

## Consumers in the circular economy

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### Abstract

The circular economy is poised to transform economic systems and contribute to sustainable development. Most of the attention has focussed on how production can become circular by developing innovative business models, processes and products that close material loops. However, although these solutions are required to inspire radical changes, the lack of demand for such offerings (both perceived and real) has been highlighted in literature as a significant barrier. Enabling such demand necessitates a deep understanding of the consumer and the processes by which consumption patterns, and the social practices they result from, are transformed. It requires an understanding of the actors that need to be involved in such processes, as well as tools and design interventions that will contribute to a circular economy. In this chapter, we provide insights regarding these aspects based on existing and ongoing research that focuses on consumption-related aspects of the circular economy. We first introduce some consumer behaviours in a circular economy, and examine factors which may influence adoption or acceptance of circular products and services. We then describe some strategies and concepts for introducing circularity to consumers, in the form of business models, design and communications strategies, and finally we discuss some of the challenges of circular consumption.

### Introduction

Consumption and consumers must be of primary consideration for companies and economies trying to increase their involvement in the circular economy. The lack of market support or demand from consumers is one of the main barriers for small and medium companies to embark on circular projects (Rizos et al., 2016). Moreover, a growing number of voices are calling for more detailed investigations into the implications of a circular economy for those on the side of consumption rather than production (Hobson and Lynch, 2016; Mylan et al., 2016; Welch et al., 2017) as these concerns seem largely absent from policy frameworks (Repo, 2017) and practice. Despite growing interest, not many definitions of the circular economy even acknowledge consumption, as recently highlighted by Kirchherr et al. (2017) who found that only 19% of the publications defining the term acknowledge the role of consumers and consumption. According to Kirchherr et al. (2017), the circular economy is “an economic system that replaces the ‘end-of-life’ concept with reducing, alternatively reusing, recycling and recovering materials in production/distribution and consumption processes. It operates 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. It is enabled by novel business models and responsible consumers.” (Kirchherr et al., 2017, p. 229) Although this definition includes consumers and consumption processes, it stops short of providing a detailed explanation of what circularity means for consumption and the role of consumers. Additionally, it assumes that consumers would be responsible or rational enablers of this system overlooking the vast literature that discredits such a ‘rational consumer’ approach. If circular economy is to become reality or normality,

further examination of its implications for consumption and consumers is required, and in this chapter we therefore address these consumption side implications from several perspectives.

## **1. Consumption and the circular economy**

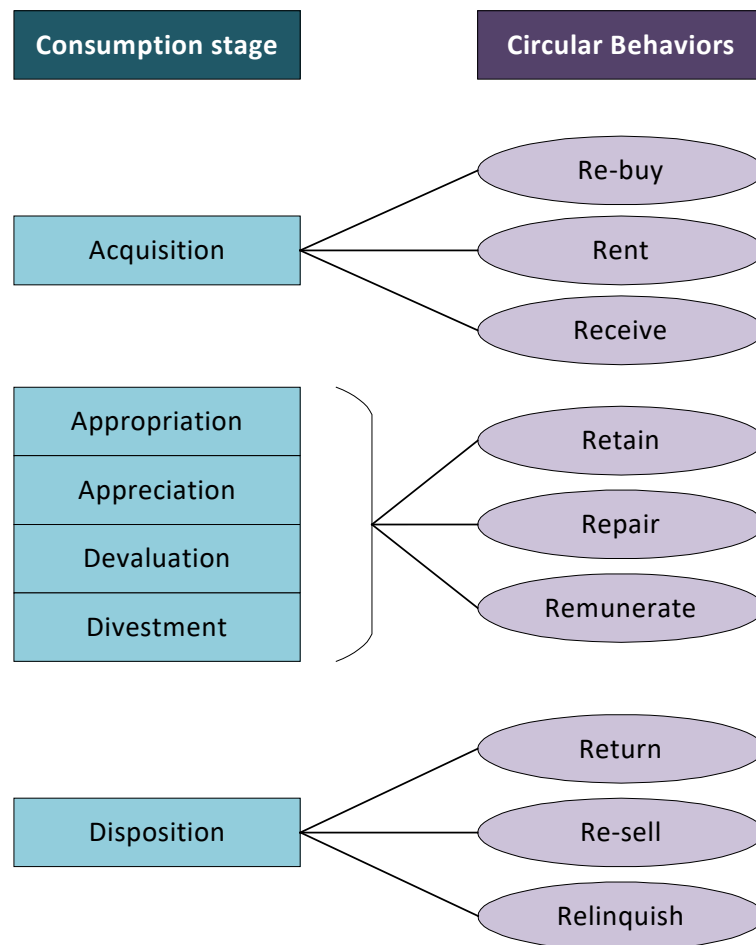
Researchers from the field of consumption studies, define consumption as a complex process embedded in social, economic, cultural and material systems (Southerton and Welch, 2018). Warde (Warde, 2005, p. 137) suggests it is “a process whereby agents engage in appropriation and appreciation, whether for utilitarian, expressive or contemplative purposes, of goods, services, performances, information or ambience, whether purchased or not, over which the agent has some degree of discretion.” In an effort to provide a more comprehensive definition that acknowledged the processes by which objects exit people’s lives, Evans (Evans, 2018) introduced three more steps: devaluation, divestment and disposal. Consumption consists then of six phases. The first stage is acquisition, the process by which consumers get hold of the objects to be consumed. It is followed by the use stage that is not just about physical deterioration of products, but also the creation of meaning. Another relevant concept within the use phase is appropriation, the means by which consumers embed acquired objects in their everyday life. Then comes appreciation, which occurs when people value such objects in their domestic environment. Devaluation happens when such objects lose their meaning and therefore importance for the consumer. Then, they divest themselves from them by exiling them from the domestic realm. Divestment closes the use stage of consumption and yields to the disposal stage. Such disposition could come in many forms, e.g. by keeping them in a storage room or throwing them in the waste bin.

Following Kirchherr’s definition of the circular economy, circular consumption is then the process of acquisition, appropriation, appreciation, devaluation, divestment and disposal of products and services that allows for reducing, or alternatively, reusing, recycling and recovering of materials (Kirchherr et al., 2017). If translated into each of the stages of consumption, within a circular economy, during the acquisition phase, consumers would purchase circulated products (pre-owned, remanufactured, refurbished, recycled) or the function of the product. In the first case, consumers should use such products for longer, in order to reduce the need for new materials. The second form of acquisition, access to the function, requires consumers – or in this case users – to use the product for a short period, to avoid creating strong attachment but a sufficiently robust bond to be careful so the product is in good shape for the next user. These two forms of acquisition have also consequences during the disposition stage. In both cases, final disposition should allow the product to re-enter the system. Compared to the linear form of consumption, these characteristics can make consumption in the circular economy challenging.

### **1.1. Circular consumption behaviours**

As Spring and Araujo (Spring and Araujo, 2017) suggest, in line with the definition of circular consumption suggested above, products are ‘objects with a career’ or ‘assemblages of materials’ that are stabilised and then transformed by consumers. In a circular economy, consumers would be expected to perform a series of behaviours that enable circular consumption. Figure 1 presents a diagram of what behaviours or activities are relevant for each consumption stage, in the tradition of ‘R’ models and waste hierarchies (e.g. see (Kirchherr et al., 2017)). These do not represent any kind of hierarchy and are extrapolated from the business models and practices suggested in literature (Bakker et al., 2014; Ellen

MacArthur Foundation, 2013; Hollander et al., 2017; Piscicelli and Ludden, 2016; Weelden et al., 2016), but they represent a sample set of behaviours that require active involvement or initiation by consumers.



*Figure 1 Circular consumption behaviours*

These nine ‘re’ activities may be compared with the desired behaviours suggested by Wastling (Wastling et al., 2018). During the acquisition stage, people are expected to re-buy used products, rent them or receive them as part of an exchange activity. During the use phase, consumers can perform activities that support extended ownership of the product or subsequent use by other consumers, depending on the business model. Here, it is suggested that people can repair, retain or remunerate products. Repairing behaviours allow for renewing the different values of the product, extending their life expectancy for a particular consumer. Remunerating can enable consumer to get additional value. In addition, retain, implies that the product is not prematurely disposed of. During the disposal phase, consumers perform activities that enable the faster circulation of goods such as return to the system, re-sell to other consumers or relinquish in the context of a money-free exchange.

A circular economy usually requires more than swapping one type of product purchase for an equivalent more ‘sustainable’ or ‘green’ acquisition: it requires changes in behaviour such as away from acquisition and towards repair, reuse or resale behaviours - as well as a net reduction in original acquisitions - in order to bring about a full scale transition away from linear systems and reduce the need for primary energy and material production. Addressing

these challenges requires a thorough understanding of the elements that influence consumer behaviour. In the following section, an overview of existing literature on the topic is offered.

## 2. Changing consumption patterns

Researchers in the field of consumption have investigated how do consumption and consumers' behaviour change from three main perspectives, individual, social structures and social practices (Halkier et al., 2017; Reisch et al., 2010, Jackson, 2005). Individualistic approaches to consumption mostly address economic, psychological and cultural factors when answering the question of change. More structural perspectives focus on social institutions and conventions such as worktime (Schor, 2008), international trade (Schor, 2005) or systems of provision. Later, a new wave of scholars interested in consumption and sustainability, suggested to change focus from either the individual or the structure, to social practice. Theories in this area argue that the appropriate level of intervention is not the individual behaviour but the web of doings and sayings people engage within their everyday life, or practices. Practices have been conceptualised as entities and performances, made of shared meanings, sets of competencies, skills and rules as well as materiality that come together to be performed by multiple agents (Shove et al., 2012).

Existing research on consumption of solutions that are considered circular such as Product Service Systems (PSSs), sharing economy, collaborative consumption and remanufactured products provide input on different elements that influence consumer acceptance and adoption. In a recent review, we offered an overview of such elements (Camacho-Otero et al., 2018). Table 1 presents a revision of such findings, based on additional research (Camacho-Otero et al., 2019).

*Table 1 Factors of acceptance of circular offerings in the fashion sector*

<b>Dimension</b>	<b>Factor of acceptance</b>
<b>Demographic</b>	Age
	Gender
	Education
	Location
<b>Economic</b>	Savings
	Transaction costs
	Hygiene and health
	Personal liability
	Trust in the provider
<b>Psychosocial</b>	Attitudes
	Attachment
	Behaviour (acquisition, use and disposal)
	Materialism
	Nostalgia
	Environmental values
	Subjective norms
	Past experiences
<b>Cultural</b>	Integrity
	Experience

	Experimentation
	Social interaction
	Fashion involvement
	Desire for change and uniqueness
	Identity
	Status
	Political consumerism
<b>Socio-material conditions</b>	Impact on everyday life
	Ease of use
	Legal issues
	Technology
	Location

Among demographic factors are age, gender, education and location. Different studies have found that younger females (Armstrong et al., 2016; Gopalakrishnan and Matthews, 2018; Weber et al., 2017, Gwozdz et al., 2017; Pedersen and Netter, 2015), with high level of education (Cervellon et al., 2012) and located in high-income economies (Gwozdz et al., 2017) are more willing to participate in circular solutions. Economic factors have been also considered by researchers, including costs savings (Armstrong et al., 2015; Cervellon et al., 2012; Laitala, 2014b; Pedersen and Netter, 2015; Petersen and Riisberg, 2017; Rexfelt and Hiort af Ornäs, 2009; Roux and Guiot, 2008), risks related to functionality, hygiene and liability (Abbey, 2015, Baxter et al., 2015, Armstrong et al., 2016, 2015; Laitala, 2014b).

From a social psychology perspective, the attitudes towards specific forms of circular consumption (Akbar et al., 2016, Johnson et al., 2016; Lang and Armstrong, 2018), general values and environmental values (Armstrong et al., 2015; Cervellon et al., 2012; Gwozdz et al., 2017; Laitala, 2014b; Pedersen and Netter, 2015; Petersen and Riisberg, 2017; Roux and Guiot, 2008), level of attachment to products (Park and Armstrong, 2017), personality characteristics such as materialism (Akbar et al., 2016; Gwozdz et al., 2017; Johnson et al., 2016; Lang and Armstrong, 2018; Roux and Guiot, 2008) and frugality are relevant. Beyond these aspects, academics have investigated cultural factors such as identity (Cervellon et al., 2012; Laitala, 2014b; Lang and Armstrong, 2018; Pedersen and Netter, 2015; Weber et al., 2017) and status (Park and Armstrong, 2017; Roux and Guiot, 2008).

The final set of influencing factors, the socio-material conditions refer to the impacts circular offerings have in everyday life using theoretical approaches that do not only focus on the individual. Examples of this research include the work done by Rexfelt and Hiort af Ornäs (2009) regarding the activity framework where they suggested that the impact a solution had on activities in the domestic sphere would influence acceptance of the solution and the exploration. According to their findings, people are more prone to accepting PSS, for example, if they help them perform activities they enjoy, and prevents them from engaging with activities they want to avoid. In a recent study we found that users of fashion subscription services, a form of PSS, did appreciate the impact the service had in their daily lives (Camacho-Otero, et al., 2019, forthcoming).

Acceptance and adoption of circular offerings by consumers requires attention to these aspects. However, no single strategy is suitable to address all of them at the same time.

Multiple tools are required in order to create offerings that consider all of these aspects. In the next section, three main tools are discussed, business models for the circular economy, design for sustainability and communication strategies.

### **3. Strategies for facilitating circular consumption**

The three tools discussed here address four of the five sets of factors and conditions suggested above. First, business models for the circular economy focusses on the economic aspects. By developing innovative strategies for creating and delivering value, companies can support circular consumption. Second, design for sustainability, and in particular for sustainable behaviour addresses psychological factors and material aspects that can trigger circular behaviours. Finally, communication strategies and marketing offer insights on how to create meaning and address cultural aspects. For each tool, a couple of examples are presented as illustration.

#### **3.1. Business models for the circular economy**

Business models describe the way companies conduct business (Osterwalder et al., 2005). A traditional business model implies extracting resources, creating products, and selling them; the final step of discarding products, currently often in landfills or incineration, is outside the scope of the majority of traditional business models. Moving away from these business models and towards innovative ones can shift business activities from maximising profits towards maximising benefits for the company, society and the environment. Business models can enable sustainability and circularity in different ways. In recent literature, sustainable business models (Bocken et al., 2014), product-service systems (PSS) (Mont, 2002), and circular business models (Lewandowski, 2016) have been studied.

Tunn et al. (Tunn et al., 2019) explored business models for sustainable consumption in the circular economy context and identified four business model elements of particular interest, because of their influence on the sustainability of the consumption side. These four elements are Resource Strategy, Revenue Model, Consumer Effort, and Objective to Decrease/Increase Consumption Level. Companies can, for example, purposefully design products and services to decrease consumption levels. They can design durable, upgradable products that do not become obsolete prematurely (Bakker et al., 2014) but they can also go beyond this by designing systems that enable consumers to use less resources to fulfil their needs. When developing these products and systems it is crucial to consider the effort the use of the offering entails for the final user or consumer. Consumers compare the effort of the current standard offering with the effort they perceive the new offering requires. To potentially achieve wide consumer acceptance, circular offerings cannot only compete with their sustainability proposition but need to offer additional benefits such as convenience (Tunn et al., 2019).

In practice, numerous businesses have adopted different types of circular business models over the last years. Below in Table 2, three business cases are outlined. These businesses have all incorporated ways to create product loops. There are other circular businesses that focus on recycling of materials or extending lifetimes, however; reusing products is a very interesting strategy as it preserves products at their highest value and has enabled particularly innovative business models.

Table 2 Circular business models examples

Company	Involved product	Circular business model	Input
Leapp	Consumer electronics	Refurbishment and sales	Used consumer electronics (e.g. smartphones, laptops)
OV-fiets	Bikes	B2C 'Sharing'	Bikes designed for OV and refurbished OV bikes
HOMIE	Washing machines	Pay-per-use	Standard washing machines

Circular business models differ in how they influence consumption patterns and consumers. On the one hand, companies can offer alternatives to high impact products and services that do not require a change in consumption behaviour. One example is the company Leapp that aims to reduce purchases of new smartphones and laptops by offering refurbished ones with a 2-year warranty, thereby improving sustainability and giving consumers certainty. On the other hand, some companies aim to actively change and shift consumption behaviour. HOMIE for example provides washing machines in a pay-per-use scheme and actively tries to influence consumer behaviour through pricing, feedback and other interventions. OV-fiets tries to make the use of public transport more convenient by providing rental bikes at Dutch railway stations and thus potentially reducing the use of cars.

### 3.2. Design for circularity

The field of Design for Sustainability, and more particularly, Design for Sustainable Behaviour, has identified a variety of opportunities for intervention that address psychosocial factors. These are rooted in theoretical concepts such as feedback intervention theory (Kluger and DeNisi, 1996), persuasion (e.g. (Cialdini, 2001), scripts (Akrich, 1992), affordances (Gibson, 1979; Norman, 2013), critical design (Dunne, 2005), and emotional durability (Muis, 2006) that can support circular consumption. These interventions range from information provision, feedback and choices intended to make people reflect, to technological persuasion, steering and force. Several empirical studies were done that both informed, and were derived from theoretical work. Examples of case studies include behaviour related to choice of preferred washing machine programs (McCalley and Midden, 2002), switching off electrical appliances (Rodriguez and Boks, 2005), and behavior related to efficient use of wood stoves

A well-known tool is the Design with Intent Toolkit (Lockton, 2010) based on 101 patterns of how design may influence behaviour, each with an everyday life example, and sorted as nine different lenses of how to look at behaviour change challenges. Examples include the Architectural lens (how can physical aspects of a design guide behaviour, for example by using a slanting surface to avoid that people place things on top of it), the Error-proofing lens (as in including a double-check, to avoid undesirable habitual or automatic behaviour), and the Ludic lens (making desirable behaviour tempting by making it fun). Another approach which aims to

help designers to make informed decisions about which design principles to apply when aiming to achieve a desired behaviour change for a target group, are the Principles of Behaviour Change (Daae and Boks, 2014).

Based on insights from behavioural psychology it suggest the consideration of a variety of design principles that may positively influence user behaviour (Zachrisson and Boks, 2012). It makes use of a landscape that allows sorting design principles based on two parameters: the degree of control that a product allows the user to have over his or her behaviour, and degree of subtlety or obtrusiveness that is designed into the solution. The Dimensions of Behaviour Change (Daae and Boks, 2014) are an extension of this work, proposing that designers can, besides control and obtrusiveness, focus on timing, exposure, meaning, importance, direction, encouragement and empathy when designing interactions between users and products or services, with the aim to make these more sustainable. Table 3 presents a brief description of each of such dimensions.

*Table 3 Dimensions of Behaviour Change*

Control	How much control a user is given over his behaviour may vary from complete control to no control. If the user has much control, designers can only expect the user to behave the desired way if this is in line with their intentions.
Obtrusiveness	How obtrusive a design is will affect how likely it is that the user will become aware of it, but will also affect how it will be accepted. Sometimes the immediate attention of the user is required, whereas in other contexts this may be counterproductive.
Encouragement	When attempting to making people change their behaviour, designers can focus on which behaviour to avoid, or rather on which way to behave, or perhaps present alternative ways of behaving – all with various degrees of encouragement.
Meaning	Sometimes people behave a certain way because they think it is the right way to behave, or because they are afraid of the consequences of behaving differently. Sometimes people might do something just because it is enjoyable or fun, or emotional in some other way.
Direction	The more the user will agree with the way the designer tries to make him or her behave, the more likely it is that they are willing to make an effort or even sacrifice to behave that way.
Empathy	Whether people focus on themselves or on others and what others might think of them depends both on who they are, what they think is important, and on the situation they are in.
Importance	How important someone considers certain behaviour, or the consequences thereof, to be, will affect how much effort the user is willing to put into it. It will also affect to what extent they will accept design solutions that take away the possibility to control their own behaviour.
Timing	Whether users encounter behaviour principles before, during or after the behaviour will affect how they are affected by them. Sometimes the context or the users disqualify some options because the users are unwilling to pay attention, or because the context does not allow them to be interrupted.
Exposure	Users have different needs, and exhibit different levels of acceptance, depending on how often they interact with a product. Something might work if the user encounters it rarely, but loses its effect or becomes when encountered every day.



Taking the Dimensions of Behaviour as an example of a representative DfSB approach, Daae et al. (Daae et al., 2017) show how different DfSB strategies have relevance for the circular economy. Depending on the context, the aim for circularity may require a stronger behavioural focus on maintenance, reuse, remanufacturing or recycling, for example. This paper explains how most if not all dimensions have relevance for these elements of circular behaviour.

### **3.3. Communication with consumers**

Circular economy business models such as PSS involve increased contact or ‘touchpoints’ between business and consumer, with each of these interactions providing an opportunity for communication and heightened service experience (Boag, 2017; Duncan and Moriarty, 1998). Consumers glean information from many such sources - from advertising to social media to word of mouth - and the content and format will resonate differently with each person depending on their own context and personal values or goals. Configuring these flows of information is a complex challenge, but they can help people to structure their environment, take decisions, ascribe meaning and act -so are a critical focus point for any organisation attempting to encourage circular consumption (Duncan and Moriarty, 1998).

However, meaning is not only transmitted by a sender but also created by the receiver according to semiotic conventions that they may well be ignorant of (Chandler, 1994). But by engaging with a medium people both act and are acted upon in an ongoing process of structuration. Obvious attempts to manipulate through communication can be controversial, but slick information design is more likely to get the consumer to act on the message, and has also been shown to increase the value of and trust in a brand as well as facilitating customer service and increasing satisfaction (Boag, 2017). Rhetorical devices, puzzling messages and ‘code play’ can increase a message’s memorability and a viewer’s engagement with it and thus its persuasiveness and potential influence on behaviour (Bateman, 2014; Cook, 2001). Narrative techniques have also been shown to be particularly influential in introducing consumers to new products or behaviours (Van Den Hende et al., 2012) as models such as Entertainment Overcoming Resistance (EORM) and Narrative Transportation Theory show that people’s resistance to a message is decreased the more immersed they are in a story. They imagine themselves part of the action and become less aware of its persuasive intent, and images can enhance this experience (Jansen, 2017; Van Den Hende et al., 2012).

Businesses that are already engaged in selling circular economy-type products and services to consumers use a combination of hedonic and eudaimonic-type communications strategies to address consumers’ extrinsic and intrinsic concerns respectively (Chamberlin and Boks, 2018). For example, as illustrated in Table 4 concerns about cost or warranties are often assuaged by strategies such as monetary rewards, encouragement and ‘obtrusive’ communications, whereas more intangible concerns about brand image, quality or contamination may be addressed by communicating empathy, emotional engagement or meaning (see Table 3 for more detail). This has been illustrated using strategies from design frameworks to analyse the online communications of four ‘circular’ businesses (Chamberlin and Boks, 2018), for instance showing how certain brands use storytelling, metaphors or playfulness to try and change people’s preconceptions about used products. Describing used clothes as ‘better than new’ and anthropomorphising 2nd life materials as ‘rescued’ or ‘heroic’ for example may help to

transform consumers' initial feelings of disgust or contamination at the thought of purchasing a pre-used item into feelings of interest or empathy.

*Table 4 Communication strategies found to address consumer concerns in a circular economy (Chamberlin and Boks, 2018).*

<b>Consumer factor</b>	<b>Communication design strategies</b>
Contamination /Disgust /Newness	Importance, playfulness, rephrasing and renaming, emotional engagement, empathy, personality, framing, choice editing
Convenience /availability	Encouragement, direction, simplicity, assuaging guilt, worry resolution
Ownership	Meaning, anchoring
Cost /financial incentive /tangible value	Encouragement, rewards, importance, first one free, scarcity, framing
Environmental impact	Transparency, simplicity, empathy, obtrusiveness, meaning, framing, emotional engagement, importance, assuaging guilt, direction
Brand image /design /intangible value	Meaning, storytelling, empathy, mood, colour associations, importance, emotional engagement, scarcity, prominence, obtrusiveness, expert choice, social proof.
Quality /performance	provoke empathy, meaning, storytelling, personality, importance, scarcity, expert choice, direction, emotional engagement, worry resolution
Customer service /supportive relationships	Encouragement, tailoring, transparency, emotional engagement, metaphors, provoke empathy, assuage guilt, reciprocation, importance.
Warranty	reciprocation, assuaging guilt, worry resolution, obtrusiveness, metaphor, importance
Peer testimonials /reviews	social proof, storytelling, provoke empathy, expert choice, importance, worry resolution

#### **4. Challenges for consumption in the circular economy**

The circular economy is widely seen as a concept that bridges the gap between economic and environmental concerns. However, some important aspects have not yet been addressed such as the impact a circular economy might have on the overall sustainability of a society. Some research indicates that although resources might be used more efficiently, this does not necessarily translate into an actual reduction of overall material use. For example, in a recent study about collaborative consumption in the fashion sector, Iran and Schrader (2017) found that resource consumption reductions would only be achieved if circular business models had a sufficiency effect, meaning that circular consumption would substitute consumption of new items. Moreover, it is argued that the circular economy does not challenge norms and conventions such as economic growth that have heretofore supported the expansion of a

consumerist economy and created threats to the health of Earth's ecosystems (Hobson and Lynch, 2016). Thus, the root causes of the current sustainability crises may not be addressed by the model of a circular economy.

Another aspect relates to the driving force behind the transition to a circular economy, which could be motivated by companies or citizens. Bakker (Bakker et al., 2018) outline two alternate circular economy scenarios that have different implications for consumers. On the one hand, a scenario that is driven by companies characterised by services in which companies own and maintain products that consumers can gain access to. In this scenario, consumers do not have to worry about the burdens of ownership such as maintenance, repair and the end of life of products implying a low effort for consumers to consume sustainably (Tunn et al., 2019). However, as the providing companies retain ownership of the products this scenario would need some form of safety net for consumers to prevent debt accumulation and loss of essential services in times of unemployment and difficulty (Cherry and Pidgeon, 2018). In the second scenario, Bakker et al. (Bakker et al., 2018) outline a circular economy that is actively propelled by consumers, through local initiatives such as repair cafes and peer-to-peer sharing. In this scenario consumers retain control over, and responsibility for, their products. The implications of these two scenarios for consumption and consumer behaviour differ significantly and need to be further explored.

## **5. Conclusion**

In this chapter, we set out to contribute to the literature on the circular economy by offering a detailed account of the implications of circularity for consumption. We did this by acknowledging the complexity of this socially embedded process and by identifying the behaviours consumers are required to engage with when adopting circular offerings. As a result, we suggest that consumers are not only expected to acquire circular products or services but may need to perform new activities during the use phase and disposal phases of consumption as opposed to existing linear consumption. We offered a set of nine behaviours that consumers – or users- may have to engage with, thus contributing to a more detailed definition of the circular economy from the consumption side.

These behaviours are quite different to those needed in a linear economy and may be beset by low acceptance and adoption. To address this concern, this chapter also discussed the main factors and conditions found in the literature that influence both acceptance and adoption of specific circular solution: demographic, psychological, economic and cultural factors as well as socio-material conditions. Finally, we briefly described three concepts that are important elements of a toolbox that can be used by companies and other stakeholders to address these aspects to facilitate acceptance and adoption of circular offerings. This chapter thus provides business developers, policymakers and organisations interested in advancing the circular economy with valuable information about the demand side. It also contributes to closing the gap between knowledge created about the production and consumption sides of the circular economy.

In this chapter, we have focused on consumers and how they can participate in the circular economy. Despite their importance, consumer behaviour is not only governed by individual factors. Collective elements and social structures are also active elements in configuring consumption. Literature exploring these aspects is slowly emerging but further work is needed to understand the role of social conventions, institutions, norms and other meso and macro-

level elements that influence people's behaviour. Nonetheless, it is important to highlight that these contributions focus on the micro-level, the individual, whereas consumption is also governed by meso and macro-level aspects such as collective norms, institutions, capabilities and knowledge. Policy frameworks, practice-oriented design and transition studies can also support the adoption and wider diffusion of the circular economy. This chapter did not include these perspectives but suggests that more research on such drivers is required and needs to be integrated in the research agenda for circular consumption.

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