



CIRCULAR ECONOMY IN COMPANIES FROM THE NORTHWEST OF THE IBERIAN PENINSULA – SURVEY UNDER THE CIRCULAR LABS POCTEP PROJECT

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Abstract

Circular Economy (CE) is a strategic concept based on a deep change in contemporary societies, moving from a linear economy to a circular model. The CircularLabs POCTEP* project aims at promoting the integration of the CE in business models and includes the participation of 11 partners from the three Regions of: the North of Portugal, Galicia and Castilla y León, both in Spain. This project Among its initial actions, this project launched an online survey for companies located in this Iberian Northwest Regions. A total of 294 companies answered this survey. On this sample, SMEs from services and industry were the most represented groups. The survey focused on multiple aspects, including the recognition of CE concepts, the integration of CE strategies, reasons for CE implementation, main obstacles and barriers, among others. Results show a dispersion in the interpretation of the CE concept, as it is mostly recognised as part of a strategical vision or policy in these companies. Moreover, CE is mostly considered for its environmental benefits. The most relevant difficulties found in EC implementation are related to the lack of information and advice and insufficient financial support. The fact that only a fraction of the companies had implemented environmental management systems, may be seen as a reason for the lack of internal structure for CE technical support. This research will outline some of the necessary steps towards CE implementation in these North-western Iberian Regions.

1. INTRODUCTION

Circular Economy (CE) is a strategic concept based on a deep change in contemporary societies, moving from a linear economy to a circular model in which both energy and materials are recirculated, this entails the use of such practices as reduction, reuse, recovery, and recycling. The replacement of the end-of-life concept, with new circular flows of reuse, restoration, and renovation, in an integrated process, demands major changes in the way organizations produce their products and provide their services. CE is seen as a key element to promote the decoupling between economic growth and increased consumption of resources. For the overstated reasons, CE has become a major slogan for both National and European authorities, however, its application in organizations is still far from being generalized.

The CircularLabs, an INTERREG POCTEP project, aims at promoting the integration of the CE in business models and includes the participation of 11 partners from the three Regions including the North of Portugal, and Galicia and Castilla y León, both in

Spain. This project includes multiple transnational actions such as training actions, workshops, events, expositions, marketplaces, among others. Among its initial actions, this project launched an online survey for companies located in the northwest of the Iberian Peninsula, focusing on their perception of CE and on how they implement this complex concept in their activities. The aim of this survey was to provide an insight on CE implementation, current limitations, and potential for its development among organizations under a transnational and regional perspective.

2. METHODS

The questionnaire for this survey was developed taking into consideration strategic documents [1-3]. Its design included five sections: section 1. General data (regarding the entity in question); section 2. Circular Economy; section 3. CE vision; section 4. Obstacles and difficulties (in the implantation of CE) and section 5. CE actions. Once drafted, this survey was discussed and ultimately approved by the project consortium.

The requests for participation in this research were sent by the different project partners, distributed via email to over 5000 Portuguese and Spanish organizations, including companies, foundations, and local councils, among others. The survey remained open between December 15th, 2019, and November 9th, 2020. Despite the large dissemination, only 294 companies answered this survey. In this sample, SMEs from services and industry were the most represented groups. From the regional representativeness perspective, this sample included 144 organizations from Castilla y Leon, Spain (49%), 69 from Galicia, Spain (23,5%), 64 from the North of Portugal (21,8%), and 17 from other parts of the Iberian Peninsula (5,8%). The most represented sectors were services (34%), followed by the Industry (16,7%) and the public sector (10,5%). Most of these organizations were small-sized, with less than 50 employees (79%). Representatives from different organizational levels answered the survey, although most respondents (64%) had management positions, including managers, executives, and CEOs.

All closed answers, initially in Excel format, were imported and treated with IBM-SPSS Statistics 27, and only the open answers were processed with the qualitative data analysis software NVivo12. Statistical methods applied included the Chi-square test for testing relationships between categorical variables and Qualitative Content Analysis [4] for the assessment of open questions, namely to determine similarities among data.

3. RESULTS

The survey provided major insight into the current relation of these organizations' perceptions on CE. Most relevant results included:

- When asked about the concepts most associated with CE, the most popular choice was "Resources Optimization" at 14,4%, followed by "Recycling", "Responsible Production" and "Waste Reduction" at 14,0%, 13,2%, and 11,8%, respectively.
- When asked about which strategic areas are more often related to CE, the most popular choices were "Entity's mission and vision", 12,1% "Environmental policy or environmental management system", and 11,8% "Purchasing policy and raw materials supply".
- Concerning the reasons why the organizations embraced CE, "Environmental reasons" were the most frequent answers, followed by "Corporate reputation" and "Socioeconomic reasons". Conversely, "Financial reasons" was the least reported reason, at 4,2%.
- Regarding the difficulties faced by the entities in the process of implementing CE, most organizations mentioned the lack of financial resources, information, and guidance;
- The answers highlighted by the organizations regarding their needs for a transition to CE, the most cited were Information and technical support, financial resources, and technological solutions.

When comparing the answers among surveyed groups, several differences were identified:

- The fact that Technical Staff associate "Eco-design" to CE more significantly than other positions, while managers tend to emphasize the relevance of CE in waste reduction more than other positions;
- As strategic areas where CE could be implemented, managers emphasize more than Technician Staff, areas like "Communication strategy and corporate branding" and "Purchasing policy and relationship with suppliers";

- Managers selected socioeconomic and environmental factors as reasons for embracing the transition to CE while Technical Staff appointed institutional reasons.

Concerning measuring the impact of the Circular Economy on businesses, the following differences were identified:

- The use of indicators is more pronounced in the industry than in the other sectors (services, public sector, tourism, and agriculture);
- Large companies (with more than 250 employees) are more likely to measure the impact of the Circular Economy through indicators than smaller ones;
- At the level of potential industrial cooperation or symbiosis, equipment sharing is mentioned by all sectors, with the exception of manufacturing.

4. CONCLUSIONS

Circular economy, as a concept, is growing in relevance worldwide. A reason for such popularity may come from the fact that it unifies a set of strategies of principles that can be used to reduce the long-term impact of human activities on our planet. Nonetheless, there are still multiple visions, developed as a consequence of the profile and the role of the different actors that answer this survey.

Ultimately, this research will outline some of the necessary steps towards CE implementation in these North-western Iberian Regions, as some of this survey results, such as the difficulties and needs, should be considered when developing actions and strategies.

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References

- [1] European Comission, 2019. "Circular Economy Action Plan." In Commision Staff Working Document (No. 90; SWD(2019)). availabe at: . <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52019SC0090&from=EN>
- [2] Junta de Castil y León, 2020. "Estrategia de Economía Circular de Castilla y León 2020-2030".
- [3] OECD, 2020. "The Circular Economy in Cities and Regions: Synthesis Report." OECD Publishing. <https://doi.org/10.1787/10ac6ae4-en>.
- [4] Vaismoradi, M.; Snelgrove, S., 2019. Theme in qualitative content analysis and thematic analysis. "Forum Qualitative Social Research", 20(3). <https://doi.org/10.17169/fqs-20.3.3376>