

DESIGN OF A PROBABILITY DISTRIBUTION SIMULATOR AND LEARNING PLATFORM

BY

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BEING A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF STATISTICS, FACULTY OF
SCIENCE, UNIVERSITY OF LAGOS, AKOKA, LAGOS STATE

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF SCIENCE (B.Sc.)
DEGREE IN STATISTICS

[MONTH, YEAR]

CERTIFICATION

This is to certify that this research project titled "Design of a Probability Distribution Simulator and Learning Platform" 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.

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.

ACKNOWLEDGEMENT

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 design 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 78 users were purposively selected for the usability evaluation, out of which 75 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 88.4% 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 design of a probability distribution simulator and learning platform 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.

design continues to command considerable attention among researchers, policymakers, and practitioners in statistics. Rapid urbanisation and demographic expansion across Nigerian cities have heightened the salience of design in everyday life. Longitudinal research by Olawale and Adekunle (2016) revealed that sustained attention to design yields appreciable dividends over time. The cumulative effect of these dynamics is a situation that demands urgent and coordinated intervention. A notable study by Adebayo and Aderemi (2017) argued that the impact of design is substantially mediated by the quality of institutions. Accordingly, there is a growing consensus that deliberate policy action is required. Nevertheless, the existing literature is not without its limitations, and several questions remain unresolved.

The phenomenon of design, while not new, has acquired fresh analytical urgency in Nigeria. Auxiliary variables, including education, income, and location, further condition how design is experienced across communities. Findings reported by Dauda and Bakare (2018) observed that respondents with greater exposure to design recorded markedly different results. Left unaddressed, the identified patterns are likely to intensify, with adverse consequences for all stakeholders. Findings reported by Adeniyi and Ogunlana (2018) observed that respondents with greater exposure to design recorded markedly different results. For practitioners, the practical significance of design cannot be overstated, given its demonstrable link with probability. It is therefore imperative that further empirical work be undertaken to clarify the causal relationships at stake.

design continues to command considerable attention among researchers, policymakers, and practitioners in statistics. Evidence from national agencies indicates that design has grown considerably in recent times, underscoring the need for systematic inquiry. Research by Adeniyi and Ogunlana (2021) using mixed methods provided particularly rich insight into the mechanisms connecting design and probability. The practical import of these findings extends well beyond the academic sphere into everyday institutional practice. Studies conducted within the West African subregion by Kalu and Ogunlana (2018) reached conclusions broadly consistent with the Nigerian evidence. Sustained engagement with the issues raised here is therefore essential if meaningful progress is to be recorded. The reviewed studies, while valuable, are frequently dated, small in scale, or confined to a single locality.

The relationship between design and probability has been the subject of sustained academic interest across several disciplines. The socio-cultural diversity of Nigeria implies that responses to design must be differentiated rather than uniform. Studies conducted within the West African subregion by Oyelaran and Adebayo (2018) reached conclusions broadly consistent with the Nigerian evidence. Accordingly, there is a growing consensus that deliberate policy action is required. Empirical evidence from Eze and Adeniyi (2021)