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REVIEW ARTICLE

Envisioning just circularity: A scoping review of normative justice claims in circular economy literature

Angela M.C. Caredda[1*], Hauke Ward[1], Arnold Tukker[1,2]

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Abstract

The circular economy (CE) is widely believed to have significant potential to achieve environmental, economic, and social sustainability. However, its social sustainability promises remain contested. We conduct a scoping review of literature at the intersection of CE and justice, building upon earlier work on environmental and energy justice to develop a novel framework. Using this framework, we map CE's justice community (subjects, scale, time, knowledge), stakes (distribution, procedure, recognition), and relevant justice principles. Our analysis reveals multiple tensions, which future research on just CE should address. First, parameters to the justice community require further scrutiny, especially surrounding agency of subjects; relative importance of place; politicization of time-frames; and the balance between quantitative methods and socially constructed knowledge. Second, the stakes require further consideration, especially as they pertain to the distribution of dwindling resources; political inclusion of essential stakeholders; and recognition of non-economic contributions. Finally, we call for clear justice principles to arbitrate trade-offs, and visions for social organization in the just CE.

Keywords Circular Economy · Just Transition · Social Sustainability · Scoping Review · Environmental Justice

1. Introduction

In contemporary sustainability discourse, the circular economy (CE) seems inevitable. This economic system aims for environmental quality, economic prosperity, and social equity by slowing, closing, and narrowing resource loops (Bocken et al., 2016; Kirchherr et al., 2017). Its promise for a triple bottom line has made it popular with scientists, policy makers and businesses alike (Aguilar-Hernandez et al., 2021; Boerner et al., 2025; Ellen MacArthur foundation, 2013; Ghisellini et al., 2016; Ministerie van Infrastructuur en Milieu & Ministerie van Economische Zaken, n.d.). Yet, the three pillars are not treated evenly in CE discourse, which prioritizes economic and environmental benefits while social benefits are implied or neglected altogether (Blomsma & Brennan, 2017; Geissdoerfer et al., 2017; Kirchherr et al., 2017). This is risky: the ideal of achieving holistic sustainability without changing linear economic social organization is not realistic (Giampietro & Funtowicz, 2020). As a result, the CE may perpetuate injustices of the linear economy (Temesgen et al., 2021) or even harm marginalized peoples through economic downturns, job loss, and concentration of economic power (Tukker et al., 2024).

[*] Corresponding author: a.m.c.caredda@cml.leidenuniv.nl
[1] Institute of Environmental Sciences (CML), Leiden University, 2333 CC Leiden, the Netherlands
[2] Netherlands Organization for Applied Scientific Research TNO, 2595 DA Den Haag, the Netherlands

Linear patterns of resource extraction are characterized by injustices (Hickel et al., 2022; Owen et al., 2023), so a circular transition is invaluable to achieving social sustainability. However, a socially sustainable CE requires a coherent normative vision. This is lacking in CE models, which focus instead on what-if scenarios (Aguilar-Hernandez et al., 2021). Of course, normative claims are not absent from the literature; rather, they are frequently left implicit, which prevents challenging them, thereby hindering public debate, fostering misunderstanding, and ultimately allowing harmful visions to persist (Stumpf et al., 2015; Van Uffelen et al., 2024). This results in a CE that reinforces status quo, risks unexpected consequences, and oversimplifies its goals (Steenmans & Lesniewska, 2023). A good example of this is the treatment of employment, which is by far the most-addressed social theme in CE literature (Mies & Gold, 2021; Padilla-Rivera et al., 2020). Coverage of employment emphasizes job creation, thereby ignoring important factors such as job quality and emancipation of the working class (Deutz, 2014; Rogers et al., 2024). The implicit normative claim is that net job creation is a social good, even if those jobs do not benefit the communities in which they emerge.

CE scholars cannot limit themselves to analyzing what will be; they must ask themselves what should be. This requires explorations of justice (Walker, 2012). Some authors have already started exploring justice dimensions of CE (Kirchherr, 2021; Pansera et al., 2024). However, this body of literature is still in a nascent stage. To our knowledge, there have been no attempts to synthesize the visions developed in these initial explorations, which means that potential tensions and loci for debate go unnoticed. Therefore, we perform a scoping review of academic literature on just CE, which aims to synthesize common justice claims; identify tensions between dominant perspectives; and build a research agenda around resolving these tensions where possible and making trade-offs where necessary.

The remainder of this article is structured as follows: first, we briefly describe the theoretical framework for our analysis, which we build by integrating Bell's (2004) questions for reconstructing justice claims and Van Uffelen et al.'s (2024) normative dimensions of justice. Then, we describe our research methods. The findings address each question separately, and the discussion suggests avenues for further research based on the core tensions for each question. As such, we hope to fuel much-needed debates about visions for desirable circular futures.

2. Justice

While relatively new to CE transitions, justice has been explored for related sustainability transitions such as energy (Sovacool & Dworkin, 2015); mobility (Sheller, 2018); and food systems (Kaljonen et al., 2021). Usually, just transition frameworks follow a three-tenet structure comprised of distributive, procedural, and recognition justice. Distributive justice concerns itself with the distribution of material outcomes; procedural justice pertains to the way decisions are made in the pursuit of social goals; and recognition asks who is recognized (and how) within the transition (Jenkins, 2018; Jenkins et al., 2016; Sovacool & Dworkin, 2015; Walker, 2012). Rather than constituting normative claims, the three tenets are empty categories on which justice principles can be imposed (Stumpf et al., 2015; Van Uffelen et al., 2024).

To reconstruct the components of a justice claim, we ask three questions, which we adapted from Walker (2012) and Bell (2004). (1) Who are the recipients of justice (justice community)? (2) What is at stake? (3) What justice principles apply in case of trade-offs?

Thus, the first step is to identify the justice community: a community of entities who may affect one another's ability to live life as desired, and therefore have rights and responsibilities towards one another (Sen, 2008). Identifying this community requires questions about boundaries of the community, who is included, and consideration of future generations (Walker, 2012). Similar steps are explored in more depth by Van Uffelen et al. (2024), whose normative dimensions for justice we use to reconstruct the justice community:

- Subject of justice: asks whose experiences are and are not included in the justice claim (Stumpf et al., 2015). This may include different social groups within the community (Walker, 2012), but also non-human actors such as animals (Kaljonen et al., 2021; Van Uffelen et al., 2024).

- Scale of justice: asks which geographies are included in the justice claim. While justice principles should be unrestricted in their coverage (Sen, 2008), one's experiences of (in)justice could differ vastly based on their location and sense of place (Bouzarovski & Simcock, 2017).
- Time: asks what the acceptable timeframe is for justice impacts to occur. Walker (2012) mostly associates this with the rights of future generations. However, it may also refer to the acceptable duration of the overall transition process (Van Uffelen et al., 2024).
- Knowledge: interrogates the informational base for the justice claim (Stumpf et al., 2015). This may reflect distribution of epistemic goods such as information or education (Fricker, 2013), but also requires asking whose knowledge is validated within the justice community (Temper & Del Bene, 2016).

Once the justice community is identified, we may ask what is owed to this community. Bell's (2004) original questions pertained exclusively to distributions, so this was phrased as "What is to be distributed?". For the CE, distributed benefits may include newly created jobs, economic competitiveness, economic goods, and resource access (Deutz et al., 2025). Despite its roots in distributive justice, however, the question can also be applied to procedural justice. Procedures also contain various dimensions, such as information availability, inclusion in policy- and decision-making, access to legal protection, or participation in community-based research, which may have varying significance between different claims (Walker, 2012). Even recognition justice, which is the least tangible tenet to grasp, differentiates between different ways to be (mis)recognized, including love, legal protection, and cultural appreciation (Honneth, 2004; Van Uffelen, 2022). An actor claiming to be misrecognized may face injustices in any or multiple of these three spheres. Therefore, we expand Bell's (2004) original question to ask what is at stake, a question that retains its relevance across all three tenets of justice.

Finally, a justice claim, when interpreted as a statement on what should be, serves to arbitrate trade-offs (3). In CE, as in other sustainability projects, there are always conflicts between multiple desirable objectives: this may include achieving positive or avoiding negative impacts, weighing the short and long term in strategy, or allocating scarce resources (Ünal & Sinha, 2023). Navigating such trade-offs is a necessary part of environmental decision making (Kravchenko et al., 2021). However, there is rarely one objectively correct decision. Decisions may be made based on metrics such as causal responsibility, merit, or varying interpretations of equality (Walker, 2012). To know how different justice claims interpret these trade-offs, the principle of justice must be made explicit.

These dimensions and their integration with the three components of justice claims are displayed in Table 1.

Table 1. A framework for reconstructing justice claims. Based on Walker (2012) and Van Uffelen et al. (2024).

Component of justice claim	Dimension	Core question
Community of justice	Subject	Who is included in the justice claim?
	Scale	What are the geographical boundaries of the claim?
	Time	In what time-frame are trade-offs allowed to occur?
	Knowledge	What is the informational base for the claim?
Stakes	Distributional	What is to be distributed?
	Procedural	Which dimensions of procedure are relevant?
	Recognition	In what ways are subjects (mis)recognized?
Principle of justice	Trade-offs	Which metrics guide decision-making?

3. Methods

Scoping studies are a rigorous yet efficient method for mapping the extent, range and nature of research on a particular topic (Arksey & O'Malley, 2005; Levac et al., 2010). Following the example of several authors who recently applied scoping studies to shape justice debates (Blue et al., 2021; Liboiron et al., 2023; Liu, 2024), we chose this approach for its merit in mapping out fields that have so far escaped consolidation (Arksey & O'Malley, 2005).

We developed the sample for our review through two initial keyword searches: one using Web of Science between 21 and 23 October 2024, and one using Google Scholar on 28 October 2024. Both used the following search string: ((("circular economy" AND ("justice" OR "fair" OR "just transition")) OR ("just circular economy")) (topic). The Web of Science search returned 253 results, and the Google Scholar search 180. Of these 433 papers, 31 were duplicates and 35 were excluded for not being peer-reviewed texts. The latter category included student theses, consultancy reports, conference papers, and policy documents. 362 remaining records were subjected to a relevance screening by reading title, abstract and keywords. Papers were excluded if justice and CE were not central to the text. Usually, these papers made a casual reference to these topics in their abstract, such as "Circular Economy is a popular tool for achieving fair sustainable futures". After this screening, 64 articles remained, which were read in full to ascertain that they made claims about just CEs. This eliminated 12 papers. Usually, these studies were embedded in a CE context but their justice claims were not directly about circularity. For example, Singh & Singh (2019) study a CE-adjacent firm, but their justice claims pertain to non-related organizational citizenship experiences. When a paper was included despite focusing on systems other than CE, as was the case for Jalas & Numminen (2022)'s analysis of dynamic pricing for energy and infrastructure services, it usually applied the lessons from these other systems to CE. Thus, we developed a sample of 52 papers, which were read in-depth. The process for developing the sample is summarized in Figure 1.

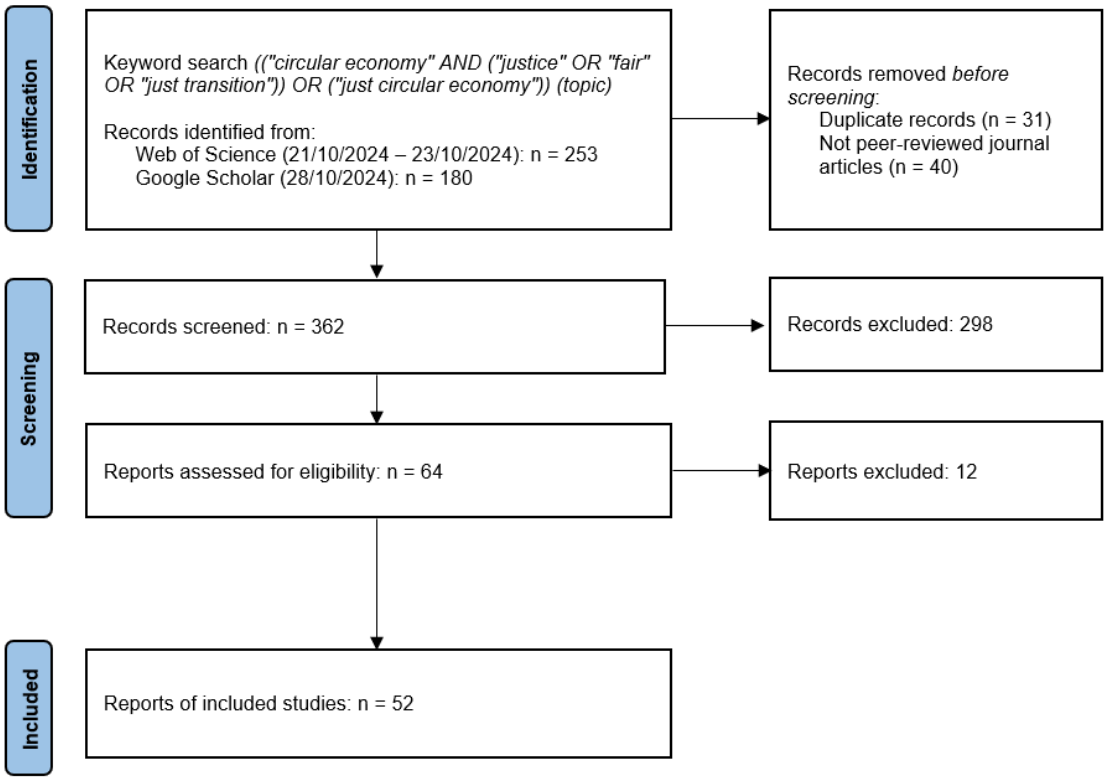

Figure 1. Process of creating the sample. Based on Page et al. (2021).

In designing our search string, we limited the initial review to papers that explicitly aligned themselves with justice and CE. This decision served to limit the quantity of data generated, as scoping reviews frequently necessitates subjective decisions between breadth and depth (Arksey & O'Malley, 2005). Including texts that do not self-align with themes of just CE would create a much greater reliance on reviewers' judgment to artificially narrow the scope of inquiry. However, we acknowledge that a narrower approach creates a risk of missing relevant publications. Articles about adjacent fields such as recycling or waste management may still make justice claims about CE. To validate our sample's representativeness and avoid missing relevant content, we iterated on our initial search (Levac et al., 2010). We collected potentially relevant but unreviewed records from the following sources: publications that were discovered to publish multiple studies on CE justice; bibliographies from the original sample; and research projects related to just CE (Arksey & O'Malley, 2005). This verification step reassured us of our sample's representativeness.

We used a data-charting form to collect essential data on themes in the sample (Arksey & O'Malley, 2005). The form collects two sets of data. First, we documented (elements of) justice claims made by each paper by mapping them onto the framework described in section 2. Second, we collected descriptive information about the articles, including year of publication, journal, and author country, as well as sectors, regions, and r-strategies represented. Since scoping reviews are more suitable for producing narrative or descriptive accounts of available research than for addressing the relative weight of evidence (Arksey & O'Malley, 2005), our results synthesize the justice claims while the descriptive statistics can be found in Appendix A. To avoid the common pitfall of summarizing rather than synthesizing the articles in a scoping review (Levac et al., 2010), we focused our analysis on tensions and apparent contradictions in the sample, which in turn allowed us to develop a research agenda.

4. Results

4.1. Community of Justice

4.1.1. Subject When reconstructing the subject of justice, we particularly interrogated proposed inter-relationships of responsibility. We found that recipients of justice were often individuals: humans were acted upon in their capacity as community member or citizen (Beamer et al., 2023; Berry et al., 2022; Malcolm et al., 2024; Nogueira & Wallig, 2022; Steenmans & Lesniewska, 2023; Vanacker et al., 2023); consumer (Jalas & Numminen, 2022); or worker (Fairbrother & Banks, 2024; Pansera et al., 2024; Persson & Hinton, 2023; Repp et al., 2021; Souza-Piao et al., 2023; Surchat et al., 2024; Vanacker et al., 2023; Ziegler et al., 2023), especially informal worker (Amorim De Oliveira, 2021; Carenzo et al., 2022; Hartmann et al., 2022; Nagarajan, 2022; Valencia et al., 2023). To a lesser extent, non-human subjects also emerged in the form of animals, plants, and even land itself (Beamer et al., 2021, 2023; Chang et al., 2024; Isenhour et al., 2022; Rask, 2022; Wuyts, 2024; Wuyts & Marin, 2022). These non-humans were nearly always acted upon by humans. One notable exception to this is Gesing's (2023) discussion of slurry, to which they ascribe more-than-human agency due to its smell and the visceral reaction it evokes in humans.

Agency to steer the transition, and with it responsibility for its justness, was frequently allocated to groups of humans rather than individuals or non-human entities: mostly to authorities such as government agencies (Calisto Friant et al., 2023; Gyori, 2022; Rask, 2022; Steenmans & Lesniewska, 2023; Vanhuyse et al., 2022) or employers (Carenzo et al., 2022; Fairbrother & Banks, 2024; Ghisellini et al., 2024; Persson & Hinton, 2023). Yet, the company representatives interviewed by Härri & Levänen (2024) claim to be subject to the desires of customers. Similarly, the agency of governments, especially those in the Global South, also depends on context. In some cases, these governments were described as responsible for their polity's CE transition (Amorim De Oliveira, 2021; Rosenbaum & Kehdy, 2022; Yang, 2024); in others, they are acted upon by foreign governments and companies, who enforce certain circularity regimes on them (Cotta, 2020; Nagarajan,

2022; Thapa et al., 2024). As such, different subjects' role in the CE appears highly contextual. While many narratives describe individuals and non-humans as acted upon by companies and states, there are a rare few exceptions that reverse this agency. Based on our analysis, we cannot know whether these various relations are mutually exclusive, or whether they can co-exist. In the former case, one may also ask what the appropriate direction of responsibility is. These matters must be further clarified for CE's justice community to materialize.

4.1.2. Scale Boundaries to CE's justice community are porous and fuzzy. Many studies that invoke place take a multi-region lens, either through comparative case studies across several cities or countries (Calisto Friant et al., 2023; Carenzo et al., 2022; Hartmann et al., 2022; Wuyts, 2024) or through discussions of global supply chains (Härri & Levänen, 2024; Repp et al., 2021) and waste trade (Cotta, 2020; Thapa et al., 2023, 2024). Even for place-specific themes such as local policy, multi-region impacts are frequently invoked (Elliot et al., 2024; Rask, 2022). However, CE is not entirely cosmopolitan, and several authors highlight the role of place (Malcolm et al., 2024; Nogueira & Wallig, 2022). For instance, Mason-Renton and Luginaah (2018) find that rural inhabitants who feel more estranged from city dwellers are also more likely to feel violated by the 'intrusion' of urban waste into the countryside. Similarly, Deutz et al. (2024) show how place-specific factors can influence both the trajectory of a CE transition and its distributive outcomes.

Thus, reconstructing CE's justice communities should acknowledge the role of place in creating (un)just outcomes by starting at the smallest scale. Yet, the experience of scale is highly subjective, and even the most local CE will inevitably have impacts outside a community. This creates a tangle of responsibilities: within a local community, between communities at the same level of organization, between a community and larger organizational levels, and between global actors such as nation-states. Tensions arise when those localities are at odds with one another, as is the case in Repp et al.'s (2021) analysis of CE-induced employment shifts: CE transitions in the Global North strengthen employment locally, but destroy jobs in the Global South. As of yet, the literature provides limited judgements on multi-scalar impacts. Some articles suggest relative importance for the Global South, for instance by highlighting the Global North's disproportionate responsibility in waste generation (Cotta, 2020; Thapa et al., 2023). However, further work is needed to explore the entanglement of rights and responsibilities at different scales.

4.1.3. Time Due to rapid technological developments and the accumulating harms of unsustainable waste systems, the CE transition is considered an urgent matter (Berry et al., 2022; Calisto Friant et al., 2023; Cotta, 2020; Härri & Levänen, 2024; Isenhour et al., 2022). In general, early and long-term planning is seen as an asset, as with Gothenburg's 2006-2050 strategy (Rask, 2022) and China's early adoption of CE strategies (Suárez-Eiroa et al., 2021). Yet, it is not always as clear what is meant by 'long term' strategy. Very few articles include a clear time frame; when they do, it happens in the context of a scenario modelling exercise (Elliot et al., 2024) or in reviews of political strategy (Calisto Friant et al., 2023). Thus, while authors appear to agree that CE transitions are urgent and must be planned for the long term, it is not entirely clear what that means.

This under-representation can harm the implementation of CE: as pointed out by Purvis et al. (2023), too little discussion of time dimensions limits anticipation of CE's future consequences. For instance, commonly used timeframes fall short for non-human life forms, whose lifespans can far exceed these (Wuyts & Marin, 2022). Similarly, we encountered little mention of justice for future generations. As such, politicizing the time frame should be a priority for defining CE's justice community. Here, it is important to distinguish between short-term urgency to act and long-term developments that may shape a CE; and to justify our respective choices on these matters, knowing that they will always in- and exclude certain subjects of the community.

While not yet politicized as a key resource for an urgent transformation, the literature does describe time as a key resource for participating in CE activities themselves. Consumers and citizens require time for repair and maintenance of products, but also for participation in research, flexible circular services, stakeholder involvement, and circular skill development (Fairbrother & Banks, 2024; Jalas & Numminen, 2022; Malcolm et al., 2024; Purvis & Genovese, 2023; Thapa et al., 2023). Manufacturers and informal workers need to spend significant time on the certifications and registrations necessary to be acknowledged as a CE actor (Amorim

De Oliveira, 2021; Härri & Levänen, 2024; Hartmann et al., 2022). Thus, time is already a site of contestation as many authors acknowledge that experience of time may be a major hurdle to participating in the (formal) CE; however, this politicization has seen little expansion to other aspects of the temporal dimension.

4.1.4. Knowledge Our sample carried two competing narratives about the informational base for CE justice claims. On the one hand, CE is often described through the lens of Western scientific tradition, with several papers addressing the duties of academic researchers (Berry et al., 2022; Kirchherr, 2021). This framing posits broad access to quantitative information as an important vehicle for justice (Ghisellini et al., 2024; Gyori, 2022; Lima et al., 2021), and emphasizes the importance of training disadvantaged workers (Fairbrother & Banks, 2024; Souza-Piao et al., 2023). Some authors address the harm of unequal access to such technical knowledge, as in cases where the communities handling waste suffer because they lack knowledge about harmful substances in said waste (Cotta, 2020; Mason-Renton & Luginaah, 2018). Overall, this frame implies that CE requires a definable set of knowledge and skills, which can and should be accessible to diverse audiences.

On the other hand, some authors describe the uncertainty inherent to CE transitions, and suggest that accurately observing the CE may be impossible (Purvis et al., 2023; Purvis & Genovese, 2023). This framing posits CE knowledge as socially constructed and shaped by the networks it emerges in, and claims that CE scholars should take pluralist approaches to knowledge creation by acknowledging Global South, Indigenous, Small Island or rural perspectives (Ashton et al., 2022; Beamer et al., 2023; Carenzo et al., 2022; Nagarajan, 2022; Nogueira & Wallig, 2022; Pansera et al., 2021; Surchat et al., 2024; Vanacker et al., 2023; Wuyts & Marin, 2022; Ziegler et al., 2023). As such, our sample presents an apparent tension between hegemonic knowledge and pluralism. Considering that both approaches have a unique set of merits, visions for CE justice would benefit from developing their compatibilities. This already happens in some cases: for instance, Carenzo et al. (2022) suggest grassroots self-organization as a path for informal workers to enter the formal CE without being alienated from their original skills and knowledge. Beamer et al. (2021) compare the Hawaiian concept of Aloha ʻĀina to the European CE, and show how the systems may inform one another.

4.2. Stakes of Justice

4.2.1. Distributive Justice Among various relevant distribution patterns, access to waste and employment received by far the most attention in our sample. The increased value of waste in a CE creates several distributive conflicts. As governments shift to formal waste treatment systems, they risk dispossessing informal recyclers and ignoring disadvantaged areas (Amorim De Oliveira, 2021; Carenzo et al., 2022; Valencia et al., 2023; Yang, 2024). Similar dynamics exist at global scale: as waste increases in value, the Global North becomes more selective with waste exports, holding back high-quality recyclables and shipping low-grade materials to the Global South (Cotta, 2020; Thapa et al., 2023; Vanacker et al., 2023). Simultaneously, though, responsibility over waste is described as a burden of CE, to be allocated fairly: despite presenting an economic opportunity, waste management is an unpopular responsibility as it is dirty and potentially toxic (Gesing, 2023; Isenhour et al., 2022; Mason-Renton & Luginaah, 2018). To some extent, this depends on the quality of waste. Authors who describe it as burdensome emphasize toxicity or low material quality. However, one must remember that the goals of CE are not only to efficiently process waste, but also to minimize waste generation altogether (Uekert et al., 2024). Therefore, debates on waste distribution must move beyond redistributing current waste flows, and consider what wastes will remain relevant in future CEs.

Claims about employment echo those about waste distribution. While CE can empower workers by creating job and market opportunities (Lima et al., 2021), several authors sound the alarm about distribution of high-quality CE jobs (Berry et al., 2022; Fairbrother & Banks, 2024; Härri et al., 2022; Härri & Levänen, 2024; Kirchherr, 2021). Here, too, reconfiguration of global supply chains breeds anxiety. While CE transitions in the Global North create economic opportunities locally, ensuing job loss in the Global South may be orders of

magnitude greater (Härri & Levänen, 2024; Repp et al., 2021). Meanwhile, circular alternatives to linear manufacturing, such as repair and product sharing, are usually less accessible to disadvantaged communities due to high prices, inefficient resource allocation, poor access to infrastructure and information, and stigma (Vanhuyse et al., 2022; Ziegler et al., 2023). Thus, the CE transition presents distributive tensions on multiple levels. There are significant allocation problems for linear (e.g. manufacturing) and circular (e.g. waste management) activities that become increasingly obsolete as societies transition to CE, but circular alternatives are far from universally accessible. Therefore, visions for just CE must move beyond current redistribution patterns by developing long-term prospectives on what is distributed in circular futures.

4.2.2. Procedural Justice The most common stakes for procedural justice are democratic participation and transparency. Of these two, democratic participation was more represented. Stakeholders' rights to decide in matters affecting them was deemed important not only for policy development but also in other contexts such as circular workplaces (Amorim De Oliveira, 2021; Ghisellini et al., 2024; Souza-Piao et al., 2023; Valencia et al., 2023). Therefore, several authors call for governance processes that account for the socio-political context of CE and create space for deliberations for each step of the CE transition (James, 2022; Pansera et al., 2021). Malcolm et al. (2024) propose collaborative policy-making as an essential tool for translating national policy to local action, and suggest that governments should promote community-led transformations. Civil society, third sector actors, and other community-led initiatives are uniquely well-suited to progress such a social CE transition as their motives and duties are social, rather than profit-driven (Persson & Hinton, 2023).

However, the literature also warns that bottom-up organization can be abused by authorities to avoid responsibility. In Lebanon, local CE initiatives sprung up in response to a garbage crisis caused in part by ineffective waste collection (Rosenbaum & Kehdy, 2022). Therefore, grassroots organizations play a dual role: they perform essential services for the CE, but also advocate for their communities. For instance, Fairbrother and Banks (2024) emphasize unions' role in ensuring workers' rights in the CE transition, and Carenzo et al. (2022) showcase how grassroots recyclers' collectives successfully advocated for previously excluded informal waste workers.

Of course, participation is rarely as simple as finding the right organizations to include. Vanhuyse et al. (2022) observe a mismatch between participation and expected contribution for civil society. This is attributed in part to the government's struggle to reach out to civil society actors, and in part to limited knowledge about CE initiatives and ad hoc communication about possibilities to get involved. Poor communication is a common trend in the literature. This is especially true for social dimensions, which CE policies rarely address in a way that allows for systemic implementation (Steenmans & Lesniewska, 2023). Such unclarity hinders just participation and breeds uncertainty, which in turn leads to struggles and loopholes such as unclear reporting on the contents of waste (Cotta, 2020; Isenhour et al., 2022; Mason-Renton & Luginaah, 2018) and producer struggles to navigate circular governance standards (Härri & Levänen, 2024). Therefore, just CEs require communication strategies that allow reflection, anticipation, and the consideration of a wide range of perspectives (Purvis et al., 2023). Procedurally just CEs can be spearheaded by the third sector, but this must not become their burden to bear; transparent communication is inherently important to procedural justice as well as essential to just involvement, but more work is necessary to develop truly anticipatory communication about the CE.

4.2.3. Recognition Justice Literature on just CE contained numerous claims on recognition justice. These mostly pertained to informality, since many CE practices are pioneered by marginalized groups. The literature especially addresses informal waste workers, who face stigma, discrimination, and exclusion from society despite being essential to CE (Amorim De Oliveira, 2021; Carenzo et al., 2022; Hartmann et al., 2022; Nagarajan, 2022; Schroeder & Barrie, 2022; Surchat et al., 2024; Thapa et al., 2023; Valencia et al., 2023; Yang, 2024). Similar dynamics exist for indigenous groups, who have long practiced durability practices and environmental stewardship (Beamer et al., 2023; Vanacker et al., 2023); or for women, whose care work is often a cornerstone to CE practices like repair (Niskanen et al., 2021; Valencia et al., 2023). Yet, these groups

are disproportionally excluded from opportunities within the CE, while their work is classified as low value added (Niskanen et al., 2021; Pansera et al., 2024). Therefore, Wuyts and Marin (2022) warn for the 'nobodization' of groups that do not fit the idealized image of a white, well-off innovator. Recognizing these groups requires protection through law, but that alone is not enough: it also requires cultural appreciation for their specific techno-cognitive skills; attitudes towards their work; and self-organized collective governance structures (Carenzo et al., 2022; Niskanen et al., 2021; Surchat et al., 2024). This requires a clear way to communicate their labor to wider audiences, a task that is complicated by the lack of widely understood metrics for unpaid work such as care and stewardship (Valencia et al., 2023).

This lack of communicable metrics is amplified for laypeople. Citizens of circular societies are too rarely recognized as active participants in shaping a CE: instead, they are framed as passive recipients of innovation, and their labor commodified as a resource to be nurtured (Ziegler et al., 2023). Such a reduction from citizen to consumer makes it harder to recognize their unique experiences (Rask, 2022). Niskanen et al. (2021) apply this to repair, showing how it imbues items with a tension between forward-looking visions of emancipation and nostalgia for an idealized simpler past. Treating repair as a purely economic activity strips it of this context, and fails to do justice to embedded temporal tensions. Finally, commodification also hinders recognition of non-human experiences: after all, the nature that is entangled in disposable goods risks being treated as equally disposable (Wuyts, 2024). Yet, current CE policy insufficiently acknowledges the reciprocity between humans and non-humans, instead seeing nature as something for humans to enjoy (Isenhour et al., 2022; Rask, 2022). As such, future scholars of CE justice are not only challenged with the recognition of marginalized workers, but also of experiences that are hard to express in economic terms, which CE currently struggles to address.

4.3. Principles of Justice

Few authors argued for specific justice principles, but many did propose visions for just CE from which decision-making metrics may be derived. The most evident trend was a rejection of market logic, which was broadly considered unsuitable for reaching just outcomes. Berry et al. (2022) term this 'neoliberal justice', which centers free pursuit of mutual self-interest, protection of private property, and freedom of choice while viewing social benefits as welcome side-effects of profit-seeking. We consider this vision to be revealing of underlying justice principles, as authors condemn 'neoliberal justice' not only on grounds of suboptimal circularity outcomes, but also for its inherent properties, which are said to breed alienation and exploitation (Carenzo et al., 2022; Niskanen et al., 2021). Authors specifically reject profit as a metric for deciding trade-offs, deeming it unable to center human health, equity, and wellbeing (Leipold et al., 2021; Persson & Hinton, 2023; Rosenbaum & Kehdy, 2022). The desirable vision is described in contrast to this market logic: a logic of solidarity (Leipold et al., 2021). For instance, Beamer et al. (2023) describe Hawai'i's ancestral CE as one where abundance is shared with the community and the ecosystem it is entangled with. Hearkening back to CE's ambitions, such relationships are considered truly regenerative and restorative, in the broadest sense of the word (Beamer et al., 2023; Nogueira & Wallig, 2022). This aligns with some other visions outlined in the literature, such as Raworth's safe and just operating space (Suárez-Eiroa et al., 2021) and social embeddedness (James, 2022; Ziegler et al., 2023).

Identifying these visions constitutes a step towards reconstructing the principle of justice, but is not enough to arbitrate trade-offs. Therefore, a closer look at invoked principles is desirable. Equity was among the most prominent (Ashton et al., 2022; Gyori, 2022; Leipold et al., 2021; Rask, 2022; Thapa et al., 2024), although it was not always clear how equity was understood. Mainly, it seemed to manifest in a desire to prioritize the wellbeing of vulnerable groups (Kirchherr, 2021). Moreover, several authors referred to causal responsibility, for instance by condemning situations where those without responsibility face harm (Isenhour et al., 2022; Lima et al., 2021) or by advocating for extended producer responsibility (Thapa et al., 2023; Vanacker et al., 2023). However, too much unclarity still persists about justice principles. As long as metrics for trade-offs remain scarce, limited in their justification, and implicit to visions, realistic and desirable choices for the CE remain difficult to make.

5. Discussion

One purpose of scoping out normative claims is to identify the tensions inherent to contested concepts such as justice (Stumpf et al., 2015; Van Uffelen et al., 2024). Throughout our review, we identified several such tensions, which are listed in Table 2 and further developed in the remainder of this section. While they invoke trade-offs without objective answers, we urge scholars interested the just CE to explore them further: either to find compatibilities among apparent contradictions, or to identify the more just outcomes among possible circular futures.

Table 2. Currently unresolved tensions among normative visions for just CE.

Component of justice claim	Dimension	Tension
Community of justice	Subject	Passive or active subjects?
	Scale	Place-based identity or cosmopolitan justice?
	Time	Act now or plan for the future?
	Knowledge	Quantitative evidence or epistemic pluralism?
Stakes	Distributional	Reduce or redistribute?
	Procedural	Grassroots participation without exploitation?
	Recognition	Non-economic metrics for recognition in an economic system?
Principle of justice	Trade-offs	Circular economy or circular reciprocity?

Uncertainties about the justice community usually derived from apparent contradictions between different narratives. The ascribed agency of different actors may vary depending on context and narrator; experiences of place define justness despite the global nature of production systems and justice itself; CE is an urgent transition that must anticipate faraway futures; and the knowledge base for CE justice is simultaneously based on empirical data and socially constructed. Some of these tensions can be eased through more elaborate mapping of the justice community. For instance, scholars may verify responsibility claims by mapping out the roles of stakeholders across various countries and sectors, as Suarez-Visbal et al. (2023) did for the transition to circular textiles. In other cases, the options may not be as mutually exclusive as they initially seem: for instance, marginalized and hegemonic knowledge traditions may complement each other, allowing side to learn (Beamer et al., 2021). In many cases, however, trade-offs must be made. Which time-frames are acceptable? Which claims require localness, and which require a global view? Especially in the absence of complete information on matters such as stakeholder networks, scholars of just CE must interrogate these choices.

In discussions of the stakes, tensions seem to arise out of difficulties to envision drastically different CEs. Main topics are the (re)distribution of dwindling goods such as waste and primary manufacturing; the risk of exploiting civil society in grassroots-led CEs; and the challenges of appraising non-economic contributions in systems structured around economic thinking. To some extent, the literature already offers solutions in the form of bottom-up organization and advocacy, which play a central role in advocating for CEs to be just (Amorim De Oliveira, 2021; Carenzo et al., 2022; Nogueira & Wallig, 2022). However, the influence of social organizations is by definition local, and they rely on institutional infrastructure for the expansion of their value circuits (Lekan et al., 2021). As such, a just CE cannot fully rely on bottom-up organization; scholars must interrogate the necessary systems of governance surrounding these self-organized communities. This requires holistic visions for the CE, which acknowledge and anticipate the structural shifts that arise as the transition proceeds.

Ultimately, the applied principles of justice dictate which possible outcomes are desirable. For many tensions described above, there is no objectively correct answer. Instead, the answer depends on context and

on the values of those answering it. Those shaping the CE must be explicit in the choices that to them define CE's justice community and govern its stakes. Perhaps the most important of these choices pertains to the need for systems transformation: many tensions in the literature resulted from contradicting visions for the just CE. One part of our sample takes an incrementalist approach by discussing employment shifts in a presumably otherwise unchanging economic system (e.g. Repp et al., 2021) or assessing profit-driven circular businesses (e.g. Ghisellini et al., 2024). Another stream of literature in our sample aligns with authors such as Temesgen (2021) and Giampietro & Funtowicz (2020) in its call for a radical systems-level transitions, ideally away from neoliberal capitalism. This is most clearly represented by a focus on bottom-up self-organization (e.g. Nogueira & Wallig, 2022), a push away from hegemonic western thought (e.g. Beamer et al., 2023), and a rejection of economic growth as a metric for societal success (e.g. Calisto Friant et al., 2023).

Tension between radical and incrementalist perspectives echoes debates in mainstream CE literature, such as CE's compatibility with economic growth (Kirchherr, 2022). While the radical approach was more common in our sample, this also created a disconnect from mainstream CE strategy: several authors who analyzed CE policy discovered a disconnect from their ideals for a just CE (Calisto Friant et al., 2023; Rask, 2022; Vanhuyse et al., 2022). This may come as no surprise. Much like energy justice is considered more in policy decisions because of its perceived disconnect from energy activism (Jenkins, 2018), just CE studies whose narratives align with less disruptive models of economic organization will likely see more alignment with policy makers, entrepreneurs, and other practitioners (Kirchherr, 2022). In the short term, this could be positive: CE strategies built on economic growth may be instrumental in immediate responses to deprivation experienced by marginalized communities (Dollar & Kraay, 2002). However, while suitable for short-term relief, growth-oriented strategies may also come at the expense of truly transformative and just CEs (Temesgen et al., 2021). Indeed, there is significant overlap between degrowth and powerful CE strategies such as slowing loops and reconsidering consumption, which should be acknowledged and embraced (Nesterova & Buch-Hansen, 2023; Schröder et al., 2019). Thus, we find that these approaches serve different purposes: one is a response to inefficiencies in the current system, the other a proactive vision of transformation. When trying to balance these, justice claims matter greatly. By developing an understanding of what should be, we can find ways to build short-term solutions into transformative visions, and arbitrate the trade-offs that may come with doing so.

6. Conclusion

While CE is unmistakably important to a sustainable future, it may fail to live up to its potential due to its neglect of social themes. In this study, we scoped out the small but growing body of literature on just CE transitions. With that, it is the first study to comprehensively map literature on just CE and to apply justice frameworks that are already established for some other sociotechnical transitions. Mapping the field provides important benefits: first, it allows us to identify often-implicit normative assumptions made in the literature, which is essential to informing public debate and questioning dominant narratives. Second, the resulting overview of salient themes in just CE literature aids the further consolidation of the field by revealing over- and underrepresented areas. This, in turn, informs suggestions for further research on the intersection between justice and CE.

We approach our analysis using a novel framework, which builds upon Walker's (2012) steps for reconstructing justice claims and Van Uffelen et al.'s (2024) normative dimensions for energy justice. Using this approach, we mapped CE's justice community in terms of its subjects, scale, time, and knowledge; we described its stakes by asking what is to be distributed, which dimensions of procedure apply, and in which way subjects are (mis)recognized; and we identified principles of just CEs by analysing how authors in this field arbitrated trade-offs. While performing these steps, we noticed several tensions within the literature. First, parameters to the justice community require further scrutiny, especially surrounding subjects' agency relative to one another; relative importance of place; politicization of time-frames; and the balance between empirical data and socially constructed knowledge. Second, the stakes require further consideration, especially as they

pertain to the distribution of dwindling resources; the exclusion of essential CE actors; and adequate recognition of non-economic contributions. Finally, we call for further clarity on the justice principles of a CE, and relatedly for clearer visions of social organization in the just CE. These tensions may serve as a starting point for any scholar interested in furthering the much-needed debate on just CEs, meaning that our article's contribution is twofold: we offer a new analytical framework by which to assess justice claims, and we use this framework to develop a research agenda for the field of just CE.

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Appendix: Description of the sample

Characteristics of included studies

As presented in Figure 2, our literature review suggests a recent rise in interest for just CE. Nearly all papers in the sample were published since 2021; no papers were published before 2018. While this may suggest that justice was largely ignored in CE literature before 2018, that does not need to mean that earlier publications completely neglected justice concerns; they may have simply described it in different terms.

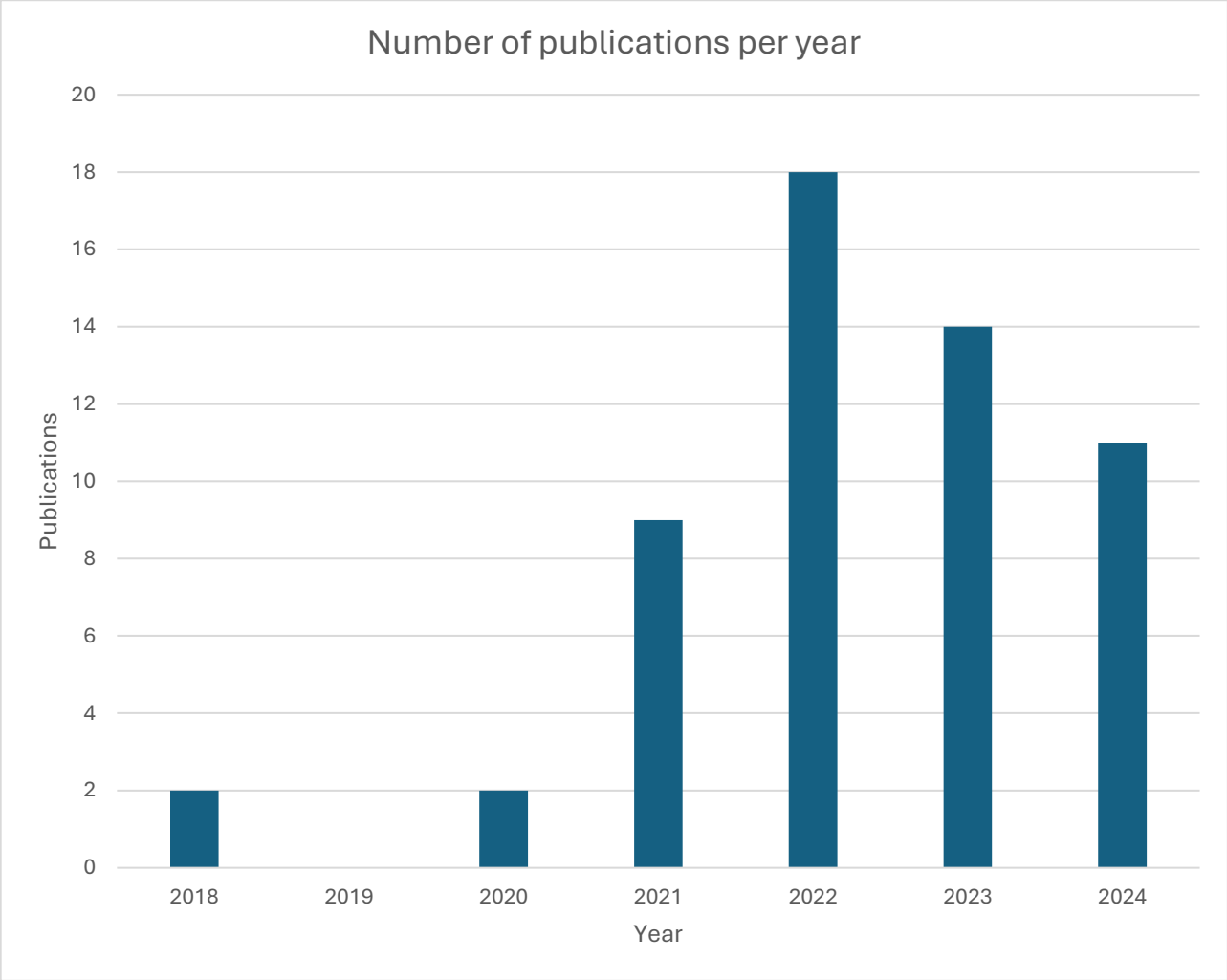

Figure 2. Number of publications on just circular economy per year

Interest in the topics spiked in 2022, which can largely be attributed to a special issue of the journal Local Environment on "Justice, Equity, and the Circular Economy". That special issue accounts for 11 papers in the sample, with Local Environment accounting for nearly a quarter of total publications. Figure 3 presents a breakdown of represented journals: while several other journals were represented three or four times in the sample, the Journal of Cleaner Production is the only one that stands out (n=6). This can probably be attributed to their special issue "Who will benefit from the circular economy?".

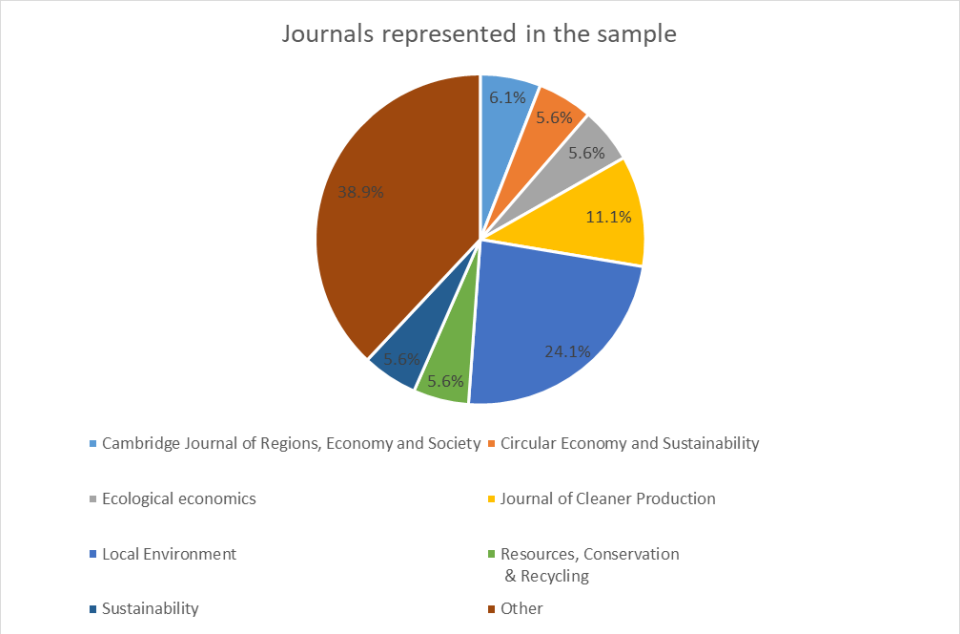

Figure 3. Representation of different journals in the sample

As for research methods, qualitative empirical methods were most represented in the sample. In total, 30 papers utilized at least one such method; most notably case studies, interviews, field observations and document analyses. Moreover, many papers used non-empirical methods, as 22 papers based at least a significant part of their analysis on scientific literature reviews or conceptual analysis, 18 of which performed no empirical analysis. Figure 4 documents the prevalence of different methods in the sample. The number of methods represented exceeds the number of papers in the sample; this is a result of several papers using multiple methods.

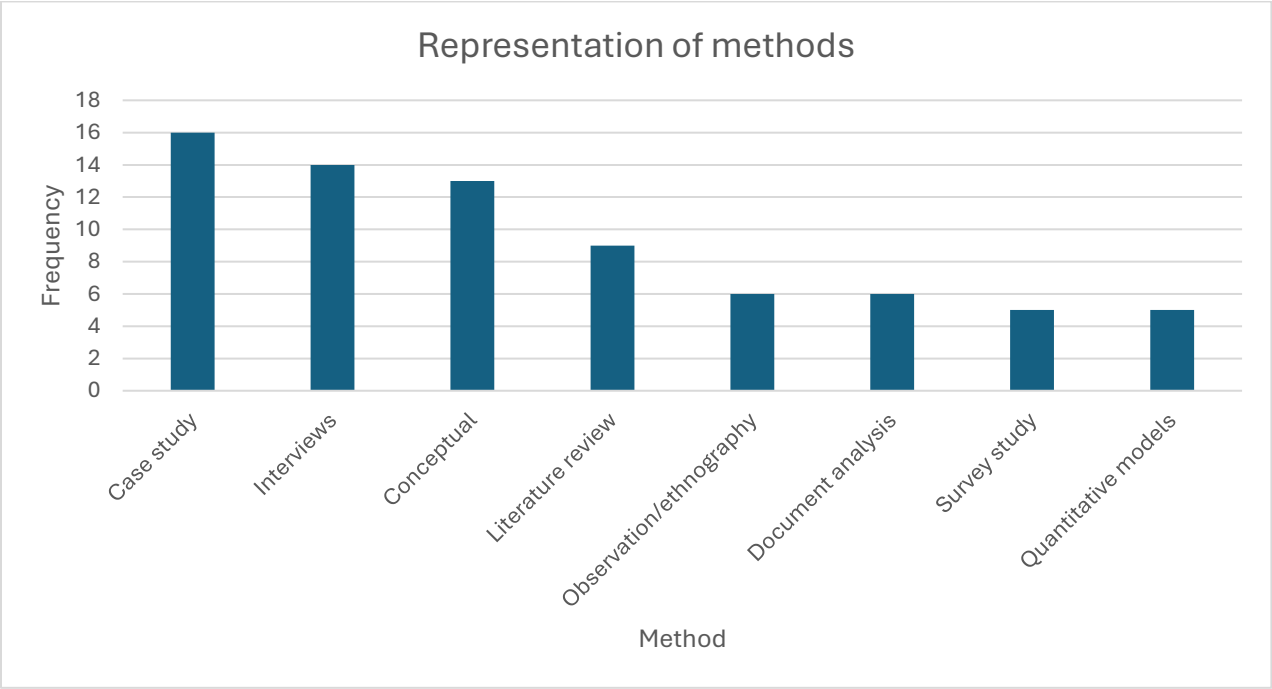

Figure 4. Representation of different methods in the sample

Contents of included studies

Sectors 44 of the 56 papers stood out as focusing a specific sector. Among these 44, the most represented sectors were waste management (n = 13); policy, strategy and public sector (n = 13); and fashion and textiles (n = 6). All other sectors were represented in three or fewer articles. Figure 5 further elaborates on the representation of different sectors in the sample.

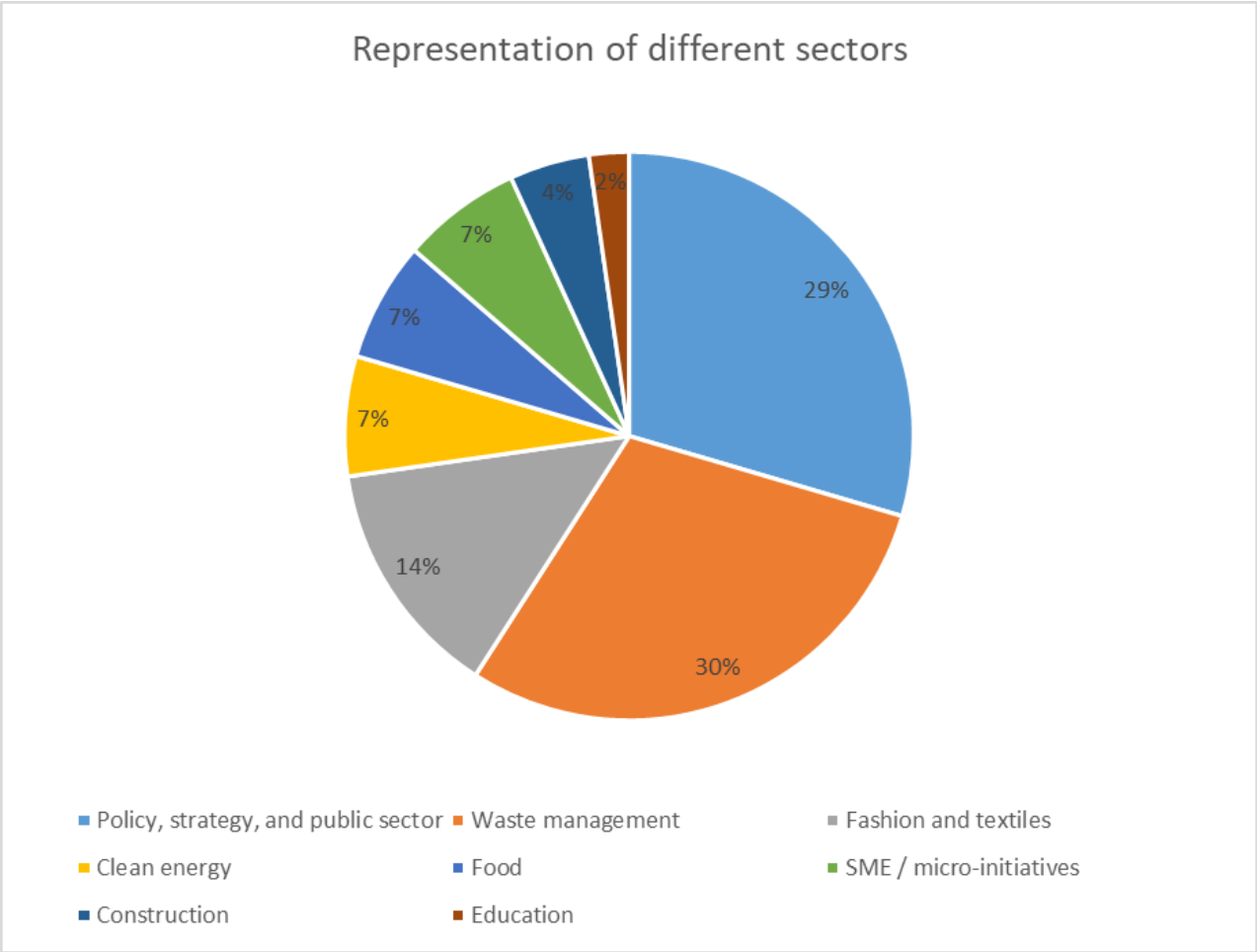

Figure 5. Representation of different sectors in the sample

Beside sector, we also identified a focus on specific R-strategies (Potting et al., 2016) in 27 of 56 papers. Figure 6 shows how frequently each R-strategy was represented. 25 papers mentioned R-strategies, but not in such a way that they could be considered a focal point of the study; these are not included in Figure 6.Still the sum of all frequencies exceeds 27, since some papers centered around more than one R-strategy. Among papers whose analysis aligned with particular R-strategies, recycling was by far the most represented. It was studied almost four times as much as the second-most represented strategies, rethink and reuse. Reduce, repair, and repurpose were studied only sporadically. However, some R-strategies may be more represented than the figure implies due to the overlap between different R-strategies. For instance, many studies on end-of-life waste management are framed explicitly in terms of recycling, but may also pertain to remanufacturing or repurposing.

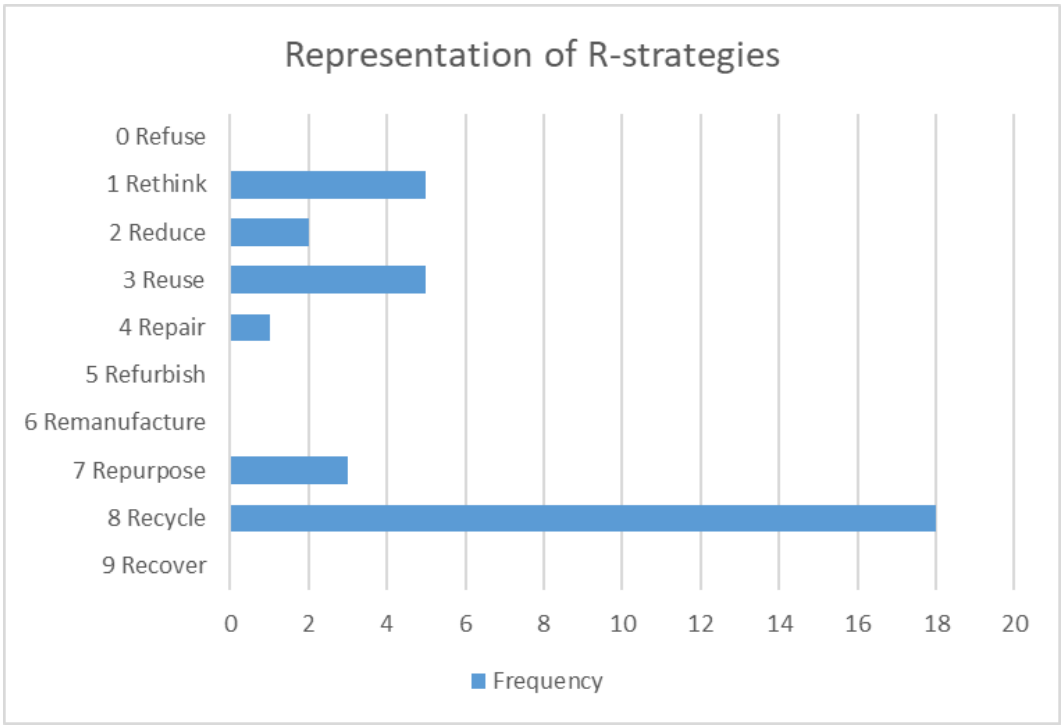

Figure 6. Representation of different r-strategies in the sample

Geography As represented in Figure 7, most first authors were affiliated to a European university. Scholars from the Global South co-authored a number of papers, but they were very rarely in the lead. Especially in collaborations between different regions, authors from the Global North were always in the lead.

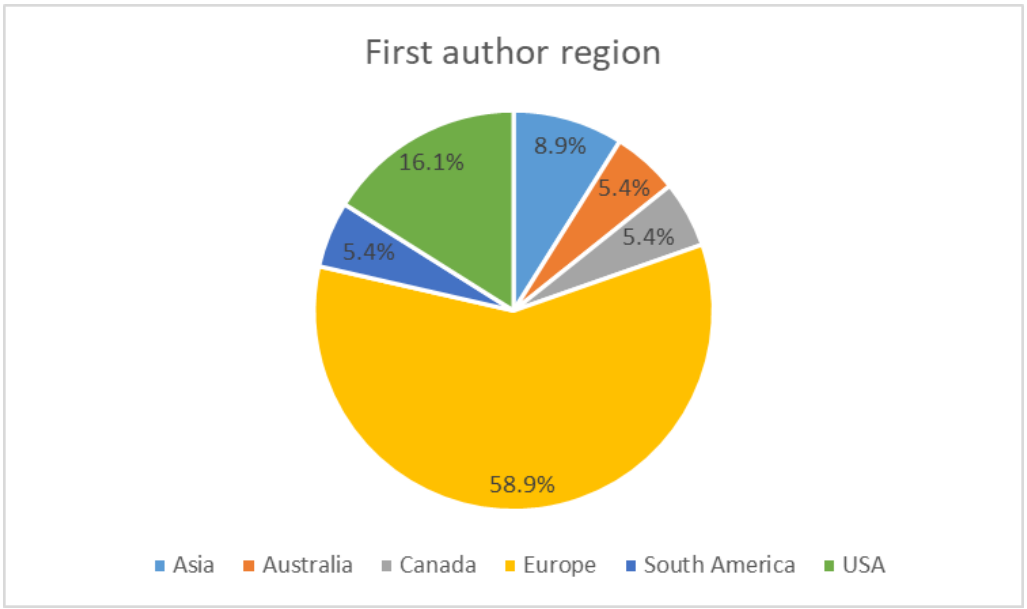

Figure 7. Regional affiliation of first authors as a share of the total sample

In terms of investigated area, 23 studies were not set in any specific region. These studies were either purely theoretical (n = 15) or took a global perspective, e.g. by including data from a vast range of different countries or analyzing global supply chains (n = 8). The geographies of studies that did represent a particular region are summarized in Figure 8. While the Global North dominates the sample (64% of place-specific studies are set in either Europe, North America, or Australia), a relevant share of the literature is dedicated to localities in the Global South. However, there is a notable difference between discussions of Global North and Global South. Of 12 studies conducted in Global South countries, 8 study waste management, often as it pertains to the informal sector. Studies in the Global North represent a much larger range of sectors, including construction, food, clean energy, and education. Similarly, of the 11 geographically specific studies on circularity policy and strategy, 9 are located to the Global North. This suggests that just CE for the Global South is a salient topic, but rather as a recipient and processor of (global) wastes, rather than a region pursuing its own CET.

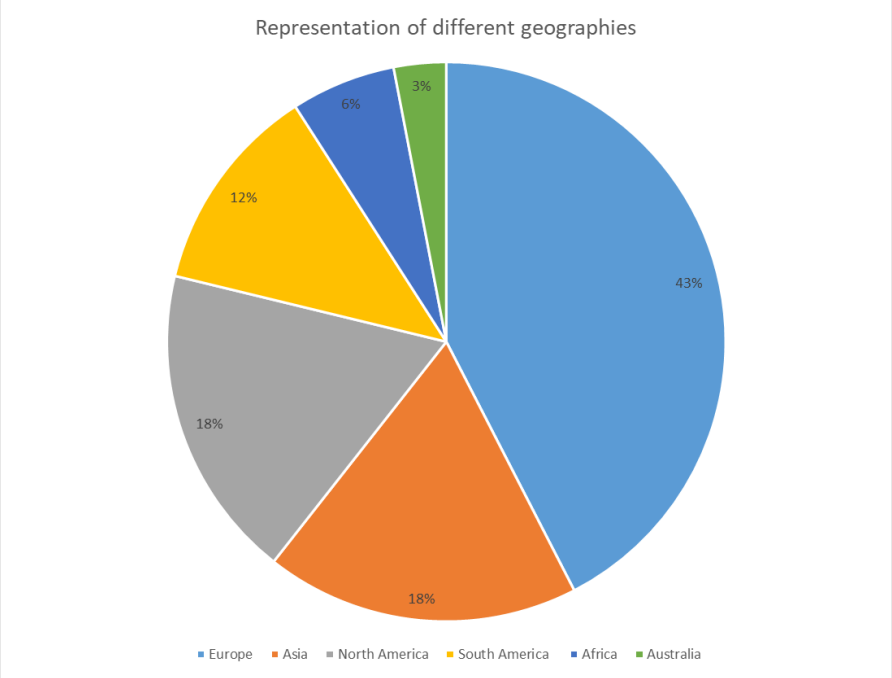

Figure 8. Representation of different geographies in the sample