

## INTISARI

Penelitian ini mengkaji strategi mitigasi risiko lingkungan dalam pengelolaan limbah baterai kendaraan listrik berbasis persepsi dan partisipasi pengguna di Daerah Istimewa Yogyakarta. Penelitian bertujuan: (1) menganalisis karakteristik pengguna dan tingkat pengetahuan mereka terhadap kendaraan listrik dan pengelolaan limbahnya; (2) mengkaji faktor-faktor sosial, ekonomi, dan regulasi yang memengaruhi persepsi serta sikap pengguna terhadap pengelolaan limbah baterai; dan (3) merumuskan strategi mitigasi risiko lingkungan berbasis partisipasi yang aplikatif dan kontekstual. Penelitian ini menggunakan metode (*mixed methods*), dengan pengumpulan data melalui survei terhadap 68 responden pengguna kendaraan listrik yang dipilih dengan teknik *accidental sampling*, serta wawancara mendalam dengan Dinas Lingkungan Hidup dan dealer kendaraan listrik di Daerah Istimewa Yogyakarta. Analisis data dilakukan secara deskriptif, dengan uji korelasi Spearman untuk hubungan antarvariabel, dan analisis tematik untuk data kualitatif. Hasil penelitian menunjukkan bahwa meskipun tingkat pengetahuan dan persepsi pengguna terhadap risiko lingkungan dari limbah baterai tergolong sedang hingga tinggi, tingkat partisipasi mereka dalam pengelolaan limbah masih rendah. Ditemukan hubungan positif dan signifikan antara tingkat pengetahuan dan partisipasi, serta antara persepsi dan partisipasi. Keterbatasan regulasi daerah, minimnya infrastruktur daur ulang, dan rendahnya literasi masyarakat menjadi faktor penghambat utama. Penelitian ini merekomendasikan strategi mitigasi berbasis kolaborasi antara pemerintah, masyarakat, dan pelaku industri, melalui edukasi berkelanjutan, penguatan regulasi lokal, dan pengembangan infrastruktur pengelolaan limbah berbasis partisipasi masyarakat. Temuan ini diharapkan menjadi referensi bagi penyusunan kebijakan pengelolaan limbah kendaraan listrik yang berkelanjutan di Daerah Istimewa Yogyakarta.

**Kata Kunci:** Kendaraan Listrik, Limbah Baterai, Mitigasi Risiko, Partisipasi Masyarakat, Persepsi Pengguna

## ABSTRACT

This study examines risk mitigation strategies for electric vehicle (EV) battery waste management based on user perceptions and participation in the Special Region of Yogyakarta, Indonesia. The research aims to: (1) analyze user characteristics and their level of knowledge regarding electric vehicles and battery waste management; (2) examine social, economic, and regulatory factors influencing user perceptions and attitudes toward battery waste management; and (3) formulate applicable and contextual risk mitigation strategies based on community participation. A mixed-methods approach was employed, involving a survey of 68 electric vehicle users selected through accidental sampling, and in-depth interviews with representatives from the Environmental Agency and EV dealers in Yogyakarta. Data were analyzed using descriptive statistics, Spearman's correlation to assess relationships between variables, and thematic analysis for qualitative data. The findings reveal that while users demonstrate moderate to high levels of knowledge and perception regarding environmental risks associated with battery waste, their actual participation in waste management initiatives remains low. There is a significant positive correlation between knowledge and participation, as well as between perception and participation. However, limited local regulations, lack of recycling infrastructure, and low public literacy on battery waste issues remain key challenges. The study recommends collaborative risk mitigation strategies involving the government, community, and industry stakeholders. These include continuous public education, strengthening local regulations, and developing community-based waste management infrastructure. The results are expected to serve as a reference for formulating sustainable battery waste management policies for electric vehicles in the Special Region of Yogyakarta.

**Keywords:** Battery Waste, Electric Vehicle, Public Participation, Risk Mitigation, User Perception