CHAPTER VI
CONCLUSION AND RECOMMENDATION

This chapter contains conclusions from this research and suggestions for further research.

6.1   Conclusion

This research uses two approaches, namely exact and metaheuristic, to solve the distribution routing problem. The exact approach can solve the problem up to 10 customers within 13.5 hours of computational time. In one month, the company serves 26 customers per day on average, so the exact approach is not feasible to implement because it requires a long computation time for large problems. The Metaheuristics approach provides solutions with shorter computation time for large problems (more than 10 customers). The results of running the genetic algorithm using Python show that on the December 5, 2023, distribution route, the company can save total travel costs of Rp180,487.22 or 21.73% per day from actual costs. In addition, the proposed route can save the total distance travelled by 12.7 km or 7.44%. The total distribution time required is also reduced by 25 minutes 24 seconds or 3.62% from the actual route that day. Based on this, the proposed route can provide better solutions than the actual route regarding total travel costs, total distance traveled, and total distribution time. In addition, the proposed solution ignores regional clustering, such as the company's current policy

6.2   Recommendation

Recommendations for future research are as follows.

1.   Further research related to transportation problems can use a model that considers the balance of the load transported by each fleet and the service time desired by customers.

2.   Researchers can use other metaheuristic approaches as a comparison for each method against the methods used in this study.

3.   Researchers can use other tools to run the program.