ABSTRACT

The development of electric motorcycle technology in Indonesia is driving the transition to sustainable transportation, offering environmentally friendly solutions as an alternative to conventional vehicles. This study aims to analyze the factors that influence people's intention to adopt electric motorcycles using the Technology Readiness and Acceptance Model (TRAM) approach with a quantitative method through Partial Least Squares - Structural Equation Modeling (PLS-SEM). Data were collected through a questionnaire distributed to 309 respondents from various regions in Indonesia, including electric motorcycle users or those with knowledge of this technology. The results show that psychological factors, such as optimism (OP) and innovativeness (IN), have a significant positive influence on perceived usefulness (PU) and perceived ease of use (PEOU), with path coefficients of OP → PU: 0.398 (p = 0.000) and IN → PEOU: 0.737 (p = 0.000). Conversely, discomfort (DC) has a significant negative effect on PEOU with a coefficient of -0.221 (p = 0.000) due to the limitations of the Public Electric Vehicle Battery Exchange Station (SPBKLU) infrastructure, while insecurity (IS) is not significant for PU (β = -0.043; p = 0.171) and PEOU (β = -0.014; p = 0.012). Furthermore, PEOU affects PU (β = 0.165; p = 0.002), attitude toward use (AT) (β = 0.451; p = 0.000), and behavioral intention (BI) (β = 0.758; p = 0.000) through the mediation of PU, with the TRAM model explaining 57.5% of the variance in BI. These findings provide insights into the role of psychological and infrastructure factors in driving the adoption of electric motorcycles, supporting the target of 2.1 million units by 2030 amid challenges such as a 70% decline in sales in early 2025 due to uncertainty over subsidies of Rp7 million per unit.

Keywords*: electric motorcycle, technology acceptance, TRAM, PLS-SEM, Indonesia*