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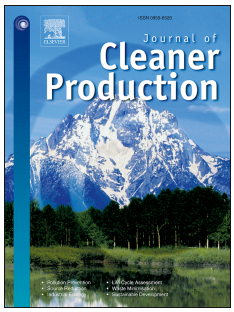

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Exploring Chinese Consumers' Attitude and Behavior toward Smartphone Recycling

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Abstract

This paper aims to provide latest research results on consumer attitudes and behaviors about smartphone recycling. In particular, the study considers China as an example and reviews the country's recent progress in legislation and business practice in smartphone recycling. The study relies on a national survey to identify the patterns and trends in Chinese consumers' recycling attitudes and behaviors. Our results show that on top of incentive and convenience, information security is the number one requirement for consumers to recycle their smartphones. Additionally, although China has made significant progress in improving social environment and people's consciousness for phone recycling, more people still choose to store their waste smartphones at home. Moreover, the impact of recycling service on the sales of new phones is also discussed in the context of closed-loop supply chain design. As an exploratory attempt to understand smartphone recycling from the consumers' perspectives, this article presents critical factors influencing consumers' attitudes and behaviors in China, and sheds new lights on future academic research directions as well as on managerial applications and policy-making.

Key Words: Mobile phone recycling; Smartphone; Consumer behavior; WEEE

1. Introduction

Waste electrical and electronic equipment (WEEE, often referred to as E-waste) is one of the world's fastest growing solid wastes (Guo et al., 2015; Wei and Liu, 2012). Of all kinds, mobile phone is the most ubiquitous electronic product (Guo and Yan, 2017). By 2015, the number of worldwide cellphone subscribers has reached 7.1 billion (ITU Report, 2015). With the rapid development of network infrastructure and the growing popularity of smartphone, a mobile phone has exceeded its basic role as a communication tool and has gradually entered into every aspect of our lives. The fast penetration rate and upgrade speed are leading to an unneglectable amount of obsolete mobile phones in the world (Jang and Kim, 2010; Paiano et al., 2013). China has become the largest producer and consumer of mobile phones in the world since 2004 and the market has been growing continuously ever since. The average possession of mobile phone per inhabitant in 2025 is estimated to be two times higher than the average possession in 2010, leading to a total possession amount of mobile phones over 1.64 billion units in 2025. Moreover, 781 million units of obsolete mobile phones were generated in 2015, and the number will grow to 877 and 937 million units in 2020 and 2025, respectively (Guo and Yan, 2017). Compared with traditional municipal waste, it is more complicated to dispose of obsolete mobile phones because they contain both the highly hazardous substances that impose environmental danger and the valuable metals that can be recovered and reused as substitutes for raw materials.