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PackAlliance:
European alliance for innovation training
& collaboration towards future packaging

Linking **Academy** to **Industry**.

Training program: modules

- New materials and biomaterials
- Eco-design & novel manufacturing processing
 - Residue management and valorisation
 - **Citizen and Consumer Engagement**



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Consumer Behaviour and the Plastic Packaging Circularity

An overview of consumer research in the field.

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Consumer behaviour studies how individual or groups purchase, use and dispose goods and services, and how the consumer's emotions, attitudes, and preferences affect buying, consuming and disposing behaviour.

Consumers as micro level actors in the CE

A circular economy describes an economic system that is based on business models, which replace the 'end-of-life' concept with reducing, alternatively reusing, recycling and recovering materials in production/distribution and consumption processes, thus operating at the **micro level (products, companies, consumers)**, meso level (eco-industrial parks) and macro level (city, region, nation and beyond), with the aim to accomplish sustainable development, which implies creating environmental quality, economic prosperity and social equity, to the benefit of current and future generations (Kirchherr, Reike & Hekkert 2017).



Plastics consumption will double in 20 years

- Consumption of plastics is expected to double in the coming 20 years
- Packaging is the largest sector of the plastic industry, representing almost 40% of total plastic consumption.
- In food industry, plastic is the most common material used for packaging
- Benefits of plastic: low weight, durability, cost
- Approximately 15% of plastic containers are collected for recycling



From consumerism to circularity

How does consumption change in circularity?



Changing consumption in circularity

(elaborated from Camacho-Otero et al. 2020)

Six phases of consumption	End-of-life/single-use consumption	Circular Consumption
Acquisition	Consumer obtains the product to be consumed, e.g. buying	Obtaining through re-buy, rent, receive. Consumer obtains products that are pre-owned, remanufactured, refurbished, recycled.
Appropriation	Consumer uses the product and embeds it in the everyday life	Consumer uses the product longer or uses it a shorter period to enable re-use.
Appreciation	Consumer creates value of the product in the use/domestic environment	Retain: product is not prematurely disposed of Repair: extending life expectancy and renewing values of the product
Devaluation	The product loses its meaning and importance for the consumer	Remunerate: enabling consumer to get additional value (e.g. by re-use of the product).
Divestment	Consumer stops using the product	
Disposition	Consumer throws the product in the waste bin or keeps it in a storage	Enabling circulation of products: Return, re-sell, relinquish



How consumers find and act upon circularity?

What do academic studies tell about circular consumer behaviour

- in general?
- regarding packaging?
- regarding plastic packaging?



CE consumption research is scarce

According to Camacho-Otero, Boks & Pettersen (2018)*:

- Research on consumption is scarce when compared to research on production in the CE
- Most popular topics: 1) consumer electronics and car sharing, 2) accommodation and co-housing, 3) clothing
- Fewer academic studies on plastic consumption
- Most of the studies have been conducted in high-income countries in North America and Europe

* based on literature review of 178 research papers

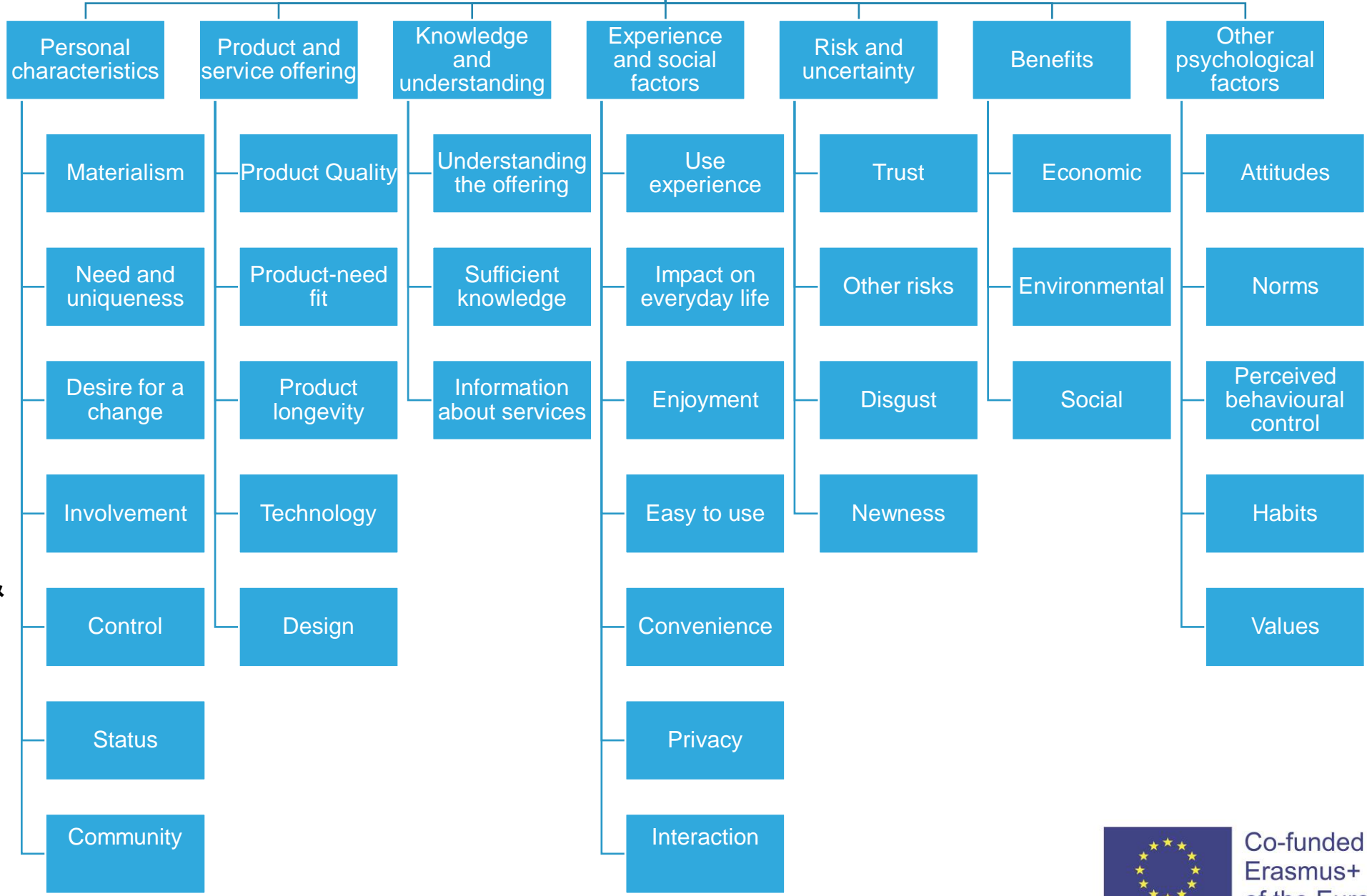


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CE consumer behaviour studies have focussed on identifying factors that **drive** or **hinder** the consumption of circular solutions (Camacho-Otero, Boks & Pettersen 2018).

Acceptance



Main factors that **drive** or **hinder** the consumption of circular solutions, combined of 178 research papers (Camacho-Otero, Boks & Pettersen 2018).

Price-quality ratio still matters

A large consumer research by EU (2018) regarding home electronics and clothing shows that:

- Consumers lack information of CE characteristics of products
- Consumers want to take part in the CE practices, but this does not necessarily show in their actions
- Pro-CE attitudes correlate with actual consumer behaviour (e.g., repair or buying second-hand)
- Price-quality ratio is the most important and convenience is the second most important driver or barrier for consumer engagement.



How about consumers, packaging and circularity?

Consumer considerations for implementation of sustainable packaging. A review by Boz, Korhonen & Sand 2020.



Traditional demographics still matter

- Age, gender, education and income level have either positive or negative effects. Sustainable purchasing solutions are favoured by e.g., women and educated people with high information seeking skills.
- Norms and values: Role identity (personal or social) has been investigated as a determining factor of sustainable behaviour.
- Consumers of high-income countries with national circularity politics and public discussion are more environmentally concerned than they are in low-income countries.

Packaging design and purchasing behaviour

- Packaging design may encourage sustainable purchasing but understanding of e.g., visual cues and packaging labels depends on consumers' previous knowledge, perceptions and habits
- Consumers are reluctant to pay more on sustainable packaging solutions
- “Value-action gap”: consumers may favour sustainable packaging **but do not purchase a product if it is more expensive.**

Case plastic packaging consumption in the Dutch food industry

How consumers make purchase decisions based on the sustainability of the decided products by Núñez-Cacho et al. 2020.



Plastic packaging needs to be useful

- Most of the consumers were worried about the impact of plastic on the environment. Younger buyers make more sustainable purchase decisions
- Consumers who follow sustainable behaviours in their ordinary life make sustainable purchasing decisions in the food industry
- Knowledge on the CE influences advantages sustainable purchase decisions
- The consumers favour products where the plastics packaging is seen useful or essential (e.g., conservation of food).

Núñez-Cacho et al. 2020



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WRAP UP: Consumers in circularity



- Demographics and many other factors effect consumer behaviour
- Accurate information is crucial factor for advancing the CE behaviour
- There may be a gap between the desire and real actions in the engagement in circularity

Challenges of consumer understanding identified by academic research

- CE research focuses on businesses and production side
- Consumers are treated as passive actors whose role is to adopt the solutions of businesses
- Consumers have restricted knowledge of the CE characteristics of products and services



Improving consumers' role in circularity



- More research is needed on CE consumer behaviour
- Taking consumers as active actors of circularity (who re-buy, rent, receive, re-use, retain, remunerate, return, re-sell, relinquish goods).
- LCA approach needed while informing consumers

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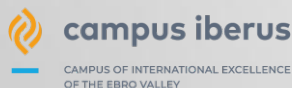
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