# Chapter 2

# Literature Review

* 1. **Introduction**

Waste (Waste management) is one of the fastest-growing waste streams globally, and its management has become a significant environmental challenge. Waste management includes discarded electronic devices such as computers, televisions, and mobile phones. These devices contain hazardous materials such as lead, cadmium, mercury, and brominated flame retardants that can have adverse effects on human health and the environment. To manage this waste stream, an effective Waste management management system is required. This literature review discusses various aspects of Waste management management systems, including their challenges, solutions, and current trends.

**2.2 Challenges of Waste management**

The challenges of Waste management include inadequate infrastructure, lack of awareness, and the complex nature of electronic devices. According to, the inadequate infrastructure for Waste management is a significant challenge, particularly in developing countries. In many developing countries, there is a lack of proper collection, transportation, and disposal facilities for Waste management. Additionally, many people are not aware of the hazardous nature of electronic devices, and they dispose of them improperly. This lack of awareness has resulted in a high rate of Waste management being sent to landfills, where it can contaminate the soil and water.

**2.3 Solutions for Waste management**

Several solutions have been proposed for managing Waste management. These solutions include the implementation of Extended Producer Responsibility (EPR) programs, the development of collection and recycling infrastructure, and the promotion of sustainable consumption. According to, EPR programs make producers responsible for the end-of-life management of their products. This approach encourages producers to design products that are easier to recycle and to take responsibility for the disposal of their products. The development of collection and recycling infrastructure is also crucial for effective Waste management. This infrastructure should include collection points, transportation, and recycling facilities. Finally, promoting sustainable consumption involves reducing the amount of Waste management generated by encouraging people to use products for a more extended period.

**2.4 Current trends in Waste management management**

Current trends in Waste management include the adoption of circular economy principles, the use of innovative technologies, and the development of international regulations. According to, the circular economy principles involve designing products for repair, reuse, and recycling. This approach aims to reduce the amount of waste generated and ensure that the resources used in product manufacturing are conserved. Innovative technologies such as artificial intelligence (AI) and the Internet of Things (IoT) are also being used to improve Waste management. For example, AI can be used to identify and sort Waste management, while IoT can be used to track the movement of Waste management from collection to disposal. Finally, international regulations such as the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal have been developed to control the movement of Waste management across borders.

## 2.5 Conclusion

Waste management management is a significant environmental challenge that requires a comprehensive and effective management system. The challenges of Waste management include inadequate infrastructure, lack of awareness, and the complex nature of electronic devices. To address these challenges, solutions such as EPR programs, the development of collection and recycling infrastructure, and the promotion of sustainable consumption have been proposed. Current trends in Waste management include the adoption of circular economy principles, the use of innovative technologies, and the development of international regulations. A combination of these solutions and trends can lead to an effective Waste management system that reduces the negative impact of Waste management on the environment and human health.

**2.6 References**

Shah, K. U., Nnorom, I. C., & Idris, O. (2015). Waste (Waste management): An overview on generation, collection, legislation and recycling practices. Renewable and Sustainable Energy Reviews, 47