ABSTRACT

In 2022, electric motorcycles began to become one of the new breakthrough and alternative technologies that replace conventional motorcycles. The popularity of electric motorcycles is becoming a trending topic. Many public responses have emerged regarding the advantages and disadvantages of electric motorcycles. Many people think that electric motorcycles are a substitute for gasoline, which contains carbon emissions emitted by conventional motorcycles. There are also many public responses to electric motorcycles, which consider them to be dangerous because they do not make noise and tend to be more wasteful in maintenance costs than conventional motorcycles. VIAR electric motorcycles are one of the most used electric motorcycle brands in Indonesia. However, public perception of VIAR electric motorcycles in Indonesia remains a challenge.

In this study, the author focuses on the public perception of VIAR electric motorcycles on Twitter using Sentiment analysis and Topic modelling approach. This study seeks the sentiment analysis and topic modelling of public perceptions on Twitter regarding VIAR electric motorcycles, utilizing a non-probability method. A large dataset of tweets containing specific keywords related to VIAR electric motorcycles in Indonesia is analysed using machine learning sentiment analysis, Naïve Bayes and Topic modelling.

The methodology employed in this paper is a quantitative method with the aim of descriptive research. Subsequently, for the Sentiment Analysis, the Naïve Bayes classifier is used for sentiment analysis of VIAR electric motorcycles, with classifications of related tweets as either positive, negative, or neutral. Also, the collected data will be processed through the LDA model to determine the topics discussed.

The result shows there are 51.7% positive perception, 13.3% negative perception and 35% neutral perception. Indonesian people gave more positive opinions compared to negative and neutral opinions towards VIAR electric motorcycles from January to December 2023, with an overall accuracy of 69% and the test dataset by 20%:80%. On topic 1, financial and regulatory aspects are being discussed on how subsidies, pricing, and government policy influence market dynamics. The consumer experience in urban settings on topic 2 is the practicality of electric motorcycles for daily use, their battery life, power, and overall ease of use. Economic and consumer aspects of topic 3 also include financial incentives, purchasing trends, and the impact of branding and consumer-friendly policies on sales. Accessibility and usability on topic 4 are discussed, including affordability, environmental impact, safety, and comfort. User experience and social aspects on topic 5 highlight the integration of electric motorcycles into daily personal transport and ride-sharing services. Commercial activity discussions on topic 6 encompass sales strategies, brand-specific comparisons, and overall marketing within the sector. Public perception and experience on topic 7 cover the usability, sound, and convenience of electric motorcycles, alongside online engagement and e-commerce strategies.

The insights gathered suggest that there are also concerns about theoretical and practical matters such as advancement in sentiment analysis methodologies, enhanced understanding of consumer behaviour, contribution to topic modelling techniques, insights into sustainable transportation adoption, strategic insights for VIAR and similar companies, policy development and advocacy, consumer awareness and education, market analysis for investors and stakeholders, and lastly, the guidance for social media strategy.