Prediction of Order Delivery Cycle time Using Machine Learning

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Research Questions

This thesis aims to develop a model that predicts order delivery cycle time for a particular origin and destination based on the volume of sales orders.

Research questions answered in this thesis are-

- **What are the highest demand areas in Indonesia?**
- **Are those areas being fulfilled by the appropriate DC/Branch?**
- **Prediction model for predicting delivery time between origin and destination.**

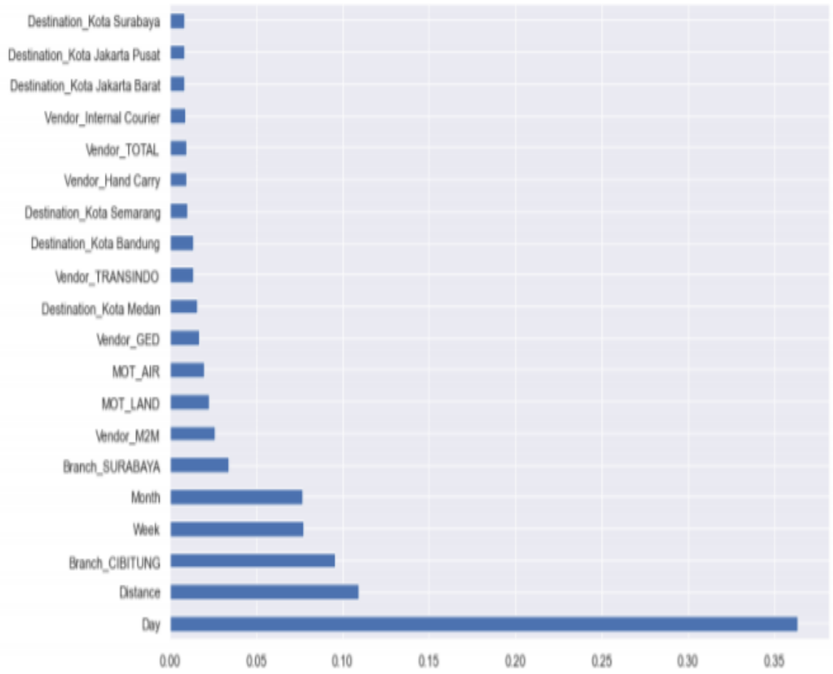
Key Objectives

- **Identifying factors that contribute to transit time variability**
- **Converting historical data to predictor variables**
- **Training Machine Learning models**
- **Testing performance against real transit time.**
- **Build a prototype that predicts the transit time in real time**

Methodology

1. Collect Data from all available sources
2. Data Cleanup(Handling Missing Data)
3. Feature Analysis & Selection
4. Implementing multiple ML models
5. Result Analysis and Comparison
6. Model selection

Important Features



Initial Results

- **Identification of 13 relevant variables out of 49 available variables**
- **Initial models performed better than liner regression**

4 Mean Absolute Error

0.69 R-Squared

14 RMSE

Conclusion

This thesis aims to predict delivery time for medical equipment from branch to customer. After implementing machine learning models an interface was developed to upload raw data and get prediction