Tanzanian Water Wells

Contents

Overview

Recent data from the World Bank show that Tanzania has a population of about 60 million. According to Nsemwa (2022) many Tanzanians continue to struggle with insufficient or limited access to clean and safe water. Only 30.6% of Tanzanian households use recommended water treatment methods, and only 22.8% have adequate hand-washing facilities (Ministry of Health report, 2019). Poor sanitation is estimated to cause 432,000 diarrhea-related deaths per year and is a major contributor to several Neglected Tropical Diseases (NTDs) such as intestinal worms, schistosomiasis, and trachoma. Malnutrition is also made worse by poor sanitation (WHO, 2019).

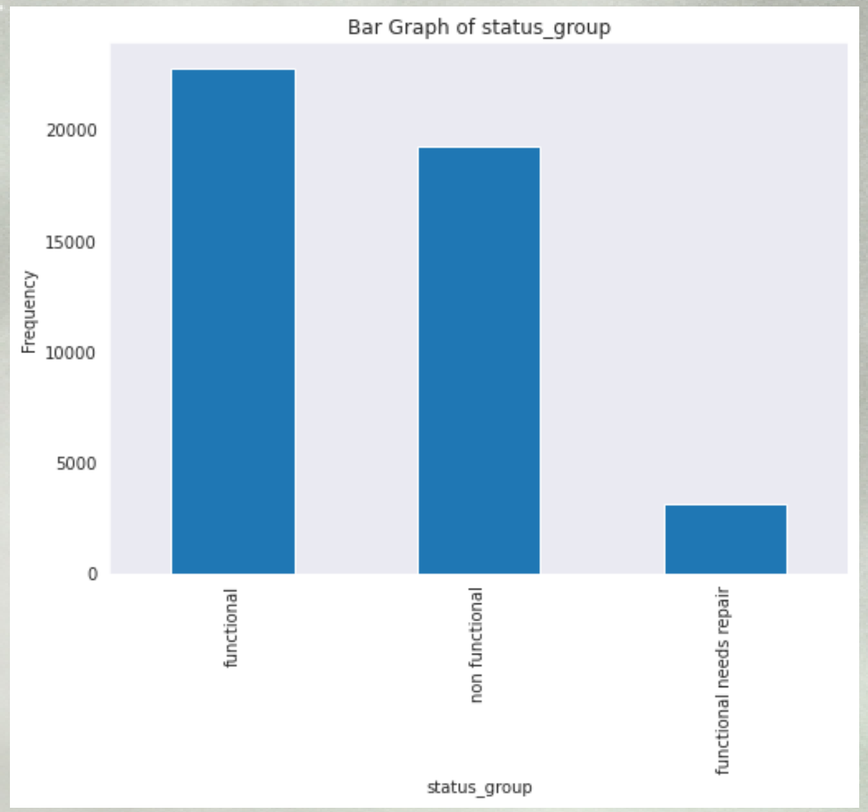
Business Understanding

Tanzania, struggles with providing clean water to its population of over 57,000,000. There are several waterpoints already established in the country. Some of the waterpoints are Functional,Others need repair while others are completely non-functional

Problem Statement

An NGO is curious to know the state of the different waterpoints so that they may Help where needed

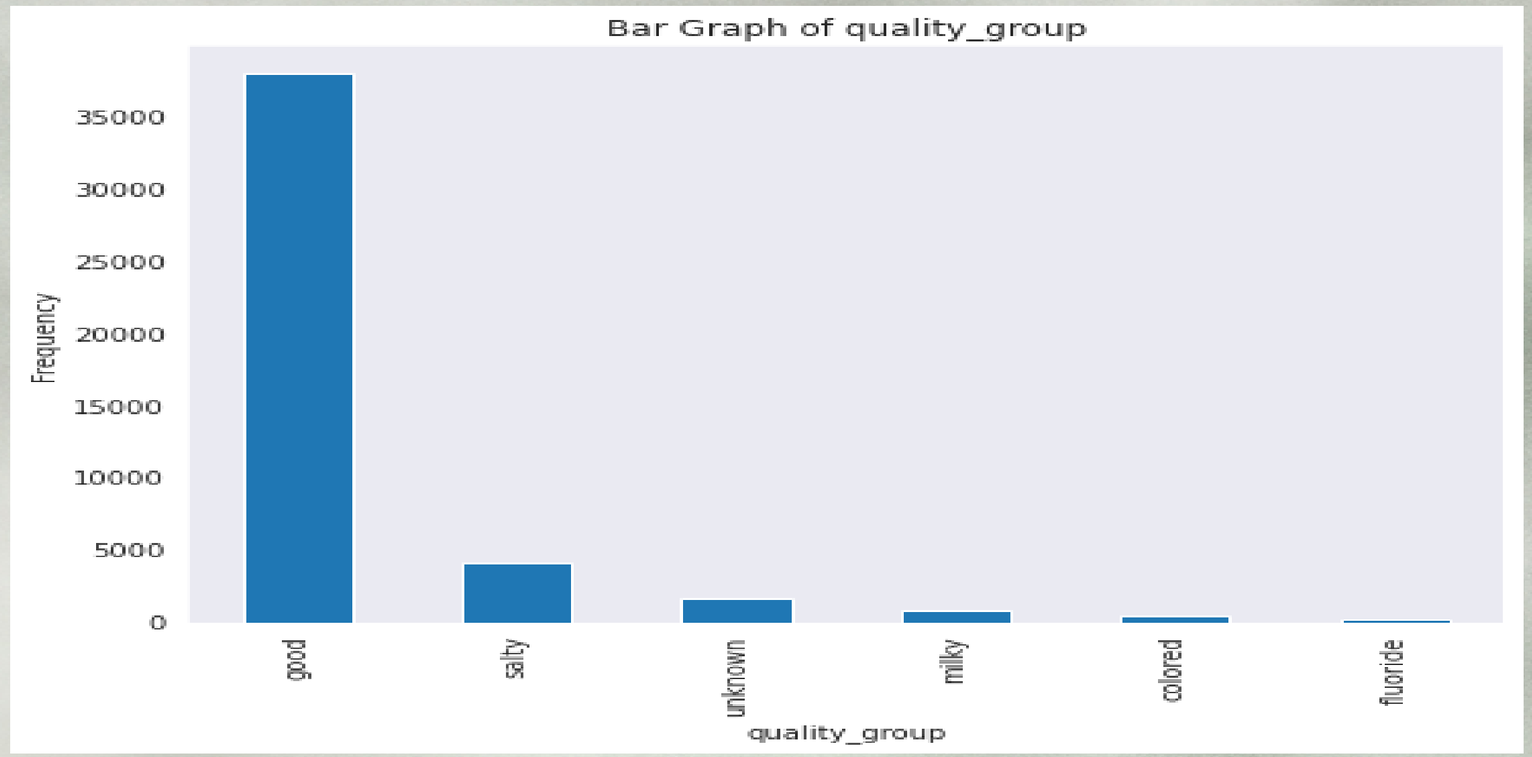
Analysis



The number of functional waterpoints is high but the non-funtional and those that need repair are also a good number

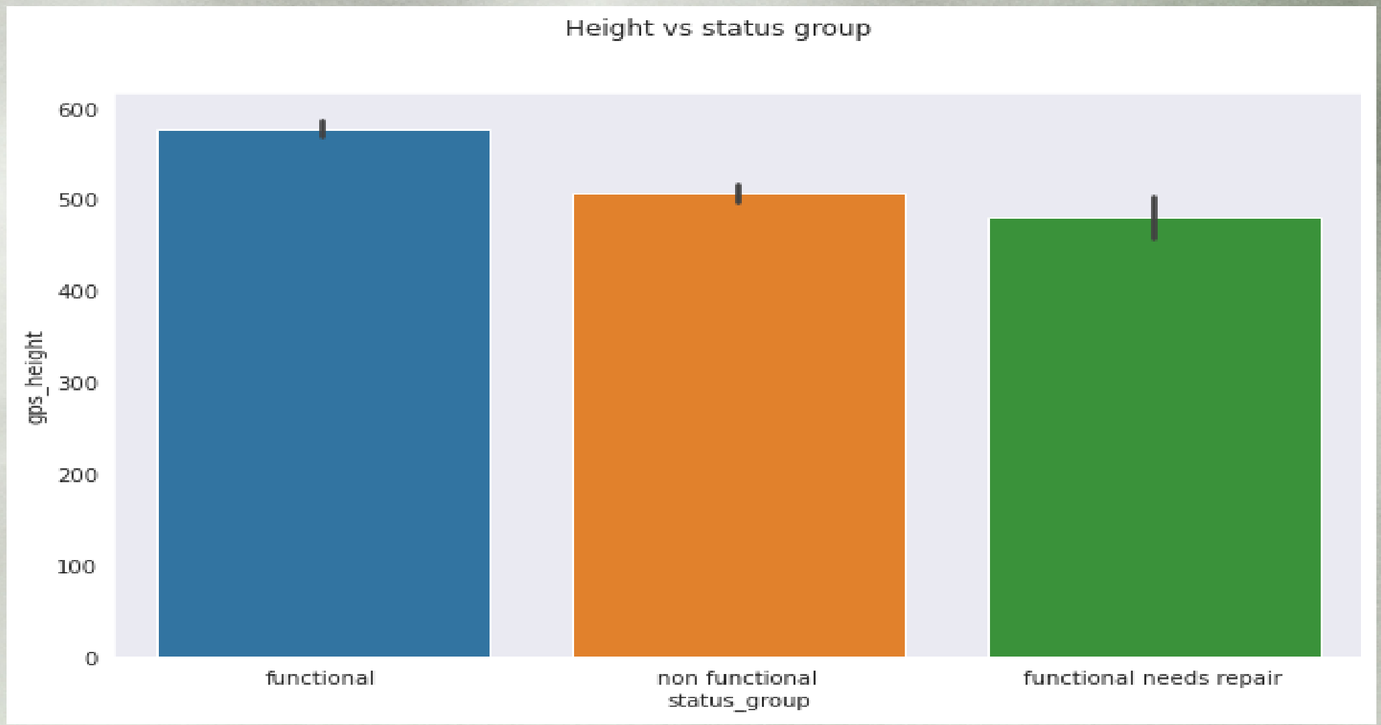
Water quality

Most water is good quality in the different waterpoints

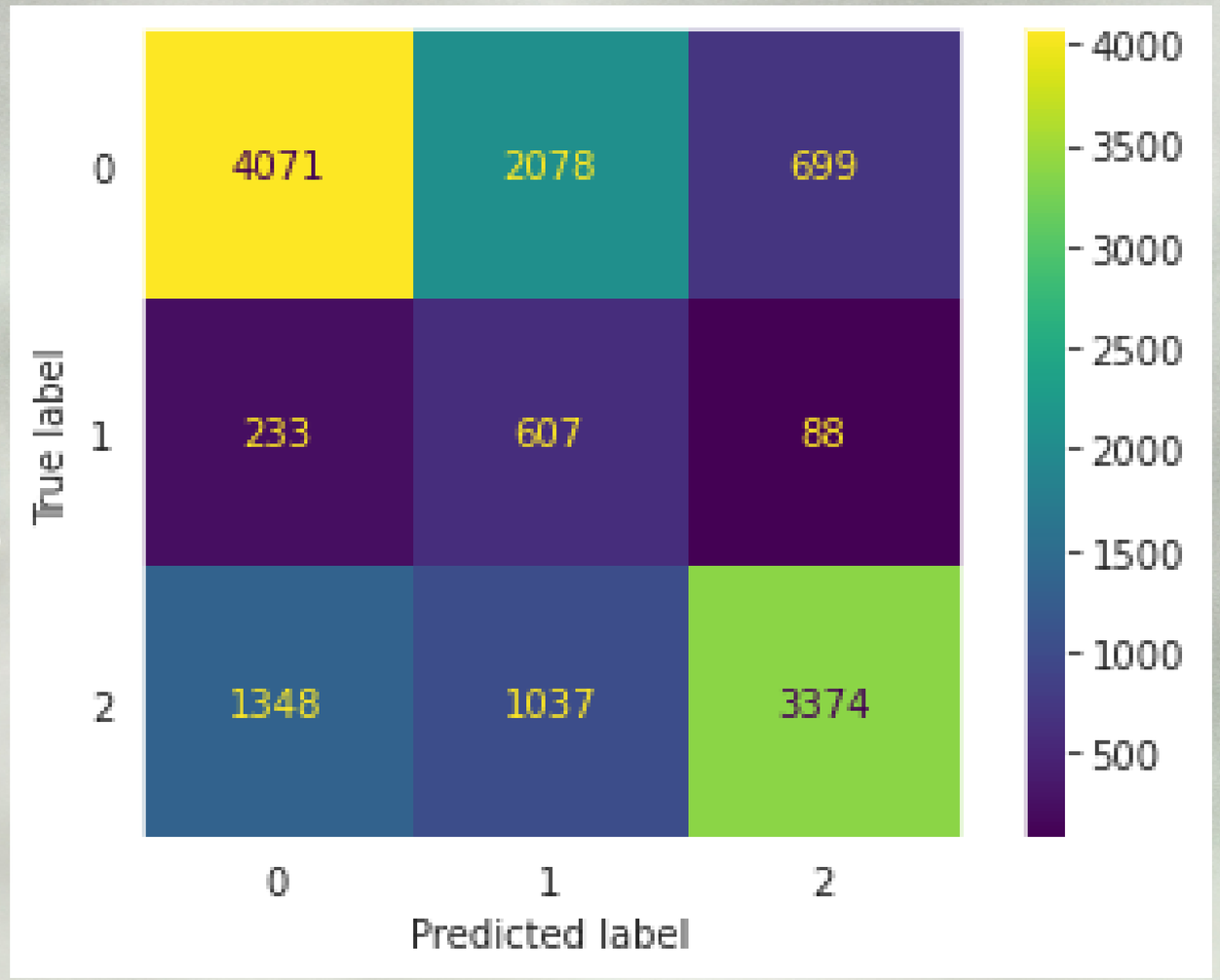


Height vs status_group

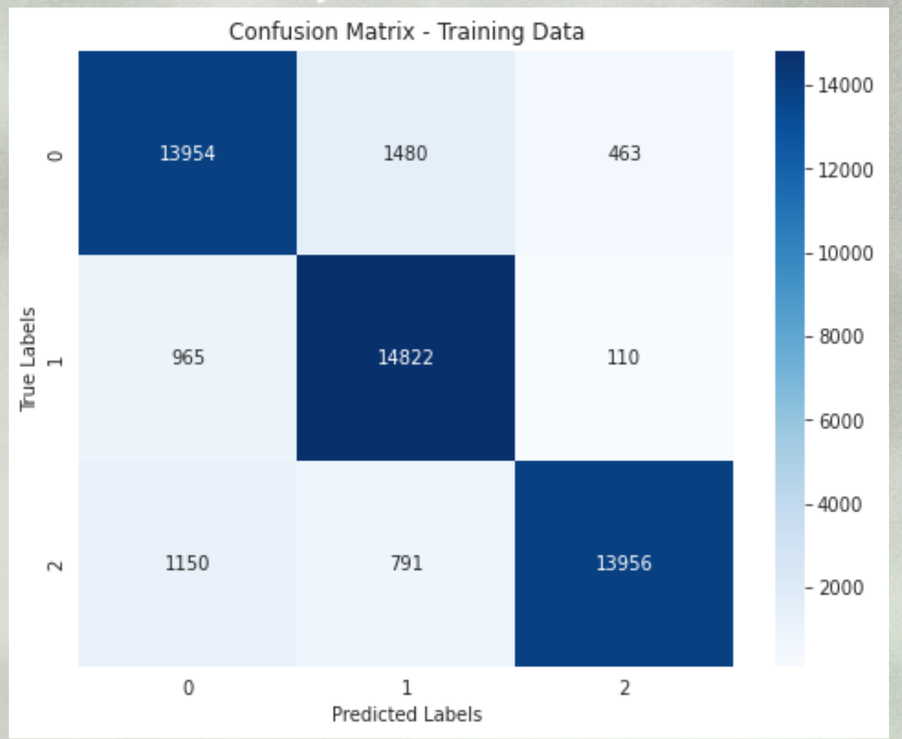
Functional waterpoints are mostly located at high altitudes

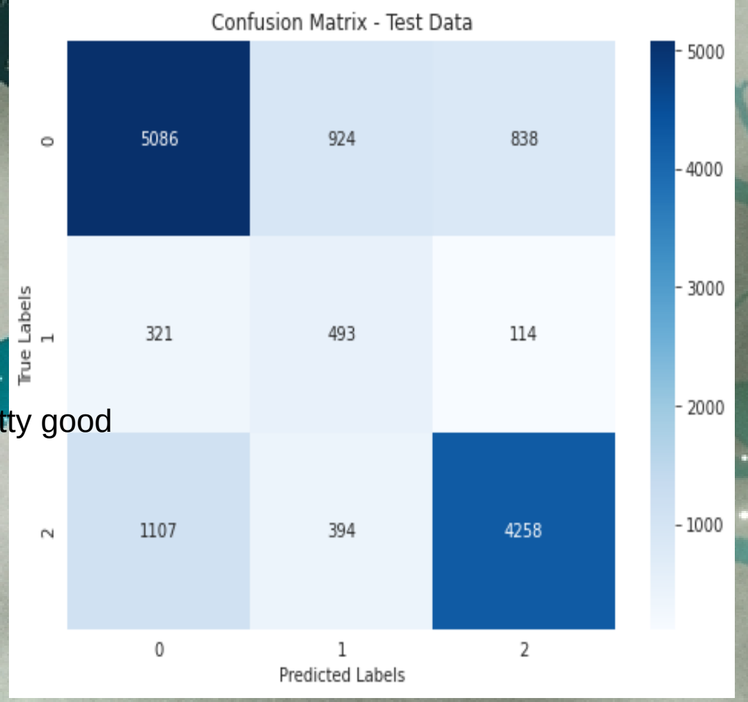


The logisticRegressionModel gave a training accuracy of 61.99 and a test accuracy of 59.49...well,not so accurate



Our best model gave us a test accuracy of 72.6 which was pretty good





GradientBoostingClassifier (Iterated model)was my best model. It has the highest test accuracy of 72.6%, indicating better performance on unseen data compared to the other models.The RandomForestClassifier first model is also a good one .This means that the Models are able to better predict the functionality of Tanzanian Water Wells better than the other models. Hence for my stakeholders i would advice the use of the model

Thank you!

Feel free to reach out if you have any questions.