

# **EXPLORING THE VIRTUAL MARKET OF RECYCLING: A CASE STUDY IMPROVING WASTE REUSE AND RECYCLING IN BANGKOK**

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## **ABSTRACT**

Increasing quantities of solid waste is a global challenge for many urban areas in industrializing countries, such as Thailand. United Nations Sustainable Development Goals (SDGs) set clear targets and indicators to improve the waste situation globally. These targets include higher collection rates, safe disposal practices and enhancing the rates of waste reuse and recycling. Bangkok, with a population of 9.5 million (Population of 2018) is facing a number of challenges in solid waste management. These challenges include an increasing quantity of waste, a shortage of waste disposal sites, and reduced incentives to reuse and recycle waste. While at the same time, 80% of the population has active internet and phone connections (Internet World Statistics, 2018).

This paper explores the viability of a virtual waste market in Bangkok by connecting the supply and demand of recyclable waste materials through a mobile application. Particularly, its viability is explored in the nexus between government institutions, informal systems of waste recycling, and in Bangkok population groups. Behaviors and attitudes towards the use of virtual markets to enhance recycling rates have been studied, while key actors (especially those who directly deal with the waste generators) in the recycling chain are also interviewed.

The paper concludes that the concept of a virtual market through a mobile application offers the potential to enhance connection between supply and demand. A virtual market offers the advantage of real time information regarding the material's quality, quantity, prices and locations. It also offers faster and reliable transfer of money. Buyers and sellers can even rate the quality of each other's services. However, to achieve the full advantages and to build a system, all the actors in the chain need to be connected. The study found that itinerant waste buyers and waste pickers directly access the waste and deal with the waste generators. While these groups are the most important links in the chain, they have a low connectivity to mobile phones and hence could not acquire full benefits of the virtual market. Virtual market works well when the connectivity is available to all the relevant groups. The paper concludes that recycling and reuse rates of waste materials can be increased through virtual market if the support is targeted to connect all.