

CHAPTER V

CONCLUSION AND RECOMMENDATION

5.1. Conclusion

Based on the results of the system design and testing that have been conducted, several conclusions can be drawn:

1. . The design of a web-based goods distribution priority optimization system has been successfully implemented using the Laravel framework and MySQL database. The developed system is capable of managing goods data, customer data, orders, and performing forecasting calculations as well as priority ranking in an integrated system.
2. The implementation of the Holt-Winters Exponential Smoothing (HWES) method for predicting goods demand has been successfully carried out. The test results show that this method is able to produce a very good level of accuracy, with an average Mean Absolute Percentage Error (MAPE) value of less than 10%, making it effective for data with seasonal and trend patterns.
3. The implementation of the Simple Additive Weighting (SAW) method in determining goods distribution priorities has also been successfully applied. This method is able to perform normalization, weighting, and ranking based on forecasting, distance, customer priority, and stock criteria, resulting in objective preference values that can be used as a basis for decision-making.
4. The system's results in providing goods distribution priority recommendations show that it is able to produce a consistent ranking that aligns with the test data scenarios. In addition, based on usability testing using the System Usability Scale (SUS), the system obtained a score of 78, which is categorized as good (acceptable), indicating that the system is suitable for supporting goods distribution decision-making.

5.2. Recommendation

The following are several suggestions for future system development:

1. The system can be further developed by adding automatic HWES parameter optimization methods (such as grid search or heuristic optimization) to improve forecasting accuracy.

2. Future development can include the integration of external data such as traffic conditions, distribution capacity, or other geographical factors to make distribution priority recommendations more comprehensive and adaptive to real-world conditions.