

# Digital Transformations Theoretical Investigation On The Basis Of Smart Government Initiatives

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**Abstract:** Indian small and medium-sized businesses have only recently started to follow CE rules. Despite significant effort, rulemaking, and international collaboration on important projects, the Indian government has seen minimal benefit. In the previous study, it was said that requiring CE in all agencies, no matter how big or small, would help businesses stay competitive in growing markets. No matter how big the agency is, this is the right thing to do. With the help of a theoretical lens based on a resource-based approach, this paper looks at the things that affect and stop small and medium-sized industrial and process-based companies in India from adopting CE. The look at analyzes a total of twelve case studies to make its findings. The within-case and cross-case studies revealed that the primary causes of the barriers to CE adoption were a lack of business-way analysis, skills, and understanding; a lack of virtual transformation; and a lack of multi-stakeholder cooperation within the supply chain. On the other hand, the factors that pressure CE adoption include authorities initiatives, aggressive advantage, environmental regulation, and consumer strain. The motive of this paper is to offer a CE implementation guide for SMEs' managers in India. The study includes six strategies for improving CE domains in the ways of resource efficiency, value savings, multi-stakeholder participation, and long-term effects.

**Keywords:** Circular economy, small-medium sized enterprises, Digital transformation.

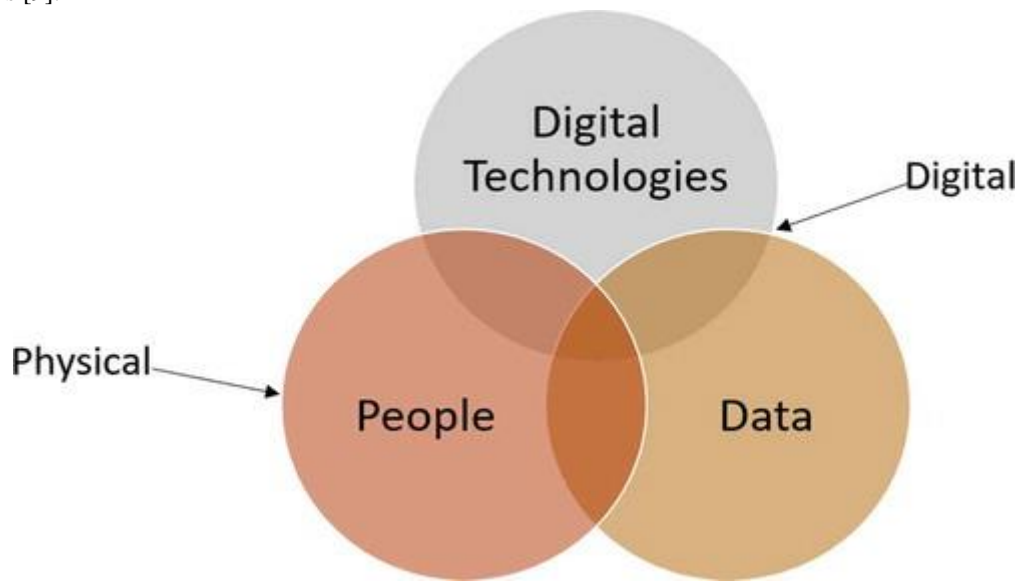
## 1. Introduction

The term "digitalization" refers to widespread adoption and use of technological breakthroughs in all facets of society. Through quick advances in computer innovation, digitalization has made for more volatile and competitive settings. There are fewer obstacles to entry as a result of digitalization since digital business models are favored and old value propositions are rethought. As a result of the challenges posed by digitalization, many conventional businesses are undergoing a process of digital transformation. Multiple digital innovations act synergistically to drive the digital transformation. New operational methods, value propositions, and business models are all signs of digital transformation as an organizational change process. The adoption of novel methods of operation necessitates the modification of existing frameworks in response to these shifts. [1].

Stakeholders with varying perspectives and answers are essential to the success of government-led digital transformation programs. Stakeholder perspectives are the system services that stakeholders need to carry out their responsibilities. However, stakeholders' reactions to the introduction of IT in their workplaces are known as stakeholder responses. Even among members of the same stakeholder group, opinions and reactions can range from supportive to conflicting. The subjective nature of stakeholder input complicates the implementation of such projects. The complex web of information and communication technologies (ICT) that drives digital transformation includes an ever-expanding user population with varying perspectives and resources. This magnifies the difficulties inherent in digital transformation project rollouts. Assessing the progress made toward the goals of a digital transformation program is a key part of the implementation process. Stakeholders' priorities are diagnosed and weighed as a way to reach consensus on the price of digital transformation tasks [2].

Figure 1 shows the components of a smart city's digital transformation. With severe and ever-evolving market rivalry, many companies are looking to DT as a way to set themselves apart. To their competitive advantage, many businesses have adopted a virtual transformation strategy [3, 4]. With "higher marketplace performance" [5] in mind, the internet and virtual era have had a major impact on the market by lowering the costs of searching, shipping, duplication, transactions, and the investigation of new market prospects. The use of digital technology opens up new opportunities for product development and cost reduction [6] and stimulates the entrepreneurial spirit [7]. The proliferation of digital technologies has encouraged the launch and growth of micro and tiny enterprises [8], and the availability of online tools has made it easier for established businesses to weather

recessions in the economy. Many companies saw a dramatic surge in their online sales during the Covid-19 outbreaks [9].



**Fig 1:** Digital transformation components in smart towns

While digital transformation can have many good effects, there are always challenges that must be overcome before a company can fully embrace it. There is no return assurance on the massive financial investment needed for digital transformation [10]. To improve the probability of success, professionals advise implementing technological developments into the creation of products, services, processes, and business models. A company's whole business strategy and approach should be considered prior to embracing digital transformation. Despite the challenges it presents, digital transformation is seen by many companies as a "competitive necessity" for assuring continued success in the face of industry disruption. However, SMEs are hesitant to fully embrace digital change.

Researchers have looked at digital disruption from many different perspectives throughout the past decade. Many fields have been investigated, although most studies have concentrated on commercial enterprises, manufacturing, industrial settings, and data analytics. Adopting new digital technology can be especially challenging for smaller organizations because of their limited resources and personnel. The service industry is comparable to the manufacturing sector in many ways but also has its own distinctive characteristics. These considerations influence how a service provider approaches innovation. To fill in the gaps in our understanding, more study of digital transformation in SMBs providing services is needed.

Some of the obstacles that prevent small enterprises from developing and expanding are a lack of capital, inexperienced management, outdated equipment, a scarcity of raw materials, and inadequate transportation links. Numerous studies have looked at the roles the government plays in helping small businesses, and they have all come to the same conclusion: the government plays an essential role in helping small businesses succeed. However, there is a dearth of research into the responsibilities that governments play in the transition to digital systems. Given the importance of government policies and initiatives to small businesses, any analysis of digital transformation in the sector must take this into consideration.

## 2. Literature Review

Citizens' expectations for high-value, real-time digital services from their government have been raised in response to digital transformation efforts outside of government. Transparency, interoperability, and public happiness are all areas where governments are being pressed to make changes in response to supranational agreements like the "Tallinn Declaration on eGovernment" (European Commission, 2017).

Ospina, Esteve, and Lee's (2018) research on digital transformation was more interested in explaining the phenomenon than making recommendations. The interpretive method, also known as the naturalistic method, focuses a lot of attention on the things, processes, and meanings that occur naturally in different settings.

Smart cities can help with SUD (De Guimares et al., 2020) because they increase the number of ways in which people can take use of city life. The United Nations' New Urban Agenda for 2017 highlights the importance of Information and Communication Technology (ICT) solutions and Smart Cities in achieving Sustainable Development Goals (SDGs) related to better waste management and reduction, equal access to water and sanitation, and ensuring that all citizens have this basic service. The SDGs serve as targets for prioritizing development without compromising a sustainable social, economic, or ecological system.

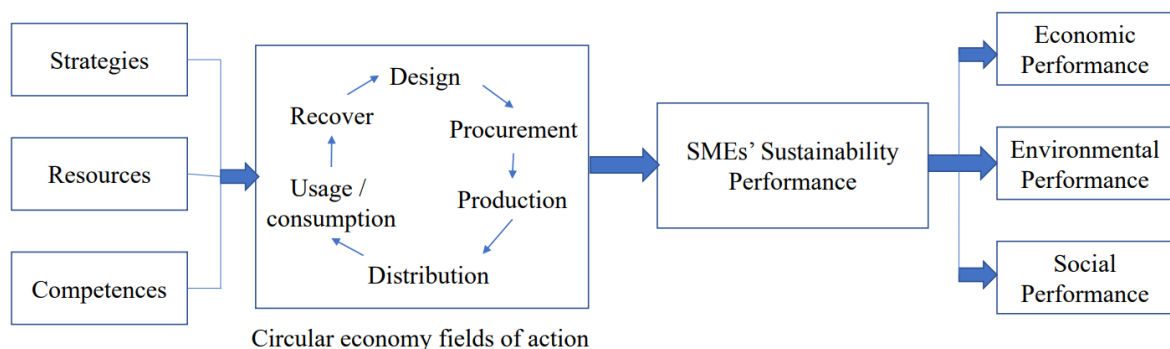
While these innovations can lead to long-term fixes, getting there is difficult and laden with dangers (Mergel et al., 2018). First, many cities aren't trying to make their sustainable practices work for everyone (Batty, 2016; Hollands, 2020). Researchers need to be able to successfully communicate their findings to a wide audience, and they must suggest tangible solutions that utilize technology to establish effective policy that benefits citizens. (Gomez-Trujillo & Gonzales-Peres, 2021). Last but not least, communities in the Global North and South provide stark examples of Smart Governance's contextual challenges (Manda & Backhouse, 2019).

This study addresses the questions like "How can digital tools be aligned with Sustainable Development Goals within an agenda of digital transformation?" and "What can a Smart Governance framework look like for sustainable development in the context of the Global South?" with the hope of finding solutions to some of these issues. Several governmental procedures in the Brazilian state of Ceará have already been digitized, and this study builds on that work. We illustrate how E-government initiatives in the state government of Ceará satisfy multiple sustainability objectives while also furthering the state's ambition for digital transformation. Related to this is the Digital Innovation and SUD Framework for Brazilian Smart Cities (Letter, MDR, 2021). Goal 16 ("Peace, justice, and strong institutions") and Goal 17 ("Partnership for the Goals"), which outline how local governments should work together to achieve sustainable development, are also relevant to the Letter's focus on governance.

### 3. Methodology

#### 3.1 Methodological steps:

We have developed a framework (Figure 2) to investigate the connection between CE areas of action (such as closed loop functions and their proxies in SMEs) and sustainable performance (economic, environmental, and social outcomes).



**Fig 2:** SMEs in a Circular Economy from a Resource Perspective Action domains

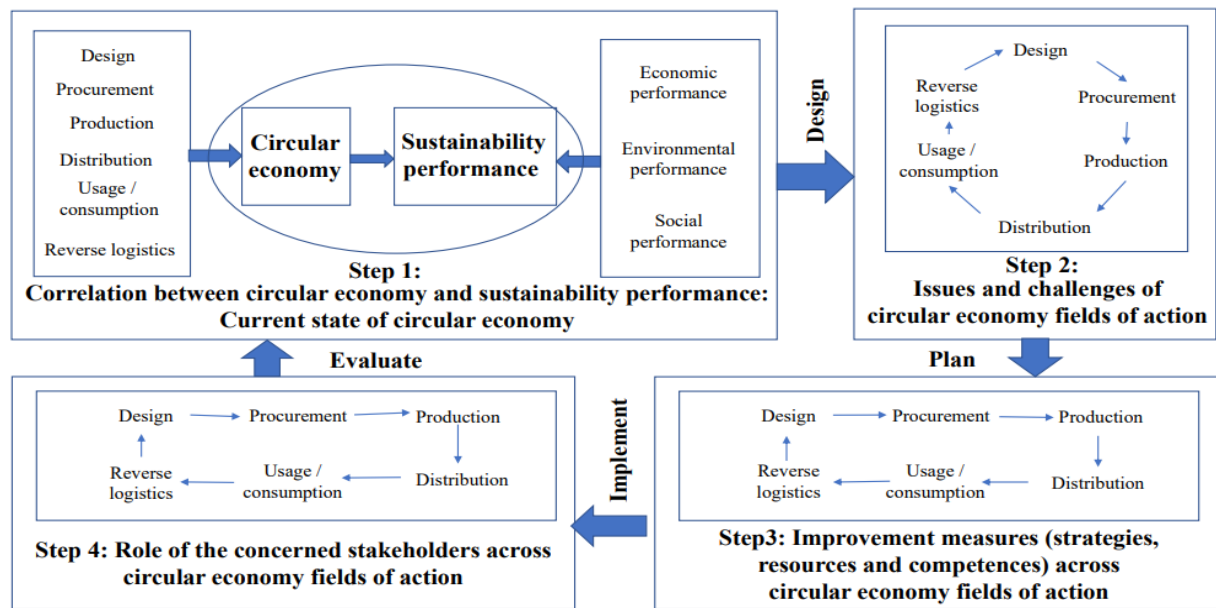
The second step is to use the provided framework to create a survey and evaluate the hypothesized relationship between the constructs. Third, we poll small and medium-sized enterprises (SMEs) in the four largest economies in the European Union (UK, Greece, France, and Spain). SEM is then used to develop conclusions about the relationships between the many CE domains of activity and the outcomes in sustainability. Fifth, this allows for a more thorough analysis of the specific challenges and opportunities facing each component of CE's efforts to achieve a more long-term goal. In the sixth phase, focus groups are conducted with the upper management of chosen SMEs in each participating countries to collect data on the methods taken to enhance the company. The results from each country are then tested in a case study.

**Table 1:** Structures and Factors Affecting the CE and Sustainability Results of SMEs

<i>Constructs</i>	<i>Closed loop supply chain functions/ variables</i>	<i>Proxies</i>
Circular Economy	Design	Design aim is to extend product life
		Material selection
		Design products for reuse, recycle and remanufacture
		Eco-design
	Procurement	Applying environmental and social criteria in the selection of suppliers
		Local sourcing to mitigate risks
		Supply chain collaboration
	Production	Lean practices
		Energy efficiency
		Use of renewable energy
		Wellbeing and equality
	Distribution	Outbound storage
		Outbound transportation
	Usage consumption /	Providing repair information
		Providing sourcing information
		Buying back used products from customers
	Reverse Logistics	Remanufacturing and refurbishing
		Reuse and recycle
		Revenue

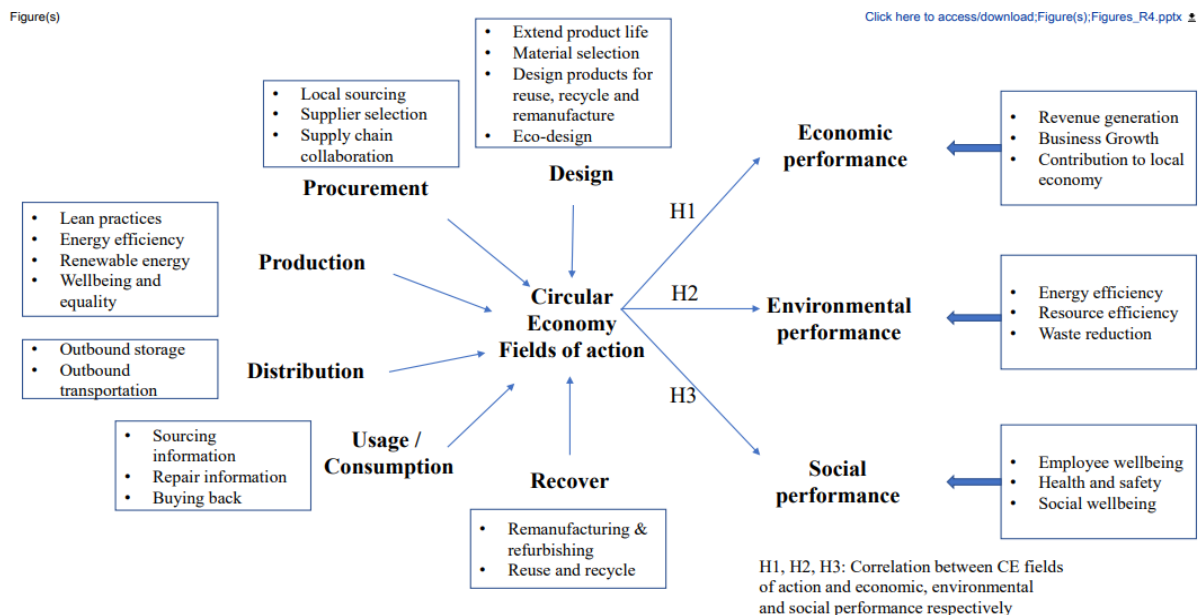
### 3.2 Theoretical implications

Several things have been added by this study. First, it provides empirical evidence to back up the notion that SMEs in the four countries investigated show considerable improvements in their sustainability performance after adopting CE principles. By analyzing the current CE state, identifying issues and challenges, deriving improvement measures through strategies, resources, and competences, and deriving the roles of each concerned stakeholder using design, plan, implement, and evaluation (principles), Figure 3 depicts an effective framework for SMEs to adopt CE in their supply chains. In a closed-loop supply chain, lagging elements include aspects of economic and environmental performance, while leading factors include aspects of design, procurement, production, distribution, usage, and reverse logistics.



**Fig 3:** Regional, sectoral, and individual frameworks for SMEs' incorporation of CE

It may be necessary to assign different values to these variables depending on the setting. The CE life cycle approach, intra- and inter-organizational strategies, resources, and competences, and the participation of key stakeholders are all incorporated into the proposed framework (Figure 3), which in turn increases the RBV of CE (Figure 4). Finally, the study shows that SMEs in four countries (Greece, France, Spain, and the United Kingdom) benefit from CE in terms of their bottom lines, the environment, and society. This makes it easier for SMEs, SME consortia, and policymakers to prioritize initiatives (including strategy development, policy deployment, resource allocation, and talent development) that would improve CE implementation. While this research only looks at four countries, the proposed framework (figure 4), indicators, and rigorous approach might be used with more countries. The results can be compared to identify priorities for enhancing the sustainability performance of SMEs in any sector or region. This research gives credence to the RBV hypothesis by illuminating the methods, resources, and skills that SMEs need to maximize the utilization of internal and external resources (and so improve their dynamic capability).

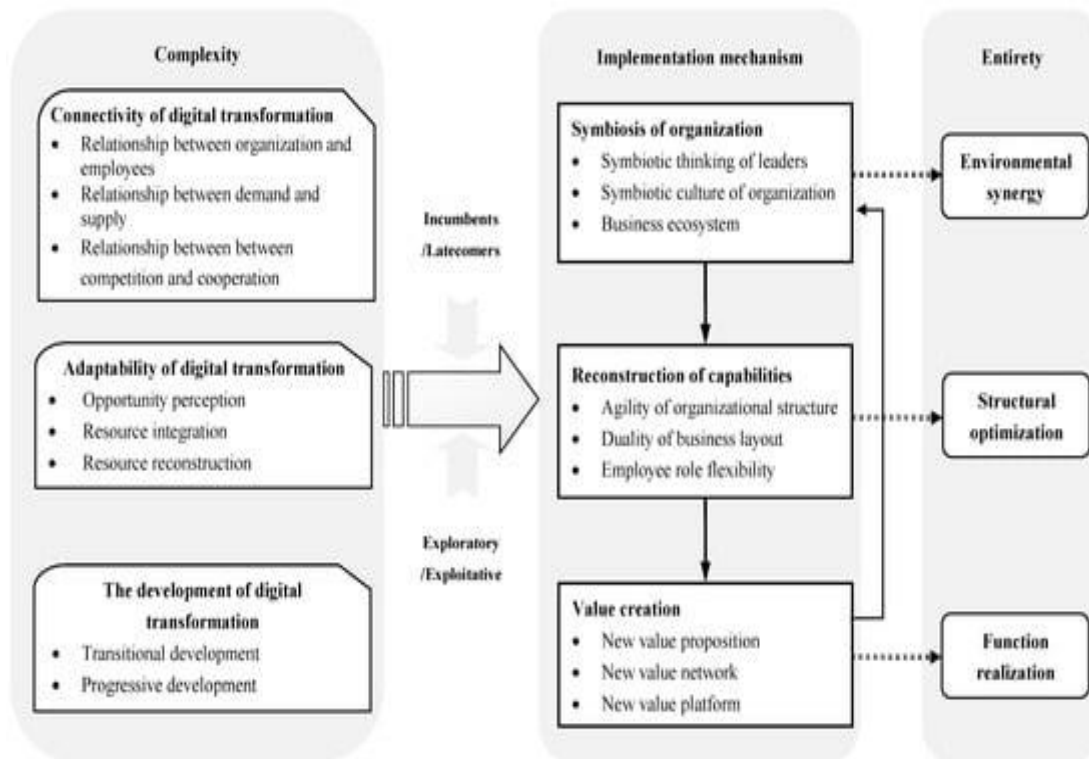


**Fig 4:** Model of Concepts and Hidden Variables Connecting Circular Economy and Sustainability Outcomes .





contemporary businesses require a degree of symbiosis between their leadership mindset, corporate culture, and business ecosystem in order to effectively implement their industry and innovation strategy.



**Fig 6:** Theoretical framework of digital transformation

#### 4.1 Environmental Synergy Dimensions

Organizational symbiosis based on digital transformation's linkage constitutes the environmental synergy component. The influence of digital transformation can be seen in the altered relationships between employers and employees, customers and enterprises, enemies and friends, and competitors and partners. People in the information age often feel more comfortable expressing themselves in the workplace. As the advantages of a more mutually beneficial partnership become increasingly evident, the traditional connection between employee and business goals is losing its significance. The old equilibrium between supply and demand has also altered with the advent of the digital age. Businesses can more easily gather demand information from customers in a digital world. It's not enough for businesses to alter production and shipping to meet current demand; they also need to anticipate future needs. The barrier between traditional rivalry and collaboration has also been blurred by the digital revolution. New competitors might come out of nowhere in today's digital era, and the boundaries between industries are constantly shifting and merging. In the information age, cooperation and competitiveness are the most effective responses to this shift. Changes in these three key links necessitate a symbiotic interaction between enterprise companies and their internal and external environments.

#### 5. Conclusion

Environmental performance is predicted to improve for SMEs in the participating nations as a result of CE adoption, but improvements in economic and social performance are not guaranteed. The study would be much stronger if it included a more objective look at how to help small and medium-sized businesses (SMEs) in the countries that were looked at last longer. It is thought that the design of goods, processes, and facilities will make it as easy as possible for small businesses in all participating countries to make the switch to CE. There are three main ways in which the paradigm offered here outperforms previous scholars' suggestions and makes a systematic study of digital transformation within firms more feasible. Since customers typically manage the design process in the operations of SMEs, they have an impact on the adoption of CE principles. There needs to be both

personal initiative and government support for SMEs to recover successfully. Sourcing, production, distribution, and usage/consumption are the other closed-loop supply chain activities that can be made better to help small and medium-sized businesses (SMEs) in these countries stay in business in the long run. There will be different obstacles and openings for success in optimizing each function depending on the specific industry, firm size, and annual revenue.

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