Chapter 2
Sentiment Analysis and Review Rating Prediction of the Users of Bangladeshi Shopping Apps

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ABSTRACT

The goal of this study is to apply machine learning (ML) approaches to assess user sentiment and predict review ratings for Bangladeshi shopping apps. The data for this study was obtained from the Google Play Store reviews of 15 Bangladeshi shopping apps. The AFINN and VADER sentiment algorithms were used to assess the filtered summary phrases as positive, neutral, or negative sentiments after cleaning. The present study additionally employed five supervised machine learning approaches to divide users' assessments of shopping apps into three sentiment groups. According to the findings of this survey, the majority of ratings for shopping apps were positive. While all five machine learning approaches (SVC, k-neighbors classifier, logistic regression, decision tree classifier, and random forest classifier) can properly categorize review text into sentiment classes, the random forest classifier outperforms in terms of high accuracy. This study adds to the literature on customer sentiment and aids app marketers in understanding how consumers feel about apps.

INTRODUCTION

Information flows digitally between users in today's fast-paced environment (Hossain et al., 2021), and it may also influence how other users perceive an event. As a result, it's critical to grasp popular opinion (Daudert, 2021). Because blogs, forums, and online social networks have all sprung up as a result of Web 2.0, allowing users to discuss and share their thoughts on any subject. They may, for example, express their dissatisfaction with a product they purchased, discuss current events, or voice their political opinions. Many applications (such as recommender systems), as well as organizational survey analysis and political campaign preparation, rely on such information about users (Dang et al., 2020). Basically, all businesses rely on data to function. Data-driven decisions are becoming increasingly important in order to stay competitive or fall farther behind. Massive volumes of data can now be collected in modern times. Manually gathering and evaluating data is, however, exceedingly difficult (Aslam et al., 2020), so we need artificial intelligence (AI) to effectively acquire and evaluate vast volumes of data (Kler et al., 2022). In the current project, for example, more than 111944 users' data will be gathered and assessed using ML programming, which is a subset of AI.

A review is a piece of feedback provided by a user who has either purchased and used the product or service, or has had some other interaction with it. User reviews are a type of customer feedback that may be found on the internet (Hossain and Rahman, 2022; Pashchenko et al., 2022). Electronic user reviews are peer-generated product evaluations and judgments that are posted on a company's or a third-party website such as the Google Play Store. User reviews provide additional backing for a choice and boost trust in the decision maker (Dwidienawati et al., 2020). Furthermore, Wang et al. (2021) claimed that increasing the volume and quality of evaluations boosted the profitability of a business. According to Chevalier and Mayzlin (2006), users' online reviews have a major influence on product and service revenue.

Over the last few years, smartphone applications have become increasingly popular (Hassan et al., 2017). People's abilities to perform daily tasks and activities have tended to be extended by mobile apps. As the number of smartphones in the world grows, so does the number of apps downloaded from app stores (Triantafyllou et al., 2020).

App platforms such as the Google Play Store and other app stores give app developers a unique consumer feedback system in the form of app reviews. The Google Play Store is a Google-run digital distribution platform. It also offers other digital products such as e-books, movies, and music, in addition to applications. In the app shops, users can find both paid and free apps. Paid applications must be purchased before they can be used, whereas free applications may be downloaded for free. Apps may be manually or automatically downloaded and updated via the

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