



# EXPERIMENTS ON PACKAGING PERCEPTION OF SEPARATING AND SORTING CUES FROM THE CONSUMER'S POINT OF VIEW

Study of the packaging club





## EXECUTIVE SUMMARY

### BACKGROUND

Packaging is often not properly sorted and disposed of. In order to support consumers, various German retailers have started to place separation and sorting cues on packaging since 2019.

However, important questions remain unanswered:

- How effective are separation and sorting cues for the correct disposal of packaging?
- Which aspects are relevant for consumers?

### METHOD: TWO-STAGE DESIGN

**STAGE 1:** Qualitative and quantitative survey on relevant aspects of separation and sorting cues in an online consumer community

**STAGE 2:** Testing the effectiveness of a specially designed separation and sorting cue in a field experiment using a 3-component cup (3K; made of plastic cup, cardboard band and lid) and a foil-wrapped cereal bar

### RESULTS STAGE 1

Respondents wanted uniform, obvious, and consistently placed separation and sorting cues.

#### GUIDING ELEMENTS RELEVANT FOR CONSUMERS

- Guidance on how to separate the different components
- Guidance into which collection stream the different packaging components must be disposed of
- Clear colour coding
- Motivational slogans

#### DISPENSABLE OR DISTURBING ELEMENTS

- Complex words and technical terms
- Material codes

### RESULTS LEVEL 2

The redesigned separating and sorting cue had no relevant effect on disposal behaviour. At the same time, the practical test implies that consumers would probably receive relevant support in their recycling behaviour from an intuitive, standardized cue applied to complex packaging.

However, to effectively change behavioural routines towards a more circular economy, product information needs to be supported by haptic and visual cues on the packaging itself as well as established rules of thumb for correct separating and sorting practices.

### PROPOSED SOLUTIONS TO INCREASE THE RECYCLING RATE

#### GENERAL

- Prioritize mono-material packaging and simple packaging concepts.

#### FOR COMPLEX PACKAGING

- Use of a standardized separation and sorting label
  - Instructions on separation and collection stream with words, symbols, and clear colour coding
  - Place highly visible
  - Do without complex or technical terms, material codes as well as symbols and slogans without function, e.g., a globe
- Colour highlighting, e.g., of the separator strap
- Targeted use of haptics, e.g., perforation for separating a paper sleeve
- Context-appropriate packaging:
  - Consider type and place of use (on the go vs. at home).
- Accompanying campaign, e.g., to increase awareness for and use of separation and sorting labels

### KEY MESSAGES

- Separation and sorting labels should be harmonized and intensively tested with consumers.
- Simple mono-material packaging is much more consumer-friendly and, with the right choice of materials, offers much higher recycling potential.

# IMPLICATIONS

While the study results confirm the usefulness of separation and sorting instructions from the consumer's point of view, they also show once again how important it is to use mono-material packaging that is as simple as possible and can effectively be recycled. Packaging that does not have to be separated and can clearly be assigned to a recyclable material fraction, remains the most effective means of preventing resource losses.

In a field experiment, the cereal bar foil (simple packaging) was entirely correctly sorted and separated. In contrast, the more complex multi-component coffee cup was only separated by under one fifth. In order to still achieve a good resource yield in practice, multicomponent packaging made of easily recyclable components requires effective strategies and intuitive guidance to activate and involve consumers. In Germany, there is a minimum standard for the recyclability of product packaging. As part of the upcoming revision, packaging can only be classified as maximally recyclable if all its recyclable components are made of the same material. If this is not possible due to the packaging properties (e.g., glass with a plastic lid or a yogurt cup with an aluminium lid), an effective separation and sorting label on the packaging can still ensure recyclability.

The following figure summarizes the building blocks for effective consumer engagement identified in this study.

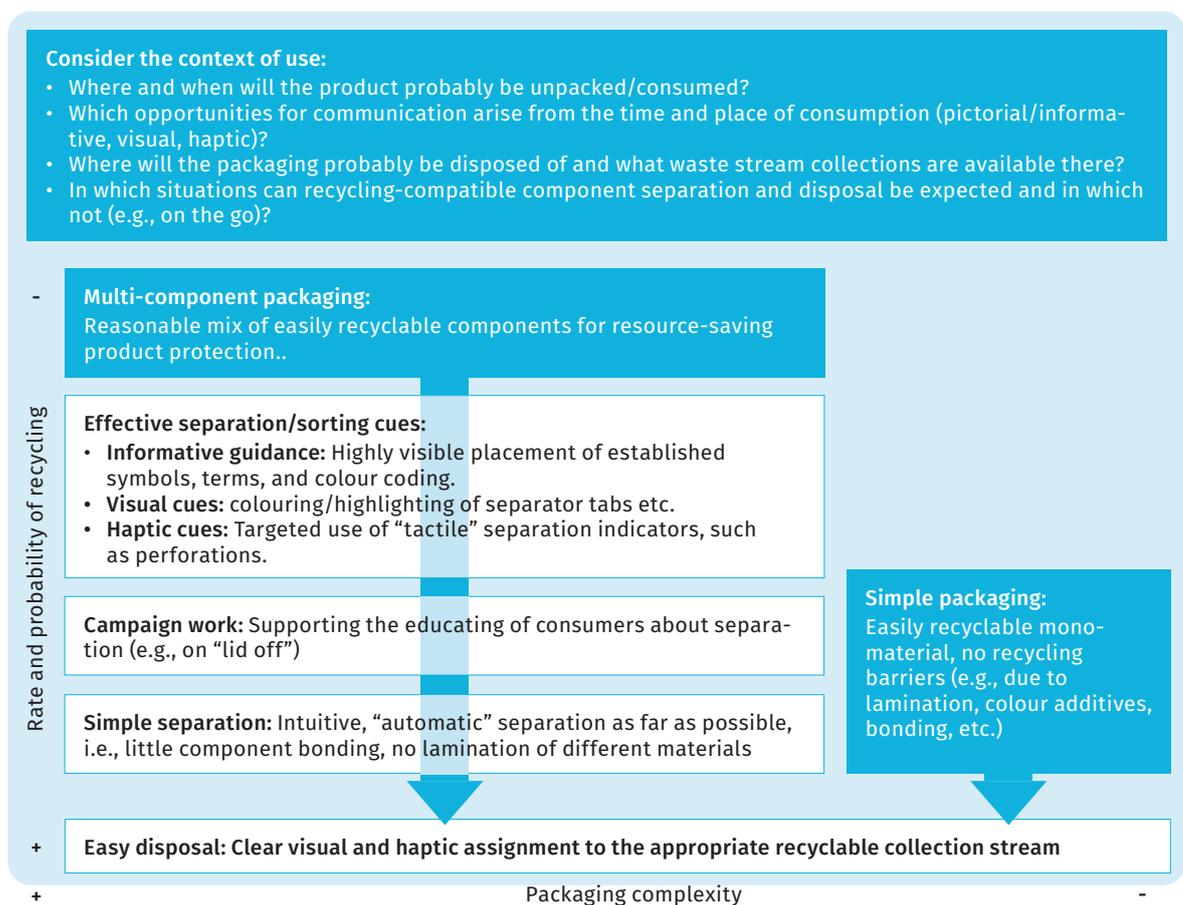


Fig.1: Procedure for simple vs. complex packaging

Effective separation and sorting cues have a relevant supporting potential which, however, is not yet fully exploited in practice. The following success factors for consumer-friendly separation and sorting cues can be derived from the online samples and the field experiment:

- **UNIFORM LABELLING AND HIGHLY VISIBLE PLACING:** First of all, it is important that instructions can be found and recognized as quickly as they can be transferred into correct separating and sorting behaviour. To this end, the respondents would particularly like to see uniform separation and sorting cues and more obvious placement on all packaging. In the practical test, it was clear-

ly observed that established and learned labels such as “fair trade” and “organic” were more strongly perceived due to their universality and familiarity. In order to be effective, uniform separation and sorting cues need to appear more often on packaging, so that consumers increasingly expect and seek help here. A large variety of different cues and labels will probably make such an establishment much more difficult and may even prevent it.

- **CLEAR INFORMATION:** With regard to the information provided on separating and sorting, the following aspects are important for the online respondents: (1) an explanation of which components the packaging consists of, (2) how each of these must be separated from one another and (3) subsequently disposed of – ideally with word(s) and symbol(s), (4) clear colour coding based on the colours already established for the collection fractions, and (5) the use of motivational slogans. Complex words, technical terms, material codes, and symbols and slogans that do not support separation and sorting and do not serve a recognizable function (e.g., the image of a globe) proved to be unhelpful or even counterproductive in this regard. In addition, other aspects for the design of separation and sorting cues are conceivable. Respondents can imagine, for example, information on recyclability, as in the British OPRL label, or on the recycled content contained in the material. The extent to which this possible information actually supports consumers requires further investigation.
- **OPTICAL AND HAPTICAL COMMUNICATION:** While the online community already highlighted a colour delimitation of guidance and components from the rest of the packaging as potentially effective, the practical test in particular showed that haptic elements such as a perforation are perceived much more strongly than purely pictorial/textual information. The prerequisite for this is a corresponding context of use in which the packaging is held in the hand for a longer period of time during consumption. Earlier studies by the “Club for Sustainable Packaging Solutions” already suggested that the visual and haptic design of a package can be significantly more effective – especially for correct separation – than corresponding information. The appearance of a package should already clearly communicate how it is to be separated later. This also means that materials must feel authentic to be correctly assigned. Plastic packaging with a paper-like appearance potentially misleads consumers and should therefore be avoided. Paper packaging with a plastic coating, as is more frequently used in the food sector, needs unambiguous information on the collection fraction in which the more effective recovery of individual components is possible. Even in the case of well-established beverage cartons, some consumers seem to remain uncertain and tempted to discard them via the paper collection.

Accompanying campaigns are another important element in achieving the highest possible recycling rate. In order to draw consumers’ attention to the (preferably standardized) separation and sorting instructions, the topic needs to have a stronger media presence. Recycling behaviour should not only be addressed by sustainability-savvy influencers, blogs, news websites, initiatives, etc., but should also be brought to the centre of society by mainstream media with high range. In the practical test, the (few) people with correct disposal behaviour cited social media, radio, local disposal companies or their own partners as sources of information. On the other hand, it turned out that even the supposedly clear separation and sorting instructions were not always interpreted correctly. This was especially true for participants who had never heard that the separation of components by type is important for good recycling, even within a collection fraction. This shows that, in addition to consumer-oriented advice, work must continue on establishing rules of thumb.

Finally, as a last central building block, the packaging itself must enable and promote easy separation. Even if this seems obvious, there is still a large number of packages in which different types of material are fully glued together and are almost impossible to remove, or in which other barriers make separation difficult. To recover at least one fraction here, clear guidance is needed to define the most appropriate fraction for such mixed packaging. In the medium term, however, such packaging should be phased out in favour of easy-to-dispose and consumer friendly mono-material packaging.

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