



Cite this article as: Sambuo, D. B. (2021). Quantitative methods for social sciences: A practical introduction with examples in SPSS and STATA. Springer International Publishing AG. 2019 ISBN 978-3-319-99117-7 ISBN 978-3-319-99118-4 (e-Book). 185pp. *East African Journal of Social and Applied Sciences*, 3(2), 206-209.

BOOK REVIEW

QUANTITATIVE METHODS FOR THE SOCIAL SCIENCES: A PRACTICAL INTRODUCTION WITH EXAMPLES IN SPSS AND STATA. SPRINGER INTERNATIONAL PUBLISHING AG 2019. ISBN 978-3-319-99117-7 ISBN 978-3-319-99118-4 (eBook). <https://doi.org/10.1007/978-3-319-99118-4>. 185PP.

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ABSTRACT

Social science studies have remained prominent and contributors to economic development. However, the invention of data science in the field of social science requires various methods of quantitative data analysis. This work gives a review of the book titled; Quantitative methods for the social sciences: a practical introduction with examples in SPSS and Stata by Daniel Stockemer. The determination of reviewing this book is to get insight of learning quantitative methods by practical for various statistical methods, understanding of survey research process, analysis of data and interpretation of the results. This book has nine chapters with varying deliberations in social science research, theories, and practices. Nevertheless, the book had limited discussion on introduction to qualitative methods as well as nonlinear functional forms. Noncontinuous dependent variables were also left out. This book forms a prospect for readers to gain primary knowledge on statistical analysis, political science theories. As far as social science discipline is concerned it is recommended a book to have a discussion on qualitative and quantitative research; powerful social science theories; variable meaning and variable types; probabilistic sampling techniques; non-linear functional forms and non-continuous dependent variables. For academicians, students, and other users are recommended to continue using this book following a demand for knowledge on application for data science in social science discipline.

Keywords: Quantitative methods, Social science, SPSS, STATA

Paper type: Book Review

Type of Review: Peer Review

1. BACKGROUND AND SUMMARY OF THE BOOK

Quantitative Methods for the Social Sciences: A Practical Introduction with Examples in SPSS and Stata by Daniel Stockemer is a social science study book which remain prominent and contributors to economic development following today's demand for knowledge on data science. However, invention of data science in the field of social science requires various methods of quantitative data analysis (Stockema *et al*, 2019). The book is a guiding resource for data analyst beginners, researchers, students and academicians engaged in survey research and quantitative methods. It contributes to practical



learning for several statistical methods. Also, this book provides a guiding process on surveying research which includes preparing, conducting and analysing survey data. The discussion in this book shows instructions for conducting statistical tests in both SPSS and Stata statistical packages.

The book has nine (09) chapters with varying deliberations in social science research, theories, and practices. Chapter one address the essence of research method as a tool for researchers in conducting research. The author pinpoints researcher should have two types of tools. One is easy tools and a complex tool is the second and they are useful for data analysis. In order to conduct a research, judge and evaluate other peoples' work (p.2) a researcher needs these tools. The other emphasis from this chapter is learning should associated with practical training which were also reflected by this book.

Chapter two offers discussion on empirical research in the field of social science, focusing on the individual change behaviour and how the world is structured. The chapter compares empirical and normative oriented research on having different goals but they are complementary (page 5-6). Other types of research discussed are qualitative and quantitative research, however the author point out that the difference in number of observation is used as a criteria to distinguish these two type of research. The chapter concluded that, in depth examination of few observations form a qualitative research or else is quantitative research. Understanding any type of research requires knowledge of theories, variables and hypothesis formulation which were also described in this chapter. The author ends the chapter with summary of figure indicating quantitative research process which starts with theory, hypothesis, operationalization, measurements, sampling, statistical analysis and ends with theory.

Chapter three has two parts. The first part gives brief introduction of survey research, relevance and its applicability in areas where it frequently used. The author introduces three widely used cross-national surveys, Comparative study of electoral systems (CSES), European social survey (ESS) and World values survey (WVS). Cross-national surveys introduced focus on developing the research agenda, survey instruments, study design, monitors, analyses issues for policy makers and understanding human values (p. 28-30). The chapter was enriched by other different types of surveys in the discussion.

Chapter four explain various approaches of conducting survey including how to design different type of questions, and refining a survey tool. The chapter also cements on four ways of how survey questions are operationalized. The four ways of operationalize are by forming several variables not limited to string, continuous, ordinal, and nominal variables. It also provides details of coding variables for the data surveyed. Chapter five focus on how to conduct a survey, understanding of the population and sampling techniques. Sampling techniques emphasized includes simple random sampling and non-sampling techniques which are convenience, purposive, volunteer, and snowball (p.63). Chapter six is a discussion about univariate statistics. The author also explains data entry into SPSS and Stata in the same chapter. Others are detailed information on central of tendency measurements (mean, median and mode); variance measurements (deviation, variance, standard error and sampling error); frequency tables and descriptive statistics were provided. The chapter also shows how to presents variables in graphics such as histogram, boxplots and pie charts altogether forming part of practical learning by using Stata and SPSS.

Chapter seven (p.102-120) offers detailed information about bivariate statistics and types of bivariate statistics. The chapter discussed about t-test for independent samples in measuring two sample groups that are different from one another using a continuous variable. The discussion is further on f-test or ANOVA to understand how it measure differences in more than one groups. The chi-square test is among the type of bivariate statistics used to measure differences in a frequency table. The chapter also gives explanation on cross tabulation table and a guide procedure of doing bivariate statistics in SPSS/Stata is provided. Chapter eight discuss bivariate relationships between two

continuous variable using scatter plots (p.143), correlation, regression analysis and implementation of the model were done by SPSS and Stata. The chapter also provides interpretation of the results were provided. The last chapter provides details about multivariate regression modelling focusing on logic behind, functional forms and model assumptions.

2. BOOK CONTRIBUTION AND REVIEWER'S CONCERNS

This book made quantitative methods simple, therefore is the simple kit for survey research and statistical analysis. Quantitative methods are very broad however, this book has streamlined a specific knowledge that link both surveys process in research and discipline of statistics. It guides the learner on self-study through practicing these statistics.

The author has made contribution on the importance of a quantitative course in social sciences sub-field linking it with normative and empirical political science. Narration was on the steps in survey research that a learner use to conduct survey. The unique contribution on these steps is on categorisation of surveying process into three groups. First group consist of steps used in constructing a survey, second group show steps used to conduct survey and the third group are steps used for analysing a survey. Meanwhile this book discussed only six steps, Passmore *et al*, (2002) discussed eight steps with an addition of two steps, plan the project and review literature. This book formed a unique way for understanding of the survey research design by categorizing these steps three parts, constructing, conducting and analysing surveys.

Another contribution provided by the author is an understanding of the research tools as applied in social science empirical research. *Quantitative Methods for the Social Sciences* book gives out real examples that can be used to understand different research tools. Among the tools that were provided with examples are construction of variables; developing research hypotheses; constructing different types questionnaires; and the choice of research survey. Other tools discussed are data coding procedure in the SPSS/stata and construction of a pre-test.

The usefulness of the quantitative methods in political science is among contribution made by the author. Main theories of political science research that should be acknowledged and useful in quantitative methods were also explained. Apart from the theories, several empirical examples of the issues regarding political sciences that a reader and specifically individuals undertaking political science discipline research should be aware were explained in a book. Among the issues are on how to construct questions and therefore makes this quantitative book useful in political science.

Understanding of the statistical packages has been challenging due to evolution of these software packages. However, this book employed SPSS and Stata statistical packages to facilitate learning process. The use of the commands in analysis of data from each statistical packages form a vital contribution the book in understanding SPSS and Stata (Landau, 2003). The data set (pg.175) used during learning process in this book was also attached, used as a tool for a proof in SPSS and Stata for the results or approaches described in a book. Therefore, the book emphasis is on learning by doing for beginners of data analysis, researchers, students and academicians.

Despite a notable contribution, the book failed to provide rigorous discussion on types, quantitative research qualitative. A cementation from the book is such that qualitative research comprises a number observation(s) from one, two, or three individuals. The surveyor has to conduct an in-depth inspection of the cases at hand. The author categorises cases with hundreds, thousands, or even hundred thousand observations as a quantitative research (pg. 8). Disregarding the number of observations this discussion has to be clear that qualitative survey research involves collection and analysis of non-numerical data. Meanwhile quantitative research is the collection and analysis of numerical data (Saunders *et al*, 2016).

Focusing on the book discussion about the theories presented (pg. 11). There are however many theories in social science discipline including theory of agency, planned behavior and elaboration likelihood model. Others are theory of innovation diffusion, and general deterrence theory. They form diversification in different subfields of social sciences research studies. Based on author's discussion about theory presented in this book. The relative deprivation, iron law of oligarchy, democratic peace theory were the mentioned theories useful for political science discipline (pg. 11) and occasionally for social science, yet were classified to be '*powerful social science theories*'. These theories made a slight rationale in social science research. Therefore, the author should have discussed the dimension of power of those theories in political science and then in social sciences. However, the research theories presented are different and it might be difficult to have the overall theory that drives different disciplines.

Further the author made a narrow discussion about variable meaning and variable types. Only two types of variables (pg. 16) were discussed, continuous independent and continuous dependent variables. The discussion should have extended to other type of variables like intervening, moderating, extraneous, qualitative, quantitative, confounding and composite variables so as to widen the book in providing clarity on causal and relationship of between and or within variables, related theories and extensive data analysis (Shreffler *et al*, 2021). Not only the book narrowed the discussion about variables, sampling approaches discussed were incomplete. Probability sampling technique discussion was on random sampling technique using lottery approach (p.58) with inclusion other few non-probabilistic sampling techniques. Therefore, inclusion of other probabilistic sampling techniques such as multistage-cluster, cluster, stratified, systematic to be part of the discussion in a book is of paramount importance in upgrading this book to serve for a wider range of researchers and other beneficiaries (Mgema, 2020). Nonlinear functional forms and noncontinuous dependent variables were also left out and therefore should also be considered for the new edition.

3. CONCLUSION AND RECOMMENDATIONS

Conclusively, this forms a prospect for readers to gain knowledge about the foundation of quantitative methods, statistical analysis and research process in social sciences. As far as social science discipline is concerned this book is recommended for researchers, lecturers, students, and other users to continue using this book following a demand for knowledge on applied data science in social science discipline. However, on its current status, related discussion on qualitative and quantitative research; powerful social science theories; variable meaning and variable types; probabilistic sampling techniques; non-linear functional forms and non-continuous dependent variables are recommended for the next edition of this book.

REFERENCES

- Mgema, J. M. (2020). *Essentials of Commerce in East Africa* by Safdar Ali Butt. Cassell Publishers Limited, London – England, 1985. ISBN 0-304-31265-7. 270pp, *East African Journal of Social and Applied Sciences*, 2(2), 325-329.
- Landau, S., & Everitt, B. S. (2003). *A handbook of statistical analyses using SPSS*. Chapman and Hall/CRC.
- Passmore, C., Dobbie, A. E., Parchman, M., & Tysinger, J. (2002). Guidelines for constructing a survey. *FAMILY MEDICINE-KANSAS CITY-*, 34(4), 281-286.
- Saunders, M., Lewis, P. & Thornhill, A. (2016). *Research methods for business students* (7th edition). Pearson Education Limited, Harlow. 768pp.
- Shreffler, J., & Huecker, M. R. (2021). Types of Variables and Commonly Used Statistical Designs. *StatPearls*. [<https://www.ncbi.nlm.nih.gov/books/NBK557882/>] Site visited 25/07/2021.
- Stockemer, D., Stockemer, & Glaeser. (2019). *Quantitative methods for the social sciences* (Vol. 50, p. 185). Springer International Publishing.