Sentiment analysis

2024-11-13

library(tidytext) library(syuzhet) library(ggplot2) library(dplyr)

Sample Data

dates <- seq(as.Date("2023-01-01"), as.Date("2023-03-01"), by="days") set.seed(0) # For reproducibility sentiment_scores <- rnorm(length(dates), mean=0.5, sd=0.1)

Data frame for plotting

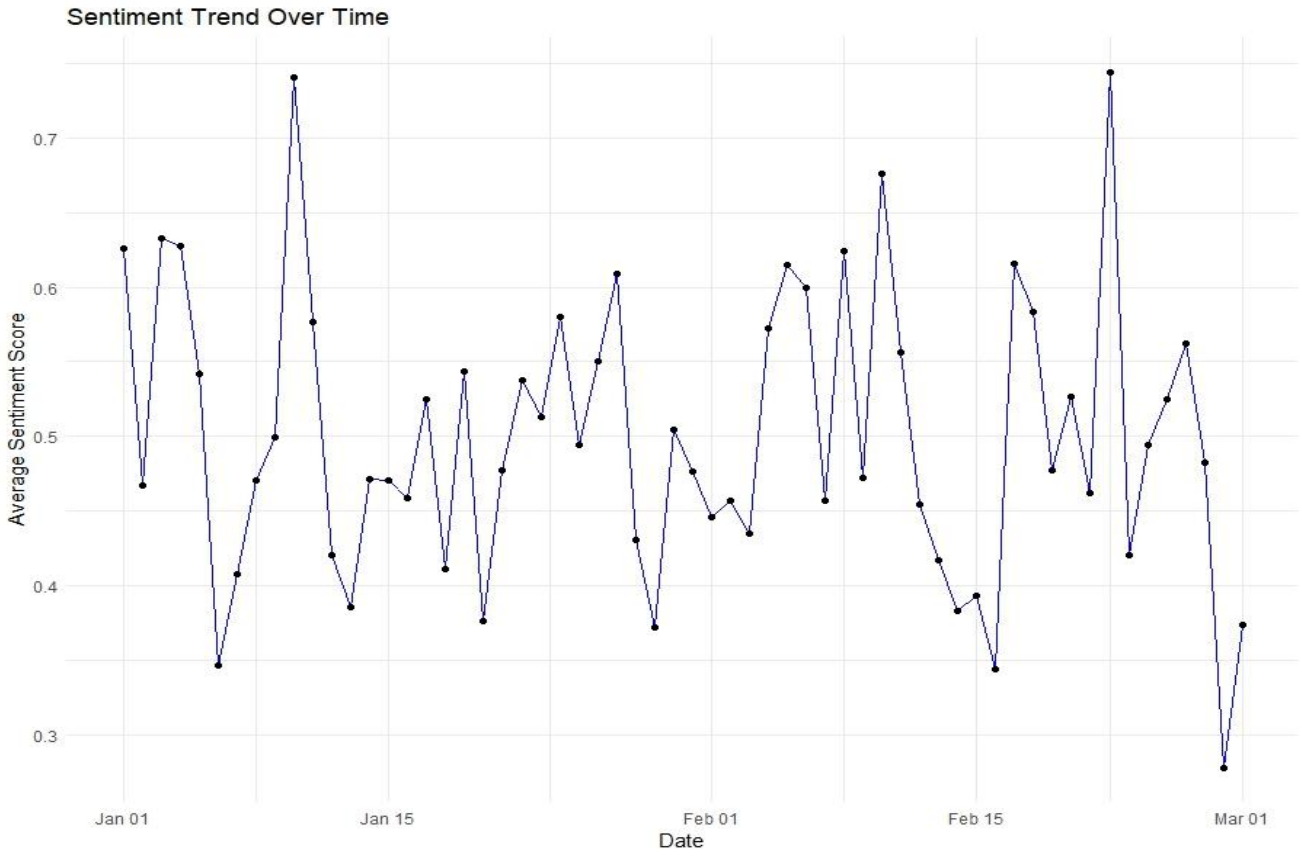
data <- data.frame(Date=dates, Sentiment_Score=sentiment_scores)

Load ggplot2 library

library(ggplot2)

Plotting sentiment trend over time

ggplot(data, aes(x = Date, y = Sentiment_Score)) + geom_line(color="blue") + geom_point() + labs(title="Sentiment Trend Over Time", x="Date", y="Average Sentiment Score") + theme_minimal()



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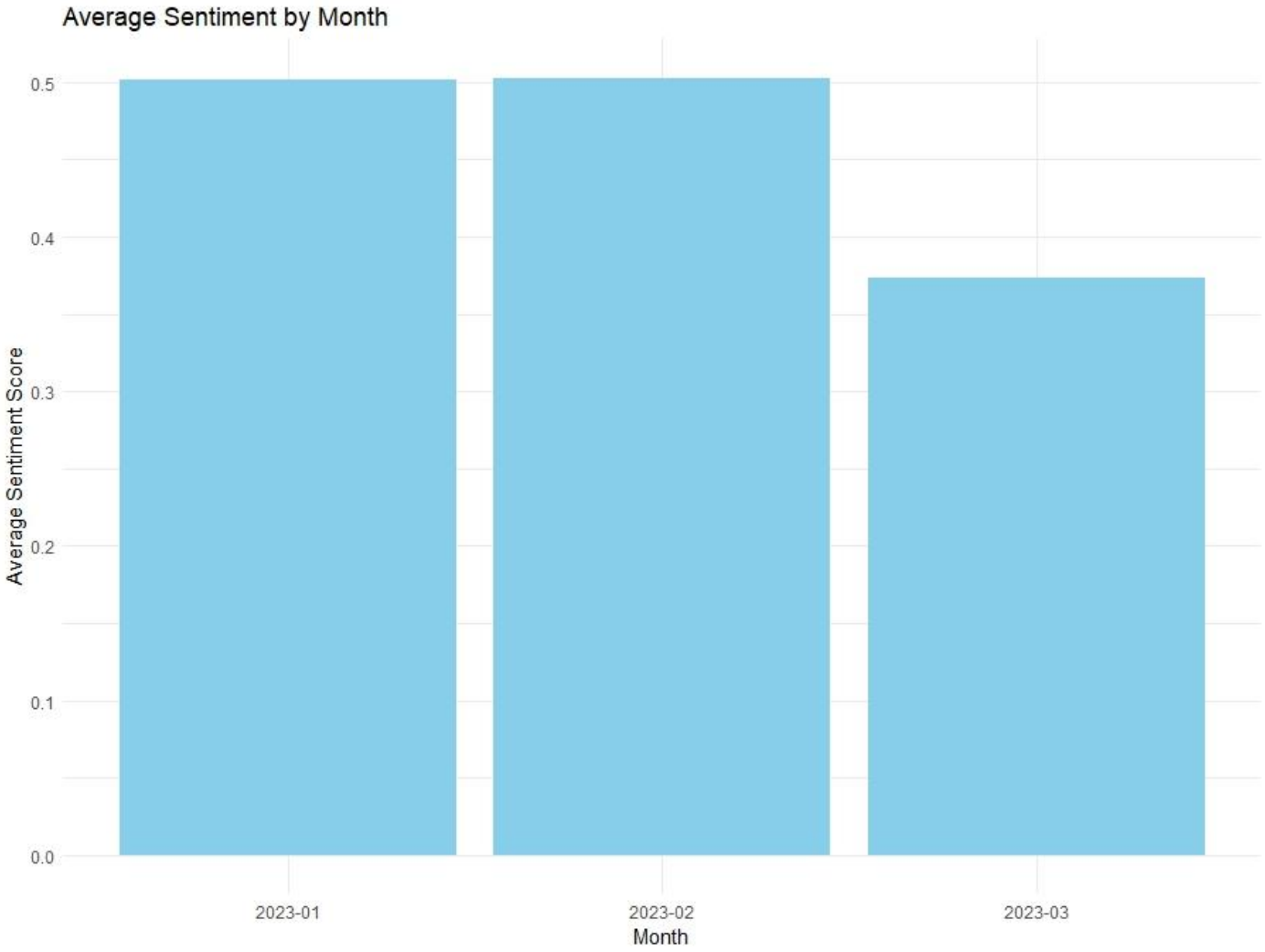
Calculate average sentiment by month

data$Month <- -format(data$Date, "%Y-%m") # Extract month-year format monthly_avg <- data %>% group_by(Month) %>% summarise(Average_Sentiment = mean(Sentiment_Score))

Plotting the bar chart

ggplot(monthly_avg, aes(x = Month, y = Average_Sentiment)) + geom_bar(stat = "identity", fill = "skyblue") + labs(title = "Average Sentiment by Month", x = "Month", y = "Average Sentiment Score") + theme_minimal()



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Categorize sentiment as Positive, Neutral, or Negative

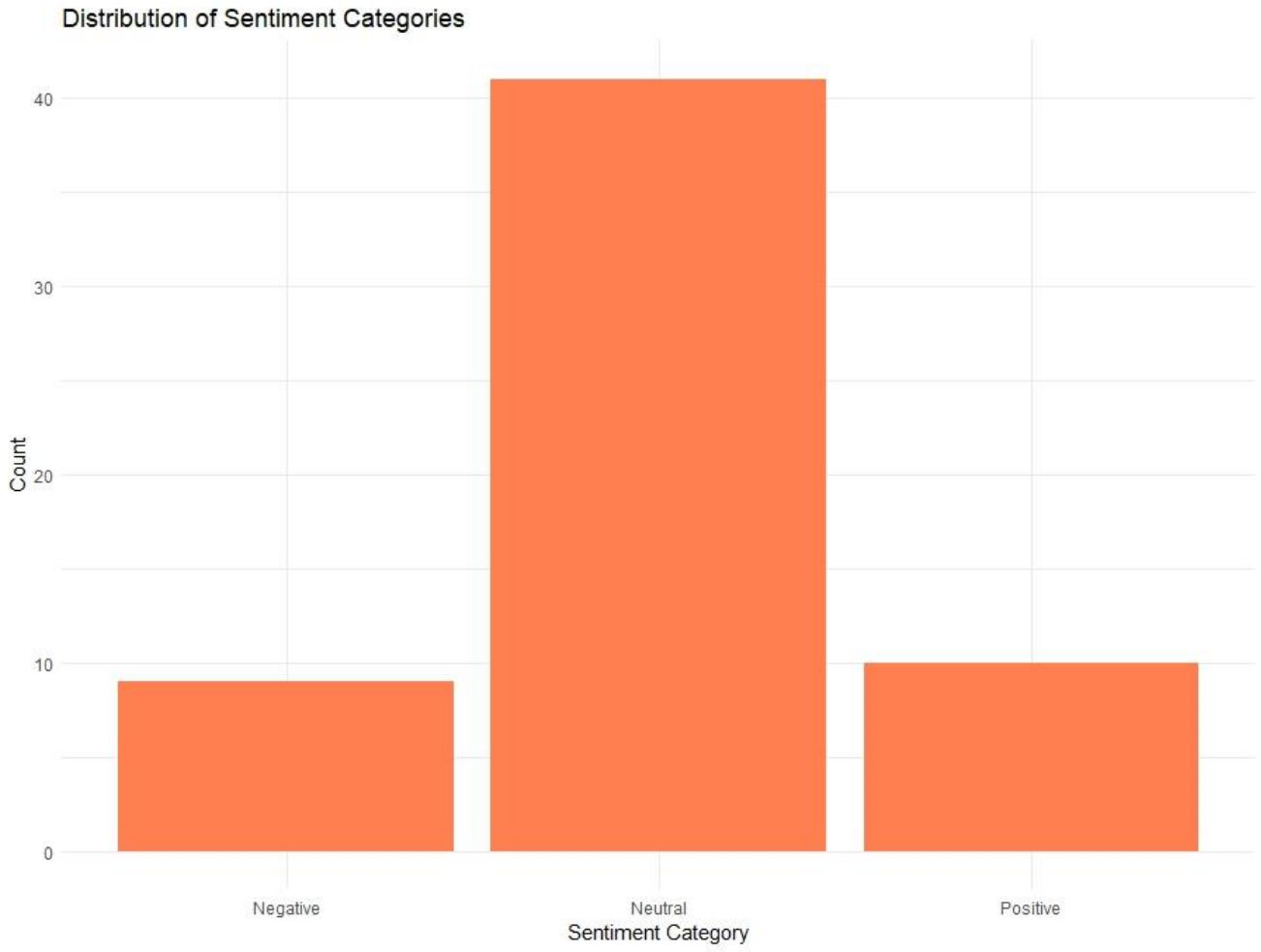
data$Sentiment_Category <- cut(data$Sentiment_Score, breaks = c(-Inf, 0.4, 0.6, Inf), labels = c("Negative", "Neutral", "Positive"))

Count the number of reviews per sentiment category

category_counts <- data %>% group_by(Sentiment_Category) %>% summarise(Count = n())

Plotting the bar chart

ggplot(category_counts, aes(x = Sentiment_Category, y = Count)) + geom_bar(stat = "identity", fill = "coral") + labs(title = "Distribution of Sentiment Categories", x = "Sentiment Category", y = "Count") + theme_minimal()



Sample sentiment data

sentiment_data <- data.frame(date = seq.Date(from = as.Date("2023-01-01"), to = as.Date("2023-03-01"), by = "week"), positive = c(30, 45, 40, 35, 60, 50, 65, 55, 70), neutral = c(20, 15, 25, 20, 30, 20, 15, 20, 25), negative = c(10, 20, 15, 30, 10, 25, 20, 25, 15))

Reshape the data using base R

sentiment_long <- data.frame(date = rep(sentiment_data$date, times = 3), sentiment_category = rep(c("positive", "neutral", "negative"), each = nrow(sentiment_data)), value = c(sentiment_data$positive, sentiment_data$neutral, sentiment_data$negative))

Plot with ggplot2

ggplot(sentiment_long, aes(x = date, y = value, fill = sentiment_category)) + geom_area(alpha = 0.6) + labs(title = "Sentiment Trend Over Time", x = "Date", y = "Sentiment Count") + theme_minimal() + scale_fill_manual(values = c("positive" = "green", "neutral" = "gray", "negative" = "red"))