



# Sentimental Analysis

*By Group 3*



2024

# Team Members

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# Business Understanding

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Kenya Power and Lighting Company (KPLC) often receives a high volume of tweets from customers reporting issues, asking questions, or providing feedback.

Understanding customer sentiment towards KPLC is crucial to enable automating of responses, enhancing customer service efficiency, improving response times, and reduce the manual workload on customer service teams.

The goal is to develop a chatbot capable of classifying various types of tweets and generating appropriate automated response



# Problem Statement

KPLC needs an automated sentiment analysis system to process and categorize customer feedback from social media, particularly X formerly (Twitter) where customers frequently express their sentiments regarding KPLC's services. By accurately classifying tweets related to KPLC's services into sentiment categories the system will be able to identify issues by pinpointing common complaints and service issues and enhance customer feedback

# Objectives

- To gauge overall customer sentiment towards KPLC's services.
- To Identify specific issues mentioned in the tweets, such as token problems, power outages, billing issues, etc.
- To Create a chatbot that provides appropriate responses to customer inquiries.





# Data Understanding

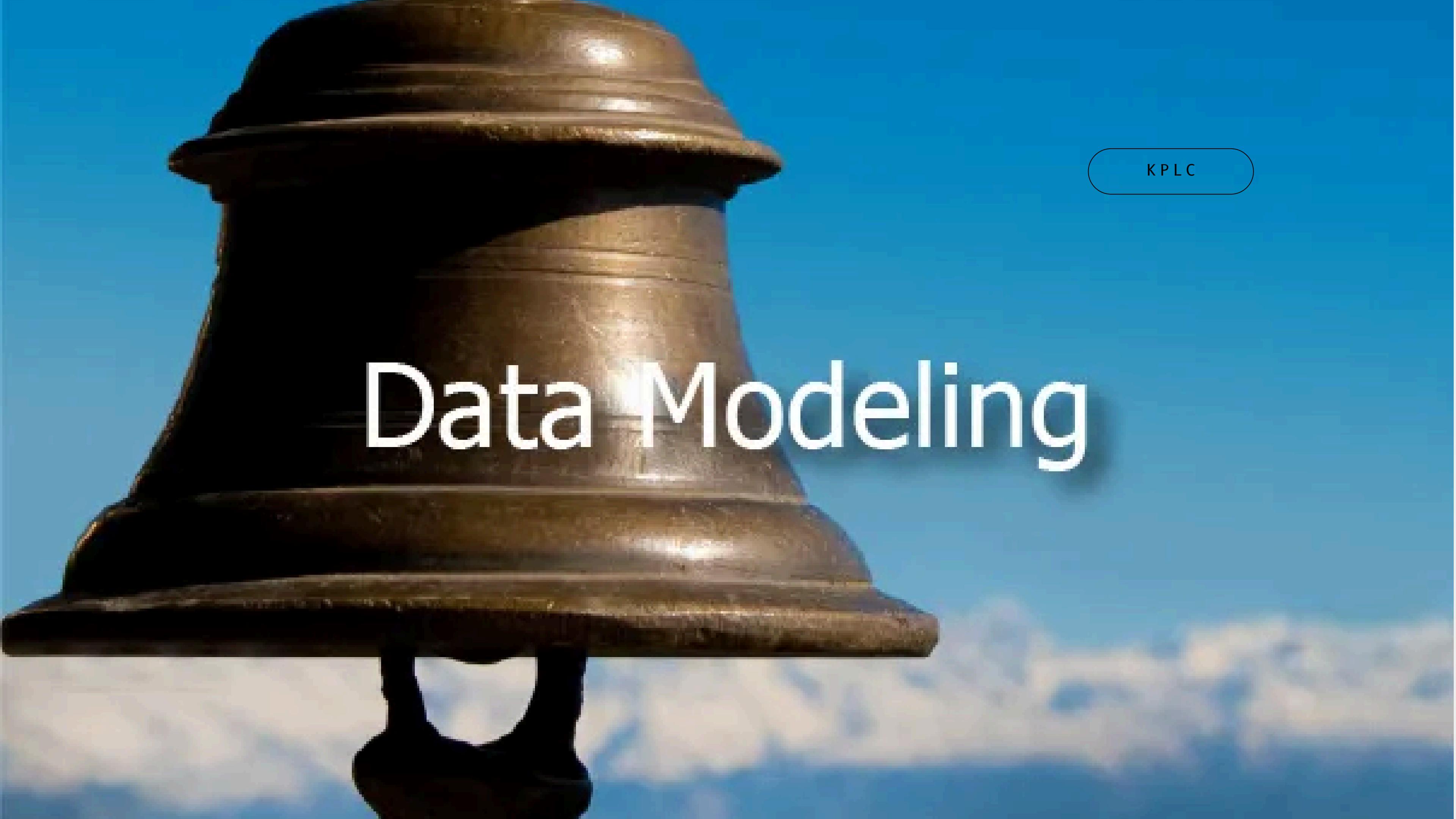
- Data was collected from X (formerly Twitter), focusing on English tweets directed to @KenyaPower\_Care over the past two years, using keywords like "Tokens," "Blackout," and "Bills."
- The dataset, kplc\_df, contains 15 features, with irrelevant columns like likes, reposts, and comments being removed due to missing values.
- After addressing data types and eliminating duplicates, the dataset was free of null values, allowing us to proceed with further text cleaning.

# Data Preparation

Steps include:

- Data Cleaning
- Exploratory Data Analysis



The background image shows a large, ornate brass bell tower with multiple tiered roofs, set against a bright blue sky with scattered white clouds.

KPLC

# Data Modeling

# Model used

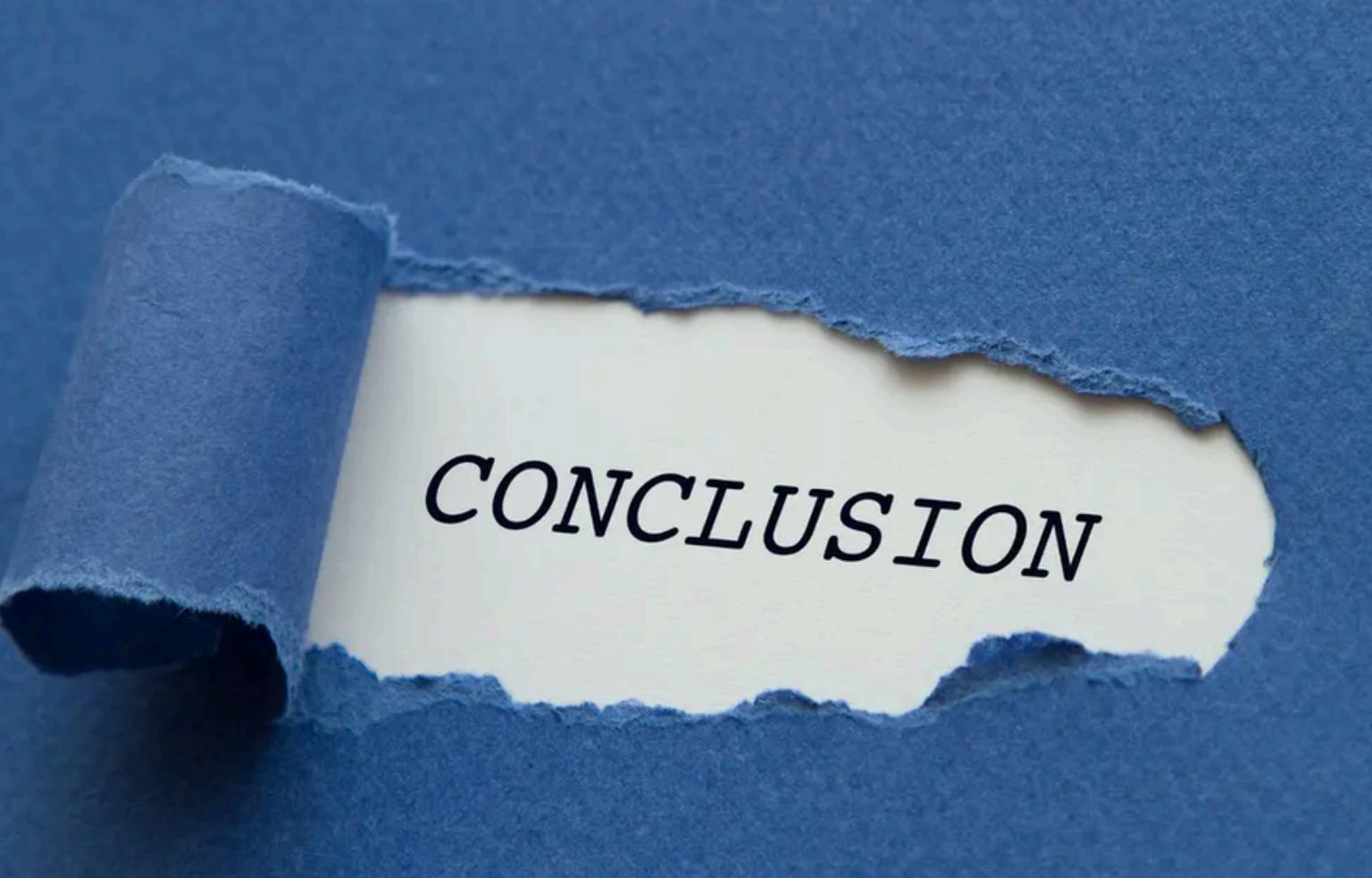
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**1.Naive\_Bayes Classification**

**2.Support Vector Machine Classification**

**3.Neural Network**

# Conclusion



*CONCLUSION*

The best model to use in classifying tweets is the Recurrent Neural Network as it has the highest accuracy score of the three and captures the patterns in the tweets users send



# Recommendations

- Integrate the model with a chatbot framework so as to provide automated response to Kenya Power Clients
- Create user guides for interacting with the chatbot.
- Plan for periodic model retraining with new data to ensure it captures any new issue arising and stay up to date
- Implement mechanisms for collecting user feedback and use the feedback for iterative improvements to the model and chatbot.

# Thank you

