

INTRODUCTION

Indonesia is undergoing rapid urbanization, with its major cities experiencing significant growth [1], especially in metropolitan areas like Jabodetabek [2]. Therefore, the need for efficient public transportation in Jabodetabek is crucial in shaping the daily activities of the people [3]. Responding to this demand, the government introduced a new public transportation mode, namely Light Rail Transit (LRT) Jabodebek (Jakarta, Bogor, Depok, Bekasi), in August 2023 [4]. The aim is to fulfil the mobility needs of the population and contribute to the overall well-being of society [5].

The Role of LRT Jabodebek as a mode of transportation in service quality has positive implications. By providing comfort, timeliness, and safety, LRT Jabodebek can efficiently address the daily mobility needs of metropolitan residents [6]. The reduction in travel time, increased productivity, and decreased air pollution illustrates the tangible benefits of LRT Jabodebek to encourage people to switch to this public transportation option [7]. Despite the addition of a new public transportation mode that can improve mobilization with a quick travel time, the number of Jabodebek LRT users is not as substantial as it was during its initial operations [8]. This is allegedly because the community is perceived to be less satisfied when using this mode of transportation, which has various shortcomings in its service quality.

However, the long-term success of LRT Jabodebek relies on the quality of its services to provide a satisfying user experience. This enhancement is not merely an option but a necessity to ensure that LRT Jabodebek meets the expectations of the public, supporting more efficient daily lives and becoming the primary transportation choice. Therefore, promptly detecting and addressing issues related to services is a critical element [9]. Studies and analyses of the performance of LRT Jakarta and LRT in Klang Valley highlight efforts to enhance operational efficiency and services [6], [10]. This analysis underscores the urgency of service quality in public transportation and the continuous improvement needed to enhance the success of LRT Jabodebek [6].

The LRT Jabodebek, as a new mode of transportation, faces various challenges such as insufficient preparation for operational launch, recurring technical disruptions, and ensuring services alignment with user needs. These challenges have generated diverse public opinions regarding its operational services. The public's perception of LRT Jabodebek services, whether positive or negative, plays a crucial role in shaping improvements and enhancements to this new mode of transportation [11]. Understanding diverse opinions in society is a complex task, involving exploration of various perspectives among users and non-users of LRT Jabodebek. Additionally, sentiments expressed by individuals on social media platforms serve as valuable data, reflecting diverse opinions, complaints, and aspirations related to LRT Jabodebek services [12].

In response to the challenges posed by the abundance of social media data, sentiment analysis becomes a relevant tool [13]. This research utilizes sentiment analysis to identify and delve into positive and negative sentiments regarding LRT Jabodebek services using comments on social media [14]. We combine Lexicon-based approaches [15], the application of IndoBERT specifically designed for Indonesian language analysis [16], and topic modelling techniques using BERTopic [17]. This research offers an innovative and holistic approach aiming to measure positive and negative sentiments of the community towards the Jabodebek LRT service using the InSet Lexicon and IndoBERT approaches. We analyzed frequently occurring topics for each polarity using BERTopic and assesses the dimensions of service quality improvement needed by the relevant stakeholders of the LRT Jabodebek. The results of this

study can provide recommendations for LRT Jabodebek to obtain feedback for improving service quality.