Chapter 9
An Overview of E-Waste Management:
Health Obstacles and Prospects

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ABSTRACT

The reuse and recirculation of products and materials are the basis of the concept of the circular economy. A circular economy entails markets that give incentives to reusing products, rather than scrapping them and then extracting new resources. The circular economy model has become highly relevant in recent years, with the electronics industry being one of the sectors that have considered its application. Electronic waste (e-waste), that is, waste arising from end-of-life electronic products similar to computers and mobile phones, is one of the swiftly growing waste aqueducts in this world moment. The developing world has come to the primary destination for the habituated electrical and electronic outfit (EEE) exported by the advanced world, making waste operations critical. Indeed, though numerous studies were conducted on waste operation, veritably many are conducted in developing countries that are significant donors of used EEE. India is among the top five-waste-producing countries in the world with an estimated periodic product of 2 million tons.

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INTRODUCTION

Electronic waste, as known as e-waste, is generated when any electronic or electrical outfit becomes unfit for the intended use or if it has crossed its expiry date. Electrical and electronic equipment (EEE) has turned out to be the most vital accessory to our everyday life (Kazancoglu, Mangla, & Ram, 2020). Given the potential for growth, this concept is becoming increasingly relevant for e-products which is identified as one of the key focus areas by the recent Circular Economy (Isernia et al., 2019). The increasing population, excessive use of electrical and electronic products, and extreme demand for resources have compelled the linear economy to transform into Circular Economy (Isernia et al., 2019). A circular economy, by definition, covers the entire lifecycle of a product, which requires an optimal combination of business model and design strategy for slowing, narrowing, and closing resource loops (European Commission Communication, 2015). Due to rapid-fire technological advancements and the product of newer electronic outfits, the old bones get easily replaced with new models. This has particularly led to an exponential increase ine-waste in India. India is a big request for electronic bias. E-waste is an arising problem given the volumes ofe-waste being generated and the content of both toxic and precious paraphernalia in them. This presto-growing waste aqueduct is accelerating because the global request for particular computers (PC) is far from achromatism and the average life span of a PC is abating swiftly. Over the formerly three decades, the global request for electrical and electronic outfits (EEE) continues to grow exponentially, while the life span of those products becomes shorter and shorter. Predictably, the number of electrical biases will continue to increase on a global scale as the product of EEE is one of the nippy-growing global manufacturing exertions and microprocessors will be used in ever-adding numbers in quotidian objects. At present, general disquisition one- waste operation in developing countries is still in its childhood.

E-waste is posing a serious challenge in the disposal and recycling of both developed and developing countries. While having some of the world's most advanced high-tech software and attack development installations, India's recycling sector can be called medieval. The ditching of e-waste, particularly computer waste, into India from advanced countries and all this has made e-waste operation an issue of environmental and health concern. Compared to conventional external wastes, certain factors of electronic products contain toxic substances, which can induce trouble to the terrain as well as to mortal health. For case, television and computer spectators generally contain dangerous paraphernalia analogous to lead, mercury, and cadmium, while nickel, beryllium, and zinc can constantly be set up on circuit boards (Joon, Shahrawat, and Kapahi, 2017). In the last two decades, increasing environmental awareness has strongly influenced the relationship between the production and consumption of products, environmental protection, and sustainability (Kumar Awasthi et al., 2018). Due to the presence of these substances, recycling, and disposal ofe-waste becomes an important issue.

A number of people are ignorant of the implicit negative impact of the swiftly adding use of computers, spectators, and boxes. When these products are placed in tips or incinerated, they pose health risks due to the dangerous paraphernalia they contain. The infelicitous disposal of electronic products leads to the possibility of damaging the terrain. As further waste is placed in tips exposure to environmental venoms is likely to increase, performing to elevated risks of cancer and experimental and neurological conditions.CE is considered a new business model able to support more sustainable development by retaining, as much as possible, products, resources, energy, and materials (Bocken et al., 2016). A major auto mobilise of the growinge-waste problem is the short life span of utmost electronic products lower than two times of computers and cell phones. India, moment, is burdened with the enormous volume of