# Evaluating the Challenges and Obstacles of Recycling Industry of Hong Kong in the Perspective of Recycling Value Chain -A Comparative Study of the Plastics and Metals Recycling

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#### **Background**

Problem nowadays: Low overall recycling rate

→Metal: high recycling rate ; plastics: low recycling rate Recycling value chain: focus on the positive value created by recycling

Made up by 5 components:

- 1. Waste Produce
- 2. Waste Collection
- 3. Sorting
- 4. Further Treatment
- 5. Secondary Goods



Findings	
Some major findings:	
Waste Produce	<ul> <li>High awareness</li> <li>Major source of metals is from construction site</li> </ul>
Waste Collection	<ul> <li>Rely on 3 colored recycling bins</li> <li>Majority of waste metals are delivered directly to the recycler</li> </ul>
Sorting	<ul> <li>More complicated sorting process of plastics</li> </ul>
Further Treatment	<ul> <li>Mainly export to other countries</li> <li>Cost: Plastics &gt; Metals</li> <li>Benefit: Plastics &lt; Metals</li> </ul>
Secondary	<ul> <li>High acceptance level and price</li> <li>Small market demand</li> </ul>

#### **Research Objectives**

Main Objectives: Investigate the major difficulties and blockages of the recycling value chain that suppress the development of the recycling industry in Hong Kong.

#### 4 sub-objectives for the research:

- 1. To understand the current situation of the recycling industry and the recycling value chain in Hong Kong.
- 2. To find out the attitude of general citizens towards recycling.
- 3. To examine the effects of recycling of collection points and further treatment.
- 4. To identify the major blockage in the recycling value chain that hinders the development of the recycling value chain.



### **Theoretical Framework**

#### Goods

- Small market demand
- Metal: higher value-added





Waste Collection Points – Community Green Station

Metal Sorting

#### **Implication**

- 4 Reasons for high metals recycling rate but low plastics recycling rate:
- 1. Shorter and simpler RVC of metals recycling
- Majority of recycled metals from the construction site are directly sent to the recycler, involving less stakeholder, transportation and chance of being polluted.
- 3. Recycling of metals is lower cost, higher profit, higher valueadded
- 4. PVC cannot be recycled.

6 major obstacles in the recycling value chain:

Waste producers do not put recycling into practice,
 Amount of recycling waste is not sufficient →higher cost

## **Methodology**

- 229 Questionnaire responses
- 4 formal interviews
- 5 Site visits
- Literature review



- 3. Rely on 3 colored recycling bins.
- 4. Stricter regulations on exporting.
- 5. The local recycling market is too small  $\rightarrow$  less benefit
- 6. Inadequate government support, which makes the operation environment of recycler is not friendly

#### **Future Improvement**

- Provide monetary / material measures
- Increase number of collection points and education
- Source reducing
- Waste-to-energy

