

# Chapter 3

## Operationalization of Circular Economy: A Conceptual Model

**Teresa Dieguez**

 <https://orcid.org/0000-0002-4886-1446>

*Polytechnic Institute of Cávado and Ave, Portugal*

### ABSTRACT

*The arguments for growth, inequality and persistent poverty, climate change, and finite resources call for stronger sustainable development policies, from both developed and developing countries. Situations of more or less (un)sustainability that encourage the idea of finding reasonable ways out of humanity's desire for progress can be conceived. The economy is nowadays mainly based on the called linear economy, which demands a paradigm shift within public administration, companies, and citizens must be committed. The present study has the main goal to understand how entrepreneurship and business have shaped the sustainability and the circular economy model requirements. It also aims to review important concepts like circular economy, sustainable development, sustainable entrepreneurship, servitization, and product-service system. A hypothetical conceptual model for the operationalization of the circular economy model is proposed. Finally, some discussion is done, future research is suggested, and conclusions are presented.*

### INTRODUCTION

The arguments for growth, inequality and persistent poverty, climate change and finite resources call for stronger Sustainable Development policies, from both developed and developing countries. Situations of more or less (in) sustainability that encourage the idea of finding reasonable ways out of humanity's desire for progress can be conceived.

One of these, which have recently appeared, is “prosperity without growth” (Jackson, 2009). Based on the realization that doubting the dogma of growth is an act of lunatics, idealists or revolutionaries, Tim Jackson insists that growth must be questioned. “The idea of a non-growing economy may be an

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anathema to an economist. But the idea of a continually growing economy is an anathema to an ecologist” (Jackson, 2009: 14).

Tim Jackson (2009) takes up the line of thought launched by the Club of Rome in the 1970s, reaffirming the physical impossibility of our economy to expand infinitely on a finite planet for the simple reason that the economy is fuelled by physical resources. The dilemma will be between unsustainable growth and unstable growth.

Another possible alternative to the economic growth paradigm is “sustainable degrowth” (Schneider & Williams; 2011), based on the premise that economic growth is not synonymous with increased quality of life or justice, nor is it ecologically sustainable. It arises in this context of the inevitability of ecological collapse if nothing is done to stop the steamroller of economic growth (Romeiro, 2012).

However, sustainable growth must be an option (UNCTAD, 2018), a social choice of the individual to which it associates, leading to a profound transformation of values. The primacy of efficiency will be replaced by a focus on sufficiency (Research & Degrowth, 2012) and innovation will focus on new social and technological combinations that will allow for moderate living and co-living (Research & Degrowth, 2012).

The world economy at the beginning of the 21st century is mainly based on converting natural resources into waste via production: goods are manufactured and then discarded as waste, deteriorating the environment. It is the called Linear Economy (LE) and although recycling is fully developed in our society, and improving resource efficiency is encouraged, activities focused on achieving this efficiency fail to consider the finite nature of material stock (EMF, 2013).

These realities demand a paradigm shift where an effort is needed to replace the end-of-life concept with reducing, reusing, recycling and recovering (4Rs) materials and to slow down, close and narrow material and power loops. This concept is much discussed in the academic literature and it is known as Circular Economy (CE) (Garcés-Ayerbe, Rivera, Perales, & Leyva-de la Hizm, 2019). The transition from a linear system to a circular one will require commitment from three key social actors: public administration, companies and citizens (Moyano & Paniagua., 2018).

In fact, this concept must be clarified as it is incipient in the academic literature since the concept is novel (Ghisellini, Cialani & Ulgiati. 2016; Korhonen, Nuur, Feldmann, & Eshetu-Birkie, 2018). Based on the document presented by the Ellen MacArthur Foundation (2015), three principles are the support of CE: (1) defending and enhancing natural capital by controlling finite stocks and balancing renewable resource flows; (2) optimizing resource yields by circulating products, components and materials in use at the highest utility; (3) fostering system effectiveness by revealing and designing out negative externalities. The 4Rs the CE is based on - reduction, reuse, recycling and recovery - are extracted from these principles.

With limited resources, increasing demand and profitability, the circular economy is a promising model that is fit for the future. Due the problem of (un)sustainability that is invisible and silent the vision of a sustainable future calls for genuine entrepreneurship where the leaders and decision makers believes that in the long run only responsible entrepreneurship is profitable (Diacono, 2017)

The present study has a main goal to understand how entrepreneurship and business have shaped the sustainability and the Circular Economy model requirements. It also aims to review important concepts like Sustainable Development, Circular Economy, Sustainable Entrepreneurship, Servitization and Product-Service System. A Hypothetical Conceptual Model for the Operationalization of the Circular Economy Model is proposed. Finally some discussion is done, future research is pointed out and conclusions are presented.

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