

ABSTRACT

XYZ Farm is one of the laying hens in East Java province. This company is located in Blitar Regency. XYZ Farm currently has as many as 1150 chickens which are productive in producing chicken eggs. At present the XYZ farm has a problem, namely that breeders find it difficult to increase the current profits. This happens because the XYZ farm has a cost component of the cost of production (HPP) and support costs which are mostly constant each period without regard to demand for the selling price of chicken eggs except for employee wage bonuses.

In addition, the XYZ farm does not yet have a pricing strategy that can maximize profits from selling chicken eggs. This makes it difficult for breeders to achieve increased profits. Based on these problems, in this final project a pricing strategy policy is designed that can maximize profits from selling chicken eggs.

The first step in this research is to collect relevant data, including historical demand data, egg selling price data, and cost of production data, which is divided into production and supporting costs. The next step is data processing, which involves creating a demand forecasting model. The demand forecasting model aims to define the relationship between price and demand in future periods.

Two models are used: linear demand model and exponential demand model. After the demand forecasting models are processed using linear regression, the selected demand model is determined by calculating the root mean square error (RMSE) of each model. The demand model with the lowest RMSE value is chosen and adjusted using linear programming.

The next step is to optimize sales profits using the aggregate planning equation based on the selected demand model. The decision variables for the aggregate planning method are the optimal number of hens, employees, and egg selling price, with constraints set. The equation is then verified and validated with the owner of the farm.

Based on the data processing, the results show that the farm has 1,150 laying hens and one employee. The optimal egg selling price in future periods is also determined. The optimization results show that feed costs decrease by 4.34% from the actual condition, while employee wages decrease by 1.49% from the actual condition. Meanwhile, the optimization of farmer's profits increases by 31.8% from the total actual profit.

Based on the planning results, it can be concluded that the pricing strategy policy design using linear programming method presented in this research can help XYZ Farm increase their total profits. The results of this research can be implemented in a real system to determine if it can contribute to increasing the farmer's profits. If the proposed egg selling price is consistent with the actual system, the farmer can use it as a reference to determine the egg selling price and achieve maximum profit.

Keyword: Linear Programming, Linear Demand Model, Exponential Demand Model, Revenue Maximization, XYZ Farm, Price Optimization