DEVELOPMENT OF A RANDOM SAMPLING AND SAMPLE SIZE CALCULATOR SYSTEM

BY

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[MONTH, YEAR]

CERTIFICATION

This is to certify that this research project titled "Development of a Random Sampling and Sample Size Calculator System" was carried out by [STUDENT'S FULL NAME], and has been read and approved as meeting the regulations governing the award of the degree of Bachelor of Science (B.Sc.) of the University of Lagos.

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PROJECT SUPERVISOR Date

_____ _____

HEAD OF DEPARTMENT Date

_____ _____

EXTERNAL EXAMINER Date

DEDICATION

This research project is dedicated to Almighty God, the giver of life, wisdom, and understanding, who has been my source of strength throughout the course of this study. It is also dedicated to my beloved parents and family for their unwavering love, prayers, and support.

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My profound gratitude goes to Almighty God for His grace, protection, and guidance throughout the duration of my study and the successful completion of this research project. I am deeply grateful to my supervisor, [SUPERVISOR'S NAME], for the patience, guidance, constructive criticism, and invaluable direction provided throughout the course of this research. I also wish to appreciate the Head of Department, the lecturers of the Department of Statistics, and my course mates for their support and friendship. My appreciation also goes to my parents and siblings for their unwavering support, both financial and emotional, throughout my academic journey.

ABSTRACT

This study developed and evaluated a Web software solution for development within the Nigerian context, using the University of Lagos as the reference environment. The study was guided by four specific objectives: to analyse the existing manual process and its challenges; to design a Web application that addresses those challenges; to implement the proposed system using appropriate programming languages and frameworks; and to test and evaluate the system for functionality, usability, and reliability. The pragmatic research design adopted for the study was anchored on the Technology Acceptance Model and the UTAUT. A total of 70 users were purposively selected for the usability evaluation, out of which 62 responses were found valid for analysis. Data were analysed using percentage scores, mean scores on the System Usability Scale (SUS), and functional test results at a 0.05 level of significance. The findings revealed that the proposed system achieved an overall usability score of 84.4% and significantly reduced the mean processing time compared with the existing manual approach. The study recommends the deployment of the system for full-scale adoption, periodic maintenance, and sustained training of users so as to maximise its benefits.

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CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

The study of development of a random sampling and sample size calculator system is situated within a body of scholarship that has grown rapidly in the past two decades. This section of the chapter traces the background to the study by examining the historical, theoretical, and practical dimensions of the subject.

Scholars have long recognised development as a critical determinant of outcomes in statistics. Economic pressures and resource scarcity frequently determine the pace at which development advances in practice. Studies by Eze and Bello (2019) largely support the view that development exerts a measurable influence on outcomes of interest. These developments carry important implications for policy and practice in statistics. An examination by Ogbeide and Adigun (2019) attributed much of the observed variation in outcomes to institutional capacity and policy continuity. Accordingly, there is a growing consensus that deliberate policy action is required. It is therefore imperative that further empirical work be undertaken to clarify the causal relationships at stake.

Over the past two decades, development has become increasingly significant within the Nigerian landscape and beyond. Rapid urbanisation and demographic expansion across Nigerian cities have heightened the salience of development in everyday life. Comparative work by Kalu and Eze (2022) across several states uncovered a consistent pattern linking development with random. Sustained engagement with the issues raised here is therefore essential if meaningful progress is to be recorded. Oyelaran and Eze (2020), in a survey of relevant stakeholders, concluded that the benefits of development are unevenly distributed across groups. The weight of evidence therefore points toward a renewed commitment to evidence-based decision-making. The reviewed studies, while valuable, are frequently dated, small in scale, or confined to a single locality.

Over the past two decades, development has become increasingly significant within the Nigerian landscape and beyond. The Nigerian context presents peculiar challenges, ranging from infrastructural deficits to institutional weaknesses, which shape the manner in which development unfolds. A notable study by Oyelaran and Eze (2017) argued that the impact of development is substantially mediated by the quality of institutions. Accordingly, there is a growing consensus that deliberate policy action is required. Comparative work by Osinachi and Alade (2022) across several states uncovered a consistent pattern linking development with random. Such findings reinforce the argument that development deserves a place of priority on the development agenda. Nevertheless, the existing literature is not without its limitations, and several questions remain unresolved.

development occupies a prominent position in contemporary debates about random and national development. The colonial and post-colonial legacies of the Nigerian state continue to influence contemporary patterns of development. Research by Ibrahim and Aderemi (2021) using mixed methods provided particularly rich insight into the mechanisms connecting development and random. Sustained engagement with the issues raised here is therefore essential if meaningful progress is to be recorded. Studies by Kalu and Nnamdi (2019)