

# **A GUIDE TO RESEARCH IN AGRICULTURAL EXTENSION**

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## **Preface to the Second Edition**

One of the major weaknesses of contemporary agricultural extension worldwide is the lack of research that can drive policy, and enhance management and practice of agricultural extension. Most of the available research efforts and output in agricultural extension lack careful attention to conceptual and methodological details. There is the feeling that narrow ideological considerations with pre-determined outcomes not designed to address specific extension problems predominate the agricultural extension research scene. In most cases the scope is so small and narrow that the outcome cannot feed into policy.

This is clearly not an acceptable state of affairs. This compilation therefore, is an effort to provide a guide that will encourage all those involved in agricultural extension work to conduct research. It is targeted at field extension personnel who by the nature of their work sit on a large amount of valuable agricultural extension data that hitherto are not collected, analyzed and reported. It is also designed to serve the need and meet the challenges of junior and senior academics who not only share the responsibility of teaching research methods and statistics as a course at undergraduate and postgraduate levels, but also, must conduct research to advance knowledge in agricultural extension. This is not a text book on research methods and statistics, it does not address the conceptual and theoretical underlining of the methods and statistics presented, rather, it provides guidelines on how to use these methods and statistics.

This guide is a follow up to the first edition titled “Research Methods in Agricultural Extension” published in 2004. The presentation of material in this edition is markedly different from that of the first edition in that emphasis is placed on how to do, leading the user through the step by step process of planning, data collection, analyzing and reporting research. The authors are persons in the field of agricultural extension and the examples are drawn from their practical field experiences. However the material presented will be useful to practitioners and scholars in others fields of knowledge. The text contains 22 chapters.

Chapter one presents a detailed guide to identifying and defining a research problem, providing examples of what is and what is not a research problem. Chapter two discusses the conceptualization and operationalization of variables in research, providing examples of how a variable can be practically understood and measured. Research designs and their application and relevance in agricultural extension are presented in chapter three. Data sampling techniques are discussed in chapter four. Methods of conducting participatory research in agricultural extension, the use and relevance of specific participatory tools are presented in chapter five. Chapter six explains the methods of collecting data in agricultural extension research. A step by step process of writing research report in agricultural extension is presented in chapter seven. Chapter eight introduces the reader to tools for online collaboration in conducting and reporting research. A detailed description of the use of Geographic Information Systems and Spatial Analysis in agricultural extension research is presented in chapter nine with examples.

In chapter ten the reader is introduced step by step to the Use of Statistical Product and Service Solution (SPSS) software for statistical analysis in agricultural extension research. Chapter eleven presents the guide that will enable the reader use charts and graphs in reporting agricultural extension data. Application of measures of central tendency in presenting extension data is presented in chapter twelve. How to use the Chi-square statistics in analyzing and presenting data is presented in chapter thirteen.

Chapter fourteen guides you on the use of t-test to compare the mean of two groups for small size of respondents, while chapter fifteen presents a similar statistics, the Z-test Analysis suitable for larger samples. Chapter sixteen guides you on the use of Analysis of Variance (ANOVA) to compare means when the groups are more than two.

The use of correlation analysis to determine the extent and direction of relationship between variables is presented in chapter seventeen. Chapter eighteen presents the use of linear regression which enables the researcher to understand the rate at which variation in the dependent variable can be explained by the variations in one or more independent variables. Similarly, guides on the use of other variants of regression analysis based on the nature and level at which the dependent variable and independent variables are collected are presented. These include the application of Discriminant Function Analysis (chapter nineteen), application of the Logit Regression Analysis (chapter twenty),

use of the Probit Regression Analysis (chapter twenty one), and use of the Tobit Regression Analysis (chapter twenty two).

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