

Chinese Resident' s Behavior and Preference toward Source Separation of the Household Kitchen Waste : A Case Study in Beijing City

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論 文 内 容 の 要 旨

High participation rates by the public in local authority schemes are crucial in increasing household recycling levels. Understanding waste separation behavior is key to achieving sustainable waste management within such household-based projects.

This study focuses on a real household kitchen waste source separation program in Beijing to understand the determinants of households' behavior toward household kitchen waste separation and to estimate and identify the value and residents' preference of household kitchen waste separation services attributes, and evaluate the value of household kitchen waste separation services based on about 400 respondents which were randomly collected in Haidian and Dongcheng districts of Beijing City in 2013 through face-to-face interviews.

To identify the driving forces behind kitchen waste separation behavior, five psychological factors, namely, attitude, perceived behavior control, subjective norms, moral norms, and responsibility denial, are established. Through structural equation modeling, we find that moral norms are consistently the most important predictor of household kitchen waste separation behavior. Subjective norms have a larger effect on such behavior than responsibility denial. Data analysis shows that perceived behavior control contributes significantly and independently to the explanation of such behavior. By contrast, attitude toward kitchen waste separation is found to be significantly negatively correlated with actual separation behavior. In combination, these predictors explain 50.3% of the variance in kitchen waste source separation behavior.

For the preference analysis, on average, most of respondents prefer services with frequent, evening, plastic bag attributes. Young respondents care only about the collection frequency, middle-age respondents prefer services with frequent evening collection, and free plastic bag attributes, while elder people prefer services with frequent collection, no instructor, free plastic bag, and compensation attributes. Furthermore, the latent class analysis suggested that two classes of residents exist in the sample. Interestingly, 70.1% of the sample who were highly educated, young, or with separation experiences are more likely to accept the proposed separation services with frequent evening collection, while they do not show significant preferences for the attributes of instructor, container, and compensation. For the remaining (29.9% of the sample) who were low educated, old, and with less separation experiences, joining the separation program would impose a loss of utility. Moreover, they seem to prefer services with the attributes of frequent collection, plastic bags, and compensation. However, they do not show significant preferences for the attributes of time and instructor.

On average, about 41.4% of 391 respondents agreed to accept the proposed price of household kitchen waste separation services, while 42.2% refused to pay, but with a positive attitude toward the household kitchen waste separation program. In addition, the contingent valuation method revealed that respondents' willingness to pay (WTP) for proposed services is significantly related to the level of bid price and their gender, age and education experience. Attitudinal factors that affect resident WTP were also found. For example, respondents who perceive themselves as having a higher ability to conduct household kitchen waste separation at the source are more willing to pay for their household kitchen waste separation services, while respondents who complain the inconvenience of conducting household kitchen waste separation show negative WTP. The results also showed that on average each household is willing to pay about US\$1.44 per month for household kitchen waste separation services, which is based on 327 respondents after excluding 64 (16.4% of all sample) who indicated complete opposition to the household kitchen waste separation program.