
ADVANCING SUSTAINABILITY IN PROPERTY MANAGEMENT THROUGH CIRCULAR ECONOMY PRACTICES: A SYSTEMATIC LITERATURE REVIEW

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ABSTRACT

The need for the property management industry to shift to more sustainable practices has been highlighted by the growing pressures of waste generation, resource depletion, and environmental degradation. The circular economy (CE) has emerged as a viable alternative to the conventional linear "take-make-dispose" model. The purpose of this article is to investigate how CE practices might improve sustainability in property management, an area that is still largely unexplored while having a significant impact on the lifecycle performance of constructed assets. The study explores the integration of the crucial R-strategies, such as reduce, reuse, repair, refurbish, and recycle, in prolonging product lifespans, enhancing resource efficiency, and maintaining material circularity, based on an extensive examination of the body of existing knowledge. The results emphasize the contributions of CE in the environmental, economic, and social spheres and indicate key sustainability components linked to its implementation. This study offers insights into how property management can support sustainable urban development and positions the sector as a crucial enabler in the shift towards a more resource-efficient and regenerative green economy by bolstering the theoretical understanding of CE-driven sustainability in the property sector.

Keywords: Circular Economy, Built Environment, Property Management, PRISMA Literature Review, Sustainable Practice

1. INTRODUCTION

Global issues include rapid resource depletion, higher material use, and increased in waste production have emerged as significant concerns in the built environment (Yang et al., 2023). The construction and real estate industries are major users of raw materials and energy, while producing substantial waste across the whole lifespan of structures, encompassing design, construction, operation, and destruction (Sakthibala et al., 2025). The linear "take–make–dispose" model depletes scarce natural resources and exacerbates environmental deterioration, leading to heightened greenhouse gas emissions and landfill overflow (Sakthibala et al., 2025). As urbanisation intensifies worldwide, especially in developing areas, these challenges are anticipated to exacerbate if traditional practices continue (Mhatre et al., 2023).

A strategic response to environmental issues is included in the circular economy (CE), which opposes the linear economic model by emphasising the retention of materials in circulation to minimise waste (Iacodivou et al., 2021). CE promotes for techniques like reuse, recycling, refurbishing, remanufacturing, and regeneration, with the objective of prolonging the lifespan of materials and assets while reducing waste production (Ellen MacArthur Foundation, 2017). In the constructed environment, this involves designing edifices for flexibility, preserving materials at their optimal value, and reintroducing resources into the production cycle (Zimmermann et al., 2024). This article emphasises the R-framework, a fundamental of CE, in the use of CE within property management.

However, CE research within property management remains limited especially on its application. This gap hinders industry's capacity to completely adopt CE principles and contribute to sustainable urban development. The systematic literature review (SLR) methodology is used in this paper to critically examine how CE practices intersect with the three pillars of sustainability: economic, environmental, and social. Through the SLR, this paper strengthens the theoretical foundation of CE in property management and highlights practical strategies for achieving the three pillars of sustainability.

2. RESEARCH METHODOLOGY

This study employs SLR to investigate the application of CE in the property management industry. SLR is chosen due to its replicable, transparent, and rigorous methodologies in which it can identify and synthesize relevant literature for this study. SLR is considered as secondary research which includes the identification, evaluation, and interpretation of the available research that is pertinent to a specific research question, area of topic or phenomenon of interest, as defined by Merli (2018).

Figure 1 illustrates the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) diagram, which has been adapted and modified from PRISMA 2020 flow diagram to suit the context of this study. As shown in Figure 1, the SLR adhered to an evidence-based PRISMA framework to guarantee a thorough and open review procedure. PRISMA is widely used in the context of SLR and is a well-accepted and used approach (Oluleye et al., 2022). This study employed a specific set of keywords to conduct the literature review, utilising the Scopus database for this purpose. To guarantee the timeliness and relevance of the chosen literature, a filter was done to include only research published for the last ten years, beginning in 2015 and ending in 2025. Boolean operators were used to structure the search terms:

Table 1: The Boolean Query in Scopus

Database	Boolean Query	Total Publications for Title-Abstract-Keyword Search
SCOPUS	("circular economy" OR "CE") AND ("property management") AND ("reduce" OR "reuse" OR "repair" OR "refurbish" OR "recycle") AND ("sustainability" OR "energy efficiency" OR "waste reduction")	487

This study conducted a critical analysis of the selected articles to ascertain their suitability as references for the review scope of this article. Explicit inclusion and exclusion criteria were established to ensure the relevance and quality of selected studies. Redundant research publications were removed, retaining only those articles that aligned with the objectives of this study, specifically papers that examined the concept of CE within the framework of property management. Initially, authors selected articles based on the headline and subsequently comprehended the abstract in its entirety. Abstracts of works that go outside the parameters of this article is removed.

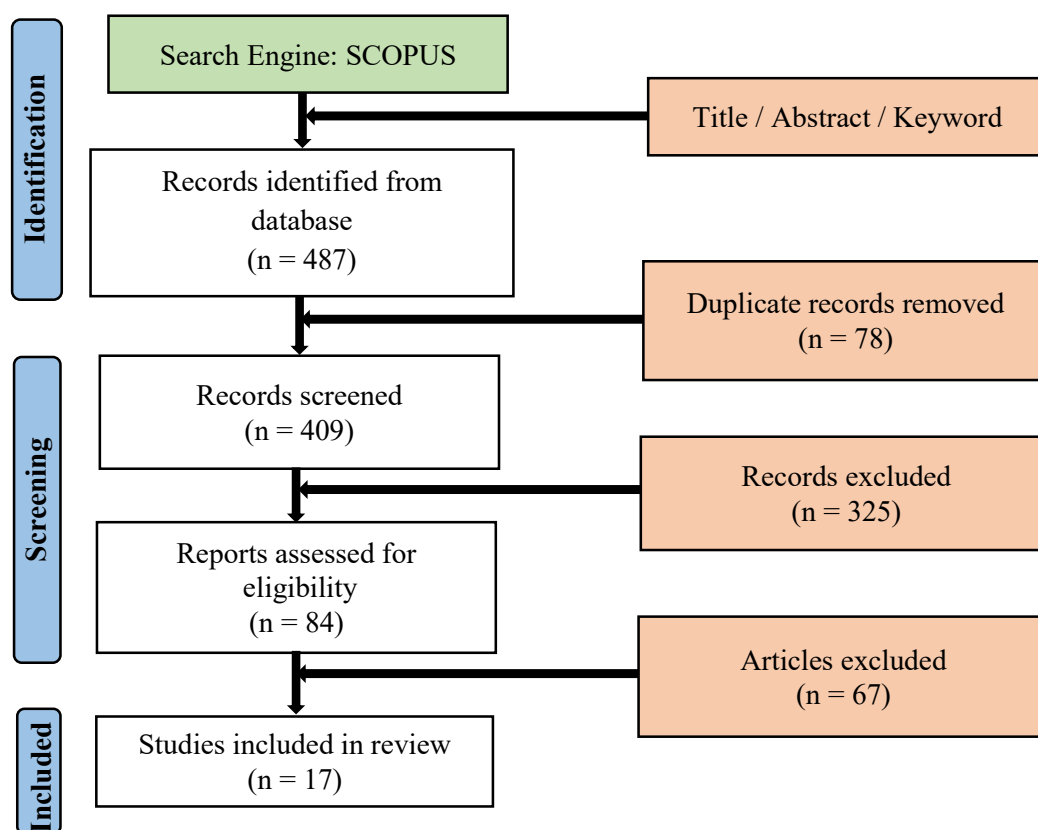


Figure 1: PRISMA Literature Review Flow Diagram
(Sources: Page et al., 2021)

Figure 1 shows the PRISMA framework illustrated using the PRISMA 2020 flow diagram (Page et al., 2021). Following the PRISMA framework, all retrieved articles of 487 were then removed duplicates (n = 78). After reviewing the titles and abstracts of the remaining 409 entries, 325 studies were deemed irrelevant and removed. A total of 84 full-text papers were evaluated, of which 49 satisfied all inclusion criteria and were incorporated into the final evaluation.

3. SYSTEMATIC LITERATURE REVIEW

Systematic literature review (SLR) collects all relevant articles and resources meeting predefined inclusion criteria (Cabrera et al., 2023). It uses clear and methodical techniques to reduce the possibility of bias while searching, finding, assessing, merging, analysing, and synthesizing research. A well-designed systematic literature review is crucial because it guarantees that each step is meticulously planned out before the review process starts (Moher et al., 2015). According to Mengist et al. (2020), a systematic literature review's essential elements include a thorough search to find all pertinent studies that fit the eligibility requirements, evaluating the quality and reliability of the studies that are chosen, methodically compiling and presenting the data that has been extracted from the selected articles, and making the results of the study available for scientific and decision-making purposes.

Table 2 summarises significant studies concerning CE in the built environment, emphasising their focal points, methodological strategies, and research scope. The table indicates that current literature primarily focuses on conceptual definitions, sustainability dimensions, and CE implementations in construction and material management, with very few studies explicitly examining the role of CE in property management.

An in-depth analysis of the chosen studies uncovers multiple prevailing research themes. A substantial segment of the literature concentrates on the conceptualisation of CE, encompassing definitions, frameworks, and theoretical underpinnings (e.g., Kirchherr et al., 2023; Ellen MacArthur Foundation, 2017). These studies delineate the foundational principles of CE and underscore the shift from linear to circular systems. Secondly, a multitude of studies examine the dimensions of sustainability, specifically the environmental, economic, and social facets (Ghisellini et al., 2016; Hariram et al., 2023; Hunjra et al., 2024). These works underscore the multifaceted advantages of CE and its capacity to further sustainable development objectives. Third, an expanding corpus of research investigates implementation tactics, encompassing R-strategies, lifespan evaluation, and resource management approaches (Potting et al., 2017; Zimmermann et al., 2024). These studies offer pragmatic methods for implementing CE principles within the built environment.

Despite the extensive studies available, the analysis uncovers a significant deficiency in the literature. The majority of studies concentrate on the design and construction stages of the built environment, whereas the operational phase, especially property management, receives scant attention. Moreover, although sustainability outcomes are extensively examined, there is a deficiency of research that directly connects CE approaches to daily property management decisions, asset lifecycle strategies, and operational performance.

This study aims to fill these gaps by analysing the impact of CE practices, namely through R-strategies, on sustainability in property management. This research enhances current literature by concentrating on the operational phase of buildings, offering a more thorough understanding of the practical implementation of CE principles to attain environmental, economic, and social sustainability goals.

Table 2: Literature review on Circular Economy in Property Management

Focus	Authors	Databases	Years	Keywords	Numbers of revisited papers	Source
Definitions	(Kirchherr et al., 2023)	ScienceDirect	2005-2022	Circular economy, 4R framework, sustainable development, definitions, content analysis, systematic review	84	Resources, Conservation & Recycling
Concepts	(Ellen McArthur Foundation, 2017)	Scopus	n.a.	Circular economy, waste management, recycling	n.a	Ellen McArthur Foundation
Indicators	(de Oliveira et al., 2023)	ScienceDirect	2014-2022	Circularity indicators, resources management, circular economy principles, nano level, micro level, sustainability	59	Resources, Conservation & Recycling
Circular economy in buildings	(Rahla et al., 2021)	Scopus	1995-2020	Circular economy; circular building; implementation strategies; design strategies; circular resource flows	89	Applied System Innovation
Barriers in transitioning towards circular economy	(Mhatre et al., 2023)	ScienceDirect	2007-2022	Circular economy; built environment, building materials, sustainable construction; materials reuse.	133	Journal of Cleaner Production
Life cycle assessment	(Joensuu et al., 2020)	Scopus	2006-2018	Built environment, circular economy, sustainable development, urban development, cradle to cradle, waste hierarchy	210	Journal of Cleaner Production
Sustainability	(Ghisellini et al., 2016)	ScienceDirect	1966-2015	Circular economy, resource efficiency, reuse, recycling, zero waste, sustainability	249	Journal of Cleaner Production
Environmental sustainability	(Hariram et al., 2023)	Scopus	2003-2022	Sustainalist, sustainability, sustainable revolution, SDG, quality of life, sustainanalism	185	Sustainability
Economic sustainability	(Boar et al., 2020)	Scopus	1987-2020	Sharing economy, Sustainable Development Goals, sustainability,		Sustainability

				mobility, accommodation		
Social sustainability	(Ajmal et al., 2018)	Scopus	1987-2016	Sustainability, social indicators, social sustainability, businesses, society	93	International Journal of Sustainable Development & World Ecology
R-strategies	(Zimmermann et al., 2024)	ScienceDirect	2005-2023	Circular economy, R-strategies, circular supply chain, systematic review, recycle	122	Cleaner and Responsible Consumption
Sustainable development	(Velenturf et al., 2021)	ScienceDirect	1972-2020	Circular economy, sustainable development, sustainable transition, natural capital, social equity, economic prosperity	198	Sustainable Production and Consumption
Resource management	(Akhimien et al., 2021)	ScienceDirect	2002-2020	Buildings, circular economy, material recovering, resource efficiency, sustainability	92	Journal of Building Engineering
Reduce	(Zorpas, 2024)	ScienceDirect	2012-2024	Multiple “Rs, R-strategies, strategies development, SDGs, environmental performance, circular strategy, circular economy standard, ISO 59000 framework, ISO 59010, R100	234	Science of the Total Environment
Reuse	(Hart et al., 2019)	ScienceDirect	2015-2018	Circular economy, built environment, building materials, sustainable construction, materials reuse	21	26th CIRP Life Cycle Engineering (LCE) Conference
Recycling	(Lundgren et al., 2024)	Scopus	2007-2023	Adaptive reuse, circular economy, sharing economy, lifecycle assessment (LCA), lifecycle profit (LCP)	94	Construction Management and Economics
Environmental impacts	(Ghisellini et al., 2018)	ScienceDirect	1981-2017	C&DW, circular economy, life cycle assessment, cleaner production, reuse, recycle	213	Journal of Cleaner Production
Waste management	(Kirchherr & Hartley, 2025)	Scopus	2013-2025	Capitalism, circular economy, environmental policy, public policy, sustainable development, sustainability discourse	101	Journal of Industrial Ecology

3.1 Concept of Circular Economy (CE)

The traditional linear economy's "take-make-dispose" model has resulted in inefficient resource use and wasteful product and material disposal (Wittjes and Lozano, 2016). CE concept has emerged and is increasingly regarded as a sustainable alternative to the old linear economic model. It aims to reduce waste and enhance resource efficiency by keeping goods, materials, and resources within closed loops (Geissdoerfer et al., 2017). CE advocates for a regenerative framework that emphasises reuse, recycling, and restoration, thereby diminishing reliance on virgin resources and alleviating environmental repercussions (Ghisellini et al., 2016).

Kirchherr et al. (2023) explains that CE has been interpreted with many definitions from the academics and industry professionals. In this study, it explores how through the principles of CE improves sustainability by optimizing the social, environmental and economic aspects of materials and products. This holistic approach strives to repair and rejuvenate the environment (EMF, 2021). Korhonen et al. (2018) states that the majority of people see CE as a means to increase economic and environmental advantages via the use of technology. As a whole, society benefits from these solutions.

3.1.1 R-Strategies in CE

CE goals are to lessen the use of natural resources and improve the recycling of materials, which helps in reducing waste (Potting et al. 2017). The main element in implementing CE is through the adoption of R-Strategies. R-strategies lie under the principles of CE and currently, there is no exact definition and number of R-strategies, however, the 10R framework by Kirchherr et al. (2023) is presented and discussed.

The "R" framework has evolved to encompass 10Rs (Kirchherr et al., 2023). The 10-R framework further expands these strategies by incorporating additional actions such as refuse, rethink, remanufacture, repurpose, and recover. Higher levels of circularity are achieved when materials are retained within the product lifecycle for extended periods, thereby reducing the need for new resource extraction (Morseletto, 2020). An elevated degree of material circularity within a product chain indicates that these materials persist in the chain for an extended duration and can be reutilised post-consumption, ideally preserving their original quality (Potting et al., 2017). As a result, fewer production of new materials are needed which can reduce the consumption of natural resources. However, some R-practices like repairing, reducing, and reusing relies on the active participation from the stakeholders in order to achieve the objectives of CE (Ghisellini et al., 2018).

Reduce, Reuse and Recycle are the three main "Rs" that have been recognized (Ossio et al., 2023). Efficient production is closely linked to the "Reduce" principle which defines it as limiting the use of natural resources by lessen waste production through efficient production (Ghisellini et al., 2016). "Reuse" is any activity that causes a product or its parts to be used again for the intended purpose (Morseletto, 2020). "Recycle" is retrieving resources from waste, reprocessing them and transforming them into materials or goods that serve the same or other purposes (Ossio et al., 2023).

However, the implementation of R-strategies in property management sector requires active participation from multiple stakeholders This includes property managers, tenants, and policymakers, as behavioural and organisational changes are critical to achieving CE objectives (Ghisellini et al., 2018; Zorpas, 2024).

Table 2: Literature review on Circular Economy in Property Management

Smarter product use & manufacture				Extend the lifespan of products or parts				Reuse materials sensibly	
R0 Refuse	R1 Rethink	R2 Reduce	R3 Reuse	R4 Repair	R5 Refurbish	R6 Remanufacture	R7 Repurpose	R8 Recycle	R9 Recover
Make redundant products by providing different function	Intensify use of a material/product (e.g sharing)	Increase efficiency in product use or manufacture by lessen the consumption of natural resources	Reuse by other consumers according to its original function	Restoration and upkeep of damaged items to restore their original functionality	Restore/upgrade old products	Use parts from an old product into a new product with the <i>same</i> function	Use parts from an old product into a new product with a <i>different</i> function	Process materials to achieve equivalent or poorer quality	Incineration of materials with energy recovery

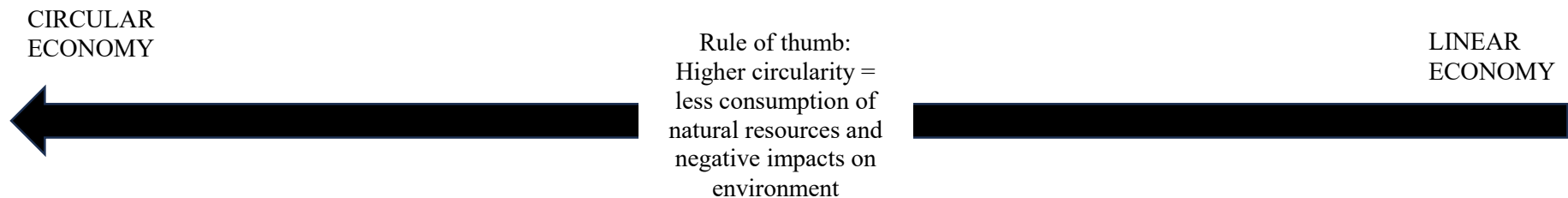


Figure 2: The 10-R Framework, Source: own illustration; based on Potting et al. (2017) and Morsetto (2020).

Figure 2 illustrates the 10-R framework of the R-strategies. This framework is divided into three categories of objectives within the framework: the advancement of smart product manufacturing and utilisation, the enhancement of product and component longevity and also the effective use of materials. Each group is delineated in separate subsections.

The 10-R framework highlights that strategies positioned higher in the hierarchy, such as refuse, rethink, and reduce, achieve greater levels of circularity by minimising resource consumption and environmental impact, whereas lower-level strategies such as recycling and recovery focus on managing waste after it has been generated. In the context of this paper, Figure 2 provides a structured representation of how CE principles can be operationalised through R-strategies within property management practices. This directly supports the study's objective of linking CE with sustainability, as the application of these strategies enables property managers to optimise resource efficiency, extend asset lifecycles, and reduce waste generation throughout the operational phase of buildings (Potting et al., 2017).

Furthermore, the framework reinforces the integration of the three pillars of sustainability discussed in this study. Environmentally, higher-order R-strategies contribute to reduced emissions and resource extraction (EMF, 2017). Economically, practices such as repair and refurbishment lower operational and capital costs by prolonging asset usability. Socially, the implementation of these strategies encourages stakeholder participation and enhances occupant well-being. The relevance of Figure 2 is further reflected in the study's findings, which indicate that property management practices predominantly adopt mid-level R-strategies such as reduce, reuse, repair, refurbish, and recycle due to their practical applicability (Zorpas, 2024). Therefore, the 10-R framework not only bridges the gap between theoretical CE concepts and real-world implementation but also serves as a strategic guide for advancing sustainability outcomes in property management.

3.2 The Aspects of Sustainability

International organizations, governments, and academics have all expressed a strong interest in sustainability. Sustainability can be defined in multiple ways, although its fundamental components consistently include the equilibrium of economic growth, environmental preservation, and social accountability (Hariram et al., 2023). The notion of sustainable development is commonly linked to sustainability, leading to the interchangeable usage of the two phrases, especially in academic and scientific publications, as demonstrated by Grosseck et al. (2019).

The United Nations (UN) played an important role to promote sustainable development since 1980s (Wang et al., 2024). Sustainable development is the process of making progress that addresses the requirements of the current situation without jeopardizing the future generations (Emina, 2021). True sustainability requires interconnection and overlaps of the three pillars of sustainability; economic, social, and environmental which was introduced in the 1980s by the Brundtland Commission's global environment and development report (Purvis et al., 2019).

Chauke et al. (2018) and Hariram et al. (2023) stated that the first pillar, environmental sustainability, came about because of the issues in the community. The goal is to improve human well-being and socially sustainable development by protecting the sources of raw materials that people need, making sure that waste landfills stay within their limits, and keeping people and the environment from getting damage. Economic sustainability is the second point. It is closely linked to social and natural sustainability. Hunjra et al. (2024) say that economic sustainability means allocating and protecting resources in a way that guarantees good social and natural outcomes. The last pillar, which is just as important, is social resilience, which can be reached by building a strong public space and getting people involved in their communities. Ajmal et al. (2018) argues that social sustainability may be defined as an end goal in itself and a means to that end, as it raises people's standard of living.

The advantages of these pillars coexisting are far greater than those of each pillar alone. These pillars are interconnected and equally crucial to attaining successful sustainable development. Hence, through the implementation of CE is one of the methods in achieving sustainability in property management.

3.3 Sustainability Dimensions in CE

The integration of CE practices into property management has gained increasing attention as a strategic approach to achieving sustainability across environmental, economic, and social dimensions (Kanters, 2020). While CE has been extensively studied in the construction phase of the built environment, its application in property management remains comparatively underexplored, particularly in relation to how specific CE practices contribute to sustainability outcomes throughout the operational lifecycle of buildings (Rahla et al., 2021).

CE in property management are generally implemented through R-strategies: reduce, reuse, repair, refurbish, and recycle, which seek to optimise resource utilisation, decrease waste production, and prolong the lifespan of building components (Kirchherr et al., 2023). These methods offer a pragmatic framework for converting CE practices into quantifiable sustainability results in the management and maintenance of physical assets (Potting et al., 2017).

Despite the known benefits, many challenges impede the successful incorporation of CE principles in property management. These factors encompass inadequate knowledge among stakeholders, substantial initial investment expenditures, a deficiency in technical skills, and insufficient regulatory backing (Rahla et al., 2021). Addressing these barriers are crucial to completely actualise the potential of CE in promoting sustainability within the built environment.

This subsection emphasises that CE approaches offer a holistic framework for attaining sustainability in property management by concurrently addressing environmental, economic, and social goals. Nonetheless, additional research is required to investigate realistic implementation tactics and to reconcile the disparity between theoretical principles and real-world implementations.

4. FINDINGS

The findings show that the application of CE in the property management industry is increasingly gaining momentum. Lack of awareness, inadequate technical understanding, the absence of comprehensive legislative frameworks, and the notion that CE procedures have significant initial costs continue to impede wider implementation. However, CE practices are steadily being implemented, particularly through the use of R-strategies.

4.1 CE Implementation in Property Management

Real estate sector is vital for social and economic development (Hossain et al., 2020). Nevertheless, economic expansion significantly degraded the environment, with the construction industry accountable for 40% of resource utilisation, 40% of waste generation, and 33% of greenhouse gas emissions (Rahla et al., 2021). Academia and policymakers have advocated for a novel paradigm that departs from the traditional linear economic model due to adverse environmental impacts and the necessity for improved management of increasingly scarce resources.

Property managers have begun incorporating CE practices in managing their building in order to minimise energy use, optimise water consumption and a better waste management in order to reduce the operational costs (Rahla et al., 2021). Referring to the case study by Lundgren et al. (2024), the circular activities that are being implemented in the built environment is referring to the R-strategies.

The R-strategies that are most used by property managers is the “reduce” strategy (Rahman et al., 2021). Referring to Malaysian Green Technology and Climate Change Corporation (2024), energy intensity has been cut off to 15% to 25% after the installation of LED lighting, smart HVAC systems and motion sensor-controlled utilities.

Meanwhile, the “reuse” and “recycle” strategies are being practiced through materials recovery programs, where products or parts of the products (e.g., benches, tables) are either reused in other areas or it can be recycled (Victar et al., 2024). Property managers also implement rainwater harvesting systems as one of the efforts in reusing natural resources (Chen et al., 2025). However, not many buildings can incorporate these efforts into their buildings due to lack of CE awareness and financial capability (Rahla et al., 2021).

Furthermore, “repair” and “refurbish” strategy is emerging as a sustainable alternative in managing a building (Khajuria et al., 2025). According to Sharma (2024), property managers are aware that rather than replacing the entire product, upgrading and repairing components such as retrofitting lifts and upgrading a space can extend the asset lifespan while also cutting the operational costs. The efforts in implementing circularity into a building will go hand-in-hand between sustainability and also financially.

4.2 Sustainability Outcomes of CE Practices in Property Management

Integrating CE principles into property management practices is a long-term strategy for sustainability. Iacovidou et al. (2021) state that this idea leads to inefficiency and environmental deterioration due to a lack of sequential reasoning. There is a shift towards a more sustainable cycle that allows for the reusing, recycling, and regeneration of materials and products. Significant improvements in resource management and ecological connections may result from carrying out the CE (EMF, 2013). The goal, according to Ghisellini et al. (2016), is to create a system that can withstand economic downturns and raise consumer consciousness about how their choices affect the environment.

4.2.1 Environmental Sustainability

One of the most significant sustainability aspects of CE implementation is the positive impact towards the environment across property lifecycles (Larsen et al., 2022). In property management, CE encourages the use of R-strategies (reduce, reuse, repair, refurbish and recycle) that lies under the principles of CE to maximize resource use and extend product lifespan (AlJaber et al., 2025).

Furthermore, sustainable product design is a primary focus in the domain of CE where it promotes sustainable product design and lifecycle consideration, ensuring that materials and components are engineered for durability, repairability, and recyclability (Den Hollander et al., 2017). This leads to lower ecological footprints from maintenance and renovation. In the context of property management, this translates into more sustainable maintenance and renovation practices, which reduce energy consumption, greenhouse gas emissions, and waste generation (Hariram et al., 2023). Consequently, CE plays a critical role in addressing global environmental challenges such as climate change and resource depletion.

Implementation of CE has also enhanced the environmental pillar through waste minimization. The idea of waste has evolved from viewing it as disposable to recognising it as a valuable resource with potential for reuse (Kirchherr et al., 2025). CE aims to establish a zero-waste approach by concentrating on optimising the production process and minimising waste output to the greatest extent possible (Agamuthu et al., 2023). Thus, the environmental pillar of CE ensures that property management practices are able to tackle issues like resource depletion and climate change.

4.2.2 Economic Sustainability

The economic aspect of sustainability within the CE framework in property management focuses on financial viability by maximizing use of resources and extending asset lifespan in order to reduce operational costs (Kandpal et al., 2024). According to Boge et al. (2021), the goal of implementing CE methods into property management is to change the emphasis from maximizing profits in the near term to creating value in the long run. By shifting from the linear economic model, CE practices such as preventive maintenance, refurbishment projects and integration of smart building systems can reduce operational costs in property management.

CE promotes the integration of energy-efficient design and operations throughout the building's lifespan (Almusaed et al., 2024). The implementation of CE in property management includes smart building systems and renewable energy integration (e.g. solar panels) (Windapo et al., 2020) which significantly reduce energy consumption and operational costs.

CE in property management stresses lifecycle thinking, which involves retrofitting or maintaining buildings to retain their energy performance over time (Rahla et al., 2021). The transition from energy-intensive to energy-efficient systems, supported by data-driven monitoring and occupant engagement, leads to substantial reductions in energy consumption and operating costs (Almusaed et al., 2024). Therefore, the economic pillar of CE in property management is not only about reducing costs but also to create sustainable financial value through resource efficiency.

4.2.3 Social Sustainability

The social pillar of CE practices in property management highlights improving quality of life, the community well-being, tenant satisfaction and engagement from the stakeholders (Almusaed et al., 2023). The social pillar in property management encompasses how buildings, spaces, and services contribute to the well-being of tenants, workers, and the surrounding community, in addition to the physical care of assets (Al-Kodmany, 2018).

Social pillar focuses on creating inclusive living or working environments for people (Ajmal et al., 2018; Niza et al., 2023). For example, this can be done by designing the interior space fits with the needs of the building's occupants in order to improve on their productivity while meeting their needs and satisfaction (Abouelela, 2022). Indoor environmental quality such as good air circulation, access to natural lighting and thermal comfort through the use of smart technologies also plays a part for this social pillar (Niza et al., 2023)

Community engagement is vital in the implementation of CE practice (Salvioni et al., 2020). Property managers can organize recycling programs, energy conservation campaigns and other sustainable initiatives to encourage the community in practicing the CE initiatives (Salvioni et al., 2020). Additionally, cooperative decision-making between property managers and tenants guarantees that sustainability plans represent the community's true needs and values, boosting their efficacy and adoption of CE property management practices (Almusaed et al., 2023).

5. DISCUSSIONS

The results of this study are consistent with the literature examined in Section 3. In alignment with other research (e.g., Geissdoerfer et al., 2017; Ghisellini et al., 2016), the findings affirm that CE practices concurrently enhance environmental, economic, and social sustainability outcomes. The focus on R-strategies highlighted in the data aligns with the theoretical framework established by Potting et al. (2017) and Kirchherr et al. (2023), illustrating the application of conceptual CE ideas in actual property management techniques. This connection enhances the credibility of the findings and

underscores the significance of previous research in elucidating real-world CE intergration.

The study emphasises the interconnection of the three pillars of sustainability from an analytical standpoint. Enhancements in the environment resulting from resource efficiency and waste minimisation frequently yield economic benefits, including cost reductions and increase the asset value (Hariram et al., 2023; Almusaed et al., 2024). Likewise, increased social outcomes, such as enhanced occupant well-being and community involvement, can favourably affect property performance and stakeholder contentment (Salvioni et al., 2020). This connection underscores the necessity of embracing a holistic approach to sustainability instead than tackling each pillar in isolation.

The study offers significant information for property managers and industry professionals. The implementation of CE practices, especially R-strategies, can markedly improve building performance and operational efficiency. Implementing preventative maintenance and refurbishment techniques can diminish lifecycle costs, while the integration of smart technology can maximise energy and resource utilisation (Windapo et al., 2020; AlJaber et al., 2025). Furthermore, involving tenants and stakeholders in sustainability activities can enhance the efficacy and acceptance of CE.

This study theoretically enhances the existing knowledge by connecting CE ideas with property management techniques. It focuses on the operational phase, underscoring the vital importance of property management in attaining sustainability goals, in contrast to prior research that mostly concentrated on the construction period. It further enhances the comprehension of how CE can be integrated with the three pillars of sustainability in a pragmatic setting.

Nonetheless, the study recognises multiple limitations. The dependence on secondary data through SLR may restrict the profundity of contextual insights, and the limited number of research explicitly focusing on CE in property management suggests that the discipline is still developing. Furthermore, discrepancies in terminology and methodologies among research may influence the uniformity of results.

Consequently, future study focus should be on empirical studies and case-based analyses to corroborate the findings and offer more nuanced insights into the practical obstacles and opportunities associated with CE implementation. Additional study is required to investigate the influence of policy frameworks, financial incentives, and stakeholder participation on expediting the implementation of CE practices in property management.

6. CONCLUSION

This study shows that the incorporation of CE practices, specifically through the implementation of R-strategies, offers a solid and pragmatic approach to enhancing environmental, economic, and social sustainability in property management. The results indicate that transitioning from linear to circular methods facilitates improved resource utilisation, minimises waste, prolongs asset lifecycles, and concurrently produces cost efficiencies while boosting occupant well-being and stakeholder involvement. This study directly connects CE concept to the operational phase of the built environment, addressing a significant gap in current literature and underscoring the strategic importance of property management in attaining long-term sustainability results. Despite its dependence on secondary data, the study underscores the necessity for additional empirical validation and ultimately asserts that the implementation of CE practices establishes property management as a pivotal force in the shift towards a more resilient, resource-efficient, and sustainable built environment.

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