CHAPTER 1
INTRODUCTION

1.1. Background

Over the past ten years, the average selling price of new vehicles has increased by around 18% annually. There is no definite answer to the question of how much a car costs each year. Car prices may vary by make, model, and year. However, there are some general trends to be expected. Many manufacturers predict an increase in car prices due to the rise in the cost of raw materials such as steel and aluminum. As you can see, many different factors play a role in determining the price of a new car. Vehicles are generally more expensive in urban areas than in rural areas. This can be attributed to the costs associated with maintaining and operating vehicles being higher in cities. One of the best ways to find great car deals is to do some research before making a purchase. Compare prices from various dealers and research the reliability and safety of the various makes and models on the market.

Based on previous exposure, the author will predict car prices using Orange data mining application with Neural Network and K-Nearest Neighbor methods. This process will use data that has been taken from the Kaggle website. The data will be processed using two methods: the first is the Neural Network method, and the second is the K-Nearest Neighbor method.

Predicting car prices using the Orange application with the Neural Network and K-Nearest Neighbor methods to see the effectiveness of making predictions by looking at the lowest MSE value. Predictions were made with three trial variants, with 70%, 80%, and 90% sampler data proportions. After the prediction process was carried out, it was found that the Neural Network model has a smaller MSE value than the KNN model.

1.2. Problem Formulation

Focus of this project are:

1. How can Orange predict car prices using the Neural Network algorithm?
2. How can Orange predict car prices using the K-Nearest Neighbor algorithm?

1.3. Scope

This project gets data from kaggle with 5 car manufacture and production years starting from 1939 until 2020. The prediction was done by helping orange data mining applications using the Neural Network and K-Nearest Neighbor algorithm. The main target to be predicted is the price of cars from several manufacturers.

1.4. Objective

The purpose of this research is to find out which algorithm is more effective at making predictions. To determine the effectiveness of the algorithm are looking at the lowest MSE value between the two algorithms. Prediction is done several times so that the results are more accurate.