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-RESEARCH ARTICLE-

CIRCULAR CITY: AN INTEGRATIVE INTERDISCIPLINARY LITERATURE REVIEW

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Abstract

In an era fraught with environmental issues, -resource depletion, and economic crises, the circular economy has arisen as a revolutionary paradigm aimed at effectively achieving sustainable growth. Following the Industrial Revolution, economic growth and progress were viewed as limitless phenomena, and the capitalist system's drive for limitless profit was backed by a linear economic framework. Under this method, some natural resources such as water, minerals, and fossil fuels-are extracted, processed, and eventually turned into trash when the product they were used to make uses up all of them. Unlike traditional linear economics, which takes a 'take-make-dispose' approach, the circular economy emphasizes resource efficiency, waste reduction, and the continuous use of materials, and is based on the idea that economic growth can be achieved as independently as possible from the use of natural resources. Cities play a crucial role in the transition to a circular economy. Because cities are where the majority of people live and where manufacturing and consumption occur most. The purpose of this study is to detect trends in the literature on the notion of circular city, to identify the key subjects addressed, to assess important studies, and to guide researchers or-implementers, and policymakers interested in the subject in their future research. Within the scope of the study, publications in the form of articles linked to the idea of circular city in the scientific area were searched in Scopus and Web of Science databases and examined using an integrated literature review methodology. The searches revealed that 88 publications about circular city were created between 1970 and 2023. The journal Sustainability has published the most scholarly papers on the subject. Furthermore, it was noted that the majority of the studies in the article category had to do with science and technology research. Circular city is a relatively current subject of research with historical roots.

Keywords: *City, Circular Economy, Integrative Literature Review, Scopus, Web of Science.*

JEL Codes: *Q01, Q57, O44.*

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DÖNGÜSEL KENT: DİSİPLİNLERARASI BÜTÜNLEŞTİRİCİ BİR LİTERATÜR TARAMASI[2]

Öz

Çevresel sorunların, kaynakların tükenmesinin ve ekonomik krizlerin damgasını vurduğu bir çağda döngüsel ekonomi, sürdürülebilir büyümeyi başarılı bir şekilde gerçekleşmesine yardımcı olmayı amaçlayan dönüştürücü bir model olarak ortaya çıkmıştır. Sanayi devriminden sonra ekonomik büyüme ve kalkınma sınırsız bir olgu olarak görülmüş ve kapitalist sistemin sınırsız kâr arzusu doğrusal bir ekonomik anlayışla desteklenmiştir. Bu anlayışta su, fosil yakıtlar ve mineraller gibi belirli doğal kaynaklar alınıp işlenmekte ve dönüştürüldükleri ürünün kullanım ömrünün sonunda atık haline gelmektedir. 'Al-yap-at' yaklaşımını izleyen geleneksel doğrusal ekonomik anlayışın aksine döngüsel ekonomi kaynak verimliliği, atık azaltımı ve malzemelerin sürekli kullanımını vurgulayarak ekonomik büyümenin doğal kaynak kullanımından mümkün olduğunca bağımsız bir şekilde gerçekleştirilebileceği fikrine dayanmaktadır. Döngüsel ekonomiye geçisin sağlanabilmesinde ise kentlerin önemli bir yeri ve önemi bulunmaktadır. Çünkü kentler insanların çoğunun içerisinde yaşadığı üretim-tüketimin gerçekleştiği temel mekânlardır. Bu doğrultuda hazırlanan çalışmanın amacı, döngüsel kent kavramına yönelik literatürdeki eğilimleri tespit etmek, ele alınan ana konuları belirlenmek, ön plana çıkan çalışmaları incelemek ve konu ile ilgilenen araştırmacılara-uygulayıcılara-politika yapıcılara gelecekte hazırlayacakları çalışmalar için rehberlik etmektir. Çalışma kapsamında, Scopus ve Web of Science veri tabanlarında yapılan aramalar yoluyla bilimsel alanda döngüsel kent kavramıyla ilgili makale türünden yayınlar, bütünleştirici literatür taraması yöntemiyle analiz edilmiştir. Yapılan aramalar sonucunda döngüsel kent konusunda 1970 - 2023 yılları arasında tabanında yer alan 88 yayının hazırlandığı tespit edilmiştir. Konu hakkında en fazla akademik çalışma Sustainability adlı dergi tarafından yayınlanmıştır. Ayrıca, hazırlanan makale türündeki tüm çalışmaların daha çok Bilim ve Teknoloji araştırma alanı ile ilgili olduğu görülmüştür. Döngüsel kent, tarihsel kökenleri olan ve hala çok güncel bir çalışma alanı olarak karşımıza çıkmaktadır.

Anahtar Kelimeler: *Döngüsel Kent, Döngüsel Ekonomi, Bütünleştirici Literatür Taraması, Scopus, Web of Science.*

JEL Kodları: *Q01, Q57, O44.*

"Bu çalışma Araştırma ve Yayın Etiğine uygun olarak hazırlanmıştır."

[2] Genişletilmiş Türkçe Özet, makalenin sonunda yer almaktadır.

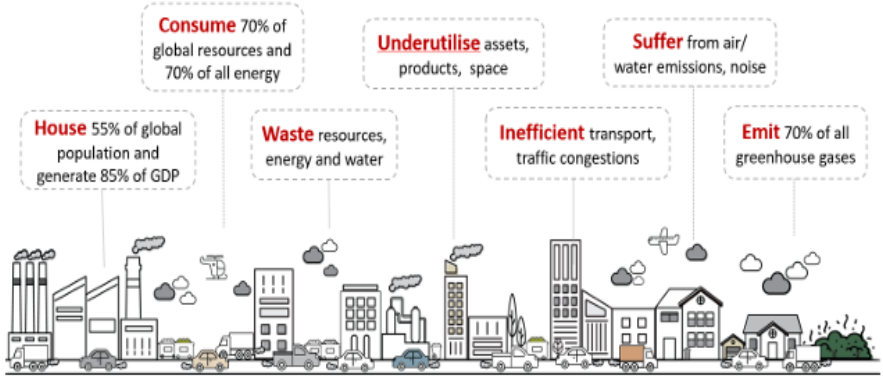
1. INTRODUCTION

In an era characterized by environmental issues, resource depletion, and economic crises, the circular economy has developed as a revolutionary paradigm aimed at achieving sustainable growth. Unlike traditional linear economics, which follows a 'take-make-dispose' approach, the circular economy is based on the idea that economic growth can be achieved as independently as possible from the use of natural resources, emphasizing resource efficiency, waste reduction and the continuous use of materials. Therefore, the circular economy, based on the 'make-use-recycle' philosophy, is not independent from the capitalist system, but unlike linear economics, it is an environmental protectionist approach developed to find solutions to the resource problem that hinders development by taking into account environmental factors.

Humanity's impact on the environment has always existed in the historical process. However, this impact has been realized with the understanding that human beings are a part of nature rather than the idea of dominating nature. In the 19th century, with the Industrial Revolution and the developments that followed, humanity's view of the environment and its impact on the environment changed significantly. From this period onwards, nature began to be seen as a commodity that humans could dominate and exploit. The results of this understanding are reflected in the data after the Industrial Revolution. Globally, material use has increased almost fifteenfold in the last 107 years, from 7 billion tons in 1900 to 100 billion tons in 2023 (Circle Economy, 2023: 17; Lacy ve Rutqvist, 2015: xvi). This means that humanity is currently using our planet's ecosystems 1.75 times faster than they can be replenished, meaning that a second world is almost needed to match production and consumption habits (WWF, 2019). Material use is expected to be between 170 and 184 billion in 2050 (Circle Economy, 2021: 38). This indicates that 2.8 more planets, almost a third world, will be needed by 2050 (WWF, 2012: 56). As a result of this understanding that sees the environment and natural resources as unlimited and cheap, there has not only been an increase in the use of natural resources, but also an increase in environmental problems and a 'second nature' created by human hands as a result of the creative destruction of the so-called 'first nature' over the last three centuries.

The center of this created nature has been cities. Cities are the residential areas in which more than half of the people live today. Although these settlements make up only 2% of the Earth's surface, they produce about 80-85% of global GDP. In doing so, they consume about 70-75% of global resources and 70% of all energy produced. They also emit 70-80% of all greenhouse gases and produce around 75% of all waste. Cities also waste assets, resources, public services, space and time. For example, on average, a car spends more than 90% of its time in a car park, 30% of food is wasted, and the average office is used only 35-50% of the time (Dhawan, 2019: 6; WB, 2020; Byström, 2018: 3). In this context, whether the transition to a circular economy is achieved or not is directly related to the work to be done in urban areas.

Figure 1. Economic and Environmental Impact of Cities



Source: Byström, 2018: 3

From here, a new approach called the 'circular city' has emerged, with the circular economy approach more specifically addressed at the urban level. The circular city aims to create a closed-loop system where resources are continuously reused, waste is minimized and the urban environment is harmonized with natural ecosystems. A circular city can also be defined as "a city that applies the principles of a circular economy approach to close resource cycles, together with the city's stakeholders, such as knowledge stakeholders, community, citizens and business (Prendeville, Cherim, ve Bocken, 2018: 187). In the light of this information, the aim of this study is to identify the gaps in the literature on the concept of circular city, to identify the main topics addressed and to guide researchers, practitioners and policy makers interested in the subject for future studies. Within the scope of the study, publications related to the concept of circular city in the scientific field through searches in Scopus and Web of Science (WoS) databases were analyzed with the integrative literature review method. An integrative literature review is a research method in which researchers objectively critique, summarize, and draw conclusions about a topic through a systematic search, classification, and thematic analysis of past qualitative and quantitative research on the topic (Christmal Dela and Janet J., 2017: 7).

2. LITERATURE REVIEW

The circular economy is a concept that offers an important framework for sustainable development and environmental protection and is gaining increasing attention. Emerging as an alternative to the traditional linear economic model, the circular economy aims to ensure efficient use of resources, reduce waste and revitalize natural systems. However, the origins of the circular economy approach go back a long way and have been supported by various conceptual underpinnings. The foundations of circular economy thinking began to be laid in the mid-20th century (Yalçın ve Negiz, 2022: 61-65). During this period, names emerged that developed new perspectives on the relationship between the economy and the environment. In his 1966 article "The Economics of the Coming Spaceship Earth", Boulding described the world as a closed system with limited resources and questioned the sustainability of economic activities

from this perspective. K. Boulding's 'Spaceship Earth' metaphor emphasized the idea that resources are limited and waste should be minimized (Veral, 2018: 151; Boulding, 1966). Following Boulding's conceptual explanations, two environmental economists, Pearce, D. W. and Turner, R. K, also contributed to the circular economy. Pearce, D. W. and Turner, R. K. (1990) have made important contributions to the circular economy with their studies on environmental economics and circular economy, with fundamental issues such as efficient use of resources, conservation of natural capital and sustainable development. B. Commoner has made significant contributions to the development of the concept of circular economy with his studies in environmental science and ecology. His views on the functioning of natural systems, resource efficiency and waste management constitute an important reference point for understanding and applying the theoretical foundations of circular economy (Commoner, 1971: 11-44). M. S. Andersen strengthened the scientific foundations of circular economy by explaining the relationship with thermodynamic principles. Andersen's work is a guide for the development and implementation of sustainable economic models (Andersen, 2007: 134-135). Apart from the mentioned researchers, there are many other researchers who have contributed to the development of the circular economy concept (Connectedpapers, 2024). Some of these researchers are shown in Table 1. In addition to these, there are organizations such as the Ellen MacArthur Foundation, Circle Economy, Platform for Accelerating the Circular Economy, which have made significant contributions to the development of the concept by preparing research and reports, and official institutions that have prepared and implemented laws and policies.

Table 1. Some Academic Studies on the Circular City

Title of the Study	Author(s)	Year
''The Circular Economy: A New Development Strategy in China''	''Zengwei Yuan, J. Bi, Yuichi Moriguichi''	2006
''Putting a Circular Economy Into Practice in China''	''Zhijun Feng, Nailing Yan''	2007
''An Introductory Note on the Environmental Economics of the Circular Economy''	''M. S. Andersen''	2007
''Developing the Circular Economy in China: Challenges and Opportunities for Achieving 'Leapfrog Development''	''Y. Geng, B. Doberstein''	2008
''Implementing China's Circular Economy Concept at the Regional Level: A Review of Progress in Dalian, China.''	''Y. Geng, Qinghua Zhu, B. Doberstein, Tsuyoshi Fujita''	2009
''Progress Towards a Circular Economy in China: The Drivers (and Inhibitors) of Eco-Industrial Initiative''	''J. Mathews, Hao Tan''	2011
''A Global Redesign? Shaping the Circular Economy''	''F. Preston''	2012
''Towards a National Circular Economy Indicator System in China: An Evaluation and Critical Analysis''	''Y. Geng, Jia-Yi Fu, Joseph Sarkis, B. Xue''	2012

‘‘A Review of the Circular Economy in China: Moving from Rhetoric to Implementation’’	‘‘Biwei Su, A. Heshmati, Y. Geng, Xiaoman Yu’’	2013
‘‘Product Services for a Resource-Rfficient and Circular Economy - A Review’’	‘‘A. Tukker’’	2015
‘‘The Circular Economy: An Interdisciplinary Exploration of the Concept and Application in a Global Context’’	‘‘A. Murray, Keith R. Skene, Kathryn Haynes’’	2015
‘‘Circular Economy: Lessons from China’’	‘‘John A. Mathews, Hao Tan’’	2016
‘‘Designing the Business Models for Circular Economy—Towards the Conceptual Framework’’	‘‘M. Lewandowski’’	2016
‘‘Environmental Sciences, Sustainable Development and Circular Economy: Alternative Concepts for Trans-Disciplinary Research’’	‘‘S. Sauvé, Sophie Bernard, P. Sloan’’	2016
‘‘Product Design and Business Model Strategies for a Circular Economy’’	‘‘N. Bocken, I. de Pauw, C. Bakker, Bram van der Grinten’’	2016
‘‘Towards Circular Economy Implementation: A Comprehensive Review in Context of Manufacturing Industry’’	‘‘Michael Lieder, A. Rashid’’	2016
‘‘A Review on Circular Economy: The Expected Transition to a Balanced Interplay of Environmental and Economic Systems’’	‘‘Patrizia Ghisellini, Catia Cialani, S. Ulgiati’’	2016
‘‘A Review of the Circular Economy and its Implementation’’	‘‘A. Heshmati’’	2016
‘‘Lost in Transition? Drivers and Barriers in the Eco-Innovation Road to the Circular Economy Working’’	‘‘P. Nightingale, B. Martin, J. Tidd’’	2017
‘‘The Emergence of Circular Economy: A New Framing Around Prolonging Resource Productivity’’	‘‘F. Blomsma, Geraldine Brennan’’	2017
‘‘Towards a Consensus on the Circular Economy’’	‘‘V. Prieto-Sandoval, C. Jaca, M. Ormazábal’’	2017
‘‘The Circular Economy: New or Refurbished as CE 3.0? — Exploring Controversies in the Conceptualization of the Circular Economy through a Focus on History and Resource Value Retention Options’’	‘‘D. Reike, W. Vermeulen, S. Witjes’’	2017
‘‘Lost in Transition? Drivers and Barriers in the Eco-Innovation Road to the Circular Economy’’	‘‘Ana de Jesus, S. Mendonça’’	2017
‘‘Towards a New Taxonomy of Circular Economy Business Models’’	‘‘Andrea Urbinati, D. Chiaroni, V. Chiesa’’	2017
‘‘Circular economy – From review of theories and practices to development of implementation tools’’	‘‘Y. Kalmykova, Madumita Sadagopan, L. Rosado’’	2017
‘‘Supply Chain Configurations in the Circular Economy: A Systematic Literature Review’’	‘‘D. Masi, Steven Day, J. Godsell’’	2017

‘‘Measuring Circular Economy Strategies through Index Methods: A Critical Analysis’’	‘‘V. Elia, M. Gnoni, F. Tornese’’	2017
‘‘The History and Current Applications of the Circular Economy Concept’’	‘‘K. Winans, A. Kendall, H. Deng’’	2017
‘‘How Do Scholars Approach the Circular Economy? A Systematic Literature Review’’	‘‘R. Merli, Michele Preziosi, Alessia Acampora’’	2017
‘‘Circular Economy Policies in China and Europe’’	‘‘W. McDowall, Y. Geng, Beijia Huang, E. Barteková, R. Bleischwitz, S. Türkeli, R. Kemp, T. Domenech’’	2017
‘‘The Circular Economy - A New Sustainability Paradigm?’’	‘‘Martin Geissdoerfer, P. Savaget, N. Bocken, E. Hultink’’	2017
‘‘Spectrum of Circular Economy and Its Prospects in Logistics’’	‘‘Simon Peter Nadeem, J. Garza-Reyes, A. Anosike, Vikas Kumar’’	2017
‘‘Conceptualizing the Circular Economy: An Analysis of 114 Definitions’’	‘‘J. Kirchherr, D. Reike, M. Hekkert’’	2017
‘‘Towards a More Circular Economy: Exploring the Awareness, Practices, and Barriers from a Focal Firm Perspective’’	‘‘D. Masi, Prof Vikas Kumar, J. Garza-Reyes, J. Godsell’’	2018
‘‘Circular Economy as an Essentially Contested Concept’’	‘‘J. Korhonen, Cali Nuur, A. Feldmann, Seyoum Eshetu Birkie’’	2018
‘‘The Circular Economy Umbrella: Trends and Gaps on Integrating Pathways’’	‘‘Aline Sacchi Homrich, Graziela Darla Araujo Galvão, Lorena Gamboa Abadia, M. M. Carvalho’’	2018
‘‘A Systematic Review on Drivers, Barriers, and Practices Towards Circular Economy: A Supply Chain Perspective’’	‘‘K. Govindan, M. Hasanagic’’	2018
‘‘Circular Economy: The Concept and its Limitations’’	‘‘J. Korhonen, A. Honkasalo, J. Seppälä’’	2018
‘‘Circular Economy in the Manufacturing Sector: Benefits, Opportunities and Barriers’’	‘‘Vikas Kumar, Ihsan Sezersan, J. Garza-Reyes, E. D. Gonzalez, M. Al-Shboul’’	2019
‘‘Understanding Circular Economy in Solid Waste Management’’	‘‘Monika Patel, Swetambari Kumari, N. Kumari, A. Ghosh’’	2021

Source: Connectedpapers, 2024

With the development of the circular economy concept and the prominence of urban areas, new approaches called ‘circular city’ have emerged (Yalçın, 2023: 109; Yaş, 2022: 80). In this context, a circular city can be defined as a city that applies the principles of the circular economic approach to close resource cycles, together with the city’s stakeholders, such as knowledge stakeholders, communities, citizens and the business world (Prendeville et al., 2018: 187). The circular city concept is based

on everything operating in a closed loop, with resources being reused, repurposed, or recycled rather than becoming garbage. This model also minimises resource exploitation. To do this, communities, the government, and local companies must collaborate to develop commodities, services, and infrastructure that are long-lasting, adaptive, and simple to maintain. There is also a focus on using locally sourced products and enabling nature to thrive whenever feasible (University College of Estate Management, 2024). With the application of circular economy principles in cities, it is aimed to use natural resources efficiently, minimize waste and reduce the ecological footprint of cities. Byström (2018: 10) prepared a roadmap for cities to become circular and identified 15 steps. This roadmap is shown in Figure 2.

Figure 2. Cities' Roadmap for Circular Cities

PLAN	1. Characterise and analyse local context and resource flows, and identify idle assets
	2. Conceptualise options and prioritise among sectors with circular potential
	3. Craft a circular vision and strategy with clear circular goals and targets
ACT	4. Close loops by connecting waste/residue/water/heat generators with off-takers
	5. Consider options for extending use and life of idle assets and products
	6. Construct and procure circular buildings, energy and mobility systems
	7. Conduct circular experimentation – address urban problems with circular solutions
	8. Catalyse circular developments through regulation, incentives and financing
	9. Create markets and demand for circular products and services – be a launching customer
	10. Capitalise on new ICT tools supporting circular business models
MOBILISE/ MONITOR	11. Coach and educate citizens, businesses, civil society and media
	12. Confront and challenge linear inertia, stressing linear risks/highlighting circular opportunities
	13. Connect and facilitate cooperation among circular stakeholders
	14. Contact and learn from circular pioneers and champions
	15. Communicate on circular progress based on monitoring

Source: Byström, 2018: 3

In addition to these theoretical developments, the "European Declaration on Circular Cities", which was opened for signature for Sustainability in 2020, was launched with the signature of 28 European cities. As of August 2024, 84 cities have signed the Declaration, which only İzmir and İzmit Municipality has signed from Turkey. The Declaration mentions the necessity of a transition from a linear economy to a circular economy. It is stated that climate change requires a more resilient future and with the realization of the circular economy, the pressure on resource use will decrease and

thus a climate-zero, just and prosperous society will be achieved. Cities that sign the Declaration commit to achieving circular economy goals, restoring the economy by mobilizing local stakeholders, operationalizing circular principles in urban planning, establishing policies and legislation in cooperation with central government and European institutions, and other issues (ICLEI, 2023).

3. METHODOLOGY

In the study, the integrative literature review method was used. Through integrative literature review in academic research, an evidence-based practice is followed by adopting a repeatable, scientific and transparent process that aims to minimize bias (Tranfield et al., 2003). This method is defined as including both empirical and theoretical publications (Evans et al., 2008). Integrative literature review is a distinctive form of research that generates new information, provides frameworks, and creates perspectives on the topic under investigation. Integrative literature reviews are conducted on dynamic topics that are experiencing rapid growth in the literature and have not benefited from a comprehensive review and update for a long time (Torraco, 2016). It is considered to be the most appropriate type of review to draw attention to and resolve inconsistencies in the existing methods literature and to provide new perspectives on a topic (Cronin and George, 2023). The aim of this study is to identify the trends in the literature on the concept of circular city, to identify the main topics addressed, to examine the prominent studies and to guide the researchers-implementers-policy makers interested in the subject for their future studies. Within the scope of the study, publications related to the concept of the circular city in the scientific field were analyzed by using the integrative method of literature review by searching Scopus and WoS databases.

Data collection was conducted in two databases, WoS and Scopus, to ensure the high quality of the findings and to reach wider journal coverage. On May 02, 2024, 193 studies published between 1970 and 2023 were found in Scopus and WoS databases in the title category and article type. Among these 193 studies, those of article type were selected. As a result of the selection process, 154 publications of article type were reached. In the next stage, among these selected articles, the ones that are in both databases, such as conjugates, book chapters and conference texts were identified. As a result, 2 book chapters and 64 articles were found to be in both databases. Finally, 88 articles were found to be prepared within the scope of the searched keywords and these articles were evaluated. Following a well-defined research protocol, the articles were ranked according to the number of citations they received according to the inclusion and exclusion criteria, and the top 5 ranked articles were analyzed in more detail.

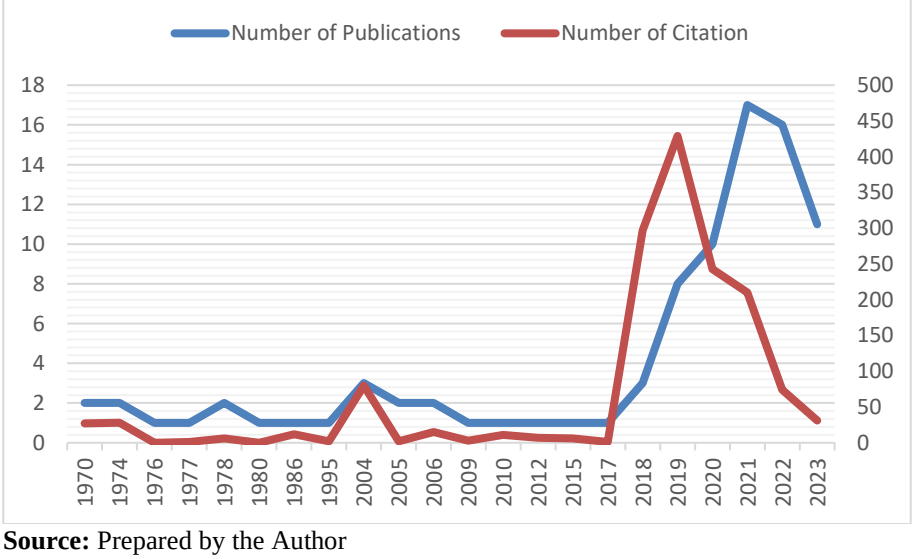
4. FINDINGS

An overview of the descriptive characteristics of the 88 publications analyzed in the review is presented in this section. The temporal distribution of the included publications, influential fields of study, main publication channels, prominent

keywords, active research institutions and countries are discussed. Furthermore, to assess important gaps and potential directions for future research, the relevance of the articles to the circular city, research methods used, purpose and key findings are examined.

The first article on the circular city was published in 1970. From that date until 2023, 88 works were indexed in WoS and Scopus database. It is seen that works in this field have been produced in various fields at certain intervals for 53 years. While from 1970 to 2023, no serious change was observed in academic studies; after 2017, there has been a significant increase in the number of publications. This is related to the fact that the concept of circular city has recently become a popular concept with the circular economy and has been studied more frequently. After 2021, a slight decrease was observed in the number of publications. This is attributed to the fact that some articles prepared and published in journals have not yet been processed in databases such as WoS and Scopus. The first thing that can be seen when we look at the citations of the prepared works is the change in the citation momentum in parallel with the publications. In total, 1485 citations were made to 88 prepared works. The distribution of the studies conducted in the field of circular city and the citations to these studies by years is shown in Figure 3.

Figure 3. Distribution of Studies and Citations in the Field of Circular City by Years



Source: Prepared by the Author

When the studies on the circular city are examined on the basis of the university where they were prepared, the journal in which they were published and the field of research, it was determined that articles were prepared in 62 different universities, 53 different journals and 19 fields. It is seen that most of the relevant articles were prepared at

Purdue University and University of London. It is understood that most of the articles were published by the journal Sustainability. On the basis of field, it is seen that the articles are mostly related to Science and Technology research field. The distribution of circular city studies according to universities, journals and research fields is shown in Table 2.

Table 2. Distribution of Studies on Circular City by Universities, Journals and Research Areas

Universities	Journals	Research Areas
Purdue University (4)	Sustainability (16)	Science and Technology (17)
University of London (4)	Computer (4)	Environmental Sciences and Ecology (15)
BOKU University (3)	European Planning Studies (3)	Business and Economics (12)
Boston College (2)	Journal of Optimization Theory and Applications (3)	Engineering (6)
Bournemouth University (2)	Water (3)	Computer Science (5)
Consiglio Nazionale delle Ricerche (CNR) (2)	Annals of Regional Science (2)	Construction and Building Technology (5)
KU Leuven (2)	Blue-Green Systems (2)	Economics, Econometrics and Finance (5)
National Taipei University (2)	Building and Environment (2)	Geography (4)
Tampere University (2)	Cities (2)	Mathematics (3)
University College London (2)	Economics Bulletin (2)	Operations Research and Management Science (2)
University of Bologna (2)	Regıonal Science and Urban Economıcs (2)	Architecture (2)
University of Hong Kong (2)	Resources Conservation and Recycling (2)	Development Studies (2)
University System of Ohio (2)	Sustainable Cities and Society (2)	Earth and Planetary Sciences (2)
Vienna University of Economics and Business (2)	Techne-Journal of Technology for Archıtecture and Envıronment (2)	Urban Studies (2)
VTT Technical Research Center Finland (2)	Transportation Research (2)	Other (5)
Utrecht University (2)	Urban Geography (2)	
Other (51)	Other (37)	

Source: Prepared by the Author

When the keywords of the studies on the circular city were analyzed, it was found that a total of 303 different keywords were used in 88 studies. The top five keywords used in these studies are ‘circular’ with 79 times; ‘urban’ with 41 times; ‘economy’ with

39 times; 'city' with 34 times; and 'cities' with 21 times. The word cloud of the keywords used in the studies on circular city is shown in Figure 4.

Figure 4. Keywords Used in Studies in the Field of Circular City[3]

Source: Prepared by the Author

When the number of citations of 88 studies in the field of circular city is analyzed, the most cited studies among the articles are ''Circular Cities: Mapping Six Cities in Transition'' published in 2018; ''Circular Economy Strategies in Eight Historic Port Cities: Criteria and Indicators Towards a Circular City Assessment Framework'' published in 2019; ''Circular Cities2 published in 2019; 'Towards Circular Cities-Conceptualizing Core Aspects'' published in 2020 and ''Circular Cities: Challenges to Implementing Looping Actions''. Information such as year, article name, research area, index, journal impact factor, and number of citations of the studies conducted in the field of circular cities are shown in Table 3.

Table 3. Articles Prepared on Circular City

[3] Figure 4 was created by the author using the Nvivo program.

Year	Title of the Article	Research Area	Index	Journal Impact Factor	Number of Citations
2018	‘‘Circular Cities: Mapping Six Cities in Transition’’	Environmental Sciences and Ecology	SCI-E; SSCI	9,1	195
2019	‘‘Circular Economy Strategies in Eight Historic Port Cities: Criteria and Indicators Towards a Circular City Assessment Framework’’	Science and Technology	SCI-E; SSCI	4	95
2019	‘‘Circular Cities’’	Environmental Sciences and Ecology	SSCI	4,9	87
2020	‘‘Towards Circular Cities-Conceptualizing Core Aspects’’	Construction and Building Technology	SCI-E; SSCI	10,6	81
2019	‘‘Circular Cities: Challenges to Implementing Looping Actions’’	Science and Technology	SCI-E; SSCI	4	75
2018	‘‘Interpreting Circularity. Circular City Representations Concealing Transition Drivers’’	Science and Technology	SCI-E; SSCI	4	69
2004	‘‘Where to Locate in a Circular City?’’	Business and Economics	SSCI	1,9	64
2019	‘‘Circular Cities: Exploring Local Government Strategies to Facilitate a Circular Economy’’	Environmental Sciences and Ecology	SSCI	3,5	63
2020	‘‘Implementing Nature-Based Solutions for Creating a Resourceful Circular City’’	Environmental Sciences and Ecology	ESCI	4,1	59
2019	‘‘The Economy that Runs on Waste: Accumulation in the Circular City’’	Development Studies	SSCI	3,8	56
2018	‘‘Non-Uniform Ground-Level wind Patterns in a Heat Dome Over a Uniformly Heated Non-Circular City’’	Thermodynamics	SCI-E; SSCI	5,3	33
2021	‘‘Creating a Circular City-An Analysis of Potential Transportation, Energy and Food Solutions in a Case District’’	Construction and Building Technology	SCI-E	10,6	30
2021	‘‘Management of Urban Waters with Nature-Based Solutions in Circular Cities-Exemplified through Seven Urban Circularity Challenges’’	Environmental Sciences and Ecology	SCI-E; SSCI	3,5	30
2020	‘‘Operationalizing the Circular City Model for Naples’ City-Port: A Hybrid Development Strategy’’	Science and Technology	SCI-E; (SSCI)	4	29
2021	‘‘The Adaptive Reuse of Cultural Heritage in European Circular	Science and Technology	SCI-E; SSCI	4	29

	City Plans: A Systematic Review''				
2019	''Urban Heat Island Circulations of an Idealized Circular City as Affected by Background wind Speed''	Construction and Building Technology	SCI-E	7,6	26
2021	''Circular Cities: What Are the Benefits of Circular Development? ''	Science and Technology	SCI-E; SSCI	4	23
1970	''Routing in a Circular City with two Ring Roads''	Undefined	Scopus	-	20
2020	''Transformation Tools Enabling the Implementation of Nature-Based Solutions for Creating a Resourceful Circular City''	Environmental Sciences and Ecology	ESCI	4,1	17
2021	''Adaptive Re-use of Urban Cultural Resources: Contours of Circular City Planning''	Economics, Econometrics and Finance	Scopus	-	17
2021	''Towards a Cross-Sectoral View of Nature-Based Solutions for Enabling Circular Cities''	Environmental Sciences and Ecology	SCI-E	3,5	15
1974	''A Continuous Model of Optimal-Cost Routes in a Circular City''	Mathematics	Scopus	1,8	15
2020	''From Circular Consumers to Carriers of (Unsustainable) Practices: Socio-Spatial Transformations in the Circular City''	Geography	SSCI	4,4	14
2019	''Implementation of Connected and Autonomous Vehicles in Cities Could Have Neutral Effects on the Total Travel Time Costs: Modeling and Analysis for a Circular City''	Science and Technology	SCI-E; SSCI	4	14
2021	''Nature-Based Solutions for Agriculture in Circular Cities: Challenges, Gaps, and Opportunities''	Environmental Sciences and Ecology	SCI-E; SSCI	3,5	14
2021	''The Circular City and Adaptive Reuse of Cultural Heritage Index: Measuring the investment opportunity in Europe''	Engineering	SCI-E; SSCI	13,4	13
2019	''Water Tank Modelling of Variations in Inversion Breakup Over a Circular City''	Construction and Building Technology	SCI-E	7,6	13
2022	''Digitalisation Driven Urban Metabolism Circularity: A Review and Analysis of Circular City Initiatives''	Environmental Sciences and Ecology	SSCI	6,9	13

2020	‘‘Circular Cities: The Case of Singapore’’	Engineering	ESCI	2,5	13
1974	‘‘Land Use in a Circular City’’	Economics, Econometrics and Finance	Scopus	1,9	13
1986	‘‘The Location Process Of Central Place System Within A Circular City’’	Business and Economics	SSCI	13,9	12
2022	‘‘More Circular City in the Energy and Ecological Transition: A Methodological Approach to Sustainable Urban Regeneration’’	Science and Technology	SCI-E; SSCI	4	12
2022	‘‘Circular Cities: Planning for Circular Development in European Cities’’	Environmental Sciences and Ecology	SSCI	3,5	12
2021	‘‘Human-Centred Indicators (HCI) to Regenerate Vulnerable Cultural Heritage and Landscape Towards a Circular City: From the Bronx (NY) to Ercolano (IT)	Science and Technology	SCI-E; SSCI	4	11
2010	‘‘Spatial Cournot Competition in a Circular City with Directional Delivery Constraints’’	Business and Economics	SSCI	2,4	11
2020	‘‘Waste Management in Small and Medium Enterprises (SMEs) - A Barrier to Developing Circular Cities’’	Engineering	SCI-E	8,7	10
2020	‘‘A Materials Bank for Circular Leuven: How to Monitor ‘Messy’ Circular City Transition Projects’’	Science and Technology	SCI-E; SSCI	4	10
2020	‘‘Site Resource Inventories-A Missing Link in the Circular City’s Information Flow’’	Earth and Planetary Sciences	Scopus	-	10
2022	‘‘Make It a Circular City: Experiences and Challenges from European Cities Striving for Sustainability Through Promoting Circular Making’’	Engineering	SCI-E	13,4	8
2004	‘‘A Noncooperative Analysis of a Circular City Model’’	Business and Economics	SSCI	3,3	8
2006	‘‘Spatial Cournot Competition Among Multi-Plant Firms in a Circular City’’	Business and Economics	SSCI	1,8	8
2004	‘‘Spatial Cournot Competition in a Circular City with Transport Cost Differentials’’	Economics, Econometrics and Finance	Scopus	0,5	8

2006	‘‘Product Differentiation and Location Choice in a Circular City’’	Business and Economics	SSCI	3,2	7
2012	‘‘Spatial Cournot Competition and Transportation Costs in a Circular City’’	Business and Economics	SSCI	2,4	7
1970	‘‘Circumferential-Direct Routing in a Circular City’’	Undefined	Scopus	-	7
2022	‘‘From The Sanıtary Cıty To The Cırcular Cıty? Technopolitics of Wastewater Restructuring in Los Angeles, California’’	Geography	SSCI	4,4	6
2022	‘‘Indicators for the Circular City: A Review and a Proposal’’	Science and Technology	SCI-E; SSCI	4	6
2023	‘‘Sustainable Circular Cities? Analysing Urban Circular Economy Policies in Amsterdam, Glasgow, and Copenhagen’’	Science and Technology	SSCI	3	6
2015	‘‘Production Cost Heterogeneity in the Circular City Model’’	Operations Research and Management Science	SCI-E; SSCI	1,2	6
2021	‘‘Agency in Circular City Ecosystems-A Rationalities Perspective’’	Science and Technology	SCI-E; SSCI	4	5
2022	‘‘The Process of Digitalization of the Urban Environment for the Development of Sustainable and Circular Cities: A Case Study of Bologna, Italy’’	Science and Technology	SCI-E; SSCI	4	5
2021	‘‘Making it Concrete: Analysing the Role of Concrete Plants’ Locations for Circular City Policy Goals’’	Construction and Building Technology	ESCI	3	5
2023	‘‘Sustainability Transitions to Circular Cities: Experimentation Between Urban Vitalism and Mechanism’’	Urban Studies	SSCI	7,6	4
2023	‘‘Enterprise Architecture as a Responsible Data Driven Urban Digitization Framework: Enabling Circular Cities in India’’	Operations Research and Management Science	SCI-E	4,6	4
2021	‘‘How Shall We Start? The Importance of General Indices for Circular Cities in Indonesia’’	Science and Technology	SCI-E; SSCI	4	4
2021	‘‘Smart District and Circular Economy: The Role of ICT Solutions in Promoting Circular Cities’’	Science and Technology	SCI-E; SSCI	4	4

2022	‘‘Temporal Challenges of Building a Circular City District Through Living-Lab Experiments’’	Environmental Sciences and Ecology	SSCI	3,5	4
1978	‘‘A Critical Condition for the Cost Density in the Circular City Model’’	Mathematics	Scopus	1,8	4
2021	‘‘Degrowing Circular Cities: Emerging Socio-Technical Experiments for Transition’’	Architecture	ESCI	0,3	4
2021	‘‘Rough Set-based Model of Waste Management Systems towards Circular City Economies’’	Chemical Engineering	Scopus	-	4
2022	‘‘Vulnerability Exposure Driven Intelligence in Smart, Circular Cities’’	Computer Science	Scopus	-	4
2023	‘‘The Complexity and Interconnectedness of Circular Cities and the Circular Economy for Sustainability’’	Development Studies	SSCI	10,1	3
2023	‘‘The Rising Phenomenon of Circular Cities in Japan. Case Studies of Kamikatsu, Osaki and Kitakyushu’’	Environmental Sciences and Ecology	SCI-E	9,6	3
2023	‘‘Transitioning Towards a Sustainable Circular City: How to Evaluate and Improve Urban Solid Waste Management in Brazil’’	Engineering	SCI-E	4,2	3
2009	‘‘Harmonic Symmetries of Imperfect Competition on Circular City’’	Business and Economics	SCI-E; SSCI	1,1	3
2023	‘‘An Actionable Maturity Planning Model for Smart, Circular Cities’’	Urban Studies	SSCI	7,6	2
1978	‘‘A Model of Population Distribution, Traffic Congestion, and Neighborhood Crowding in a Circular City’’	Economics, Econometrics and Finance	Scopus	6,3	2
2023	‘‘Co-construction of Performance Indicators for a Circular City and Its Relation to a Local Action Net’’	Business and Economics	SSCI	5,5	2
2023	The Role Given to Citizens in Shaping a Circular City’’	Geography	SSCI	4,4	2
2023	‘‘Smart Circular Cities: Governing the Relationality, Spatiality, and Digitality in the	Science and Technology	SCI-E; SSCI	4	2

	Promotion of Circular Economy in an Urban Region''				
2005	''Cournot Competition in a Two-Dimensional Circular City''	Business and Economics	SSCI	1	2
2022	''A Caring Confrontation: Re-Ordering as a Design Research Strategy Toward a Circular City''	Geography	ESCI	0,7	2
2021	''District Circular Transition and Technological Design Towards a Circular City model''	Architecture	ESCI	0,3	2
1995	''Allocation of Urban Space Between Roads and Residential Area - Circular City Model of Traffic Congestion Free Area''	Operations Research and Management Science	SCI-E	0,22	2
2022	''The Sound of a Circular City: Towards a Circularity-Driven Quietness''	Environmental Sciences and Ecology	SCI-E; SSCI	4,8	1
2022	''Business Model Canvas for Big and Open Linked Data in Smart and Circular Cities: Findings From Europe''	Computer Science	SCI-E	4,5	1
1977	''Further Optimal Cost Routes in the Circular City Model''	Mathematics	Scopus	1,8	1
2017	''Spatial Cournot Competition in a Circular City with More than Two Dispatches''	Business and Economics	SSCI	0,9	1
2022	''Smart and Circular Cities''	Computer Science	SCI-E	4,5	0
2022	''Redefining Circular Cities: Regulation, Governance, Infrastructure, and Technology''	Computer Science	SCI-E	4,5	0
2022	''Interoperable Internet of Things for Smart Transportation Systems in Circular Cities''	Computer Science	SCI-E	4,5	0
1976	''Land Use in a Circular City: Some Numerical Results''	Economics, Econometrics and Finance	Scopus	3,3	0
2023	''Quantification of Sustainability Index for the Wastewater Recovery Technologies: A Decision Support Approach for Circular City Adaptations''	Environmental Sciences and Ecology	SCI-E	3,2	0
2005	''Horizontal Mergers in the Circular City: A Note''	Business and Economics	ESCI	0,5	0
2020	''"Zéro Artificialisation Nette" Target, Towards Circular Cities and Territories''	Environmental Science and Ecology	Scopus	-	0
2021	''Circular City/Circularity in the City. Limits and Potential of an Emerging Paradigm''	Social Sciences	Scopus	-	0

1980	‘‘Some Generalizations of the Circular City Model’’	Engineering	Scopus	-	0
2022	‘‘Urban Metabolism as a Background for the Development of Circular Cities in Ukraine’’	Earth and Planetary Sciences	Scopus	-	0

Source: Prepared by the Author

The qualitative structure of the 5 most cited publications among the articles in Table 3 was examined in detail. As a result of the examination, it was seen that 3 of these publications used qualitative research methods and 2 of them used mixed research methods. Case studies were analyzed in 2 of the articles. In 2 studies, theory and literature were examined. In the other 1 study, both comparative case study analysis and literature review were included. The qualitative structure of the 5 most cited studies in the field of circular city is shown in Table 4.

Table 4. Structure of the 5 Most Cited Studies in the Field of Circular City

Title of the Article	Objectives	Methods	Key Findings
‘‘Circular Cities: Mapping Six Cities in Transition’’	‘‘The research, we initiate a critical discussion on the concept of the circular city, through six European case studies. The aim is to undertake exploratory research into early examples of city managers initiating CE activities within their cities: How are cities adopting CE as a strategy? We review and critique the emerging body of CE literature from an urban sustainability perspective.’’	Qualitative Research - Sample case analysis	‘‘Some cities were examined in a circular city perspective and policy strategies were mapped.’’
‘‘Circular Economy Strategies in Eight Historic Port Cities: Criteria and Indicators Towards a Circular City Assessment Framework,,	‘‘The paper aims to develop an extensive form of “screening” of circular economy actions in emerging circular cities, focusing on eight European historic port cities self-defined as “circular”. The analysis is carried out as a review of circular economy actions in the selected cities, and specifically aims to identify the key areas of implementation in which the investments in the circular economy are more oriented, as well as to analyze the spatial implications of the reuse of buildings and sites, proposing a set of criteria and indicators for ex-ante and ex-post evaluations and monitoring of circular cities.’’	Mixed method - Sample case analysis	‘‘The review of projects and indicators of circular city conducted in this study highlights the lack of measures and assessments that go beyond the “materials and energy” dimensions in circular urban economy, embedding other dimensions related to the culture of cooperation, synergies, and symbioses that are key to the self-sustainability of

			urban and territorial systems.''
''Circular Cities''	''The paper I investigate why the current state-of-the-art conceptualisation for circular economy (RESOLVE) is inadequate when applied to a city. Through this critique and a broader review of the literature I identify the principles and components which are lacking from the circular economy (CE) conceptualisation when applied to a city. I then use this to develop my own definition and conceptualisation of a circular approach to urban resource management.''	Qualitative Research - Conceptual and/or theoretical review	''Conceptual and/or theoretical contribution.''
''Towards Circular Cities-Conceptualizing Core Aspects''	''The aim of this article is to conceptualize 'circular city' by composing a comprehensive overview of the most relevant aspects covering constraints, characteristics and connections. Additionally, the article aims at pointing the next steps for the cities to take towards circularity.''	Qualitative Research - Conceptual and/or theoretical review	''Conceptual and/or theoretical contribution.''
''Circular Cities: Challenges to Implementing Looping Actions''	''The paper we explore the challenges facing the implementation of looping actions in cities.''	Mixed method - A literature review, expert workshop and comparative case studies were employed.	''The study identified 58 challenges to circular action in cities.''

Source: Prepared by the Author

CONCLUSION

The circular economy is a transformative model that aims to achieve sustainable growth by focusing on resource efficiency, waste reduction and minimum material use. It is not independent of the capitalist system, but is a conservationist approach developed to address resource issues that impede development. Human impact on the environment has always existed, but the Industrial Revolution in the 19th century changed this perception. Global material use has almost tripled in the last 107 years and is expected to reach between 170 and 184 billion tons by 2050. This means that humanity is using our planet's ecosystems faster than they can be replenished, requiring almost a second world to match production and consumption patterns. Urban areas are at the center of this production and consumption, responsible for much of this resource use and waste generation. With these characteristics, cities have an important role in the transition to a circular economy. The aim of this study is to identify the trends in the literature on the concept of circular city, to identify the main topics addressed, to examine the prominent studies and to guide the researchers, -implementers, and -policy makers interested in the subject for their future studies.

In the study, 88 publications on the concept of circular city between 1970-2023 in WoS and Scopus database were listed and analyzed. The circular city is still a very current field of study with historical roots. Until 2017, there was no significant change in the number of publications on the circular city; However, there has been a significant increase in the number of publications after 2017. In other words, since 2017, the topic of circular city has frequently appeared in the literature. It is seen that most of the relevant articles were prepared at Purdue University and University of London. It is understood that most of the articles were published by the journal Sustainability. In terms of field, it is seen that the articles are mostly related to the Science and Technology research field. The most commonly used keywords in the studies are 'circular', 'urban, economy', 'city' and 'cities'. Among the studies on circular cities, the most cited works are ''Circular Cities: Mapping Six Cities in Transition'', ''Circular Economy Strategies in Eight Historic Port Cities: Criteria and Indicators Towards a Circular City Assessment Framework'', ''Circular Cities'', ''Towards Circular Cities-Conceptualizing Core Aspects'' and ''Circular Cities: Challenges to Implementing Looping Actions''.

As a result, this study has attempted to provide an overall picture of the research on the circular city in general, including current and diverse publications. The literature on the concept of the circular city has been defined, studies in the WoS and Scopus databases have been identified and a literature summary has been presented for researchers, -practitioners, and also -policy makers interested in the subject.

DÖNGÜSEL KENT: DİSİPLİNLERARASI BÜTÜNLEŞTİRİCİ BİR LİTERATÜR TARAMASI

1. GİRİŞ

Döngüsel ekonomi, kaynak verimliliği, atık azaltımı ve sürekli malzeme kullanımına odaklanarak sürdürülebilir kalkınmayı sağlamayı amaçlayan dönüştürücü bir modeldir. Bu model kapitalist sistemden bağımsız değildir, ancak kalkınmayı engelleyen kaynak sorunlarını ele almak için geliştirilmiş çevre korumacı bir yaklaşımdır. İnsanın çevre üzerindeki etkisi her zaman var olmuştur, ancak 19. yüzyıldaki Sanayi Devrimi bu etkiyi ciddi bir şekilde artırmıştır. Küresel malzeme kullanımı son 123 yılda neredeyse on beş katına çıkmıştır. Bu, insanlığın gezegenimizin ekosistemlerini yenilenebileceklerinden daha hızlı kullandığı ve mevcut üretim- tüketim kalıplarını devam ettirmek için neredeyse ikinci bir dünyaya ihtiyaç olduğu anlamını taşımaktadır. Kentsel alanlar bu üretim ve tüketimin merkezinde yer almakta olup, bu kaynak kullanımı ve atık üretiminin büyük bir kısmından sorumludur. Bu özellikleriyle kentler döngüsel ekonomiye geçişte önemli bir role sahiptir. Bu çalışmanın amacı, döngüsel kent kavramına yönelik literatürdeki eğilimleri tespit etmek, ele alınan ana konuları belirlenmek, ön plana çıkan çalışmaları incelemek ve konu ile ilgilenen araştırmacılara-uygulayıcılara-politika yapıcılara gelecekte hazırlayacakları çalışmalar için rehberlik etmektir.

2. YÖNTEM

Çalışmada bütünleştirici literatür taraması yöntemi kullanılmıştır. Akademik araştırmalarda bütünleştirici literatür taraması ile yanlılığı en aza indirmeyi amaçlayan, tekrarlanabilir, bilimsel ve şeffaf bir süreç benimsenerek kanıta dayalı bir uygulama izlenir. Bu yöntem, hem ampirik hem de teorik yayınları içerecek şekilde tanımlanmaktadır. Bütünleştirici literatür taraması, incelenen konuya ilişkin yeni bilgiler üreten, çerçeveler sunan ve perspektifler oluşturan kendine özgü bir araştırma biçimidir. Bütünleştirici literatür taramaları, literatürde hızlı bir büyüme yaşayan ve uzun süredir kapsamlı bir inceleme ve güncellemeden faydalanmamış dinamik konular üzerinde gerçekleştirilir. Bu doğrultuda hazırlanan çalışmanın amacı, döngüsel kent kavramına yönelik literatürdeki eğilimleri tespit etmek, ele alınan ana konuları belirlenmek, ön plana çıkan çalışmaları incelemek ve konu ile ilgilenen araştırmacılara-uygulayıcılara-politika yapıcılara gelecekte hazırlayacakları çalışmalar için rehberlik etmektir. Çalışma kapsamında, bilimsel alanda döngüsel kent kavramıyla ilgili yayınlar, Scopus ve WoS veri tabanlarında yapılan aramalarla bütüncül literatür taraması yöntemiyle analiz edilmiştir.

3. BULGULAR

Bu çalışmada, WoS ve Scopus veri tabanlarında 1970-2023 yılları arasında döngüsel kent kavramı üzerine yapılmış 88 yayın listelenmiş ve analiz edilmiştir. Döngüsel kent, tarihsel kökleri olan ve hala çok güncel olan bir çalışma alanıdır. 2017 yılına kadar döngüsel kentlerle ilgili yayın sayısında önemli bir değişiklik olmamıştır; ancak 2017 yılından sonra yayın sayısında önemli bir artış olmuştur. Diğer bir deyişle, 2017 yılından itibaren döngüsel kent konusu literatürde sıklıkla yer almaya başlamıştır. Konuyla ilgili en çok akademik çalışma yapan kurumların Purdue Üniversitesi ve Londra Üniversitesi olduğu tespit edilmiştir. Hazırlanan çalışmaların büyük kısmının Sustainability dergisi tarafından yayınlandığı anlaşılmaktadır. Alan açısından bakıldığında ise makalelerin çoğunlukla Bilim ve Teknoloji araştırma alanıyla ilgili olduğu görülmektedir. Çalışmalarda en sık kullanılan anahtar kelimeler döngüsel, kentsel, ekonomi, şehir ve kentlerdir. Döngüsel kentler üzerine yapılan çalışmalar arasında en çok atıf alan eserler ‘‘Circular Cities: Mapping Six Cities in Transition’’, ‘‘Circular Economy Strategies in Eight Historic Port Cities: Criteria and Indicators Towards a Circular City Assessment Framework’’, ‘‘Circular Cities’’, ‘‘Towards Circular Cities-Conceptualizing Core Aspects’’ and ‘‘Circular Cities: Challenges to Implementing Looping Actions’’dur.

SONUÇ

Döngüsel ekonomi, kaynak verimliliği, atık azaltımı ve minimum malzeme kullanımına odaklanarak sürdürülebilir büyüme sağlamayı amaçlayan dönüştürücü bir modeldir. Kapitalist sistemden bağımsız değildir, ancak kalkınmayı engelleyen kaynak sorunlarını ele almak için geliştirilmiş korumacı bir yaklaşımdır. Bu yaklaşımın hayata geçirilmesinde ve başarısının sağlamasında kentlerin önemli bir yeri ve rolü bulunmaktadır. Çünkü kentler dünya yüzeyinin küçük bir kısmının

kaplamasına rağmen insanların çoğunun içerisinde yaşadığı üretim ve tüketimin gerçekleştiği asli mekânlardır. Çalışmada döngüsel kent kavramına odaklanılmış, WoS ve Scopus veri tabanlarında 1970-2023 yılları arasında döngüsel kent kavramıyla ilgili 88 yayın listelenmiş ve analiz edilmiştir. Yapılan analizler neticesinde döngüsel kent kavramı yönelik araştırmaların 2017 yılından sonra ivmelenme gösterdiği ve sürdüğü tespit edilmiştir. Konu hale güncel bir araştırma alanı olarak karşımıza çıkmakta ve çalışılmaktadır. Sonuç olarak bu çalışma, güncel ve çeşitli yayınları da içerecek şekilde döngüsel kent üzerine yapılan araştırmaların genel bir resmini sunmaya çalışmıştır. Döngüsel kent kavramına ilişkin literatür tanımlanmış, WoS ve Scopus veri tabanlarında yer alan çalışmalar tespit edilmiş ve konuyla ilgilenen araştırmacılar-uygulayıcılar-politika yapıcılar için bir literatür özeti sunulmuştur.

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KATKI ORANI / *CONTRIBUTION RATE*	**AÇIKLAMA / *EXPLANATION***	**KATKIDA BULUNANLAR / *CONTRIBUTORS***
Fikir veya Kavram / *Idea or Notion*	Araştırma hipotezini veya fikrini oluşturmak / *Form the research hypothesis or idea*	Özkan YALÇIN
Tasarım / *Design*	Yöntemi, ölçeği ve deseni tasarlamak / *Designing method, scale and pattern*	Özkan YALÇIN
Veri Toplama ve İşleme / *Data Collecting and Processing*	Verileri toplamak, düzenlenmek ve raporlamak / *Collecting, organizing and reporting data*	Özkan YALÇIN
Tartışma ve Yorum / *Discussion and Interpretation*	Bulguların değerlendirilmesinde ve sonuçlandırılmasında sorumluluk almak / *Taking responsibility in evaluating and finalizing the findings*	Özkan YALÇIN
Literatür Taraması / *Literature Review*	Çalışma için gerekli literatürü taramak / *Review the literature required for the study*	Özkan YALÇIN