



**“Gheorghe Asachi” Technical University of Iasi, Romania**



---

## **MOBILE PHONE AND SPENT LAPTOP WASTE: GENERATION, DISSEMINATION AND FLOW PATTERN ANALYSIS**

**Mohammad Abdur Rouf Khan<sup>1\*</sup>, Mohammad Abdul Motalib<sup>2</sup>,  
Abu Hekmot Mohammad Saadat<sup>1</sup>**

<sup>1</sup>*Department of Environmental Sciences, Jahangirnagar University, Saver, Dhaka-1342, Bangladesh*

<sup>2</sup>*Department of Environment, E-17 Sher-E-Bangla Nagar, Agargaon, Dhaka-1215, Bangladesh*

---

### **Abstract**

The digital revolution has induced social and environmental impacts, which have generated a new crisis in Bangladesh concerning e-waste. Data on market supply and the use of this equipment could provide a more realistic assessment of e-waste compared to information on e-waste generation previously estimated from production data. In this context, a survey was conducted to explore in depth the patterns of e-waste generation, public awareness, participation in formal management and practices of stakeholders related to the generation of electrical and electronic waste. The existence of four categories of interested parties was found: I - the device importer, II - users, III - the debris store and IV - the recycling organization. A total of 1138 individual respondents were interviewed, and the statistical software package for the social sciences (SPSS, v-22) was used to analyze the data from the questionnaire. The study reveals that 18775792 units of mobile phones, 445409 units of laptops and 1295923 units of lithium-ion batteries weighing 4655 metric tons (Mt) entered the local market in 2021; while 1666 Mt of obsolete products were collected for treatment. The paper aims to identify various stakeholders involved in e-waste generation in the local market to provide a clear picture of e-waste generation patterns. The study sought to show the future challenges facing a developing country and strengthen intergovernmental policy enforcement to comply with the UN Sustainable Development Goals as sustainable cities (SDG 11), responsible consumption and production (SDG 12).

*Key words:* discarded laptop, e-waste, lithium-ion battery, spent mobile phone, WEEE

*Received: March, 2022; Revised final: July, 2022; Accepted: August, 2022; Published in final edited form: August, 2022*

---

---

\* Author to whom all correspondence should be addressed: e-mail: [arkhan.phd@gmail.com](mailto:arkhan.phd@gmail.com), Mobile: +8801716063294