

Abstract**[Project Information]**

Project Title :	Effectiveness of Measures Using ICT and Other Tools for Preventing Household Food Waste
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[Abstract]

This research investigates the effectiveness of interventions to households on the reduction of avoidable food waste. The research consists of three subthemes each looking into the same topic with a different level of granularity.

Subtheme 1 is an analysis of the efficacy of existing policy measures taken by local authorities. This was conducted through several on-line questionnaire surveys to residents in chosen cities. 16 cities were chosen as representing those with administrative measures that are variable charging for general household waste collection, or separate collection for food waste, and those with four different types of awareness campaigns, as well as those without such measures as a control. In total, around 5000 responses from residents were gathered and analysed. Regarding administrative measures, statistically significant differences were not observed in the frequency of food wastage by the residents. On the other hand, a positive effect on food waste reduction behaviour was seen in cities with each awareness raising activity.

Subtheme 2 is an in-depth assessment of interventions involving refrigerator tidying tools, regular snapshots of fridge contents, food management smartphone app, and an originally developed behaviour recording app with a gamification aspect. This was investigated through two sets of panel studies, each involving about 125 individuals. The amount of food waste generated during the investigation period was automatically recorded via "smart bins" at home with a weight sensor connected on-line to the server. All interventions showed positive effects on food waste reduction, and further characteristics of each intervention were identified.

Subtheme 3 is the evaluation of some of the interventions mentioned above in a social experiment

setting. Case studies took place in Maizuru City, Kyoto Prefecture, and in Nagai City, Yamagata Prefecture. In each city, an experiment neighbourhood and a control neighbourhood were determined, with about 200 households each in Maizuru, and 500 each in Nagai. Composition analyses of household waste as well as questionnaire surveys were carried out once before and once during the intervention for both experiment and control neighbourhoods. It turned out that in either cities we could not establish a statistically significant effect of the interventions on the amount of food waste generated. Questionnaire results indicated that the interventions triggered initial awareness and behaviours such as checking the content of the refrigerator, however it is apparent that there are more factors involved in leading to a reduction in food waste that could be observed by sorting analyses.

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