



Analysis of ‘Toll Free Agricultural Advisory Service’ Data as a Decision Support Tool For the Department of Agriculture

N.C. Rajapaksha

(Reg. No.: MS19804798)

M.Sc. in IT

Specialized in Information Technology

Supervisor: Ms. Nilushi Dias

November 2021

<26336>

**Department of Computer Science
Faculty of Graduate Studies and Research
Sri Lanka Institute of Information Technology**

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Abbreviations

- ADA - Assistant Director of Agriculture
- BIS - Business Intelligence Systems
- CART - Classification and Regression Tree
- DOA - Department of Agriculture
- DST - Decision Support Tool
- DV - Dependent Variable
- DW - Durbin Watson
- ECA - Event-Condition-Action-based
- FYM - Farmyard Manure
- GIS - Geographical Information System
- HM - Heavy Metal
- ICT - Information and Communication Technology
- ICTA - Information and Communication Technology Assistant
- ICTO - Information and Communication Technology Officer
- IS - Information System
- IV - Independent Variable
- KCC - Kisan Call Centers
- MIM - Mother International Migration
- MV - Monetary Value
- OLAP - On-Line Analytical Processing
- OM - Organic Matter
- RDF - Recommended Dose of Fertilizer
- RMI - Remote-Method-Invocation-based
- RSM - Response Surface Methodology
- SOC - Soil Organic Carbon
- SPSS - Statistical Package for Social Science
- SYI - Sustainable Yield Indexes
- TOT - Transfer of Technology
- WPM - Woody Plant Medium

Declaration

I hereby declare that to the best of my knowledge, this submission is my own work and it neither contains direct material previously published nor written by another person or material, which to substantial extent, has been accepted for the award of any other academic qualification of a university or other institute of higher learning except where acknowledgement is made in the text.

Certified by

Signature : 

Date : 10th December 2021

Name of Supervisor :

Signature :

Date :

Acknowledgement

First and foremost, I would like to express gratitude to my Supervisor. Ms. Nilushi Dias (SLIIT) for her time, knowledge and effort to make this assignment better.

I would like to thank my external supervisor Mr. Dineth Rangoda (DoEA) about bringing me an idea to do research like this.

I also would like to thank Dr. Anuradha Jayakody (SLIIT) because of his wisdom to finish this assignment with quality and on time.

I kindly acknowledge Mr. T. Kamiss (ADA) for his time, information and for his supportiveness. Next, I would like to mention Mr. Prasad Bandara (ICTO) and Mr. Damith Abeyrathne (ICTA) for their support. In addition, I would want to express my gratitude to Mr. Hiran Peiris (Director-NAICC) for facilitate the work with 1920 call center.

I would like to express to my friends. Ms. Kanishka Jayasekara (ICTA) and Ms. Hasanthi Kulawansha (ICTA) for all their support during this work.

Finally, I would like to thank to my relative Mrs. Priyanthi Gunasinghe about proofreading for quality of tone and style of this document.

Abstract

Toll-Free Agricultural Advisory Service of the Department of Agriculture named as “Govi Sahana Sarana” was established in the year 2006 with the 1920 short code and connected to all of Sri Lanka's land and mobile telephone service providers. Farmers and other stakeholders were enabled to directly contact technical officers (Agricultural Instructors) utilizing this short code. All information was entered into the 1920 call center database manually. Monthly statistics that were generated in the 1920 database were then summarized into a tabular format using Microsoft Excel and distributed to top management of the Department of Agriculture. Top management was assumed to make decisions based on analytics of the content of these reports. Farmers all over the island bring their agricultural problems to 1920 Agricultural Advisory Service. Those may be different types of agricultural problems. These farmers' problems can be identified into several major categories. However, it can be seen that they do not analyze these problems and give solutions to farmers at that moment only. If so analyses, that big data can benefit in the future on a vast scale at the national level. This study for carrying out to explore the possibility of introducing a decision support for 1920 reporting system to generate enhanced analytics and to make it easier to make informed decisions by the top management of DOA, more efficiently and effectively than the reporting method previously. First, a basic preliminary analysis was performed. Preparing it for further analysis, edited dataset was into describe the main features of the data and summarize the results. Results of the frequency analysis had been obtained. Accordingly, the districts with the highest number of problems were found. It was also possible to find out which category received the most problems. It was also found out from which district the problems related to that category were received the most. Quantitative and qualitative approaches were used to achieve the objectives to do this research. The topic covered include measurement scales, data types and analysis methods. Then, a Regression Model was built using SPSS statistics software. It was able to make predictions related to farmers' problems. It provides probabilistic conspiracies and other basic descriptive statistics of data, such as mean, standard deviation and so on. There is used validation methods to select the best model. That is the Normal Probability Plot and R Square. It is used these validation methods to select the best model. The results of this analysis can be used as a decision support tool for the Department of Agriculture at the national level. That means, results can be made basing on how the Independent variables respond to the dependent variable, which is very helpful on the decisions of the Department of Agriculture.