

DESIGN AND IMPLEMENTATION OF A GENERATOR FUEL AND MAINTENANCE LOG SYSTEM

BY

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[MONTH, YEAR]

CERTIFICATION

This is to certify that this research project titled "Design and Implementation of a Generator Fuel and Maintenance Log 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.

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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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 Signal Processing Theory and the Power System Stability Theory. A total of 64 users were purposively selected for the usability evaluation, out of which 54 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 85.4% 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 and implementation of a generator fuel and maintenance log 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.

In both global and African literatures, design is now regarded as a key index of institutional performance. Economic pressures and resource scarcity frequently determine the pace at which design advances in practice. Findings reported by Adeniyi and Oyelaran (2018) observed that respondents with greater exposure to design recorded markedly different results. The practical import of these findings extends well beyond the academic sphere into everyday institutional practice. Umeh and Dauda (2020), in a survey of relevant stakeholders, concluded that the benefits of design are unevenly distributed across groups. For practitioners, the practical significance of design cannot be overstated, given its demonstrable link with implementation. The reviewed studies, while valuable, are frequently dated, small in scale, or confined to a single locality.

In both global and African literatures, design is now regarded as a key index of institutional performance. The colonial and post-colonial legacies of the Nigerian state continue to influence contemporary patterns of design. Adigun and Adekunle (2020), in a survey of relevant stakeholders, concluded that the benefits of design are unevenly distributed across groups. These observations collectively invite a reconsideration of standard assumptions regarding implementation. Comparative work by Chukwu and Eze (2022) across several states uncovered a consistent pattern linking design with implementation. The weight of evidence therefore points toward a renewed commitment to evidence-based decision-making. A recurring weakness in the literature concerns the difficulty of isolating the precise influence of {k0} from confounding factors.

In both global and African literatures, design is now regarded as a key index of institutional performance. Public institutions at the federal, state, and local levels have developed programmes that seek to mainstream design into routine governance. Empirical evidence from Chukwu and Eze (2021) suggests that positive developments in implementation are associated with improvements in design. The weight of evidence therefore points toward a renewed commitment to evidence-based decision-making. An examination by Adebayo and Ogunlana (2019) attributed much of the observed variation in outcomes to institutional capacity and policy continuity. These observations collectively invite a reconsideration of standard assumptions regarding implementation. A recurring weakness in the literature concerns the difficulty of isolating the precise influence of {k0} from confounding factors.

The relationship between design and implementation has been the subject of sustained academic interest across several disciplines. The Nigerian context presents peculiar challenges, ranging from infrastructural deficits to institutional weaknesses, which shape the manner in which design unfolds. Research by Adebayo and Salami (2021) using mixed methods provided particularly rich insight into the mechanisms connecting design and implementation. For practitioners, the practical significance of design cannot be overstated, given