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THEORY/CONCEPTUAL

User circularity practices: Adopting a user stewardship perspective for a circular economy

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Abstract

Humanity is depleting the planet's natural resources at an unsustainable rate. The pursuit of a circular economy is a strong, viable means of reversing this trend; however, it will require users to take responsibility for the proper application and protection of resources for future generations. While the daily practices of users play a significant role in enabling a circular economy, this role has largely been overlooked in current literature. Our research synthesizes knowledge from the circular economy and marketing literatures, and draws on stewardship theory to better understand the user's role in the circular economy. Specifically, we introduce a resource stewardship framework from a user perspective. This framework specifies a set of user circularity practices to minimize the extraction of finite resources, while conserving and regenerating resources already in circulation for future use. These practices occur at various stages in the resource life cycle and include minimizing the sourcing and use of finite resources, (re)designing products and services to use less resources, and optimizing the value potential from resources through extending their life cycle and recovering resources for future use. With this framework, we redefine the role of users as resource stewards and advance the rather narrow and fragmented considerations of user contributions to the circular economy, laying the foundation for more caring and responsible users and a future research agenda.

Keywords Stewardship · Resource stewards · User · Circular economy · Circularity practices

A focus on the societal impact of our market systems is desperately overdue; our current approaches to production and consumption are not environmentally sustainable, as we consume more resources each year than can be replenished (Lim, 2017). For example, currently 90 billion tons of primary materials are extracted and used globally, with only 9% ever recycled (CSIRO, 2022). In 2023, August 2 marked 'Earth Overshoot Day', that is the date each year on which humanity has exhausted the equivalent to all the natural resources that the Earth regenerates in a given year. This situation represents a significant problem for the future survival of humanity. Environmentalists and scholars are hence calling for societies to go beyond the current linear (i.e., "take–make–waste") consumption models and move to a more circular approach, keeping resources in circulation for longer and slowing their use (Camacho-Otero et al., 2018; Diddi & Yan, 2019).

A circular economy entails decoupling economic activity from the consumption of finite resources, it is based on three principles: design-out waste and pollution; keep products and materials in use; and regenerate natural systems (Ellen McArthur Foundation, 2013). To date, the circular economy is largely seen as a macro-level issue, with frequent calls for the introduction of relevant policy and legislation, private sector investment, as well as the design and adoption of circular business models (Huang et al., 2021). However, for the circular economy to be a viable approach, it needs the almost eight billion consumers on the planet to become stewards of our resources (Hensen et al., 2016), take greater personal responsibility, and embrace practices that benefit the greater good (Labroo & Goldsmith, 2021). Yet, the role of consumers has been largely undervalued in current theorizing and practice, instead seeking a modification of institutions

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and policies, rather than consumer practices. This is highly problematic and a missed opportunity in view of potential consumer contributions to circular economies.

Despite common representations of the circular economy placing the consumer as the central node around which resources flow and new practices emerge (Hobson et al., 2021), their role in the circular economy has been framed primarily in terms of their willingness to adopt new business models and/or products (Camacho-Otero et al., 2018). Similarly, Chamberlin and Boks (2018) note that while the importance of the consumer mindset is recognized in literature, there is a need to further understand how circular businesses attempt to reshape consumers' behavior through marketing practices. In both these instances, the onus of responsibility is placed on businesses to galvanize consumers to participate in the circular economy; yet we know that consumers play an active role in the circular economy by making conscious choices about what resources they buy, how they (re)use these resources, and how they dispose of them (Machado et al., 2019). Resources are "anything an actor can draw on for support" in their daily practices to achieve their goals (Vargo & Lusch, 2018, p. 740). Consumers accordingly use resources such as finished products (e.g., manufactured clothes) or raw materials (e.g., organic food) in their value creation. What has largely been neglected is a considered understanding of the consumer's role in initiating, enabling, and executing circular resource models. This is a critical gap in knowledge, given that a major barrier to the advancement of a circular economy is a lack of consumer support (Malik et al., 2022).

A recent global study found that while consumers support a shift to a circular economy, almost half (46%) do not believe they need to change their own practices (Henley, 2021). Therefore, if consumers are to embrace a circular economy, they must first overcome this perception barrier that they are not personally responsible. Here we draw on stewardship theory, which has been more extensively used in management contexts to inform how organizational members can act as resource stewards in view of long-term responsibility and sustainability (Davis et al., 1997), with a few applications of this theoretical lens in marketing (e.g., Hensen et al., 2016; Schepers et al., 2012). Unlike other theories that deal with human behavior (e.g., agency theory; social exchange theory), stewardship theory assumes that individuals are intrinsically motivated to act responsibly and in the long-term best interest of a focal collective such an organization or community (e.g., Hernandez, 2012). Indeed, stewardship implies looking after and protecting entities such as resources and systems, which is why this motivation can be harnessed for more sustainable behavior (Contrafatto, 2014). We thus apply a stewardship lens to frame the concept of resource stewardship by way of mindsets and practices consumers may adopt in circular economy contexts. We define resource stewardship as a sense of moral responsibility and felt obligation of users to purposefully act for the long-term care of focal resources and the well-being of the ecosystem in which they are embedded (cf., Hensen et al., 2016). Stewards thus seek to protect and conserve the resources themselves (Lertzman, 2009), which is why we prefer the term users over consumers from here onwards.

A stewardship lens as method theory can help researchers and users understand the impact of their consumption patterns and encourages more responsible practices. Resource stewardship accordingly manifests in users making more conscious choices that minimize waste and conserve resources, thereby adopting a set of circularity practices that help create a more regenerative economy and protect the planet for future generations. Circularity practices, usually considered from an organizational perspective, are recognized as "*planned, ongoing, or realized actions, initiatives, and techniques that aid in achieving circular economy*" (Skärin et al., 2022). These practices offer a routinized set of behaviors that are regularly performed by an individual or a group of individuals, can be intentional or habitual, and are influenced by various contextual factors (Reckwitz, 2002). In the context of resource stewardship in a circular economy, these practices are characterized by actions that reduce waste, extend the life of products, and conserve resources, and reflect a willingness to accept personal sacrifices for the collective benefit (Hensen et al., 2016).

While important research has considered the role of consumer environmental stewardship (Hensen et al., 2016), such research remains limited to understanding consumer attitudes toward the environment, and a relatively narrow perspective and measurement of pro-environmental behaviors, rather than providing a systemic understanding of potential user circularity practices. Thus, the aim of our research is *to identify and explicate a set of user circularity practices, which embody a resource stewardship perspective and offers the opportunity to conserve and/or extend the life cycle of resources in a circular economy*.

This article advances current understanding of the users' role in circular economies by developing a framework that elucidates users' resource stewardship and presents a set of user circularity practices. Users as resource stewards implies a change in mindset and practices toward minimizing and preserving, rather than consuming resources. We draw on stewardship theory and explore the praxis of users in a circular economy to conceptualize a user resource stewardship framework for a circular economy. First, we conduct an initial thematic literature review of the role of consumers within the circular economy, and give consideration to how consumption and marketing practices have been understood to date. We then combine these emerging insights with in-depth theorizing through stewardship theory to elucidate user practices in the context of a circular economy. Our

resulting framework systematizes and illustrates circularity practices users may adopt to extend the life cycle of a resource and its value potential, specifically through minimizing the sourcing and use of resources, (re)designing of resource bundles (i.e., products and services), extending the life cycle of resources, as well as recovering and reforming of resource bundles for future use.

To this end, we perform a conceptual theory synthesis approach (Jaakkola, 2020), identifying new ways of understanding the circular economy, our domain theory, and providing a deeper understanding of how users steward resources, particularly in the context of a circular economy. Second, we consider stewardship theory, our method theory (Jaakkola, 2020), to move beyond previously considered, relatively narrow, prosocial (environmental) consumer behavior (Hensen et al., 2016), and argue for a more systemic stewardship role of users and propose a detailed and systematic set of practices that aid in achieving a circular economy. This further informs a future research agenda around user circular resource stewardship, to develop a solid foundation of users serving as caretakers through circular resource practices.

Circularity models and consumption

The notion of a circular economy represents a shift from the traditional linear models of production-consumption systems, in which materials flow in a single direction, to a model in which resources are regenerated and held within a closed loop for as long as possible to maximize their value and minimize waste (Hobson et al., 2021; Mylan et al., 2016). There is a limit to the resources the planet can provide, how quickly it can renew itself, and how much human impact it can absorb before it starts to fail (Horton & Horton, 2019). The flow of materials within a circular economy requires biological nutrients to be safely fed back into the biosphere, while technical nutrients should be recirculated, maintaining their quality, without entering the biosphere (Ellen Macarthur Foundation, 2017). The (umbrella) concept of a circular economy has emerged from an array of different scientific fields and, as such, does not have a clearly defined identity in terms of boundaries and limits (Korhonen et al., 2018; Peronard & Ballantyne, 2019). Building on previous work, Nobre and Tavares (2021, p. 10) develop a commonsense definition of the circular economy: "An economic system that targets zero waste and pollution throughout materials, from environment extraction to industrial transformation, and to final consumers, applying to all involved ecosystems. Upon its lifetime end, materials return to either an industrial process or, in case of a treated organic residual, safely back to the environment as in a natural regenerating cycle."

The circular economy systems diagram (Butterfly Diagram) offered by the Ellen Macarthur Foundation (2019) illustrates the continuous flow of materials in the economy via two main cycles: the technical cycle and the biological cycle. In the technical cycle, products are kept in circulation in the economy through practices such as reuse, repair, remanufacture, and recycling to eliminate waste. In the biological cycle, the nutrients from biodegradable materials are returned to the earth, through processes such as composting or anaerobic digestion to support regeneration. The Butterfly Diagram is based on the cradle-to-cradle concept (Braungart et al., 2007), in which products, components, and materials are circulated in a closed loop to reduce the use of raw material or energy, reduce emissions and use of toxic materials, extend resource life, and eliminate waste before resource-life extension. This conceptualization combines the concepts of sustainability and circularity (Nobre & Tavares, 2021). Sustainability focuses economic activity on users choosing, applying, and disposing of goods and services and how this may be changed to bring social and environmental benefit (Abdulrazak & Quoquab, 2018). While circularity contributes to a more sustainable world, not all sustainability initiatives can contribute to circular economy initiatives.

Another circular economy conceptualization presents the three core strategies of narrowing, slowing, and closing resource loops (Bocken et al., 2016; Braungart et al., 2007). According to these, companies may maximize value from extracted materials by narrowing resource loops (e.g., improving resource efficiencies), slowing resource loops (e.g., increasing resource longevity), and closing resource loops (e.g., eliminating waste through recycling) (Bocken et al., 2016). For these strategies to be effective, current consumption patterns need to change; however, it is unlikely that current consumption patterns will change sufficiently in an economic environment that rewards the constant creation of products and services to fulfill people's needs. Making sacrifices, changing habits, reducing consumption, and adapting to a simpler lifestyle can be challenging. As a result, users often make only superficial changes that may satisfy their desire to take action but do not significantly impact major sustainability issues (Horton & Horton, 2019). Consequently, researchers have called for a paradigm shift toward a circular economy, in which consumption practices are adapted to better satisfy the health and well-being needs of the individual, broader society, and global environment (Bocken & Short, 2020).

Research to date on the circular economy largely focuses on reconfiguring business models such as moving from "sale-and-ownership" to "product service systems" (Mylan, 2015). Circular products that are ownership-based allow for value maximization through maintenance, reuse, repair, refurbishment, redistribution, upgrading, reselling, recycling, and dematerialization (Lewandowski, 2016; van

Loon et al., 2021). However, these actions have largely been examined from the business model perspective, and the consumer role is less considered. Conversely, in product-service systems, companies retain ownership and offer product-oriented services, use-oriented services (e.g., product leasing, renting, sharing, pooling), pay-per-service units, or results-oriented services. These models primarily focus on the business (production) side of the circular economy and consider users as passive and rational recipients in circularity models (Ghisellini et al., 2016). The underlying assumptions that the burden on consumers in a circular economy is low, and that users will adopt these models and do what is needed (Lewandowski, 2016) are being challenged. Mylan et al. (2016) question whether the provision of new business models is sufficient to achieve a circular economy and call for a greater focus on users' role in the circular economy.

The current focus on reconfiguring business models to affect consumption patterns assumes that users are passive recipients of a service and not cocreators of value or coproducers within a circular economy (Camacho-Otero et al., 2018). Indeed, this problematic treatment views the responsibility for circular action frameworks to be with organizations and governments; at the same time, users' activities have been marginalized, with less than 20% of circular economy definitions considering user consumption (Hobson et al., 2021; Kirchherr et al., 2017). Some preliminary work has, however, identified user (consumer) practices in a circular economy context (Camacho-Otero et al., 2018; Rabiu & Jaeger-Erben, 2022). The practices are initiated by users at acquisition (e.g., rebuy, rent, receive), application (e.g., retain, repair, remunerate), or disposal (e.g., return, resell, relinquish) of a resource. Similarly, research has recognized the opportunity for users (e.g., citizens or regular consumers) to become integrated in policy planning, as active players in the realm of the circular economy (Repo et al., 2018). We provide an overview of some of this preliminary research

Table 1 Literature identifying consumer (user) practices in the circular economy

Author	Actor Perspective	Research methodology	Context	Practices
Diddi and Yan (2019)	Consumers	Empirical, survey	Textiles	Clothing repair and mending
Gruen (2017)	Consumers	Empirical, interviews	Car sharing	Designing, appropriating (sharing, renting, swapping)
Hensen et al. (2016)	Consumers (students)	Empirical, survey	–	Conserving, purchasing, recycling, environmental activism, information seeking
Hobson et al. (2021)	Consumers	Conceptual	–	Leasing, pay-per-use, renting, borrowing, pooling, maintenance, reducing, gifting, reusing, repairing, exchanging, co-ownership
Machado et al. (2019)	Consumers	Empirical, ethnographic, interviews	Textiles	Reusing, second-hand clothing
Matsumoto et al. (2018)	Consumers	Empirical, survey	Automotive	Remanufacturing and repair
Mylan et al. (2016)	Consumers	Conceptual	Food	Reducing consumption, reusing leftovers (food), sharing, and recycling
Nazli (2021)	Consumers	Design inquiry, workshops	–	Repairing
Peronard and Ballantyne (2019)	Organizations & Consumers	Conceptual	–	Repairing, maintenance, reusing, recycling, renting, composting
Sørensen and Bærenholdt (2020)	Consumers	Empirical, delphi study	Tourism	Switching to more sustainable options, sharing platforms, reusing options to minimize food waste
Testa et al. (2020)	Consumers	Empirical, survey	Consumer products	Buying circular packaging
Wastling et al. (2018)	Organizations & Consumers	Literature review, case studies, interviews	Mixed	Product care, repairing, engaging with product life extension services, prolonging replacement, returning product, selling, enabling reuse, appropriate disposal

on the user's role in the circular economy and identify user circularity practices in Table 1.

Importantly, as the table shows, user practices in the context of a circular economy are often examined only one practice at a time (e.g., repairing products, buying circular packaging), or in a singular context (e.g. textiles, food). These studies provide a rather reductionist and oversimplified view of circular models, while largely neglecting the user's role or significant user contributions therein (Korhonen et al., 2018; Peronard & Ballantyne, 2019). Consequently, research exploring the dynamics of user practices in the context of the circular economy remains limited. We therefore adopt a user perspective and consider their stewardship or care-taking of resources within a circular economy context.

Reflective of the lack of research investigating the user perspective of the circular economy, there is currently little research at the intersection of this literature with marketing. Rejeb et al., (2022) recently conducted a systematic literature review within these parameters (i.e. the intersection of marketing and circular economy) and identified only four themes, including the reliance of green washing as a foundational concept, remanufacturing marketing, product-service systems, and neuromarketing tools. However, a more broadly defined scope may have identified the links with other related domains, such as the role of supply chains and business models, with product-as-a-service, closed-loop systems and supply chain collaboration also advocated as ways to promote circularity and reduce waste (Calzolari et al., 2021). There is also recognition in the product design and innovation literature that organizations adopt circularity practices such as designing products that reduce waste and improve resource efficiency, while enabling them to create more value for customers (e.g., Suchek et al., 2021). Furthermore, recent research has emerged suggesting companies need to communicate the benefits of adopting circularity practices more effectively, if they are to be more widely adopted (Suchek et al., 2021). Our research adds to the user perspective of a circular economy by outlining a comprehensive set of user circularity practices informed by a stewardship lens, and hence contributes to marketing and circular economy literature.

Stewardship perspective and the circular economy

Stewardship theory emerged as a counter perspective to agency theory, accounting for human behavior that is not just self-interested and short-term oriented but also other-interested and long-term oriented for shared benefits (Hernandez, 2008). Fundamental to stewardship perspectives is that actors as stewards seek balance between personal and communal goals, transcending self-centeredness for the common good and well-being. In doing so, stewards feel a shared responsibility for emerging problems or challenges and show care for the people and systems in which they are embedded. Stewardship theory, unlike other theories in marketing and management, operates with an assumption that individuals are intrinsically motivated to inherently care for the well-being and the best interest of the community they are part of. Stewardship thus provides motivational and ethical grounds to inform behavior that benefits and sustains current and future generations (Contrafatto, 2014). In contrast, agency theory for instance, rests on assumptions that self-interest dominates other-interest, while social exchange, equity and goal theory both stress the need for (fair or specific) returns to be willing to act in a desired (e.g., sustainable) way. Furthermore, common theories applied in marketing miss the voluntary, prosocial, and long-term motivations that go hand-in-hand with the care taking and protecting nature of stewardship theory. Even citizenship theory such as applied in customer citizenship behavior (e.g., Yi et al., 2013), does not necessarily assume intrinsic motivation, as external incentives or triggers (e.g., role based or context based) might stimulate customers to behave in a certain way and often with a short-term perspective in mind. Stewardship theory thus can function as an important method theory (Jaakkola, 2020) enabling us to rethink and retheorize consumer behavior in view of circular lifestyles. Accordingly, Schepers et al., (2012, p. 1) describe stewards as having a "deeply instilled sense of accountability" for others' welfare and being prepared to act on their perceived co-ownership of the situation at hand. Stewardship theorists also assert a sense of moral responsibility and felt obligation that is based on an implied covenantal relationship between actors, such that they do not take advantage of or avoid acting opportunistically toward each other (Hensen et al., 2016). Acting in the best and future interest of others thus defines stewardship at its core. As summarized by Contrafatto (2014, p. 193), stewardship theory with its "emphasis on 'others'; 'preservation' and 'protection'" offers the "potential to provide a strong foundation to inspire ways of organizing humanity and undertaking economic actions so that a SD [sustainable development] transition might be achieved."

A stewardship lens has only recently emerged in management and marketing literature, taking mainly an organizational perspective. Hernandez (2008, p. 121) promotes stewardship in view of organizational leadership, stipulating a "positive cycle of intergenerational reciprocity by exhibiting stewardship behaviors that are in service of ensuring the wellbeing of future generations." Her reasoning features leaders doing something larger than themselves that is other-directed and in stakeholders' long-term best interests. This organizational focus is also largely mirrored in marketing literature. For example, Schepers et al. (2012) investigate frontline employees as customer stewards, conceiving

employees' role as more than 'just' understanding and satisfying customer needs; rather, frontline employees as stewards take a broader customer well-being perspective,. As a result, frontline employees are more likely to engage in extra-role behaviors that support the long-term well-being of customers.

Literature in other disciplines that focuses on sustainable living has also shown a keen interest in stewardship from an organizational perspective, for example, by conceiving organizations or (collective) actors as "resource stewards" (Lertzman, 2009), "environmental stewards" (Bennett et al., 2018), or even as "earth stewards" (Chapin et al., 2011). According to these illustrative conceptions, actors can have a positive influence on available resources and ecosystems, acknowledging a gradually larger spectrum of influence. As such, actors show a desire to further the positive development of resources and ecosystems in the interest of future generations. This also includes "the role of extended producer responsibility, or product stewardship,… specifically in regard to waste requiring special management, such as oil, tires, end-of-life vehicles and electronic goods" (Brown & Stone, 2007, p. 725).

Researchers have accordingly proposed models that consider stewardship behaviors to conserve, renew, or responsibly mobilize resources and to increase productivity within a circular economy. A common characteristic is the underlying holism view that actors are part of a larger (eco)system, in which they recognize their individual and collective responsibility and act in appropriate ways. While gaining momentum, current literature in marketing, management, and other disciplines has largely focused on an organizational perspective of stewardship, manifesting mainly across leaders, employees, and collective entities as stewards. This parallels conventional assumptions that sustainability innovations and transformations of sociotechnical systems are largely the responsibility of political, academic, and industry players, rather than users (Trischler et al., 2022). However, a stewardship perspective specifically *on* users, rather than *for* users, is largely missing. In parallel, researchers argue that a deep understanding of potential user routines that might lead to (un)sustainable circularity practices is absent (Trischler et al., 2022). The limited consideration of users as stewards in circular economy contexts is rather surprising. For the past two decades, research has treated users as cocreators of value rather than passive recipients, with important competences and practices to co-opt (Prahalad & Ramaswamy, 2000). Table 2 summarizes illustrative and critical recent articles taking a stewardship perspective relevant for marketing literature.

Despite the ensuing empowerment of users to contribute (Karpen et al., 2012), user responsibility and circular economy research in marketing is far less advanced. An exception represents, for example, Hensen et al. (2016), who introduce the concept of "consumer environmental stewardship." In their research, the authors examine antecedents of environmental stewardship and resultant pro-environmental behaviors. The construct of environmental stewardship focuses on users' respective attitudes, demonstrating a willingness to take personal responsibility for the future well-being of society even at personal costs. However, the pro-environmental behaviors center on a relatively narrow (contextualized) set of activities across conservation, purchasing, recycling, and environmental activism. We concur with the authors' conceptual framing of users as stewards is central to the future survival of the planet. However, current theorizing does not go far enough in terms of considering the role of users in a circular economy. Specifically, research is still lacking a detailed and systematic understanding of user circularity practices across resource life cycles that promote a circular economy. We argue that stewardship theory can inform such a perspective for two key reasons. First, stewardship can inform individual- and collective- level considerations, which is important as individual users need to take responsibility for the life cycle of resources. Felt obligations or a commitment to the greater good is thus an important ingredient from a stewardship perspective for individual users to show care by engaging in more circularity practices. Second, stewardship theory implies a more balanced distribution of value within society (Hensen et al., 2016), as actors are willing to accept sacrifices that benefit the wider community. Both conditions are integral to facilitating a circular economy.

User resource stewardship framework

We now leverage a resource stewardship perspective, to provide an integrated user perspective of the circular economy, which is missing yet much needed in marketing theory to better account for the user's role in a circular economy. Consistent with a theory synthesis approach, we draw on stewardship theory as a method theory (Jaakkola, 2020) to synthesize and integrate literature that has previously been piecemeal, and in this instance through the application of a resource stewardship lens provide a new and enhanced conceptualization of a circular economy (our domain theory). Adopting a resource stewardship lens through which to view the users' role in a circular economy, recognizes that users are not passive recipients; rather, they are active circular economy participants, integrating resources with other actors (Hobson et al., 2021). Thus, the stewardship perspective provides a different ontological understanding of users as responsible entities. To develop a user resource stewardship framework that systematizes circularity practices, we first examined the literature to identify such potential practices (see Table 1).

Table 2 Illustrative stewardship literature

Authors	Actor Perspective	Focus	Definition or Description
Brown and Stone (2007)	Organizations, sectors, governments	Reviewing attitudes and behaviors toward sustainable business practices, particularly in view of cleaner production and conserving ecosystems	"Product stewardship activities are anticipated to be initiated by specific sectors, or by central government, to ensure national uniformity and access" (p. 725)
Lertzman (2009)	People/managers	Relating emerging management and indigenous practices to resource stewardship and conservation, considering social and ecological dynamics	How people interact with resources and the respective gradients of human influence on ecosystems, based on an intentional approach toward a more sustainable future
Chapin et al. (2011)	Organizations, communities	Stewardship is vital for maintaining social order and preserving life on Earth, providing a social–ecological framework for sustaining life in a rapidly changing world	"Earth Stewardship is the active shaping of trajectories of change in coupled social–ecological systems at local-to-global scales to enhance ecosystem resilience and promote human well-being" (p. 44)
Schepers et al. (2012)	Frontline service employee (FLSEs)	Frontline employees' felt ownership of and moral responsibility for customers' welfare, shaping employees' in- and extra-role behavior	"Frontline employee's felt ownership of and moral responsibility for customers' overall welfare" (p. 2)
Hensen et al. (2016)	Consumers (individual)	Establishing the concept of consumer environmental stewardship (CENS), studying antecedents (perceived consumer effectiveness, affinity with the future generation) and outcomes (pro-environmental behavior)	"An individual's willingness to take personal responsibility for, and balance one's own short-terms interests with long-term collective interests of the environment, society and future generations, even if this requires personal sacrifices in consumption decisions." The concept is described as "having a moral basis and centers on a feeling of obligation, responsibility, and accountability toward a bigger entity" (p. 390)
Bennett et al. (2018)	Individuals, groups, networks	Establishing a definition and analytical framework of environmental stewardship, to strengthen the understanding of factors that lead to the success or failure of environmental stewardship in different contexts	"Local environmental stewardship as the actions taken by individuals, groups or networks of actors, with various motivations and levels of capacity, to protect, care for or responsibly use the environment in pursuit of environmental and/or social outcomes in diverse social–ecological contexts" (p. 597)
Singh and Tiwari (2020)	Frontline service employees	Developing the concept of customer stewardship fatigue as experienced by frontline employees, considering its drivers and conditions	Customer stewardship fatigue "as a situation in which FLSEs feel "worn out, tired or on the edge" attributed to continuous engagement in CSB [consumer-oriented stewardship behaviors]" (p. 389); that is, "negative symptoms of worn out, tired or on the edge, associated with the constant display of feelings of responsibility and psychological ownership for overall benefits of customers" (p. 390)

Stewardship represents an appropriate theoretical lens for framing the current literature on circular economy, as the former can meaningfully inform and complement the latter; particularly, as their shared principles can underlie user practices. Hence, we assessed the circularity practices we identified by principles consistent with both stewardship theory and a circular economy: (1) users' purposeful actions to take responsibility for and feel an obligation to resources and the ecosystem that (2) manifest in an aim to avoid unnecessary use, conserve, and/or regenerate resources, with (3) a long-term orientation and (4) the consideration of the well-being of the whole ecosystem. For the purposes of our synthesis, we consider users to be human actors, as this perspective is largely consistent with the current literature and enables us to meaningfully consider how the principles of caring and responsibility manifest; but we recognize that future research could expand this definition to include non-human actors.

To organize the proposed practices into a framework, we adopt a circularity model, exploring these user circularity practices throughout the life cycle of a resource. This circular framework depicts the minimization of resource input into the system, as well as resource leakage out of it in the form of waste (Geissdoerfer et al., 2017; Kalmykova et al., 2018). We consider the potential opportunities for users to engage at each stage in the model and identify five practices: minimizing the sourcing of finite resources, (re)designing resource bundles for product and service offerings reducing the use of resources, extending the life cycle of resources, and recovering and reforming resource bundles for future offerings. These circularity practices are considered from the perspective of the user at each stage, and hence these practices are interrelated and may occur independently or concurrently. Our proposed framework is largely consistent with but expands on previous framings of activities in the circular economy that suggest users should reduce, reuse, and recycle (see Table 1), and are partially related to the conserve, (green) purchase, and recycle activities considered in the consumer environmental stewardship framework (Hensen et al., 2016). However, researchers criticize such categories as too simplistic and reductionist (Korhonen et al., 2018; Peronard & Ballantyne, 2019), and as missing a systematic and broader (context-independent) conceptualization. We now present these circularity practices and zoom in on their content and nature, illustrated in Fig. 1 and summarized by examples in Table 3.

Minimizing the depletion of natural resources

A defining characteristic of a circular economy is the conservation, and regeneration of resources, so that there is

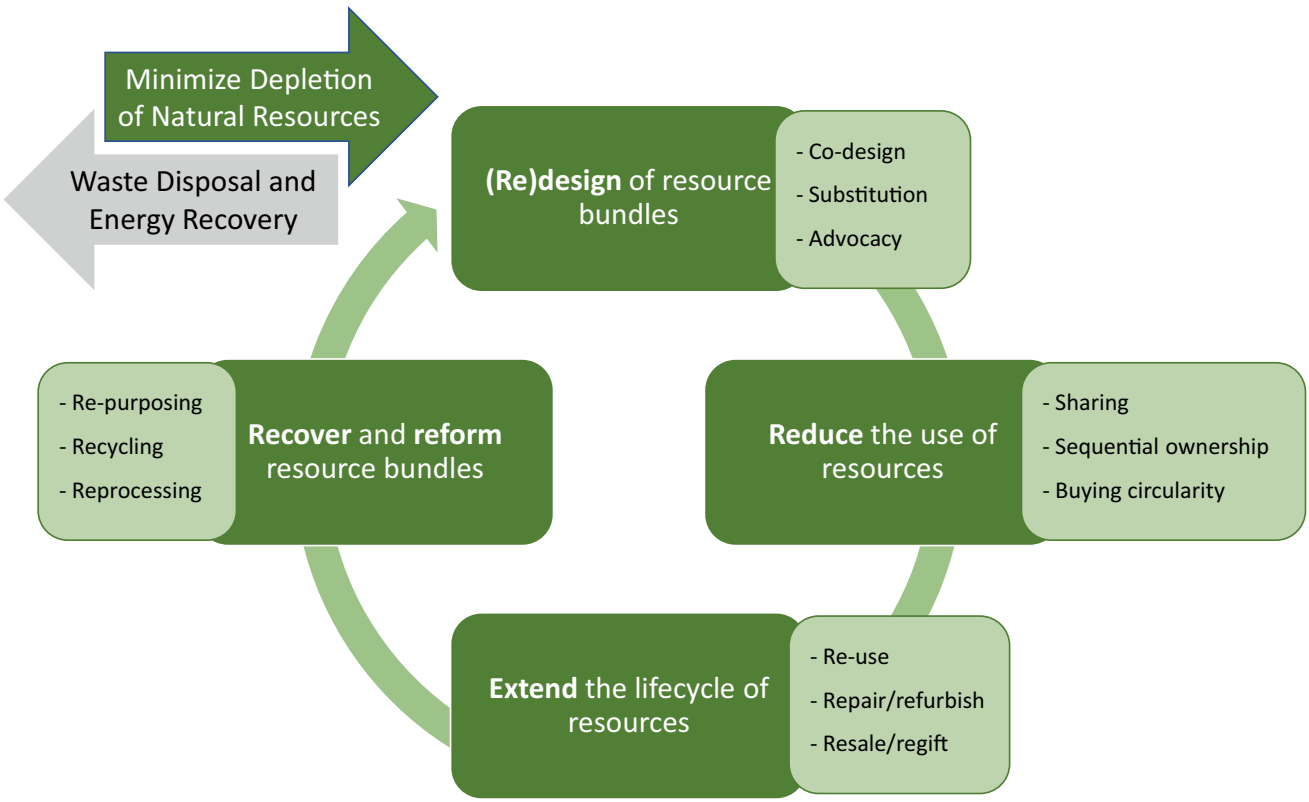

Fig. 1 Conceptual framework of user resource stewardship in a circular economy

Table 3 User circularity practices

Resource Stewardship	Definitions	User Circularity Practices	Examples
Minimizing the depletion of natural resources	Users minimize the introduction of natural resources into the broader system	• Minimize extracting natural resources from their environment • (Re)Generating alternative resources for use	Community gardens generate plant-based food resources to be used and shared by community members, avoiding the need to deplete plant and animal resources
(Re)Designing resource bundles	Users actively contribute to the design of resource bundles with the aim to minimize resource use, extend the life cycle of the resource, and/or enable the recovery of resources	• Codesigning resource bundles for products and services • Substituting resources in existing product and service offerings • Advocating for others to adopt a circular approach	Fairphone conducted user-centered workshops and established an online forum and community platform where users could actively participate in the design and development of Fairphone products. Collectively they designed a modular smartphone that includes easily replaceable modules, such as the display, battery, and camera, which users can replace themselves with minimal technical knowledge
Reducing the use of resources	Users engage in purposeful actions to minimize the use of resources either through purchasing products and services with a circular value proposition or sharing resources with other users	• Sharing resources • Sequential ownership of resources • Buying circular value propositions	Rent the Runway is an online fashion rental platform that allows customers to rent designer clothing and accessories for a limited period instead of purchasing them. Rent the Runway promotes circularity by encouraging the reuse and sharing of clothing, and is challenging traditional models of clothing ownership
Extending the life cycle of resources	Users engage in purposeful actions to conserve resources by extending or slowing their life cycle to maximize value outcomes	• Reusing existing resources • Repairing or refurbishing resources • Reselling or regifting resources	The Buy Nothing project is the world's largest gift economy online platform. The Buy Nothing app offers users a way to give and receive, share, and lend resources in a local community network without the exchange of money or other financial resources. On Buy Nothing, an individual can post gifts of items or services that others can use or ask for resources to be used
Recovering and reforming resource bundles	Users engage in purposeful actions to retain resources and maximize value outcomes by enabling them to be recovered and reformed into new resource bundles	• Repurposing resources • Recycling resources • Reprocessing resources	TerraCycle sets up collection programs for resources that are typically not recyclable through traditional systems. They sort and separate the materials, and convert them into raw materials to create new products. TerraCycle engages consumers in their initiatives by rewarding them for participating in collection programs. Participants earn points which can be redeemed for charitable donations or support for community organizations

minimal need to extract and introduce new resources from the environment. Overall, the goal is to prevent or minimize the use of resources such that capital is preserved (Kirchherr et al., 2017). The adoption of a resource stewardship perspective means that users assume a sense of moral responsibility for the long-term care of these resources. Thus, users seek to conserve resources for future generations and minimize their introduction to the market in the first instance. We propose that users can engage in circularity practices to avoid unnecessarily (or prematurely) introducing natural resources by either (1) forgoing the use of non-circular resources or (2) (re)generating alternative, or substitute, resources that can contribute to a circular economy.

Minimizing the extraction of natural resources The literature on sustainable and circular consumption notes that users as stewards cease purchasing to avoid the unnecessary consumption of resources (Brozović et al., 2020). Acting from stewardship motives, users regard the future value potential that could be derived from these resources, perhaps for future generations, as greater than the value potential to be derived from a current purchase. This notion is deemed bequest value and considered in ecosystem studies (O'Garra, 2009), it represents the need to preserve potential use for future unknown actors through non-use. This approach is recognized as "dematerialization" in the circular economy literature and addresses environmental impacts by reducing material flows (Mylan et al., 2016). Voluntary simplification is an example of this ethos, in which users as stewards choose, "out of free will—rather than by being coerced by poverty, government austerity programs, or being imprisoned—to limit expenditures on consumer goods and services, and to cultivate nonmaterialistic sources of satisfaction and meaning" (Etzioni & Etzioni, 1999, p. 620). By minimizing the need for a purchase in the first place, fewer resources are sourced from the environment. For example, a user may decide to forgo meat by choosing a vegan restaurant or ordering plant-based meals. From a circular economy perspective, reduction in meat consumption increases the efficiency of resource flows, including the reduction of the amount of energy, land, and water used (Mylan et al., 2016).

(Re)Generating natural resources Circular economies require sufficient resources to replace those sourced or leveraged, so as to not deplete natural resources. Therefore, users as stewards may engage in practices with the intended purpose of (re)generating resources that can contribute to a circular economy without the need to extract naturally forming resources from the environment. Much of the discussion about material sourcing for a circular economy has centered on the role of governments and organizations and considered topics such as energy production and bio-based materials, taxes on resource inputs, and the introduction of industry standards (Kalmykova et al., 2018). However, users as stewards also often engage in practices with the purpose of (re) generating resources. For example, users may grow their own fruit and vegetables or contribute to a community garden to generate alternative food resources that can be used by the community, minimizing the use of resources sourced from natural supplies (Mylan et al., 2016).

(Re)designing resource bundles

A systemic approach to a circular economy is based on a few core principles, including *designing out* waste and pollution (Ellen Macarthur Foundation, 2017). Few studies recognize the need to incorporate a user perspective in the design process of a circular economy (Hobson et al., 2021; Wastling et al., 2018), and fewer explicitly consider the codesign role of users (Gruen, 2017; Knot & Luiten, 2006). We identify practices in which users as stewards are active contributors to the design of resource bundles, a constellation of resources that constitute the product or service offering, with an aim to minimize resource use, extend the life cycle of resources, and/or enhance circularity of the resources embedded in the value proposition. We identify three distinct circularity practices in which this occurs: (1) codesigning products and services, (2) adapting product and service offerings through the substitution of resources, and (3) advocating for change to institutional arrangements that shape norms or expectations around resource usage (e.g., regulations).

Codesigning resource bundles for products and services Users work directly or indirectly with others to jointly design, or redesign, products and services in a manner that minimizes use and/or enhances the circularity of resources embedded in the products and services (Kalmykova et al., 2018). This can include either indirectly providing feedback to organizations on how to redesign or improve their offerings or being directly involved in workshops or online innovation platforms. Design element changes could include the elimination of peripheral resources (e.g., elimination of plastic straws in drinks) or the switching of embedded resources to improve their circularity (e.g., a swap from plastic to compostable coffee cups) or ways to enhance the ease of disassembly of resources for repair or recycling (Kalmykova et al., 2018). Designers often encourage a change in consumption by creating new artifacts that lead to the development of new meanings attached to the object. This might encourage users as stewards to change their daily routines and the way they interact with resources and thus adopt new practices (du Gay et al., 2013). Gruen (2017) discusses the importance of these design elements in the adoption of a car-sharing scheme, Autolib', to create meaning for users in the context of access-based consumption.

Substituting resources in the product or service offering Users modify or change the offering through real-time adaptation of the product or service to enhance its value-in-use. User stewards may *substitute resources* for resources that are known to be more circular in their properties, thereby modifying the offering at its point of value creation. For example, users may bring a canvas bag to the supermarket rather than using the plastic bag provided in-store (Gonzalez-Arcos et al., 2021) or bring a reusable "keep cup" to an outdoor café rather than taking a single-use takeaway cup. On a broader scale, users may substitute a hotel room for a tent and embark on a more sustainable "glamping experience" at a tourism destination, or opt for digital bank statements instead of paper-based versions. Further, they may commit time and effort to make resources that can be used as substitutes (e.g., make their own soap to conserve resources used when washing their clothes). Users may also introduce resources into the experience if they help conserve resources already in circulation. For example, they may bring a container to a restaurant to take home any leftover food (Mylan et al., 2016).

Advocating for change to a circular approach A move to a more circular approach requires institutional change (Schulz et al., 2019). Individual users are known to mobilize communities and lobby organizations and governments to change institutions and thereby effect change at a macro level (Jaakkola & Alexander, 2014). An example is when users lobbied against the burning of unsold merchandise by fashion merchandisers, a practice used by Burberry, which in 2017 admitted to burning $38 million worth of products (Napier & Sanguineti, 2018). In response, the French government acted to ban the wholesale destruction of consumer goods. Similar advocacy has resulted in the introduction of legislation banning the use of some single-use plastics (e.g., plastic bags, polystyrene containers) in Australia, Canada, England, Kenya, Zimbabwe, and jurisdictions in the United States and elsewhere (Masterson, 2020). Gonzalez-Arcos et al. (2021) considered how users made sense of these bans and changed their everyday practices accordingly.

Reducing the use of resources

Recent literature on circular consumption highlights the need for users to reduce, reuse, and recycle resources (Camacho-Otero et al., 2018; Hobson et al., 2021; Knot & Luiten, 2006; Wastling et al., 2018). While we come to the notions of reuse and recycle in turn, we focus here on the circularity practice of *reducing* superfluous consumption (Peronard & Ballantyne, 2019). This is consistent with a stewardship perspective, as users adopt a long-term orientation for the well-being of others by minimizing the use of resources to maintain them for future generations. From a user perspective, value is cocreated during the integration of resources (Vargo et al., 2017). Users as stewards achieve value outcomes from the value-in-use of resources and do not need to take ownership of the product, instead opting for what is deemed collaborative, or access-based, resource integration (Benoit et al., 2017). Practices that depict this approach include sharing resources with other actors (e.g., borrowing, renting), purchasing resources previously used by other actors (e.g., second hand), and purchasing resources with a "circular" value proposition.

Sharing resources A common practice often advocated by those pursuing a circular economy is the practice of sharing, borrowing, or renting resources (Hobson et al., 2021; Kalmykova et al., 2018; Peronard & Ballantyne, 2019). This principle includes the shared use, access, and/or ownership of, for example, space (e.g., coworking spaces, accommodations) and products (e.g., cars, books, clothing) and sharing platforms enabling shared use (Kalmykova et al., 2018). With this access-based resource integration, no transfer of ownership takes place (Hobson et al., 2021); rather, goods are leased, which may involve individual and unlimited access (e.g., the private leasing of a car), limited and sequential access (e.g., Marriott Vacation Club, which is based on a timeshare model), or even peer-to-peer renting (Philip et al., 2015). Indeed, this is the principle behind the "sharing economy," in which individuals share access to underused resources via marketplaces, platforms, or networks for monetary or nonmonetary benefits (Belk, 2014). Users, as stewards, contribute either by making available unused or underused resources to a broader group of actors (e.g., listing a vacant holiday home on Airbnb; donating food to a food bank) or by using these resources rather than purchasing a resource for themselves (e.g., using Uber rather than buying a car). While many such practices (Airbnb and Uber) are now on a large scale, they also occur on a smaller scale—for example, local websites with designer clothes or jewelry, a community toy library, and companies that lease construction equipment to enable the provision of landscaping services. Though often touted as exemplary circularity practices, Hobson et al. (2021) raise concerns about whether sharing initiatives address the sustainability issues they claim to overcome, as without perceived ownership of the resource, users may not be willing to undertake the consumption work (e.g., repair, maintenance) to ensure the longevity of the resource.

Sequential ownership of resources The sharing of resources among actors does not need to be a temporary exchange (e.g., renting, leasing); we also identified sequential resource ownership (i.e., purchasing pre-owned resources) (Hobson et al., 2021; Machado et al., 2019) as a common circularity practice among users. Purchasing secondhand products extends the life of existing resources, and fewer products for

the same purpose need to be produced (Kalmykova et al., 2018). The vintage fashion trend has spurred consumption of used clothing in the last 10 years, with the number of thrift stores and online communities facilitating the sale of secondhand resources increasing (Machado et al., 2019). For example, on Gumtree, an online classifieds platform, people can connect and purchase relevant, mostly pre-owned resources. In the United Kingdom alone, Gumtree enjoys 9.2 m unique visitors to its platform and an online reach of 18% of the population each month (Gumtree, 2022).

Buying circular value propositions Often overlooked in the identification of user circularity practices are practices that reflect the user's active choice to buy a brand or product that offers a value proposition that is more "circular" (Kirchherr et al., 2017). A circular value proposition might manifest in various forms. The properties of the resource might render it more durable, repairable, or long-lasting than the available alternatives, thus extending its life cycle (e.g., a shift away from fast fashion to more durable clothing). Alternatively, the product might be made from recycled materials, such as Adidas footwear and clothing lines made with Parley Ocean Plastic reimagined from plastic waste collected in the ocean or Suga's yoga mats containing more than 27,000 wetsuits destined for landfill (WWF, 2021). Finally, the properties of a resource might render it recyclable or compostable, such that its value proposition is aligned with a closed-loop system and the circularity of resources. For example, the Nestlé Pure Life bottle is made from recycled content and features a pressure-sensitive label that releases during the recycling process.

Extending the life cycle of resources

The following set of circularity practices are underpinned by the notion that the circular economy is founded on the need to extend the life cycle of existing resources (Hansen & Revellio, 2020; Kalmykova et al., 2018). A core principle of resource stewardship is for actors to conserve resources, thus adopting a long-term orientation and lengthening the life of resources. This set of practices are consistent with the notion of product service systems (Camacho-Otero et al., 2018; Baines et al., 2007), which are "a market proposition that extends the traditional functionality of a product by incorporating additional services. Here, the emphasis is on the 'sale of use' rather than the 'sale of product'" (Baines et al., 2007, p. 1543). Each of the identified practices (reuse, repair or refurbishment, and resale and regifting of resources) is a manifestation of the purposeful actions users take to ensure additional value from resources, thus conserving resources and extending their life cycle.

Reusing existing resources The conservation of resources in a circular economy is perhaps most easily achieved through the reuse of existing resources that are still in good condition and fulfill their original function (Kirchherr et al., 2017). The aim of reusing a resource is to optimize its embedded value potential (Peronard & Ballantyne, 2019). Many times, users are attracted to new models or variants of a product, while their current offering is fully functional, often through planned obsolescence (Satyro et al., 2018). However, if resources are still able to provide the desired value, users can deviate from the pressures of consumerism and continue to use the existing resources. For example, the average upgrade cycle for smartphones is approximately 24 months (Kantar, 2020); however, even mobile phone producers suggest that the hardware on the phone (i.e., the physical resource) provides a quality service for 5 to 10 years. The old model will continue to provide the (near) identical service delivery as the previous version, thus extending and slowing the life cycle of the resource.

Repairing or refurbishing resources While circular economy models often discuss the role of "remanufacturing," from a user stewardship perspective this constitutes a process that repairs, replaces, or restores resources with the goal to ensure operation comparable to the original function or a similar offering (Camacho-Otero et al., 2018; Kirchherr et al., 2017). Scant literature has adopted a user perspective within the circular economy, but studies that do focus on *repair* have examined users' attitudes toward repaired products (Matsumoto et al., 2018), the development of user repair services of mobile devices (Riisgaard et al., 2016), and used clothes repairing behavior (Diddi & Yan, 2019). In today's fast-paced world, many users do not have the time or expertise to repair or refurbish resources and opt to purchase new resources instead (Diddi & Yan, 2019). However, evidence shows that users as stewards are demanding the right to repair their resources and are lobbying for the publication of information on how products are made to improve repair markets. In 2021, a set of European Union rules that gives users a "right to repair" came into force. Manufacturers and importers must now make essential parts for electronic devices available to professional repairers for 10 years after the last unit of a model has come to market. While the literature largely provides examples of the government and organizations taking responsibility for the repair of resources, we also identified the user circularity practice of repairing resources, with the rise of repair cafes (Madon, 2021), or "repair workshops that seek to provide an alternative to the make-take-waste paradigm" (Durrani, 2018, p. 2218). Here users themselves can join a community of likeminded people and learn skills to repair broken or damaged items.

Reselling or regifting resources The counter side to the purchase of secondhand resources (i.e., sequential ownership) is the offering of resources for resale or regifting without financial compensation. When a resource has served the original purpose for which it was acquired and the user is no longer extracting value from the resource, users as stewards conserve and extend the life cycle of resources by passing it on to others who are likely to gain more value from it. The resale or regifting of resources may occur directly between people, but more frequently, it occurs on engagement platforms (e.g., Facebook marketplace) or through third parties such as charity stores. Contrary to the belief that all donated clothes are resold, only about one-fifth of the clothing donated to charities is used or sold in thrift shops; the rest is in such poor condition that it ends up in landfill (Diddi & Yan, 2019).

Thus, users as stewards have an opportunity to take more direct responsibility to resell resources or give them away to others. Direct resale or regifting can be difficult, as users may not know others who would be able to generate value from the specific resources. For example, a child who is part of a sports team may require equipment such as a uniform and footwear to take part. As the child grows, they no longer fit the specific uniform and shoes and, thus, no longer generate value from these resources. Community groups often collect old uniforms to donate to their vulnerable members, matching resources and extending their life cycles.

Recovering and reforming resources

Users undertake purposeful actions to regenerate resources, thus closing the loop and bringing these resources back into circulation to maximize value outcomes (Kalmykova et al., 2018). Closing the loop to ensure the circularity and recovery of resources is a defining characteristic of circular economy models (Hansen & Revellio, 2020). Resources need to be renewed, recycled, or regenerated to be able to continue to provide value outcomes (Peronard & Ballantyne, 2019). For example, the materials in e-waste include iron, copper, gold, silver, and aluminum, materials that could be reused, resold, salvaged, or recycled. Estimates indicate that the value of raw materials in global e-waste equates to approximately US $57 billion (Forti et al., 2020). This phase of a circular model is therefore potentially valuable for organizations to extract the resources from products at the end of their life cycle and try to bring these resources back into circulation. However, users' role in this phase of a circular economy is often overlooked, as they are assumed to be passive adopters of circular economy models.

Repurposing resources Also known as upcycling, the repurposing of resources into new products perceived to be of more value is a popular user circularity practice reflecting stewardship principles. Whereas recycling (sometimes referred to as downcycling) breaks down the product and then uses the materials, upcycling sorts and reuses materials in a different way, recombining resources to increase value outcomes (Kirchherr et al., 2017). For example, an old briefcase could be mounted on the wall and used as a bathroom cabinet, or old clothing can be placed in the bottom of planters to improve drainage, or as depicted in *The Sound of Music* movie, old curtains can be turned into play clothes for children. In these examples users as stewards modify the service design enabled by focal resources. Users can widen the contexts in which focal resources are used, thereby utilizing resources for different offerings and, in so doing, substitute the commonly used resources. This co-opting of existing resources for different purposes, in which other resources are replaced or not used, is also referred to as "exaptation" (Dew & Sarasvathy, 2016).

Recycling resources Recycling is the process of collecting used products, components, and/or materials to disassemble them (when necessary), separate them into categories, and process them as recycled products, components, and/or materials (Beamon, 1999). Resources can be used across different value streams at end of life, and recycling is the process of capturing these resources, whether it be through cascading, downcycling, or resource recovery practices (Kalmykova et al., 2018). The objective of recycling is to make used resources suitable for reuse (Peronard & Ballantyne, 2019). While studies have considered users' acceptance of recycling, and focused on the conditions required for them to purchase products made from recycled products (Lin & Huang, 2012), there has been little consideration given to users' role in recycling practices.

In Australia, households have a complex recycling system with the separation of landfill, recycling, and compostable resources occurring in separate bins at home; electronic materials, batteries, soft plastics, and glass bottles have recycling stations outside the home. Recent studies suggest that households are only getting this process right a fraction of the time; for example, in Singapore only 15% of household electronic waste enters a responsible recycling stream (Shah, 2014). The success of these recycling practices relies not only on the infrastructure available (e.g., bins, food waste, caddies) but also on deeper-held institutions and cultural conventions surrounding waste (Welch et al., 2021). Users need to educate themselves and engage in respective recycling practices. An additional challenge is when users move outside their everyday practices. Sørensen and Bærenholdt (2020) note that recycling waste is challenging for tourists, though there is an emergence of apps that help tourists educate themselves and find appropriate recycling infrastructure while traveling (e.g., Too Good to Go).

Reprocessing resources Reprocessing occurs when the resources from one product or service are used as raw materials in the bundling of resources for new offerings. Much of the circular economy literature considers the industrial extraction of raw materials, such as bio- chemicals (Kalmykova et al., 2018), and examines the incineration of resources for energy recovery (Kirchherr et al., 2017). A common circularity practice adopted by users as stewards is composting, a process for dealing with food waste in which biological resources are returned to the soil after breaking down by micro-organisms (Kalmykova et al., 2018). Studies show that users find composting a means of disposing of unwanted food without feeling quite so anxious or guilty that it was being "wasted" (Machado et al., 2019). Other smaller-scale alternative strategies of reprocessing include regenerating food (e.g., potatoes) from offshoots that were planted in previous years. Nevertheless, such circularity practices require a level of knowledge about what can be composted or replanted, and the reprocessing of food, especially via composting, conjures up social concerns and anxieties, such as having the appropriate skills, the right equipment, and enough space, as well as other practicalities (e.g., the smell) associated with the practice. Hobson et al. (2021) report that adoption of one user circularity practice can have (sometimes undesirable) knock-on effects on others (e.g., more recycling may lead to less alternative waste prevention behaviors in a household) and reinforce that the circularity practices of users need to be considered holistically.

Theoretical contributions

The pursuit of a circular economy, and sustainability goals more broadly, is necessary for the future survival of humanity. Several marketing scholars are experiencing a paradigm shift and recognize the need for research that addresses these complex, societal challenges (Bolton, 2022; Conduit et al., 2022); however, the dominant views of marketing scholarship remain overly constraining and there is a need for new conceptual understandings to ensure we achieve real-world, societal impact (Bolton, 2022). Marketers have little knowledge yet of the ways in which our traditional consumption practices will change as a result of this transformational shift to a circular economy. In a circular economy, users (i.e. consumers) will change their practices, as they become more conscious of the resources they use, how they take responsibility for those resources, and eventually how they dispose of them. This paper provides an important integrative perspective of how user circularity practices change, and thus lays a framework for future research focused on marketing, consumer behavior, and consumption for more sustainable ways of living.

Marketing, as a discipline, is perfectly placed to be able to offer insight into the role of users in a circular economy. Users play a central, yet underappreciated, role in conserving and extending the lifespan of resources with their daily practices. Yet, current circular economy literature focuses predominantly on organizations and governments as the level of analysis and application, assuming that any shifts in user behavior will be driven through government policies and business models. Switching the level of analysis from organizations, governments, or societies to individual users, we provide an important micro-level foundation for meso- and macro-level theorizing. Without such a micro-level foundation, theorizing remains rather incomplete, as essential actors holding important agency toward a circular economy remain neglected. Recognizing that users can take a proactive role and can collectively contribute to system-level change (Kleinaltenkamp et al., 2021) will require wider and more interdisciplinary models and approaches; and marketing approaches can play a key role in shifting the dialogue from the role of governments and businesses to the central role of users. Marketing scholars have the theoretical toolkits to understand user mindsets and practices, which can inform the rapidly growing body of literature on the circular economy. Our paper contributes to the circular economy in this way, identifying and explicating a set of user circularity practices, which embody a resource stewardship perspective, and thus advance the circular economy agenda. Thus, we address the call for greater consideration of user (consumer) contributions to circular economies (Hobson et al., 2021; Trischler et al., 2022).

To acknowledge and inform a preconceived understanding of users in circular economies, we draw on a stewardship perspective to develop the notion of user resource stewardship (Hensen et al., 2016; Hernandez, 2008). Stewardship theory emphasizes the responsible use and protection of resources for the benefit of current and future generations (Hensen et al., 2016; Lertzman, 2009). It posits that individuals (in this instance, users) have a responsibility to act as stewards of resources, and thus to use them in a sustainable and socially responsible manner. In parallel, a circular economy seeks to eliminate waste and promote the continual use and regeneration of resources. Thus, stewardship theory and circular economy principles are complementary, as they both emphasize the responsible and sustainable use of resources. Stewardship theory thus served as a useful foundation to identify and explicate user circularity practices in our organizing framework. While stewardship theory is utilized in circular economy literature, it is almost exclusively considered in relation to product stewardship at an organizational level (e.g., Jensen & Remmen, 2017). Our paper is critical in proposing stewardship at a micro-level and considering users as stewards, and investigating how stewardship manifests as a series of user circularity practices. As such, stewardship

theory advances knowledge in marketing as it enables us to understand how consumer mindsets and practices are evolving in circular economy contexts. Users are moving away from a linear 'take-make-waste' mentality and are being responsible for resources with a long-term orientation and caring for the broader ecosystem.

We conduct a theory synthesis conceptual approach, leveraging a user stewardship perspective to put forth a novel, integrative conceptual framework. This framework offers a concrete set of interrelated practices that individual and collective users can adopt to contribute to circular economies. Informed by a stewardship lens, we identify and systematize a comprehensive set of user circularity practices as purposeful actions to minimize introducing, conserving, or regenerating resources, and demonstrate a long-term orientation to enhance the sustainability and well-being of future generations, consistent with the principles of both stewardship theory and circularity. In addition, by adopting a circular economic structure as an organizing framework and prioritizing the conservation and regeneration of resources, our research offers a more systemic perspective of the stewardship role of users and expands on existing models of sustainable and circular consumption. To our knowledge, this paper is the first to provide a comprehensive perspective of user circularity practices throughout the resource life cycle, providing a framework for a future research agenda.

In recent years there have been few articles that consider circular consumption (e.g. Camacho-Otero et al., 2018; Hobson et al., 2021). These articles recognize that an attitude-behavior gap (often called the 'green gap') exists between users' declarations of growing concern regarding the environment, and their actual behaviors (ElHaffar et al., 2020; Park & Lin, 2020). This phenomenon is based on an economic rationalism perspective and closely related to the Theory of Planned Behavior (Ajzen, 1991); it assumes that attitudes are a major influencer of subsequent behavior. ElHaffar et al. (2020), however, reviewed 58 articles on the 'green gap' and concluded that multiple, interrelated factors influence this green gap and the phenomenon will not desist in the near future, but is likely to continue to evolve. In our study, we explicate user circularity practices that are manifestations of a stewardship perspective, and thus have a high degree of alignment between attitudes and behaviors. Stewardship provides the ontological understanding of users as stewards and can translate into respective caring user mindsets or attitudes, whereas the practices provide a normative, behavioral understanding of how stewardship can be enacted. These behavioral insights (i.e. the circularity practices) rely on the unconscious rather than deliberate human agency and enable users to acknowledge the problem and work toward a solution. Cultivating knowledge of these practices in itself may be an effective means of altering behavior (ElHaffar et al. 2020). Adoption of these circularity practices would reflect a stewardship mindset and/or aligned behaviors, thus narrowing—albeit unlikely to close—the attitude-behavior gap.

While we have thus far broadly considered users' application of any type of resource such as tangible products like computers or clothes from a generic marketing perspective, our framework is also relevant for service research. For example, Ostrom et al. (2021) recognize the need to design socially just and economically sustainable markets as a key research priority. Specifically, the authors identify the role of "consumers" in sustainability efforts as an important subtheme. Similarly, Field et al. (2021) provide a critical examination of the need for sustainable services, and depict sustainable consumption as a key priority area; their focus, however, is on reducing consumption rather than specifically making it circular. As service provision often depends on and is enabled by resources (e.g., clothes keeping warm; phones playing music; cars offering transport), circular priorities carry significant potential for service providers and researchers. Indeed, a circular economy can arguably be a very promising example of sustainable service systems. The application of our user resource stewardship framework can thus significantly inform the service literature as well.

Suggestions for future research

Researchers have called for empirical insights to further explore the user (consumer) perspective in the circular economy in general (Kirchherr et al., 2017). Building on our theoretical contribution, we call for empirical investigations that shed further light on users' resource stewardship in the circular economy.

Characteristics of resource stewardship Current research has assessed stewardship mainly from an organizational standpoint, defining leaders, employees, and collective entities as stewards. Less theorizing has explicitly addressed internal stewardship structures, and further research is required to clarify cognitive, emotional, and behavioral manifestations and considerations. On the one hand, stewards are likely to experience a degree of responsibility for a focal reference object at a cognitive level. This might include internal beliefs, intrinsic motivation, or respective moral reasoning (or reflection), compelling them to consider the consequences of their decisions and actions while trying to minimize harm to others and contribute to their long-term well-being. On the other hand, stewards are likely to act more responsibly in view of the focal reference object. In taking ownership of a situation, they might attempt to align their behaviors with their moral compass and attitudes. We further conceive stewardship as operating at an emotional level, such that actors try to avoid feeling bad or sad about inflicted unintended consequences

or regulate such emotions by compensating for such unintended consequences. Feelings of "psychological ownership" (Schepers et al., 2012, p. 6), for example, can instill a compelling drive in resource stewards to positively shape the future of a focal reference object. In combination, these different possibilities for user resource stewardship to play out provide an important avenue to further clarify the phenomenon and its internal dynamics. This understanding of the cognitive, emotional and behavioral manifestations of resource stewardship can also be extended to non-human actors as stewards. For instance, independent and autonomous systems would need to be programmed to minimize resource wastage and engage in practices informed by stewardship and circular economy principles.

Enabling conditions for resource stewardship Consideration should be given to the *enabling conditions* that facilitate resource stewardship in a circular economy. Hobson et al. (2021) recognize that users require a degree of competence, skills, and creativity to participate in a circular economy; however, the nature of these capabilities and how they might be acquired and applied remains unclear. In addition to knowledge and skills, the commitment to the pursuit of a circular economy often requires more time, effort, finances, and technology to support the enactment of circularity practices. For example, the decision to repair a washing machine, rather than purchase a new one, requires a significant investment of operant resources in the process. Taking time to learn the process, purchasing replacement parts, and expending effort to repair the machine are competing value propositions to the purchase of a new machine. Future research could expand our knowledge of how user's tradeoff between operand and operant resources for value creation within circular economies.

We acknowledge that users need a level of *knowledge* about both circular economy principles and the offering to make purchase decisions consistent with circularity and avoid greenwashing claims (Camacho-Otero et al., 2018). Several universities and private companies now offer programs educating future consumers and business leaders on the circular economy. For example, the Cambridge Judge Business School offers a program on Circular Economy and Sustainability Strategies. The Danish retail cooperative 'COOP' also offers workshops to its members focusing on how to become a sustainably responsible user with respect to food consumption (Peronard & Ballantyne, 2019). Further, many circularity practices require users to have specific skills sets; for example, in the fashion industry, many users have lost the capability to repair clothes. Indeed, U.S. consumers spend less than 2% of what they spend on clothing for their repair (Diddi & Yan, 2019). A study in Scotland (McLaren & McLauchlan, 2015) found that even skilled quilters and embroiders in craft groups did not believe they could use their skills to repair clothes, despite being engaged in a variety of other pro-environmental activities (e.g., composting, ride sharing). These examples illustrate the need for further research into the capabilities (knowledge and skills) required, and user mindsets for developing these capabilities, to enable user resource stewardship in circular economies.

A common theme in circular economy literature is the importance of *social connections and communities*. Many circular solutions, such as sharing or regifting resources, build a sense of community and contribute to creating social capital (Briceno & Stagl, 2006). This increases interaction and builds connections among customers, allowing for information sharing and empowerment among user groups (Nguyen et al., 2020). Social learning groups, such as the Facebook group 'Journey to Zero Waste', are often established for the purpose of sharing user circularity practices among like-minded users. Through word-of-mouth behavior, users promote resource stewardship to peers and occasionally lobby companies and governments for changes to sustainable or circular approaches. Despite the prevalence and visibility of these communities, scant research has examined their role in supporting and advocating for user resource stewardship in a circular economy.

Institutional mechanisms for resource stewardship Scholarship that focuses on the institutions that shape the interactions among actors is relatively recent and underdeveloped in the context of a circular economy (Field et al., 2021). Thus, the *institutional mechanisms* (i.e., regulative, normative, and cultural) that support a circular economy need to be further identified and understood. While institutions within a circular economy have been acknowledged, notably Hobson et al. (2021) draw from the notion of institutional work to consider consumption work in a circular economy context; however, a detailed understanding of the institutions and institutional arrangements that support value creation and resource stewardship is largely absent.

Consideration of institutional theory and circular economy has largely been given in a business, rather than user context. Further, primacy often rests with governance and the regulative pillar, to enforce agreements and trigger commitments by participants (e.g., emerging regulation such as the ban of single-use plastics). However, Ranta et al. (2018) demonstrate that the normative and cultural-cognitive pillars could negate the effect of the regulatory pillar and conclude that the regulative pillar alone is not capable of supporting sufficient change in the institutional environment. If the regulatory pillar is insufficient to drive change, further research needs to consider how normative and cultural-cognitive pillars can arise from user-led initiatives, rather than government or organizational policy. In this vein, future research could draw on institutional theory to help understand how user circularity practices contribute to the formation of

institutional arrangements and how these arrangements constrain user circularity practices. Thus, we echo Field et al.'s (2021) call for research on the deliberate or unintentional (re)designing of institutional arrangements (e.g., rules, rituals, symbols) that facilitate or impede resource stewardship by users. The phenomenon of market shaping is receiving increasing attention across practitioner and academic communities, with recent developments establishing the role of institutional theory in shaping economies (Kleinaltenkamp et al., 2021). Circular economies in particular provide a context to explore mechanisms that drive institutional change, as user circularity practices emerge and, in turn, shape new markets (Kleinaltenkamp et al., 2021). As new offerings providing circular solutions emerge, will new markets arise, and will they develop their own institutional norms? Future research could explore how institutions should be reshaped to allow resilience and agility to manifest within a circular economy (Field et al., 2021), thereby extending or closing resource life cycles.

Practical implications

Research conducted by Accenture (2015) indicates that the creation of a circular economy presents a $4.5 trillion economic opportunity for North America by 2030 via cost savings from efficient use of materials, stimulation of business growth from an expanded range of value maximizing products and services, and increased number of jobs to support circularity practices. Similarly, in Australia, for example, the economic benefits of transitioning to a circular economy have been estimated at almost $2 trillion over the next twenty years and could save 165 million tons of carbon pollution each year (PwC Australia, 2021).

The user resource stewardship framework and the user circularity practices presented in this study give rise to practical implications at an individual, organizational, and public policy level. At an individual level, we provide a suite of interrelated practices that users can adopt concurrently or independently to enhance the circular economy through becoming resource stewards. Importantly, these practices provide very concrete avenues for users who want to rethink how they live their lives. And while users might not be able to fully switch to all of these practices immediately, they should be able to adopt a specific set of circularity practices to begin with. Over time, and with increasing experience and appreciation, users might broaden their circularity practices and ideally even advocate for such in their own networks. The concrete and hands-on nature of these practices can also help reduce attitude-behavior-gaps that currently challenge circular initiatives. One reason for consumer reluctance could be related to users not knowing how they can actually make a difference. Another reason could be related to underlying assumptions that changing ones' practices might not make a sufficient difference. Yet, our framework and circularity practices provide practitioners with new routes to implement and test potential success and resistance factors related to circularity practices. Specifically, businesses and influencers could run awareness campaigns for these practices, helping users to see concrete ways to save and/or regenerate resources. By communicating individual and aggregate resource savings through such circularity practices (see emerging impact measurements), businesses could also help create a pull-effect, encouraging existing and turning more new users into resource stewards. Our research thus illustrates how users can change their practices by taking stewardship (ownership and shared responsibility) of resources and, thus, where they can contribute to a circular economy.

Our framework also provides practitioners and policy makers with a means of visualizing (and to a certain extent categorizing) the active role users' can take in their circular models and how these roles may be co-created in a circular economy. At an organizational level, this research calls for more institutions to adopt alternative ways of engaging users in circular economy initiatives. For example, organizations could deploy design thinking or co-design initiatives to collaborate with users on identifying opportunities for resource stewardship for each stage of resource life cycles. The responsibility for circular economies has to date been located primarily at organizational and policy level, more effort must be directed toward leveraging the ideas and contributions of users. We thus see significant potential for organizations to more strategically involve users to advance circularity practices.

We also stress the need to build and support communities to encourage the sharing of resources. This could also include the provision of platforms that enable the reuse and recycling of resources. Such platforms are likely to play an important role for hesitant users to test different ways of reusing and recycling resources, hopefully reducing cognitive and emotional barriers. For example, Toolshare is a community-driven sharing platform for tools and equipment. Toolshare provides individuals, businesses, and communities with access to a broad range of tools and equipment, hence reducing the need to purchase or maintain it themselves. Furthermore, organizations could more strongly communicate and advocate such circular practices in public, helping to develop a greater collective consciousness that more strongly appreciates such stewardship attitudes.

For many years, public policy makers have focused on regulation as a mechanism to reduce resource waste and carbon emissions. Our stewardship framework demonstrates that individuals and households can play an active role in reducing waste and enhancing circularity for the benefit of

the planet. Given the concrete nature of the proposed circularity practices, and the embedded agency of individuals, we recommend policy makers adopt a much stronger user focus. Such a focus could manifest in, for example, providing incentives for the adoption of the user resource stewardship framework for a circular economy. Rather than just incentivizing organizations to become more resourceful through circularity practices, users could equally benefit from relevant incentive schemes or structures. Patagonia, for example, offers repair services for their products (a free service for certain items), seeking to reduce waste and expand product lives. One interesting question for policy makers will revolve around whether to incentivize users directly or incentivize organizations to offer such services to users. Ultimately, the shared goal of policy makers and organizations is to create systems and structures that increase the share of resource stewards in the community. Container deposit schemes are an example of a public policy that incentivizes individuals to adopt circularity practices. Container deposit schemes have been implemented in many countries around the world, including Australia, Canada, Germany, and several US states. Users pay a small deposit when they purchase a beverage in a specific type of container, such as a glass bottle or aluminum can, and receive a refund of the deposit they paid when they return the container to a designated collection point. Further schemes such as this to incentivize circularity practices, may be worthwhile public policies for governments and local councils.

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Conflict of interest The authors declare that they have no conflicts of interest.

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