
Towards Circular Business Models: 99 Practices to Foster Consumer Acceptance

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Abstract: The circular economy aims to decouple growth from resource input. While significant scholarly attention has been put on technical solutions behind circular business models, the lack of consumer acceptance for these offers was recognised as a significant barrier in the transition towards the circular economy. Still, this topic remains underexplored. This paper aims to address this gap through a semi-systematic literature review. It conceptualises consumer behaviour in the circular economy in a framework and suggests definitions for the relevant terms. Further, it develops comprehensive frameworks for factors of consumer acceptance and for practices that companies can deploy to foster consumer acceptance. Thereby, the paper contributes to the theoretical conceptualisation of consumer acceptance in the circular economy. Moreover, it equips companies with knowledge to innovate their circular business models, increase sustainable consumption, and accelerate the transition towards the circular economy.

Keywords: Circular Economy; Business Models; Circular Business Models; Circular Business Model Innovation; Consumer Behaviour; Consumer Acceptance.

1 Introduction

The current linear economy follows a take-make-dispose approach, which is considered unsustainable for environmental, economic, and societal reasons (Ghisellini et al., 2016; Lieder et al., 2017; A. Urbinati et al., 2017). To address these challenges, the circular economy (CE) aims to replace the linear economic system by decoupling growth from resource input (Geissdoerfer et al., 2017).

The concern for sustainability issues, like global warming and declining resources, is growing (Jugend et al., 2020), with some considering environmental sustainability as the most urgent challenge society is facing (Lobos, 2017). The current linear economic system harms natural ecosystems (Wagner and Heinzel, 2020), leads to environmental degradation (Shao, 2019) and exceeds the earth's biocapacity (Cooper, 2017). With the global population expected to surpass 11 billion people by 2100 and global material resource use doubling from 2019 to 2060, the linear economy impacts society as well (OECD, 2019; United Nations, 2018). Particular challenges include food supply, global health, land shortage, and quality of life (Lakatos et al., 2018; Nathan et al., 2021). Additionally, linear resource use impacts economies negatively. The growing consumption of virgin materials is causing a lack of resources, supply and price risks, and missed economic opportunities as the residual value of resources is not utilised (Canetta et al., 2018; Lin, 2018; Wastling et al., 2018).

Although significant scholarly attention went to the technical side of improving circular business models, the lack of consumer acceptance towards these offers has proven to be a significant barrier in the transition towards the CE (Kirchherr et al., 2018). While technological approaches and solutions were developed in a techno-centric approach, individuals, society, and cultural aspects were only given limited attention (Singh and Giacosa, 2019). In particular, researchers consider the role of consumers and their behaviour to be overlooked and suggest a more consumer-centric view, as the consumer decides to accept or reject circular business models (Ertz et al., 2019; Kirchherr et al., 2017; Salvador et al., 2020).

The concept of consumer acceptance is regarded as particularly important (Kirchherr et al., 2018) and was addressed in multiple publications (Mugge et al., 2018; Singhal et al., 2019b; Tunn et al., 2019). A special focus is given to factors influencing consumer acceptance, such as price, knowledge, or quality, with some authors compiling lists of such factors (Camacho-Otero et al., 2018; Chamberlin and Boks, 2018; Rexfelt and Hiort, 2009). While such overviews exist for factors of consumer acceptance, although incomplete, similar overviews of concrete examples of activities that companies can deploy to address these factors, referred to as practices, are missing in the literature.

This study will focus on the above-mentioned research gaps and consider opportunities for future research identified in prior studies. It will address the current lack of clarity regarding the theoretical conceptualisation (e.g., definitions) in the consumer acceptance context (Camacho-Otero et al., 2017). Further, it will identify a comprehensive list of consumer acceptance factors (Camacho-Otero et al., 2017, p. 4; Hazen et al., 2017, pp. 459–460). Lastly, it will identify practices that companies can deploy to actively foster consumer acceptance (Camacho-Otero et al., 2018, p. 4; Hazen et al., 2017, p. 460; Mugge et al., 2017, pp. 20–21).

This study aims to investigate the above research gaps by answering the following three research questions:

RQ1: How is the topic of consumer acceptance towards the CE conceptualised?

RQ2: Which factors affect consumer acceptance for circular business models?

RQ3: Which practices can companies deploy to foster consumer acceptance by innovating their circular business models?

The rest of the paper is structured as follows. Section 2 explains the research methodology. Section 3 presents the results of the literature review. Section 4 introduces the conceptual frameworks. Section 5 discusses the findings. Section 6 concludes the study.

2 Research methodology

Section 2 describes the chosen research approach, a semi-systematic literature review, in response to the research questions. The research was conducted following qualitative research guidelines from Easterby-Smith et al. (2015) and follows the approach of Denyer and Tranfield (2009), applying recommended research principles in a three-step approach. These steps include data search, data analysis, and data report (Figure 1).

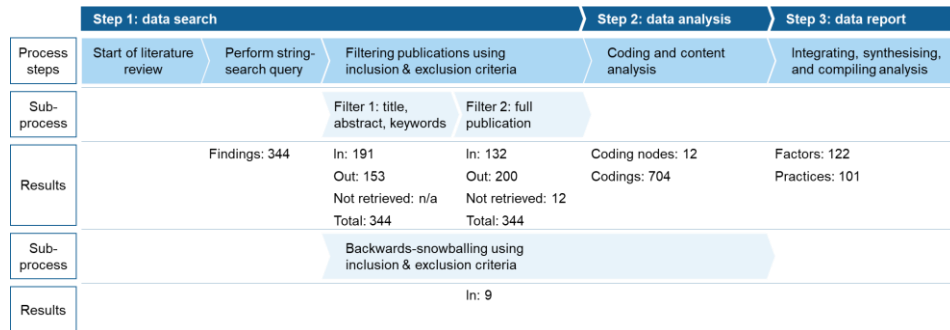


Figure 1 Conceptualisation of the literature review process in a three-step approach.

The data search consisted of a web-based string-search query, filtering of relevant articles, and backwards-snowballing in line with earlier reviews (Camacho-Otero et al., 2017; Geissdoerfer et al., 2020). The string-search query was conducted via Scopus on 23 March 2021. The terms “circular economy” AND behavio* OR acceptance OR adoption AND consumer* OR customer* OR user* were used for a search in publications’ titles, abstracts, and keywords, yielding 344 results.

Backwards-snowballing was used to extend the search perimeter and include relevant publications that were not captured before (Geissdoerfer et al., 2020; Wohlin, 2014). This process was conducted simultaneously with the data analysis step. Backwards-snowballing was also applied for newly identified publications until no additional publications were found. Thereby, 11 publications were added to the search results. Due

to the lack of definitions for consumer acceptance terminology, publications including definitions were searched purposefully, hence the review qualifies as semi-systematic.

The identified publications were filtered in a two-step approach applying three selection criteria (Table 1). Eventually, 132 publications were categorised as relevant, 200 as not relevant, and 12 could not be retrieved by the authors.

Table 1 Inclusion and exclusion criteria for filtering publications

<i>Criterion</i>	<i>Inclusion criteria</i>	<i>Exclusion criteria</i>
Study type	Article, book, book chapter, conference paper, conference review, review	Other study types than specified
Language	English	Other languages than English
Relevance	Addressing “circular economy” and “consumer acceptance” concepts	Not addressing “circular economy” and “consumer acceptance” concepts as one of the main topics of the study
	Addressing items, such as history, definitions, theories, drivers, barriers, factors, practices	Not providing contributions explicitly addressing items in the scope of the study

Source: Own table.

The data analysis step was conducted using NVIVO 12 for coding and employed content analysis, as seen in previous reviews (Camacho-Otero et al., 2017; Geissdoerfer et al., 2020). The identified publications were categorised as nodes in NVIVO 12 according to the following terms (Table 2).

Table 2 Coding terms and hierarchy for NVIVO 12 data analysis

<i>Level 1</i>	<i>Level 2</i>	<i>Level 3</i>
Literature review results	History	
	Definitions	Circular consumer behaviour Circular consumer adoption Circular consumer acceptance Circular factors Circular practices
Conceptual framework	Factors of consumer acceptance	Drivers Barriers
	Practices of consumer acceptance	Examples of practices from business Practices suggested by academia

Source: Own table.

In the data report step, the authors developed comprehensive frameworks of consumer acceptance factors and practices, by integrating, synthesising, and compiling analysis (Geissdoerfer et al., 2020). An expert panel of experienced researchers, selected on their subject knowledge, were utilised for counterchecking content analysis and coding results to ensure consistency and robustness.

3 Literature review results

Section 3 presents the results of the literature review. First, it provides an overview of the topic's history. Second, it conceptualises consumer acceptance in the CE in a framework and suggests definitions for the relevant terms.

History of the topic

Consumer acceptance in the CE has been discussed in over 100 publications to date (see section above). Maeda and Taura (2006) first mention consumer reluctance towards closed loops in a conference in 2005. The first to use the actual term “circular economy” in combination with consumer behaviour were Zhilei and Wei (2011).

Since 2015, research has picked up with an almost thirtyfold increase until 2020 (Figure 2). Over two-thirds of the entire literature body was published within the last three years. Another increase can be expected for 2021, with 52 publications published by the end of March, showing that the topic is seeing continued interest.

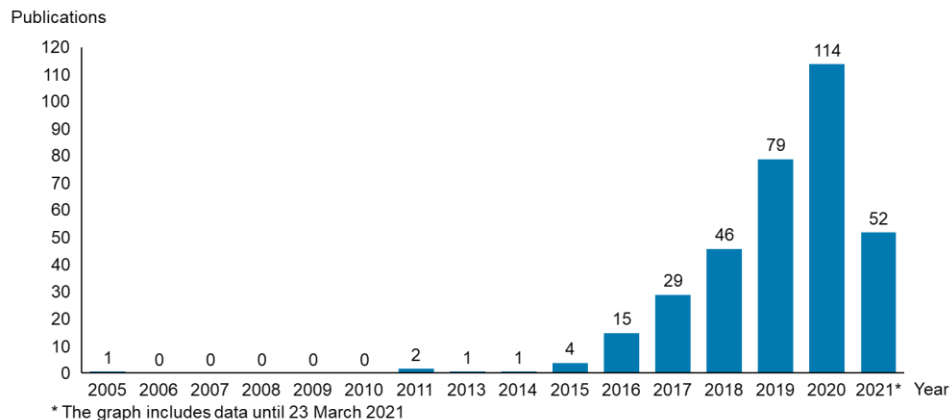


Figure 2 Number of publications per year since first mentioned on Scopus in 2005.

The topic was published in 127 journals or conference proceedings (Figure 3). These outlets focus i.a. on computer science, engineering, psychology, and supply management, highlighting the research's interdisciplinarity in this field.

A third of the literature was published by the three leading journals. Meaning, a small number of academic outlets is contributing significantly to expand the academic literature. On the other end of the spectrum, a long tail of 106 journals or conference proceedings account for one or two publications each, 123 in total, i.a. the “International Journal Of Entrepreneurship And Innovation Management”, “Ecological Economics”,

and “Computers And Industrial Engineering”. This shows the fragmentation of the literary landscape and again highlights the topic’s interdisciplinarity.



Figure 3 Journals or conference proceedings and their publications on Scopus.

Most of the research can be linked to affiliations with research institutions in Europe, accounting for two-thirds of publications, and the United States (Figure 4). Apart from that, research institutions located in Asia and Latin America, including China, India, and Brazil, contribute increasingly to the growing body of literature. This underlines the advancing relevance of consumer behaviour in the CE in emerging countries.

Factors of consumer acceptance in the CE context were popularised by Kirchherr et al. (2018), with over 450 citations. The authors highlight consumer acceptance as a central barrier to CE adoption, naming lacking consumer awareness, interest, and cultural barriers as factors.

Before that, other authors had identified factors of consumer acceptance for different circular business model strategies. Rexfelt and Hiort (2009) listed factors for product-service systems as early as 2009. Van Weelden et al. (2016) and Hazen et al. (2017) focus on factors influencing the acceptance of cycling strategies, such as refurbishing and remanufacturing. While most studies focused on European markets until then, Hazen et al. (2017) and Wang and Hazen (2016) highlight the growing importance of the Chinese consumer market.

Despite the previous research on consumer acceptance factors and possibly because of Kirchherr et al.’s (2018) emphasis on the topic’s importance, research on consumer acceptance factors remains current. Camacho-Otero, Boks and Pettersen (2018) conduct a literature review on consumption in the CE and provide the most extensive list of consumer acceptance factors to date, counting 34 factors.

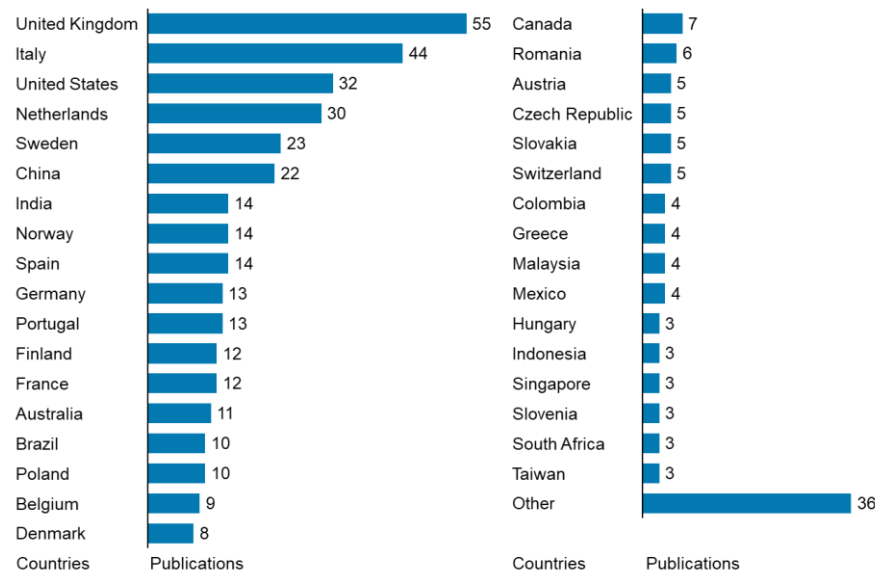


Figure 4 Countries affiliated with at least three publications on Scopus.

Building on previous research, this review will provide a comprehensive overview of the factors identified in the literature. As a result, the review will point out the covered areas and highlight those that have seen limited attention to date.

Compared to consumer acceptance factors, concrete examples of companies' practices to foster consumer acceptance have seen limited attention. Examples are Xerox (Kuah and Wang, 2020; Mostaghel and Chirumalla, 2021), offering printers as a service, and H&M's take-back programme (Forlin and Scholz, 2020; Lehner et al., 2020; A. Urbinati et al., 2017), offering coupons to consumers returning garments. Since such concrete examples from business are limited, authors have started to propose suggestions for such practices (Matsumoto et al., 2017; Sarigöllu et al., 2021).

Even though practices that foster consumer acceptance are seeing increased attention, a comprehensive overview of such practices is missing. Such an overview could help to match practices with factors, providing insights into how drivers of consumer acceptance can be reinforced and how barriers can be overcome.

Definitions

Although consumer behaviour in the CE is studied intensively and the respective terminology is used frequently, the terms are only poorly defined, if at all, potentially leading to confusion and even misunderstanding. To overcome this challenge and contribute to the theoretical conceptualisation of the consumer acceptance context within the CE, the most relevant terms will be defined and their interrelationships will be portrayed in a conceptual framework (Figure 5).

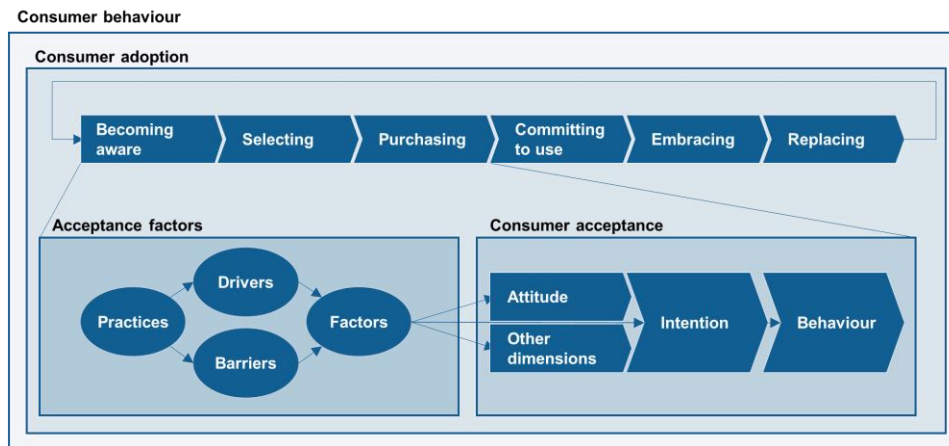


Figure 5 Conceptual framework showing the interrelation between consumer behaviour, consumer adoption, consumer acceptance, and acceptance factors in CE.

Schiffman and Kanuk (2007, p. 3 as cited in Poppelaars et al., 2018, p. 2) describe consumer behaviour as the entire consumption phase, in which the behaviour is displayed in phases that include “searching for, purchasing, using, evaluation, and disposing of products and services”. Since the context of this study is specific to the CE, it seems advisable to specify the definition for circular consumer behaviour. Muranko et al. (2018) define pro-circular behaviour as “an action which is brought about due to prioritising resource-efficiency”. Considering Geissdoerfer et al.’s (2017, p. 759) definition of the CE, possibly the most widely used, the above definition of Muranko et al. is unspecific and falls short. Next to resource efficiency, circular consumer behaviour also aims to reduce waste, emissions, and minimise energy leakage. Based on these insights, the authors propose the following definition:

Circular consumer behaviour is a process that includes searching for, purchasing, using, evaluating, and disposing of products and services, while aiming to minimise resource input, waste, emission, and energy leakage by slowing, closing, and narrowing material and energy loops. This can be achieved by purchasing, using, and disposing of products or services that are long-lasting by design and that are maintained, repaired, reused, remanufactured, refurbished, and/or recycled repeatedly during their lifecycles.

Circular consumer adoption

The term “adoption” is widely used in the psychology literature. It describes whether an individual develops a positive attitude, then intention, and finally behaviour to purchase and use a product or service, such as a technology. Historically, it was often used to evaluate the adoption of new technologies, such as email, by a user, which is why the terms “user adoption” and “technology adoption” are frequently used. Given this study’s focus lies on consumption, the term “consumer adoption” will be discussed further. (Renaud and van Biljon, 2008; Taherdoost, 2018; Taylor and Todd, 1995)

Similar to the definition of “consumer behaviour”, Renaud and van Biljon (2008) describe “adoption” as a process consisting of phases that include becoming aware, selecting, purchasing, committing to use, and embracing the product or service. These two terms, behaviour and adoption, can be distinguished based on two facts. First,

consumer behaviour describes the overall consumption of multiple products or services, while consumer adoption is focused on a particular product or service. Second, when a consumer has adopted a product or service, the consumer embraced it and wants to replace it upon breakage, since the consumer “cannot contemplate life without it” (Renaud and van Biljon, 2008, p. 2). Hence, adoption describes a state in which the consumer is committed to one product or service. Therefore, consumer adoption is a subset of consumer behaviour, in which the consumer is or is not committed to various products or services.

We define circular consumer adoption as a process that is part of consumer behaviour, in which the consumer becomes aware, selects, purchases, commits to use, embraces, and replaces a specific product or service at its end of life, as long as the adoption remains unchanged. This can be achieved by purchasing, using, and disposing of products or services that are long-lasting by design and that are maintained, repaired, reused, remanufactured, refurbished, and/or recycled repeatedly during their lifecycles.

Circular consumer acceptance

The term consumer acceptance is not well defined in the CE literature, even though frequently used. Camacho-Otero et al. (2019) found one definition for consumer acceptance. In the referenced study, Schrader (1999, p. 110) refers to acceptance as a result of a positive attitude, intention, and behaviour towards a product or service and defines it as the readiness to adopt a new product or service. Thus, acceptance is a subsection of consumer adoption, ending after the actual behaviour, which is the purchase, and before the adoption, which includes a continuous commitment to use. This is in line with other authors (Meijkamp, 2000, p. 20; Renaud and van Biljon, 2008, p. 2; Simon, 2001 as cited in Taherdoost, 2018, p. 961).

The authors define consumer acceptance as an outcome of positive intention and behaviour towards the purchase of a product or service and the post-purchase evaluation phase, which is affected by a range of influencing factors. This can be achieved by purchasing and positively evaluating a product or service that is long-lasting by design and that is maintained, repaired, reused, remanufactured, refurbished, and/or recycled repeatedly during its lifecycle.

Circular factors

Consumer acceptance can be influenced by factors (Schrader, 1999). More precisely, factors can influence consumer attitude, subjective norm, perceived behavioural control, and other dimensions, consumer intention, and even consumer behaviour (Renaud and van Biljon, 2008; Taherdoost, 2018; Taylor and Todd, 1995). While multiple studies identify general factors of consumer acceptance (Antikainen et al., 2015; Hazen et al., 2017; Rexfelt and Hiort, 2009; Van Weelden et al., 2016), some specify whether a factor is a driver (Allison et al., 2021; Camacho-Otero et al., 2018) or a barrier (Allison et al., 2021; Almefelt and Rexfelt, 2017). Drivers have a positive effect on consumer acceptance while barriers have a negative effect. Depending on the context, a factor can be both, a driver or a barrier. For example, the newness of a product or service may drive acceptance, as consumers experience pleasure from discovering something innovative, such as new technology. On the other hand, newness may be considered a barrier for, as

other consumers perceive neophobia, the fear of something new, as they feel unable to understand or operate the new technology.

Therefore, *factors can be defined as elements that either have a positive effect on circular consumer acceptance, making them drivers, a negative effect, making them barriers, or both.*

Circular practices

As stated, factors may influence consumer perception positively or negatively. However, this perception can change over time. Also, companies can actively influence how factors are perceived by consumers. Ackermann et al. (2018) refer to triggers, which are stimuli that provoke consumers to act in a desired way, by increasing consumer motivation or ability. Mugge et al. (2017, p. 3) refer to this concept as incentives, which are “strategic choices that companies can make concerning the product definition, choice for services, and marketing activities [...] to persuade consumers to purchase” a product or a service.

Since there is no standard term in the literature for this concept, the authors propose using the term practice. Quoting from the Oxford English Dictionary (2021), practice is defined as “the actual application or use of an idea, belief, or method, as opposed to the theory or principles of it”. In line with this definition, the authors understand practices as methods that companies can deploy, based on their theoretical knowledge of consumer acceptance factors, to actually achieve consumer acceptance. Hence, *practice is defined as a method a company can deploy to foster consumer acceptance for a product or service by altering the consumer perception of circular factors, either by enhancing the positive effect of drivers, by alleviating the negative effect of barriers, or both.*

4 Conceptual frameworks

Section 4 exhibits the results of the literature review on consumer acceptance factors and practices and proposes corresponding conceptual frameworks.

Factors of consumer behaviour

The literature review revealed numerous factors influencing consumer acceptance, including a variety of drivers and barriers across different categories of acceptance, with an emphasis on a selected few.

From the 118 factors identified, 31 can be classified as drivers, 25 as barriers. For instance, authors have associated product warranty only as a driver of consumer acceptance (Cooper, 2017; Matsumoto et al., 2017; Singhal et al., 2019b). Other examples of drivers are listed below (Table 3).

Table 3 Drivers of consumer acceptance

<i>Category</i>	<i>Factor (driver)</i>	<i>Literature</i>
Altruistic reasons	Anticipated conscience	(de Moraes et al., 2021; Gaur et al., 2019; Vehmas et al., 2018)
	Environmental, ethical, moral concerns	(Baier et al., 2020; Barbu et al., 2018; Botelho et al., 2016; Camacho-Otero et al., 2019; Chen et al., 2020; Cherry and Pidgeon, 2018; Coderoni and Perito, 2020; Dokmai, 2018; Gaur et al.,

		2019; Gazzola et al., 2020; Hazen et al., 2017; Hunka et al., 2021; Hur, 2020; Kabel et al., 2021; Khan and Rundle-Thiele, 2019; Ki et al., 2021; Kim et al., 2021; Koszewska et al., 2020; Lakatos et al., 2018; Lehner et al., 2020; Lieder et al., 2017; Machado et al., 2019; Mugge et al., 2017; Nathan et al., 2021; Nazli, 2021; Perez-Castillo and Vera-Martinez, 2021; Poppelaars et al., 2018; Rogers et al., 2021; Russo et al., 2019; Sharma and Foropon, 2019; Singhal et al., 2019; Spartano and Grasso, 2021; Stelick et al., 2021; Testa et al., 2020; Vehmas et al., 2018; Wang and Kuah, 2018)
	Perception of company's sustainability	(Núñez-Cacho et al., 2020, 2020; Testa et al., 2020)
	Proximity of product origin	(Coderoni and Perito, 2020; Julião et al., 2019)
	Waste aversion	(Spartano and Grasso, 2021)
Economic motivation	Access to products	(Stål and Jansson, 2017)
	Incentives	(Cordova-Pizarro et al., 2020; Lakatos et al., 2016)
	Residual value	(Stål and Jansson, 2017)
Effort	Avoidance of product responsibility	(Cherry and Pidgeon, 2018)
	Flexibility, freedom	(Lakatos et al., 2018; Stål and Jansson, 2017)
	Sharing of responsibility	(Stål and Jansson, 2017)
Functional attributes	Functionality	(Ackermann et al., 2018; Hunka et al., 2021; Magnier et al., 2019; Wurster and Schulze, 2020)
	Up-to-dateness	(Hunka et al., 2021)
Knowledge	Transparency	(Gazzola et al., 2020; He et al., 2021)
Ownership	Avoidance of paying for idle time	(Cherry and Pidgeon, 2018)
	Avoidance of product obsolescence	(Cherry and Pidgeon, 2018)
Psychological factors	Experience	(Camacho-Otero et al., 2019)
	Experiment	(Camacho-Otero et al., 2019)
	Hedonism	(Ackermann et al., 2018; Barbu et al., 2018; Chen et al., 2020; He et al., 2021; Kim et al., 2021; Machado et al., 2019)
	Identity	(Camacho-Otero et al., 2019)
	Nostalgia	(Camacho-Otero et al., 2019; Machado et al., 2019)
	Originality	(Machado et al., 2019)
Status	Gratification	(Camacho-Otero et al., 2019)
	Recognition	(Vehmas et al., 2018)
Trust	Celebrity testimonials	(Urmínová and Kusá, 2020; Vehmas et al., 2018)
	Energy-labels	(Cooper, 2017)
	Influencers	(Gazzola et al., 2020)
	Quality certification	(Camocho et al., 2020; Matsumoto et al., 2017; Singhal et al., 2019; Wang and Hazen, 2016)
	Warranty	(Cooper, 2017; Gnanapragasam et al., 2018; Hunka et al., 2021; Laitala et al., 2021; Matsumoto et al., 2017; Singhal et al., 2019)

Source: Own table.

In contrast, authors associated the feeling of disgust for a product only as a barrier to consumer acceptance (Singhal et al., 2019a; Spartano and Grasso, 2021). Other examples of barriers are listed below (Table 4).

Table 4 Barriers of consumer acceptance

<i>Category</i>	<i>Factor (barrier)</i>	<i>Literature</i>
Consumer needs	Small product range	(Baier et al., 2020)
Economic motivation	Cost of repair	(Cordova-Pizarro et al., 2020; Kirchherr et al., 2017)
	Financial commitment	(Poppelaars et al., 2018)
Effort	Inertia	(Singh and Giacosa, 2019)
	Mental effort	(Forlin and Scholz, 2020)
	Physical effort	(Forlin and Scholz, 2020)
Ownership	Limited value offering	(Singh and Giacosa, 2019)
	Relevance of ownership, control	(Gazzola et al., 2020; He et al., 2021; Mostaghel and Chirumalla, 2021; Poppelaars et al., 2018; Raihanian Mashhadi et al., 2019; Singh and Giacosa, 2019; Smol et al., 2018)
Psychological factors	Tangibility of environmental benefits	(Borrello et al., 2017; Muranko et al., 2018)
	Disgust	(Singhal et al., 2019; Spartano and Grasso, 2021)
	Status-quo bias	(Borrello et al., 2017)
Risk	Existential risk	(Nøjgaard et al., 2020)
	Financial risk, unforeseen costs	(Cherry and Pidgeon, 2018; Kabel et al., 2021; Poppelaars et al., 2018)
	Lock-in effects	(Cherry and Pidgeon, 2018)
	Possession security	(He et al., 2021)
	Practical risk	(Nøjgaard et al., 2020)
	Responsibility for product condition	(Cherry and Pidgeon, 2018)
	Risk aversion	(Bigliardi et al., 2020; Borrello et al., 2017; Camacho-Otero et al., 2019; Cattaneo et al., 2019; Cherry and Pidgeon, 2018; He et al., 2021; Kabel et al., 2021b; Matsumoto et al., 2017; Russo et al., 2019; Singh and Giacosa, 2019; Singhal et al., 2019)
	Sustainability risk	(Nøjgaard et al., 2020)
	Uncertainty	(He et al., 2021)
Safety	Contamination	(Magnier et al., 2019)
	Hygiene	(Camacho-Otero et al., 2019; Kim et al., 2021; Singh and Giacosa, 2019)
Situational factors	Operational difficulties	(He et al., 2021)
Trust	Corporate hypocrisy	(Ki et al., 2021b; Testa et al., 2020)
	Technology neophobia	(Camacho-Otero et al., 2019; Coderoni and Perito, 2020)

Source: Own table.

While some factors are considered to be drivers or barriers, over half of the identified factors classify as both. An example of such a factor is an eco-label. Eco-labels are either associated with trustworthiness (Camocho et al., 2020), thus considered a driver, or with information overload and the lack of consumer knowledge to evaluate such information (Baier et al., 2020), thus considered a barrier. Other examples of factors, which qualify as drivers and barriers, are listed below (Table 5).

Table 5 Factors of consumer acceptance, that classify as drivers and barriers

<i>Category</i>	<i>Factor (driver or barrier)</i>	<i>Literature</i>
Altruistic reasons	Altruism	(de Moraes et al., 2021; Gaur et al., 2019; Vehmas et al., 2018)
	Bio-based materials	(Baier et al., 2020)
Consumer needs	Consumer innovativeness	(Camacho-Otero et al., 2019; Camacho et al., 2020; Testa et al., 2020)
	Meeting the consumer needs	(Barbu et al., 2018; He et al., 2021; Núñez-Cacho et al., 2020)
Design	Technological newness	(Zhilei and Wei, 2011)
	Disassemblability	(Cooper, 2017; Nazlı, 2021)
	Recognisability	(Magnier et al., 2019)
	Repairability	(Ackermann et al., 2018; Bigerna et al., 2021; Cooper, 2017)
Economic motivation	Deposits	(Cordova-Pizarro et al., 2020)
	Economic reasons	(Lehner et al., 2020)
	Penalty fees	(Cordova-Pizarro et al., 2020)
	Price	(Ackermann et al., 2018; Baier et al., 2020; Camacho-Otero et al., 2019; Chen et al., 2020; Cherry and Pidgeon, 2018; Cordova-Pizarro et al., 2020; Diddi and Yan, 2019; Drábik et al., 2020; Gaur et al., 2019; Gnanapragasam et al., 2018; Hazen et al., 2017; Hur, 2020; Kabel et al., 2021, 2020; Laitala et al., 2021; Lieder et al., 2017; Ma et al., 2017; Magnier et al., 2019; Matsumoto et al., 2017; Mugge et al., 2017; Nathan et al., 2021; Nazlı, 2021; Perez-Castillo and Vera-Martinez, 2021; Rogers et al., 2021; Schallehn et al., 2019; Sharma and Foropon, 2019; Smol et al., 2018; Spartano and Grasso, 2021; Stelick et al., 2021; Urbinati et al., 2017; Urmínová and Kusá, 2020; Vehmas et al., 2018; Wagner and Heinzl, 2020; Wang and Kuah, 2018; Wang et al., 2020; Zhilei and Wei, 2011)
Effort	Willingness to pay premium	(Bigerna et al., 2021; Dokmai, 2018; Hunka et al., 2021; Julião et al., 2020; Kim et al., 2021; Magnier et al., 2019; Mostaghel and Chirumalla, 2021; Poppelaars et al., 2018; Russo et al., 2019; Shao, 2019; Stål and Jansson, 2017)
	Convenience, ease of use	(Barbu et al., 2018; Camacho-Otero et al., 2019; Canto et al., 2021; Cherry and Pidgeon, 2018; Cooper, 2017; Cordova-Pizarro et al., 2020; Lehner et al., 2020; Smol et al., 2018)
Functional attributes	Aesthetics	(Ackermann et al., 2018; Baier et al., 2020; Hur, 2020; Kabel et al., 2021; Wagner and Heinzl, 2020)
	Comfort	(Baier et al., 2020)
	Conformance	(Kabel et al., 2021)
	Durability, longevity	(Baier et al., 2020; Bigerna et al., 2021; Chen et al., 2020; Gnanapragasam et al., 2018; Jaeger-Erben et al., 2021; Kabel et al., 2020; Koszewska et al., 2020; Nazlı, 2021; Sharma and Foropon, 2019; Stål and Jansson, 2017)
	Efficiency	(Sharma and Foropon, 2019)
	Features	(Kabel et al., 2020)
	Performance	(Gnanapragasam et al., 2018; Kabel et al., 2021, 2020; Matsumoto et al., 2017; Mugge et al., 2017; Singh and Giacosa, 2019; Wagner and Heinzl, 2020)
	Quality	(Baier et al., 2020; Bigliardi et al., 2020; Camacho-Otero et al., 2020; Chen et al., 2020; Cherry and Pidgeon, 2018; Drábik et al., 2020; Gazzola et al., 2020; He et al., 2021; Hunka et al., 2021; Kabel et al., 2021, 2020; Laitala et al., 2021; Ma et al., 2017; Matsumoto et al., 2017; Mugge et al., 2017; Nathan et al., 2021; Nazlı, 2021; Sharma and Foropon, 2019; Stål and Jansson, 2017; Vehmas et al.,

Knowledge	Serviceability	2018; Wang and Kuah, 2018; Wang and Hazen, 2016)
	Taste	(Gaur et al., 2019; Kabel et al., 2020; Lieder et al., 2017; Nazlı, 2021; Poppelaars et al., 2018)
	Awareness, familiarity, knowledge	(Canto et al., 2021; Spartano and Grasso, 2021)
		(Baier et al., 2020; Botelho et al., 2016; Cordova-Pizarro et al., 2020; He et al., 2021; Kongelf and Camacho-Otero, 2020; Lakatos et al., 2016; Lehner et al., 2020; Ma et al., 2017; Matsumoto et al., 2017; Mugge et al., 2017; Núñez-Cacho et al., 2020; Poppelaars et al., 2018; Shao, 2019, Sijtsma et al., 2020; Singhal et al., 2019; Van Weelden et al., 2016; Wagner and Heinzl, 2020; Wang and Kuah, 2018; Wang et al., 2020; Wang and Hazen, 2016)
	Consumer propensity to seek information	(Testa et al., 2020)
	Consumer skills	(Cooper, 2017; Diddi and Yan, 2019; Jaeger-Erben et al., 2021)
	Information availability	(Botelho et al., 2016; Camacho-Otero et al., 2019; Cherry and Pidgeon, 2018; Cooper, 2017; He et al., 2021; Testa et al., 2020)
	Knowledge of product's provenance	(Gazzola et al., 2020; Nathan et al., 2021; Vehmas et al., 2018; Wang et al., 2020)
	Knowledge of the role of the consumer	(Mylan et al., 2016)
	Knowledge of eco-labels	(Testa et al., 2020)
Ownership Psychological factors	Promotion, marketing	(Urbinati et al., 2017)
	Understanding	(Kongelf and Camacho-Otero, 2020)
	Materialism, possessiveness	(Camacho-Otero et al., 2019; Cooper, 2017)
	Emotional attachment, involvement	
	Fashionability, trendiness	(Barbu et al., 2018; Laitala et al., 2021; Vehmas et al., 2018)
	Location, environment of transactions	(Camacho-Otero et al., 2019)
	Perception of (un-)naturalness	(Borrello et al., 2017; Cattaneo et al., 2019; Coderoni and Perito, 2020; Julião et al., 2019; Nathan et al., 2021)
	Political position	(Camacho-Otero et al., 2019)
	Social contact	(Camacho-Otero et al., 2019; He et al., 2021, 2021; Machado et al., 2019)
	Socio-technical environment	(Botelho et al., 2016; Camacho-Otero et al., 2019; Cherry and Pidgeon, 2018; Mylan et al., 2016)
Risk	Uniqueness	(Camacho-Otero et al., 2019)
	Moral risk	(Nøjgaard et al., 2020)
Safety	Personal liability	(Camacho-Otero et al., 2019)
	Health, well-being	(Camacho-Otero et al., 2019; Canto et al., 2021; Cattaneo et al., 2019; Cherry and Pidgeon, 2018; Coderoni and Perito, 2020; Hur, 2020; Kabel et al., 2021; Macneill et al., 2020; Nathan et al., 2021; Spartano and Grasso, 2021)
Situational factors	Nutritional content	(Coderoni and Perito, 2020; Spartano and Grasso, 2021)
	Reliability, safety	(Cherry and Pidgeon, 2018; Coderoni and Perito, 2020; Gnanapragasam et al., 2018; He et al., 2021; Hunka et al., 2021; Ma et al., 2017; Mostaghel and Chirumalla, 2021; Wurster and Schulze, 2020)
	Accessibility of waste handling options	(Cherry and Pidgeon, 2018; Cordova-Pizarro et al., 2020; Drábik et al., 2020; Lehner et al., 2020; Macneill et al., 2020; Smol et al., 2018; Wagner and Heinzl, 2020)
	Geographical location	(Botelho et al., 2016)
	Policy, regulatory structures	(Macneill et al., 2020)
	Storage space	(Lehner et al., 2020)
	Technical support	(Gaur et al., 2019)
	Time	(Ackermann et al., 2018; Borrello et al., 2017; Cherry and Pidgeon, 2018; Cooper, 2017; Diddi and Yan, 2019; Kabel et al., 2020; Lehner et al., 2020; Nazlı, 2021)

Status	Need for social status	(Camacho-Otero et al., 2019; de Morais et al., 2021; Hur, 2020; Laitala et al., 2021; Machado et al., 2019; Nathan et al., 2021; Nazlı, 2021; Rogers et al., 2021; Vehmas et al., 2018; Wang and Kuah, 2018)
Trust	Avoidance of ambiguity, asymmetry	(Wang et al., 2020)
	Consumer reviews	(Matsumoto et al., 2017)
	Eco-Label	(Baier et al., 2020; Camacho et al., 2020)
	Image of company, brand	(Camacho-Otero et al., 2020; Cherry and Pidgeon, 2018; Coderoni and Perito, 2020; Cooper, 2017; Gaur et al., 2019; Gnanapragasam et al., 2018; Machado et al., 2019; Matsumoto et al., 2017; Mostaghel and Chirumalla, 2021; Poppelaars et al., 2018; Sharma and Foropon, 2019; Singhal et al., 2019; Vehmas et al., 2018; Wagner and Heinzl, 2020)
	Information coherence	(Testa et al., 2020)
	Neophobia	(Baier et al., 2020; Camacho-Otero et al., 2020; Cattaneo et al., 2019; Chen et al., 2020; Coderoni and Perito, 2020; Cooper, 2017; Gaur et al., 2019; Gnanapragasam et al., 2018; Hunka et al., 2021; Hur, 2020; Jaeger-Erben et al., 2021; Laitala et al., 2021; Mugge et al., 2017; Nathan et al., 2021; Smol et al., 2018; Spartano and Grasso, 2021)
	Trust, mistrust	(Barbu et al., 2018; Bigliardi et al., 2020; Cattaneo et al., 2019; Cordova-Pizarro et al., 2020; Drábik et al., 2020; He et al., 2021; Hunka et al., 2021; Koszewska et al., 2020; Spartano and Grasso, 2021; Testa et al., 2020; Wagner and Heinzl, 2020)
	Word of mouth	(Cooper, 2017; Lieder et al., 2017)

Source: Own table.

The factors were further classified into 14 categories, of which some are more prominent than others. The authors most often identified factors falling into the psychological category (17), followed by trust (15), functional attributes (12), risk (11), economic motivation (10), and knowledge (10). The number of factors does not imply higher importance of any category, since the factors' relevance may differ significantly. It can however be used as an approximation of consumer concern and is therefore discussed in the literature more prominently.

Price is presumed to be important, being discussed a total of 36 times. Mostly, price is associated as a significant barrier to consumer acceptance. There are however exceptions, identifying price as a driver. Vehmas et al. (2018) point out that UK consumers may associate a higher price with higher quality, whereas for French consumers a higher price may symbolize higher status. Other prominent factors include environmental and ethical impact concern (36), quality (23), awareness, familiarity, knowledge (20), and neophobia (16).

The research shows that a significant number of factors influencing consumer acceptance is spread across different categories and their importance can only be approximated. A more in-depth assessment would require empirical testing and would be dependent on the specific context.

Practices of consumer behaviour

The literature review revealed a significant number (99) of practices influencing consumer acceptance (Figure 6). The majority of these practices are suggestions from academia instead of actual examples identified from business. Keeping that in mind, there

are practices which the literature frames as theoretical suggestions, while they may already be used in business. For instance, Testa et al. (2020) propose the use of information communication technology (ICT), such as bar- or QR-codes on packaging, allowing consumers easy access to sustainability-related product information, thereby addressing factors like information availability, effort, and environmental benefits. Even though the authors do not mention actual examples of this practice from business, the technology already exists and has likely been used for this purpose already, e.g., in the case of grocery shopping (Atkinson, 2013). Thus, a practice such as providing access to real-time information may address multiple factor categories, such as altruistic reasons, effort, knowledge, risk, and trust. The authors assigned the identified practices to the 14 factor categories respectively, indicating which factors they may address.

19 of the identified practices are actual examples from business. For instance, iFixit.com provides repair guides (Ackermann et al., 2018; Haines-Gadd et al., 2018) while Nudie Jeans offers free repairs (Cordova-Pizarro et al., 2020; Stål and Jansson, 2017), addressing the factor repairability.

The last category consists of practices proposed by the authors (21) i.e., practices that suggested themselves when studying the literature but were not framed as practices in the literature. This category of practices was incorporated to address the limitations of identifiable practices in the literature, considering the relative newness of the topic and the respective sparsity of research on the particular topic, as was suggested by a reviewer of the conference upon outline submission.

While most practices are referred to only once or twice in the literature, a few practices are discussed more prominently. Eleven publications highlight the practice of offering rewards in take-back programmes. A prominent example is again H&M, offering coupons for consumers that return worn textiles (Forlin and Scholz, 2020; Lehner et al., 2020; Andrea Urbinati et al., 2017). Other frequently mentioned practices are eco-labelling and environmental certification (9), communication of environmental benefits and importance (6), warranties (6), and the involvement of celebrities as designers, advocates, and entrepreneurs (5).

Altruistic reasons Consumer needs Design Economic motivation Effort Functional attributes Knowledge Ownership Psychological factors Risk Safety Situational factors Status Trust												Practice	Variations	Examples of practices Practices suggested by academia Practices suggested by authors	
Category												Practice	Variations		
x	x		x	x			x	x	x	x	x	x	Act as a broker	x	
x					x		x						Address consumer as "doers" rather than "users"		x
							x	x			x	x	Affiliate with well trusted brands	x	
x				x		x							Allow consumer involvement in circular projects to drive consumer engagement		x
					x	x					x		Allow consumer to create relationships with products	x	
x						x					x	x	Allow for more social interaction		x
					x	x							Allow for nostalgia		x
	x			x		x				x	x		Allow for reviews on platform		x
						x						x	Allow nostalgia and memory association with products		x
					x	x	x	x		x	x		Allow virtual exchange with community and showcasing the individual's personality	x	
x						x				x			Ask consumers to pledge to consume sustainably		x
					x	x	x	x		x			Bring together consumer in events to stimulate social relations		x
					x	x	x	x					Communicate clearly, consistently and set expectations right		x
x				x									Communicate emissions of alternative products or behaviours		x
x					x	x							Communicate environmental benefits of CE and importance of the consumer		x
					x				x				Communicate health information		x
					x				x				Communicate hygiene through services		x
									x	x			Communicate premium features		x
x				x			x						Communicate the products' degree of newness		x
x					x	x				x	x		Conspicuous conservation		x
	x					x							Create excitement, joy through carefree offer		x
		x				x	x						Demystify good value of cheap products		x
			x										Design for (temporary) personalisation or customisation	x	
				x	x								Design for disassembly		x
					x					x			Design for easy cleaning		x
	x	x				x	x						Design for emotional durability		x
	x	x			x	x				x			Design for upgradability and adaptability		x
			x	x						x			Design products for optimal shipment		x
				x						x	x		Display sustainable products separately in stores or online		x
x						x	x	x				x	Educate consumers on eco-labels		x
x						x						x	Employ eco-labelling or environmental certifications		x
		x	x			x	x					x	Encourage to consume durable products		x
										x			Enhance accessibility of take-back services		x
					x	x		x	x			x	Enhance and communicate quality, performance, reliability of products		x
										x		x	Ensure high operating standards to build a good reputation		x
										x		x	Ensure operational excellence		x
x		x				x							Extend customer loyalty programmes from sales value to return frequency		x
x											x		Frame green consumption as prosocial behaviour		x
						x	x						Gamify circular behaviour		x
	x						x			x			Highlight the innovativeness of circular products or services		x
							x						Identify consumers that have a history of circular consumption		x
	x		x							x	x		Implement consistent business practices and product portfolio		x
				x						x			Increase accessibility to circular behaviour options in daily routines		x
					x					x			Increase quality of product (and potentially price) and offer repair service		x
x		x	x							x			Install deposit system to encourage give-back schemes		x
x						x	x				x		Introduce circular tag or logo that is visible on products		x
												x	Introduce repair alliance		x
						x	x			x	x		Involve celebrities as designers, advocates and entrepreneurs		x
												x	Involve independent agency to fact-check claims		x
												x	Involve professionals for signalling	x	

Category	Altruistic reasons	Consumer needs	Design	Economic motivation	Effort	Functional attributes	Knowledge	Ownership	Psychological factors	Risk	Safety	Situational factors	Status	Trust	Practice	Variations	Examples of practices Practices suggested by academia Practices suggested by authors
				x				x	x	x		x			Lease products instead of just selling them	x	
				x											x Maintain and control sharing platforms	x	
															Make arrangement process for product return effortless	x	
x									x						x Make benefits of CE and consumer participation tangible	x	
															x Make cycled products' provenance traceable	x	
															x Make information on circularity easily available to consumers	x	
															Make spare parts available as producer	x	
															Marketing & sales of circular options	x	
															Offer all-inclusive services	x	
															Offer financing options	x	
															Offer free mending, repair service	x	
															Offer lucrative offers and discounts to attract first customers	x	
															Offer non-committal service	x	
															Offer referral bonus	x	
															Offer renting spare and sacrificial devices to reduce practical risk	x	
															Offer repair service	x	
															Offer rewards in take-back programs	x	
															Offer selection of return or collection types	x	
															x Offer service contracts for refurbishment, repair, upgrade or maintenance	x	
															x Offer test phase	x	
															Open stores specifically for circular products	x	
															x Partake in circularity index	x	
															Portray cleanliness of products via (digital) store space design	x	
															Promote taking part in closed loop supply chains as giving products a new life	x	
															x Provide access to real-time information	x	
															x Provide access to well-known and exclusive brands and products	x	
x															x Provide consumer information on the fate of their end-of-life devices	x	
															Provide data securement services when recovering end-of-life devices	x	
															x Provide excellent service experience	x	
															Provide guidance, education about circular behaviour options	x	
															x Provide information on product cleaning or sanitisation	x	
															x Provide performance scale to convince consumer of performance quality	x	
															Provide remote updates to ensure technological newness	x	
															Provide repair guides	x	
															x Provide transparent information on recovery processes and product history	x	
															Require return fees for products	x	
															x Run informational campaigns	x	
															Send mail order repair kits	x	
															x Share sustainability reports	x	
															x Show sustainability levels of products and highlight level of particular products	x	
															x Signal sustainable recycling practices of end of life devices	x	
															x Sustainable communication	x	
															x Train employees as circularity ambassadors	x	
															Use higher price to denote a higher quality or higher status	x	
															x Use influencers	x	
															x Use lifespan labels	x	
															Use sustainable materials	x	
															Use sustainable packaging	x	
															x Warranties	x	

Figure 6 Practices of consumer acceptance.

Even though the research shows a significant number of consumer acceptance practices, their relevance was not identified and needs to be tested empirically. Also, a single practice may be suitable to address multiple factors, as indicated by the authors. Identifying these interrelations empirically would help businesses to select appropriate

practices for their identified consumer acceptance factors. While factors are often identified in lists or as frameworks in publications (Antikainen et al., 2015; Camacho-Otero et al., 2018, 2018; Hazen et al., 2017; Rexfelt and Hiort, 2009; Van Weelden et al., 2016), consumer acceptance practices are hardly researched intentionally and even less addressed in form of lists or frameworks. This prompts that more practices exist which could be identified through targeted research.

5 Discussion

Section 5 discusses the findings from the literature review in response to the research questions. Based on the introduction, which highlighted the relevance of consumer acceptance in the CE, section 3 illustrated the topic's historic coverage in the literature, by academic outlets, and across countries. Further, it suggested a conceptual framework on the context of consumer acceptance in the CE and provided definitions for relevant terms. Section 4 suggested a comprehensive framework of factors influencing consumer acceptance and a framework of practices that companies can deploy to address these factors to foster consumer acceptance. These findings and their implications will be discussed in more detail below.

The topic of consumer acceptance was recognised as an important barrier in the transition to the CE (Kirchherr et al., 2018) and is discussed in over 100 publications (Camacho-Otero et al., 2018; Ghisellini et al., 2016; Hazen et al., 2017; A. Urbinati et al., 2017; Van Weelden et al., 2016). Despite the growing body of literature across countries and disciplines over the last years, the topic still lacks a clear conceptualisation through definitions and comprehensive frameworks of factors and practices.

Recent research advocated the definition of key terms in the context of consumer acceptance (Camacho-Otero et al., 2017). The lack of such definitions has led to misunderstandings of relevant terms, (Poppelaars et al., 2018), and lead to the usage of interchangeable terminologies, such as drivers or enablers and practices or triggers. Hence, this study proposed a conceptual framework that illustrates the interrelations between the terms consumer behaviour, adoption, acceptance, factors, and practices. Further, the suggested definitions shall improve the concept's clarity and facilitate future research, that builds on existing knowledge using consistent terminology.

The research has shown that publications discuss factors of consumer acceptance from different angles and that some authors started to create overviews of such factors (Camacho-Otero et al., 2018; Chamberlin and Boks, 2018; Rexfelt and Hiort, 2009). We unified this existing research, developing a framework consisting of 118 consumer acceptance factors across 14 categories, including 31 drivers, 25 barriers, and 62 that classify as both.

A qualified understanding of the individual factors is important to consider their actual impact on consumer acceptance since consumers can perceive more than half of the identified factors either as drivers or barriers. Even the same consumer may perceive the same factor differently, depending on the context, product, or service offered. For example, a consumer may perceive a high price for consumer goods, such as milk or bread, as a barrier, whereas a high price for fashion articles can be considered a driver, as high prices can connote quality or status (Vehmas et al., 2018). Thus, on top of the sheer knowledge of consumer acceptance factors, individual consumer preferences must be understood to foster acceptance successfully.

While researchers repeatedly discussed factors for different circular business model strategies, such as cycling, extending, and intensifying, as defined by Geissdoerfer et al. (2020), dematerialising was not covered at all. An explanation could be, that dematerialising, e.g., e-books, e-papers, or online banking, is largely not considered a circular business models strategy, but rather a technology-enabled strategy.

Moreover, the literature focused on selected industries, such as fashion, consumer electronics, and food, while other emission-intensive industries, such as building, were largely ignored. Further, the literature mainly focused on business-to-consumer markets, while business-to-business markets were largely neglected. Given the large quantities of resources that are bought by a small number of business customers, compared to consumer markets, this perspective is particularly relevant. Thus, factors of consumer acceptance for these industries and markets may be missing.

Although factors of consumer acceptance have been discussed by multiple publications, practices of consumer acceptance have largely been neglected. Hence, this study proposed a framework of practices that companies can deploy to foster consumer acceptance. Of the 99 practices identified, the majority were suggestions from academia (59) or the authors of this study (21), whereas 19 practices were examples from business. While actual examples of practices were identified as a further research opportunity (Camacho-Otero et al., 2018, p. 4; Hazen et al., 2017, p. 460; Mugge et al., 2017, pp. 20–21), no research intentionally lists such practices, to the authors' knowledge. This highlights the ongoing focus on factors of consumer acceptance and the lack of research regarding actual practices. Further, the study indicated how an individual practice can address multiple factors at the same time. These interrelations are relevant to develop a better understanding of which practices are applicable and most suitable when a company aims to address a specific consumer acceptance factor.

With the above research, we hope to contribute to theory and practice alike, with a focus on the conceptualisation of consumer acceptance in the CE, definitions of relevant terms, frameworks of factors and practices that support companies to innovate towards more circular business models, foster consumer acceptance, and thus enhance the transition towards the CE.

6 Conclusion

Section 6 concludes by highlighting the study's theoretical and practical contributions, stating its limitations, and suggesting avenues for future research.

Contributions

Despite the research interest in the topic, the concept of consumer acceptance and its relevant terms were not made explicit in the literature, causing an interchangeable or wrong use of different terms. To answer research question one – *How is the topic of consumer acceptance towards the CE conceptualised?* – the authors developed a conceptual framework showing the interrelation between the relevant elements. In addition, the authors defined the central terms in this context. Consequently, this study contributes to the theoretical conceptualisation of consumer acceptance in the CE, enhances conceptual clarity, helps researchers to avoid misunderstandings or confusion, and facilitates future research based on a common theoretical concept.

In previous research, authors identified factors of consumer acceptance in their research, some even in the form of overviews. These studies apply a specific focus, either on different business model strategies, industries, or countries. Hence, a comprehensive overview of factors is missing. To address this gap, the authors answered research question two – *Which factors affect consumer acceptance for circular business models?* The study identified 118 factors and assigned them to 14 categories, thereby proposing the most comprehensive framework of factors to date. Thus, this research consolidates the theoretical knowledge of consumer acceptance factors and highlights existing gaps. It provides insights and guidance for companies by uncovering factors they may be unaware of and by facilitating a better understanding of their consumers' behaviour.

In comparison to acceptance factors, the authors found that acceptance practices were neither explicitly researched nor listed as separate research contributions. Thus, the authors answered the third research question – *Which practices can companies deploy to foster consumer acceptance by innovating their circular business models?* This research identified 99 practices of consumer acceptance, which represents the first extensive overview to date. By providing such a framework, this study addresses the identified literature gap and contributes to the theoretical understanding of consumer acceptance practices. Moreover, it provides insights and guidance for companies to identify, select, and implement appropriate practices to address their consumers' acceptance factors. With the implementation of purposefully selected practices, companies can innovate their circular business models to enhance consumer acceptance and accelerate their transition towards a more CE.

Limitations

Multiple limitations restrict the generalisability and applicability of this study. Given the newness of the topic and its relevance for industry, the review of grey literature, which was not considered in the applied methodology, may contribute significantly to the integration of additional practices. Further, the choice of a semi-systematic review approach, that allows for freedom in the backwards-snowballing process, may result in a lack of randomised representativeness, causing selection bias (Geissdoerfer et al., 2017).

Certain factors are identified as drivers or as barriers in the literature. Yet, factors may qualify as both, depending on the specific context, which was not considered in this research. Further, factors and practices need to be applied with caution by companies, as their applicability and impact are dependent on context and consumer preferences, which was not examined. Further, the interrelationship between practices and factors was not tested empirically. Since this study did not investigate the actual circularity of business models, the results may also apply to unsustainable or greenwashed business models. Researchers have identified the intention-behaviour gap as a significant reason why circular business models are not implemented (Garcia et al., 2021). This phenomenon describes that consumers' positive purchase intentions often do not translate into actual behaviour. While this research found that factors can influence consumer behaviour directly (Fishbein and Ajzen, 1975; Khor and Hazen, 2017; Van Weelden et al., 2016), it was not investigated for which factors and to which extent this is true.

Future research

Based on the limitations above, the authors suggest the following avenues for future research. Regarding methodology, future studies should include grey literature and

empirical research to identify further practices and choose different methodologies to limit selection bias and increase representativeness.

Given the identified literature gap, future research should focus on acceptance practices. Practices suggested by academia and examples from business should be tested empirically to derive their validity and applicability in various contexts. Moreover, researchers should test which practices are suitable to influence which factors. In addition, research should investigate whether intensive use of practices leads to information overflow and decreases acceptance. Circular business model innovation research is needed to develop an implementation process that allows companies to operationalise consumer acceptance insights effectively. To close the intention-behaviour gap, future research should identify which factors impact consumer behaviour directly (Mugge et al., 2017) and examine the role of practices to narrow this gap.

The authors suggest researchers focus on the circular business model strategy of dematerialising, which was not addressed to date. Future research should also emphasise the role of business-to-business markets, which have largely been ignored. Lastly, while this research focuses on the role of companies and the perspective of consumers in the transition to a more CE, the role of policymakers was not considered. Researchers should investigate how policies can contribute to consumer acceptance by addressing circular factors or practices.

Such research will help to complement the existing theory on consumer acceptance in the CE context and support companies to foster consumer acceptance for their circular business models. This will enhance the transition towards a more CE, sustaining the environment, supporting social development, and enabling economic prosperity.

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