

Pengembangan Sistem Informasi Peramalan Hasil Produksi Tambak Udang Menggunakan Metode Regresi Linier Berganda

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ABSTRACT

The shrimp pond profit forecasting information system is an important tool to assist shrimp pond entrepreneurs in planning and managing their businesses more efficiently. This study aims to design an information system that utilizes multiple linear regression method by calculating the production forecast, then substituting it into the multiple linear equation to predict shrimp pond profit based solely on fixed costs and sales revenue. This information system will provide benefits to shrimp pond entrepreneurs in several ways. They will be able to make more accurate profit estimates based on their current fixed costs and sales revenue. This will assist them in making informed business decisions, such as efficient resource allocation. The system can also be used to test different business scenarios. Entrepreneurs can input desired values for fixed costs and sales revenue, and the system will provide estimated profits that may be generated. Thus, entrepreneurs can identify the best strategies to enhance the profitability of their shrimp ponds.

During the testing phase, the Mean Absolute Percentage Error (MAPE) for the shrimp pond production forecast was determined to be 10%. The testing of the Information System was conducted using black box testing and data collection methods, with 12 respondents producing consistent results. In this forecasting system, conducted in February 2022, a shrimp pond production forecast of 2,307.08 kg and a sales revenue of Rp50,000 resulted in a total revenue of Rp115,354,000. The total production cost of the shrimp was obtained by summing the fixed costs and variable costs, resulting in a total cost of Rp103,106,047. Therefore, the projected profit from the shrimp sales in the shrimp pond is Rp12,247,953.

Overall, the design of an information system for shrimp pond profit forecasting based on fixed costs and sales revenue using linear regression method can provide significant assistance to shrimp pond entrepreneurs in managing their businesses. It enables them to enhance efficiency and optimize their profits.

Key Word: *Forecast, fixed cost, profit, regresi linear, variable cost*