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SPACE FOR CIRCULARITY – EXPLORATORY STUDY OF LOCAL INITIATIVES IN POLISH CITIES

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ABSTRACT: The main objective of this research is to analyse how community initiatives implement the concepts of the circular economy in their activities, thus affecting their immediate environment. The consideration started by presenting and systematising the definition of the circular economy and locating its meaning in the urban space. Sixteen interviews were conducted with various non-profit and for-profit initiatives across Poland to illustrate and learn about the mechanism of the circular economy in urban space, as implemented by bottom-up initiatives. The research focuses on initiatives that reduce the waste and negative impact on the environment by both producers and consumers. The findings were analysed using the 9R concept. The research made it possible to identify which strategies are most implemented by urban initiatives. Moreover it showed that implementing the circular economy model is possible with the cooperation of producers, that consumers need initiatives that offer a space for circularity.

KEYWORDS: circular economy, 9R framework, sustainable development, circular economy strategies

Introduction

Many studies provide evidence that economic growth causes a negative impact on the environment, and economic welfare is based on natural resource exploitation and waste production (Kalimeris et al., 2020; Lubacha, 2023). A linear model of the economy is based on the extraction of resources at the beginning and waste disposal in landfills at the final stage (Sauvé et al., 2016; Stahel, 2019). In 2023, 109.4 million tonnes of industrial waste were generated in Poland. The dominant methods of handling waste generated in 2023 were recovery (48.8%) and landfill (41.5%). In 2023, 13.4 million tonnes of municipal waste were collected. On average, 356.7 kg of municipal waste was collected per resident; 47.5% of the collected municipal waste was directed at recovery, including recycling (15.8%), biological processing (composting or fermentation) (11.8%) and thermal processing with energy recovery (20.0%) (GUS, 2024a).

The concept of a circular economy (CE) is one of the proposals aimed at reducing the negative impact of humans on the environment and limiting climate change. This concept is seen as one of the conditions for sustainable development (Ekins et al., 2019). CE applies to both production and consumption (Kirchherr et al., 2017), and the implementation of its assumptions is consistent with Goal 12 of the United Nations Sustainable Development (sustainable consumption and production) (United Nations, 2015). In the CE model, products and materials should be reused, recycled or repaired, and its basis should be refusal and reduction. The CE model may be adopted by small-scale services aimed at product-life extension (Stahel, 2019). The implementation of the CE model by consumers is possible using various social initiatives that provide space for exchange, borrowing, swapping or repairing.

Cities play a role in the transition to CE because of increasing urbanisation and the proximity of producers and consumers. Moreover, cities are responsible for a big share of consumption-based GHG emissions and municipal waste production (Ellen MacArthur Foundation, 2017; OECD, 2020a, 2020b). By 2050, 70% of the global population will live in an urban area (United Nations, 2023). The CE model may be implemented in cities on various levels: environmentally friendly buildings, renewable and localised energy systems, low-emission mobility systems, urban farming and local production systems. In the urban space, many circular forms of economic activity may be developed, such as repairing services, collective resource banks, digital applications or physical spaces to broker exchange among citizens (Ellen MacArthur Foundation, 2017). Successful implementation of the CE model requires the cooperation of the main stakeholders: consumers, producers, local societies and local authorities (Chrispim et al., 2023); changes in production and consumption models (OECD, 2020a) and behavioural and cultural shifts (Morseletto, 2020; OECD, 2020b).

Zavos et al. (2024), in their analysis of 161 research papers, observed a lack of microlevel research analysing everyday, local practices allowing the implementation of the CE model. There is also limited literature on consumer circular behaviours and business models for sustainable consumption (Ferasso et al., 2020). This study fills this gap; it focuses on initiatives that reduce waste and negative impacts on the environment by both producers and consumers. According to the study, 'The CE transition calls for a societal change that requires transforming socio-material practices and attending to matters of everyday life' (Zavos et al., 2024). Therefore, the cases chosen for this analysis represent local initiatives supporting consumers in the implementation of circular strategies.

Circular economy concept and strategies

The 'cradle-to-nature' approach was utilised before the Industrial Revolution: 'most goods were used as long as they could be repaired, or their materials reused and then discarded into nature' (Stahel, 2010). The debate on waste management started in the 1960s. It continued with a discussion on the reuse and recycling of what was considered waste. 'CE articulates (more clearly) the capacity to extend the productive life of resources as a means to create value and reduce value destruction' (Blomsma & Brennan, 2017). In the 1980s the 'cradle-to-cradle' term was introduced for the idea of a closed loop in the production process (Stahel, 2010). The concept, developed further by McDonough and Braungart (2002), assumed a design of the production process that was zero waste.

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The foundation of the CE model assumes that utilising the current linear model of production and consumption ('take-make-dispose') may be limited by increasingly expensive and harder-to-access natural resources or resource exhaustibility (Cooper, 1994; Ellen MacArthur Foundation, 2013a). The use of energy and resources should be minimalised, and efficiency should be understood as the 'effective use of physical resources rather than purely financial criteria' (Cooper, 1994). 'In a circular economy, products are designed for ease of reuse, disassembly and refurbishment, or recycling, with the understanding that it is the reuse of vast amounts of material reclaimed from end-of-life products, rather than the extraction of resources' (Ellen MacArthur Foundation, 2013a). In the CE model, the producer takes responsibility for the product and service and should sell not only the product itself but also offer a service if the product needs to be repaired (Ellen MacArthur Foundation, 2013a).

The CE concept considers not only changes in production processes but also in the consumption model. The biggest risks related to consumption are the increasing population, the popularity of the middle-class consumption model, increased sales of packaged products, the increased use of disposable products and increased household waste production (Ellen MacArthur Foundation, 2013b). The consumption model typical of upper-middle- and high-income countries requires the resources of two to four times Planet Earth (Szczygieł, 2021).

The analysis of 114 definitions (Kirchherr et al., 2017) showed that the core principles of the CE concept are the R framework, waste hierarchy and systemic perspective. Circularity strategies started with 3R (reduce, reuse, recycle) and were developed from 4R (reduce, reuse, recycle, recover) to 9R (Table 1) (Ekins et al., 2019). The strategies are ordered hierarchically 'from high circularity (low R-number) to low circularity (high R-number)' (Potting et al., 2017). Refusion and rethinking are seen as the fundamental strategies. Refusion decreases the consumption of natural resources because fewer products are bought (Potting et al., 2017). Moreover, implementation of the CE model requires the rethinking and reconceptualisation of existing products and production models (Morseletto, 2020). From the consumer perspective, refuse, reduce, and reuse are interrelated – if we reuse by sharing another consumer's products, we may reduce our own purchasing (Morseletto, 2020).

Repair, Refurbish, and Remanufacture are connected and aimed to reverse obsolesce (Morseletto, 2020). In 2024 EU established 'Right to Repair Directive', which aims to reduce planned obsolescence practices (Directive, 2024). Repairing is a common practice to extend the products' lifespan and bring broken products into use. Refurbishing 'does not involve disassembly but the replacement of parts; for this reason, it is also called "light" remanufacturing'. Remanufacturing is called 'second-life production'. Remanufactured products should be the same quality as new ones (Morseletto, 2020). Repairing may be offered by small businesses, while remanufacturing is a more complex process and should be done by the producer of the original product. 'Remanufacturing requires the total dismantling of the product and the restoration and replacement of its components' (King et al., 2006).

Repurposing may also be called 'recontextualising': the product or its parts are used in a new way in a different context. This strategy is limited at scale and is considered an additional solution when a product cannot be repaired, refurbished or remanufactured (Morseletto, 2020).

In Kirchherr et al.'s (2017) study, 3R (reduce, reuse, recycle) was the most often mentioned in the existing definitions. Recycling was one of the first strategies to reduce resource use (Blomsma & Brennan, 2017; Murray et al., 2017). Recycling is seen as a good alternative to waste disposal in landfills, but it also has limitations: pollution, hazardous waste, significant energy use, technological difficulties in disassembling, and increasing waste exports to developing countries (Cooper, 1994; Guo et al., 2023). It is more common than repairing and remanufacturing (King et al., 2006). In Poland, the share of separately collected waste increased from 3.2% in 2005 to 40.7% in 2024 (Figure 1). But recycling is not enough (Bartoszczuk, 2023; Potting et al., 2017).

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Table 1. The 9R Framework

	Strategies	Description	Retention loops
Smarter product use and manufacture	**R0 Refuse**	Make a product redundant by abandoning its function or by offering the same function in a radically different product	User to business
		Buy or use less, by saying no	User to user
	R1 Rethink	Make product use more intensive (e.g. by putting multi-functional products on the market)	User to business
		Make product use more intensive (e.g. by sharing products)	User to user
	R2 Reduce	Increase efficiency in product manufacture or use by consuming fewer natural resources and materials	User to business
		Use items and services for a longer time, and buy less frequently	User to user
Extended lifespan of product and its parts	**R3 Reuse**	Reuse by another consumer of discarded product that is still in good condition and fulfils its original function	User to user
	R4 Repair	Repair and maintenance of a defective product so it can be used with its original function	User to business
	R5 Refurbish	Restore an old product and bring it up to date	User to business
	R6 Remanufacture	Use parts of discarded product in a new product with the same function	User to business
	R7 Repurpose	Use discarded product or its parts in a new product with a different function	Business to business
Useful application of materials	**R8 Recycle**	Process materials to obtain the same (high-grade) or lower (low-grade) quality	Business to business
	R9 Recovery	Incineration of materials with energy recovery	Business to business

Source: authors' work based on Potting et al. (2017) and UNEP (2024).

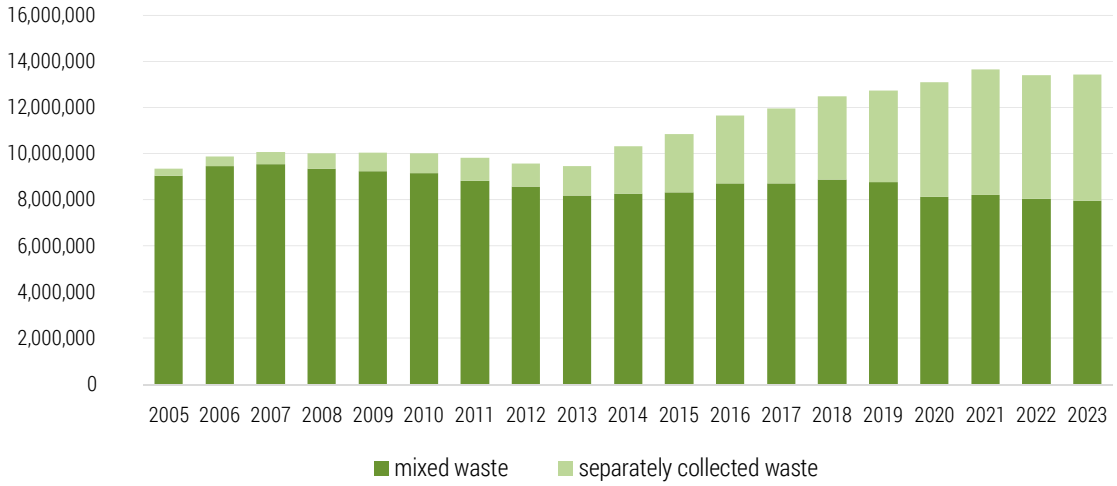

Figure 1. Municipal waste production in Poland in years 2005-2024, in tonnes

Source: authors' own elaboration based on GUS (2024b).

Therefore, the presented study aims to investigate which from 9R strategies (Table 1) are implemented in Polish cities and if local authorities support those initiatives. The second aim is to establish the motivations of their funders or owners. Their economic motivation may be related to reducing production costs by applying the CE model (Borchardt et al., 2011). On the other hand, social values and ecological awareness may play an important role (Bentkowska, 2024; Chrispim et al., 2024; Smol et al., 2018).

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Research methods

As the research was designed as an exploratory study, qualitative methods were applied. The qualitative approach was chosen because the aim of the research was to study one chosen phenomenon – the application of CE strategies. This method allowed the researchers to obtain a detailed insight into the studied phenomenon and explore the context (Creswell, 2014). A semi-structured questionnaire consisting of 12 open questions was designed based on the funnel structure (Kvale, 1996). In this study, non-probabilistic and purposive sampling was used based on the criteria relevant to the research objectives (Guest et al., 2006). The initiatives were selected in such a way in order to analyse those that offer space for consumers and enable them to implement the idea of CE. Members of diverse initiatives were interviewed as much as possible to show different possibilities and strategies. The choice of provincial cities was decided based on two main factors. First, cities and their inhabitants create the greatest pressure on the environment (see introduction), and second, it was in large cities in Poland where grass-roots organisations and initiatives promoting the idea of zero waste among consumers originally appeared. Methodological studies showed that, for qualitative research data, saturation occurs with 12-13 interviews (Francis et al., 2010; Guest et al., 2006).

The field study took place from November 2022 to November 2024. Interviews with the respondents were conducted via telephone, Teams or the Google Meet platform in person. The interviews lasted from 30 to 60 minutes. The entities under examination included local initiatives of a non-profit and for-profit nature in the biggest Polish cities. In sum, 14 local initiatives were interviewed in 7 cities: Kraków, Kielce, Lublin, Warszawa, Poznań, Zielona Góra, and Olsztyn. Five of them were non-profit initiatives: 2 foundations and 1 associations. Eleven of them were for-profit initiatives: 10 sole proprietorships and 1 agricultural production unit. In sum, 14 representatives of initiatives were interviewed: 9 women and 5 men. The transcribed and anonymised interviews were analysed by two independent researchers. The number of initiatives is given in the text in brackets as a quotation source (Table 2). Additionally 16 short interviews with customers were conducted to know their motivation to use this kind of goods and services.

Table 2. Main activities undertaken by initiatives

Activities	Initiatives
Zero-waste store	Initiative 2, Initiative 12
SWAP, Sharing space	Initiative 1, Initiative 5, Initiative 7, Initiative 9, Initiative 13
Ecological education	Initiative 6, Initiative 14
Urban farm	Initiative 3
For-profit repair services	Initiative 8
Non-profit repair services	Initiative 10
Bakery	Initiative 11
Sewing workshops	Initiative 4

Circular strategies applied by local initiatives in Polish cities – research findings

The most applied strategy was reuse (R3) and reduce (R2) – 10 out of 14 analysed initiatives applied this strategy. Those two strategies are interrelated – consumers and producers reduce their resource use or consumption by reusing existing products. We may distinguish two ways of using an application of R3 – by creating space for consumers to exchange (I1, I5, I7, I9, I10) and by companies themselves when they reuse existing packaging to sell products (I2, I12). Moreover, repairing products (R4) is a very important strategy in reducing the consumption of goods by extending the lifespan of existing products. To apply this strategy, consumers may learn how to repair clothes or household appliances for themselves (I4, I7) or use repairing services (I8, I10, I13) However, producers have more opportunities to reduce resources by refurbishing (R5) and remanufacturing (R6) (I8, I10) (Table 3).

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Table 3. Strategies implemented by individual initiatives

	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10	I11	I12	I13	I14
Refuse (R0)			●								●			
Rethink (R1)	●										●	●		
Reduce (R2)	●	●	●	●				●	●		●	●	●	●
Reuse (R3)	●	●		●	●	●	●		●	●		●	●	
Repair (R4)				●			●	●		●			●	
Refurbish (R5)								●		●				
Remanufacture (R6)								●						
Repurpose (R7)			●	●					●			●		
Recycle (R8)			●											
Recovery (R9)														

Only one initiative pursues the **Refuse (R0)** strategy. This is an urban farm where automatic machines are excluded, as the interviewee says: '*We don't use tractors and such machines, for example. We mainly use manual tools. But they are such efficient tools, for example precision seeders*' (I3). They, therefore, reject fume-generating machines and use these types of tools, which are environmentally neutral.

The **Rethink (R1)** strategy is often related to reduction. This strategy indicates that it is necessary to think about how we can use certain sources or products more efficiently or in a different way. An organic bakery whose owner decided to produce bread in limited quantities, therefore reflecting on how they can make their production more efficient: '*We produced exactly as much as there are orders, so as not to generate surpluses that would over-consume energy and all the other resources needed to produce it, including grain*' (I11). We noticed another manifestation of this strategy in a zero-waste shop, where the owner wanted to emphasise that a jar can be used more than once, and therefore, to encourage the reuse of this packaging, they offer a discount to those customers who bring their jars to the shop: '*They get a discount for bringing their own packaging. In this way, I also want to encourage them to reuse the packaging that is already at home*' (I12). The place is also running a project collecting wine cork, an initiative that embodies the repurposing strategy: '*A wine cork can't become a wine cork a second time, but it can be used, for example, as a corkboard or a yoga mat*' (I12). Rethinking (R1) may be a basis for the circular business model when the company tries to implement many circular strategies. In the case of bicycle repair services, the owner repairs (R4) the bicycles and thus reduces the purchase of new models and reduces (R2) material consumption by using old bicycle parts (R6) that are still in good condition: '*It's fun to repair things, especially as old things represent a far higher quality than new things, because someone once did it with the idea that it was meant to last. Sure it will wear out eventually, but it's meant to las*t' (I8).

The **Reuse (R3)** strategy is usually related to creating a space where people can exchange products. Initiative 6 introduces this strategy in various ways: '*There is a neighbourhood wardrobe, i.e. a place to exchange clothes. There is a gift box with items to be exchanged, and we also carry out the activities of the Long Table, which involves rescuing food from markets and distributing it to people in need*' (I6). A SWAP (as a cyclical event, not a regular space) implements this strategy as a response to consumer needs: '*Instead of going to a shop, you can swap things somewhere instead of buying some of these things, there is so much that people want to get rid of*' (I1). Moreover, companies may reuse existing packaging for selling products, as in the case of zero-waste stores: '*Everyone can bring jars of different sizes. We wash them in the dishwasher, we scald them. Boomerang bags: gift bags, from box diets, paper bags, some bigger ones for shopping and from IKEA. (...) All cosmetics packaging is returnable. The new ones that we sell: we have an agreement with the manufacturers that they can be given to them for reuse. So we collect them and you can bring them here and they can be used again*' (I2).

Refurbishing (R5) is a strategy implemented by companies or non-profit organisations to bring discarded products back to life. It needs some skills and tools; therefore, it is rarely implemented by

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individual consumers. A foundation trains homeless people in carpentry and repairs and refurbishes furniture that city residents have given away or thrown away: '*We are in the business of refurbishing and bringing furniture and people back into use. That is, we collect second-hand items that still have a use value. Those that we are able to repair somehow, to renovate, these we accept*' (I10). **Remanufacture (R6)** and **Refurbish (R5)** strategies may be complementary. In the case of bicycle refurbishing (R5), it manifests by upgrading old bicycles and fully servicing them, and in remanufacturing (R6), by remanufacturing old parts and utilising them in the refurbished bicycles: '*Very often I use old, second-hand, disassembled parts for repairs, which very often represent a decidedly higher quality of workmanship and materials than the products offered today*' (I8).

Repurposing (R7) requires some dose of creativity. It was found to be very common in the fashion context, when a piece of fabric from one type of clothing may be used to produce another: '*I also have hairbands made of second-hand materials and, for example, each band shows that in its previous life it was, for example, a blouse or a bathrobe*' (I12). Or the piece of fabric that could be considered waste may be used to produce something new: '*And those leftovers, we sew various things from it, for example new Christmas tree decorations. We sew Teddy Bears from it, hats, buffs, whatever is there at the time, for whatever season it is*' (I4).

Recycling (R8) was applied only by the urban farm (I3): they compost food waste, which may be considered organic recycling. Owing to the nature of the initiatives, none of them deals with **Recovery (R9)**. This is primarily because they are small initiatives that are not involved in energy production.

Table 4. Main motivations to start an initiative

Motivation	Initiatives
To create a place to swap goods	I1, I5, I6, I7, I9, I13
Imitation	I3, I9, I12
Spreading awareness of zero/less waste	I2, I3, I4, I7, I8, I9, I11, I12, I14
Reduce waste	I2, I6, I7, I13
Provide eco-friendly products	I2, I3, I11, I12, I14
Personal passion	I8
To make money	I2, I4, I8, I10, I12, I13

Personal motivation was an important factor in starting activities involving circular strategies (Table 4). The owners and funders of these initiatives, in their personal lives, reduced their negative impact on the environment by living according to zero-waste rules and wanted to create a place where other people might be supported to live with zero waste. '*We try to live waste-free every day. And we limited not only plastic, but also any kind of packaging as much as possible. We tried to buy everything by weight. And we saw that we fight with this, with this garbage every day and we lack external support, i.e. a store, a place, where we will feel this support*' (I2). Some of them make their production process less waste because they personally care about the environment: '*I am convinced that we simply have to all take care of the environment together and that is why I thought that if I was going to start a company, it would be one that would have the least impact on the environment.* (...) *From the very beginning, we wanted not to waste any resources: energy, water, flour*' (I11). Some of the funders were inspired by examples from other European countries or other cities in Poland (I3, I9, I12). Additionally, some for-profit initiatives (I1, I2, I4, I6) take part in charity activities to support people in need or animal shelters.

Moreover, awareness of the social and ecological unsustainability of the fashion sector is an important motivation for all clothes-sharing activities and for sewing workshops where people may learn how to sew: '*you can promote fair trade, conscious fashion, slow fashion, i.e. everything that is in opposition to what we have in shopping malls, in opposition to fast fashion, to exploiting people, to littering the planet and actually to cheating the consumer, because in reality most consumers, and*

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certainly the average consumer, has no idea of the immoral and unecological way these clothes that lie in every shopping mall are produced' (I4).

Consumers are aware of the ecological impact of production and tend to **reuse (R3)** products: '*care for the environment, to find something that has already been used, not to buy new ones* (Consumer 15). They also feel more socially responsible when supporting product reuse: '*Now we are dealing with fast fashion. I think that because I do not support it and I use second-hand clothes, I am more socially responsible, because I use clothes that someone else has already bought and then may give to someone else '* (Consumer 11). Some consumers mentioned that in everyday life, they implemented eco-friendly practices by: **repairing (R4)** goods (Consume 2, Consumer 6), buying locally (Consume 2, Consumer 5, Consumer 7), using bikes instead of cars (Consumer 2), being vegan (Consumer 4), reducing food waste (Consumer 6). They also tend to **reduce (R2)** their consumption by buying less and accumulating less goods (Consumer 3, Consumer 5, Consumer 9). Additionally important for customers was the quality of products, having less plastic, and the uniqueness of reused goods.

Discussion and Conclusions

To achieve sustainable development goals in production and consumption, a shift from a linear to a circular model is required. CE is seen as a tool to solve some of the problems of unsustainable production and consumption (Suárez-Eiroa et al., 2019). Previous research showed that CE strategies reduce the use of raw materials (Bianchi & Cordella, 2023). Circular strategies may be applied by both consumers and producers. In the presented research application, the circular strategies (9R by Potting et al., 2017) of non-profit organisations and small businesses were analysed. The most common strategies (10 out of 14 initiatives), reduce (R3) and reuse (R4), are interrelated – consumers and producers may reduce their consumption and resource use by reusing existing products. Additionally, repair (R5) was found to be the third most applied (5 out of 14 initiatives) and related to R3: by repairing, consumers may extend the product's lifespan. R5 (repair) is also linked to refurbishment (R6), because in the process of removing defects, the installation of new parts allows the old item to be adapted to new standards, adding to its strengths. Therefore, we are not dealing with the purchase of a completely new product but with the repair and improvement of an old one, which is also associated with reduction (R3). Repairing (R5), refurbishing (R6) and remanufacturing (R7) are seen as important services that may be offered by producers to increase the share of discarded products brought back to life and offer them to consumers as more sustainable and less harmful for the environment. Two out of four scenarios for the future of CE proposed by Bauwens et al. (2020) are portrayed by the obtained results. CE strategies are implemented by bottom-up local initiatives and by consumers themselves, such as decentralised small-scale production, local services, sharing economy, and collaborative economy.

Based on the presented results, it may be concluded that consumers need initiatives that offer a space for circularity. Reducing their own consumption and their negative impact on the environment is easier when there is a space to share goods that we no longer use, repair what is broken, buy products without packaging, produce and buy food in the nearest area. The implementation of a CE model is possible with the cooperation of producers and consumers and a shift in thinking about goods production and utilisation. The most important issue, however, is the creation of a space for exchange or repair. Similar findings were presented by Tunn et al. (2019), an underling sense of shared responsibility of consumers and producers. Those consumers who are aware of the negative impact of consumption on the environment will be more conscious of their purchases. However, companies are more responsible in their production process and they should provide environmentally-friendly products and services to secure the supply as well as for those who are less ecologically aware.

It is worth underlining that those who founded the analysed initiatives live according to zero/less waste principles in their personal life, similar to those who use their services. It can be concluded that ecological awareness is one of the main motivations for implementing CE strategies in the areas of business and consumption. Therefore, education may play an important role in the shift from a linear to a CE model. Previous research has demonstrated that environmental education for children and adolescents can influence their attitudes later in life (van de Wetering et al., 2022). Moreover, ecological education may increase the number of eco-aware consumers. The low demand for environmen-

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tally friendly products is one of the barriers to implementing a CE business model by companies (Araujo Galvão et al., 2018; Vermunt et al., 2019).

According to the literature, the CE model is not fully related to sustainable development because the social dimension is missing (Chrispim et al., 2023; Murray et al., 2017). The results showed that owners and funders of analysed initiatives are very often personally motivated to apply circular strategies, and along with their business activity, they take part in charity activities to support local society, people in need or animals. They are also aware of the negative social impact of mass production. Therefore further research is needed to show how the circular model may be not only environmentally but also socially sustainable.

The main limitation of the study is the lack of a database for these kinds of initiatives. Many of them are bottom-up organisations, sometimes registered as foundations and associations and sometimes unregistered. For these reasons, it was impossible to determine the total amount of initiatives and apply random sampling. Another limitation is that individual offices are poorly represented apart from initiatives dedicated to clothing exchange and other items. Further research could focus on an individual office (eg. repair services) to study it more in-depth. Other ventures that do the same type of activities could indicate other potential challenges and barriers. Another analysis could also include activities undertaken by local government units. Attention could be focused on how cities are top-down in their efforts to implement sustainable development concepts in sectors such as energy or waste management. From the data collected, it is also not possible to evaluate how circular activities affect the community, e.g. by how far the consumption of clothes from chain shops was reduced due to SWAPs. However, this is due to the chosen research method and its aim of building a broader picture of the phenomenon and learning about it. This is another aspect that can be explored in further research. The 9R circular strategies classification by Potting et al. (2017) is applied in the empirical research on CE as a business model (Salmi & Kaipia, 2022; Stumpf et al., 2021; Vermunt et al., 2019), but so far, not extensively applied in the empirical research related to consumer behaviours (Hunger et al., 2024). Therefore, there is a need for more micro-level research focused on the consumer-producer relationship in the context of the application of the CE concept.

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The contribution of the authors

Conceptualization, J.L.; literature review, J.L.; methodology, J.L.; formal analysis, J.L. and R.R.-G.; writing, J.L. and R.R.-G.; conclusions and discussion, J.L. and R.R.-G.

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PRZESTRZEŃ DLA GOSPODARKI OBIEGU ZAMKNIĘTEGO – BADANIA EKSPLORACYJNE INICJATYW LOKALNYCH W POLSKICH MIASTACH

STRESZCZENIE: Głównym celem tego badania jest analiza, w jaki sposób inicjatywy społeczne wdrażają koncepcje gospodarki o obiegu zamkniętym w swoich działaniach, wpływając w ten sposób na swoje bezpośrednie otoczenie. Rozważania rozpoczęto od przedstawienia i usystematyzowania definicji gospodarki o obiegu zamkniętym oraz umiejscowienia jej znaczenia w przestrzeni miejskiej. Przeprowadzono szesnaście wywiadów z różnymi inicjatywami (non-profit i for-profit) w całej Polsce, aby zilustrować i poznać mechanizm wdrażania modelu gospodarki obiegu zamkniętego w przestrzeni miejskiej. Badania koncentrują się na inicjatywach, które zmniejszają ilość odpadów i negatywny wpływ na środowisko zarówno przez producentów, jak i konsumentów. Wyniki analizowano przy użyciu koncepcji 9R. Badania umożliwiły zidentyfikowanie, które strategie są najczęściej wdrażane przez oddolne inicjatywy miejskie. Ponadto wyniki wykazały, że wdrażanie modelu gospodarki o obiegu zamkniętym jest możliwe przy współpracy producentów i konsumentów. Konsumenci potrzebują inicjatyw, które oferują przestrzeń dla gospodarki obiegu zamkniętego.

SŁOWA KLUCZOWE: gospodarka o obiegu zamkniętym, zasady 9R, zrównoważony rozwój, strategie gospodarki obiegu zamkniętego

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