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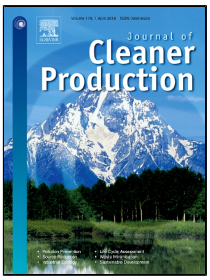

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Governance of Electronic Waste Recycling Based on Social Capital Embeddedness Theory

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Abstract: The implementation of EPR systems has posed enterprises with high responsibilities in e-waste governance and management. However, most enterprises have demonstrated a very low interest in EPR systems as expected due to a wide range of barriers, involving high cost, low efficiency on subsidies audit, a lack of effective and efficient collection systems, and low levels of public awareness and participation. We argue that social capital might function as the 'relational glue' underpinning effective supply chain relationships in e-waste management. Drawing upon a survey of 800 enterprises, we utilize structural equation model to examine the relationships between social capital, governance and willingness to participation in e-waste recycling behaviour. Findings show that social capitals have a positively impact on both governance practices and willingness to participation. Nonetheless, the positive effects of cognitive social capital and incentives on willingness to participation are limited due to the lack of coercive powers.

Keywords: electronic waste; social capital; recycling governance; stakeholder co-governance

1. Introduction

Partly driven by rapid economic growth, technology innovation and ever-shortened product lifespans, the fast-growing amount of e-waste has posed a significant threat to environment and health as well as substantial challenge to waste management and environmental governance. Generally, E-waste, also named as WEEE, refers to a large variety of electrical and electronic equipment (EEE) and its parts that have been discarded by its owner without any intention of further reuse. Such equipment includes household appliances, IT and telecommunications equipment, automatic dispensers and lighting equipment. Noteworthy, products that contain a battery or plug are also regarded as EEE, including but not limited to intelligent clothes, smart toys and tools, ubiquitous medical equipment (Balde et al., 2015). United Nations University 2015 report estimates that the total amount of e-waste generated globally in 2014 was 41.8 million metric tonnes (Mt), with a potential arise to 50 Mt in 2018 (Balde et al., 2015).

Mainland China plays a critical role in the global EEE industry, including the manufacturing, refurbishment, reuse, and recycling of e-waste. The discarded TVs, phones, computers, monitors, e-toys and small appliances grew by 6.7 Mt in 2015 alone, an 107% increase in just five years (Leahy, 2017). Mainland China is also a recipient of e-waste from other developing countries, with an estimated 1.5–3.3 Mt exported to Mainland China each year (Honda et al., 2016). Realizing the substantial negative impact of e-waste on environmental deterioration and health, the Chinese government had issued a variety of environmental laws, legislation and standards related to WEEE management, making a commitment to establish a formal recycling system. As one of the most important milestones, in 2017, China clearly advanced comprehensively implementing extended producer responsibility (EPR) system among high-pollution enterprises like the fields of electrical and