RETASTE Conference Abstracts
RETASTE-CFW-1524-In-person Oral
Rethymno, September 16-18, 2026
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DOI:10.5281/zenodo.23678469

Reducing Food Waste in Retail and at Household Level: Evidence from Dynamic Pricing, Redistribution and Mobile-App Interventions in Greece

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Abstract

Food waste prevention requires interventions that address both retail practices and consumer behaviour. This study presents evidence from the Greek use case of the Horizon Europe ROSETTA project, implemented by Super Market Chalkiadakis in Crete, combining in-store dynamic pricing and redistribution of suboptimal food with digital behavioural interventions targeting household meat waste. The first pilot focused on tomatoes, bananas and ready-to-eat salads. Selected products approaching a suboptimal but still safe and marketable condition were offered at reduced prices, while unsold safe produce was redirected through a social support network instead of being discarded. Consumer-facing communication was used to support the intervention and operational data were collected to assess food waste reduction and implementation feasibility. The reduced-price approach proved particularly effective for tomatoes, with food waste decreasing by 1% compared with June 2025 and by 2% compared with July 2024. For bananas, no major additional effect was observed because discounted sales of ripe bananas had already been established practice. Ready-to-eat salads presented greater operational challenges due to their short shelf life and the limited attractiveness of a 20% discount, although food waste decreased by 1.1% compared with July 2024. The second pilot used the retailer's mobile application to send purchase-triggered notifications to customers buying packed pork and chicken, providing storage guidance, food safety information, meal ideas and food waste reduction tips. In one notification flow, 24,324 triggers generated 8,001 successful deliveries and 293 opens, while a second chicken-related flow generated 21,016 triggers and 6,912 successful deliveries. The implementation highlighted important practical barriers, including real-time integration between point-of-sale systems and the mobile application, expiry-date information linked to product barcodes, notification frequency and participant recruitment for follow-up surveys. Overall, the results suggest that combining price-based, redistribution and digital behavioural approaches can address food waste at different stages of the retail-consumer interface, while also demonstrating that intervention effectiveness strongly depends on product characteristics, operational feasibility and consumer responsiveness.

Keywords: Food waste prevention, retail, consumer behaviour, dynamic pricing, food redistribution, mobile applications, behavioural interventions

Acknowledgments: This work was conducted within the ROSETTA project (Reducing food waste due to marketing standards through alternative market access), funded by the European Union under Horizon Europe, Grant Agreement No. 101136427. Views and opinions expressed are those of the authors only and do not necessarily reflect those of the European Union or the European Research Executive Agency

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