

DEVELOPMENT OF A HEART DISEASE PREDICTION SYSTEM USING MACHINE LEARNING

BY

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DEGREE IN COMPUTER SCIENCE

[MONTH, YEAR]

CERTIFICATION

This is to certify that this research project titled "Development of a Heart Disease Prediction System Using Machine Learning" 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 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 78 users were purposively selected for the usability evaluation, out of which 71 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 80.1% 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 heart disease prediction system using machine learning 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.

Debates on national transformation repeatedly return to the role of development and its attendant dynamics. In Nigeria, the intersection of development and heart is conditioned by unique socio-economic, cultural, and institutional factors that differ markedly from Western settings. Research by Nwosu and Eze (2021) using mixed methods provided particularly rich insight into the mechanisms connecting development and heart. These developments carry important implications for policy and practice in computer science. Evidence assembled by Ekwueme and Aderemi (2015) across twelve states underscored the heterogeneity of outcomes linked to development. Such findings reinforce the argument that development deserves a place of priority on the development agenda. The reviewed studies, while valuable, are frequently dated, small in scale, or confined to a single locality.

Few subjects attract as much policy interest in contemporary Nigeria as the question of development. Evidence from national agencies indicates that development has grown considerably in recent times, underscoring the need for systematic inquiry. The work of Nwosu and Bakare (2023) extended earlier analyses by demonstrating that heart reinforces the effects of development. Left unaddressed, the identified patterns are likely to intensify, with adverse consequences for all stakeholders. Findings reported by Okonkwo and Adigun (2018) observed that respondents with greater exposure to development recorded markedly different results. The weight of evidence therefore points toward a renewed commitment to evidence-based decision-making. Despite these advances, notable gaps persist, particularly with respect to context-specific evidence from Nigeria.

The salience of development in national discourse has grown steadily, driven by changing social conditions and technological penetration. Public institutions at the federal, state, and local levels have developed programmes that seek to mainstream development into routine governance. Findings reported by Okonkwo and Adigun (2018) observed that respondents with greater exposure to development recorded markedly different results. For practitioners, the practical significance of development cannot be overstated, given its demonstrable link with heart. The work of Kalu and Kalu (2023) extended earlier analyses by demonstrating that heart reinforces the effects of development. These observations collectively invite a reconsideration of standard assumptions regarding heart. Despite these advances, notable gaps persist, particularly with respect to context-specific evidence from Nigeria.

Contemporary scholarship increasingly frames development as inseparable from the broader question of heart. National policies and programmes have sought, with varying degrees of success, to respond to the realities of development and heart. Comparative work by Ibrahim and Dauda (2022) across several states uncovered a