ABSTRACT

LEXICON-BASED SENTIMENT ANALYSIS AND TOPIC MODELING TO EXTRACT USER EXPERIENCE PAIN POINTS FROM USER REVIEWS: A CASE STUDY ON M-PASPOR GOOGLE PLAY STORE USER REVIEWS

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In the digital era, user-generated content, particularly online reviews, has become a valuable source of information for understanding user experiences and identifying areas for improvement in various products and services. This undergraduate thesis explores the application of lexicon-based sentiment analysis and topic modeling techniques to extract user experience pain points from user reviews, focusing on the M-Paspor mobile application available on the Google Play Store. The findings of this research contribute to a comprehensive understanding of the strengths and weaknesses of M-Paspor from the perspective of its user base and the feasibility of using the proposed to do so using user reviews.

The methodology integrates widely-used sentiment lexicons and advanced topic modeling algorithms to complement the accuracy and depth of the analysis. Combining Valence Aware Dictionary and sEntiment Reasoner (VADER) based sentiment analysis, Non-Negative Matrix Factorization (NMF) based topic modeling, and n-gram analysis to categorize, cluster, and extract user pain points from user review text. User pain points that are then reviewed by experts in software related user experience and information technology adjacent fields.

The proposed methods were able to extract pain points from the negative review corpus of M-Paspor's user reviews as categorized by VADER with the approval of 75% according to the feedback given by the external reviewers. Consistency between the external reviewers and objects acting as the samples in the review also reach 0.128 and 0.884 measured using Intraclass Correlation and Cronbach's Alpha respectively. Such that it can be concluded that the results of our study have proven the degree of feasibility for the proposed method in solving the given problem.