BEvitalise

Revitalising the Belgian Circular Consumer: No time to waste food, nor electronics

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SUMMARY

Context

Belgium's continued transition to a circular economy has the potential to deliver important benefits – from reduced pressure on the environment, supply security, and increased competitiveness, innovation, and growth. Consumers have a vital role to play in this transition to deliver these benefits.

Objectives

BEvitalise has undertaken research on Belgian households' food and electronic waste decisions, to provide federal authorities with scientific evidence on how they can promote circular and climate-conscious behaviour patterns. Understanding the preferences underlying Belgian consumers' decision processes is key to transforming the linear economic model based on the 'take-make-consume-throw away' pattern into a circular one. Specifically, BEvitalise has conducted research on Belgian consumers' preferences in two domains: (1) minimising household food waste and (2) minimising household waste electrical and electronic equipment, which is the world's fastest-growing solid-waste stream.

Methods

BEvitalise used the methodology of discrete choice experiments in both studies on food waste and electronic waste, which is a method based on repeated fictional and hypothetical choices made by respondents to elicit their preferences. The theoretical framework for the **food waste** experiment study is grounded in the concept of a referendum discrete choice experiment, a method that presents respondents with a binary decision: to support or oppose a particular option. In this DCE, participants are faced with a straightforward choice concerning a food product and deciding whether to use it or discard it. The **electronic waste** experiment explored Belgian consumers' preferences for disposing of unused laptops or mobile phones at collection points, aiming to identify motivations for bringing old devices to these locations rather than hoarding them at home. Respondents were presented with a realistic scenario, iteratively refined for clarity and relevance, where they considered disposing of a device no longer in use after securing their data elsewhere. Consumers were asked to make a choice as to whether they would be more likely to dispose of their device based on the type of collection point, method of handing in (drop-off or in-person), whether there would be a guarantee of data removal, more information on next use (i.e. whether it would be reused or recycled), the compensation price, and compensation mode.

Results

The BEvitalise **food waste** experiment highlights the complexity of consumer behaviour in minimising food waste. A total of 967 respondents completed the experiment, representing the Belgian population in terms of age, gender, income, and region. One key issue that came through from the results was the misinterpretation of date labels, where many consumers wrongly associate "best-before" dates with food safety rather than quality. Another barrier is ineffective label designs, such as "look, smell, taste" labels, which failed to resonate with the majority of respondents due to unclear messaging, leading to unnecessary food waste. Consumers' aversion to risk also contributes to food waste. Many discard food that has been opened for longer periods, even if it is still safe to consume, due to a lack of confidence in sensory evaluation and fear of health risks. Nonetheless, older respondents were more likely to look, smell, and taste before discarding the food product, regardless of when it was opened.

The BEvitalise **electronic waste** experiment investigated the hoarding of unused electronic devices, focusing on the preferences and motivations of Belgian consumers to encourage the use of collection points instead of storing old mobile phones and laptops at home. A discrete choice experiment analysed attributes that could encourage disposal of such devices: the type of collection points (container parks, supermarkets, electronic stores, second-hand shops), drop-off methods (deposit machine, staff member), data removal guarantees, device reuse or recycling, and compensation (cash, vouchers, donation, or none, ranging from €0–€20). Out of 453 respondents, the findings revealed that 71% stored old devices, primarily as backups (64%), due to concerns about data security (22%) or a lack of awareness about retention and hoarding (36%), with mobile phones more commonly hoarded than laptops. Data removal guarantees and assurances about recycling or reuse strongly influenced willingness to dispose of their devices. In general, cash was preferred, but vouchers and donations could also convince people to hand in their devices. Respondents preferred container parks as a collection point, possibly due to a lack of awareness of alternative locations or for data concerns. These findings emphasise the importance of clear communication about device reuse or recycling, data security, and alternative disposal sites. Monetary incentives and increased awareness could significantly improve participation in collection schemes.

Recommendations

To address the issue of **food waste**, several recommended strategies have been proposed based on BEvitalise results and consultations with stakeholders. Consumer education campaigns should focus on promoting sensory checks for products past their "best-before" dates, raising awareness of sensory-based labels, and encouraging sustainable practices. Tailored campaigns targeting specific demographic groups, such as young adults and large families, could further enhance their effectiveness. Improved labelling practices are also essential. Labels should be designed with greater visibility and include supplementary text to clarify that food remains safe to consume past its "best-before" date, provided its quality is maintained. Introducing smart packaging options, offering clear storage duration guidelines, or leveraging digital tools to help consumers monitor and assess food quality could further address concerns and contribute to waste reduction. Stakeholder engagement plays a vital role in these efforts. Retailers should display in-store educational messages to promote

responsible consumption, while food literacy lessons in schools can help young people develop better label comprehension and waste reduction habits from an early age. Finally, a robust system for monitoring and adjustment should be implemented to track food waste levels and refine strategies based on emerging data. These interconnected approaches aim to significantly reduce avoidable food waste, boost consumer confidence, and encourage more sustainable consumption practices.

To improve the recycling and disposal of **electronic waste**, such as laptops and mobile phones, it is recommended to provide clear and transparent information about the fate of devices handed in at collection points—whether repaired and reused or recycled. Guaranteeing personal data removal and explaining the next use of devices can build consumer trust and boost participation in collection schemes. The BEvitalise study found that consumers preferred container parks for disposal, likely due to trust and data protection concerns or lack of awareness of other options, highlighting the need to raise awareness about alternative collection points. These recommendations were validated through discussions with experts from industry, policy, and civil society. To discourage hoarding, additional solutions include incentives like in-store rewards or deposit schemes. Educational initiatives, such as incorporating electronic waste management into school curricula, were recognised as vital for fostering long-term behavioural change. Awareness campaigns targeting diverse groups could further expand outreach.

Conclusions

The results of the BEvitalise **food waste** experiment highlight the need for improved label design and educational efforts to address misconceptions and reduce food waste. In a study with 967 Belgian consumers, respondents widely misunderstood the “best-before” date, confusing it with the “use by” date. They also showed no clear preference for label types like “look, smell, taste,” indicating label ineffectiveness. Many consumers discarded products regardless of quality, highlighting the need for better label design and smart packaging to reduce food waste.

With regard to **electronic waste**, in a study with 453 Belgian respondents, 71% of reported hoarding old devices at home, mainly as backups (64%), due to data security concerns (22%), or lack of disposal awareness of retention and hoarding (36%). Findings see that guarantees of data removal and monetary incentives could encourage proper disposal, while transparent information on device recycling and reuse (e.g. by charities) builds trust. Raising awareness of disposal sites for electronic and electrical waste is also key.

A balanced approach is needed to effectively reduce food and electronic waste. This should combine high-impact strategies with feasible measures. Policy recommendations must focus on raising awareness, incentivising repair and recycling, and fostering behavioural change through education and financial incentives. The federal government plays a key role in guiding regional efforts and adapting policies to local needs. By integrating these recommendations with ongoing research and collaboration with stakeholders, Belgium can make significant progress toward more sustainable food and electronic waste management.

Keywords: circular economy; food waste; electronic waste; consumers; discrete choice experiments