

Extended Abstract

Paper/Poster Title	Innovation as an intervention: How being involved in innovations against food waste changes individuals' awareness, attitude, and behaviours towards food waste?
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Abstract	200 words max
<p>Food waste is a societal challenge with significant economic and environmental consequences. To reduce or prevent food waste, individuals' awareness, attitudes, and behaviours must improve. Active involvement of individuals and groups in interventions is found to promote desired attitudes and behavioural change more effectively than passive interventions such as campaigns. However, it remains to be investigated whether being involved in the implementation of innovations acts similarly to an active intervention. We hypothesise that active involvement in innovations tackling food waste acts as an intervention, and that employees of participating workplaces and members of testing households increase in their awareness and their negative attitude towards food waste, potentially resulting in behavioural change. We design surveys informed by the Theory of Planned Behaviour and administer them before and after the use of innovations. We analyse the responses using structural equation modelling. The results are in line with our hypothesis, yet a larger sample and further research are required. Our findings point to the additional social value created by public funds that focus on testing early innovations with target pro-environmental outcomes, e.g., H2020 Innovation Action projects. More social value in terms of individuals' attitudes and behavioural change might be achieved through funding innovation development.</p>	
Keywords	food loss and waste, innovation testing, Theory of Planned Behaviour, survey, consumer behaviour, awareness
JEL Code	O13 Innovation and Invention: Processes and Incentives; Q18 Agricultural Policy; Food Policy
Introduction	100 – 250 words
<p>Previous research has demonstrated that experiences involving concrete tasks and exposure to marginalised groups of people act similarly to an active intervention in promoting change in attitudes and awareness and can effectively modify behaviours in the anticipated direction. However, to the best of our knowledge, the effect of being involved in the implementation of innovations in the workplace or at home has not been investigated. In this study we hypothesise that taking an active part in the implementation of technological, organisational or social innovations aimed at preventing or reducing food waste acts as an intervention by increasing awareness and improving the attitude and behaviour of participants towards wasting food. We test this hypothesis in the framework of a Horizon 2020 Innovation Action project aimed at demonstrating innovations to combat food waste in three supply chains characterised by perishability (fruits and vegetables, bread and fish) as well as in the household and catering sectors.</p>	

We administer baseline and post-implementation surveys to the employees of both public (schools) and private (businesses) organisations and to the members of households involved in the testing of different types of innovations.

Methodology

100 – 250 words

Data were collected using survey questionnaires administered to the employees of private and public organisations and the members of households involved in testing different types of innovations in three food supply chains as well as innovations targeting the households and catering sector. The surveys were administered in the local languages in seven European countries with participants all aged 16 and above.

The surveys included a 33-item, five-level Likert scale, aimed at measuring the constructs of a revised version of the Theory of Planned Behaviour (TPB), which have commonly been used to identify pro-environmental behavioural change. The participants were asked to rate the same statements both before (baseline) and after participating in the implementation of the innovations. This approach allowed us to assess the changes resulting from involvement in the demonstration while reducing the possible desirability bias that could emerge from asking direct questions about food waste-related attitudes and behaviours.

After combining the statements into the constructs of the TPB, we examine the constructs by means of statistical tests. We use t-tests to assess the difference before and after the rating of statements, and structural equational models estimated separately for the baseline and post-implementation responses (and based on a model structure-imposed ex ante). These are used to assess the direction and significance of the relationships between the constructs, and how this change due to the involvements in the implementation of the innovations. Sample size is between 250 and 300 responses per phase and data collection is still ongoing.

Results

100 – 250 words

The consistency between responses to statements representing to the same construct of the TBP (i.e., awareness, moral concerns, perceived behavioural control, and intention), measured by means of the Cronbach's alpha, are satisfactory. Situational factors do not link significantly to behaviours and remain non-significant after implementation. This is predictable because the innovations do not impact the individuals' situation. Respondents from participating households show significantly larger improvements in awareness, moral concern for food waste, and behaviour compared to respondents from participating workplace. How respondents are impacted by their participation in the innovations differ among different demographic groups: behaviour becomes more favourable to reducing food waste among male respondents; an increase in attitudes favourable to food waste reduction is observed among respondents aged under 35; perceived behavioural control reduces among respondents with less-than-high-school-level education; and the respondents with university education or higher show no significant changes in any of the constructs.

The above results are preliminary. The current sample is small, and data collection for the post-implementation phase is still ongoing in several countries and innovation case studies. As a result, currently the sample for the post-implementation phase is smaller than the baseline data sample, which may have affected the significance of the coefficients.

Discussion and Conclusion

100 – 250 words



Our results points to changes, mostly favourable to food waste reduction, in aspects such as attitude, awareness, moral concerns and behaviour, among those who have been involved in the implementation of innovations. This is in line with the initial hypothesis that by actively participating in testing an innovation, participants become more cognisant of the issue that the innovation addresses and their attitudes and behaviours change accordingly. Thus, public (and, possibly, private) funding for testing innovation creates an additional and usually neglected benefit in terms of creating pro-environmental outcomes at individual level. However, although positive, the impact is not strong and not observed for all the participants. Some of the effects are more salient among specific socio-demographic groups of respondents and for specific innovation typologies. A larger data set would enable simultaneously testing of the effects of multiple variables as well as on sample subsets with more robustness. Further research could concentrate on improving survey design and data collection and focus on understanding more specific determinants of influence for certain demographics, so that testing innovations can be tailored to target intended attitude and behavioural changes among participants. As previous studies suggest, surveys can only capture self-declared change but not actual private behaviour. In the project within which this study has been implemented, we can compare food waste measured at household or firm level before and after the implementation of the innovations with the survey responses described above. This will enable us to discuss if there is consistency between waste quantities and survey responses coming from the same organisations.