**CHAPTER II**

**REVIEW OF RELATED LITERATURE AND STUDIES**

Business owners have learned to adapt and rely on computers to manage various aspects of their operations. Thanks to today's technological breakthroughs, such as payroll systems, staff management systems, point of sale systems, and inventory management systems. These programs take the role of manual tasks and deliver precise data with lower rates of error. Inventory management systems in particular have a significant impact on business management and are significant in this research. A computerized inventory system aids in effectively managing transactions that revolve around the controlling levels of stock in a business. The researchers, therefore, looked at related studies on inventory management systems. The reviews discussed below would support and be used as a reference point for one or more aspects of the current system.

A research study conducted **[Arudkar et al. 2020]** focuses on the development of a poultry farm management system that leverages technology-based solutions in farming. The study aimed to utilize the poultry farm data, monitor production, and modify it by accepting and providing services online. To address this issue, the researchers employed a cloud-based poultry farm system that utilizes data scaling to evaluate the vast amounts of data from the poultry farm. Their system has served as a reference for acquiring, transmitting, storing, and managing information, and uploading data to the cloud database, which enhances the system's flexibility and scalability. Additionally, the system integrates a poultry medicine administration module in its interface which has also been integrated in the proposed study. In summary, the current study has utilized a cloud-based management system to address the challenges of poultry farming and improve production efficiency.

A study proposed by **[Chen et al. 2016]** integrated cloud-based data management system (CDMS). The cloud-based data management in monitoring egg production implements these strategies to monitor their egg production and chicken production module, which solves the handling of periodic service requests that a computer system uses, as well as the need for the traditional pen and paper. The data is first stored in the database and file system on the local server, the program recognizes the update, and the incremental data is sent to the cloud data center simultaneously. The current system leverages the cloud-based data management system developed which is to provide a more efficient and effective solution for managing chicken and egg production modules. By utilizing the cloud-based storage, the current system aims to minimize the need for manual data entry and provide timely and accurate information for decision-making. Moreover, the integration of the chicken production and inventory management modules in the current system expands its functionality beyond egg production, providing a more comprehensive solution for poultry farm management. Through the incorporation of the cloud-based data management system proposed by the research study, the current system seeks to enhance productivity, reduce costs, and improve the overall performance of poultry farms.

A study conducted by **[Ifeoma et al. 2020]** developed a web-based inventory management system designed to keep detailed records of each new or returned product as it enters or leaves a warehouse or point of sale, aspects that would improve information management in a farm/agricultural setting. The related study discussed different modules that handle different operations such as Admin module and Dashboard module. It presented flowcharts of different concepts, user interface design of major modules, and file structure of its database. These proponents would help improve upon the idea of doing a poultry farm inventory system, where stocks, a dashboard, and the concept of how to report the inventory products and display the profile of users will be applied, along with its own unique capabilities. It would also make use of similar technologies for both Back-end (database implementation) and Front-end (Graphical User Interface). The study discusses the different modules that handle various operations, such as the Admin module and Dashboard module which has been integrated in the current system. The Admin module is responsible for managing user profiles, while the Dashboard module provides an overview of the system's performance. The study also includes flowcharts that illustrate the different concepts and user interface designs of major modules. By applying similar technologies for both the Back-end (database implementation) and Front-end (Graphical User Interface), the inventory system could be easily adapted to a poultry farm setting. It has included features such as stock management, dashboard reporting, and user profiling. Additionally, it has incorporated unique capabilities to improve upon the idea of a poultry farm inventory system, ultimately leading to better information management.

On the discussion of web-based management systems, this time with a focus on agriculture, is another research study conducted by **[Gascon 2019]** developed and designed a web-based agricultural management system that will serve as a data management platform to implement Agro-Entrepreneurship. It would assist the farmers and their leaders in handling and managing farmer and product information which has allowed them to keep track of pertinent data connected to the management system. According to the conducted research, many farmers agree that having an information management system has allowed them to be more organized and improve current practices and methods wherein there is a module for farm item stocking and restocking. The current system also utilizes the scheduling flow of farm stocks, which has been inspired by the related study. This scheduling flow has been used by the proposed system for its feed and vaccine replenishing, enabling farmers to manage their inventory more efficiently. By integrating this feature into the system, farmers can keep track of the available stocks of feed and vaccines, set a schedule for their replenishment, and receive notifications when it's time to restock. This functionality will help ensure that farmers never run out of essential supplies, ultimately leading to better farm productivity and efficiency.

The study by **[Amor 2018]** designed a computerized sales and inventory system for 2M Trading to convert its manual process of managing inventory into a computerized one. The related study aims to build a computerized sales and inventory system that has recorded, computed, and updated records of 2M Trading. The related study presented its input-process-output, where: Input is where the staff encoded and records merchandise information; The process is where the system computes the sales and adds the encoded item to the inventory, and; Output would be the inventory and sales report from the information encoded that the system will generate. The input-process-output (IPO) mode have been used in the related study and has served as a reference for the current study. Inputs have included information on chicken production, egg production, medicine, and feeds. The system had processed this data by adding it to the inventory and performing calculations to determine quantities. Finally, the system has outputted reports on chicken and egg production and inventory status, which have been accessible through the system's dashboard. The IPO model provides a framework for efficient data capture, processing, and reporting, and had been integral to the current system's design.

A research study by **[Robertera 2021]** developed a web-based inventory system for vaccine management for the health office that integrates a forecasting algorithm. The researcher addressed that the City Health Office lacks an effective and systematic method of managing the inventory system, including documenting vaccination stocks and dispensing, making it difficult to keep transactions and time-consuming to manually record stocks. In order to resolve the issues at hand, the research study intends to develop an inventory system with a forecasting algorithm. It also stated that the dashboard module has a notification informing the user of vaccines that are about to expire and providing them with information. To alert the user that the stock level is low and needs replenishment, the relevant study also includes a quantity for the reorder time. The current system has leveraged the related study, which developed a web-based vaccine inventory management system called e-VaccIMS, for its notification and dashboard module, particularly in replenishing. The study aimed to improve the City Health Office's inventory system, which lacked an effective and systematic method of managing stocks and dispensing vaccines. The system includes a dashboard module with notifications that alert users of upcoming vaccine expirations and low stock levels that require replenishment. It also features a forecasting algorithm that helps with inventory management. The current system had used similar functionalities to inform users of low feed and vaccine stock levels and provide reorder quantity estimates to streamline inventory management.

In conclusion, the research and literature discussed above are highly relevant to the suggested study on a cloud-based poultry farm system. These studies provide valuable insights into various operations, such as item replenishment, and the use of modules like the admin module, dashboard module, and IPO model. This knowledge had helped the researchers create an efficient poultry inventory system. The current system aims to offer a comprehensive solution to manage poultry farms, reduce costs, and enhance overall performance.