The Transition to the Circular Economy through Buyback Programs

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Abstract

The way we produce and consume contributes to many of today's environmental issues such as global warming, pollution, exhaustion of natural resources and biodiversity loss. In a circular economy, the value of products and materials is kept if possible, waste and use of resources are minimized, and resources do not leave the economic flow once they are at the end of their lifetime but are reused and create value.

The aim of this paper is to investigate the degree of association of buyback programs with the concept of circular economy among young people. In terms of research methods, the questionnaire-based investigation method was chosen. The survey was conducted on a sample of 130 young people. The methodological tool used has the advantage of providing complex information and the objective possibility of correlating the indicators, thus making it possible to obtain credible and easy to interpret results.

Key words: circular economy, sustainable development, recycling, buyback
J.E.L. classification: A13, F63, O33, O44

1. Introduction

A Circular Economy aims at transforming waste into resources and on bridging production and consumption activities; however, there is still limited research focusing on these aspects. Even though there is ongoing discussion about the exact numbers, the fundamental need for an alternative to the current make-use-throw away model, has led to the emerging discussion about a more circular economy. While the idea of a circular economy is around for decades, the current situation seems now more favorable than ever to act.

The circular economy can be considered a kind of ecological economy that requires ecological rules to be imposed instead of market rules used to guide the economic activity of human society. Compared to the traditional economy, which is a form of linear economy, a path with a single sense of resource flow, characterized by high production and inefficient use of resources and strong emissions, the circular economy advocates a pattern of economic development that is much more in balance with the environment, characterized by low production, efficient use of resources and low polluting emissions. All raw materials and energy in a circular economy are used and reused at the highest possible level to maximize the influence of economic activities on the natural environment. Moving towards a circular economy can promote competitiveness and innovation, a high level of protection for people and the environment, and can bring major economic benefits, thus contributing to job creation and growth.

2. Theoretical background

The concept of the Circular Economy has become one of the most recent proposals to address environmental sustainability (Murray et al., 2015). Circular Economy is based on –closing loops' through different types and levels of recovery (Yong, 2007), by transforming material into useful goods and services through resource efficiency (Klettner, 2013).

In our current, linear economy, approximately 80% of what we use is directly discarded after usage (Sempels & Hoffmann, 2013). Other research even concludes that over 99% of the total material flow generated to produce consumer goods ends up in waste disposal within 6 months (Hawken, 1999).

A chronology of the formation of the concept of circular economy is necessary to see its development over time. The first ideas of circular economy began to rise at the end of the nineteenth century. By the twentieth century, more precisely in the 1960s, there is a need to use concepts such as the "spacecraft Earth". The 1970s represented the beginning for certain concepts such as "Cradle-to-cradle", "Ecological Design", "Industrial Ecology," as well as for governmental resources and for a closed-loop or regenerative loop-type economic system.

In the 1980s, the concept of "sustainable development" and concepts of "performing economy" and "green economy" appeared. Since the 1990s, several concepts have been born and infiltrated into politics, management and scientific communities, starting with the concept of "circular economy" and continuing with "producer responsibility" in 1992.

In the definition provided by the Ellen MacArthur Foundation, the circular economy is restorative and removes waste by designing better materials, products and design systems, powered by innovative business models (Esposito et al., 2015).

According to the Global Economic Forum, the goal of the circular economy is to keep our current lifestyle, rendering it more technically viable in the long run by producing, under a closed system, or closed loop, in which firms re-use, through a process disassemble, damp and recover, consolidating, and ultimately reconverting the materials already used. Fundamentally speaking, the circular economy recognizes and addresses the issue of reduced material use (Lakatos et al., 2017).

3. Methodology

The method was based on a survey among 130 young people. Establishing hypotheses has a significant practical value in designing our research, helping to clarify expectations in terms of results and setting the information that will be required in the analysis process. The working hypotheses for this study are enlisted below:

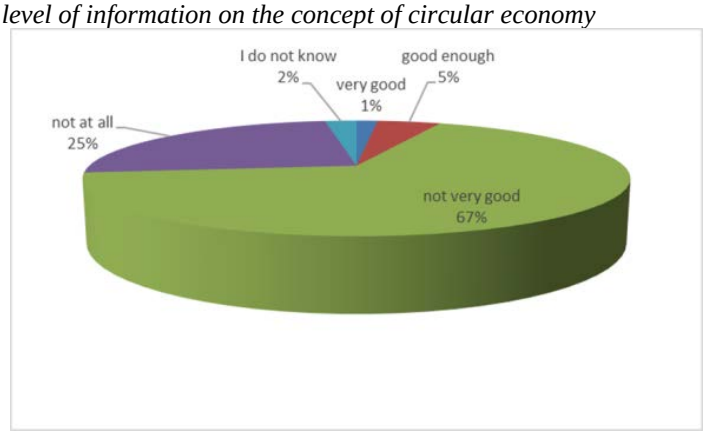
1. Over 75% of respondents do not know good enough the concept of circular economy.
2. More than half of respondents do not know that the introduction of "Buy-back" programs is a measure aimed at applying the principles of a circular economy.

4. Findings

The survey was conducted on a sample of 130 young people, including 100 women (76.9%) and 30 men (23.1%). The average age of the participants in the study is 23.19 years.

To the question "How well do you feel you are aware of the concept of circular economy?", most of the respondents consider that they are not sufficiently informed about the concept of circular economy. Only 6% of respondents said the level of information is good and very good. A quarter of respondents feel they are not informed at all about the concept of circular economy as in Figure no.1.

Figure no. 1. The level of information on the concept of circular economy



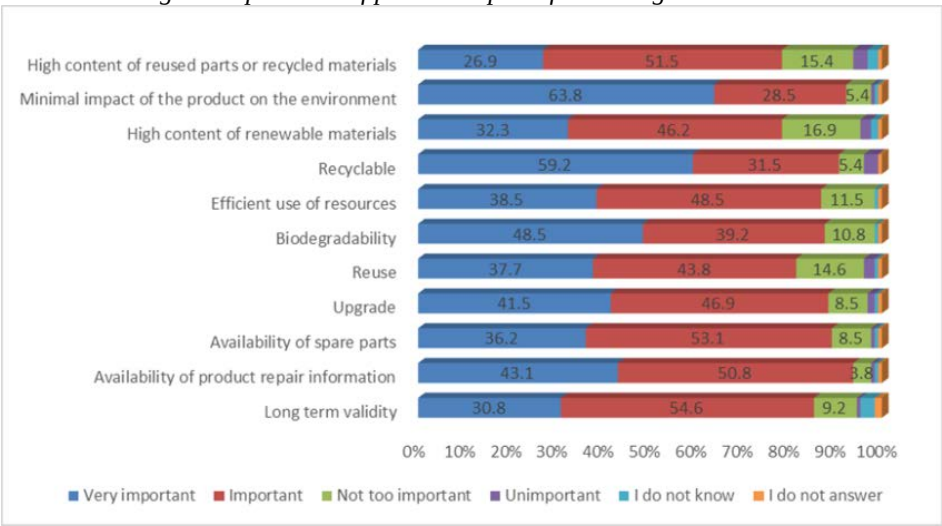
Source: Own contribution

In order to facilitate the transition to a more circular economy, the participants assessed the importance of product characteristics differently: long term validity, availability of product repair information, availability of spare parts, upgradability - ability to improve functionality, reusing the product, biodegradability, effective use of resources in the production phase, recyclability, high content of reused parts or recycled materials, high content of renewable materials and minimal impact of the product on the environment.

The participants of the research have appreciated that the transition to a circular economy can be achieved very easily if products are designed to have a minimal impact on the environment. Over 90% of participants believe it is important and very important for products to have a minimal impact on the environment.

The most respondents (59.2%) consider that to move to a more circular economy, it is very important that the products can be recycled. Biodegradability is another feature considered by almost half (48.5%) of the respondent to be very important for an easy transition. High content of reused parts or recycled materials is very important by about 27%, as it can be seen in Figure no. 2.

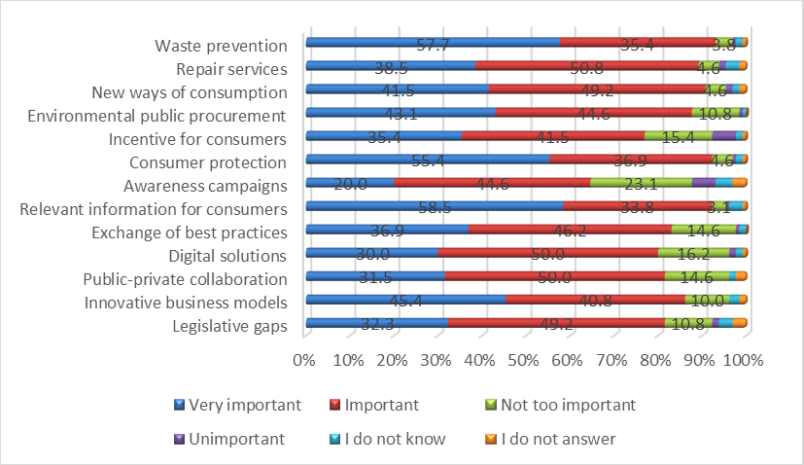
Figure no. 2. Assessing the importance of product aspects for moving to a more circular economy



Source: Own contribution

Among the actions considered to be priority to promote circular economy solutions in production processes, providing relevant information to consumers, improving consumer protection and preventing waste is very important by over 50% of respondents. Awareness campaigns are considered as very important only by 20% of the participants, as it can be seen in Figure no.3.

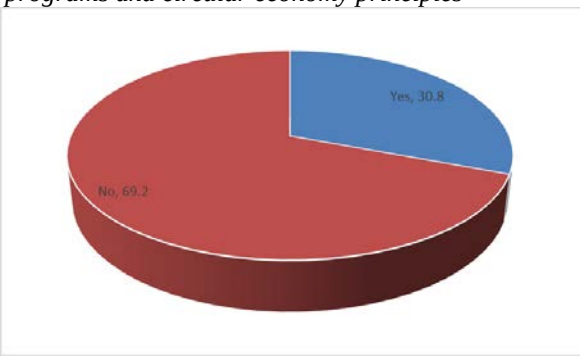
Figure no. 3 Priority Actions to Promote Current Economy Solutions in Production Processes



Source: Own contribution

After centralizing the answers to the question about the association of buy-back programs with the principles of circular economy, we found that less than one third of the respondents made this association. Approximately 70% of respondents said they did not know that the introduction of "Buy-back" programs is a measure aimed at applying the principles of a circular economy as it can be seen in Figure no.4.

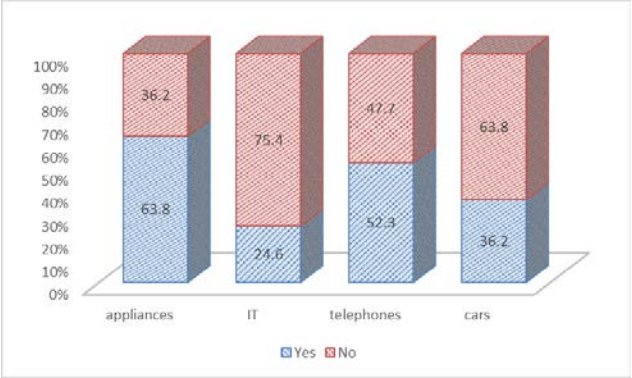
Figure no.4 "Buy-back" programs and circular economy principles



Source: Own contribution

One of the areas where buy-back systems are implemented, over 63% of the participants said that it is more common in the home appliance industry. Although in the auto field the system has been practiced for a long time, the respondents did not immediately associate the "Rabla" program with the buy-back program. Only 36.2% of respondents responded affirmatively, as it can be seen in Figure 5.

Figure no. 5 Areas where "Buy-Back" programs have been implemented

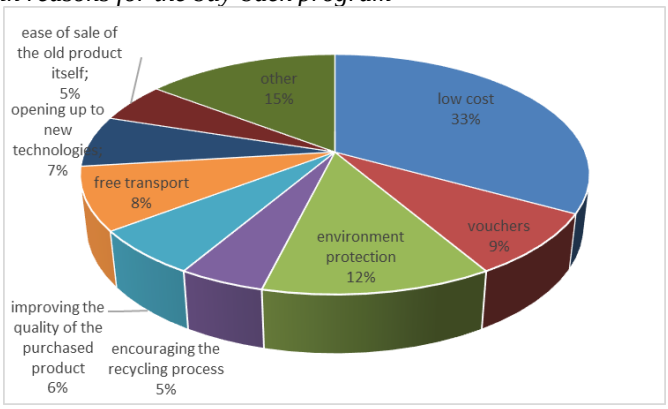


Source: Own contribution

The implementation of the buy-back system in the IT field is very little known among the participants to the study. Over 75% do not know there are buy-back IT programs.

The main reasons respondents turned to the buy-back program were categorized differently by the respondents. A quarter of those surveyed said the main reason was the lower acquisition cost that prompted them to consider buy-back. The environmental protection and vouchers received were other reasons placed on the first place in the decision to buy in the buy-back system, as it can be seen in Figure no. 6.

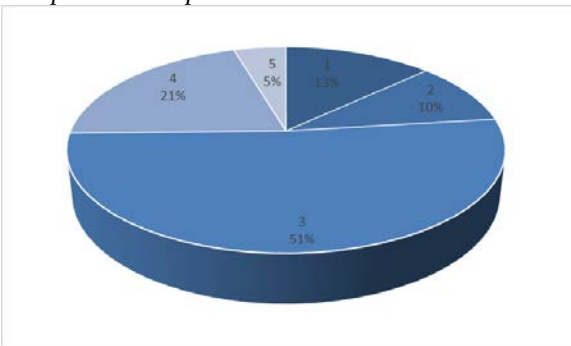
Figure no.6 The main reasons for the buy-back program



Source: Own contribution

The degree of confidence in the recycling / reusing of component parts inside the products is not very high amongst the participants. Only 5% of respondents have a very high trust in the recycling / reusing of parts inside the products. More than half of the respondents oscillate between trust and distrust that the component parts inside the products will be recycled or reused, as it can be seen in Figure no.7.

Figure no.7 Reliability of reuse parts within products



Source: Own contribution

Developing environment-friendly behavior by introducing the buy-back program may be the most important outcome of this program in the transition to the circular economy in the long run.

With the notable exception of the automotive sector, Romania does not benefit from too many buy-back programs, but things are moving in the right direction, and some companies already offer permanent or limited-time campaigns of this kind and other products.

5. Conclusions

The study is important both for the business environment because managers can design more "green" business models by resorting to such projects that enable them to be sustainable, as well as regulatory factors that can stimulate the use of these businesses by providing tax benefits or other benefits. Given the limited nature of the data used, new research directions can be identified.

The concept of circular economy is one of great novelty and topicality both in terms of designation and applicability. Moreover, it is very important to emphasize that the education and training of the skills required for the follow-up of these circular processes is a basic pillar that allows the transition from the theory to the practical aspects of the implementation of the circular economy.

The scope of the circular economy is to ensure the decoupling of resource use from the GDP growth, while restraining the adverse impact on the environment. A country's transition from the linear economy to the circular economy involves high restructuring costs, accompanied by losses, but it generates benefits in four areas: the use of resources, the environment, the economy and the society.

Based on a population of 130 young people, with an average age of 23.19 years, research results confirm the study's assumptions, showing the following: over 75% of respondents do not know good enough the concept of circular economy; over 90% of participants believe the transition to a circular economy can be achieved very easily if products are designed to have a minimal impact on the environment; a minimum of 50% of respondents consider as priorities the following activities in promoting the current economy: providing relevant information to consumers, improving consumer protection and preventing waste; 70% of respondents do not know that the introduction of "Buy-back" programs is a measure aimed at applying the principles of a circular economy.

The advantages of the Buy-Back program are diverse and with important implications for the application of circular economy principles, but for almost half of the young participants in research, reducing the amount of electronic waste is one of the advantages of applying Buy-Back and knowing the results of applicability of such programs.

Specifically, the results indicated that it would be necessary to engage in actions to be considered as a priority to promote circular economy solutions in production processes by providing relevant information to consumers, improving consumer protection and preventing waste, and finally awareness campaigns of the concept of circular economy and all the long-term implications.

6. References

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