

# Technology Adoption in E-waste Urban Mining: A Unified Technology Adoption Model from Developing Country Perspective

## Abstract

Developing countries are under escalating pressure to manage the pandemic of electronic waste (e-waste), exacerbated by inadequate and outdated e-waste management practices. In fact, there exists a pressing need to transition towards sustainable technologies to address the increasing volume of e-waste and its consequences. However, conceptual models that promote an understanding of factors influencing technology adoption in e-waste urban mining are lacking. The study presents a conceptual model to offer insights into factors shaping technology adoption in the e-waste urban mining nexus. Drawing from the Diffusion of Innovation (DOI), Technology Acceptance Model (TAM), Unified Theory of Acceptance and Use of Technology (UTAUT), and Technology Organization Environment (TOE), the study aims to develop a conceptual model that enhances understanding of factors influencing the adoption of technology in the e-waste urban mining industry. The study model will be further tested via 25 interviews followed by 250 surveys with designated participants in both formal and informal sectors from a developing country perspective. The study proposed the Unified Technology Adoption Model tailored to the e-waste urban mining context to understand what factors influence the adoption of technologies. The proposed conceptual framework produces technological know-how, environmental pressure, organizational readiness, technology design, perceived usefulness, and perceived ease of use as crucial technology adoption factors. This is the first study that extensively conceptualized the factors that influence the technological adoption of e-waste urban mining from a developing country perspective. Also, the study extends the application of the adopted theoretical models since not many of these models have been contextualized within the urban mining nexus.