The Internet of Everything and the Circular Economy: A Systematic Literature Review

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Abstract: - Better resource management combined with waste reduction and longer product life cycles presents sustainability improvements by integrating the Internet of Everything (IoE) into Circular Economy (CE) models. This extensive study examines both the promising aspects and obstacles associated with the IoE when used to advance CE goals. IoE provides enhanced servitization, optimizing resource efficiency and enabling successful product recovery through real-time surveillance, analytical tools, and improved product tracking capabilities, while enhancing sustainability, global collaboration, and leveraging artificial neural networks and convolutional neural networks. Through IoE, organizations adopt more sustainable production and consumption patterns since they gain the ability to track materials and products from creation to disposal. Various barriers prevent the adoption of IoE in CE because customers express doubts about their conduct, face financial risks, scalability limitations, and interoperability challenges. The management and utilization of the IoE system generate extensive data that faces numerous significant challenges with security and complexity concerns. The review indicates that the maximum utilization of IoE in CE requires addressing technology limitations while conducting customer behavior research and creating supportive regulatory structures. The paper closes by suggesting research paths for handling these barriers and advancing IoE adoption in circular business systems as process innovation.

Key-Words: - Internet of Everything (IoE), Internet of Things (IoT), Circular Economy (CE), Efficiency, Effectiveness, and Challenges.

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1 Introduction

The Circular Economy (CE) has widespread appeal because it operates as a solution for worldwide sustainability problems. Excessive extraction of resources and creation of environmental deterioration and waste accumulation stem from the previous linear "take-make-dispose" conventional economy model, [1], [2]. The CE promotes resource efficiency through activities that involve reuse, recycling, and regeneration operations that correspond to sustainability guidelines, [3]. The essential economic and environmental transformation needs to happen because it reduces greenhouse gas emissions while protecting biodiversity, while ensuring business sustainability, [4]. The significant nature of the subject requires detailed comprehension of CE definitions, together with analyses on how the Internet of Everything (IoE) advances its expansion.

CE represents an industrial economy built to restore itself through design, which targets waste-free circular solutions, [4]. The system applies renewable energy while utilizing restoration principles without dangerous substances at the end-of-life site, [3]. CE includes every approach of production and consumption that both increases efficiency and decreases environmental impact, [5]. The professional world maintains different interpretations about CE extent while some experts emphasize broad sustainability outcomes, and other groups concentrate on waste reduction systems. Digital technologies serve to facilitate CE, and knowledge of essential concepts is vital.

IoE adds onto the Internet of Things (IoT) because it merges people with processes, data, and things to deliver smart choices, [6]. IoE sustains CE implementation through better resource management, enhanced supply chain visibility, and real-time product lifecycle monitoring, [7]. Diagnostic sensors paired with artificial intelligence (AI) analytic systems simplify product maintenance forecasting and shorten product deterioration periods while decreasing resource loss, [8]. Through its tracking systems, IoE enables closed-loop production to follow materials during recycling operations effectively, [9]. Assessing numerous viewpoints about IoE becomes essential because its fundamental characteristics need thorough evaluation regarding future innovation potential.

IoE involves intelligent networking of people alongside processes, data, and things to create intelligent connections, [6]. IoE is an essential change method that joins cyber-physical systems through digital intelligence to provide automation and operational efficiency, [7]. IoE in relation to sustainability by studying real-time data analytics and decision systems, [9]. The absence of alignment exists regarding the functions of IoE within CE for evaluating environmental outcomes, together with operational efficiency improvements. Research needs to address these knowledge gaps to determine the directions in which IoE should apply to CE.

Standardized frameworks that combine IoE with CE remain very limited in the market. Insufficient analysis exists regarding the effectiveness and challenges of using IoE in developing CE. Therefore, this study seeks answers to the following two questions which are: 1) How does IoE enhance CE efficiency and effectiveness? and 2) Which factors make it difficult to create CE powered by the IoE?

2 Materials and Methods

The strategy of this study is to develop a relevant literature review and research gaps with a systematic literature review (SLR). A SLR uses explicit processes to find and evaluate all available research studies while maintaining full transparency in the review of a particular research topic, [10]. SLR employs organized research methods to achieve both reproducibility and whole study coverage. Academics benefit from using this method to blend existing knowledge into fresh disciplines, including IoE and CE, since the approach reveals research patterns and enables the identification of gaps that guide future scholarship, [11]. The systematic review of past research using an SLR approach would have given universal insight into how IoE technologies enhance CE efficiency, together with integration obstacles and organizational convergence strategies. There are four steps to conduct a literature review: 1) designing the review; 2) conducting the review; 3) analysis; and 4) writing the review [12] as illustrated in Figure 1.

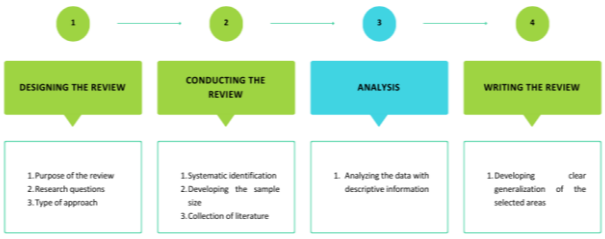

Fig. 1: Process of SLR
Source: [12]

2.1 Steps of SLR

2.1.1 Designing the Review

The first stage of the SLR should develop why this review should be addressed, why there is a need to do it, and how it is contributing to the audience, [12]. Therefore, research about the IoE within a CE framework remains highly imperative since this field remains under development. Devices and people under the IoE framework work with processes and data in interconnected systems, which lead to dramatic transformations in organizational operations towards sustainability goals. CE involves system design through closed-loop procedures while minimizing waste by reutilizing materials for extended durability. IoE has identical objectives as CE because it seeks both resource efficiency and sustainability.

The purpose of this review is to examine the knowledge gap by combining existing research about how IoE improves CE while addressing implementation barriers and successful implementation methods. The review stands crucially because of rapid technological advancement, together with organizational demands for sustainability while offering practical know-how for future research, [3].

The review examines how IoE technology improves resource handling and minimizes waste generation while boosting supply chain visibility to make CE procedures more effective and efficient. This evaluates the real-world barriers organizations encounter during IoE circular business model deployment due to technological restraints and administrative framework deficiencies, as well as high setup expenses, [13]. Businesses, especially focusing on manufacturing, agriculture, and logistics, will benefit from understanding how IoE combines with CE through practical methods and approaches.

This review will use several main academic databases, including Google Scholar, Emerald, and Eric. A search involving the keywords will be "Internet of Everything", "Circular Economy", "IoE and CE integration", "Technology Integration", "IoE-powered Circular Business Models" “Barriers to IOE in Circular Economy” “Circular Economy and Internet of Things (IoT)”, and "IoE for sustainability”. Research on the intersection of IoE and CE across sectors will be found by using the specified terminology in different permutations.

The inclusion criteria are based on the publication of works in credible journals through peer review in the last ten years (2016-2025). The research has to be on IoE and CE, or both, and on how these technologies influence business strategy and sustainability. Publications in the form of research articles, conference papers, and academic reports that review IoE for better efficiency of the CE models, impediments of integration, and ways to merge the two concepts will be included. Exclusion would be based on those unrelated articles to IoE or CE, or even just discussing either of the two ideas. Besides, non-peer-reviewed sources and publications before 2016 will be excluded to represent the most recent and relevant findings.

2.1.2 Conducting the Review

The second stage of the literature review refers to the systematic identification and collection of literature. The literature search within the IoE and CE review realm requires researchers to find academic articles and research papers, as well as other relevant sources that will be published from 2016 to 2025 based on selected inclusion criteria and a clear selection process of Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). Figure 2 describes the search process and protocols for including the papers in the literature review.

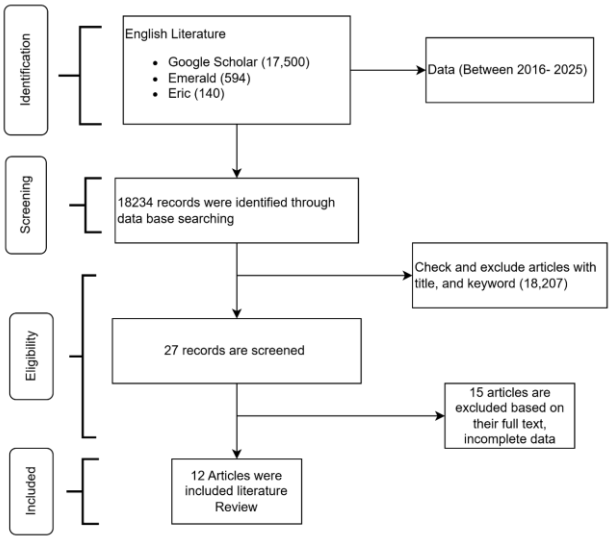

Fig. 2: Previous study screening process diagram
Sources: Own Complication (February 2025)

2.1.3 Analysis

After deciding the sample size for the literature review, data can be analyzed in the form of descriptive information, including authors, years published, topic, or output of the study. Table 1 (Appendix) describes a previous study of the concepts of IoE and CE.

3 Results

3.1 Efficiency and Effectiveness of Circular Economy with IoE

IoE provides efficiency and effectiveness for advancing circular business models, such as supporting product recovery strategies, supporting servitization, supporting CE levels, sustainability enhancement, improved global collaboration, Artificial Neural Networks (ANNs), and Convolutional Neural Networks (CNNs).

3.1.1 Support Product Recovery Strategies

IoE plays an essential role in CE since it provides continuous data monitoring across the product lifetimes, which helps improve recovery methods. Businesses use smart sensors and Radio Frequency Identification (RFID) tags as part of IoE technology to monitor items throughout all life cycle phases from utilization to wear extent and recovery or recycling potential, [1]. Organizations benefit from this approach to identify which products will soon reach expiration through effective recovery solutions, including recycling, remanufacturing, and refurbishing.

Businesses achieve maximum recovery success through IoE integration in their product designs that enable easier decomposition and recycling. IoE enables end-of-life monitoring, which provides predictive product management for manufacturers to receive products before disposal, [25]. IoE improves tracking systems, thus making reverse logistics more efficient because it helps ensure resources and recovered goods are processed effectively. IoE directly supports the CE concept of efficient product recovery, which brings products back into the loop.

3.1.2 Support Servitization

The transformation from product sales to service provision through the terms servitization and IoE provides rapid acceleration for circular business models. IoE technology aids in real-time data acquisition and feedback processes necessary to deliver maintenance services and product-as-a-service (PaaS) options through which businesses can transform their products into service-based systems. With the help of IoE technologies, they can extend product lifespans by monitoring performance through tracking mechanisms, strategic update planning, and product status observation during use, [26].

The service design capability enables businesses to offer leasing arrangements and pay-per-use models combined with subscription-based systems, which enable clients to pay for product utilization instead of standard purchases. IoE extends product lifespan by tracking deterioration as well as managing leased equipment usage through data observation for device maintenance, [27]. The prolongation of the product life cycle, combined with enhanced servitization efficiency, makes IoE contribute to waste reduction and resource efficiency goals of the circular economy.

3.1.3 Support CE Levers

IoE serves as an essential tool for businesses because it optimizes resource consumption while reducing waste and improving product life cycles for the CE. IoE technologies serve as the key implementation tools for CE to achieve design for durability as well as reuse and recycling. Through IoE-enabled product tracking, businesses can ensure that products, alongside their resources, get remanufactured along reused before disposal. IoE performs continuous supply chain component and raw material state monitoring to keep valuable resources in use as long as possible, [1].

Through its ability to deliver immediate process information, IoE actively helps optimize energy resource consumption. The automated updating of manufacturing systems using real-time information from IoE sensors promotes machine automation and operational efficiency, which reduces waste output and energy usage, [28]. This operational optimization achieves two goals by reducing operating expenses and making the environment better while advancing the main objectives of the circular economy. IoE helps drive sustainable practice transitions because it enables industries to use their capabilities in resource management and waste reduction through CE levers.

3.1.4 Sustainability Enhancement

The combination of smart CRM, smart packaging systems, smart home equipment, and predictive social media creates sustainable benefits through CE implementation, [21]. Smart packaging facilitates continuous product lifespan monitoring along with material recuperation, and smart CRM duplicates personalized customer activities with waste minimization. Applications of circular objectives receive backing from automated devices in dwellings, which perform their duties using minimal energy and resources. The patterns of stay-at-home consumers and sustainable market shifts receive guidance through predictive analysis systems operating on social media platforms. Tech-powered resource optimization enables both better management systems and sustainable customer behavior development, [29].

3.1.5 Improved Global Collaboration

The exchange of data through IoE enables stakeholders to build enhanced international cooperation for the CE, [15]. Real-time connectivity joined with smart sensors provides manufacturers, suppliers, and recyclers with current product life cycle data, resource consumption details, and environmental impact details through transparent information sharing to strengthen their joint operations. IoE establishes worldwide connections to develop efficient resource management systems and coordinated decision platforms. When businesses utilize open platforms, they receive shared data access for developing innovative solutions to find new CE business opportunities. The Web of Everything advances global teamwork to improve waste recovery actions and develop robust supply chain return systems, and instigates sustainable manufacturing alongside environmentally sustainable product usage, [7].

3.1.6 Artificial Neural Networks

Artificial Neural Networks (ANNs) serve as essential components of CE product traceability systems by their ability to discover useful data patterns from databases, [22]. ANNs were computational algorithms, based in part upon the structure and operation of the human brain, layered networks of processing nodes (or nodes that behaved like neurons) communicating amongst themselves. Being trained to perceive patterns by adapting and adjusting the weight of the interconnections according to given data, these networks are efficient at solving challenging problems such as anticipated product life cycles or opportunities for resource optimization, [30]. The installation of reuse and recycling systems depends on ANNs that connect production data to the use of information and data from the return stage. A transparent tracking system maintains material accuracy since these control methods cut down waste by finishing material loops. Product performance evaluation through ANNs lets businesses execute affordable maintenance planning across all circular value chain sectors. The system components at Altum function independently to maintain circular operations through automated decision processes.

3.1.7 Convolutional Neural Network

The CE benefits from Convolutional Neural Networks (CNNs) because of their ability to detect items and materials alongside packaging during product lifecycle stages, [22]. CNNs Deep learning model represents a particular variant of the deep learning model devoted to visual data processing and analysis, including images or videos. CNNs follow the structure of the human visual cortex, and, due to this, they were especially good at tasks such as object detection and image classification, as the network automatically learns to identify patterns, edges, and textures in images, [29]. When pictures enter facilities, CNNs examine them to identify objects and measure their importance, then extract characteristics such as damage extent and material identity. The automation process enables efficient sorting operations along with quality assessment and classification tasks for recycling and reuse. CNNs increase operational efficiency and reuse potential by minimizing the need for human intervention, together with human error in processing waste materials. Sustainability standards, along with changing material streams, become a natural fit for systems through their ability to derive understanding from visual information, [31].

3.2 Difficulties in Creating CE Models with IoE

There are difficulties in creating CE models, such as scalability, interoperability design, adaptability and upgradability, financial risk and uncertainty, customer preferences and behavior, unlocking big data, data privacy and security concerns, and complexity in integration.

3.2.1 Scalability Challenges

Scalability presents a serious problem to the IoE systems and especially to the SMEs, since the cost of introduction is high and extremely challenging to expand the technology into various business environments. To overcome this, a modular IoE architecture is being adopted so that it can be adopted in stages and cut on upfront costs. As an example, Siemens has already deployed cloud-based IoE solutions to allow cost-effective scaling by reducing the amount of on-site infrastructure required, [32]. Also, SMEs have entered liaisons with giant companies where their deployment could be in a scalable way, like in the automobile industry, where SMEs deployed IoE systems on a stage-by-stage basis so that the CE concepts could be integrated, [33]. Nevertheless, a significant number of organizations continue to struggle with the deployment of the IoE systems throughout supply chains because of the lack of resources, which is the reason to consider the long-term sustainable scalability strategies.

3.2.2 Design for Interoperability, Adaptability, and Upgradability

The logic of a CE in the IoE is powered by the fact that the exchange of platforms, devices, and systems requires interdependency; however, solutions are not usually optimal since the diverse technical standards and incompatibility of systems take place. Modular IoE architectures, such as the application by General Electric of modular systems in its manufacturing, have been utilized to overcome this by increasing their scale and interoperability, [34]. Besides, decentralized systems such as IOTA have enhanced communications among heterogeneous systems, and this has eased integration challenges, [35]. The cloud-based solutions that are already in use by BMW are flexible and easily scalable, but the current IoE infrastructure remains somewhat below the performance standards. Ongoing harmonization of technical standards and enhancement of network infrastructure are required to accommodate the transformations of the CE.

3.2.3 Financial Risk and Uncertainty

The involvement of the IoE technologies in the CE is challenged by financial instability associated with the expense of infrastructures and the lack of defined short-term gains. To keep up with this, firms such as Philips have adopted pay-per-use options in the IoE solutions, which allow the enterprises not to make massive initial investments but still enjoy the advantages of the IoE technologies, [36]. Also, Volkswagen has integrated the model of partnership with tech companies to evenly spread the financial load of implementing IoE to remain more cost-efficient and step towards their circular economy aspirations, [37]. These tactics are indicative of organizations suffering financial risks by applying fluid and pooled financial frameworks that limit the capital exposure of these organizations.

3.2.4 Customer Preference and Behavior

Although the level of sustainability awareness is increasing, consumer reluctance to change business models to a circular one is still a great barrier. Patagonia has embraced this by incorporating take-back programs and providing repair services to their products, which in turn motivates consumers to make returns, thus making these items recyclable and resalable, [38]. IKEA has even its circular product line where people are offered discounts on their old furniture, which can be traded in, and hence both the consumer behavior and sustainability issues are resolved, [39]. This evidence shows that a combination of consumer incentives and effective value propositions can deal with resistance and promote the usage of the IoE-enabled circular models.

3.2.5 Unlocking Big Data

The capability to manage and analyze big data is the key to the success of introducing the IoE to CE. Siemens has already introduced high-tech analytics platforms that use the data to analyze IoE to maximize resource utilization in the manufacturing process, offering circularity along with solving the problem of data, [40]. Moreover, BMW exploits blockchain technology to provide data exchange between the different elements of its supply chain, in which safety and privacy matters are considered, and, at the same time, allow greater transparency in circular business practices, [41]. These solutions give us an indication of how organizations can overcome the big data and security issues by implementing resilient analytics solutions and secure data management platforms.

3.2.6 Data Privacy and Security Concerns

The process of implementing CE by means of IoE systems is supposed to be a significant point of interest when it comes to data privacy and security because the amount of confidential information being processed is immense. Schneider Electric has attempted to address these matters by applying end-to-end encryption and multi-layered security to safeguard data on IoE networks, thus maintaining trust and minimizing the chances of being breached, [34]. Furthermore, Maersk has employed the strategy of blockchain technology in securing data transactions in their supply chain, issues of data privacy are mitigated, and improved data regulatory compliance is achieved since blockchain facilitates the provision of transparent data records that cannot be tampered with [42]. These solutions explain how organizations can reduce data privacy and security risks and proceed to embrace the IoE used in CE systems.

3.2.7 Complexity in Integration

The IoE and CE integration pose tremendous operational and technology issues since various system components, including smart sensors, cloud-based platforms, and legacy systems, are required. These issues have been dealt with by companies such as Cisco, namely, the development of the IoE platforms using standardized communication protocols and interoperability designs, leading to better data harmonization in the value chain and minimizing integration complications, [43]. Similarly, ABB has also managed to adopt cloud-based IoE solutions, integrating resource

optimization and remanufacturing processes to streamline the operations and minimize operational costs by ensuring effortless interaction of various systems, [44]. The solutions also portray the way in which integration issues can be addressed by using standardized procedures and expert skills, and teamwork, together with institutions.

4 Discussion

Smart technologies that connect systems, processes, and products utilize IoE to achieve substantial benefits in terms of CE implementation. IoE enhances CE's three essential elements of resource optimization, waste reduction, and product lifecycle management through its capacities for real-time tracking and data analytics and seamless inter-operational value chain communication, [27]. The major contribution of product recovery emerges from this development. IoE makes it possible to implement advanced recovery approaches through monitoring life cycle movements and usage patterns to predict end-of-life points; therefore, companies can execute strategies like remanufacturing, recycling, and product repurposing. The system reduces waste generation and decreases dependency on raw materials by CE objectives, [37]. IoE enables businesses to develop into service providers by implementing PaaS and leasing models. This change through IoE provides sustainable consumption benefits combined with waste reduction, which leads to improved product longevity, [36].

Resource conservation, along with energy efficiency, becomes maximum through the utilization of CE frameworks. IoE facilitates business asset monitoring through continuous updates of industrial processes, which enables companies to optimize energy consumption at all stages and operational workflow functions. The dynamic capabilities of IoE sensors ensure productive distribution of resources and minimal production energy consumption through automatic machine control, [35]. The adoption of IoE faces practical challenges, especially for smaller businesses, because of high implementation costs for installing IoE technologies, which create financial burdens due to large infrastructure expenses, [36]. Interoperability serves as a substantial issue because it creates problems with value chain integration due to the lack of standardization among IoE platforms and devices, [14]. The complete accomplishment of circular practices via IoE implementation remains limited.

Financial risk, together with uncertainty, becomes an important obstacle to implementing IoE. Businesses, especially those from marginally profitable sectors, refrain from pursuing IoE infrastructure because of the high initial investment requirements, which also hinder potential long-term benefits, [34]. The adoption of CE models faces resistance because customers demonstrate reluctance toward using service-based pricing and return policies. The main barrier stems from customers moving away from placing sustainability above price or convenience, [26]. The massive data production from IoE needs effective analytical procedures to create beneficial insights that aid resource optimization and waste reduction initiatives. Organisations face data security and privacy concerns that restrict supply chain data exchanges as well as analytical handling of big data for widespread adoption of IoE, [1].

The goal of achieving CE objectives depends on IoE because it enables companies to enhance sustainability across projects while maximizing resource efficiencies and minimizing environmental effects. The worldwide potential of IoT technologies to revolutionize CE operations alongside sustainable systems will increase through technological development and industry solutions to scalability, interoperability, and financial restrictions.

5 Future Work

Based on this, future studies should examine a number of areas that are critical to the full potential of IoE to CE models. One of them is the necessity of so-called interdisciplinary collaboration models that will assist in breaking down the barrier between the technical and business areas. Studies are required on the efforts of the industries, governments, and the academic fraternity in developing flexible and scalable IoE solutions capable of benefiting organizations of all sizes, with an emphasis on SMEs. The IoE solutions that are offered to businesses starting up with a small scale and then growing as required may also present an efficient practice to facilitate CE adoption in various industries, [34].

Different IoE gadgets should be standardized to work harmoniously. The establishment of universal standards in the interoperability of systems must be the focus of future research, as this will allow real-time monitoring of the supply chain and the establishment of seamless exchange of data between IoE devices. This will be important in securing the effective operations of the IoE-enabled circular business models, [39].

Another key to learning the relationship between circular business models and consumer

behaviors is behavioral change research. The process of researching the attitude of consumers about circular products and the obstacles to stopping them from using sustainable options will aid companies in shaping their products and advocating circularity. The literature on PaaS and other sustainability-oriented services should be conducted in the future, especially the willingness of the consumer to pay, which plays an important role in ensuring mass capabilities, [40].

Data analytics is also another field that requires exploration regarding its technological progress. One of the essential requirements to manage large volumes of data that the IoE systems produce will be the ability to devise and create advanced machine learning algorithms and analytics tools. The tools are useful in assisting businesses to streamline operations, minimize wastage, and optimize resource usage through the discovery of new methods to manage product life cycles and process streamlining methods, [43].

Besides that, policy implementation will be instrumental in enhancing the IoE in CE models. Investigation ought to be directed to the establishment of policy frameworks that minimize financial risks and act as a source of encouragement to shift to circular models and regulatory compliance advice. Laws need to be formulated with the assistance of industry players in order to ensure that the CE activities that are enabled by the IoE have the ability to be sustainable over the long term, [39].

Lastly, the step to consider new technologies like blockchain and 5G may bring great enablers to the defeat of the existing issues of the IoE. With the help of blockchain, data protection and transparency may prevail, and 5G technology will help to make the communication between devices of the IoE faster and more effective, which will bring about the concept of increasing circular business models in a highly connected world, [39], [42].

6 Conclusion

IoE technologies track product movements from beginning to end, and they decrease waste amounts and product longevity. IoE allows businesses to switch to product-service models that extend product lives and cut waste, and real-time monitoring with analytics helps operations reach their best performance levels. All these contribute directly to CE targets. Through its IoT capabilities, the IoE creates substantial opportunities for CE by improving product recovery and enabling servitization and optimum resource utilization.

Various obstacles remain in the way for IoE to enable full CE expansion. Several challenges, which include consumer behavior together with financial and interoperability and scaling issues must be resolved before IoE enables CE. Businesses together with governments and other stakeholders need to tackle existing obstacles so they can create an environment friendly for adopting IoE features. The implementation of IoE within the circular economy requires analysis of consumer behaviors, data analysis techniques, and policy implementation to surpass current limitations.

The adoption of IoE for CE models requires successful resolution of current behavioral, financial and technical restrictions. More sustainable and efficient operations that benefit long-term global economic sustainability targets can be developed by companies through the application of IoE.

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APPENDIX

Table 1. Previous study of the concepts of Internet of Everything and Circular Economy

No	Authors	Topic	Efficiency & Effectiveness	Difficulties
1.	[14]	How do IoT Solutions Enable Circular Economy Business Models?	Yes	No
2.	[15]	IoT-Driven Transformation of Circular Economy Efficiency: An Overview	Yes	No
3.	[16]	A Review on the Prospects and Challenges of Integrating IoT Technologies in Circular Business Models	Yes	Yes
4.	[17]	The Internet of Things and the Circular Economy: A Systematic Literature Review and Research Agenda	Yes	Yes
5.	[18]	Circular Economy and Internet of Things: Mapping Science of Case Studies in Manufacturing Industry	Yes	Yes
6.	[19]	Learning from Failure and Success: The Challenges for Circular Economy Implementation in SMEs in an Emerging Economy	No	Yes
7.	[20]	Internet of Everything: A Survey based on Architecture, Issues, and Challenges	No	Yes
8.	[21]	The Idea of Sustainable and Green Marketing Based on the Internet of Everything- The Case of the Dairy Industry	Yes	No
9.	[22]	The Circular Economy and Industry 4.0: Synergies and Challenges	Yes	Yes
10.	[23]	Opportunities and Challenges in IoT-enabled Circular Business Model Implementation- A Case Study	Yes	Yes
11.	[7]	Connecting Circular Economy and Industry 4.0	Yes	Yes
12.	[24]	Industry 4.0- Challenges to Implement Circular Economy	No	Yes

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