# ABSTRACT

The telecommunications industry in Zimbabwe is facing the challenge of accurately predicting and maximizing CLV for traditional voice calls. Existing predictive models fail to capture the complex patterns and temporal dependencies in data, leading to suboptimal CLV predictions. Accurate CLV prediction is crucial for Econet Wireless Zimbabwe to enhance customer satisfaction and optimize its business strategies in a highly competitive and rapidly evolving market. Therefore, this project aims to address the aforementioned challenges by developing an deep artificial neural networks-based model that effectively predicts CLV using traditional voice calls data, tailored specifically for Econet Wireless Zimbabwe. This was achieved by collecting data from the Econet Wireless database from the 22nd of October 2023 to the 18th of November 2023. This project developed a deep artificial neural network (DANN) model that predicts customer lifetime value based on traditional voice calls data at Econet Wireless Zimbabwe. The project identified key features that significantly influence CLV. The analysis revealed that the most crucial feature in predicting CLV was "Days since the start of the month," indicating that customer behaviour and spending patterns are significantly impacted by the time of the month. The "Recent recharge date" was also found to be an important feature as customers who recharge more frequently were found to have a higher CLV. The developed DANN model had a reasonably low Mean Absolute Error (MAE) and could explain approximately 81% of the variation in CLV, indicating a good fit of the model to the data. However, the model had difficulties in predicting extreme values, and the remaining 19% variance in CLV was not explained by the model. Overall, this project provides valuable insights into the features that significantly influence CLV and a DANN model that can be used to predict CLV accurately.