Sentiment and Emotion Analysis in Religious Texts: The Bible and the Quran.

This document presents a comparative sentiment and emotion analysis of two major religious texts: the Bible (King James Version) and the Quran (Pickthall translation). The analysis was conducted in R, using natural language processing (NLP) techniques. The report includes visualizations, statistics, most frequent words, bigrams, and comparisons of the emotional profiles of both texts.

Data Overview

The textual analysis was based on the following:

* **110,978 sentences** from two religious texts: the Bible (bible\_df – 51,992) and the Quran (quran\_df – 28,868),
* **1,165,203 raw bigrams**, from which **82,435 cleaned bigrams** were extracted after filtering out digits and stop words (bigrams\_clean),
* **44,019 unique counted bigrams** (bigrams\_count),
* **376,936 emotion-labeled words** using the NRC lexicon (emotion\_words, nrc – 13,872 words),
* **20 emotional categories** detected across both texts (emotion\_counts, df\_emotions),

All text was cleaned of digits, special characters, and blank lines; converted to lowercase, lemmatized, and stop words removed. The analysis was conducted in R using packages such as tidytext, textstem, dplyr, and ggplot2.

Top 10 Most Frequent Words (Percentage)

**Obraz zawierający tekst, zrzut ekranu, diagram, numer

Zawartość wygenerowana przez AI może być niepoprawna.**

This bar chart compares the ten most frequently used words in the Bible and Quran, normalized as a percentage of all words in each text.

* **"God"** is the most used word in the Quran and also frequent in the Bible.
* **"Lord"**, **"thy"**, **"thou"**, and **"ye"** dominate the Bible, reflecting a formal and archaic tone.
* **"Mohammed"** and **"verily"** appear exclusively in the Quran.
* Shared words such as **"god"**, **"day"**, **"you"**, **"king"**, and **"israel"** occur in both books but at different frequencies.

This visualization highlights key differences in vocabulary, linguistic structure, and theological emphasis between the two religious texts.

Word Cloud – Bible

**Obraz zawierający tekst, Czcionka, zrzut ekranu, projekt graficzny

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The word cloud for the Bible (KJV) is dominated by archaic personal pronouns and grammatical forms such as **"thou"**, **"thy"**, **"hath"**, and **"ye"**, reflecting the 17th-century linguistic style. Common words like **"lord"**, **"god"**, **"israel"**, **"king"**, and **"son"** point to the central spiritual and social themes of the text.

Word Cloud – Quran

**Obraz zawierający tekst, Czcionka, zrzut ekranu, design

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In the Quran (Pickthall translation), we again see archaic forms (**"thou"**, **"hath"**, **"ye"**), alongside terms specific to religious context, such as **"mohammed"**, **"prophet"**, and sacred places like **"mecca"**. Words such as **"truth"**, **"punishment"**, **"reward"**, and **"verily"** indicate a moral and didactic focus.

Top 10 Most Frequent Bigrams in the Bible and Quran

Obraz zawierający tekst, zrzut ekranu, numer, diagram

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This chart presents the top ten most frequent bigrams (pairs of consecutive words) found in the Bible and the Quran. The data was extracted from text analysis of both religious texts.

* In the **Bible**, archaic English constructions are prominent, such as *"thou hast"*, *"thou shalt"*, and *"shalt thou"*.
* Many bigrams reference God directly, like *"lord god"*, *"thy god"*, *"god hath"*, and *"jesus christ"*.
* In the **Quran**, in addition to religious expressions (*"god hath"*, *"fear god"*, *"merciful god"*), there are references to commentaries or social terms such as *"al beidâwî"* (a well-known commentator) and *"true believers"*.
* The shared bigram *"thou shalt"* indicates similar imperative structures, such as commandments or divine instructions.

The bigram analysis highlights stylistic and thematic patterns: the Bible tends to use archaic expressions and direct references to divine figures and commandments, while the Quran also includes doctrinal and exegetical terminology. Shared elements point to structural similarities in religious discourse.

Distribution of Sentence Sentiment

Obraz zawierający tekst, zrzut ekranu, diagram, Wykres

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Chart 1 shows the histogram of sentiment values. Both texts have a strong concentration around the neutral score (0), but the Bible displays more extreme values—both positive and negative.

Sentence Sentiment Variation

Obraz zawierający tekst, zrzut ekranu, diagram, Wykres

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Chart 2 shows sentiment values of each sentence in order of appearance. It reveals emotional variability across texts. Both show similar range, though the Quran appears slightly more stable.

Average Sentence Sentiment

Obraz zawierający tekst, zrzut ekranu, diagram, Czcionka

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Chart 3 compares the average sentiment value for each text. The Quran shows a higher mean sentiment, indicating that it uses slightly more positive language overall compared to the Bible.

Emotions in the Bible and Quran (percentage)

**Obraz zawierający tekst, zrzut ekranu, diagram, Wykres

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The above chart shows the percentage of words associated with specific emotions in the **Bible** and the **Quran**, based on the NRC emotion lexicon. Each bar represents the proportion of emotionally tagged words corresponding to each emotion.

* **Trust** is the most frequent emotion in both texts, with a noticeably higher proportion in the Quran.
* **Joy** also appears more frequently in the Quran than in the Bible.
* **Fear** and **anger** are slightly more prominent in the Bible.
* **Sadness** and **disgust** are present in both texts at a similar level.
* Overall, **positive emotions** are more dominant in the Quran.

While both texts include words tied to both positive and negative emotions, the analysis suggests that the **Quran contains a slightly higher proportion of positive emotional content**, particularly emotions related to **trust** and **joy**, which aligns with the results of the sentiment analysis.

Summary of the analysis (EN)

A comparative analysis of the Bible and the Quran shows that the Quran contains a slightly higher average positive sentiment than the Bible. Both texts share dominant emotions such as trust and joy, though with varying intensity. The most frequent words and bigrams reveal characteristic religious and imperative phrases, with a notable presence of archaic English in the Bible. Overall, both scriptures demonstrate a similar emotional and thematic structure, despite cultural and linguistic differences.