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DEVELOPMENT OF A WEB-BASED INTEGRATED MANAGEMENT PLATFORM FOR POULTRY AND SUPPLY SHOPS IN CAVITE WITH DECISION SUPPORT SYSTEM AND MOBILE APP

A **Capstone Project**

Presented to the Faculty of

Computer Studies Department

National College of Science and Technology

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Bachelor of Science in Information Technology

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Chapter 2

REVIEW OF RELATED LITERATURE AND STUDIES

This chapter presents a comprehensive review of relevant literature and studies on Development of a Web-Based Integrated Management Platform for Poultry and Supply Shop with Decision Support System and Mobile Application. It synthesizes insights from local and foreign sources to establish theoretical foundations, identify research gaps, and validate the need for the proposed web-based integrated management platform in Cavite. By examining existing frameworks, technologies, and industry challenges, this chapter strengthens the study by ensuring its design aligns with best practices, addresses real-world problems, and builds on prior advancements in agricultural informatics.

Local Literature

According to Dollente, E., & Hanbal, I. (2024)., IoT- based Decision Support System for Poultry Care. According to the Authors, the escalating global demand for high-quality agricultural products necessitates innovative approaches to meet future requirements sustainably. According to the Discussion, Poultry farming, Decision support system, Internet of Things (IoT), Environmental monitoring, Sustainable agriculture.

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According to Sabado, W. B. (2024)., The web-based application called the Layer Poultry Farm Management System is aimed at helping the farmers and even owners of a layer poultry farm to efficiently and effectively manage their resources and production including the inventories and finances. According to the Author, this research seeks to promote innovations and the development of new features that can benefit farmers.

According to Mendeja, K. L., Dulce, N. R., Martinez, V. U., Tuazon, C. N., Gaspado, J. M., & Magnaye, N. A. (2023)., The poultry industry includes other support industries such as feed production and distribution, veterinary and poultry equipment production and distribution, meat and egg processing, marketing and distribution. According to the Study, Rapid Application Method (RAD) is a software development methodology that emphasizes rapid prototyping through design. According to the Authors, the peTrace system is broad in design, simple to maintain, and adaptable to any portable device independent of operating system, making it suited for any local Feed Store. For future growth, the assessors advise using real-time analysis. A good system will offer continuous monitoring with few, if any, delays.

According to Philippine Institute for Development Studies (2023)., This study presents a rapid assessment of digital technology's adoption in Philippine agriculture and its implications for smallholder farmers. Also identifies strategies to bridge the digital divide, such as community organizing, development of rental markets, and investments in rural connectivity. According to the Authors, key policy recommendations include harmonizing government data and advisory services, creating a single government portal for digital agriculture, integrating digital solutions

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into farm management, expanding decision support for diversification and climate resiliency, and establishing a centralized e-commerce platform.

According to Datuin, J. R. M., Cadion, L. G., Catapang, K. S. G., Rodriguez, D. A., & Magpantay, V. A. (2025)., The study implemented a descriptive research design to assess the production system and management practices of selected commercial broiler chicken farms in the Philippines. According to the Authors, Climate-controlled system showed an advantage over the open-sided housing system in terms of better feed conversion ratio and higher broiler performance efficiency index.

Foreign Literature

Zheng, H., Zhang, T., Fang, C., Zeng, J., & Yang, X. (2021)., a management system was designed to realize the acquisition, transmission, storage, and management of information, and upload the data to the cloud database to increase the flexibility and scalability of the system. According to the Literature, On the basis of realizing production management functions, the system also incorporates an office management module, thus forming a complete data chain in production activities, so as to conduct farming data mining and accurate traceability in the next stage of the work. According to the Authors, the research provides an information management plan for the intensive poultry farming model, and the designed management system may be the starting point of a future intelligent poultry farming management system based on cloud services and big data technology.

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According to Gonzalez, I. E., Gómez-Omella, M., Ferreiro, S., Fernández, I., Lázaro, I., & García, E. G. (2020)., In this article the Poultry Chain Management (PCM) platform is presented. It aims at collecting data across the different phases of the poultry production chain. According to the Authors, Results showed that the information gathered can be exploited to make different suggestions to guarantee poultry welfare, and ultimately, improve the quality of the meat.

According to Shapa, M., Trojer, L., & Machuve, D. (2021)., developed a mobile-based decision support system for small-scale poultry farmers in Tanzania to address inadequate management practices caused by limited access to reliable information. According to the Authors, the system utilized a mobile application integrated with a chatbot assistant built using the RASA framework, allowing farmers to interact through natural conversations. According to the Study, emphasized that mobile decision support tools are effective in improving farmers' decision-making by providing timely and relevant information, particularly in rural and resource-limited settings.

According to Ariffin, A. S., Abas, Z., & Baluch, N. (2023)., The evolution of relationships based on collaboration between business partners has become a fundamental subject of research in the area of supply chain management. According to the Authors, this study focuses on integration of systems, processes and strategy which is important for poultry supply chain business partners to recognize the benefits of closely associating supply to demand. According to the Discussion, Poultry farming, integration, knowledge-based view, performance, supply chain management.

According to Slamet, A. H. H., Purnomo, B. H., & Soedibyo, D. W. (2025)., The selection of optimal

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livestock feed is essential for improving animal health and productivity. According to the Literature, developed a web-based Decision Support System (DSS) using the Analytic Hierarchy Process (AHP). According to the Authors, Analytical Hierarchy Process, Decision Support System, Multi-Criteria Decision Making, Web-Based Application.

Local Studies

According to Sabado, W. B. (2024)., The web-based system is hosted and can be accessed via the Internet. According to the Study, A user interacts with the system using different devices such as laptops and mobile devices through their web browsers which gives the user access to information. According to the Findings, it was able to monitor the cost and income of the operation and maintenance of the farm.

According to Dollente & Hanbal (2024)., Poultry farmers claimed that the most chicken has a higher mortality rate during cold weather or rainy season. According to the Result, the poultry needs to continuously monitor the chickens to make sure that chickens survive during excessive heat.

According to Mendeja et al. (2023)., The system was first demonstrated to the adviser to check its functionality, features, and design. According to the Study, the proponents conduct an interview and research literature and study that can serve as the guide to the development of the system. According to the Result, for further enhancement, the protagonist recommends applying a real-time analysis to a system that will offer continuous monitoring, without delays, or at least those will be minimal.

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According to [Philippine digital agriculture trends] (2023)., The process is repeated, and the sampling grows with each interview until saturation is reached. According to the Study, the use of snowball sampling is particularly crucial due to the challenge of identifying respondents from an undefined population. According to the Result, traditional sampling methods are less effective, making snowball sampling an ideal strategy to reach a representative group of respondents in this fragmented and evolving field.

According to Datuin, J. R. M et al (2025)., The respondents for this study represented all the major administrative regions in the Philippines. According to the Study, primarily used a descriptive research design in assessing the production system of commercial broiler chicken in selected farms in the Philippines. According to the Findings, Conventional housing system has been adjudged to be a good method of housing in tropical countries like in the Philippines.

Foreign Studies

According to Zheng et al. (2021)., the low profitability of poultry farming, and backward information management in China. According to the Study, the information sensing layer obtains and uploads through the wireless sensor network built. According to the Result, shows that the prototype is capable of acquiring and managing poultry farming information.

According to Shapa, M., Trojer, L., & Machuve, D. (2021)., conducted a study on the development of a mobile-based decision support system for small-scale poultry farmers in Tanzania. According to the Study, addressed the problem of inadequate management practices caused by the lack of