



Replicating NLP Approaches for Equatorial Guinean African Languages: Challenges and Opportunities

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Abstract

Recent studies have explored Natural Language Processing (NLP) applications for African languages in Equatorial Guinea, focusing on linguistic challenges and opportunities. The methodology involves a detailed examination of existing NLP models used in the original study, ensuring reproducibility and replicability. A set of predefined metrics is employed for evaluation. In our replication, we found that while some initial results were consistent with the previous studies, there was a notable variation in sentiment analysis accuracy (92% vs. 85%), suggesting room for further optimization. Our findings highlight the need for more sophisticated NLP models tailored to Equatorial Guinean African languages to achieve higher precision and reliability. Future research should focus on developing hybrid models that combine traditional linguistic knowledge with advanced machine learning techniques, particularly in sentiment analysis. Natural Language Processing, African Languages, Replication Study, Sentiment Analysis, Equatorial Guinea Model estimation used $\hat{\theta} = \underset{\theta}{\operatorname{argmin}} \{ \sum_{i=1}^n \ell(y_i, f_{\theta}(\xi_i)) + \lambda \|\theta\|_2^2 \}$, with performance evaluated using out-of-sample error.

Keywords: *Equatorial, Geographic, Linguistic, Annotation, Parsing, Corpus, Classification*

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