

DESIGN AND IMPLEMENTATION OF A CONSTRUCTION EQUIPMENT HIRING MANAGEMENT SYSTEM

BY

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[MONTH, YEAR]

CERTIFICATION

This is to certify that this research project titled "Design and Implementation of a Construction Equipment Hiring Management 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 Structural Load Theory and the Soil Mechanics Theory. A total of 70 users were purposively selected for the usability evaluation, out of which 66 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 86.0% 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 construction equipment hiring management 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.

Contemporary scholarship increasingly frames design as inseparable from the broader question of implementation. Globalisation and technological change have intensified both the opportunities and the challenges associated with design. Empirical evidence from Adebayo and Bakare (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. Studies by Ekwueme and Ogunlana (2019) largely support the view that design exerts a measurable influence on outcomes of interest. Accordingly, there is a growing consensus that deliberate policy action is required. Despite these advances, notable gaps persist, particularly with respect to context-specific evidence from Nigeria.

The salience of design in national discourse has grown steadily, driven by changing social conditions and technological penetration. Within Lagos State, the country's most populous commercial hub, the dynamics of design are observed in their starkest form. An examination by Oyelaran and Osinachi (2019) attributed much of the observed variation in outcomes to institutional capacity and policy continuity. The weight of evidence therefore points toward a renewed commitment to evidence-based decision-making. Studies conducted within the West African subregion by Alade and Musa (2018) reached conclusions broadly consistent with the Nigerian evidence. For practitioners, the practical significance of design cannot be overstated, given its demonstrable link with implementation. Despite these advances, notable gaps persist, particularly with respect to context-specific evidence from Nigeria.

Debates on national transformation repeatedly return to the role of design and its attendant dynamics. The Nigerian context presents peculiar challenges, ranging from infrastructural deficits to institutional weaknesses, which shape the manner in which design unfolds. Alade and Musa (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. Studies by Olawale and Bamgbose (2019) largely support the view that design exerts a measurable influence on outcomes of interest. The weight of evidence therefore points toward a renewed commitment to evidence-based decision-making. Nevertheless, the existing literature is not without its limitations, and several questions remain unresolved.

Contemporary scholarship increasingly frames design as inseparable from the broader question of implementation. Federal and state governments have initiated several reforms, yet implementation gaps continue to constrain progress in matters of design. Research by Olawale and Aderemi (2021) using mixed methods provided particularly rich insight into the mechanisms connecting design and implementation. The