Environmental sustainability of liquid food packaging: Is there a gap between Danish consumers' perception and learnings from life cycle assessment?

The environmental impact of packaging has already been studied since the early development of the life cycle assessment (LCA) methodology, and today an extensive amount of studies exists. LCAs inform policy makers and guide companies in developing more environmentally sustainable packaging. From both a policy and a business perspective it is also relevant to understand what citizens and consumers recognize as being an environmentally sustainable packaging. Does perceived environmental sustainability align with the results of LCAs? And if not, where do consumers go wrong? In this study, we investigate how well-educated young consumers living in Denmark understand the environmental sustainability of five different kinds of packaging for liquid food (milk, beer, soft drink, olive oil and skinned tomatoes) based on an online survey and qualitative interviews. The results are compared with a streamlined LCA we performed for packaging of beer and soft drinks, and they are validated by means of comparative LCAs of these five product categories published in scientific literature. The results of the consumer research show that consumers assess the environmental sustainability of the tested types of packaging primarily based on the material type and on what they can personally do at the disposal stage. The consumers covered in this study do, in general, not consider the impacts of production and of transport. Amongst the investigated packaging types, bio-based types and glass are perceived as the most environmentally sustainable ones, and plastic in general is perceived least favourable. Laminated cartons receive a mixed perception. LCA results show that plastic – and especially laminated cartons – can be environmentally preferable solutions, even though they may be difficult to recycle. Our streamlined LCA on beer and soft drink shows that there is a significant difference in environmental performance between one-way glass and refillable glass, but consumers seem not to be aware of this difference. Our findings show i) that there is a gap between Danish consumers' perception of environmental sustainability of packaging and LCA results, and ii) that consumers have limited knowledge of sustainability-related eco-labels. In order to close these gaps, actions are needed both from producers, retailers and policy makers. The final aim of such improvement efforts should be to give to the consumers the possibility to make choices based on better information.

General information
State: Published
Organisations: Department of Management Engineering, Quantitative Sustainability Assessment
Contributors: Boesen, S., Bey, N., Niero, M.
Number of pages: 14
Pages: 1193-1206
Publication date: 2019
Peer-reviewed: Yes

Publication information
Journal: Journal of Cleaner Production
Volume: 210
ISSN (Print): 0959-6526
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 5.79 SJR 1.467 SNIP 2.194
Web of Science (2017): Impact factor 5.651
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 5.83 SJR 1.659 SNIP 2.502
Web of Science (2016): Impact factor 5.715
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 5.57 SJR 1.635 SNIP 2.375
Web of Science (2015): Impact factor 4.959
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 4.6 SJR 1.665 SNIP 2.481
Web of Science (2014): Impact factor 3.844
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 4.47 SJR 1.618 SNIP 2.527
Web of Science (2013): Impact factor 3.59