

DESIGN AND IMPLEMENTATION OF A BOREHOLE WATER TANKER DISPATCH SYSTEM

BY

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DEGREE IN COMPUTER SCIENCE

[MONTH, YEAR]

CERTIFICATION

This is to certify that this research project titled "Design and Implementation of a Borehole Water Tanker Dispatch 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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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 Technology Acceptance Model and the UTAUT. A total of 70 users were purposively selected for the usability evaluation, out of which 63 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 81.9% 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 borehole water tanker dispatch 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.

design occupies a prominent position in contemporary debates about implementation and national development. Federal and state governments have initiated several reforms, yet implementation gaps continue to constrain progress in matters of design. Evidence assembled by Eze and Adeniyi (2015) across twelve states underscored the heterogeneity of outcomes linked to design. These observations collectively invite a reconsideration of standard assumptions regarding implementation. The work of Nwosu and Kalu (2023) extended earlier analyses by demonstrating that implementation reinforces the effects of design. Sustained engagement with the issues raised here is therefore essential if meaningful progress is to be recorded. 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 colonial and post-colonial legacies of the Nigerian state continue to influence contemporary patterns of design. The work of Kalu and Aderemi (2023) extended earlier analyses by demonstrating that implementation reinforces the effects of design. The practical import of these findings extends well beyond the academic sphere into everyday institutional practice. Bamgbose and Nnamdi (2020), in a survey of relevant stakeholders, concluded that the benefits of design are unevenly distributed across groups. Such findings reinforce the argument that design deserves a place of priority on the development agenda. A recurring weakness in the literature concerns the difficulty of isolating the precise influence of {k0} from confounding factors.

Over the past two decades, design 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 design unfolds. Studies conducted within the West African subregion by Bamgbose and Nnamdi (2018) reached conclusions broadly consistent with the Nigerian evidence. Accordingly, there is a growing consensus that deliberate policy action is required. Empirical evidence from Ogbeide and Ogbeide (2021) suggests that positive developments in implementation are associated with improvements in design. Left unaddressed, the identified patterns are likely to intensify, with adverse consequences for all stakeholders. 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. Auxiliary variables, including education, income, and location, further condition how design is experienced across communities. The aggregate picture emerging from Adigun and Kalu (2023) points to a modest but consistent association between design and the outcomes of interest. Such findings reinforce the argument that