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Cognitive biases of consumers as barriers in transition towards circular economy

Cognitive
biases of
consumers

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Abstract

Purpose – The purpose of this paper is to identify the cognitive biases of consumer and explain how they are creating barriers in transition towards circular economy (CE).

Design/methodology/approach – This is a conceptual paper which adopts a consumer-centric conceptualization of CE by focussing on cognitive biases as an underlying and unifying mechanism which is creating barriers in the adoption of CE. This conceptualization explains consumers' non-adoption of circular business model, highlight synergies across disconnected theories and streams of research originating in different disciplines and at the individual, societal and cultural levels of analysis.

Findings – The findings of this paper suggest that circular business models are not fulfilling the psychological, social and cultural needs of the consumers and that in turn lead to barriers in diffusion of the CE. Consumers have a negative connotation with the different circular business model due to their cognitive biases.

Practical implications – The paper details about key implications to design effective interventions to modify consumer behaviour in the desired direction for hassle-free transition to CE from the linear economy.

Originality/value – This paper offers a shift in CE research from a deterministic approach to conceptualising consumers to a positivist approach to conceptualising consumers.

Keywords Cognitive biases, Circular economy, Consumer perspective, Circular business model

Paper type Research paper

1. Introduction

In the last few years, a new paradigm – circular economy (CE) – has been gaining momentum worldwide (Ghisellini *et al.*, 2016), as it promises a new business model to decouple economic growth and environmental pressure (Stahel, 2016; UNEP, 2006). Current linear business models, often described as “take–make–waste” models, have led the world into a nexus of waste production and depletion of resources (Preston, 2012). Hence, there is a pressing need for the current business economy to transition towards CE, which envisages the global economy as regenerative and restorative by intention and design (Ellen MacArthur Foundation, 2012).

Businesses models incorporating CE principles lead the way towards a CE (Lewandowski, 2016; Edbring *et al.*, 2016, p. 5), ensuring the circular flow of materials in the production and consumption phase (Edbring *et al.*, 2016, p. 5). The main activities based on this principle are: cascading, renewability, longevity, reuse, upgrade, repair, capacity sharing, dematerialisation and refurbishment (Lacy *et al.*, 2014). Product service system (PSS), collaborative consumption and industrial symbiosis are some of the business strategies based upon these activities for the circular flow of materials. Despite the cost and environmental benefits of these strategies, they are yet to be widely adopted in consumers markets (Abbey *et al.*, 2015; Baines *et al.*, 2017; Tukker, 2015). Consumer's non-acceptance has been highlighted as one of the main reasons for such delay (Abbey *et al.*, 2015; Khor and Hazen, 2017). However, there is a gap in the literature regarding the reasons of this non-acceptance.

The purpose of this paper is to explain the reasons behind the consumers' non-acceptance of these circular business models. An emerging body of research suggests that consumers are not the rational decision-makers (Kahneman, 2003) as envisaged by neoclassical economic



models of human behaviour (Henry, 1990). Empirical evidence demonstrates that consumer behaviour often deviates from traditional economic assumptions of rationality, and is influenced by cognitive biases (Kahneman, 2003). We contribute to this work by linking consumer decision making, cognitive biases and the reluctance to adopt circular business models and, in doing so, we provide an analysis of the psychosocial cultural barriers in the transition towards a CE. Here, in this paper, the analysis considers choices individuals make about their discretionary behaviour in a circular business model.

Thus, this paper makes contribution to what we know about CE by offering a conceptual framework that advances the understanding of why consumers are reluctant to adopt a circular business model and how their behaviour is creating a barrier to the transition towards a CE. Specifically, we adopt a consumer-centric conceptualisation of CE and analyse how consumers experience a circular business model by taking an active role. In addition, we rely on recent research on the consumer perspective on different types of circular business model. By drawing on critical insights from behavioural economics, psychology and sociology, we illuminate the key cognitive biases that may explain why circular business models so often fail to align with either the personal values or material interests of consumers. Understanding these phenomena can help policy-makers to intervene and design more consumer-friendly behavioural solutions to encourage a circular business model among consumers. An important contribution of this model is that by using cognitive biases as a unifying underlying process, it explains how consumers perceive a circular business model, consequently, why they experience CBD in a particular manner – resulting in non-acceptance of a CE. In addition, we propose implications for practice and how CE research can answer the call for bridging research and practice.

This paper also contributes to management research by bridging the gap between micro- and macro-level constructs. The approach is to investigate CE as micro level in nature although CE has a multilevel nature that integrates elements from micro (company, customers and consumers), macro (global trends and drivers) and meso (ecosystem and value co-creation) levels (Valkokari *et al.*, 2014). But unlike the linear economy, consumers are an important actor in the CE (Mylan *et al.*, 2016; Ellen MacArthur Foundation, 2013). Their reluctance towards the CE is delaying its transition. This proposed framework incorporates theories to explain why and how micro-level CE is creating a barrier to a circular business model.

Next, we identify knowledge gaps in the CE literature focussed on the individual level of analysis. This material serves as a brief introduction and synthesis for those not familiar with the CE literature addressing the circular business model and perspective of consumer towards it and, in addition, as a way to highlight knowledge gaps.

2. Consumers' perspective in CE research: knowledge gaps

The “circular” economy presents an alternative to the “linear” economy which maximises resource use as long as possible by extracting its maximum (use and exchange) value from materials and products at the end of each service life (WRAP, 2017). Two key approaches to achieving this are closing resource loops through recycling (at the end of product life) and slowing cycles of resource use (Bocken *et al.*, 2017; Murray *et al.*, 2017).

CE has a rich history which is rooted in many different disciplines. To make the concept precise, we define CE explicitly by following the EMF definition (2012), which is considered as the most prominent definition by Geissdoerfer *et al.* (2017) as well as Schut *et al.* (2015, p. 15) and is abridged by Charonis (2012) and Cullen (2017):

CE is an industrial system that is restorative or regenerative by intention and design. It replaces the “end-of-life” concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse, and aims for the elimination of waste through the superior design of materials, products, systems, and, within this, business models.

From the definition, it is clear that an innovative business model is imperative for enabling the transition towards a CE. Innovative business models refer to creating value for customer society and company (Osterwalder and Pigneur, 2010). Bocken *et al.* (2014) and Bakker *et al.* (2014) identify six key business model strategies that fit these basic approaches of slowing and closing resource cycles: access and performance model, extending product value, classic long life model, encouraging sufficiency, industrial symbiosis and extending resource value. The focus of this paper is to explain the factors that determine non-acceptance of the circular business model. Although the definitions view CE as a producer-led solution (Gregson *et al.*, 2015), it can be realised only with the involvement of all actors, especially consumers (Ghisellini *et al.*, 2016). Therefore, we make the role of consumers explicit by focussing on the barriers they would experience in the CE, which has thus far not been the focus of the relevant academic discourse, possibly because it is mainly discussed at macro levels in which CE is fostered at an administrative level such as country, region or city. The high number of studies on this level is due to the fact that China has launched a national policy for CE (Geng *et al.*, 2012).

Scholarly work exploring what factors explain non-acceptance is mainly focussed on three strategies – PSS, collaborative consumption and remanufacturing. Most studies focus on the individual, while few studies deal with the role of societal- or system-level factors (Petersen and Riisberg, 2017; Santamaria *et al.*, 2016). The extant and widely used theoretical lenses, namely, theory of planned behaviour (Ajzen, 1991), personal construct theory (Kelly, 1955), cognitive involvement theory (Andrews *et al.*, 1990; Houston and Rothschild, 1978; Zaichkowsky, 1985), consumer culture theory (Arnould and Thompson, 2005), practice theory (Ortner, 1984), actor network theory (Latour, 1999) and push and pull theory (Lee, 1966) suggest that it is difficult for people to accept the philosophy and the practice of the circular business model. Table I includes a summary of the many valuable contributions that have already been made to the understanding of non-acceptance of CE. Furthermore, Table II depicts key cognitive barriers of the CE model which need to be handled adequately and effectively for the consumers to move away from the linear to CE.

In the next section, we offer a model that examines why consumers are not willing to accept the models that are intended for a CE. Before we describe the model, we highlight two important clarifications. First, information in Table I suggests that there are many factors that could be included in each of the three levels in this proposed model (i.e. individual level, societal level and cultural level). So, the factors we included should be seen as illustrations, and we chose them because there is sufficient empirical evidence to warrant their inclusion and also because they are derived from different theories and research streams. Accordingly, the proposed model should be seen as a typology or gestalt that allows us to explain non-accepting factors residing at three different levels and also clearly allows for the inclusion of additional factors in the future.

Theories	Illustrative sources
Theory of planned behaviour	Abbey <i>et al.</i> (2015), Ajzen (1991), Hazen <i>et al.</i> (2012), Khor and Hazen (2017), Michaud and Llerena (2011), Piscicelli <i>et al.</i> (2015), Rexfelt and Hiort af Ornäs (2009), Schotman and Ludden (2014), Shihand Chou (2011), Van Weelden <i>et al.</i> (2016)
Personal construct theory	Catulli and Reed (2017), Kelly (1955)
Cognitive involvement theory	Andrews <i>et al.</i> (1990), Ertz <i>et al.</i> (2017), Houston and Rothschild (1978), Zaichkowsky (1985)
Consumer culture theory	Arnould and Thompson (2005), Catulli <i>et al.</i> (2017a)
Practice theory	Mylan (2015), Ortner (1984), Piscicelli <i>et al.</i> (2015)
Actor network theory	Latour (1999), Petersen and Riisberg (2017)
Push and pull theory of migration	Hazen <i>et al.</i> (2017), Lee (1966)

Table I.
Theoretical lenses and
non-acceptance of
circular business model

Table II.
Barriers of
non-acceptance
of circular
business model

Key barriers	Illustrative sources
Worse performance of the services	Abbey <i>et al.</i> (2015), Jiménez-Parra <i>et al.</i> (2014), Matsumoto <i>et al.</i> (2017)
Hygiene issues	Abbey <i>et al.</i> (2015a), Bardhi and Eckhardt (2012), Catulli <i>et al.</i> (2013), Baxter <i>et al.</i> (2016)
Risk aversion	Hazen <i>et al.</i> (2012)
Animosity against lack of ownership	Bardhi and Eckhardt (2012), Catulli <i>et al.</i> (2017a)
Belief	Abbey <i>et al.</i> (2015a), Abbey <i>et al.</i> (2015), Mugge <i>et al.</i> (2017), Van Weelden <i>et al.</i> (2016)
Attitudes	Hazen <i>et al.</i> (2017)
Norms	Bardhi and Eckhardt (2012), Khor and Hazen (2017), Matsumoto <i>et al.</i> (2017), Michaud and Llerena (2011), Mylan (2015)
Lack of awareness	Lakatos <i>et al.</i> (2016)
Inertia	Santamaria <i>et al.</i> (2016)
Limited value offering	Catulli <i>et al.</i> (2013), Dewberry <i>et al.</i> (2013), Stacey and Tether (2015)

Second, although the model is multilevel in nature, we first describe each level separately for ease of exposition. Factors residing at each level of analysis are not isolated from the other factors and levels. Thus, propositions addressing direct effects must be interpreted within the context of a general statement of holding all other non-accepting factors constant.

Next, we describe the proposed model and derive eight propositions to guide future research. Then, in the Discussion section, we use the model to understand consumers' non-acceptance on different CE strategies. After this we offer implications for theory and additional directions for future research, and describe implications for practice.

3. Cognitive biases: underlying mechanism to explain consumer's non-acceptance

Consumption is a psychological, social and cultural process of choosing goods (Zukin and Maguire, 2004). It enables individuals to form and express their identity. The symbolic, hedonic and aesthetic nature of buying behaviour constitutes important components of consumption (Holbrook and Hirschman, 1982). Consumers' decision to buy any product is, therefore, likely to be influenced by specific values and beliefs of individuals, which is affected by a complex set of cultural, social and psychological factors (Campbell, 1994).

Cognitive bias, a term coined by Tversky and Kahnemann in the 1970s, can be defined as a systematic error in human decision making (Mata, 2012) which stem from heuristics, mental shortcuts and rules of thumb that limit the need for effective information processing, eventually leading to error in decision making (Gigerenzer and Gaissmaier, 2011; Tversky and Kahneman, 1974). We conceptualise that cognitive bias has an important role in non-acceptance of circular business models.

The conceptual model in this paper relies on nascent research linking business models of CE and consumer behaviour. For example, Briceno and Stagl (2006) use the needs framework presented by Cruz *et al.* (2009) to explore whether PSS satisfy human needs or not. Baxter *et al.* (2015) use it to address ownership and object attachment in a circular context. Catulli *et al.* (2017b) draw on consumer culture theory to explore how PSSs fit in consumer culture values and perspectives. Piscicelli *et al.* (2015) use practice theory as a framework to explain the potential for PSS diffusion. We develop this pioneering work further by offering the consumers' perspective across three levels of analysis: individual, social and cultural. The examination of the consumers' role sheds new light on why they are reluctant towards its business model. As a preview of the material that follows, Figure 1 includes a graphic representation of our proposed model.

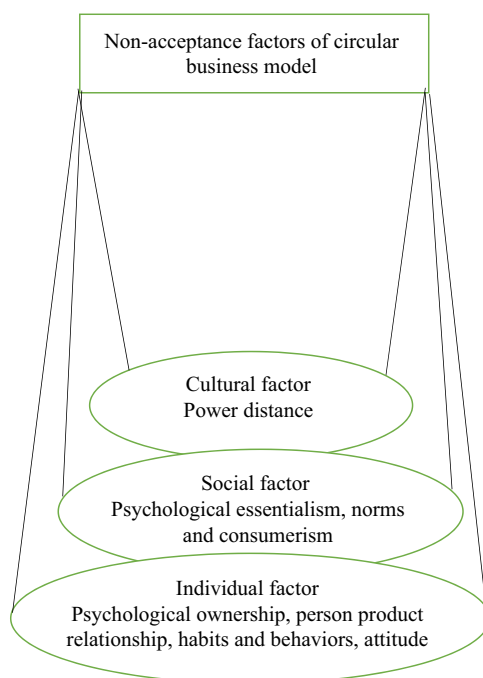


Figure 1.
Factors influencing
non-acceptance
of circular
business model

Based on the extant literature, we selected widely used and studied factors as mentioned in the reviewed literature in this paper and depicted in Table I. Therefore, our framework (Figure 1) presents key variables at the cognitive level which have a potential to act as cognitive biases for the non-acceptance of CE model.

Figure 1 includes the following four illustrative individual factors that affect consumers' negative perspective towards CE: person-product relationship, psychological ownership, habits and behaviours and negative attitude. Each of these factors allows us to understand how consumers experience CE and why they can have a difficulty in adopting it.

3.1 Person-product relationship

Product attachment can be defined as the emotional bond that a consumer experiences with a special and significant object (Mugge *et al.*, 2005). People become attached to products for various reasons, such as recurrent pleasurable experiences during interactions, a suitable match with one's self-identity and pleasant shared memories. After some time, the object means a lot to the person, to a point where emotional distress could result if damage or loss occurs (Schifferstein and Zwartkruis-Pelgrim, 2008; Schifferstein *et al.*, 2004).

This person-product attachment has important implications in the context of a circular business model. If a consumer develops an emotional bond with the product, he/she is more likely to care for the product, repairing it when possible and postponing its replacement eventually leading to product longevity (Mugge *et al.*, 2005). But if a consumer has a weak attachment with the product, it will lead to the premature disposal of the product (Schifferstein and Zwartkruis-Pelgrim, 2008), eventually hampering product's longevity. Thus, it can be argued that weak person-product relationship is detrimental for the circular business model:

- P1. The weak person-product relationship leads to a premature disposal of the product which is detrimental for the circular business model.

3.2 Psychological ownership

The theory of psychological ownership explains the non-acceptance of the access and performance model. Psychological ownership is a mental state in which individuals feel that an object is theirs; it is driven by three motives: efficacy and reflectance, self-identity and having a place to dwell (Pierce *et al.*, 2001, 2003). Having a place to dwell refers to the desire to gain and preserve physical, emotional and mental security through familiar surroundings, whereas Self-identity is the desire to create, continue and/or transform one's public and/or private identity (Baxter *et al.*, 2015).

Access-based objects are, by design, transient and they consequently threaten the motives of self-identity and dwelling and help to explain why consumers prefer ownership rather than access. Self-identity is threatened due to transient use and, in transient usage, objects and their meaning, are not easily transferred to the user's extended self (Baxter *et al.*, 2015). Having a place to dwell requires developing familiarity with the object, so it offers security for the user. Such familiarity is threatened by short-term usage. Thus, we argue that consumers will not accept the strategies of a circular business model, such as sharing, collaborative consumption and access-based models because these models do not provide psychological ownership to the consumer:

P2. Psychological ownership inhibits the diffusion of access-based business model.

3.3 Habits and behaviours

Research evidence suggests habits are highly automatised behaviours (Aarts and Dijksterhuis, 2000; Verplanken and Orbell, 2003) or behavioural patterns (Kurz *et al.*, 2016). They give a person tunnel vision, that is, even if people are explicitly asked to make deliberate choices, they lack choice awareness, make superficial decisions and take no interest in new information (Aarts *et al.*, 1997; Verplanken *et al.*, 1997).

Business models that do not remind consumers of existing models are likely to experience resistance; it is easier to gain acceptance of a new practice when it closely resembles other practices that are already common (Mylan *et al.*, 2016). Radical innovations and disruptive business models are imperative to move towards the CE model (Boons *et al.*, 2013). By using products repeatedly over a long period of time, consumers form habits and routines and they aim to preserve these habits and strive for consistency and the status quo (Bagozzi and Phillips, 1982). This leads to a form of passive resistance, which is mainly caused by satisfaction with the status quo. Transition towards the CE requires radical change in consumers' habits and behaviours and the adoption of a complete new set of behaviours. But people are strongly rooted to their current situation due to their status quo bias, rather than economic rationality. Based on empirical evidence, Bamberg *et al.* (2003) in the travel destination choices and Koivumaki *et al.* (2006) in mobile service choices found that habits are the strongest predictors of behaviour. Based on these conclusions, it can be argued that pure information about the ecologic and economic rationality of switching to a CE business model will not be sufficient to change the long-learned habits of consumers. So, long-learned established habits will lead to non-acceptance of a circular business model:

P3. Established habits will act as potential barriers in the transition towards a CE as it will challenge the status quo.

3.4 Consumer attitude

Consumer attitude is a composite of a consumer's beliefs, feelings and behavioural intentions towards some object or any business model (Perner, 2010). Attitude can be defined as a learned predisposition towards being in favour of, or opposed to, a given object.

In the context of consumer behaviour, it can be considered as a filter through which every product and service is scanned.

The literature provides conflicting attitudes toward different circular business models. Empirical evidence suggests positive attitude towards sharing model (Vehmas *et al.*, 2018) but negative attitude towards access-based consumption and collaborative consumption (Edbring *et al.*, 2016). In the context of China, remanufacturing is suffering from the low purchase intention of consumers (Wang *et al.*, 2013). Surprisingly, there is also a negative correlation between product knowledge and purchase intention, which means that the more consumers understand remanufactured products, the less likely they are to purchase these products (Wang *et al.*, 2013). This can be partially explained by the great disparity between consumers' intentions and reality. Definitions of remanufactured products suggest that remanufactured products are equivalent to new products (Thorn and Rogerson, 2002). However, consumers may not perceive this equivalence since they do not trust the remanufacturing process and perceive remanufactured products to be of lesser quality than new products (Hazen *et al.*, 2012). Studies that analyse customer attitude towards remanufactured products state that these products provide a substantial value for customers, although they are not evaluated as new products (Mobley, 1995). Hence they are unwilling to pay the apt price for the remanufactured products:

P4. Consumers' negative attitude towards a circular business model will lead consumers' non-acceptance of a circular business model.

3.5 Social factors

Social structure and relationships play important roles in influencing consumer behaviour. Therefore, in this section, we propose the following illustrative social-level factors: subjective norms, ideology of consumerism and psychology of essentialism.

A subjective norm refers to perceived social pressure to perform or not to perform a certain behaviour (Schepers and Wetzels, 2007). They are major drivers of human behaviour and play an important role in decision making. Consumers often take the expectations and behaviour of others into consideration when deciding what is appropriate (Cialdini *et al.*, 1990) and social norms thus profoundly influence their buying decision. On the basis of empirical evidence, it can be argued that subjective norms play a detrimental role in the transition towards a CE. Studies of normative institutions confirm that the goal of material-intensive economic growth has deeply penetrated societal rules and conventions. Not having certain possessions might be a reason for group rejection (Ger, 1997). Circular business models, i.e., sharing, reuse, remanufacture, servitification, etc., contradict the well-established subjective norms of possession and ownership. Hence, consumers are hesitant towards alternatives of consumption without ownership (Behrendt *et al.*, 2003):

P5. Social norms negatively affect the customer's behavioural intention to use reusable goods.

3.6 Ideology of consumerism

The ideology of consumerism is the product of the capitalist system which has convinced consumers (Lodziak, 2000) that consumption is essentially fulfilling and morally desirable. Markets have projected the ideals of plenitude to possibilities for personal realisation. Symbolic cultivation and construction of identity through consumption practices is a significant perspective within sociology (Featherstone, 2007; Giddens, 1984). Consumerism helps us figure out where we fit within the society and provides the means by which to change social circumstances. Perhaps one of the most liberating forms of consumerism is the concept of making a new "self." The process of consumerism makes it possible for a person to move from one area of society to another independent of circumstances of birth, gender or race.

This ideology is relevant to analyse the non-acceptance of the sufficiency and reuse model (Bakker *et al.*, 2014) in the CE discourse. The “sufficiency” model actively seeks to reduce end-user consumption, in particular through a non-consumerist approach to promotion and sales that contradicts consumers’ desires. Thus, this aspect of consumer behaviour can be seen as paradoxically limiting the sufficiency model of CE while appealing to the desires of a socially conscious consumer as it indicates a tendency to engage in hoarding behaviour that is not acceptable in a CE:

P6. The ideology of consumerism limits the diffusion of the sufficiency model of CE.

3.7 *Psychological essentialism*

Psychological essentialism is the tendency to assume that certain kinds of things possess a deep, underlying essence that is responsible for phenomenal properties and category membership (Gelman, 2003; Newman and Knobe, 2018). It provides a general framework for understanding why people value exclusivity and authenticity (Newman and Knobe, 2018). Designer goods and labels have cachet because of their expense or exclusivity.

Psychological essentialism undermines the principles of recycling and reuse. Recycled items lack authenticity, which compromises their identity and perceived value. When it comes to second-hand goods, most of us care about who previously handled them and what they were used for. These unconscious often irrational preferences underpin a metaphysical dimension of reused things which cannot be filtered or eradicate by logic. Thus, psychological essentialism directs consumers to the non-acceptance of reused things:

P7. Psychological essentialism dilutes the circulation of recycled and reused goods in a CE.

3.8 *Power distance belief*

Power distance belief has been defined as the degree of power disparity that people in a culture regard as normal (Hofstede, 1984; Oyserman, 2006). Importantly, power–distance belief is independent of power. It deals with people’s view of power disparity, not the extent to which they have power (Oyserman, 2006; Zhang *et al.*, 2010).

Cultural practice of high power distance belief keeps status concept and status difference salient among members. Consumers with high power distance belief are constantly reminded of their social standing on the status continuum (Triandis, 1995). In general, people in high power distance belief cultures are more likely to believe in inequality and are more accustomed to accommodating it than those in low power distance belief cultures. Accordingly, high power distance belief cultures facilitate a concept salience that would engender a need to improve their status. Likewise, we argue that recognition of social standing relative to others on the continuum will cause them to feel low self-esteem (or lack of self-worth). Much work indicates that perception of one’s status influences self-evaluations (Han *et al.*, 2010; Keltner *et al.*, 2003). Perception of low status might elicit low self-esteem. Research evidence suggest that consumers’ power distance belief has a systematic impact on consumers’ “preference for status brands when they see the benefits of engaging in buying status brands for the purpose of social mobility” (Kim and Zhang, 2014). Based on this research evidence, we can extrapolate that there is a limited probability of the success of a circular business model in high power distance societies as it will limit the chance of social mobility:

P8. In high power distance societies, consumers’ propensity to buy status brands will lead to the non-acceptance of a circular business model.

So far, the discussion on consumers’ non-acceptance of circular business model is focussed on each level separately. However, non-acceptance also includes the cross-level

interaction of factors. Thus, our model suggests the possibility of two types of interactions: same-level interactions and cross-level interactions. In sum, consumers' non-acceptance of circular business model is affected by all three level factors simultaneously. Thus, although our discussion initially included propositions regarding direct effects, our model suggests that complete and comprehensive understanding of why consumers reject the circular business model will be derived from examining variables within and across levels simultaneously.

4. Discussion

In spite of the growing literature on CE, the aspects of consumption are under-addressed in the CE literature. (De los Ríos and Charnley, 2017; Mugge *et al.*, 2017; Murray *et al.*, 2017; Van Weelden *et al.*, 2016) and is a considerable challenge in terms of practical application. However, up to now, the CE's focus is on corporates operating within business-to-business models (Ellen MacArthur Foundation, 2017) with technological approaches (e.g. "biocycle", "techno cycle") and solutions (e.g. renewable energies, product sensors). This techno-centric framing reflects a sense of technological determinism reminiscent of the early days of "eco-design", which focussed on (material and energy) resource efficiency with limited attention on the individual, social and cultural aspects. Through this proposed model, we offer a positivist viewpoint where individuals are agentic actors who are actively interpreting and shaping the world around them and are not just passive recipients of governmental and organisational policies and actions (Weiss and Rupp, 2011).

This paper raises questions as to whether people will buy into circular business offerings as they are currently conceptualised within the literature. Consumer behaviour is difficult to adjust and this affects the potential success of any circular business models. Whether or not a given type of circular business model will be successful depends on a multitude of nuanced and often subconscious human behaviours that can be perceived from multiple psychological, sociological and cultural perspectives. Moreover, we are using cognitive biases as a unifying factor that can create barriers towards the transition towards a CE. By offering this unifying theoretical perspective, we are able to offer a broad and inclusive yet parsimonious framework. This framework is built upon synergies across disconnected domains and streams of research at different levels of analysis. In addition to the eight propositions derived from in the proposed model, which serve to guide future research, we next discuss implications for theory.

4.1 Policy implications

Our conceptual framework leads to several implications for practice. These key insights from cognitive biases from different levels can guide the policy-makers to design effective interventions that can specifically contribute to the idea that consumer perspectives are particularly beneficial when used as a means to push the diffusion of circular business models.

This paper provides an insight to the policy-makers to consider the impact of these cognitive biases at different levels when making strategy to modify consumer behaviour in the desired direction. This research aims to contribute towards the hassle-free transition to CE from the linear economy. It rests on the assumption that various psychosocial cultural cognitive biases currently impede the implementation of CE. If the transition of CE is supposed to progress, these barriers must be understood as a first step to overcome them.

This paper suggests that the bottom-up approach would be more effective for the diffusion of the CE. However, a broad "bottom-up" movement will emerge only if government agencies, manufacturing companies and other relevant institutions consider the consumer perspective and make consumers aware of the benefits and urgency of CE. They can train people with the help of professionals to project the benefits of CBM to the consumer, keeping in mind their individual, social and cultural inspiration. Governments

and regulators should adapt policy levers, including tax benefits, structural economic reforms, etc., to the consumer, to promote CE.

Specifically, this proposed model offers a perspective that is counter to many state policies that are top-down and treat the consumer as a passive agent as “one size fits all,” which has led to the absence of the consumer perspective in policy documentation. In addition, if the circular business model is pushed top-down on consumers, it could backfire on the state. Consumers who are not aware of the circular business model now might start asking why they should be part of a business model that is not helping the world. Therefore, the proposed model suggests that the state should be cautious in implementing the policies for CE and take a bottom-up and inside-out approach to CE, which begins with understanding how consumers perceive CE, its business model and how it is important for them. As noted earlier, this is counter to current practices in which CE has been treated as a state-level initiative (i.e. mainly top-down).

4.2 Direction for future research

Our model may serve as a guide to direct future research. In addition to the propositions offered earlier, following empirical and conceptual issues should be considered for future research.

First, from a methodological perspective, current design and approaches used in micro-level CE research often treat consumers as passive actors with the goal of generalising and aggregating individual responses. In other words, variance across individuals is often ignored. Our proposed model suggests that the use of qualitative approaches, including narratives, stories and histories, is likely to yield interesting insights on the individual experience of CE and the resulting speeding up of its diffusion. A greater understanding of the nuances of people’s behaviour (Tukker, 2015) with respect to the types of business models associated with the CE is required (Lofthouse and Prendeville, 2018) and for this qualitative study can give better insights.

Second, future research on CE could focus on the measures that would control the barriers from the consumer perspective. For example, if the CE model is implemented in a top-down approach, it might be perceived as a violation of consumer rights (i.e. state hegemony), which could lead to a negative consumer experience of CE, eventually leading to the non-stability of this model.

This paper positions the consumer at the centre stage. This approach will open up new opportunities because CE is a context within which we can explore many questions about cognitive, structural and behavioural phenomena of consumers’ behaviour that have not been considered in the CE literature. This paper can also guide the research which can bridge micro- and macro-level research. For example, with the pursuit of trying to make the diffusion of circular business models and the focus on demonstrating advantages in terms of sustainability outcomes, the extant macro-level literature on CE has largely ignored the impact from the consumer perspective. On the other hand, the consumer perspective is one of the most studied phenomena in several micro-level subfields, such as marketing, international business and strategy and we know that the consumer perspective is very important for the diffusion of related circular business models. Thus, the model as proposed in this paper leads to future research addressing conditions under which CE can lead to the win-win outcomes of consumer satisfaction and diffusion of circular business models at the same time.

Fifth, as noted earlier, this paper does not include a comprehensive list of all psychosocial and cultural barriers from the consumer perspective. There are additional factors that we could have considered. For example, what is the role of fear, geographical conditions and language in the transition towards the CE? Future research can address this issue and examine the relative effect of this as compared to other psychosocial barriers.

Finally, the proposed model explains reasons why consumer perception can be a potential barrier in CE diffusion. Future research can focus on the ethical questions that need to be

drawn out with respect to the consumer-centric approach in transition towards the CE: what can be gleaned from taking a more participatory approach of consumer to CE diffusion? In particular, what power imbalances, data and privacy rights, as well as uneven development issues, are at play? What are the consumer perspectives on reconciling these issues?

5. Conclusion

This paper concludes that there is a pressing need for changing the way that the CE is framed so that it can be more inclusive to people and their behaviours, which would open up a broader and more nuanced debate on the role of consumer. At present, the consumer perspective in respect of their cognitive biases takes a narrow position in the CE literature. This paper offers a conceptualisation that opens up new perspectives by putting the consumers at the centre stage and focussing on their different cognitive biases as barriers to the adoption of a circular business model. The conceptualisation in this paper explains, within the framework of cognitive biases, how consumers experience circular business models and how these business models are not fulfilling their psychological, social and cultural needs – resulting in barriers in the diffusion of the CE. Thus, we offer a shift in CE research from a deterministic approach to conceptualising consumers to a positivist approach to conceptualising consumers. Our approach to CE also offers new insights into the management literature in general, because it can be used to consider norms, behaviours, attitudes and the contexts of people's social lives needs in designing alternative consumption models, products and services, recognising the immense challenges of behaviour change. Thus, expanding the role of the consumer, what we observe as positivist approaches, would present opportunities to respond to the very real psychosocial and cultural issues that we face in the CE.

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