

Government incentives and circular economy in organizations: a systematic analysis of policies and regulations

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Abstract. The aim of the article is to investigate the main government incentives aimed at promoting the circular economy in organizations, highlighting its growing importance for global sustainability. The results emphasize the intrinsic link between government financial incentives and the promotion of the circular economy, emphasizing that while these incentives are important, an integrated approach involving education, collaboration among stakeholders, and technological innovation is essential to achieve a more circular and sustainable economy.

Keywords: Circular economy, Sustainability, Government incentives

1. Introduction

Increasing population and extravagant consumption of virgin resources are key issues in developing economies today [1]. Increasingly, the issue of sustainability becomes a central concern around the world, and most countries have prioritized sustainable expansion ². And on a global basis, the circular economy strategy has aroused significant interest among industries, consultants, business associations and policy makers around the world. It has been recognized as a comprehensive model capable of addressing social problems related to environmental pollution and resource scarcity in an integrated way [1;3].

Given the important role of organizations in preserving the environment, the concept of circular economy can be an alternative to managing resources, reducing waste and reprocessing them into high-value products [4]. The principle of a linear economy that prioritizes take-make-dispose has implications for increasing the volume of waste and wasted resources, and in a circular economy, the use of waste as a source of energy is one of the ways to reduce the use of fossil fuels [5].

Although the Circular Economy is a widely discussed topic, there are still many gaps and challenges to be faced [6] this implementation of the circular economy is not, however, a task that involves only companies, it is necessary for everyone Those involved in the life cycle of a product, including the consumer, understand their role in this new model. Also, cooperation between the Government, local authorities, banks and companies is fundamental [7].

This systematic analysis aims to solve the following research problem: What are the main government incentives adopted for the adoption of circular economy practices by organizations? To resolve this problem, the general objective is to closely examine the different types of government incentives available to promote the circular economy in organizations. And beyond that, to explore the relevant policies and regulations that shape the operating environment of companies in relation to sustainability and the circular economy.

By better understanding government incentives and policies related to the circular economy, we can identify opportunities and challenges for organizations and, to help policymakers to promote a more effective transition to a more circular and sustainable economy.

2. Theoretical Reference

2.1 Circular Economy

With the purpose of discussing the gaps and other problems not resolved by Sustainability, the concept of Circular Economy is revived, gaining importance and prominence in the discussions of global political decision-makers [8]. The term has a linguistic meaning, it is an antonym of linear economy, which has as its definition the conversion of natural resources into waste, through production [9].

The circular economy is an emerging concept that has attracted increasing interest from researchers [10] as discussed in the study by Tiozzi & Simon¹¹ it emerges as a new paradigm, which is gaining momentum and promises to overcome the existing

contradiction between the economic and the environmental, where they also reinforce the idea that resources should never be transformed into waste, but rather kept in the process for as long as possible and with the minimum loss of quality.

Thus, it aims to achieve sustainable development integrated into the tripod of creating environmental quality, economic prosperity and social equality, being made possible through new business models and responsible consumers [12]. In other words, the circular economy is the manifestation of a paradigm shift and will require changes in the way society legislates, produces and consumes innovations, while using nature as inspiration to respond to social and environmental needs [13].

2.2 Government Incentives

The circular economy has been the subject of attention in the main global governance forums [14], due to the observation that with appropriate government coordination arrangements, the State demonstrates, to some extent, its ability to respond to social problems current [15]. As well as sustainability, and in this regard the country needs to encourage the expansion of actions aimed at more efficient use of resources.[14].

This government interest in assisting and encouraging sustainability and the circular economy can be called environmental governance. Environmental governance encompasses the processes, policies and entities that guide society's decisions and actions to protect and preserve the environment. This includes governments, non-governmental organizations, companies and individuals, and can adopt different strategies such as regulations, economic incentives and community management [15].

Government incentives can and do significantly help the performance of sustainable actions by organizations, including the development of the Circular Economy. For example, financial incentives such as tax credits and subsidies can encourage the adoption of sustainable practices and technologies. Furthermore, market demand for sustainable products and services can drive innovation in this field, while regulatory policies can promote fair competition between companies and encourage them to invest in sustainable technologies [15].

2.3 Business Sustainability

The concept of corporate sustainability materializes sustainable development in the business context, which equally comprises economic, social and environmental organizational results without affecting future generations [16], this comprehensive term covers all efforts of a company to reduce its impact, being a true strategic driver of the organization and its business in favor of a sustainable world [17].

The need for corporate sustainability arises both from legal requirements and from awareness of the role of companies as social agents responsible for contributing to economic, environmental and social aspects, as well as their long-term interrelationships [18;19].

The studies by Kalai and Sbaïs²⁰ reveal that the sustainable practice of organizations increases their credibility among stakeholders. The authors also observed that quality information resulted in better economic-financial and market performance.

To analyze these sustainable organizational developments, in 1999, the first corporate sustainability index was created in the USA, the Dow Jones Sustainability Index (DJSI), presented by the New York Stock Exchange. These indices guide the decisions of global investors in allocating resources in a select group of companies committed to economic, environmental and social efficiency, encouraging corporate ethical responsibility and commitment to long-term sustainability [21].

As discussed by Silva²², Corporate Sustainability must guide the organization's purpose, promoting the practice of what is ethical and correct. This implies the construction of corporate identity through commitments based on values that permeate the organizational culture, considering stakeholders and their implications in terms of the company's structure, management, strategy and decision-making.

3. Methodology

The method used in the literature review consists of a sequence of elaboration stages, defined to enable the systematization of the steps and provide safe support for achieving the proposed research objective [23]. A systematic review effectively provides a practical and holistic perspective on the topic under analysis, contributing to creating a body of knowledge on this subject, to determine how to implement practices in subsequent studies [24].

The set of keywords and combinations to be used in the search was defined through preliminary investigation, prepared by testing possible terms in the Web of Science and Scopus databases. The following search string was used: ("circular economy") AND (stimulus OR incentive) AND ("government") AND (organizations OR enterprises OR Companies).

The step was followed by the selection of sources for the research. The superior quality of the databases is an essential requirement for a good literature review. The use of highly qualified resources from the main journals in the field, extracted from multiple databases, enables structured, reliable and effective literature review work, with sufficient conditions to provide valuable information for future initiatives [25;26]. The databases accessed were Scopus and Web of Science on February 25, 2024. The search in

the databases returned the list of articles summarized in Table 1.

Tab. 1 - Search string and number of articles

Data base	Search String	Results
Web of Science	ALL=((("circular economy") AND (stimulus OR incentive) AND ("government") AND (organizations OR enterprises OR Companies) AND Article (Document Types)	36
Scopus	ALL=((("circular economy") AND (stimulus OR incentive) AND ("government") AND (organizations OR enterprises OR Companies) AND Article (Document Types)	568

For analysis and production of the final report, considering the application of the inclusion and exclusion criteria, as well as the categorization of the quality of the articles, the final corpus resulted in 48 articles. During the analysis of the articles, a number of issues were taken into consideration, including topics covered (e.g. circular economy, organizational incentives, government policies); gap that motivated the study; methods applied in the study; circular economy practices addressed by the study. From the final list of articles, duly analyzed, we proceeded to categorize and identify the circular economy practices covered, to enable the preparation of the final stratification of the study.

4. Discussion and presentation of results

For data analysis, the bibliometric package was used: Rstudio in conjunction with the Bibliometrix program, which provided the results that will be presented below.

4.1 Corpus Scientific Production Indicators

It can be seen in figure 1 and figure 2 below that the sample period was from 2015 to 2024, containing 21 journals and 48 articles, with an annual growth rate of 31.8%. In the entire final corpus, there were 173 authors, of which 3 had sole authorship, and with a percentage of co-authorship totaling 8,333%. The identified keywords totaled 442, and the number of references was 3,584.



Fig. 1 - Corpus Scientific Production Indicators



Fig. 2 - Corpus Scientific Production Indicators

4.2 Descriptive analysis of bibliometric indicator

The “Word Cloud” is used to provide the reader with a faster and more intuitive view of the terms that were most relevant to the study, highlighting the main keywords found in the final corpus of the review.

The word cloud is used in a circular format, so that with the size of the words it is possible to demonstrate the frequency with which they appear during the articles studied. Figure 2 below illustrates a graphical representation of the words originating from the articles used for this systematic literature review.



Fig. 3 - Word Cloud

4.3 Main articles on the topic

During the analysis of the final data set, several significant studies were identified that precisely address the topic proposed in this article. One of the main studies that stands out is the research conducted by Lin²⁷, in which the author discusses reducing the costs of renewable energy sources through the implementation of technological advancement policies. The author argues that it is feasible to resolve this issue through the application of incentives, addressing aspects such as tax reductions, subsidies, quotas, regulations, tariffs, public contracts and standards. These measures can enhance the sustainability capacity of organizations, focusing on the updating and conservation of natural capital.

Another interesting study that makes up the final

corpus of the systematic analysis is the study by Fiorello and Merkaĵ²⁸, the authors deal with issues related to urban waste management, arguing that Municipalities act in a fundamental way by deciding on the allocation of capital and tax incentives, which influence companies' choices, and ensuring compliance with goals and objectives. Most incentives are carried out through taxes, either by charging or reducing them. The author also comments that government incentives are influenced not only by internal dynamics, but also continue to be influenced by external factors, such as prices offered by competitors and the cost of autonomy of recycling companies.

5. Conclusion

In this context, the present study set out to address the following research question: What are the main government incentives adopted for the adoption of circular economy practices by organizations? And with this the general objective of closely examining the different types of government incentives available to promote the circular economy in organizations, which was carried out based on a systematic literature review.

The objective was achieved, thus the results showed that the main government incentives to promote the circular economy are intrinsically linked to financial aspects, such as taxes, fees and regulations. These measures reflect the importance of aligning public policies and business practices to drive the transition towards a more sustainable economic model. However, it's crucial to recognize that financial incentives are just one part of the puzzle. The success of the circular economy requires an integrated approach, also involving education, collaboration between different stakeholders and the creation of an environment conducive to innovation and the adoption of new technologies. Therefore, while government incentives play a key role, a joint effort from all sectors of society is essential to achieve a more circular and sustainable economy.

As a suggestion for future research, it is recommended that a field study be carried out in organizations to identify their sustainable practices and the incentives or policies they receive in return, or are forced to adopt due to government regulations. This study would provide a more in-depth understanding of the dynamics between companies' sustainability practices and government interventions, contributing to the development of more effective strategies to promote the circular economy and corporate sustainability.

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