Arif Anjum,

Assistant Professor, G.D.A.B. Arts, Commerce and Science College, Malegaon, MS (India)
Project Director, ICSSR Research Project, Govt. of India, New Delhi, India.

Book: Comprehensive Research Methodology (Focused on Marketing & Applied Research)
Author: B.L. Agarwal
Publisher: New Age International (P) Limited, Publishers
Edition: First Edition 2015 ISBN: 978-81-224-3811-6
Price: INR 399.00
Pages: 553
Binding: Perfect Binding

The present book review analyzed B.L. Agarwal's book on Comprehensive Research Methodology (Focused on Marketing & Applied Research). This book brings together adequate matter on a complex topic of research methodology. Research is a part of all disciplines and it requires a clear and conceptual knowledge of techniques to be used in solving research problems. This book updates students, researchers and teachers with the theory of research methods and their application in actual research problems. The contents of the book are oriented towards marketing and applied research but this book can widely be used in all kinds of courses and researches. This book have two approaches, one is to coach research by theorists emphasizing on development and derivation of research methods, and solving the research problems is being the other. It is an applied book in research methodology. The theoretical part of the book helps the readers to follow the matter in exact and clear manner like how class room sessions are conducted.

Presenting theory as well as practical in a lucid manner makes this book unique. Collection of data, analysis of data, interpretation of results and report writing are the aspects systematically covered in the book. The most important part of research process is to deal with applied multivariate data analysis, which is very well focused in seven chapters that are totally devoted to applied multivariate data analysis with explanations in some graphs and simple numerical examples that made it interesting to deal with.

Interpreting the results and drawing correct conclusions out of it are very irritating problems to handle. To solve these problems, author elucidates the explanations next to output tables in all the chapters and sustained the output values in reference to theory given in the text. The students, teachers and researchers will find this book congenial and it will instill confidences of students from the exam point of view. Furthermore, appendices are provided as supporting material to understand and work-out the theory and numerical problems.

B.L. Agarwal, in Comprehensive Research Methodology (Focused on Marketing & Applied Research2015), investigated what is research and how it could be carried out in an effective manner by providing concrete and complete information using different *designs of data collection, survey sampling methods, measurement and scaling, statistical hypothesis testing, nonparametric tests, multivariate analysis, cluster analysis* etc. The book is intelligently divided into 18 chapters to express its ingredients in a lucid manner.

Chapter 1 **"Fundamentals of Research Methodology"** lays the groundwork by defining *Research, Types of Research, Types and editing of Data, Information System, Use of Computer and Internet in Research and Report Writing*. Here, the author has described the base of research methodology excellently.

The second chapter **"Statistical Insight and Concepts"** provides fundamental information like, *Distribution Function, Mathematical Expectation, Univariate Frequency Distribution, Frequency Polygon, Measures of Location Dispersion, Discrete Theoretical Distribution,* etc. which are the

foundations of statistics and are most commonly used in research methodology. Statistical methods are innumerable to deal with collection, compilation, estimation, testing and analysis of data for drawing meaningful and correct conclusions.

Following which the third chapter discussed about **"Survey Sampling Method and Sampling Distributions"**, which focuses on data with various ingredients like, *Need of Surveys, Various Sampling Methods and types of Distributions* etc.

Chapter 4 "**Designs of Data Collection"** focuses also on data. The author elucidates that it becomes very important to collect concrete and purified data free from contaminations and biases because data is the backbone of any research and it should be more flexible to be used for statistical analysis. To meet this desired objective, survey methods are best to carry out social, psychological and marketing research. This chapter has adequately covered various approaches of collecting primary information (data) through questionnaires and secondary data from publications, unpublished records, computerized databases and in-depth interviews.

The author devoted the Chapter 5 '**Measurements and Scaling'** to techniques of developing proper scales with anchor point as deemed relevant to the problem under investigation. The author narrated about marketing management and social research, and about attitude scales that are principally used to assess the behavior of the respondents and impact of various plans or schemes or segments of the society. The adequacy of the scales is judged on the basis of reliability and validity of the constructs.

Chapter 6 '**Statistical Hypotheses Testing',** In this chapter, the author exposed that hypothesis is a strong tool in statistics which has a wide range of utility and there is hardly any science dealing with quantitative research which does not utilize the technique of testing of hypothesis. He mainly concluded that besides *Z, t,* x^2 and *F* tests, there are several statistical tests which are seldom used as compared to these four tests. He added that units are not measured but are ranked. In case of ranked data, nonparametric tests are applied.

Chapter 7 '**Nonparametric Tests**', The author introduced about Nonparametric Tests in previous chapter whereas in this chapter he threw lights on availability of many more nonparametric tests in statistical literature like Fisher's exact test, Pitman's permutation test, Jonckheere-Terpstra test, Page's test, Shapiro-Wilk test, Moses test and so on. The tests covered by the author can be commonly and easily used in marketing research, business management, behavioral sciences etc.

In the eighth chapter **Experimental Research Designs,** Some tests are covered on experimental research designs as they are analogous to one way and two way analysis of variance. All researches are carried out after selecting suitable experimental design. In this chapter, experimental designs are discussed adequately. Hundreds of experimental designs evolved befitting to the research problems in different areas such as agriculture, marketing, medical sciences, biosciences engineering and so on. This chapter has covered some of the experimental designs commonly used in marketing and business management research. These designs fulfill the requirements of most of the courses conducted in institutes and colleges of business management and administration and for the research scholars.

Chapter 9 '**Statistical Association Studies'** Apart from covering nonparametric measures of associations, a wide range of topics are explicated in this chapter like *Simple & Graphical Display of Correlation Coefficient, Regression, Autocorrelation, Multiple Regression Analysis Using SPSS Software, Logistic Regression* and many more. Some topics are covered in detail and others in a bird's view moderately keeping their applicability in general. Still the contents are limited and a large number of association measures are not the part of this chapter.

Chapter 10 '**Rudiments of International Marketing and Advertising',** In this chapter, the author explained about advertising in detail by elucidating the *Factors Affecting Marketing Research, Foreign Market Opportunity Analysis, Role of Communication in Market, Advertising, Criteria for Promotional Budget, Advertising Methods, Advertising Research, Modern Trends in Advertising* etc.,

The Eleventh chapter '**Decision Theory and Application'**, is designed to suit the application oriented courses on decision theory, especially in context to marketing problems. The theoretical concepts are presented to the extent that they can be applied to real marketing and other applied problems. Applications of theoretical concepts, methods and formulae have been explicated through real situational examples which enhance the insights about the subject matter to a greater extent. The author has kept the mathematical and statistical involvement as little as possible expecting that the students, teachers and researchers will find this chapter on decision theory very useful and easily understandable.

The chapter on '**Preliminaries to Multivariate Analysis'** (Chapter 12) focused that knowledge of matrices is necessary to understand multivariate distribution and analysis. The Appendix-A has some real scenario to get a workable knowledge of matrices. Purpose of this chapter is to acquaint the students with various multivariate statistics that will frequently be used in different types of multivariate analysis.

Chapter 13 '**Multivariate analysis of Variance',** the contents of this chapter are limited. It covers only one-way multivariate analysis of variance, whereas MANOVA can be applied in two-way classification, in randomized block design and in three-way classification such as Latin square design. MANOVA can also be used in the analysis of factorial experiments. To specifically mention, MANOVA becomes more and more complicated. But these days, due to the availability of computer packages, the analysis is made possible for a large number of designs. There are a large number of other tests which are not even referred in this chapter, but few statistical hypothesis tests that are quite popular and in vogue are covered. The purpose of this chapter is to acquaint the readers with the procedures of Multivariate analysis of variance because knowledge of the topic is highly important. The computer facility has made the use of multivariate analysis of variance very handy.

In the 14th Chapter '**Discriminant Analysis'**, the author discussed about the confusion between Discriminant function and multiple regressions but it should not be. As multiple regressions is simply meant to predict a criterion (dependent) variable through repressor variables. Discriminant analysis covered in this chapter does not contain all sorts of situations and possible manipulations. However the covered sections is sufficient enough to understand the overall concept of the discriminant function. The numerical examples make the topic more easily understandable and it emphasizes that a reader should learn the use of computer software packages for discriminant analysis and moreover how to draw interfaces from the output tables as provided in this chapter. The author has tried his best to simplify the complex mathematical treatments as much as possible.

Chapter 15 '**Principal Components and Factor Analysis',** the concepts of Principal Component Analysis (PCA) and factor analysis are somewhat intermingling. The author hopes that the readers will understand the distinction between these two analytical methods without any difficulty. The numerical examples adequately support to grasp the theory. As a matter of fact, the model's analyses that are explicated in theory with matrix notations in short and simple way become gigantic in practical problems. Easy access to computers and availability of software packages for almost all type of statistical analyses has made possible the frequent use of these analyses now-a-days.

There are many other methods of estimating the factor loading like maximum likelihood estimates, regression method and so on. But all of them are not covered in this chapter. This chapter discusses appropriately the methods which are commonly used by SPSS, SAS, etc. Variations in different methods can be understood as per the needs. The author believes that the contents of this chapter will cover the courses taught in different faculties and fulfill the requirements of most of the researchers.

The objective of the 16th Chapter '**Cluster Analysis'** is to acquaint the inquisitive minds with the purpose, application and interpretation of results. Calculate part is secondary because now-a-days, no one performs cluster analysis manually. Computer software packages such as SPSS/WIN, SAS, etc., are easily available for data analysis. Cluster analysis may be used in conjunction with Discriminant analysis. Cluster analysis can be properly used only after understanding its purpose, process of analysis and the kind of results that can possibly be revealed though its methods are not clearly established. Thus, this is open to criticism that a statistician may mine data by different methods of computing proximity matrix and linking groups until one discovers the structure that was contained in the data. In spite of many gaps, cluster analysis is frequently applied in various research disciplines. The results are quite satisfactory as it fulfills the objectives of research to a great extent.

Chapter 17 '**Conjoint Analysis',** this chapter is just an introductory chapter so that a person who is working in the areas of marketing can make proper use of the technique and does not confuse it with other multivariate techniques. The author expects that the users will find its contents very helpful for course and research works.

The author concluded that, Conjoint Analysis is an analytical procedure especially used in deciding the combination of features and attributes of a product on the basis of the linking of prospective buyers. The techniques of Conjoint Analysis has been successfully utilized in a large number of areas to predict preferences of the respondents for acceptance of consumer products and services, durables, automobiles, financial services, food products, confectionery and so on. Conjoint analysis is not an old concept but it gained popularity only after easy access to computer software packages.

The chapter on '**Elements of Multidimensional Scaling'** (Chapter 18) discussed about the use of multidimensional scaling which is not limited to a single discipline. But it has a wide range of applications in various areas of research and especially in the area of marketing research.

Multidimensional scaling can also be considered as a mathematical procedure that converts as item-by-item matrix into an item-by-variable matrix. For instance, there is a person-by-person matrix of similarities in attitudes. One may prefer to explain the pattern of similarities in terms of simple personal characteristics such as sex, age, income education and so on. But there arises a problem when these two kinds are not compatible.

Conclusion and Suggestions:

B. L. Agarwal in Comprehensive Research Methodology (Focused on Marketing & Applied Research), 2015, investigated what is research and how it could be carried out in an effective manner by providing concrete and complete information using different *designs of data collection, survey sampling methods, measurement and scaling, statistical hypothesis testing, nonparametric tests, multivariate analysis, cluster analysis* etc.

This book is an attempt to provide adequate knowledge on a complex topic of research methodology. Research is a part of all disciplines and it requires a clear and conceptual knowledge of techniques to be used in solving research problems. Thus, the students, teachers and researchers can update themselves with the theory of research methods and their application in actual research problem. This book will solve the problem in both the directions.

The contents of the book are oriented towards marketing and applied research. But all the research methods are not confined to any particular area or discipline of research. In view of this fact, the book can widely be referred in all kinds of courses and researches.

In this book there are two approaches where one is to teach researchers by theorists who emphasize on development and derivation of research methods and the other is towards solving research problems. This book is meant to be an applied book on research methodology. Theoretical part of each and every method is provided in such a manner that the readers will be able to follow the content in an exact and clear manner. Of course, the derivation of theorems and formulae has been avoided as far as possible.

This book is unique as it is intended to present the theoretical and application aspects of any technique in a lucid manner. Hence, the students, scholars and the researchers will learn basic methodology and will be able to develop themselves to make use of statistical procedures in research and profession.

This book presents *seven chapters* that are totally devoted to applied multivariate data analysis. Due to the complications in multivariate concepts. These concepts are first clarified in an easy manner followed by some graphs and simple numerical examples. This will create a clear understanding about the topic in consideration. The process of analysis is explained through window exposure along with the operations carried out for clear and better understanding. Finally the output tables are oriented and the author has handled the most important and challenging problem of interpreting the results to draw the correct conclusion through interpreting the results. The author has provided the explanation below all output tables in all chapters. Not only this, the author has authenticated the output values in reference to theory given in the text.

*****