**CHAPTER TWO**

**Literature Review**

**2.1 Introduction**

This chapter aims to explain how the topic under research relates to prior research, current practice, or other areas of knowledge by mentioning relevant works by other scholars that have dealt with a related issue. Furthermore, this chapter will present a synthesis of the current research on the issue, highlighting areas of agreement, disagreement, and gaps in the literature, to show the relevance of the project topic in the field and to recommend opportunities for future study.

**2.2 Literature Review**

Oliha et al. (2019). An Electronic Birth Record Management System for Nigeria

Nigeria currently has a centralized Civil Registration and Vital Statistics (CRVS) system with no effective ways of detecting fake birth certificates or contradicting birth records. Due to a large number of birth registration centers with varied certificate looks, textures, and signatures, detecting counterfeit birth certificates or contradicting birth records in Nigeria is now very impossible. The unpleasant consequence of such a birth registration system is the dependence on erroneous data for national resource allocation, planning, and immigration control. This highlights the importance of an electronic birth record management system in Nigeria.

The Sublime Text Integrated Development Environment (IDE) was used in the development of the prototype civil system - a text development environment for creating script files such as PHP and markup files such as HTML. To make the system more appealing, Bootstrap was utilized as a foundation for creating a CSS/HTML layout library, while JavaScript was used to create the system's interactive interface and form validation.XAMPP (Cross-Platform (X), Apache (A), MySQL (M), PHP (P), and Perl (P)) was used as a local server to test the system using a structured query language and MySQL for database administration.

Season Affective Disorder (SAD) research approach was used. The following were the results of the interviews:

1. Individual birth information verification (retrieval) is grossly inefficient, unreliable, and expensive.
2. No means of checking duplicate birth registration/records of individuals.
3. Birth records were prone to alteration, theft, destruction, or disappearance.
4. Birth registration and record maintenance are manual.
5. Third parties (e.g., schools, hospitals, immigration agents, etc.) do not have direct access to birth information;

This study revealed the shortcomings of Nigeria's current civil birth registration and record management system. It created a working prototype of an electronic birth record management system. The system enables fast verification of Nigerians’ birth records and is capable of detecting problems such as birth information tampering, theft, destruction, duplication, and fabrication. When fully implemented, this method will thereby reduce birth information fabrication in Nigeria.

Ojokoh and Afolayan. (2017). E-birth Registration and Certificate Issuance System.

During the course of this research, it was learned through oral interviews with birth registrars in the NPC office of Akure South Local Government, Ondo State, Nigeria, that birth certificate collations and registrations were done manually, and that gathering information about the registrant is stressful due to the large collection of files. The above limitations have necessitated the development of a web-enabled registration and issuance system.

Over time, several software development strategies, approaches, models, and techniques have been used to create the software (both generic and customized). The system in this study is built on a three-tier design.

1. The back end, which is controlled by the MySQL Database Management System, holds all non-visible information on the website.
2. The middle end is defined by web servers such as Apache Web Server, MySQL DBMS, and PHP (WAMP) server.
3. The front end is comprised of HTML (HyperText Markup Language), CSS (Cascading Style Sheet), JQuery, and Java Scripts.

The establishment of an e-birth certificate issuing system will allow applicants to register for their birth without having to travel to a specific zone or location and to obtain the certificate immediately over the internet. It will also provide another channel for the nation to generate a citizen population without the need for another census program since monthly data gathering can be simply done and acquired successfully and efficiently.

The system was evaluated using data that was readily available. However, the system's security will be evaluated as a future study issue.

Sonali (2021). Online Birth Registration & Certification System.

The conventional technique of birth registration is human examination. Manual birth registration is complicated and inefficient in the face of rapid population growth. The expense of registering a child, the loss of the registration certificate by the parent and child, and erroneous population numbers are all potential consequences of inaccurate birth registration data. Birth registration became an urgent issue as a result of the difficulties encountered in obtaining accurate population statistics, which are essential in any government's social service planning and in ensuring that adequate resources and budgets are made available to address the needs of the populace.

The current system was built using Microsoft Visual Studio, which is used to develop computer programs for Microsoft Windows as well as web pages, online applications, and web services. Furthermore, in the system, we employed MySQL, a structured query language for data storage, and XAMPP, one of the most frequently used cross-platform web servers, which allows developers to construct and test their applications on a local webserver. PHP, a server-side scripting language, is the back-end language for creating the interface we picked. For the user interface, HTML, JavaScript, AJAX, and JQUERY are used. Because this project is a method ofproblem-solving and meeting requirements that has a good and long-term influence.

Birth registration and subsequent certificate issuing not only promotes human rights to citizenship, but also to good health, education, social security, and general human development. As a result, timely child registration should be pushed as a right problem. This study discovered that a high level of birth registration was associated with a high degree of birth registration awareness among the urban population. However, the results of this study appear to indicate that it is more of a benefit for children whose parents are educated, rich and reside in cities.

Khandagale, et al. (2022). Web Base Online Birth Registration and Certification System

The goal of this suggested endeavour is to provide a remedy to the existing situation with birth registration. To address the issues and challenges that residents have while registering their births and negotiating with government officials here and there for the certificate. As a result, the person may obtain the certificate quickly and simply, saving both himself and the government time.This encourages more effective and can be readily taken utilizing the online system and effective data collection, storage becomes easy and administration of paper certificate becomes easy and we can acquire it online.

Over time, additional software development processes, approaches, models, and techniques were used to create the software (both generic and customized). The system in this study is built on a three-tier design, with MySQL serving as the backend. The middle end is identified by web servers such as Apache, MySQL, and PHP (WAMP), whereas the front end is implemented using HTML (HyperText Markup Language), CSS (Cascading Style Sheet), JQuery, and Java Scripts.

The proposed system encourages more efficient data collecting, simplifies storage, and allows for online credential maintenance. This initiative would also provide funds for national planning by monitoring the growth or decline in the birth rate, and we would be able to prepare for the young based on these citizens. Population forecasting may be done by running reports from the system and designing charts to gain rapid insights.

Oshomoh. (2017). Design and Implementation of an Online National Databasefor Birth and Death Registration (A Case Study of NationalPopulation Commission, Benin City).

The current system was found to employ a manual approach for birth and death registration. The information is gathered on an A4 sheet of paper divided into five areas. Each part comprises information on the child, mother, father, informant, and registrar. The obtained data is subsequently forwarded monthly to the National Population Commission (NPC) headquarters. This necessitates significant resources at the state level in terms of employees, equipment, and storage space for these records. As a result, birth and death registration in Nigeria is still manual. This procedure has various downsides, including delays in data transfer from the location of birth or death to the NPC, keying mistakes, data duplications, and inconsistencies.

The system includes a user-friendly interface that makes it simple for all users to utilize. The client-side will be developed in HTML (Hyper Text Mark-Up Language) and accessed using a web browser, whilst the middleware program will be implemented in PHP (Hypertext Pre-processor), a sophisticated computer language used to create dynamic and interactive Web sites. PHP is a programming language that runs on a server. PHP was chosen because of its simplicity of connection and manipulation with several databases. MySQL will also be utilized to assist decrease data redundancy and regulate security by establishing permission levels where only defined users may add, remove, and update data.

The advantages of adopting an online database for birth and death registration cannot be overstated. This is because the technology will speed up the production of birth and death certificates, improve registration correctness, eliminate incidents of misplaced individual files, and decrease paper pileups in offices.

Pelumi. (2016). Development of a Web Application for Birth and Death Certificate Request.

As a result of the difficulties encountered in obtaining accurate population statistics, which are essential in social service planning for any government, and in ensuring that adequate resources and budgets are made available to address the needs of the population, childbirth and death registration became an issue of paramount importance. Access to civil registry services is difficult, as is the expense of registering a birth or death, as are great distances to registration centres, and the loss of a registration certificate. Furthermore, many people do not prioritize child-birth and death registration because they are preoccupied with a variety of other everyday issues.

The study is conducted via the internet and journals. The waterfall approach will be used for this project's requirements analysis, design, implementation, testing, integration, and maintenance. The system's functionality is represented by the Use Case, Data Flow Diagram, Entity-Relational Diagram, and Entity-Relationship Diagram. PHP, Bootstrap web template, MySQLi, Xammp Server, and Notepad++ will be used to implement the project. PHP was utilized in the software development since it supports relational DBMS features such as file manipulation and relational capability.

This project was undertaken due to the need for citizens to apply for birth and death certificates, which allows the National Population Commission to keep track of citizens' birth and death records, resulting in the development of a web-based application that allows citizens to apply for birth or death certificates, pay online, and receive the certificate in pdf format.

**2.3 Summary of Related Literature Reviews**

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| **Author &Year** | **Title & Description** | **Merit and Demerits** |
| Oliha et al. (2019). | An Electronic Birth Record Management System for Nigeria  This paper developed an electronic birth registration system to manage birth records throughout many registration centers in Nigeria. | Any  birth information can be checked to checkmate  falsification irrespective of its registration center.  The proposed system is yet to be deployed. |
| Ojokoh and Afolayan. (2017). | E-birth Registration and Certificate Issuance System.  This study presents a web-based birth registration and certificate issuing platform that will aid government authorities in terms of speeding up the child-birth registration procedure, lowering the cost of registering a kid, and storing registration records for future use. | The system aided in keeping track of the nation's population in terms of gender, children, and adults.  The system might possess security issues as was suggested for future research. |
| Sonali (2021). | Online Birth Registration & Certification System.  The proposed web-based birth certificate system results in an easily and internationally accessible system, which speeds up the birth certificate issuance procedure. | The system minimized paperwork for birth applications.  An Internet connection is a must. Lack of network can create problems |
| Khandagale, et al. (2022). | Web Base Online Birth Registration and Certification System.  The system provides a simple method to register and acquire a birth certificate from anywhere and at any time. | This initiative would also provide funds for national planning  The system is a privilege for children whose parents are educated and elite. |
| Oshomoh (2017). | Design and Implementation of an Online National Databasefor Birth and Death Registration.  The system tends to provide solutions to present challenges in birth and death registration, promoting a more effective and efficient data gathering, storage, processing, and retrieval approach. | Data consistency and data security were achieved.  Deep technical know-how is needed to operate the system. |
| Pelumi (2016). | Development of a Web Application for Birth and Death Certificate Request.  The project is intended to create a website where citizens can request birth and death certificates. | The system provided improved efficiency in obtaining certificates in a digital format.  The system was not deployed to maximize its efficiency. |

**2.4 Analysis of the Current System**

The current system of manual system of birth registration and issuance involves a process in which the information about a person's birth is recorded and a physical document, such as a birth certificate, is issued to prove their identity and age. This system is often used in countries or regions where there is a lack of access to electronic databases or advanced technology.

There are several potential advantages to using a manual system of birth registration and issuance. For example, it can be relatively simple and cost-effective to implement and maintain, especially in resource-limited settings. It may also be more secure and less prone to errors or tampering compared to electronic systems.

There are several problems inherent in the manual system of birth registration and issuance that can impact on its effectiveness and efficiency. Some of these problems include:

1. **Time-consuming and labor-intensive process**: Manually recording and issuing documents can be a slow and time-consuming process, especially if there is a large volume of requests. This can lead to delays in issuing documents and can be frustrating for individuals seeking to obtain them.
2. **Inaccurate and incomplete records**: The manual system can be prone to errors and omissions, as it relies on paper records that can be lost or damaged over time. This can make it difficult to maintain accurate and complete records, which can have negative impacts on the reliability of the system.
3. **Vulnerability to corruption**: Manual systems may rely on manual processes and subjective decision-making, which can make them more vulnerable to corruption. This can result in documents being issued to individuals who are not entitled to them, or in the abuse of power by those responsible for issuing the documents.
4. **Limited accessibility**: The manual system may be less accessible to some individuals, especially those who live in remote or rural areas that are far from the issuing authorities. This can make it difficult for these individuals to obtain the documents they need to prove their identity or age.

Overall, the manual system of birth registration and issuance can be a useful tool for recording and proving identity and age in certain circumstances, but it has limitations and may not be the most efficient or effective option in all cases.

**2.5 Analysis of the Proposed System**

The proposed central e-birth registration and issuance system is an electronic system for recording and issuing documents related to an individual's birth, such as a birth certificate. This system would likely involve the use of digital databases and advanced programming languages (python, Django) to store and manage records and to issue documents electronically.

There are several potential advantages to using a central e-birth registration and issuance system. For example:

1. **Increased efficiency**: Electronic systems can be faster and more efficient than manual processes, as they can process and issue documents more quickly and with fewer errors.
2. **Improved accuracy and completeness of records**: Digital databases can store and manage records more accurately and securely than paper-based systems, which can reduce the risk of errors or omissions.
3. **Greater accessibility**: Electronic systems can be accessed remotely, which can make it easier for individuals to obtain the documents they need, regardless of their location.
4. **Reduced vulnerability to corruption**: Electronic systems can be more transparent and less prone to corruption, as they can be designed to prevent fraud or abuse and to track the issuance of documents.

Overall, the proposed central e-birth registration and issuance system has the potential to improve the efficiency, accuracy, and accessibility of birth registration and document issuance processes. However, it will also require significant investments in terms of cost, infrastructure, and capacity-building in order to be successful.

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