



Research paper

Customer-perceived value in the circular economy: A multidimensional framework

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ABSTRACT

This article explores how the circular economy (CE) affects customer-perceived value (CV), an important success factor for business-to-business companies. To this end, we examine business-to-business customers' value perceptions of circular market offerings and suppliers' alignment with such perceptions. More specifically, we conducted a qualitative multiple-case study of 12 business-to-business customer–supplier dyads in industrial CE businesses. Using abductive reasoning, we found that circularity modifies conventional CV dimensions (economic, functional, relationship, and identity value) and identified three new CV dimensions specific to the CE (ethical, strategic adaptation, and systemic value). Furthermore, our findings showed that suppliers' conceptions of various CV dimensions were either partially (for economic, functional, and ethical value) or fully (for systemic value) misaligned with customers' value perceptions of circular market offerings. Based on our findings, we developed six research propositions and a conceptual framework of multidimensional CV in the CE for business-to-business customers. This study contributes to supplier-dominant CE-oriented business-to-business research by adopting a customer-oriented approach and to CV research by extending the concept of CV into the CE. Our multidimensional framework explains what customers look for when buying circular offerings, which can help managers communicate full customer value in an increasingly circular world.

1. Introduction

To fight climate change and other environmental crises, industrial companies are pressured to adopt circular economy (CE) principles. The CE, defined as a restorative and regenerative economic system that promotes corporate environmental sustainability (Bocken, de Pauw, Bakker, & van der Grinten, 2016; Ellen MacArthur Foundation, 2013; Merli, Preziosi, & Acampora, 2018), has affected all major industrial business sectors, including manufacturing (Chen, Chen, Jiang, & Yan, 2021), energy (Kaipainen & Aarikka-Stenroos, 2021, 2022), construction (Ghisellini, Ripa, & Ulgiati, 2018), forestry (D'Amato, Veijonaho, & Toppinen, 2020), textiles (Jia, Yin, Chen, & Chen, 2020), and agrifood (Anastasiadis, Manikas, Apostolidou, & Wahbeh, 2022; Närvänen, Mattila, & Mesiranta, 2021). The shift from the linear to the circular requires industrial companies and industry sectors to change and develop many critical aspects of their businesses, such as business models, supply chains, value propositions, and strategies (Aarikka-Stenroos, Chiaroni, Kaipainen, & Urbinati, 2022; Ranta, Keränen, & Aarikka-Stenroos, 2020). In the CE, companies create value using

circular market offerings (hereafter, circular offerings), which involve technologies, products, and services that harness the 3R principles of recycling, reuse, and reduction (Frishammar & Parida, 2019). The shift to CE changes not only how value is created by suppliers but also how it is perceived by customers. For example, companies can buy lighting services instead of physical lamps because paying for usage ensures effective, energy-saving, and cost-efficient lighting (see the case of Philips Lighting; Nobre & Tavares, 2017) or purchase refurbished telecommunications equipment as an economic and environmentally friendly option with a full warranty for the extended product lifetime (see the case of Cisco Systems; Whalen & Whalen, 2020). Prior research indicates that the CE extends customers' value perceptions and suppliers' value propositions, particularly regarding environmental and social considerations (Frishammar & Parida, 2019; Geissdoerfer, Morioka, Monteiro de Carvalho, & Evans, 2018; Patala et al., 2016). However, customer-perceived value (CV) in the CE remains an understudied phenomenon, as the rapidly growing B2B marketing research on the CE typically focuses on the supplier perspective of value creation (Ranta et al., 2020), while established CV research (Zeithaml, Verleye, Hatak,

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Koller, & Zauner, 2020), particularly in the B2B context, has overlooked the CE. Therefore, in this study we examine CV in the CE in B2B settings.

Next, we describe the research gaps that motivated our study in CE-oriented B2B research and CV research, which are focal to our study, as well as in sustainability research. To date, the growing body of CE-oriented B2B research has neglected customers' perspectives, instead focusing heavily on suppliers' perspectives on value. For example, prior studies offer insights into how suppliers create value by implementing circular business models (CBMs) (Fehrer & Wieland, 2021), designing circular supply chains (Aarikka-Stenroos et al., 2022), and configuring circular offerings (Spring & Araujo, 2017). Other studies show how CE pushes suppliers to change their value propositions and communicate new types of benefits, such as environmental advantages, to customers (Frishammar & Parida, 2019; Ranta et al., 2020). Such supplier-dominated studies improve our understanding of CE-oriented B2B businesses, but they entirely neglect the customer perspective. Consequently, we lack an understanding of what underpins B2B customers' CV in the CE. Although CV is widely regarded as a crucial aspect of business success (Anderson & Narus, 1998; Woodruff, 1997), little is known about how B2B customers perceive the value of circular offerings.

Prior studies on CV acknowledge that CV is an important source of competitive advantage for companies (Eggert, Ulaga, Frow, & Payne, 2018; Woodruff, 1997; Zeithaml et al., 2020) and positively impacts customer satisfaction and loyalty (Eggert & Ulaga, 2002). CV can be conceptualized as a customer's perceived contribution to achieving their goals and purposes (Woodruff, 1997; recently reaffirmed by Kleinaltenkamp, Eggert, Kashyap, & Ulaga, 2022). It is conventionally seen as a multidimensional construct that includes multiple value dimensions, such as economic and functional value (Anderson & Narus, 1998; Sweeney & Soutar, 2001). However, CV research remains focused on conventional linear business (e.g., Eggert et al., 2018; Kumar & Reinartz, 2016) and does not address how the CE affects existing dimensions of CV or creates new ones. Moreover, the CV literature requires a better understanding of suppliers' conceptions of CV. Prior studies have emphasized that suppliers' abilities to conceive, measure, and even anticipate CV are key to effective B2B marketing strategies and market success (Flint, Blocker, & Boutin Jr., 2011; Ulaga & Chacour, 2001). However, understanding CV is difficult because customers' value perceptions are influenced by customer-specific goals and processes, which are beyond suppliers' control (Bond et al., 2020; Prohl & Kleinaltenkamp, 2020). Given that customers' value perceptions and sellers' value propositions often differ (Aarikka-Stenroos & Jaakkola, 2012), it is important to increase mutual understanding of value and foster alignment between customers and suppliers regarding CV. Misalignments between suppliers and customers regarding CV can hinder their relational interactions (Corsaro & Snehota, 2011; Kragh & Andersen, 2009) and, in the circularity context, system-level implementation of the CE (Fehrer & Wieland, 2021). Although some previous studies have addressed suppliers' and customers' value perceptions separately (Mustak, 2019; Songailiene, Winklhofer, & McKechnie, 2011), to the best of our knowledge, no study has analyzed suppliers' abilities to understand CV based on dyadic customer–supplier data.

Finally, the sustainability research domain that addresses CE business has not developed a clear understanding of B2B customers' value perceptions either. This research domain provides some initial insights into the customer perspective in the CE, particularly regarding customer experience (Pekorari & Lima, 2021), customer perceptions (Anastasiadis, Manikas, Apostolidou and Wahbeh, 2022), and consumer acceptance (Kuah & Wang, 2020). Furthermore, some studies have analyzed CV-related aspects of the CE in business-to-consumer markets (Borrello, Caracciolo, Lombardi, Pascucci, & Cembalo, 2017; Bucker, Geissdoerfer, & Kumar, 2021), recently giving limited attention to the B2B context (Aarikka-Stenroos, Welanthanthri, & Ranta, 2021).

In sum, the B2B business, CV, and sustainability literatures have not developed a clear understanding of what the ongoing CE transition implies for customers and CV in B2B settings. Critically, CE-oriented B2B

research has been limited to the supplier perspective by employing supplier-centered concepts, such as CBMs and value propositions. Therefore, there is an absence of customer-oriented research designs that would empower customers to provide their views on circular business and the value of circular offerings.

To address these research gaps, the purpose of this study is to examine B2B customers' value perceptions of circular offerings and contrast them with suppliers' understandings of their customers' CV in the CE. First, we examine the CV of circular offerings in B2B settings. To explore how CE principles affect the existing dimensions and subdimensions of CV and create new ones, we build a framework using the CV dimensions identified by prior studies and introduce the concept of circularity-driven CV. Therefore, our first research question (RQ1) is as follows: *What dimensions constitute CV in the CE in B2B markets?* To answer this question, we explore and conceptualize the value dimensions and subdimensions of circular offerings as perceived by business customers. Second, we investigate whether the suppliers that provide circular offerings understand their customers' CV. More specifically, we examine whether suppliers' conceptions of circularity-driven CV align with their customers' value perceptions. Therefore, our second research question (RQ2) is as follows: *How well are suppliers aligned with their B2B customers' circularity-driven value perceptions?* To answer this question, we contrast suppliers' views on circularity-driven CV with customer data and newly identified CV dimensions.

To answer the research questions, we conducted a qualitative multiple-case study of 12 customer–supplier dyads in which B2B customers acquired circular offerings from suppliers. First, we investigated the customers to capture their CV. Second, to enable a comparison of perspectives, we examined the suppliers to capture their conceptions of the CV that they provided. The case dyads were sourced from several B2B industry sectors: machinery, industrial tools, construction materials, energy, and workwear. The circular offerings of the cases employed different CE principles, involving novel recycling services, industrial reuse, renewable products, lifecycle extension services, and product servitization. Using extensive primary interview data, secondary data, and an abductive analysis process, we identified and categorized seven main dimensions and 15 subdimensions of circularity-driven CV. Then, we compared the customer and supplier datasets to uncover how well the suppliers were aligned with their customers' value perceptions. Finally, we synthesized our findings with empirically confirmed literature-driven insights to arrive at a conceptual framework of CV in the CE.

We contribute to B2B marketing research by showing what B2B customers consider valuable in contemporary markets affected by the circularity transition. Furthermore, we contribute to CV research by extending customer value dimensions with circularity-driven CV and providing new insights into the (mis)alignments between customers and suppliers regarding CV. Finally, our study contributes to CE business research by providing a B2B customer perspective on the value of circular offerings. Managerially, the study provides key insights for the design, development, and marketing of circular offerings by improving our understanding of customers' perceived multidimensional value.

2. Theoretical background

In this section, we discuss the theoretical approaches to studying CV in the CE. First, we review how the CE transforms value creation processes that involve suppliers and B2B customers, exploring multiple implications for customers' value perceptions (Section 2.1). Then, we discuss CV and its dimensions, particularly in the B2B context (Section 2.2). Finally, we integrate these diverse theoretical approaches into a single framework for our empirical study (Section 2.3).

2.1. Value creation in the CE and its implications for customers' value perceptions

Because CV is greatly influenced by the processes of value creation that involve both suppliers and customers (Grönroos & Voima, 2013; Plewa, Sweeney, & Michayluk, 2015), understanding how circularity shapes value creation processes is essential to analyze the resulting value outcomes for suppliers and customers in the CE. In this study, we focus particularly on customers' perceptions. Therefore, in this section, we provide an overview of value creation in the CE, reviewing how the CE shapes value creation processes and how these changes may affect B2B customers' resulting value perceptions. First, we show that value creation in the CE is both diverse and systemic by nature. Second, we consider how value creation is shaped by different CBMs, from recycling to reuse and various circular offerings. Finally, we summarize the few extant insights into how the various changes in value creation processes affect value outcomes for customers, that is, their value perceptions.

Circular business is not homogenous: it is implemented using diverse, distinct CBMs ranging from recycling (e.g., substituting virgin materials with recycled ones) to more immaterial approaches (e.g., providing materials and products as services; or extending life span through repair or new marketplaces) (Ranta, Aarikka-Stenroos, & Mäkinen, 2018). Consequently, the CE can change the logic of value creation in various industries either radically, such as by the selling and buying of desired outcomes as services instead of as physical products, or incrementally, such as by increasing the share of recycled materials in products (Ghisellini, Cialani, & Ulgiati, 2016; Merli et al., 2018). Moreover, companies in the CE may harness established resource-efficient practices, such as modernizing industrial equipment, to meet new sustainability goals along with conventional economic goals (Ranta et al., 2020; Schroeder, Anggraeni, & Weber, 2019). Despite its diversity, circular business is always characterized by the aim to retain products, materials, and resources at the highest possible levels of value for as long as possible (European Commission, 2023). This aim requires business actors to adopt more sustainability-centered mindsets and pursue long-lasting value (Frishammar & Parida, 2019; Urbinati, Chiaroni, & Chiesa, 2017).

In addition, value creation and value perceptions in the CE are guided by its systemic multi-actor nature (Fehrer & Wieland, 2021). Circulation and loop-closing are rarely executed by a single company or actor; rather, they require collaborations at the value-chain and ecosystem -levels to actualize circular material flows, economic value creation, and future knowledge development (Fehrer & Wieland, 2021; Harala, Alkki, Aarikka-Stenroos, Al-Najjar, & Malmqvist, 2023). In circular value chains, existing value-chain actors frequently adopt emergent value-chain positions to perform new tasks (Ranta et al., 2018), such as takeback logistics. Circular value chains often require close, actively managed customer relationships that involve collaborative innovations (De Angelis, Howard, & Miemczyk, 2018; González-Sánchez, Settembre-Blundo, Ferrari, & García-Muiña, 2020). Furthermore, at the system level, companies and other stakeholders across the whole industry increasingly collaborate to realize the institutional changes required for circularity, which reshapes the shared norms of the industry and affects companies' views on how value is and should be created in the future (see Fehrer, Kemper, & Baker, 2023; Harala et al., 2023).

As many studies in B2B and sustainability research have indicated, the CE is changing B2B suppliers' value creation processes for and with their customers. First, implementing circularity requires suppliers to harness CBMs, which refer to value creation, delivery, and capture to improve resource efficiency through circular offerings (Nußholz, 2017; Osterwalder & Pigneur, 2010). Value creation in CBMs is typically based on slowing down material loops by reuse (e.g., by remanufacturing, modernization, and product servitization) or closing material loops by recycling (e.g., using recovered and renewable raw materials and cascading) (Lüdeke-Freund, Gold, & Bocken, 2018). Although researchers have suggested that reuse-based CBMs enable comprehensive,

sustainable value creation, they have highlighted risks related to complexity and possible damage to customers' perceptions of quality (Kristensen & Remmen, 2019; Vogtlander, Scheepens, Bocken, & Peck, 2017). Recycling-based CBMs are generally considered easier to implement and to have good economic potential (Kurniawan, Othman, Hwang, & Gikas, 2022; Ranta et al., 2018), although some materials and legislative contexts can present challenges to value creation (Nußholz, Rasmussen, Whalen, & Plepys, 2020; Paletta, Filho, Balogun, Foschi, & Bonoli, 2019).

Second, circularity enables and requires suppliers to configure their offerings in new ways, which affects customers in terms of, for example, changes to product ownership. Circularity promotes various product-service system types, particularly those that focus on value creation through service components (Yang, Smart, Kumar, Jolly, & Evans, 2018). Circular offerings frequently use digital technologies to optimize resource efficiency, enable servitization, and thus deliver superior value to customers (Ertz, Sun, Boily, Kupiat, & Quenum, 2022; Lenka, Parida, & Wincent, 2017). Spring and Araujo (2017) argued that in the CE, products should be seen as chronically unstable assemblages of materials that are qualified and valued various times by different actors during their lifetimes.

Despite bringing multiple key changes to value creation processes, circularity is rarely discussed by researchers in terms of how it affects customers' value perceptions—that is, in terms of the outcomes of value creation processes. Although transformed business models and innovative circular offerings entail the emergence of new value-creation logics in suppliers' customer value propositions, according to which value is resurrected, shared, optimized, or replaced (Ranta et al., 2020), few studies have considered customers' viewpoints regarding the value of circular offerings. For example, Aarikka-Stenroos et al. (2021) have explored some value dimensions among business and consumer customers, finding that customers valued the convenient use of circular products and services, emphasized the functional value dimension, and perceived diverse direct and indirect economic gains. Research on how customers experience the CE (Pekorari & Lima, 2021; Ta, Aarikka-Stenroos, & Litovuo, 2022) has suggested that consumers' experiences with circular offerings are dynamic and multidimensional, while B2B customers' experiences are strongly affected by supplier proactivity and well-organized customer service. Studies of CE consumer acceptance (Camacho-Otero, Boks, & Pettersen, 2019; Kuah & Wang, 2020) have found that economic and quality considerations are typically the most critical issues to consumers. In addition, several studies have indicated that customers tend to mistrust circular offerings (e.g., due to fear of low quality and unexpected risks; see Anastasiadis et al., 2022; Tingley, Cooper, & Cullen, 2017), which has negative implications for customer value. These limited and recent studies provide only an initial understanding of how circularity can create value for B2B customers.

2.2. CV and its dimensions in B2B

Because CV is a major concept in the business and marketing literature, its theoretical basis has been established over decades. Conventionally, CV has been conceptualized as either a trade-off between what is received and given (Anderson & Narus, 1998; Zeithaml, 1988) or the perceived contribution to goal achievement (Kleinaltenkamp et al., 2022; Woodruff, 1997). In this article, we adopt the latter definition of value because CV dimensions can reflect the underlying goal systems of B2B customers, including intertwined collective and individual goals (Kleinaltenkamp et al., 2022; Macdonald, Kleinaltenkamp, & Wilson, 2016). Regarding the formation of customers' value perceptions, researchers agree that value is not perceived before a customer uses an offering and that customers participate in value creation together with suppliers (Aarikka-Stenroos & Jaakkola, 2012; Grönroos & Voima, 2013; Woodruff, 1997). This means that customers' actions and capabilities are central to value creation (Macdonald et al., 2016). Moreover, CV is strongly linked with value-in-use and value co-creation by a wide

array of influential studies on value in the industrial context (Aarikka-Stenroos & Jaakkola, 2012; Eggert et al., 2018; Grönroos, 2011; Hansen, Samuelsen, & Silseth, 2008; Li, Peng, Xing, Zhang, & Zhang, 2021; Ulaga & Chacour, 2001).

CV has been widely investigated as a multidimensional construct (Sheth, Newman, & Gross, 1991). The dimensions that constitute CV may vary greatly depending on the context and chosen conceptualization, but each dimension addresses a distinct facet of value perceived by customers (Sweeney & Soutar, 2001; Ulaga, 2003). In the goal-based conceptualization of CV, customer companies and the individuals constituting them pursue multiple goals, each of which is reflected in a distinct value dimension (Kleinaltenkamp et al., 2022). Multiple studies have examined and theorized CV dimensions, mostly in the consumer context (e.g., Rintamäki, Kuusela, & Mitronen, 2007), rarely in the B2B context (only Anderson & Narus, 1998; Ulaga, 2003), and generally in the linear business setting. Table 1 synthesizes the CV dimensions and subdimensions that are widely recognized in the extant literature (albeit under slightly differing names and conceptualizations).

Next, we briefly discuss the established dimensions of CV. First, regarding economic value, there is a dispute as to whether the offering price should be considered part of CV (Anderson & Narus, 1998; Ulaga, 2003). We adopt the negative view: altering the price does not affect CV but does affect a customer's incentive to purchase the offering. Although we regard price as an indicator of CV rather than as a part of it, other possible monetary costs incurred by customers through an offering's use are integral parts of CV. Such costs form the subdimension of indirect cost effects. Cost savings and added costs related to the processes of obtaining, owning, and using an offering, as well as costs related to the consequent changes in customers' other operations and processes, are included in this subdimension (Smith & Colgate, 2007; Ulaga, 2003).

Table 1
Initial CV dimensions recognized by extant literature.

Value dimensions and the underlying customer goals	Value subdimensions	Example studies
Economic value <i>Financial performance goals</i>	Indirect cost effects	Anderson & Narus, 1998 Rintamäki et al., 2007 Ulaga, 2003
	Financial stability effects	Anderson & Narus, 1998 Smith & Colgate, 2007 Sheth et al., 1991 Smith & Colgate, 2007
Functional value <i>Operational performance goals</i>	Offering performance	Ulaga, 2003 Leroi-Werelds, 2019
	Reliability and safety	Sheth et al., 1991 Smith & Colgate, 2007 Lapierre, 2000
Relationship value <i>Learning and capability-building goals</i>	Relationship quality	Plewa et al., 2015 Sheth & Sharma, 1997 Ulaga, 2003 Lapierre, 2000
	Expertise and co-development	Plewa et al., 2015 Ulaga, 2003 Rintamäki et al., 2007
Symbolic value <i>Positioning and branding goals</i>	External brand and image	Sheth et al., 1991 Smith & Colgate, 2007 Plewa et al., 2015
	Emotional impact	Rintamäki et al., 2007 Sweeney & Soutar, 2001

The subdimension of financial stability effects includes the value related to stable, predictable cash flows, risk aversion, and released capital (Anderson & Narus, 1998).

The functional value dimension consists of everything related to an offering's perceived characteristics, quality, and utility. The first subdimension (offering performance) includes an offering's measurable performance qualities, ease of use, customizability, and specific characteristics (Anderson & Narus, 1998; Liu, Leach, & Bernhardt, 2005; Smith & Colgate, 2007). The second subdimension covers reliability and use safety (Ulaga, 2003). Some authors have extended functional value to include the value linked to surrounding supplier relationships and interactions (Rintamäki et al., 2007). However, we adopt the view that functional value is always derived from an offering's characteristics and attributes (Sheth et al., 1991).

The relationship value dimension includes the value resulting from continuous interactions with the supplier and the availability of supplier resources over time (i.e., prospects for collaboration; Lapierre, 2000; Ravald & Grönroos, 1996). The relationship quality subdimension includes perceived supplier relationship dynamics (Liu et al., 2005; Ulaga, 2003) and the ease or fluency of collaborative processes (Plewa et al., 2015; Rintamäki et al., 2007). The expertise and co-development subdimension refers to specific capabilities (e.g., technological capabilities) possessed by suppliers that benefit customers through collaboration, learning, and joint development activities (Plewa et al., 2015; Ulaga, 2003). Notably, relationship value is sometimes conceptualized as a multidimensional higher-order construct and even used as a synonym for customer value (Biggemann & Buttle, 2012; Ulaga & Eggert, 2005). However, we adopt the established alternative conceptualization of relationship value as the part of value that concerns interactions and collaborations with suppliers (Lapierre, 2000; Plewa et al., 2015).

Finally, the symbolic value dimension is value related to B2B customers' external and internal images. The external brand and image subdimension includes the possible benefits and damages of an offering or of a collaboration with a supplier to a customer's own image among various stakeholders (Parasuraman, 1997; Smith & Colgate, 2007). Emotional impact, which is often considered an independent value dimension (Rintamäki et al., 2007), refers to the subjective responses (e.g., feelings of excitement, satisfaction, disappointment, or motivation) of a customer company's personnel related to buying, possessing, or using an offering (Sheth et al., 1991; Smith & Colgate, 2007). In this article, we include emotional impact within the symbolic value dimension due to the subdimension's close dependency on internal branding efforts.

2.3. Initial framework for examining CV in the CE

To establish a theoretical foundation for analyzing circularity-driven CV and to build a conceptual framework of CV in the CE, we developed an initial framework (Fig. 1). Our framework suggests that the shift from linear to circular offerings (based on the 3R principles) not only reshapes the value creation process but may also change B2B customers' CV and thus challenge suppliers' existing understandings of their customers (i.e., suppliers' awareness of the value of their offerings for their customers). The CE is strongly related to the growing prominence of social and environmental goals at the organizational and individual levels (Schroeder et al., 2019), which can be expected to modify CV dimensions in CE settings. Given that existing research on CV dimensions has been conducted in linear economy settings, we assumed that the move toward the CE and circular offerings would entail completely new customer goals and CV dimensions while also affecting conventional CV dimensions. The initial framework allowed us to study the customer perspective on circular offerings in the B2B context using the CV concept and its multiple dimensions.

The framework is derived from the literature. First, it incorporates customer perspective and initial CV dimensions, which are literature-driven and discussed in detail in Section 2.2 (see Table 1 for a

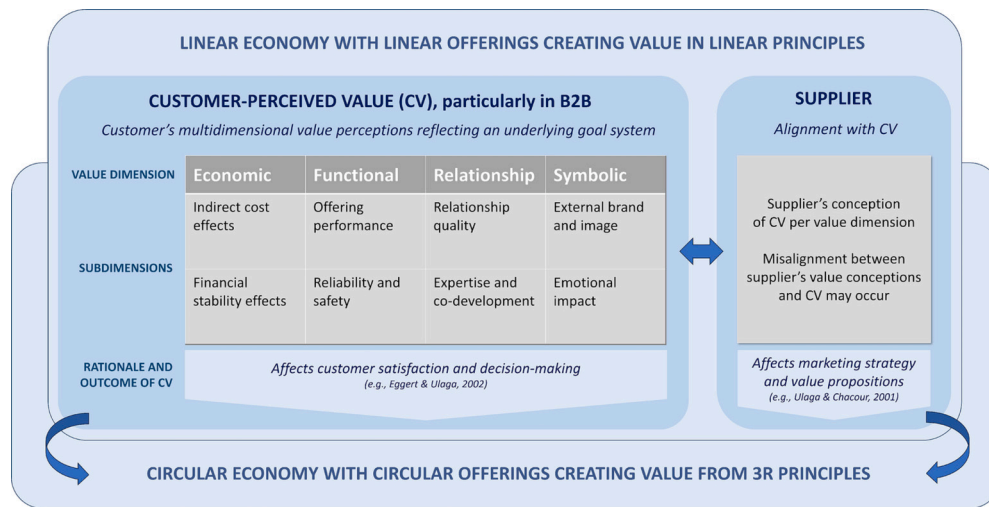


Fig. 1. The initial framework for examining CV in the CE.

summary). Second, the framework considers suppliers' conceptions of CV dimensions by determining suppliers' levels of alignment (see e.g., Corsaro & Snehota, 2011; Ingstrup, Aarikka-Stenroos, & Adlin, 2021) with their customers regarding each CV dimension. In our study, we did not consider alignment in a dichotomous manner, because partial alignment and misalignment can also occur (Ingstrup et al., 2021). Finally, the framework incorporates the rationale and key outcomes of CV from both customers' and suppliers' perspectives: customers' value perceptions affect their satisfaction and decision-making (Eggert & Ulaga, 2002; Ruiz-Martínez, Frasquet, & Gil-Saura, 2019), whereas for suppliers, accurately conceiving and measuring CV is valuable in crafting improved marketing strategies and value propositions (Kumar & Reinartz, 2016; Ulaga & Chacour, 2001). The importance of understanding CV has been identified by various scholars (e.g., Flint et al., 2011) and is implied by the literature, which has established CV as a crucial success factor for companies (Eggert et al., 2018; Woodruff, 1997).

In sum, the initial framework allowed us to address our research questions. First, regarding the dimensions of CV in the CE for B2B customers (RQ1), the framework's four initial theory-driven value dimensions guided our examination and enabled further dimensions of circularity-driven CV to emerge from the data. Second, to develop an understanding of how well customers' and suppliers' conceptions of CV align in the CE in a dyadic, relational setting (RQ2), our framework included a comparison of the customer and supplier perspectives on CV to uncover potential (mis)alignments. Thus, the framework provided the theoretical and analytic grounding for our empirical multiple-case study, whose methods we explain in the following section.

3. Methodology

3.1. Research design and case selection

To develop the understanding of CV in the CE, we adopted an exploratory qualitative multiple-case strategy (Corbin & Strauss, 2014; Eisenhardt, 1989), which enabled an open yet structured examination of what customers value in CE settings and how suppliers conceive CV. Each case was designed around a customer–supplier dyad in which the customer purchased and the supplier delivered an industrial-scale circular offering. We selected 12 case dyads (see Fig. 2) to allow for an in-depth examination of each case while including a variety of B2B customers and circular offerings with underlying reuse- and recycling-based CBMs. Therefore, we could map circularity-driven CV dimensions that are relevant across diverse industries and CE principles.

Case sampling followed multiple purposive sampling criteria to

optimize the external validity of the results (Patton, 1990). We employed a twofold case selection process. In the first stage, we conducted a preliminary search for cases based on websites, online reports, informal discussions with CE business researchers, and previous CBM-related case studies. At this stage, we applied the following sampling criteria: First, we applied the maximum variation criterion to select case dyads that involved both reuse and recycling in different industries to cover diverse circular offerings and underlying CBM types (see Lüdeke-Freund et al., 2018). This enabled us to identify logically generalizable CV patterns in the CE and capture the full spectrum of relevant value dimensions in the CE. Second, we used the criticality criterion to select case dyads in which circular offerings were proven feasible at the industrial scale and had large environmental impacts in environmentally burdensome industries (e.g., energy and construction; Intergovernmental Panel on Climate Change, 2022). Third, to reaffirm criticality and control for unknown geographic and cultural variables, we focused the case selection on the Finnish market, where the CE has increasing relevance (see Finnish Ministry of Environment, 2021).

The first case-selection stage resulted in 27 potential reuse- and recycling-based cases. In the second stage, we introduced a fourth sampling criterion: to meet our research objectives, it was necessary to have direct, fluent, and even confidential access to primary data in each case, not only from the supplier but also from the customer. Therefore, we approached the suppliers of the potential case dyads to confirm the possibility of direct access to their customers. Finally, after applying this final criterion, we made sure that the final set of cases had sufficient variation in terms of reuse- and recycling-based offerings and environmentally critical industries.

The selected 12 case dyads consisting of customers and their suppliers, as displayed in Fig. 2, came from the following five industries: machinery (M), industrial tools (I), construction materials (C), energy (E), and workwear (W).

- In cases M1–M3, the circular offering is a lifetime extension of industrial cranes through modernization and predictive maintenance by a multinational lifting systems provider. Regarding customers, the three cases involve a global stainless steel manufacturer, a global manufacturer of wood-based materials, and a large Finnish ship-building company.
- In case I1, professional-grade tools are provided as a service on a monthly lease by a large multinational tools and systems supplier to a leading elevator and escalator manufacturer.
- In cases C1–C3, a state-of-the-art circular offering of precast concrete element reuse is piloted. A large European solution provider is the supplier, and a Nordic construction company is their customer, along

CASES: 12 customer–supplier dyads with circular offerings from five industries												
CE PRINCIPLE	REUSE						RECYCLING					
Case number & case code	1: M1	2: M2	3: M3	4: I1	5: C1	6: C2	7: C3	8: E1	9: E2	10: E3	11: W1	12: W2
Customer (industry)	Metal	Pulp and paper	Shipbuilding	Elevator	Building contractor	Housing company	Housing company	Food	Logistics	Construction	Retail	Restaurant
Circular offering	Modernizations and predictive maintenance of industrial cranes			Tools-as-a-service for professionals	Reuse of concrete elements			Renewable fuels			Sustainable workwear and its recycling	
Supplier (industry)	Machinery			Industrial tools	Construction materials			Energy			Workwear	
Data of case dyads with the same supplier	4 Customer interviewees 4 Supplier interviewees		1 Customer interviewee 1 Supplier interviewee		8 Customer interviewees 1 Supplier interviewee			4 Customer interviewees 2 Supplier interviewees		3 Customer interviewees 2 Supplier interviewees		
	1 Sustainability report 2 Video presentations 7 Webpages		2 Sustainability reports 4 Webpages		1 Sustainability report 4 Webpages			3 Annual / Sust. reports 1 Video presentation 1 Podcast episode 11 Webpages		2 Sustainability reports 5 Webpages		
Interviewees	Customer per case: M1: Sourcing Manager M2: Buyer, Engineer M3: Maintenance Manager			Customer per case: I1: Production Manager		Customer per case: C1: Business Dev. Manager, Proj. Manager C2: Sustainability Manager, Proj. Manager C3: R&D Manager, Proj. Manager, Engineer, R&D Employee			Customer per case: E1: Logistics Manager E2: Sustainability Director, Business Dev. Manager E3: Business Dev. Director		Customer per case: W1: Sustainability Manager W2: Sustainability Director, Sustainability Expert	
Average interview duration 62 mins	Supplier: Sales Director, Service Director, Service Manager, Sustainability Manager			Supplier: Sales Manager		Supplier: R&D Director			Supplier: Sales Manager		Supplier: Sales Director, Business Dev. Director	

Fig. 2. Cases and empirical data.

with two potential customers (housing providers in Sweden and Finland).

- In cases E1–E3, renewable fuels are supplied by a globally leading company in terms of volume and technology, with well-known Finland-based companies in the food product, logistics, and construction industries as their customers.
- In cases W1 and W2, sustainable workwear and closed-loop recycling services are offered by a pioneering Finnish company. The customers are big chains in the Finnish retail and restaurant industries.

Detailed case descriptions are provided in Appendix A.

3.2. Data collection and analysis

For each case dyad, we collected primary and secondary data (see Fig. 2 for an overview and Appendix B for details). The primary data consisted of semi-structured interviews conducted in Northern Europe in 2021 and 2022. To investigate customers' value perceptions (RQ1), we first conducted interviews with 20 customer interviewees (from the 12 customer companies). The interviewees were typically project, R&D, and sustainability managers; some were buyers or other experts. To examine suppliers' conceptions of customer value (RQ2), we conducted interviews with 10 supplier interviewees (from the five supplier companies), covering all the dyadic cases), with sales, service, R&D, and sustainability directors and managers.

The main criterion for selecting interviewees was expert knowledge of the circular offering and the customer–supplier interface. The interview questions addressed circularity implementation in each company, the role of and experiences with the circular offering, general customer–supplier relationships, and, most importantly, possible sources of and barriers to CV in terms of the circular offerings' sourcing, use, and possession (see the interview guides in Appendix C). All interviews were recorded and transcribed for analysis, and interview memos were written and shared with the interviewees for validation.

To improve the study's quality and reliability, we gathered a wide range of secondary data (Yin, 2018). These data principally included

non-financial reports, company webpages, news articles, and presentation material, all from publicly available sources. Such data helped us clarify which value items and subdimensions were emphasized by the customers in various communication channels and to identify potential supplier misconceptions about CV. The secondary data were used almost exclusively to validate and sharpen the findings from the interview data; no major findings were grounded solely in secondary data.

We employed an abductive analysis process in which extant theoretical literature and empirical data were compared continually to improve and extend conceptualizations of CV in the CE (Dubois & Gadde, 2002). Fig. 3 depicts the research process, whose analytical steps we discuss below.

We conducted a three-stage abductive thematic analysis. This approach allowed us to take full advantage of existing CV research and enabled the explorative development of novel conceptualizations based on case data to be logically generalized (see Dubois & Gadde, 2002; Patton, 1990). In the first stage, we focused on uncovering the composition of circularity-driven CV (RQ1). We first inductively coded the customer-sourced data for each case using qualitative analysis software (Atlas.ti). The codes were based on identifiable value items (e.g., “cost savings from reduced workload” and “meaningfulness”) and other prominent issues possibly related to CV (e.g., “strategy,” “environmental data,” and “regulatory effect”). Approximately 110 codes were derived from the data. The initial value items were then synthesized into second-order value subdimensions and finally into value dimensions, forming a hierarchical data structure (Gioia, Corley, & Hamilton, 2012). The grouping and structuring process included theory- and data-driven insights. Some value items were informed by the initial framework (Fig. 1), which suggested that the empirical data confirmed the validity of the subdimensions acknowledged in the extant literature. At the same time, many novel value items emerged from the data that were unrelated to the extant research on CV. Thus, these items constituted empirically based new value dimensions and extended the literature-driven initial value dimensions with novel subdimensions. These new dimensions and subdimensions accounted for the circularity-driven CV (Table 2).

In the second stage, we investigated the suppliers' alignment with

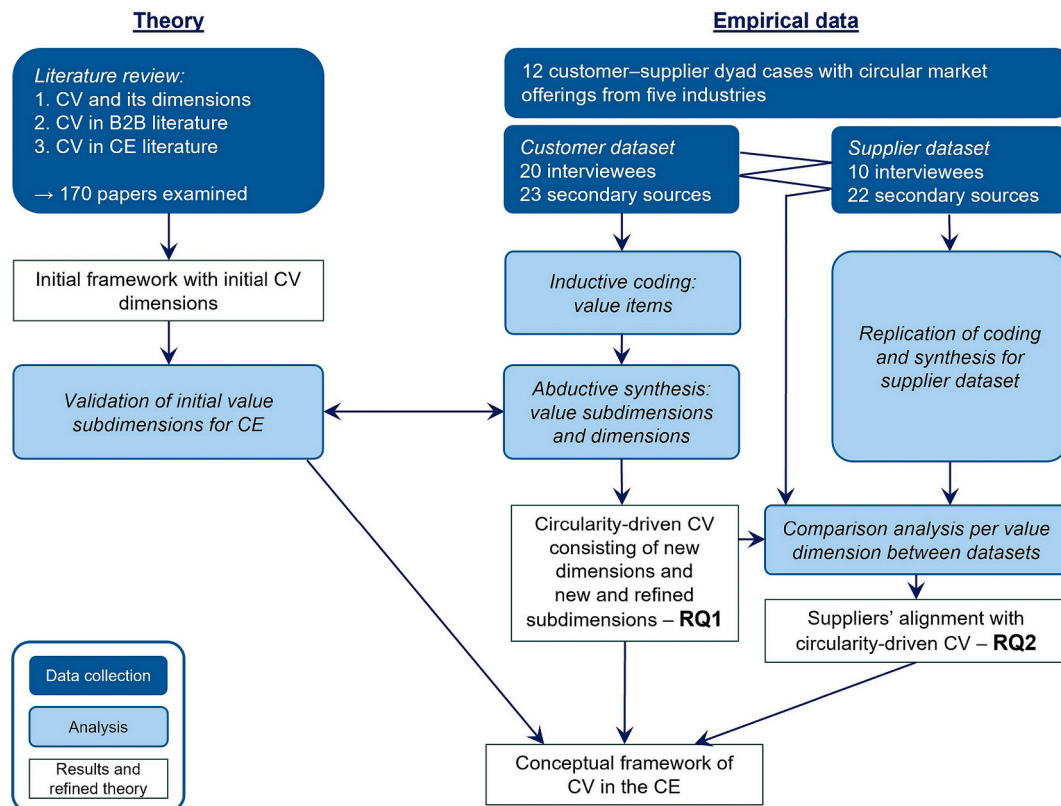


Fig. 3. Research process flowchart.

their customers' value perceptions (RQ2). We repeated the coding procedure from the first stage for the supplier dataset and conducted a qualitative comparison analysis of the customer and supplier datasets for each case and value dimension. When analyzing the suppliers' alignments with their customers' value perceptions, we determined a literature-driven degree of alignment for each value dimension based on the differences in customer and supplier discourses regarding CV themes and their perceived importance. For example, we noticed that although the suppliers acknowledged that their customers perceived the circularity-driven cost savings of their offerings, the suppliers failed to consider that customers may sometimes perceive negative economic impacts from buying products as a service. Therefore, partial misalignment was observed regarding the economic value dimension.

Finally, in the third stage, we synthesized the findings in the form of a conceptual framework of CV in the CE (Fig. 4), which contained all identified potential CV dimensions and subdimensions in the CE from the first analysis stage and our key findings on suppliers' conceptions of those dimensions from the second analysis stage. In practice, the framework was developed by combining the empirically discovered circularity-driven CV dimensions (Table 2) with the initial framework's conventional CV dimensions (Fig. 1), which we confirmed to be common in the CE.

To ensure the quality and robustness of the results, we applied several tactics and types of triangulation. Researcher triangulation was used during the interviews and the analysis rounds to consolidate the interpretations of the data. We validated our interpretations further by writing interview memos and sending them to the interviewees for review and by conducting a follow-up group discussion with customers and suppliers. The group discussion ensured that saturation was reached and that no new value items emerged. Data triangulation was implemented by combining interview data from two different perspectives of the supplier–customer dyads with versatile secondary data, which

allowed us to validate the findings from the interviews. Theory triangulation was based on a comprehensive literature review. The use of software (Atlas.ti) enabled systematic data management, iterative analysis, and re-analysis rounds during the research process. In addition, we constructed and refined several summary tables, issue-specific tables, and matrices to avoid missing any relevant insights. All the research and analytical steps were carefully documented to ensure methodological transparency.

4. Findings

4.1. Circularity-driven CV and its dimensions

The data revealed that circularity-driven CV comprises seven main value dimensions—economic, functional, relationship, identity, ethical, strategic adaptation, and systemic value—and 15 value subdimensions consisting of various value items. Four dimensions—economic, functional, relationship, and identity value—were included in the initial framework (we renamed symbolic value as identity value in the CE). For these four dimensions, we found that the conventionally acknowledged subdimensions were present, but we also encountered new circularity-driven subdimensions. Three new value dimensions emerged from the data and were conceptualized as ethical, strategic adaptation, and systemic value. Each dimension was motivated by distinct underlying customer goals, such as operational performance goals. The novel circularity-driven CV dimensions were motivated by emergent goals, such as environmental performance goals. The findings and an overview of the circularity-driven CV dimensions, subdimensions, and items are provided in Table 2. In addition, the table contains empirical examples from the data. Below, we provide a detailed discussion of each value dimension.

Table 2
Circularity-driven CV dimensions with subdimensions and items.

Value dimensions and underlying customer goals	Value subdimensions	Value items	Data examples
Economic value <i>Short-term financial performance goals</i>	Circular indirect cost effects	Cost savings due to avoided need for virgin purchases	Maintaining a crane is cheaper for the customer than buying a new one (case M2)
		Cost savings due to reduced customer workload	The supplier can take over tasks such as management and bookkeeping of tools from the customer by selling them as a service (I1)
		Optimization-driven cost savings	The customer achieves a reduction in the total number of tools because the latter are sold as a service (I1)
	Revenue increase	Cost effects of logistical changes	Workwear takeback logistics: the customer faces added implementation and operation costs but saves in waste management costs (W2)
		Premium pricing	The customer has established that consumers are ready to pay a premium for a product produced more sustainably (E1)
		Waste valorization	Purchasing renewable fuels inspires the customer to monetize organic waste (E1)
Functional value <i>Operational performance goals</i>	Circular financial stability effects	Production risk mitigation	Modernization and predictive maintenance improve the reliability of production-critical cranes (M3)
		Predictability of cash flows	Tools as a service -model with a fixed monthly price eliminates surprise expenses for the customer (I1)
		Technological fit	Renewable hydrotreated vegetable oil fuel can be used in conventional diesel engines; customer does not need to invest in fleet (E2)
	Customer-specific utility	Operational fit	The customer sees that a takeback logistics service is difficult to implement within their franchising business model (W2)
		Regulatory fit	The customer perceives reuse of precast concrete elements as more difficult due to the increase in required room height from historical 2.8 m to 3.0 m in Finland (C1, C3)
		Value chain fit	The customer faces the issue that some machine suppliers prohibit the use of all bio-based fuels in their engines (E3)
Relationship value <i>Learning, information flow, and capability-building goals</i>	Co-development of circularity	CBM co-implementation	The customer perceives that active joint development of takeback logistics chains leads to flexible solution design and improved performance (W2)
		Supplier-driven innovation	The customer sees that the supplier's position as a highly skilled technology leader enables broader learning and collaboration (M1)
		Transparent and effective dialogue about the offering	Additional information and support available to the customer on request to quickly assuage external or internal stakeholders' doubts (E3)
	Reporting and transparency	Broad and accurate data availability	The customer views even garment-specific emission and resource savings data as highly valuable (for transparency, marketing, internal calculations, etc.) (W2)
		External sustainability brand and image	The customer can better utilize environmental impact data when it is delivered in easily communicable, thought-provoking forms (W2)
		Making sustainable or circular actions visible	The customer uses data on the circular offering in non-financial reporting (various cases)
Identity value <i>Positioning, branding, and self-identification goals</i>	Internal brand and image	Building forerunner status among external stakeholders	Tangible recycled products from takeback processes perceived by the customer as highly valuable for branding purposes (W1)
		Fostering employer image	The customer highlights circular collaboration with supplier as an industry forerunner action (various cases)
		Boosting internal innovation	The customer sources novel circular workwear to make the working environment more attractive (W1)
	Emotional response to circularity	Positive emotions	The customer markets the sourcing of renewable fuels internally to inspire similar initiatives (E1)
		Negative emotions	The customer's offices report increased work meaningfulness upon putting sustainable workwear or similar products to use (W1)
		Scale of environmental impact	The customer feels pride due to piloting concrete element reuse (C2)
Ethical value <i>Moral goals regarding environmental and social performance</i>	Environmental impact	Scope of environmental impact	The customer reports generally excited reception of circular initiatives, particularly when they do not increase costs (E1)
		Scale of social impact	The customer states that changes, particularly those involving new technology (e.g., renewable fuels), often provoke initial skepticism or even mistrust (various cases)
		Scope of social impact	The customer is willing to, for example, recycle workwear or use renewable fuels even if this means losing some profits (various cases)
	Social impact	Scale of environmental impact	In addition to CO ₂ reduction, for instance, resource conservation or reductions in other emissions, such as NO _x , are highly valued by the customer (various cases)
		Scale of social impact	The customer points out that evaluation of supply chain social responsibility has older traditions compared to evaluation of supply chain emissions (M1)
		Scope of social impact	The customer considers the broadest possible responsibility criteria in sourcing (E3)
Strategic adaptation value <i>Strategic goals addressing anticipated changes in the operating environment</i>	Value chain development adaptation	The customer sees sourcing of renewable fuel as crucial to acquiring a green supply chain actor profile, which is considered vital for business continuation in the future (E2)	
	Regulatory development adaptation	The customer has dialogue with key customers about the future introduction of sustainability criteria into sourcing (E3)	
			The customer measures changes in consumers' willingness to pay for sustainability (E1)
			The customer evaluates and compares the price and benefits of implementing circular business now and in the future using regulatory or policy development scenarios, with the aim to avoid costly last-minute changes (various cases)

Table 2 (continued)

Value dimensions and underlying customer goals	Value subdimensions	Value items	Data examples
Systemic value <i>System-level transformation goals covering customers' stakeholders and relevant social institutions</i>	Stakeholder impact		The customer promotes circular collaboration to other suppliers to spark more sustainable initiatives (E1) The customer wishes to use their position as a big industry player to ease the transition for the whole sector by piloting construction element reuse (C2)
	Industry norm development		The customer uses the circular partnership to develop and introduce a new sustainability-based sourcing-criteria standard for the construction industry (E3)

4.1.1. Economic value

We found that circularity-driven economic value involves cost savings due to work reduction and optimization (along with some possible added costs), revenue increases due to the increased value of products and side streams, and financial stability due to lower-risk, more transparent monetary and production flows. When realized sufficiently, economic value enables customers to meet their short-term financial goals while sourcing circular offerings.

Based on our empirical findings, the economic value from savings was largely related to product lifecycle services or servitization. More specifically, the customers found savings by avoiding new purchases as product lifetime was prolonged (reported in cases M1–M3), reducing product numbers (I1), and implementing other optimization-related changes based on circular services, such as workload reduction due to the supplier taking over responsibilities for servitized tools (I1) or decreased maintenance frequency due to the predictive maintenance of cranes (M2 and M3).

There are more and more tools whose usage is so occasional that it does not make financial sense for each mechanic to have their own. As an example, back in the day, every mechanic had their own angle grinder, and nowadays it is typical to have one per six or eight mechanics. (Customer's Production Manager, I1).

The customers also highlighted circularity-bound logistical changes that frequently add costs but can also lead to savings or synergies (W1 and W2). When implementing takeback logistics, it is essential to address the customer's existing processes:

The restaurants can generate savings in waste-management costs due to this [takeback of workwear], but if the costs of delivering the clothes back to the supplier are higher [than managing them as waste], the restaurants won't be motivated to take that action. (Customer's Sustainability Director, W2).

In addition, circular offerings can enable customers to increase their revenues by allowing them to either charge a sustainability premium for existing products (E1) or monetize new materials. Considering the latter, new revenue sources can originate from side streams (e.g., biowaste) that circular offerings can use or refine (E1) or from the resale of reusable products or components, such as concrete elements at the end of their lifecycle (C2).

Finally, the economic value of circular offerings was related to financial stability, as customers perceived there to be substantial benefits in the improved management of financial risks and cash flows. Notably, production-related financial risk mitigation through circular maintenance and modernization services was considered a critical value item for industrial machinery (M1–M3). However, this type of value perception strongly depends on the role of a circular offering in a customer's process. Cranes, for example, are typically considered production-critical items:

Principally, we look at what has to be done to guarantee production security instead of performance considerations. The cranes need to be able to complete their tasks reliably, but they do not really affect

the process or results of the paper-making process. (Customer's Buyer, M2).

Moreover, product servitization increases the predictability of cost streams, either in the form of buying products as services based on a periodic fee (I1) or comprehensive maintenance contracts that eliminate surprise expenses (M1–M3). Product-as-a-service offering also reduces the initial investment required from a customer, which can be particularly important for smaller customers (I1).

4.1.2. Functional value

The findings show that circularity-driven functional value contributing to customers' operational goals originated from a circular offering's fit with a specific customer's business. We conceptualized this novel circularity-driven subdimension, which complements the conventional subdimensions of functional value, as customer-specific utility. Because circular offerings are often innovative and entail product- or process-related changes for customers, the question of how smoothly a circular offering fits each customer's existing infrastructures, processes, customs, business relations, and regulations is crucial. The example of high-technology renewable fuels demonstrates the issue's complexity. Although the fact that such fuels technically fit any conventional diesel motor was crucial to customers, saving them large amounts of money and effort (E1–E3), one customer found that some of their machine manufacturers discontinued maintenance services if any bio-based fuels were used in their motors, which was due to the manufacturers' lack of awareness of this unique technology (E3). In another example, centrally managed (W1) and franchising-based (W2) large customer companies had highly different capabilities in implementing takeback logistics for workwear recycling. The former could use their existing centralized logistics, whereas the latter faced a considerable challenge in searching for a cost-effective solution:

We are a big chain, and we own our logistics organization, which makes it easier to establish the collaboration. ... We're able to centralize the logistics and take advantage of our existing process so that we can effectively and sensibly implement the takeback logistics. (Customer's Sustainability Manager, W1).

We have nearly 300 restaurants all over Finland, and there surely isn't any truck that's going to tour around picking up the clothes, so we would need some local collection points or postal service. But, so far, there has been little discussion of such logistics infrastructure. (Customer's Sustainability Director, W2).

Thus, our results indicate that in addition to the fit with technology, suppliers should always consider whether their circular offerings fit each customer's entire value chain, processes, organizational structures, and regulatory setting.

Moreover, we found that in the CE, functionality is closely linked to sustainability. Customers frequently demanded that certain operational and sustainability performance be achieved simultaneously and without compromise.

When products are made of recycled materials, they can't be any worse in quality than the virgin alternatives. ... Demand for recycled

products took off once the performance rose to an equal level [with virgin products]. But, for that to happen in any product segment, equal or better performance is required. (Customer's Sustainability Manager, W1).

Customers emphasized the importance of product performance not only when product characteristics differed due to the use of recycled or renewable raw materials (W1, W2, and E1), but also when the product was affected by circular services (M1 and I1). This suggests that typically, functional CV is difficult to substitute with, for example, improved environmental performance.

4.1.3. Relationship value

We found that circularity-driven relationship value involves the joint development of circular business and circular offerings and that a transparent flow of data plays a major role by enabling customers to learn from suppliers and build new business capabilities. Customers consider it valuable if a supplier engages them in the optimization of novel circular offerings and openly provides information that customers perceive as useful.

The first novel subdimension of relationship value is the co-development of circularity, which refers to close collaboration between suppliers and customers that extends to the co-innovation of circular products and services, such as practical ways of reusing concrete elements (C1). As a result, customers may achieve a sustainable competitive edge while engaging in the continuous learning of circular practices. This type of value is highly relevant in the CE because the provision of many circular offerings, particularly services such as leasing activities (I1) and takeback logistics (W1 and W2), was found to require continuous interaction and joint planning between customers and suppliers.

In the strategy work, we aim for a supplier scorecard thinking, which means transitioning to long-term supplier relationships and creating mutually beneficial innovations. In this respect, there has been good progress with the supplier in recent years. (Customer's Sourcing Manager, M1).

Consequently, the customers confirmed that suppliers' abilities to create proactive dialogue and establish fluent collaboration processes were highly valuable to them (E3 and W2). For example, customers buying renewable fuels expressed their appreciation of the supplier's effort to proactively pursue discussions on various levels and to establish various channels for customer support (E2 and E3). In addition, the customers considered a supplier's status as a technology leader to contribute to CV because it enabled them to access groundbreaking innovations, such as exceptionally heavyweight cranes (M1) and state-of-the-art tool technology (I1), and receive technological support (M2) in the long run. The customers aimed to build their own CE capabilities by relying on supplier relationships:

As we don't yet consider ourselves experts of the circular economy, we hope that we can get good suggestions from our business partners and that we can unite with the right knowledgeable companies. (Customer's Sustainability Director, W2).

Second, we found that reporting and transparency are crucial in the CE to maintain trust in suppliers and ensure full data-driven benefits from circular offerings to the entire downstream value chain. The customers considered that open dialogue on difficult issues increased a supplier's reliability (M3 and W2). Our findings even suggest that being perceived as reliable may be a prerequisite for a supplier to be perceived as ethically responsible. Across the cases, the customers highlighted the value of broad (e.g., various environmental indicators), accurate (e.g., water saved per recycled garment), and compatible (standardized) data, particularly on environmental impacts. The customers used such data, for example, in branding work to fulfill their own ever-tightening reporting targets and to justify their circular sourcing decisions by

addressing potential doubts about corporate social responsibility in internal and external contexts (E3 and W1).

4.1.4. Identity value

Identity value is the empirically based reconceptualization of symbolic value. This dimension involves external and internal images and emotional responses related to sustainability that enable customers to build coherent internal and external identities. Circular offerings contribute to identity building by making circularity visible and concrete and by internally shaping the mindsets and actions of customer companies. We found that in the CE, external branding efforts are closely interlinked with organizational self-identification, which involves subjective personal emotions related to business circularity and sustainability. The value perceived in this dimension facilitates customers' multilevel aligned positioning and (self-)identification, which can produce branding benefits and a shared organizational vision.

Regarding external identity and branding, we found that while sourcing circular offerings, customers typically (although not always) attributed high importance to sustainability branding. The customers often promoted circular collaboration through formal (non-financial reporting) and informal (ad campaigns) communication, both of which can be facilitated by suppliers providing the right kind of data, materials, and communicational support. Concrete numbers and outcomes were perceived as crucial to maximizing branding benefits (W1, W2, E1, and E3).

In our strategy work, we have emphasized that we want to be a pioneer in infrastructure construction, and climate change is the biggest megatrend in construction guiding our actions. ... We have made a joint publication [with the supplier] for a large audience, with the aim of making clear that we have chosen to be pioneers [by using renewable diesel] even though no one is demanding that from us. (Customer's Business Development Director, E3).

One frequently emphasized customer goal was indeed the image of being a sustainability forerunner. Many customers indicated that pioneer status provided numerous benefits, including a competitive advantage, and thus acted as a key motivator for sourcing circular offerings, such as renewable fuels and sustainable workwear (E1, E3, W1, and W2).

Our brand, growth, and success are nowadays based on our sustainability ambitions. We have set the bar high for ourselves and committed to it publicly. It is extremely important to have these kinds of initiatives to have proof of responsible actions for the consumer interface as well. Competition in this sense is also fierce, and these kinds of collaborations fuel the marketing efforts. (Customer's Sustainability Director, W2).

The customers widely considered the value of sustainability branding and forerunner image in terms of potential revenue increases and a strategic time horizon, hoping to maximally convert sustainability branding into monetary benefits:

We are actively considering how we could even more effectively commercialize the use of renewable diesel and make it visible. The logistics field is very cost-competitive, and with our immense numbers of kilometers driven, even a small price difference does have its effect on the business. If that effect can't be cashed out as brand value, it is something we must consider in strategic decision-making. (Customer's Business Development Manager, E2).

If you wait until the last minute [to make a sustainability transformation], you won't get the brand value and business boost out of it. (Customer's Sustainability Director, W2).

Many customer firms perceived value in using circular offerings for internal branding and marketing purposes. The offerings were used to inspire more sustainability-related innovation by employees (E1) and to

create more attractive and motivating working environments (E2 and W2).

Now that our franchising-entrepreneurs have stored all these clothes in whatever places, it would be great to get to say, “Hey, now we have collected this amount, and this and this much we could save in different resources.” These kinds of small things are very important for us too, also for internal communication and not only external. (Customer's Sustainability Expert, W2).

This leads us to the third subdimension: emotional response to circularity. The customer interviewees reported various highly positive subjective reactions to being able to implement circular and sustainable business collaborations, both personally and as heard from colleagues. The reactions included strong feelings of meaningfulness, pride, and excitement. However, on some occasions, there was mistrust or cynicism, usually when circularity meant carrying out significant changes to operations, as was the case with concrete element reuse (C2). In addition, we detected occasional suspicions about the performance or sustainability of circular offerings (E1 and C2). However, the suppliers could address most of these reactions by proactively providing high-quality information on their offerings.

4.1.5. Ethical value

We found that in the CE, customers consider doing the right thing in the environmental and social senses when making sourcing decisions. The ethical value of circular offerings allows customers to meet their moral goals, which, in the CE, are closely linked to environmental sustainability. The most sustainability-centered customers clearly stated their willingness to spend money on the acquisition of ethical value:

Economic reasons do not always support the decisions, and here, for example [in the takeback of workwear], the burning of clothes could be cheaper than this kind of recycling. On these occasions, we need to have other types of reasons, and they can naturally be found in the sustainability program and its goals. Sometimes, when you want to make an impact, you have to make some sacrifices in economic terms. (Customer's Sustainability Manager, W1).

Sustainability is no longer a separate issue. We have very ambitious targets, and we are taking them into account in everything we do. (Customer's Logistics Manager, E1).

The value dimension consists of environmental and social values and involves considering their scale and scope (the variety of issues impacted). Although all customer companies paid attention to environmental and social justice in sourcing, depending on their strategies and internal incentivizations, the weight of these considerations ranged from minimum legal compliance (M2) to crucial strategic decision criteria (E2 and W2). In general, detailed and broad ethics-related reporting, such as garment-specific recycled content information (W2), was highly valued by customers strategically focused on sustainability.

I do feel that it would clearly have a value if we would get more data regarding this [saving natural resources]. It would also support the general discussion on biodiversity and the sustainable use of natural resources, which are in our and global interests. To obtain an understanding of where we are, we need data. It is currently kind of a high-level flurry, and every input of data can contribute. (Customer's Sustainability Manager, W1).

Lastly, it is worth noting that the customers had different focus areas in their corporate social responsibility strategies, such as emissions, resource conservation, biodiversity, or human rights issues. Thus, the customers had differing information preferences when it came to sustainability reporting.

4.1.6. Strategic adaptation value

The second new value dimension that emerged from the data,

strategic adaptation value, stems from forward-looking customers' desire to proactively adapt to constantly changing operating environments, particularly in their own downstream value chains and regulatory settings. The most relevant anticipated changes concern the growing importance of environmental sustainability. The strategic adaptation value of circular offerings contributes to customers' business feasibility and financial goals in the long run.

First, customer companies turn to their own customers to see or sense whether the latter are willing to pay extra for a more sustainable product, such as food products with a smaller logistics carbon footprint (E1) or refurbished concrete elements (C3). In some cases, the customer companies could verify this immediately, but often, circular offerings were sourced in an anticipatory manner. The companies believed that the profits would gradually increase, as explained by a customer from the construction industry buying renewable fuel:

As an added cost, this is significant, and the clients do not yet value this choice as a bonus in tendering processes. However, we see it as an investment for the future. ... I would say that everything will go smoothly as long as this investment will help us score more contracts in the future. (Customer's Business Development Director, E3).

Second, the customer companies perceived value in the ability to proactively adapt to anticipated regulatory and policy changes by sourcing and employing circular offerings. The customer companies proactively assessed how potential regulation-bound opportunities and risks could be capitalized on or mitigated up to years in advance with the help of circular offerings. In many cases (C3, E1, E3, W1, and W2), staying ahead of regulatory developments was among the customers' main motivations to source circular, sustainable solutions; for example, to avoid being forced to implement costly last-minute changes or face unnecessary future losses.

If you're running behind, and the regulation strikes into effect, you will be in a terrible hurry, and then it is twice as expensive to implement those changes when the panic is on. (Customer's Sustainability Manager, W1).

Our data showed that, by taking advantage of strategic adaptation value, B2B customers could attempt to proactively manage certain developments, such as changes in customers' sourcing criteria in the downstream value chain (E3 and W1), or even attempt to shape future regulation by using circular offerings as references in different communication forums (W1). Furthermore, some customers considered the development of circular supply chains indispensable for maintaining long-term competitiveness (E2).

4.1.7. Systemic value

Finally, systemic value emerged as the third novel value dimension. The customers highlighted the CE as a systemic transition and often referred to their intentions to steer and accelerate industry-wide circular developments. The customers perceived systemic value in circular offerings because such offerings could directly affect the customers' stakeholders, inspire more similar changes, and offer concrete benchmarks, thus facilitating industry-wide or institutional changes. Regarding the underlying goals, the customers often aspired to multiply their positive sustainability impact together with companies and organizations close to them. In practice, the customers pursued this goal, for example, by distributing knowledge of concrete element reuse to the whole sector (C2), writing publications of the sourcing of renewable fuels in an effort to inspire more logistics providers take similar actions (E1), and referring to the circular collaboration in everyday discussions with various stakeholders (W1). In addition to contributing to ethical goals, system-level actions could translate into economic value through new market creation and economies of scale; for instance, through the creation of industry standards and marketplaces for reused concrete elements (C1). Thus, systemic value allows customers to achieve and even scale their sustainability and financial goals by facilitating the

creation of more favorable business ecosystems and operating environments.

First, systemic value was realized in the context of the customers' key stakeholders, typically their own customers or other suppliers, by using circular collaboration to inspire or push them to adopt similarly responsible business actions (E1 and C2):

And another strong motive from the logistics perspective that I see is that I would like this to be an example to our other suppliers. When we write promotional posts about this collaboration, I wish that at least someone from our partners would call and approach me with a sustainability-related idea. So that this would encourage the whole logistics field and show that a change is possible. (Customer's Logistics Manager, E1).

Second, systemic value was realized in a wider industry context, as customers used circular offerings as a tool to drive change in social institutions and create new norms, such as pursuing changes in the standards of construction project tendering (E3). The customers even expected such actions from their suppliers, particularly when a supplier had a leading role in their industry (M1). In general, the sustainability-oriented customers were particularly aware that, with their choices, they were always shaping their business ecosystems:

Considering the circular economy, our fuel supplier's role, and us as a big logistics provider that employs these tools, the implications at the systemic level are interesting. How is us using the renewable diesel taking the energy or oil refining industry in the right direction, and on the other hand, how is it taking the logistics sector and its value chains in the right direction? For the big picture, it would be interesting to understand what positive and negative implications this has. (Customer's Sustainability Director, E2).

Indeed, many customers pointed out the value of networking facilitation and information sharing on the suppliers' part. The customers considered these actions to increase their understanding of their business ecosystems and capabilities to create desired impacts (M1, E1, and W2).

4.2. Suppliers' alignments with customers' circularity-driven value perceptions

In this section, we contrast suppliers' and customers' understandings of each circularity-driven CV dimension to examine whether the suppliers are aligned with their customers. We use Ingstrup et al.'s (2021) four degrees of alignment (full and partial mis/alignment) to describe how well suppliers are aligned with their customers' value perceptions regarding each CV dimension. High alignment means that suppliers discussed CV themes with emphases similar to those of their customers. Partial alignment means that the discussed CV themes were similar but the suppliers emphasized them less than the customers. Partial misalignment means that some CV themes discussed by customers were

not considered by suppliers. Finally, misalignment means that suppliers considered none or almost none of the CV themes discussed by their customers.

A comparative analysis of perspectives showed that the suppliers were aware of the customers' main value perceptions, particularly at the dimension and subdimension levels, which indicates generally good customer understanding. As shown in Table 3, high or partial alignment occurred for the relationship, identity, and strategic adaptation value dimensions. However, some clear misalignments emerged from the data: systemic value was largely neglected by the suppliers, and they struggled to correctly interpret certain aspects, such as the possibility of certain negative value perceptions regarding economic, functional, and ethical value. The observed degrees of alignment, including summaries of how the alignment or misalignment emerged, are provided for all dimensions in Table 3. A more detailed review of each value dimension follows below.

For circularity-driven economic value, the results showed that the suppliers were not inevitably aligned with their customers' perceptions. Although the suppliers recognized the different circular cost effects and their importance for customers, the suppliers overestimated their abilities to communicate the finer aspects of lifecycle costs. As one customer stated,

Often, the argumentation is focused on technical functionality, and the benefits should be highlighted more from a total cost of ownership perspective. Better monetary data would help our decision-making. (Customer's Buyer, M2).

In addition, in one case, the customer was not interested in lifecycle savings because their procurement was incentivized purely by hourly or unit costs (M3). The supplier providing industrial tools as a service also failed to consider the risk of servitization-bound negative economic value perceptions. This risk could materialize if a customer assessed that the leased product was returned well before the end of its useful lifespan (I1). Moreover, when servitizing products, the hidden savings of reduced workloads were sometimes not properly perceived by the customers (I1).

Although the suppliers were very conscious of the conventional aspects of functional value, such as the importance of offering performance, the results revealed some confusion regarding the relevance and implications of the circularity-driven subdimension of functional value, namely, customer-specific utility. The suppliers partially failed to proactively inform themselves about their customers' current business practices, processes, and stakeholders to ensure that their circular offerings would fulfill important decision-making criteria, such as the quickness (C1 and E1) or cost efficiency (E2) of implementing the offering, for each individual customer. The customers often faced tough questions about how circular offerings could be integrated with, for instance, their individual business models:

Table 3
Suppliers' degrees of alignment with customers' value perceptions regarding circular offerings.

Dimensions of circularity-driven CV	Suppliers' degrees of alignment with customers' value perceptions	Emergence of alignment or misalignment
Economic value	Partial misalignment	The suppliers were overconfident of their abilities to communicate lifecycle cost effects of the circular offering or ignorant of customers' decision-making criteria.
Functional value	Partial misalignment	The suppliers were vulnerable to misinterpreting the criticality or exact implications of one or more aspects of the customer-specific fit of the circular offering.
Relationship value	High alignment	The suppliers understood the importance of close collaboration and seamless information flows for the customers.
Identity value	Partial alignment	The suppliers paid less attention to the value items of identity value compared to the customers.
Ethical value	Partial misalignment	The suppliers were challenged by the limited visibility of the customers' decision-making criteria in terms of ethical value. In some cases, they neglected the possibility of negative value perceptions.
Strategic adaptation value	Partial alignment	The suppliers paid less attention to the value items of strategic adaptation value compared to the customers.
Systemic value	Misalignment	The suppliers did not refer to the customers' desires to generate systemic benefits using the circular offering.

We're in the process of figuring out what the process of collecting and sending back individual garments is. Somehow, we should collect them from nearly 300 [franchising] restaurants all over the country and deliver them to the supplier without creating polluting logistical chaos. (Customer's Sustainability Director, W2).

The suppliers did not refer to potential issues related to customer-specific fits with the same priority as their customers when describing the CV.

Regarding relationship value (i.e., the value related to close collaboration and knowledge sharing), the suppliers were well aligned with their customers' value perceptions. However, we found that different types of customers (e.g., the cooperative customer in the W1 case compared to the franchising customer in the W2 case, or the process industry cases M1 and M2 compared to the project industry case M3) of circular offerings required different communication and customer service approaches. According to the data, the suppliers occasionally neglected these nuances.

The suppliers did not fully appreciate identity value and the fact that customers with a stronger focus on sustainability likely expected considerable identity value from circular offerings. Unlike many of their customers, the suppliers did not emphasize that the provision of versatile, detailed, and widely usable sustainability-related data could play a key role in customers' internal branding efforts (E1, E3, and W2). Another issue noted by the customers but not by the suppliers was that external brand value related to sustainability is impermanent, and customers regularly require new kinds of inputs and topics to communicate to their own customers and other stakeholders (W2). According to the data, the suppliers grasped identity value to some extent, but the customer companies generally highlighted it more strongly.

Regarding ethical value, the data suggested that the suppliers had occasional difficulties evaluating the true weight of environmental value in customers' decision-making processes (especially regarding industrial cranes in cases M1–M3). In large industrial customer companies, sustainability values were often first introduced as a high-level vision, then integrated into internal core operations, and finally reflected in the value chain strategies and sourcing decisions (M1–M3). Moreover, when tools were provided as a service, there was a risk of the intended positive environmental CV turning into a negative CV (I1). As with economic value, this risk could materialize if a product was taken back in a fully functioning condition and a sufficiently sustainable reuse scheme or end-of-life treatment was not in place:

One question that comes to mind sometimes is if this [sourcing tools as a service] is the most ecological way to act for all of the equipment. I would dare to suspect that some of the tools end up in their grave before it is necessary. So, I have questioned every once in a while whether it would be better to own some of those tools and to focus more on the critical ones as a service. (Customer's Production Manager, I1).

This issue was not mentioned by the suppliers. Therefore, suppliers should pay greater attention to each customer's usage patterns of servitized products.

The suppliers did not pay sufficient attention to strategic adaptation value, failing to envisage their customers' value chains. Anticipated developments in the business environment played a significant role in the customers' value perceptions, affecting, for instance, their possibilities of allocating the possible added costs of the circular offering to the prices of their own offerings (E1). Overall, the data suggested that the close proximity of a consumer interface in the value chain could increase a customer company's willingness to pay for sustainability. These aspects of strategic adaptation value were partly overlooked by the suppliers and discussed more frequently by the customers (C3, W2, E1, and E3).

Finally, the suppliers did not refer to systemic value, which clearly implies that they struggled to identify the CV related to network

building, matchmaking, and industry-wide development efforts (E2 and W2). According to the data, the customers often sought to work and learn with new business partners and institutions on the sustainability front, which the suppliers did not consider, even though they had the potential to facilitate such efforts (E1, E3, and C2). Furthermore, noticing and contributing to customer aspirations of system-level collaborations can not only increase CV but also deepen business relationships between customers and suppliers in mutually beneficial ways. The results showed that the suppliers largely overlooked these considerations.

5. Discussion

In this study, we examined circularity-driven CV and investigated whether suppliers are aligned with their customers' value perceptions. In this section, we develop a conceptual framework of CV in the CE that integrates empirically confirmed knowledge from the initial framework (Fig. 1) with the novel dimensions and subdimensions of circularity-driven CV (Table 2). Then, we develop six research propositions by considering our empirical findings in relation to the existing literature on CV and CE-oriented B2B research.

5.1. Conceptual framework of CV in the CE

To synthesize our empirical results with the initial framework, we developed a conceptual framework of CV in the CE (Fig. 4). The framework covers all recognized value dimensions that B2B customers perceive in the CE, which facilitates in-depth mapping and communication of the CV of circular offerings. In addition, the framework encompasses our empirical findings on suppliers' understanding of the CV dimensions. Therefore, we address a knowledge gap that extends beyond the CE stream to the larger B2B and CV literature, thus facilitating a better managerial understanding of CV, a crucial aspect for the success of B2B companies (Anderson & Narus, 1998; Flint et al., 2011; Ulaga & Chacour, 2001).

Regarding the framework's economic value dimension, we merged the circular indirect cost effects and circular financial stability effects of the circularity-driven CV with the indirect cost effects and financial stability subdimensions of the initial framework. The revenue increase subdimension stems from circularity-driven CV. The economic cost reduction and flexibility potential of the CE have been recognized in the literature (Ghisellini et al., 2016; Ranta et al., 2020), including in the context of CV (Aarikka-Stenroos et al., 2021; van Boerdonk, Krikke, & Lambrecht, 2021). We emphasize that the CE has greater economic CV potential compared to linear economy settings, with customers frequently discussing economic value in terms of its traditional and circularity-driven aspects. For suppliers, we identified novel risks of partial misalignment in interpreting how customers perceive the life-cycle costs and economic value of servitized products.

For functional value, we added the customer-specific utility subdimension to the subdimensions of the initial framework. Although the complex ecosystem settings warranted by circularity (Engez, Leminen, & Aarikka-Stenroos, 2021) and the varying, often ambiguous, roles of customers (Peronard & Ballantyne, 2019) are well acknowledged in the literature, the importance of ensuring a product's situation-specific suitability for a customer has been neglected by the extant literature. In addition, we found that suppliers are at risk of misevaluating or neglecting the effects of customer-specific characteristics on functional value.

For relationship value, we merged the co-development of circularity subdimension of the circularity-driven CV with the expertise and co-development subdimension of the initial framework. Reporting and transparency were added as a new circularity-driven subdimension. We found that dynamic collaboration and open information exchange were often highlighted by customers in the CE. Although the extant CV literature (Plewa et al., 2015; Ulaga, 2003) recognizes the value of joint

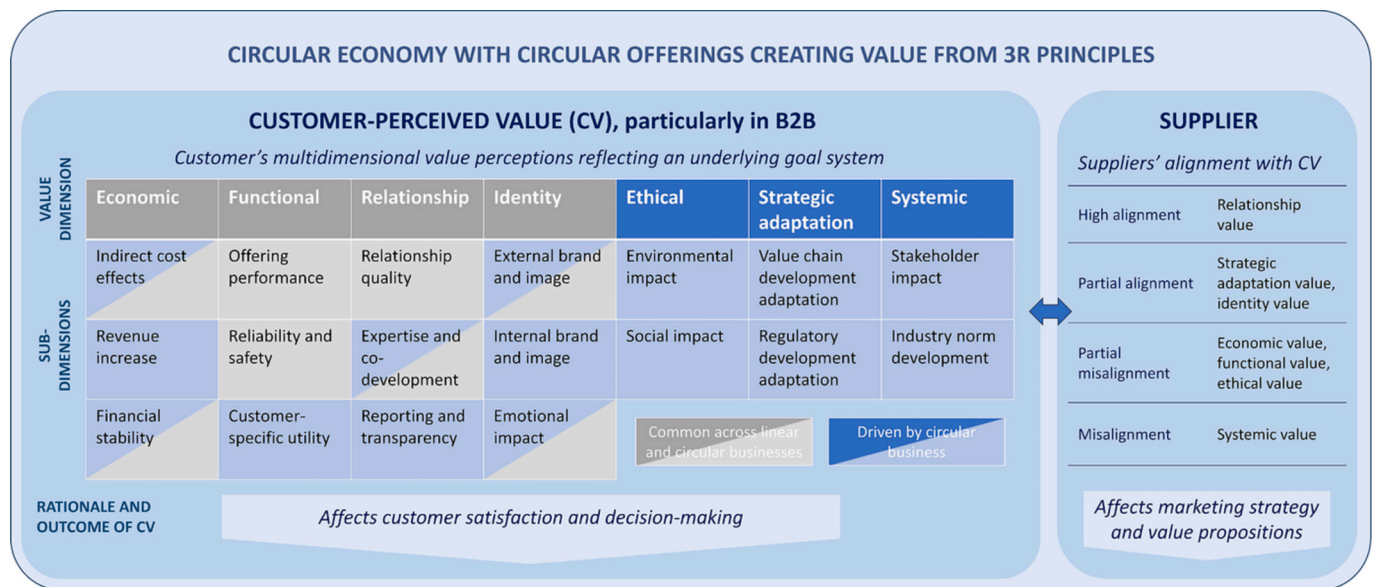


Fig. 4. Conceptual framework of CV in the CE.

development processes and the contributions of specific supplier capabilities to such processes, the CE brings depth to these aspects of value in terms of the complex implementation of new business models and the high demand for innovations and new technology. This happens partly because suppliers take on new roles and form more complex customer relationships in the CE (González-Sánchez et al., 2020; Ranta et al., 2018).

Having reconceptualized symbolic value as identity value, we conclude that customers often leverage circular offerings to brand themselves not only externally but also internally, resulting in the addition of circularity-driven internal brand and image subdimension. Such efforts are often grounded in emotional self-identification. The demand for external brand and image value is clearly boosted in the CE by the need for sustainability branding and the data showed that customers' perceptions of identity value depend, to some extent, on their perceptions of ethical value. In the CE or sustainability contexts (Aarikka-Stenroos et al., 2021), this value dimension was previously identified primarily in consumer markets and conceptualized as symbolic value (see Aarikka-Stenroos, Welanthantri, & Ranta, 2021; de Moraes, Pinto, & Cruz-Jesus, 2021). To the best of our knowledge, symbolic value has not previously been framed through the identity lens.

Although ethical (and particularly environmental) value is a key driver of the CE, it has not been conceptualized as an explicit value dimension from the customer perspective due to a scarcity of research. In the few CV studies in the CE context addressing B2B markets, van Boerdonk et al. (2021) employed the concept of environmental value, and Aarikka-Stenroos et al. (2021) classified it as part of emotional value. Our conceptual framework establishes ethical value as an integral CV dimension in the CE. We found that, in the CE, business customers frequently considered environmental and social responsibility to directly produce noticeable value and that suppliers face risks of developing misaligned conceptions of this dimension, particularly due to difficulties in determining the weight of environmental value in customers' decision-making processes.

Strategic adaptation value, which we conceptualized as a novel dimension of the CE, is well aligned with extant research because strategic long-term planning is a characteristic value creation determinant of the CE (Kaipainen & Aarikka-Stenroos, 2022). Moreover, the importance of customers' future-oriented considerations has long been acknowledged (Lemon, White, & Winer, 2002). This customer

orientation to assess value in relation to long-term goals connected to changes in the business environment can have significant implications for suppliers. However, we found that suppliers do not pay sufficient attention to this CV dimension. For CV and CE-oriented B2B research streams, strategic adaptation value constitutes a largely novel perspective on value.

To conclude with systemic value, this study showed that ambitious customer companies engage in circular business to be part of and manage ecosystem-level changes, seeking positive impacts beyond their immediate businesses. We found that suppliers often failed to consider this value dimension, which led to misalignment. Surprisingly, although complexity in ecosystems and value chains has been acknowledged as a powerful characteristic of the CE (Fehrer & Wieland, 2021; Parida, Burström, Visnjic, & Wincent, 2019), systemic value has not been discussed as part of CV. However, systemic value co-creation has been identified in the B2B literature (Aarikka-Stenroos & Ritala, 2017). Thus, although systemic CV likely exists in multiple B2B contexts, the systemic characteristics of the CE may make it more explicit in the CE than in the linear economy.

5.2. Propositions for an in-depth understanding of CV in the CE

We developed six research propositions to further explain and theorize CV in the CE, particularly in the B2B context. According to Ulaga, Kleinaltenkamp, Kashyap, and Eggert (2021) guidelines for research proposition development, these propositions can help deepen our theoretical understanding of CV in the CE, explain the connections between the literature and our novel findings and concepts, and support researchers and managers alike by highlighting the most significant insights into CV. Propositions 1–3 explore the connections between the identified CV dimensions: Proposition 1 highlights the most prominent dependencies between the dimensions, while Propositions 2 and 3 identify key connecting themes by which circularity-driven CV expands and modifies the previous understanding of CV. In Propositions 4–6, we focus on those CV dimensions that the suppliers tended to overlook and highlight our key findings regarding how the CE shapes these dimensions.

Our findings showed that ethical value had strong connections to and some influence over various other value dimensions, namely identity, strategic adaptation, and systemic value. Our results demonstrate that

for circular offerings, both the brand-building and internal responses that constitute identity value typically lean heavily on a perceived increase in environmental sustainability. Similarly, strategic adaptation principally happened due to anticipated changes in the requirements for environmental sustainability, while systemic value was perceived in connection to scaling up the customer's sustainability impact. Our findings are in line with multiple prior studies showing that value dimensions are typically interrelated (e.g., Aarikka-Stenroos et al., 2021; Sweeney & Soutar, 2001; Zeithaml et al., 2020), and we build on these studies by identifying important relationships between value dimensions in the CE. Our study suggests that customers' ethical value perceptions, which have been understudied, play an important role in relation to other CV dimensions. With this in mind, we developed the following proposition:

Proposition 1. The perceived importance of ethical value, particularly of the environmental value subdimension, steers B2B customers' perceptions of identity, strategic adaptation, and systemic value.

We found that, in the CE, B2B customers can aim for monetary benefits by emphasizing different time-bound value dimensions. We identified several short- and long-term benefits stemming from savings, added revenue, and financial risk mitigation, which customers perceived in relation not only to the economic value dimension but also to other value dimensions involving monetary considerations. First, indirect cost and stability effects are typically present from the purchase onward (Anderson & Narus, 1998; Ulaga, 2003) as customers' costs may decrease due to resource optimization, their revenues may grow (e.g., due to waste monetization), and their risk of facing surprise expenses may drop. Second, we found that in the CE, customers hope to turn the added brand capital into increased revenues in the short to medium term. Customers believe that their decisions (e.g., to source renewable fuels or sustainable workwear) should pay back in time as they become a more sustainable and more attractive choice for their own customers. Finally, in the CE, customers proactively strive to mitigate anticipated long-term financial risks caused by sustainability-related changes (e.g., sudden changes in regulations or changing market demand) by sourcing circular offerings to secure future profits. As companies are guided by an institutional logic of making profit (see Ingstrup et al., 2021), it is crucial to analyze B2B customers' economic rationale to engage in the CE because this can improve profitability and ensure the feasibility of circular business (see e.g., Ingstrup et al., 2021; Ranta et al., 2018) through the co-existence of environmental and economic sustainability. Therefore, our findings are an important contribution to the vivid discussion on how circular business can efficiently contribute to both economic and environmental sustainability (Gandolfo & Lupi, 2021; Ghisellini et al., 2016; Kaipainen & Aarikka-Stenroos, 2022). Thus, we propose that customers of circular offerings perceive monetary benefits related to the CE across three time horizons: short term, medium term, and long term.

Proposition 2. In the CE, B2B customers pursue monetary benefits through (1) short-term cost and revenue optimization and financial stabilization (economic value), (2) short- and medium-term cash-out of increased sustainability brand value (economic and identity value), and (3) long-term proactive anticipation of external developments (strategic adaptation value).

We found that in the CE, customers widely engage in system-level considerations of their individual sourcing decisions. They seek clarity on how their business environments and their future developments can affect the risks and benefits associated with their procurements (strategic adaptation value) and how these procurements, in turn, can nudge the surrounding systems in desirable directions (systemic value). Therefore, we can confirm that at the customer level, companies' decision-making in the CE is often influenced by broader considerations, such as system-level goals (Aarikka-Stenroos & Ritala, 2017) and policy

developments (Wasserbauer, Sakao, & Milios, 2022). These broadened perspectives on CV have significant implications for both researchers and industrial suppliers' managers, which motivated our third proposition:

Proposition 3. In CE settings, B2B customers consider the time horizon (strategic adaptation value) and the sphere of influence (systemic value) of their procurement decisions more broadly than in linear settings.

Our results regarding the suppliers' CV conceptions indicated that much of the identified misalignment was linked to the far-reaching contextual aspects of CV. Most strikingly, no supplier referred to systemic value, although their customers frequently considered it. In addition, some misalignment was observed regarding how the offerings affected the customers' ethical and long-term economic value perceptions, such as the perceived environmental and economic sustainability of products sold as services. This indicates that suppliers focus excessively on their solutions' immediate effects on customers' businesses instead of the wider impact potential, which runs contrary to the need to convey a broad value spectrum to B2B customers (Aarikka-Stenroos et al., 2022). Thus, to some extent, suppliers fail to see their customers' strategic motives for buying circular offerings and fail to acknowledge that these motives arise from value-chain and system-transition thinking.

Proposition 4. Suppliers of circular offerings emphasize short-term product-focused thinking, failing to fully grasp the strategic customer implications caused by the impact of the offerings on value-creating systems (systemic and strategic adaptation value).

We found that across the studied cases and industries, all customers confirmed that taking care of the environment was intrinsically important to their company. However, the extent to which environmental value guided customers' sourcing decisions in practice varied drastically, and we found that the suppliers sometimes found this difficult to decipher. This variation can be influenced by, for instance, company values (Mustonen, Karjaluoto, & Jayawardhena, 2016), the role of a circular offering in a customer's business, and incentivization systems (Pagell & Wu, 2009). Nevertheless, we consider it important to highlight this finding given the lack of prior research on the environmental value perceptions of B2B customers. Therefore, we propose that suppliers of circular offerings should always consider environmental value as a potential source of CV.

Proposition 5. In the CE, B2B customers generally perceive environmental value, albeit to varying degrees.

Finally, our results underline the importance of perceived product performance for CV. Regardless of the industry, the customers in this study emphasized that a circular product's performance in its core task (functional value) should never be inferior to that of conventional alternatives. For example, any perceived sacrifice in the comparable quality of renewable fuel or sustainable workwear would entail a considerable reduction in demand according to the customers. To guarantee the recognition of high product performance, suppliers must not only ensure high quality but also engage in proactive and fact-based communication. Our results support earlier research arguing that customers' and stakeholders' doubts about circular products' performance can be a barrier to CBM success (Kaipainen & Aarikka-Stenroos, 2022). Therefore, our final proposition aims to remind suppliers of innovative circular offerings of the fact that functional value remains largely non-substitutable, regardless of the other possible benefits of the circular offerings.

Proposition 6. Functional value is critical to CV whenever circularity may affect product characteristics.

6. Conclusions

6.1. Theoretical contributions

This concept-developing study improves our understanding of multidimensional CV in the CE in B2B settings. We adopted an empirical customer-oriented approach to complement formerly supplier-dominated circular business research, generating novel insights into the CV dimensions of circular offerings. Our dyadic research design, which examined customers' value perceptions and their suppliers' alignment with these perceptions, sheds light on how B2B customers and suppliers see and assess the CV of circular offerings in markets undergoing the sustainability and circularity transition. These findings provide a more profound and nuanced understanding of CV in the CE in the B2B context. Our key contributions are as follows: a thorough conceptualization of circularity-driven CV with seven value dimensions (Table 2), an analysis of suppliers' alignments with customers' value perceptions regarding the CV dimensions (Table 3), a conceptual framework of CV in the CE in the B2B context (Fig. 4), and six research propositions (Section 5.2). These contributions are specifically addressed to CE-oriented B2B and CV research streams, as we discuss below.

First, as the first empirical study of B2B customers to analyze the CV of circular offerings, our work provides a much-needed customer orientation to B2B research on CE. This is an important contribution because prior B2B research on the CE was limited to the supplier perspective in proposing, creating, and delivering value via CBMs and in forming circular value chains (Aarikka-Stenroos et al., 2022; Närvänen, Mattila, Keränen, Kaivonen, & Nurminen, 2022; Ranta et al., 2020; Spring & Araujo, 2017).

Second, our detailed analysis of how CE affects conventional CV dimensions and creates new ones contributes to CV research, particularly in the B2B setting, which has been limited to examining the CV and its dimensions in the linear economy (e.g., Eggert et al., 2018; Ulaga, 2003). By analyzing CV in terms of customers' goals, our analysis shows how the identified value dimensions create value for customers. Our study reveals that B2B customers' value perceptions are increasingly influenced by environmental and social goals, in accordance with prior research on CE (Schroeder et al., 2019). Our findings consolidate previous research arguing that CV dimensions are motivated by customers' underlying goal systems (Kleinaltenkamp et al., 2022; Woodruff, 1997).

Our study identified seven value dimensions that constitute CV in the CE. Although some of them were already known in extant CV dimension research (e.g., Anderson & Narus, 1998; Smith & Colgate, 2007), our study showed that in the CE, value dimensions can acquire new sub-dimensions (economic, functional, and relationship value) or be transformed (symbolic value becoming identity value). Importantly, we found that in the CE, entirely new CV dimensions can emerge (ethical, strategic adaptation, and systemic value). These findings are significant contributions to the extant discussions on CV dimensions (e.g., Anderson & Narus, 1998; Plewa et al., 2015; Rintamäki et al., 2007), providing much-needed insights into how sustainability and the CE reshape what customers perceive to be valuable. For example, the identified novel dimensions of CV in the CE (ethical, strategic adaptation, and systemic value) reflect system-level thinking and a long-term time horizon in customers' value perceptions and encourage strategic considerations of customers' businesses when designing circular market offerings. This study also uncovered interesting interconnections between the value dimensions; for example, customers' perceptions of ethical value may steer their perceptions of several other value dimensions.

Another key contribution to CV research comes from our dyadic study design, which allowed us to analyze suppliers' abilities to understand their customers' value perceptions by comparing interview data

from customers and their suppliers. This approach and our insights into suppliers' (mis)alignments with their customers, together with related studies on suppliers' and customers' value perceptions (Mustak, 2019; Songailiene et al., 2011), can help CV researchers examine suppliers' capabilities to understand their customers. Our findings revealed that suppliers' conceptions of various CV dimensions were either partially or fully misaligned with their customers' value perceptions of circular market offerings. The implication is that in the CE, in certain situations, suppliers do not fully understand their customers and what is valuable to them and why. These insights are connected to prior CV research, which contends that a seller's ability to understand their customers' value perceptions is crucial to the development and communication of effective value propositions (Storbacka & Nenonen, 2011), increases customer satisfaction and loyalty (Flint et al., 2011), and is key to business success (Aarikka-Stenroos & Jaakkola, 2012; Woodruff, 1997). Our study showed that in the CE, suppliers need to develop new understandings, particularly of their customers' long-term strategic and systemic goals and the ways in which customers integrate economic and ethical value perceptions into their decision-making.

Finally, our findings provide a novel customer-oriented angle to CE business and CBM-oriented sustainability research (e.g., Bocken et al., 2016; Kristensen & Remmen, 2019; Lüdeke-Freund et al., 2018; Nußholz, 2017). We add a customer perspective to reuse- and recycling-based circular offerings, improving our understanding of the respective CBMs. In particular, our study shows that in the CE, B2B customers gain various short- and long-term monetary benefits through savings, revenues, and financial risk mitigation (as depicted in Proposition 2); this is an important contribution to the discussion on the economic feasibility of CBMs and whether economic and environmental sustainability can co-exist in the CE (see e.g., Schögl, Stumpf, & Baumgartner, 2020). Finally, although we initially aimed to differentiate the CV of reuse- and recycling-based circular offerings, we found no significant differences based on this division.

6.2. Managerial contributions

This study provides multiple managerial insights for industrial suppliers and customers. Supplier companies with circular offerings should carefully identify the different kinds of value that their offerings can create, along with new value creation opportunities (Propositions 3 and 5). Our table of circularity-driven CV dimensions (Table 2) and conceptual framework (Fig. 4) reveal the value dimensions, subdimensions, and value items of CV in the CE and can be used as managerial tools to identify and map the CV of a circular offering.

Our mapping of CV can guide suppliers in becoming aware of the full spectrum of the customer value of their offerings, as well as of the potential interconnections between the CV dimensions (Proposition 1). The detailed presentations of the diverse value dimensions and items (Table 2 and Fig. 4) can help suppliers communicate and explain to their B2B customers in detail what the customers can gain by choosing circular offerings. Importantly, as profitability is a major concern of companies during the transition to the CE, our findings can help suppliers better argue the various short-, medium- and long-term monetary benefits of circular offerings (Proposition 2). Work on value propositions based on our findings can generate numerous customer-oriented selling points, which can be used in sales presentations and web sites to strengthen sales and commercialization of circular offerings.

Furthermore, supplier companies that want to ensure the success of their CE businesses can pursue customer-oriented approaches by using Fig. 4 as a managerial tool because it depicts multiple value dimensions and items that customers perceive as important. Using this tool, suppliers can internalize customer perspectives when developing novel circular offerings, harnessing CBMs, renewing their value propositions,

and consequently refining their marketing strategies to communicate value to their customers. For example, customization can be added to products to achieve a better customer-specific fit, and the environmental benefits of a circular offering compared to conventional alternatives can be emphasized by using more detailed datasets in marketing the offering.

Moreover, suppliers should reflect on the identified typical areas of misalignment in CV conceptions (Table 3 and Proposition 4) to improve their customer understandings and ensure that they do not ignore or neglect aspects that customers perceive to be valuable, such as system-level value considerations. Managers are encouraged to take note of the discussed issues that may undermine CV and that require attention from suppliers, such as the accuracy and clarity of the communication of lifecycle costs and savings, considerations of customers' entire business ecosystems, knowledge of customers' real decision-making criteria at the procurement level, and the CV implications of the utilization rates of the products sold as services.

Customer companies can also benefit from our findings. Customers can use our value dimension categorization (Table 2 and Fig. 4) to analyze their own value perceptions in more detail. They can use this information in sourcing to ensure the selection of suppliers and offerings with the greatest benefits. In practice, customer companies can, for example, weigh the various identified value dimensions and sub-dimensions against the company strategy and subsequently evaluate suppliers based on these criteria. Finally, customers should take advantage of our study to improve and standardize their value-related discourses at all organizational levels, thus improving decision-making and motivating personnel by making company values more explicit. Managers should pay attention to improved communications of, for

example, the value dimensions that a company seeks to attain and provide, as well as of their underlying goals and motivations.

6.3. Limitations and future research

We acknowledge that this study has several limitations. First, the results are based on our interpretations of the qualitative data, and different interpretations may exist. However, researcher triangulation and participant validation supported interpretation validity. Second, the purposefully chosen sample consisted of a limited number of circular products and services, which could have created bias. However, these concerns were mitigated by our careful case identification process and multiple purposeful sampling criteria. As the case setting included various industries and circular offerings realized through reuse- and recycling-based CBMs, we believe that the proposed framework is logically generalizable to various CE businesses (Patton, 1990). Finally, this study was conducted in Northern Europe and may contain cultural and institutional bias; thus, other cultural and institutional contexts for CV in the CE may yield different answers.

Given that this concept-developing study is the first initiative to establish a profound understanding of CV in the CE in the B2B context, it suggests multiple directions for future research, as shown in Table 4.

This study discussed the importance of CV to B2B businesses and began filling a knowledge gap regarding CV in the CE. As a profound understanding of CV is crucial to business success in the global economy's transition from a linear to a circular paradigm, we hope that our study inspires scholars to continue developing knowledge on this topic.

Table 4
Future research avenues for developing an understanding of CV and its creation in the CE.

Main themes for future research	Suggested research questions, topics, and designs
	<p>What value dimensions are most important in customers' decision-making? <i>Case and interview studies, experiments, and/or action research on customer decision-making.</i> Focused studies on newly identified value dimensions to deepen our understanding of them. Some dimensions, particularly systemic value, should be examined in complex B2B contexts outside the CE. <i>Interview-based or multiple-case studies on value dimensions.</i></p>
Circularity-driven CV and its multiple dimensions	<p>How do different value dimensions interconnect and co-exist? What are the most significant interdependencies between value dimensions? <i>Interview- and case-based studies of suppliers, their customers, and/or supplier–customer dyads; survey studies for testing the qualitatively explored interdependencies.</i> Validation of the framework for CV in the CE, from theory-developing explorations to statistic generalizability. <i>Studies with quantitative designs and large empirical samples.</i> How is CV perceived in different circular strategies and CBMs? <i>Studies comparing the CVs of specific circular offerings.</i></p>
CV in the CE in different business settings	<p>How do different industry sectors shape CV in the CE? What are industry-specific value dimensions (e.g., CV in project business in the construction sector; in process business in the chemical, forestry, and other industries; and in product business in manufacturing or textile industry)? <i>Cross-sector comparative case studies or surveys.</i> How do diverse global contexts with different institutional settings for CE (see Ranta et al., 2018) shape CV? <i>Cross-country and cross-continent comparative studies or surveys.</i> How does a customer's sustainability strategy affect CV in the CE? <i>Multiple-case study or survey involving customers with differing sustainability orientations.</i> How do other sustainability-oriented contexts, such as low-carbon business, shape CV? <i>Exploration and comparison of contexts through case studies.</i></p>
Relational activities between suppliers and customers to improve CV in the CE	<p>How can suppliers and their customers jointly develop CV in the CE? What are the tools, processes, practices, and methods for developing technologies, products, and services that create optimal customer value? <i>Dyadic supplier–customer case-study settings; action research involving suppliers and customers.</i> How do supplier companies develop and redesign their CBMs to create optimal CV in CE? How can supplier companies create value propositions, sales argumentation, and marketing communications about their circular offerings that would resonate with customers and their value perceptions?</p>
Becoming a well-performing and competitive supplier in the CE via CV	<p>How do supplier companies develop their customer understanding in the CE? What areas of customer understanding contribute to suppliers' capabilities to provide optimal CV in the CE? <i>Dyadic supplier–customer case-study settings; action research involving suppliers and customers.</i> What are the strategic implications of changes in CV by the CE for supplier companies? <i>Process-based case-study research capturing the long-term changes in companies and in CV.</i> How do societal changes, trends, and evolving institutions (regulations and industry norms and awareness) shape CV (e.g., the growing importance of ethical value)? <i>(Processual) studies that extend from company-level analysis to explore system-level impacts on CV using multi-actor-based data.</i></p>
Systemic change fueling CV in the CE	

CRedit authorship contribution statement

Mikko Sairanen: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Software, Validation, Visualization, Writing – original draft, Writing – review & editing. **Leena Aarikka-Stenroos:** Conceptualization, Formal analysis, Funding acquisition, Investigation, Methodology, Validation, Visualization, Writing – original draft, Writing – review & editing. **Jenni Kaipainen:** Conceptualization, Investigation, Methodology, Validation, Visualization, Writing – original draft, Writing – review & editing.

Declaration of competing interest

None.

Appendix A. Case descriptions

Case code	Customer	Suppliers and circular offerings	Case setting and characteristics
M1	A stainless steel manufacturer; operates in about 30 countries; revenue €5–10 billion (2021)	This supplier is a global giant in the lifting industry and manufactures and provides industrial cranes, other lifting equipment, and related solutions. They operate globally, with revenues of €1–5 billion (2020). Their circular offering consists of modernization and predictive maintenance of industrial cranes for lifetime extensions (underlying CE principle: reuse).	The customer has hundreds of suppliers' cranes in use, and their business relationship is decades old. The customer has insourced the maintenance of cranes, but they continuously order modernization projects from the supplier. The case involves the process industry. The customer has used the case supplier as their primary crane supplier on European sites for a long time. In this case, the research focused on a mill located in southern Finland, with several dozens of the supplier's machines and a broad service contract covering predictive maintenance and modernization. The case involves the process industry.
M2	Wood-based materials manufacturer; operates globally; revenue €5–10 billion (2021)		The customer uses hundreds of the supplier's cranes, broadly serviced by the supplier, at a shipyard. The case involves the project industry.
M3	Shipbuilding company; operates in Finland; revenue €1–5 billion (2021)	This supplier is a large and well-known manufacturer and provider of industrial, professional-grade systems and related services for the construction, energy, and manufacturing industries. They operate globally, with revenues of €5–10 billion (2021). Their circular offering is a product-as-a-service offering to lease industrial tools for a fixed period with a monthly fee that covers all repairs, other service costs, and insurance for theft. At the end of the lease, the supplier aims to use the leftover potential of the recovered tools by offering contract extensions, reusing spare parts, or organizing donations. When no such opportunities exist, the tools are sent to authorized recycling partners (underlying CE principle: reuse with related recycling).	
I1	Elevator and escalator company; operates globally; revenue > €10 billion (2021)		The customer procures a selection of tools required for installation and construction work as a service from the supplier. The customer has used their tools-as-a-service offering for many years, resulting in well-established business practices and an active dialogue between the two firms.
C1	Building contractor; operates in approximately 10 countries; revenue > €10 billion (2021)	This supplier is a Finnish concrete element manufacturer and is owned by a leading European consortium that manufactures precast concrete products. The consortium operates widely in Europe, with revenues of €1–5 billion (2021). They pilot precast concrete element reuse in the building sector by remanufacturing and refurbishing used elements deconstructed intact to be resold and reused (underlying CE principle: reuse).	The supplier collaborates with the building contractor to pilot the reuse of precast concrete elements. The building contractor provides a donor project, and the supplier remanufactures the old elements to be used again by the customer.
C2	Public housing company; operates in Sweden; revenue unknown		The public housing company currently does not have a direct business relationship with the supplier, but they share a strong interest and a joint research project to introduce reused concrete elements in their buildings as soon as possible, thus offering fertile grounds for CV research.
C3	Private housing company; operates in Finland; revenue €0.1–1.0 billion (2020)		The private housing company does not currently have a direct business relationship with the supplier, but they share a strong interest in introducing reused concrete elements in their buildings as soon as possible, thus offering fertile grounds for CV research.
E1	Family-owned food industry company; operates in approximately 10 countries; revenue €0.1–1.0 billion (2021)	This supplier is a well-known, leading renewable fuel company that manufactures low-emission renewable diesel, aviation fuels, fuel oil, and renewable plastics	The customer uses renewable diesel in closed-area internal logistics in collaboration with their logistics provider.

(continued on next page)

Data availability

The data that has been used is confidential.

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(continued)

Case code	Customer	Suppliers and circular offerings	Case setting and characteristics
E2	Postal and logistics service provider; operates in about 10 countries; revenue €1–5 billion (2021)	using state-of-the-art technology. They operate in approximately 15 countries, with revenues of > €10 billion (2021). Their circular offering is renewable, low-emission diesel and fuel oil produced from waste, residues, and other bio-based oils (underlying CE principle: recycling).	The customer has been collaborating with the supplier for many years, but the renewable fuels were introduced into their fleet in 2020 and are currently used in almost all of the customer's parcel distribution vehicles. Since 2021, the customer has used the supplier's renewable diesel for their cars and renewable fuel oil for their heavy construction machinery.
E3	Infrastructure construction company; operates in Finland and part of a global corporation with operations in several countries (2021); revenue €0.1–1 billion	This supplier is a Finnish provider of sustainable workwear. Their production operations take place in several countries, and they have revenues of < €0.1 billion (2021). They manufacture B2B workwear using recycled, leftover, and innovative renewable materials and offer a takeback service for the mechanical recycling of used workwear (underlying CE principle: recycling).	The customer is collecting and delivering used workwear for recycling in their restaurant and hotel business areas within the supplier's take-back system. The customer switched to this supplier's products in 2020 and since then has been collecting and delivering old restaurant workwear for recycling within the supplier's take-back system.
W1	Cooperative retail company; operates in Finland; revenue €5–10 billion (2021)		
W2	Franchising restaurant chain; operates in Finland; revenue €0.1–1.0 billion (2021)		

Appendix B. Case-specific datasets

Case code	Number of interviews per case dyad	Pieces of secondary data per case dyad, including reports, presentations, web sources, etc.	Interviewees: Customers	Pieces of secondary data: Customers	Interviewees: Suppliers	Pieces of secondary data: Suppliers
M1	3	8	1: sourcing manager	2	4: sales director, service director, service manager, sustainability manager	6
M2	4	7	2: buyer, engineer	1		
M3	3	7	1: maintenance manager	1		
I1	2	6	1: production manager	3	1: sales manager	3
C1	3	3	2: business development manager, project manager	1		
C2	2	3	2: sustainability manager, project manager	2	1: R&D director	2
C3	2	2	4: R&D manager, project manager, engineer, R&D employee	0		
E1	2	10	1: logistics manager	3		
E2	2	11	2: sustainability director, business development manager	4	1: sales manager	7
E3	2	9	1: business development director	2		
W1	2	5	1: sustainability manager	2	2: sales director, business development director	3
W2	2	5	2: sustainability director, sustainability expert	2		

Appendix C. Interview guides

This appendix presents the interview structures and questions for the customer and supplier interviews. The questions were often slightly modified to match each case and the company's individual setting. The interview guides were translated into English from Finnish, the original interview language.

Supplier interviews

Introduction

- Could you please tell us a little bit about your background, particularly in your current company?
- What are your current responsibilities in the company? Are you actively working on the customer interface?

Circular economy in the company

- What is your personal understanding of the circular economy?
- How does the circular economy appear in your company?
- Which of the three most important principles of the circular economy—resource efficiency, prolonging a product's lifecycle, and closing material loops to minimize waste—are highlighted in your company's activities, and how?

Business-model-specific questions

- For what reasons has your company had to increase the use of renewable or recycled raw materials or the recyclability of products to implement lifecycle-prolonging services or to transition to offering a product-as-a-service solution?
- How and when was this transition carried out?

Customer-perceived-value perspective

- a. What kinds of customers and customer segments do your renewable or recycled products or the aforementioned services have?
- b. What are the key differences between the new, more sustainable products and the replaced products or the old and new business models from the customer's perspective?
- c. How have sustainable products or circular services added value for the customer?
- d. Have you received direct customer feedback related to more sustainable products or circular services?
- e. How do renewable or recycled products or services affect the prices and other costs encountered by customers?
- f. Is there a difference between the performance of renewable or recycled products or circular services and old products or services?
- g. Can you describe how the dynamics of customer relationships have changed due to the introduction of circular products or services? Has the number of interactions and their forms changed?
- h. Do you believe renewable or recycled products or circular services affect customers' processes, time use, and general workload?
- i. Do you think that the potential brand value resulting from the selection of responsible suppliers plays a role in customers' buying decisions?
- j. Have employees of the customer company expressed personal thoughts or feelings related to the sourcing or use of renewable or recycled products or circular services?

Closing

- a. Would you like to add something that has not been discussed yet?

Customer interviewsIntroduction

- a. Could you please tell us about your background, particularly in your current company?
- b. What are your current responsibilities in the company? Are you actively in touch with the case supplier company?

Circular economy in the company

- a. What is your personal understanding of the circular economy?
- b. How does the circular economy appear in your company?

Relationship with the supplier company

- a. What do you know about the supplier and their products and services?
- b. What made your company a customer of the supplier, or what made you buy the circular product or service?
- c. How and when did the customer relationship or sourcing of the circular product or service start?
- d. Describe the collaboration with the supplier briefly. What processes do you have?

Customer-perceived value

- a. Please describe what kind of role the circular product or service plays in your business.
- b. What benefits or disadvantages resulting from the use of the product or service come to mind first?
- c. How does the use of the product or service affect your total costs? What about the effects on your revenues?
- d. How does the use of the product or service affect your processes, including sourcing, use, marketing, selling, and end-of-life?
- e. Are there differences between the performance of the circular product or service and the alternatives?
- f. What are the effects on your workload and work-time allocation? Is using circular product or service easier or harder compared to "traditional" products or services?
- g. Does the general reputation of the circular product or service in your industry or among customers influence your buying decisions?
- h. Does the product's or service's use affect the value of your brand? Is the impact small or big?
 - i. Do you perceive that the product's or service's use makes your business more sustainable? Is there intrinsic value in this impact?
 - j. Would you find it valuable if the supplier were to generate (more) data for you regarding environmental benefits?
 - k. What kind of indirect benefits does the (potential) added sustainability offer?
 - l. How does the product's or service's sourcing affect you and your colleagues emotionally?
- m. Do some of the mentioned value aspects of the product or service give you, for instance, a particular sense of satisfaction?
- n. Considering everything discussed, do you think that the perception of the value of the product or service has changed over time, for instance, since the decision to buy until gaining use experience?

Closing

- a. After reflecting on this discussion, tell us how you hope the collaboration with the supplier will develop in the future.
- b. Would you like to add something that has not been discussed yet?

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