

Sustainable Business Models and Circular Economy Adoption

Ramakant Tripathi¹, Neha Kulkarni², Aman Chopra³, Kuldeep Yadav⁴

Assistant Professor, Associate Professor

Department of Strategic Management and Policy

Narsee Monjee College of Commerce and Economics — Mumbai, Maharashtra

Corresponding Author Email: kulkarnineha70@rediffmail.com²

ABSTRACT

Sustainable business models and circular economy adoption have become increasingly important in contemporary business environment due to rising environmental concerns, resource scarcity, and stakeholder pressure. Traditional linear models based on “take–make–dispose” approach are no longer viable in long term, forcing organizations to redesign their value creation processes. This paper reviews the concept of sustainable business models and examines how circular economy principles are being integrated into organizational strategies and operations. The study discusses drivers, practices, benefits, and challenges associated with circular business models across industries. It also explores the role of innovation, digitalization, and policy frameworks in enabling circular transition. The paper finds that circular economy adoption improves resource efficiency, reduces waste, and enhances competitive advantage, but adoption remains uneven due to financial, technological, and institutional barriers. The study contributes to literature by synthesizing existing knowledge and providing a conceptual framework linking sustainability orientation with circular business innovation. The findings are relevant for managers, policymakers, and researchers seeking to promote sustainable economic development.

KEYWORDS: *Sustainable business model, circular economy, sustainability, resource efficiency, green innovation, waste reduction*

INTRODUCTION

Global economic growth over past decades has resulted in significant environmental degradation, climate change, and depletion of natural resources. Businesses traditionally followed linear production systems where raw materials are extracted, transformed into products, and finally disposed as waste. This model is increasingly criticized because it creates unsustainable resource consumption and environmental damage. As a result, firms are shifting towards sustainable business models that integrate environmental and social considerations into value creation.

The circular economy (CE) concept offers an alternative to linear economy by promoting closed-loop systems where products, materials, and resources remain in use for as long as possible. Circular strategies such as recycling, remanufacturing, repair, and reuse aim to minimize waste generation and maximize resource productivity. Many organizations are adopting circular practices to meet regulatory requirements, consumer expectations, and sustainability goals.

Sustainable business models and circular economy adoption are closely connected. A sustainable business model ensures that firms create, deliver, and capture value in ways that maintain environmental and social capital. Circular economy provides operational mechanisms to achieve sustainability objectives. Therefore, understanding how circular principles are embedded into business models is essential for achieving sustainable development.

This paper reviews literature on sustainable business models and circular economy adoption. It examines key drivers, business practices, benefits, and challenges of circular transformation. It also presents conceptual linkages and practical implications for organizations transitioning towards circular systems.

CONCEPT OF SUSTAINABLE BUSINESS MODELS

A business model explains how an organization creates, delivers, and captures value in economic terms. Traditionally, business models were mainly focused on profitability and market competitiveness. However, increasing environmental degradation, climate change concerns, and social inequalities have led to the evolution of sustainable business models (SBMs). A sustainable business model extends the conventional model by integrating

environmental stewardship and social responsibility alongside economic performance. It aims to balance profit generation with long-term ecological integrity and societal well-being.

In simple terms, a sustainable business model ensures that business activities do not compromise natural resources or social systems while still maintaining financial viability. It reflects the idea that organizations are not isolated economic entities but part of a broader socio-ecological system. Therefore, value creation is not limited to customers and shareholders only, but also includes employees, communities, environment, and future generations.

1. Key Characteristics of Sustainable Business Models

Sustainable business models differ significantly from conventional linear models in several important aspects. These distinguishing features define how firms integrate sustainability into their core strategy and operations.

a) Lifecycle Perspective of Products

Conventional models often focus only on production and sales stages, ignoring environmental impacts occurring before and after product use. In contrast, sustainable business models adopt a lifecycle perspective that considers raw material extraction, manufacturing, distribution, consumption, and end-of-life disposal. Firms attempt to minimize negative impacts at every stage through eco-design, recyclable materials, and waste reduction practices. This lifecycle thinking supports circular economy principles.

b) Efficient Resource Utilization

Resource efficiency is central to sustainable business models. Firms aim to reduce energy consumption, material waste, and water use in production processes. Renewable energy adoption and closed-loop material systems are often integrated. Efficient resource use not only reduces environmental footprint but also lowers operational costs in long term.

c) Stakeholder Value Orientation

Traditional business models emphasize shareholder value maximization. Sustainable business models expand this perspective to multiple stakeholders including employees, customers, suppliers, communities, and environment. Decision-making considers social equity, employee well-being, ethical sourcing, and environmental protection. Firms adopting such orientation often engage in transparent reporting and responsible governance practices.

d) Long-Term Strategic Orientation

Short-term profit maximization is replaced with long-term sustainability goals. Investments in renewable energy, eco-innovation, or circular supply chains may not produce immediate financial returns but create durable competitive advantage and risk resilience. Sustainable firms prioritize longevity and resilience over quick gains.

e) Integration of Environmental and Social Goals

Sustainable business models integrate environmental and social objectives directly into value proposition. For example, products may be designed to reduce emissions, improve energy efficiency, or support social inclusion. Sustainability is embedded in core business strategy rather than treated as separate corporate social responsibility (CSR) activity.

2. Structural Changes in Sustainable Business Models

Transitioning towards sustainability requires firms to redesign multiple components of business model including value proposition, value creation system, and revenue mechanisms.

a) Product Redesign and Eco-Innovation

Firms modify product design to reduce material intensity, increase durability, and enable reuse or recycling. Eco-design also considers modularity and repairability, allowing components to be replaced instead of discarding entire product. This reduces resource extraction and waste generation.

b) Sustainable Supply Chains

Supply chain structures are reconfigured to ensure responsible sourcing, ethical labor practices, and reduced environmental impact. Companies may shift to certified raw materials, local sourcing, or low-carbon logistics. Collaboration with suppliers becomes important to achieve sustainability targets.

c) Service-Oriented Revenue Models

Many sustainable firms shift from product ownership to service-based models such as leasing, sharing, or product-as-a-service. This approach extends product lifespan and reduces consumption. Because producers retain ownership, they are incentivized to design durable and repairable products, aligning economic and environmental interests.

d) Renewable Energy and Resource Inputs

Sustainable business models often rely on renewable energy sources and recycled materials. This reduces dependence on finite resources and decreases emissions. Resource loops are

closed by integrating waste streams back into production cycles.

3. Value Creation and Competitive Advantage

Sustainable business models are not only environmentally beneficial but also strategically advantageous. Firms adopting sustainability often experience several forms of competitive benefit.

a) Cost Efficiency

Resource efficiency and waste reduction lower production costs over time. Energy-efficient processes and material reuse reduce operational expenses. Though initial investments may be high, long-term savings are significant.

b) Brand Reputation and Customer Loyalty

Consumers increasingly prefer environmentally responsible products and ethical brands. Sustainable firms gain positive reputation, trust, and customer loyalty. Sustainability certification and transparent practices enhance brand credibility.

c) Innovation Opportunities

Sustainability challenges encourage innovation in products, processes, and business models. Firms develop new materials, circular services, and digital solutions that open new markets. Innovation capability strengthens competitiveness.

d) Risk Management and Resilience

Sustainable models reduce exposure to resource scarcity, regulatory penalties, and environmental risks. Firms become more resilient to supply disruptions and policy changes. Long-term sustainability orientation enhances organizational stability.

4. Organizational and Strategic Requirements

Despite advantages, transitioning to sustainable business models is complex and requires significant organizational commitment. Firms must invest in new technologies, redesign processes, and develop sustainability capabilities. Leadership support and strategic alignment are essential for successful transformation.

Organizational culture also plays important role. Employees need awareness and skills related to sustainability practices. Cross-functional collaboration is necessary because sustainability affects procurement, production, marketing, and logistics simultaneously. Companies often adopt sustainability reporting frameworks and performance metrics to monitor progress.

Another challenge is balancing economic and environmental objectives. Short-term financial pressures may conflict with sustainability investments. Therefore, strategic vision and stakeholder support are crucial for long-term success.

5. Link with Circular Economy

Sustainable business models provide the structural foundation for circular economy adoption. Circular strategies such as reuse, repair, remanufacturing, and recycling can only function effectively when embedded into business model design. For example, product-as-a-service models facilitate product return and refurbishment, while eco-design enables material recovery. Thus, sustainable business models operationalize circular economy principles within organizational systems.

CIRCULAR ECONOMY PRINCIPLES

Circular economy (CE) represents a transformative economic system that aims to eliminate waste generation and maintain continuous use of resources through closed-loop material cycles. It emerged as a response to limitations of the traditional linear economy model characterized by “take–make–dispose” production and consumption patterns. In linear systems, resources are extracted, transformed into products, and eventually discarded as waste after use. This approach leads to resource depletion, environmental pollution, and loss of economic value embedded in materials.

In contrast, circular economy redefines waste as a valuable resource and promotes restorative and regenerative production systems. The objective is to keep products, components, and materials circulating within the economy for as long as possible, thereby reducing resource extraction and environmental impact. Circular economy principles are closely linked with sustainability because they support resource efficiency, environmental protection, and long-term economic resilience.

The circular economy framework is generally based on three core principles: designing out waste and pollution, keeping products and materials in use, and regenerating natural systems. These principles guide organizations in restructuring production processes, product design, and consumption patterns.

1. Design Out Waste and Pollution

The first principle emphasizes preventing waste and pollution at the design stage rather than managing them after production. Traditional industrial systems often treat waste management as an end-of-pipe activity, meaning waste is handled only after it is generated. Circular economy instead promotes proactive design strategies that eliminate waste creation from the beginning.

Products are designed to use fewer materials, avoid toxic substances, and enable easy disassembly and recycling. Packaging is minimized or made recyclable or biodegradable. Manufacturing processes are optimized to reduce emissions and material losses. By addressing environmental impacts during design phase, firms can significantly lower lifecycle footprint of products.

Eco-design and sustainable material selection are central to this principle. For example, using modular components allows damaged parts to be replaced without discarding entire product. Similarly, biodegradable materials prevent long-term environmental pollution. Designing out waste also reduces production costs because fewer raw materials and energy inputs are required.

Overall, this principle shifts focus from waste treatment to waste prevention, making production systems inherently sustainable.

2. Keep Products and Materials in Use

The second principle focuses on maximizing the useful life of products, components, and materials. Instead of single-use consumption followed by disposal, circular economy encourages repeated use cycles through reuse, repair, refurbishment, remanufacturing, and recycling. Maintaining materials in circulation preserves their economic value and reduces need for virgin resource extraction.

Durability and repairability are key product characteristics under this principle. Products designed for long life can be maintained and upgraded rather than replaced. Repair services and spare parts availability support extended use. Refurbishment restores used products to functional condition, while remanufacturing rebuilds components to original performance

standards.

Recycling is another important mechanism, where materials from end-of-life products are processed into secondary raw materials. However, circular economy prioritizes reuse and repair over recycling because recycling often requires energy and may degrade material quality. Therefore, higher value retention strategies are preferred.

Business models also play crucial role in keeping products in use. Leasing, sharing, and product-as-a-service models ensure producers retain ownership of products, enabling them to recover and recirculate materials after use. These models shift consumption from ownership to access, reducing total resource demand.

By extending product life cycles and recirculating materials, this principle reduces waste generation, conserves resources, and maintains economic value within production systems.

3. Regenerate Natural Systems

The third principle recognizes that economic activity depends on healthy natural ecosystems. Circular economy not only aims to minimize environmental harm but also to actively restore and regenerate natural systems. This principle emphasizes renewable resource use, ecological restoration, and sustainable resource cycles.

Renewable energy sources such as solar, wind, and biomass replace fossil fuels in circular systems. Sustainable agriculture practices restore soil fertility and biodiversity. Organic materials are returned safely to biological cycles through composting or biodegradation, enriching ecosystems rather than polluting them.

Regenerative practices ensure that natural capital is preserved and enhanced rather than depleted. For instance, sustainable forestry maintains forest regeneration rates, while circular water systems recycle and purify water resources. Industrial processes can also integrate biological cycles, where organic waste becomes nutrient input for agriculture.

This principle highlights that long-term economic sustainability is impossible without ecological sustainability. By regenerating natural systems, circular economy supports

resilience of both environment and economy.

4. Circular Strategies and Resource Loops

To operationalize circular economy principles, organizations implement various circular strategies that extend product life and close material loops. These strategies differ in value retention level but collectively contribute to resource efficiency.

a) Reduce Material Use

Material reduction involves designing products that require fewer raw materials and energy inputs. Lightweight materials, efficient manufacturing, and minimal packaging decrease resource consumption at source. Reduction is considered most effective strategy because it prevents resource extraction entirely.

b) Reuse Products and Components

Reuse involves using products multiple times without significant modification. Examples include refillable containers, reusable packaging, and second-hand markets. Component reuse allows parts from discarded products to be integrated into new ones, preserving material value.

c) Repair and Refurbish

Repair restores functionality of damaged products, while refurbishment upgrades or improves used products to acceptable quality standards. These activities extend product lifespan and delay disposal. Repair culture also supports local employment and service economy.

d) Remanufacture

Remanufacturing involves disassembling used products and rebuilding them to original performance specifications using recovered components. It retains high value of materials and reduces production energy compared to manufacturing new products. Industrial equipment and automotive sectors widely use remanufacturing.

e) Recycle Materials

Recycling converts waste materials into secondary raw materials for new production. Metals, plastics, glass, and paper are commonly recycled. Although recycling requires energy, it significantly reduces need for virgin resource extraction and landfill disposal.

f) Recover Energy

Energy recovery extracts usable energy from non-recyclable waste through processes such as incineration with energy capture or anaerobic digestion. This is considered lowest level of circular strategy because material value is lost, but it still reduces landfill burden and fossil fuel use.

These strategies collectively create closed material loops where resources circulate continuously within economy instead of being discarded.

5. Role of Renewable Energy and Regenerative Inputs

Circular economy emphasizes transition from finite resources to renewable and regenerative inputs. Renewable energy reduces environmental footprint of production and recycling processes. Similarly, renewable materials such as bioplastics or sustainably harvested biomass replace non-renewable resources.

Biological cycles play important role in circular systems. Organic materials safely decompose and return nutrients to ecosystems. This contrasts with linear systems where organic waste accumulates in landfills and generates pollution. Integrating biological and technical cycles ensures sustainable resource regeneration.

6. Circular Economy vs Linear Economy

The fundamental difference between circular and linear economy lies in resource flow patterns. Linear economy is characterized by one-directional flow from extraction to disposal, leading to waste accumulation and resource depletion. Circular economy establishes cyclical flows where materials continuously circulate through reuse and regeneration processes.

Circular economy also shifts business perspective from volume-based production to value retention and service provision. Instead of maximizing product sales, firms aim to maximize utility and lifespan of products. This transition aligns economic activity with environmental sustainability.

SUSTAINABLE BUSINESS MODELS IN CIRCULAR ECONOMY CONTEXT

Circular economy adoption requires firms to redesign their business models to support closed-loop systems. Sustainable business models provide structure through which circular principles are operationalized. The integration occurs across value creation, delivery, and capture dimensions.

1. Circular Value Creation

Value creation in circular models focuses on resource productivity and waste minimization. Firms create value by using recycled inputs, renewable materials, and eco-design practices. Production processes emphasize efficiency and low environmental impact.

2. Circular Value Delivery

Value delivery involves distribution and consumption patterns supporting circularity. Examples include product sharing platforms, leasing systems, and take-back programs. These approaches ensure products remain in circulation rather than disposal.

3. Circular Value Capture

Value capture in circular business models often differs from traditional sales revenue. Firms may generate income from services, maintenance, remanufacturing, or secondary material markets. Such models provide continuous revenue streams while reducing resource consumption.

DRIVERS OF CIRCULAR ECONOMY ADOPTION

Organizations adopt circular economy practices due to several internal and external drivers. These drivers influence strategic decisions and sustainability orientation.

1. Environmental Regulations

Governments increasingly impose regulations on waste management, emissions, and resource efficiency. Compliance requirements encourage firms to adopt recycling, reuse, and eco-design practices. Regulatory pressure often acts as major driver for circular transformation.

2. Resource Scarcity and Cost Pressures

Rising prices of raw materials and supply uncertainty motivate firms to reduce material dependence. Circular strategies such as recycling and remanufacturing lower material costs and improve supply resilience. Firms see circular economy as risk management approach.

3. Consumer Awareness and Demand

Consumers are becoming more environmentally conscious and prefer sustainable products. Demand for eco-friendly goods, recyclable packaging, and ethical production influences firms to adopt circular practices. Brand reputation also benefits from sustainability commitment.

4. Competitive Advantage and Innovation

Circular economy provides opportunities for differentiation and innovation. Firms adopting circular models often gain first-mover advantage and market recognition. Innovation in materials, design, and services enables firms to create new revenue streams.

5. Corporate Sustainability Goals

Many organizations integrate sustainability into corporate strategy and reporting. Circular economy helps firms achieve environmental targets such as waste reduction, carbon neutrality, and resource efficiency. Sustainability commitments drive circular initiatives.

CIRCULAR BUSINESS MODEL PRACTICES

Organizations adopt various practices to implement circular economy within business models. These practices vary across industries and product types.

1. Product Life Extension

Firms design products for durability, repairability, and upgradeability. Maintenance services and spare parts availability extend product lifespan. Longer product life reduces material consumption and waste generation.

2. Product-as-a-Service

Instead of selling products, firms provide access or performance-based services. Leasing, renting, and subscription models ensure products remain under producer control, enabling reuse and refurbishment. This model is common in electronics, mobility, and industrial equipment.

3. Take-Back and Reverse Logistics

Companies implement take-back systems to collect used products from customers. Reverse logistics allows materials recovery, recycling, or remanufacturing. Closed-loop supply chains support circular material flows.

4. Recycling and Material Recovery

Recycling transforms waste into secondary raw materials. Firms use recycled inputs in production to reduce virgin resource extraction. Material recovery also creates new markets for waste streams.

5. Industrial Symbiosis

Industrial symbiosis involves collaboration between firms where waste from one process becomes input for another. This approach reduces disposal costs and resource consumption while creating mutual economic benefit.

BENEFITS OF CIRCULAR ECONOMY ADOPTION

Circular economy adoption provides multiple environmental, economic, and social benefits for organizations and society.

1. Environmental Benefits

Circular practices reduce waste generation, pollution, and resource extraction. Recycling and reuse decrease landfill disposal and environmental damage. Renewable resource use supports ecological regeneration.

2. Economic Benefits

Circular business models improve resource efficiency and reduce material costs. Remanufacturing and recycling create new revenue opportunities. Service-based models generate stable long-term income streams. Firms also gain cost savings from waste reduction.

3. Competitive Advantage

Organizations adopting circular strategies often enhance brand image and customer trust. Sustainability reputation attracts environmentally conscious consumers and investors. Circular innovation differentiates firms in competitive markets.

4. Risk Reduction

Circular economy reduces dependency on scarce resources and volatile supply chains. Recycling and local material sourcing enhance supply security. Firms become more resilient to resource shocks and regulatory changes.

5. Social Benefits

Circular economy creates employment opportunities in recycling, repair, and remanufacturing sectors. It also promotes responsible consumption and environmental awareness among consumers. Community well-being improves through reduced pollution.

CHALLENGES IN CIRCULAR ECONOMY ADOPTION

Despite benefits, many organizations face barriers in implementing circular business models.

1. Financial Constraints

Circular transformation often requires significant upfront investment in technology, infrastructure, and redesign. Small and medium enterprises face limited financial capacity to adopt circular practices.

2. Technological Limitations

Recycling and material recovery technologies may be inadequate or costly for certain materials. Product design complexity can hinder disassembly and reuse. Technological gaps restrict circular implementation.

3. Organizational Resistance

Employees and managers may resist change due to uncertainty and lack of knowledge.

Transitioning from linear to circular models requires cultural shift and skill development. Organizational inertia slows adoption.

4. Market and Consumer Barriers

Consumers may perceive recycled or refurbished products as lower quality. Limited awareness of circular benefits reduces demand. Market acceptance remains challenge in some sectors.

5. Policy and Infrastructure Gaps

Circular economy requires supportive policies, standards, and waste management infrastructure. In many regions, inadequate recycling systems and regulatory frameworks hinder circular initiatives.

ROLE OF INNOVATION AND DIGITALIZATION

Innovation and digital technologies play important role in enabling circular business models.

1. Eco-Design Innovation

Designing products for modularity, repairability, and recyclability supports circular lifecycle. Eco-design reduces material use and facilitates disassembly. Innovation at design stage determines circular potential.

2. Digital Tracking and Data

Digital technologies such as IoT and blockchain enable tracking of product lifecycle and material flows. Data transparency improves resource management and reverse logistics efficiency.

3. Sharing Platforms

Digital platforms enable sharing and collaborative consumption models. Asset sharing increases utilization and reduces need for new production. Mobility sharing and rental platforms are examples.

4. Predictive Maintenance

Sensors and analytics allow predictive maintenance, extending product life. Equipment failure can be prevented, reducing waste and resource consumption. Service-based circular models rely on such technologies.

CONCEPTUAL FRAMEWORK

The relationship between sustainable business models and circular economy adoption can be summarized in following framework.



Figure 1: Conceptual Linkage of Sustainable Business Model and Circular Economy

This framework suggests that sustainability orientation drives firms to innovate business models. These innovations enable circular practices such as reuse, recycling, and service models. Circular practices improve environmental and economic performance, leading to competitive advantage and long-term sustainability.

CASE ILLUSTRATIONS (GENERALIZED)

Many industries demonstrate circular business model adoption.

- Manufacturing firms adopting remanufacturing of components
- Fashion companies implementing recycling of textiles
- Electronics firms offering product take-back and refurbishment
- Mobility companies providing shared transportation services

These examples show that circular economy can be applied across sectors with appropriate business model redesign.

DISCUSSION

The review indicates that sustainable business models and circular economy are mutually reinforcing concepts. Circular economy provides operational mechanisms for sustainability,

while sustainable business models provide strategic structure for circular implementation. Firms integrating both achieve higher environmental and economic value.

However, circular transition is complex and context dependent. Developed economies with strong regulations and infrastructure show faster adoption compared to developing regions. SMEs face more constraints than large firms. Sector characteristics also influence circular feasibility.

Collaboration among stakeholders is essential for circular economy. Governments must provide supportive policies and infrastructure. Firms need innovation and investment. Consumers must adopt responsible consumption behaviors. Without systemic change, circular adoption remains limited.

Future research should examine quantitative impact of circular models on financial performance and sustainability outcomes. Sector-specific studies and empirical evidence are needed to understand adoption dynamics. Integration of digital technologies and circular economy also requires deeper exploration.

CONCLUSION

Sustainable business models and circular economy adoption represent critical pathways towards environmentally responsible and economically viable development. The shift from linear to circular systems enables efficient resource utilization, waste reduction, and long-term competitiveness. Organizations adopting circular practices benefit from cost savings, innovation opportunities, and improved brand reputation.

Despite advantages, adoption remains uneven due to financial, technological, and institutional barriers. Overcoming these challenges requires supportive policy frameworks, technological innovation, organizational commitment, and consumer awareness. Circular economy should be viewed not only as environmental initiative but also as strategic business opportunity.

The study concludes that integration of sustainability orientation with circular business model innovation is essential for achieving sustainable development goals. Firms that successfully adopt circular economy principles are more likely to achieve resilience and long-term value

creation in evolving global economy.

TABLES

Table 1: Comparison of Linear and Circular Business Models

Aspect	Linear Model	Circular Model
Resource Flow	One-way	Closed-loop
Product Life	Short	Extended
Waste Generation	High	Low
Revenue Source	Product sales	Services & reuse
Environmental Impact	High	Reduced
Resource Efficiency	Low	High

Table 2: Key Drivers and Barriers of Circular Economy Adoption

Drivers	Barriers
Regulations	Financial cost
Resource scarcity	Technology gaps
Consumer demand	Market acceptance
Innovation opportunities	Organizational resistance
Sustainability goals	Policy infrastructure gaps

REFERENCES

1. Bocken, N. M. P., Short, S. W., Rana, P., & Evans, S. (2014). A literature review and practice review of sustainable business model archetypes. *Journal of Cleaner Production*, 65, 42–56.
2. Geissdoerfer, M., Savaget, P., Bocken, N., & Hultink, E. (2017). The circular economy – a new sustainability paradigm. *Journal of Cleaner Production*, 143, 757–768.
3. Kirchherr, J., Reike, D., & Hekkert, M. (2017). Conceptualizing the circular economy. *Resources, Conservation and Recycling*, 127, 221–232.
4. Murray, A., Skene, K., & Haynes, K. (2017). The circular economy: an interdisciplinary

- exploration. *Journal of Business Ethics*, 140(3), 369–380.
5. Tukker, A. (2015). Product services for a resource-efficient and circular economy. *Journal of Cleaner Production*, 97, 76–91.
 6. Stahel, W. R. (2016). The circular economy. *Nature*, 531(7595), 435–438.
 7. Lewandowski, M. (2016). Designing the business models for circular economy. *Sustainability*, 8(1), 43.
 8. Lacy, P., & Rutqvist, J. (2015). *Waste to Wealth: The Circular Economy Advantage*. Palgrave Macmillan.
 9. Ellen MacArthur Foundation. (2019). *Completing the Picture: How the Circular Economy Tackles Climate Change*.
 10. Urbinati, A., Chiaroni, D., & Chiesa, V. (2017). Towards a new taxonomy of circular economy business models. *Journal of Cleaner Production*, 168, 487–498.