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CHALLENGES IN IMPLEMENTING CIRCULAR ECONOMY STRATEGIES IN ROMANIA

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Abstract

One of the great challenges of humanity today is to manage the consumption of resources and increase their recycling. Current overconsumption constantly aggravates resource insufficiency, by producing an aggressive impact on the environment. The circular economy model is the way to provide the necessary resources and from politicians to companies and consumers the transition to this modern economic system requires responsibility. Worldwide there are concerns in this direction, looking for new ways of financing such sustainable models, both in production and consumption. The functioning of the circular economy model is not easy, it involves transition funds and consistent investments This study aims to analyse the degree to which specific circular economy strategies are known, understood and implemented in Romania. Also, the quantitative research undertaken on the Romanian market analyses the connection between various factors, such as the structure of the social capital, the field of activity, the number of employees, the investments in research-development-innovation, the organizational culture and the stage of the transition to the circular economy in which those companies are.

Key words**:** *circular economy, sustainability, strategy implementation, strategic management, organisational culture; research-development investments*

INTRODUCTION

As the literature reveals, the concept of circular economy is not a new one. Concerns regarding the transition to renewable energy and the fundamental change of the economic system began to appear as early as the 1970's when the idea of a model based on the transformation of waste resulting from all activities from production to consumption (and even after this point) into inputs, began to take shape. This system, unlike the linear economy concept, involves the development and implementation of actions and activities that target the problems caused by climate change, pollution and waste generation.

The linear economy, as it is perceived, is based on the production model "use of resources - use of products – waste generation" (Fig. 1).

According to this model, raw materials are used to produce goods that move along the producer's and consumer's consumption chain and finally to landfills. In contrast, a circular economy emphasizes the use of inputs while ensuring that inputs for the production process can be recycled and reused, ensuring that their economic value increases [2].

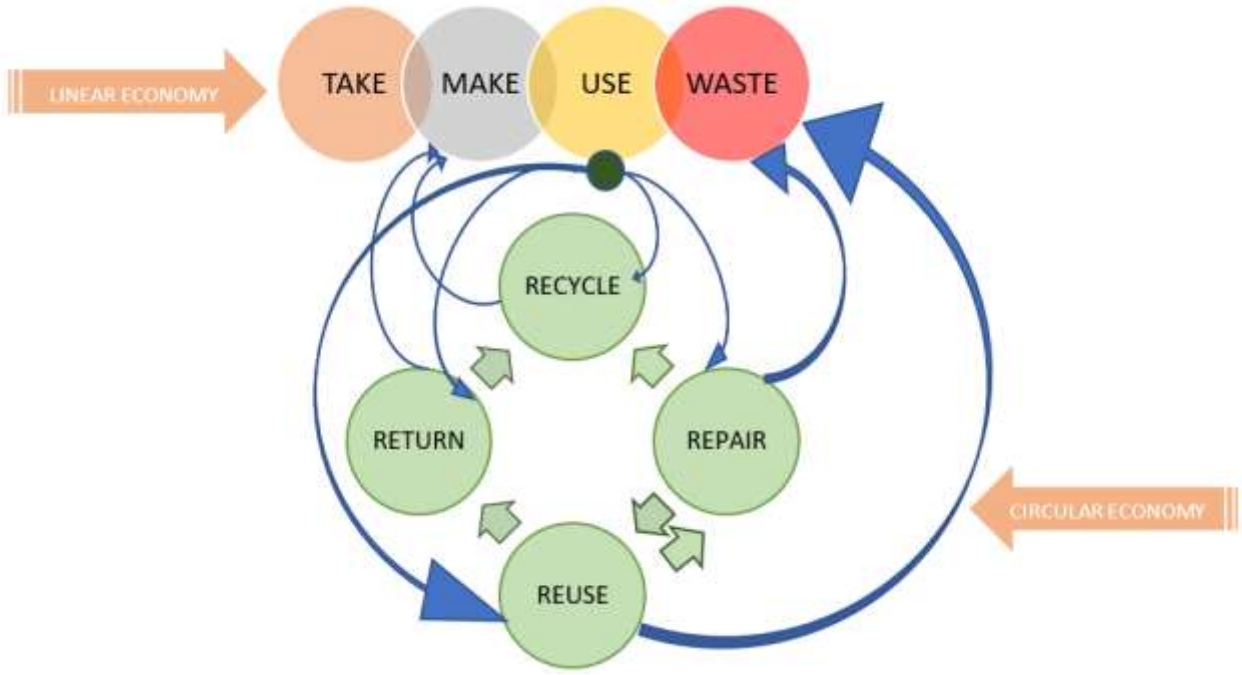

Fig. 1. The linear economy model vs. the circular economy model
Source: Adaptation after [48]

Literature review

Most specialists relate, from the perspective of defining the circular economy term, to the definition developed by the Ellen MacArthur Foundation: a circular economy decouples economic activity from the consumption of finite resources. The circular economy is seen as a framework for solutions that address global challenges such as climate change, biodiversity loss, waste and pollution [12]. In the vision of other authors, circular economy is restorative being destined to maintain the quality, utility and value of products, components and materials [32]. The circular economy can also be seen as a regenerative system where resource input and waste, emissions and energy leakage are minimized by slowing down, closing and narrowing material and energy loops. Through a long-term design, maintenance, repair, reuse, remanufacturing, reconditioning and recycling, this goal could be carried out [24].

The concept of circular economy has intensified its concerns since the 1980s mainly regarding its definition, principles and [35]. Because the resources are limited, amny experts sustained that the transition to circukar economy is compulsory, introducing the concept of sustainable development [41] as a necessity for society.

[47] offered a comprehensive guide on the concept of circular economy for businesses environment and supply chains. She referred to the design for circularity, product life cycle, remanufacturing, and closed-loop supply chains, giving case studies and examples in various economic industrial sectors.

[14] emphasized the potential thresholds and challenges of the concept, because the circular economy is not a panacea for sustainability and needs a profound change in the economic system and the adoption of new business models and technologies.

The effective implementation of environmental policies began to take shape from the 2000s, when in China more emphasis began to be placed on resources and how they are used, on products and on extending their life cycle, and on reducing the resulting waste. Efforts in the same direction are also noticeable within the European Union, whose vision on this aspect is summarized in the plans launched since 2014 [15] and 2015 [16].

According to those plans, the economy of the European Union was (and still is) highly dependent on resources (specific feature of the

linear economy) and new ways were sought to revitalize competition and integrate new technologies into the market. The transition to the system based on the circular economy represents an advantage not only for the market, by stimulating competitiveness and innovation, but also for the environment, by reducing waste and resource dependence [11]. The benefits are undeniable, and such innovative models lead to the reduction of dependence on raw materials by strengthening the relationship between the company and its customers, offering products with a high degree of customization, the emergence of a participatory economy based on digital technologies (IoT, blockchain or artificial intelligence) [17].

In 2021, the EU adopted the New Circular Economy Action Plan which points out the need to implement the circular economy [19]:

- sustainable business practices and European companies and economies will be the ones to implement and at the same time enjoy several benefits in the global race towards circularity.

-circular economy principles should be at the heart of any European and national industrial policy and Member States' national recovery and resilience plans under the Recovery and Resilience Mechanism, keeping in mind the three basic pillars [13]: waste disposal and pollution; the circulation of goods and materials; the regeneration of the natural environment.

At the end of 2022, according to the continuous efforts registered at the level of the European Union regarding the creation of the legislative framework specific to the circular economy and its implementation, the European Commission published the Circular Economy Package II, which sets as major objectives the provision, for European consumers, of compliant packaging options with the new orientation and the abandonment, where feasible, of additional packaging. Concepts such as biobased, compostable and biodegradable plastics are clarified for both the consumers and industry and suggestions are offered for the design, use, disposal and recycling of some materials so that they should be truly environmentally beneficial [18].

In this context, the purpose of this study was to analyse the degree to which specific circular economy strategies are known, understood and implemented in Romania.

MATERIALS AND METHODS

The study is based on various information sources useful for describing different aspects related to the circular economy as presented below.

Circular economy versus sustainability

Some experts wondered if the circular economy is nothing more than another name for sustainability, because sustainability so described in various ways, some of the most relevant being:

-carrying out all activities in such a way that ecosystem functions are conserved [28];

-changing the approaches to economic activity and beyond, so that everyone's lifestyles support security, well-being and health, especially by maintaining the supply of non-substitutable goods and services [36];

-an indefinite perpetuation of all forms of life [10].

-development of society that involves meeting the needs of the present without compromising the ability of future generations to meet their own needs [5].

The study undertaken by Geissdoerfer and his team [24] on the common points and differences between the two concepts, led to a definition of sustainability more adapted to our reality, thus: sustainability is seen as a balanced and systemic integration of economic, social and intra and intergenerational environment. There are obviously common points between sustainability and the circular economy, but also several differences. Although, at the level of specialized literature, this cannot be highlighted very clearly, the common points refer to their global nature, to the characteristics of production and consumption on an industrial scale, and to the impact that the specific actions of each have on future generations. At the same time, one cannot fail to notice that the purpose, in each individual case, can be quite different, being determined by the context. It can be said, although the

discussion is still open, that there is clearly a close connection between the two concepts, the existence of the circular economy being an essential condition for sustainability on a global scale.

In other words, the transition from the linear economy model to that of the circular economy is based on the involvement of the whole society and emphasizes its ability to develop sustainable resource management models by changing societal behaviour and old business models accordingly [25]. The adoption of closed-loop production models and the circular economy have the purpose to grow the efficiency of resource use, mainly regarding urban and industrial waste for assuring a better balance between the economy, environment and society.

The change of the linear economy into a circular one requires a reorganization of the main services at the society level, especially concerning energy, transport, production and food repartition. Also, these transformations must be doubled by changes at the level of institutions, changes that should be reflected in the updating of regulations, customs, standards and production practices. At the same time, all this must also be supported at the consumer level, by encouraging him to change his behaviour to align with the principles of sustainability [43].

A number of defining characteristics of a sustainable economic system have been proposed by Tim Jackson in his work, and they refer to the fact that the system is a closed-loop one, which stimulates the reduction of consumption, contributes to social and environmental improvements, tends to zero waste, focuses on the transmission of process and experience, harnesses talents and relies on cooperation [31]. Also, in one of the studies of the European Commission, published in 2020, the idea is emphasized that such a sustainable system is vital, and social improvements also refer to the provision of high-quality, functional and safe, efficient and affordable products, with a longer lifespan, which are designed to be reused, repaired and recycled at a high-quality level. New business models such as product-as-service and digital solutions will have a considerable weight in improving the quality of life, creating innovative jobs and updating knowledge and skills [17].

A study published in 2019 raises the alarm that, worldwide, we could talk about a percentage of the circular economy of only 9% [6], which means a global economy that runs under the rules of the linear economy and this despite all the efforts to educate and raise awareness about the situation of natural resources, about global warming or about waste and pollution. According to the most current report from the same agency, from 2023 [7], the percentage of circularity has decreased down to 7.2%, as a result of the increase in the overall rate of extraction of raw materials and the fact that more and more materials enter stocks, such as roads, houses and goods durable, thus leaving less material to return to the economy.

The measures proposed to increase this percentage are within everyone's reach, but the effort must be a collective one, not one coming only from the companies. The goal should be directly related to the rehabilitation of natural resources, and for this we need targeted policies and practices that fundamentally redefine the relations between the dominant economic environment and other spheres of society and nature.

Strategic management of the circular economy

Before introducing the strategic process for obtaining a Sustained Competitive Advantage (SCA), it is important to understand that, in general, what determines the success or failure of a company that approaches the principles of circularity is the organizational culture. Indeed, strategic decisions are naturally affected by the type of culture developed within an organization, as this causes certain strategic issues to receive the most attention while others are overlooked.

Despite being a difficult and time-consuming task, changing organizational culture is often considered a key aspect to ensure that strategic change occurs successfully and effectively. Therefore, strategists must ask themselves whether the strategic change they have envisioned can take place within the existing cultural framework of the firm, or

whether this must also change. Because culture is a source of stability for a company's employees and customers, it should generally be avoided to implement change too quickly or in response to negative events (e.g., an environmental disaster caused by the company's operations); fostering a cultural change implemented in small steps and described as something positive and beneficial for all. If the positive aspect can always be sustained when circular solutions are proposed, the pace of change is not always guaranteed.

There are four types of strategic changes (Fig. 2) that can occur based on differences in speed and scale of implementation [3]:

***Adaptation*:** changes at low scale and speed. This move does not require a change in strategy, nor does it have a major impact on the company's structure. Today, in the face of tightening environmental legislation, increasing consumer awareness of the environment and price fluctuations, many companies have partially switched from using harmful production inputs such as chemicals and plastics to materials bio more circular. For example, Dutch multinational AkzoNobel has joined forces with clean technology leader Photanol to naturally produce bio-chemicals for the company's products instead of typical fossil fuel raw materials [1].

Rebuild: small-scope, high-velocity changes. Often, rebuilding can be accommodated within the current culture, even if the organization is heavily impacted by the change. Rebuilding the circular economy can happen, for example, when a company succeeds in moving to closed-loop operations with the support of key suppliers and environmentally friendly suppliers. Carlsberg, for example, is investing heavily in circular packaging solutions and has selected a group of 'green' suppliers to work with [39]. Such a transformation can take place without major changes in the company's core business, particularly because the remanufacturing or recycling activities take place externally.

Evolution: large-scale and high-speed changes Such changes involve extensive and multi-stage processes that may take a long time to complete. For example, automakers such as Nissan and BMW are slowly transitioning to electric motor technology in an effort to anticipate future industry trends. Although most cars are still fuel-powered, the BMW I3 and Nissan LEAF are clear evidence that these companies have plans to step up their efforts towards zero-emission cars [21].

Revolution: *changes with transformation-like scale and high speed*. The Italian energy and resources group ERG, for example, underwent a radical and rapid transformation of its business by selling all its oil and gas activities and reinvesting in wind power plants.

Speed of change	Extent of change		
		Realigment	Transformatio
	Incremental	Adaptation	Evolution
	Big Bang	Reconstructi	Revolution

Fig. 2. Sizing Up Change vs. the circular economy model
Source: Adaptation after [4].

The strategic process of circular economy

Given the strategic importance of circular practices in the near future, the circular economy must be considered in strategic decision-making. Executives willing to accept that businesses operate in an ever-changing environment where strategies must be continually reshaped based on the latest industry opportunities and threats will focus on monitoring the complex context in which businesses operate them, both at the business level and at the societal level.

The most important stages of the strategic process are [46]:

-**Identifying the current situation:** although not common, the situation of businesses approaching a circular path may already include components of circular economy practices and objectives. An in-depth assessment of the current strategy is essential to understand where a business stands in its circular journey and what steps need to be prioritized when establishing a preferred strategy for the circular economy.

-**Data analysis:** the analysis part of the strategic process involves data collection, careful examination, given priorities and

integration with chosen circular economy principles, business objectives and areas of intervention. Business strategies will be built on trends, strengths, weaknesses, opportunities and threats derived from information gathered at company, industry and macro levels using methods such as value chain, PEST and SWOT. When trying to define a new circular economy strategy, attention should mainly be paid to the often-unexplored aspects of business, such as materials management, sustainable design, opportunities for reverse cycles, supplier and customer attitudes towards the circular economy, etc. This type of data will be used to identify the critical points for the implementation of the circular economy.

-**Determining the preferred position of the circular economy:** the scenario resulting from the examination, prioritization and integration of all data will reveal the strategic options of the circular economy available. At this stage, the strategic quadrant can help a company choose its ideal position in the industry, thus determining its preferred attitude in the circular economy.

-**GAP Analysis:** a company's current and ideal positions don't quite coincide, especially when circular principles are at play. Therefore, there will be a gap that will be closed. In those cases where the gap is too large, given the real readiness of society in terms of the circular economy, the data will need to be rearranged (in terms of prioritization) so that a "circular economy reality" can be imagined and assessed favourites" alternative.

-**Strategy formulation and planning:** the final steps of the process involve deciding on a circular economy strategy, so moving on to its formulation and planning.

In [29], the data analysis segment highlights the state of agriculture in Romania from 2013 to 2022. Using statistical methods like regression equations and graphical comparisons, it was found that although Romania's GDP grew significantly, agriculture's share remained relatively minor at 4.5%. Ionitescu shows that despite a substantial increase in Gross Value Added (GVA) in agriculture, its Gross Fixed Capital Formation (GFCF) and Net Investment Rate (NIR) were disproportionately low, reflecting underinvestment and a lack of modern technological integration. These insights emphasize the need for enhanced investment in agriculture to support sustainable growth and reduce import dependency in a circular economy context.

Circular economy and the organisational culture

Being an economic model that aims to minimize waste, maintain the value of products and materials and reduce the resource consumption by keeping resources in use for as long as possible, circular economy requires a significant shift in organizational culture. The organisational culture concept began to take shape in the 1970s, when some specialists noted certain differences between the same type of organization that could not be explained either from the point of view of the organizational system, the way of implementing strategies, or from the point of view of human resources [38]. Leavitt's model, developed in 1964, predicted the existence of four variables within any organization: the objectives to be achieved, the structure of the organization - composed of communication systems, authority, status and rewards, technology and human resources.

The concept of organizational culture is introduced by Pascale and Athos [40], based on studies undertaken by Geert Hofstede [27]. According to the two, in the analysis of the difficulties that arise in the implementation of strategies, within some American, European and Japanese companies, the organizational culture stood out as that element that contributes significantly to the functioning of the organization and differentiates it from the competition.

Knowing the organizational culture is necessary and useful, as it is probably the only and most useful long-term anticipatory element of an organization. It can be difficult for both insiders and outsiders to penetrate the culture of the organization, which is often considered a universe of beliefs, values and concepts given once and for all and which is rarely stated or questioned, especially by

those who have a limited experience of other organizations or cultures.

To do so, companies need to put an accent on sustainability and adopt new business models that prioritize reuse, refurbishment, and recycling of products and materials. This requires a shift from the traditional linear, "take-make-dispose" model of production and consumption to a circular model that prioritizes resource efficiency and waste reduction. Organizations that do so will be more likely to develop innovative products and services and they will also be more likely to attract and retain employees who are committed to sustainability and social responsibility, reinforcing a circular culture.

Resistance to change, however, is a real problem that many organizations face and that hinders the process of transitioning to circularity. Change requires not only coherent management, but also the existence of effective leadership, successfully introduced and sustained [26]. On the other hand, the values that constitute an organizational culture are also influenced by external factors, such as those from the socioeconomic, political or institutional environment [33].

The reality shows that the organizational culture is often seen as a barrier, especially in organizations paying tribute to the principles and way of thinking specific to the linear economy. Recent studies, such as the one undertaken by [8] analyses the role of organizational culture in the development and implementation of sustainable processes specific to the circular economy.

The choice, within organizations, of circular practices that match the values of the company also depends on the perspective, such as that of the producer or the consumer [44] but also the ability to find sustainable levels for the materials used and for the waste generated [34].

Specific strategies for the circular economy model

Economic challenges, especially in recent years, have made instability the new reality for companies and economies. Risks regarding the supply chain, delivery, those related to the right of ownership, incentives offered without real coverage and the liberalization of certain areas were determining factors for the strategies adopted by the companies [24].

Ensuring the transition from the linear economy to the circular system can be done by implementing research strategies, radical innovation (especially in the field of technology) and digitization [22]. Within the European Union, companies can access specific programs (e.g. Life, Horizon Europe or the Marie Sklodowska Curie Actions are just some of the programs dedicated to research, innovation and digitization in the EU), aimed at the development of production technologies, new products and materials, the replacement or elimination of harmful substances, up to the development of specific business models.

In an article published in 2023 [30], Ionitescu et al. show that having a robust digital infrastructure and effective human resource management is crucial for cultivating a workforce with high professional and digital skills, which is essential for future success across various economic sectors. In agriculture, digitalization should consider specific factors such as the size of farms, the age and education levels of farmers, and available financial resources. Enhancing communication between farmers and their customers is vital to strengthen the food value chain. Moreover, developing modern ICT infrastructure is essential for providing employees with digital skills, improving existing strategies for better results, and developing services and digital applications that adhere to EU regulations.

In Romania, implementing a circular economy faces challenges that can be mitigated through the development of rural, agritourism, and ecotourism sectors. In [45], Stanciu et al. show that these tourism forms help transform the rural image and bring numerous benefits, crucial for a sustainable economic model. Key advantages include preserving natural and cultural heritage, creating jobs, enhancing professional and digital skills, generating supplementary income to agriculture, and improving locality aesthetics. Moreover, they support biodiversity conservation, promote local

gastronomy, and utilize local products registered under quality schemes. Such activities strengthen the local economy and foster short food supply chains, essential elements in building a resilient circular economy that reduces waste and promotes resource efficiency.

In the report published in 2019 [6] by the Circle Economy Organization, it talks about a series of elements that are basically the basis of the development of strategies specific to the circular economy and that companies can develop in order to be an active part of the global paradigm change process. These elements aim at actions such as: maintaining, repairing and updating resources to maximize their lifespan, rethinking the business model so that it provides greater value, using waste as a secondary source of resources, recovering waste through reuse and recycling, efficient use of resources renewable, reusable and non-toxic, intensive collaboration along the entire supply chain, between the private and public environment and increased transparency in activities specific to the circular economy.

Moreover, these actions are also found in the model presented by Potting et all [43] and taken over by Morseletto [37] (Fig. 3). According to the model adapted by Morseletto, the strategies, found in the specialized literature under the phrase "10R", are analysed starting from those with the lowest level of circularity to those with the highest level.

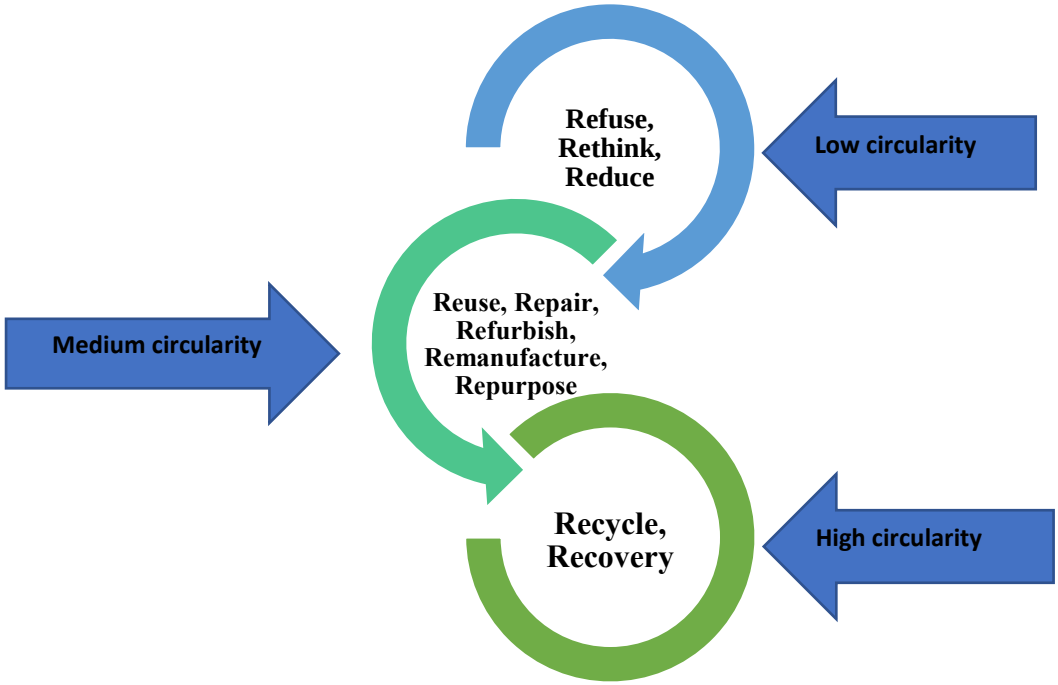

Fig. 3. Specific strategies for the circular economy
Source: adaptation after [37], citing [43]

It is noticeable that the strategies are divided into three distinct categories or groups, targeting activities with different degrees of integration of the principles of circularity. In the category with a ***low level of circularity***, there are strategies that are frequently chosen by decision-makers and represent a step in the transition from the linear economy to the circular one, by reducing, for the most part, the impact on the environment.

Strategies with a ***medium degree of circularity*** are intended to keep finished products and their component parts for a longer period in the economy, maintaining or increasing their value permanently. Specific actions can be from improving adjacent services (warranty extensions, repairs), to reducing costs by streamlining processes at company level or offering the consumer the

option of spare parts, to improving design with a direct impact on efficiency.

The category of ***highly circular strategies*** targets processes such as the creation, design and development of products or services and involves significant investment in research, development and innovation. These strategies have the ability to transform, from the early stages, a linear system into a circular one, as long as they are implemented by the mass of those who have active roles in this transition, globally.

In the current context, the most common practices are, in many organizations, reduced to the 3 R's (reduce, reuse and recycle) [23].

Research methodology

In Romania, the circular economy, with everything it entails - at least at the level of vision, implementation - is still in the phase of fully understanding the concept, of "discovery". This opinion takes on a clearer meaning when we look at the area of application of the specific strategies; on a practical level, the circular economy is at a point of implementation within most companies. Obviously, this statement is not valid for all actors in the internal market, there are quite a few companies that come from experienced environments and that know how to use what the circular economy entails in a fair and efficient way. Even in this case, there is a risk that the business will not be successful, due to the lack of adaptation to the specifics of the local market and the use of strategic models that do not fit the Romanian market. In addition, we emphasize the importance of technological challenges. Like in the area of renewable energy, one of the most relevant technological issues is the none or limited availability of physical infrastructure and of transmission and distribution networks in promising locations of renewable energy supply, which leads to a scarce exploitation of their capacity [9].

Romania's economy is one of the least efficient on the European level from the perspective of how resources are used. From the point of view of the circularity rate of materials, Romania ranks last in the European Union, at a considerable distance from the member state in first place - the Netherlands (Fig. 4). It also ranks last in terms of resource productivity (Fig. 4). Also, the focus is on areas that register low degrees of circularity, investments in research-development-innovation, technology and human resources being very low. But as long as the cost of the original base raw materials is below that of raw materials and recycled materials, it is expected that things will not move in the right direction for quite some time.

To address the challenges of implementing a circular economy in Romania, it is important to reduce dependency on imports by stimulating agro-food exports. In [42], Popescu et al. point out that this can be achieved by increasing agricultural production to provide more high-value-added and superior quality products, thereby enhancing competitiveness.

Additionally, revising imports and improving resource allocation are essential strategies to bolster internal production and better meet domestic consumption needs.

These measures are integral to fostering a more sustainable and self-sufficient economic model in line with circular economy principles, which aim to minimize waste and maximize the reuse and recycling of resources.

According to the World Bank report published in 2022 [48], Romania and other three EU member states registered the lowest level of implementation of the circular economy, in terms of resource productivity and garbage disposal rates (Figure 4).

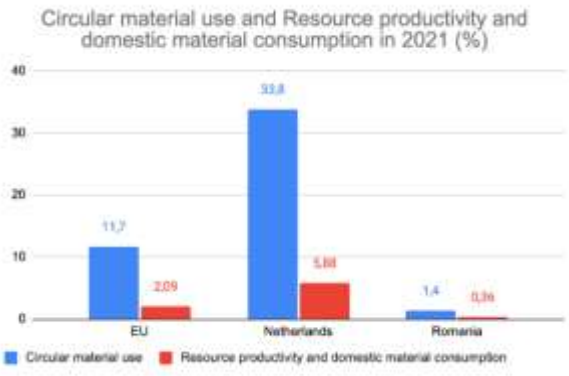

Fig. 4. Circular material use and Resource productivity and domestic material consumption in 2021 (%)
Source: [20].

Municipal waste landfill rates exceed 60%, investments in innovation and technology or human capital are very weak, and connections to circular economy specific production networks are weak or completely absent in certain areas.

In other words, on the Romanian market there are still companies that, not only have not incorporated this philosophy, but are also not oriented towards circularity except to the extent that they are obliged by the existing legal framework, which constitutes a negative factor in the evolution them and the market as a whole (Fig. 5). All the more so, since, in recent years, sustainability and circularity are concepts that have penetrated not only into the vocabulary of the business environment, but also into the actions taken.

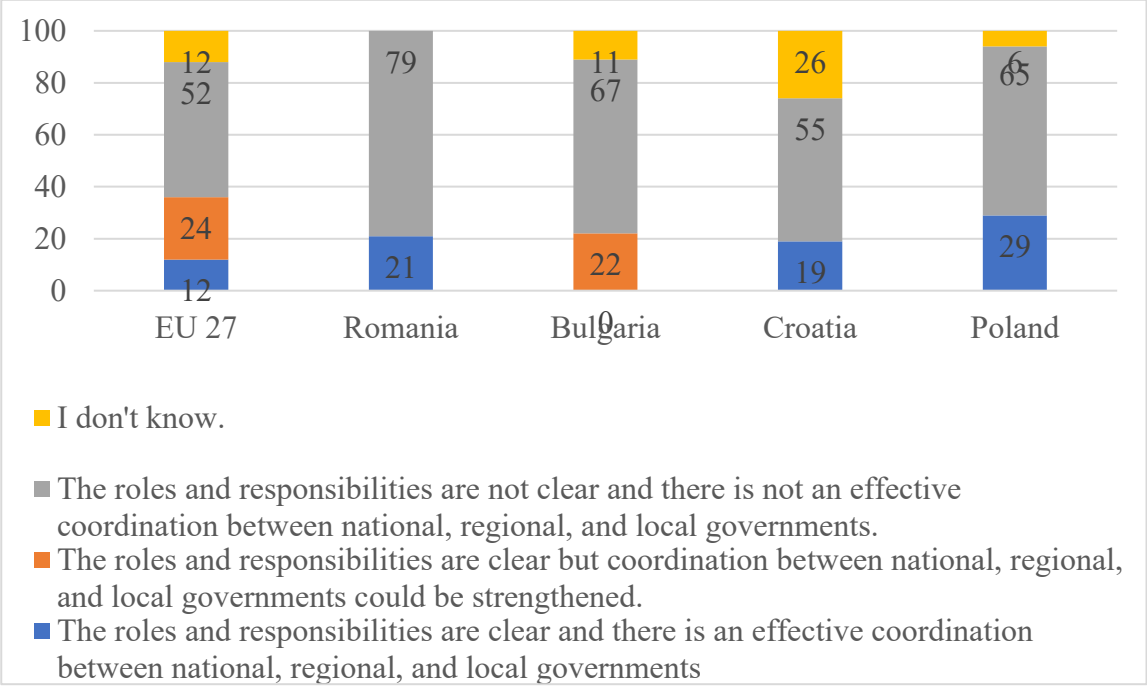

Fig. 5. Roles and responsibilities for circular economy implementation (%)
Source: Adaptation after [49].

As a result, the need to resort to circular economy strategies is more than necessary and obvious for companies on the Romanian market, which aim to participate in domestic and international economic exchanges.

From the previously presented aspects derives the need for a study, which aims to analyse the current stage of the implementation of specific circular economy strategies at the level of the domestic market. This research aims to determine the degree to which managers and specialists are concerned with the transformations of the business environment, with adaptation to market changes, with knowledge of the legislation in the field, as well as other elements.

The general objective consists in ***studying the opinion of economic agents regarding the circular economy and the challenges in implementing specific strategies on the Romanian market.***

The primary and secondary objectives can be summarized as follows:

(1)The **primary objective** of this study involves quantifying the degree of implementation of specific circular economy strategies at the level of companies operating in Romania. This means to assess the level of knowledge and implementation of the circular economy concept in practice in the country and, the degree of how the new strategic orientation of an organization to ensure coordination, integration and subordination of all company activities for customer satisfaction and sustainable development is perceived.

(2)Within the **secondary objectives**, which derived from the primary objective, the study aimed to:
-identification in each main field of activity in Romania how the concept of circular economy is known and implemented.
-emphasizing the role that organizational culture plays in implementing the circular economy at the organizational level.
-identifying in what proportion the concept of circular economy is known in the Romanian market.
-identifying which is the decision centre with the duty to develop and implement a circular economy strategy at the company level.
-quantifying in what measure the Romanian companies invest in the triad RDI- research-development-innovation, as a changing strategy within the circular economy.
-quantifying in what proportion companies are interested in circular economy strategies.
-identifying and selecting the main factors which could influence the implementation of circular economy specific strategies, in accordance with the profile of a company.
Considering all these aspects, the hypotheses of the proposed study were:
-In Romania, although there are clear and obvious concerns both in the academic and the economic environment, the application of the principles and strategies of the circular economy, with everything it entails, is limited, due to insufficient education of the business environment in this direction, the lack of budgets to support the implementation or investments in research-development-innovation or a deficient national legislation.
-most companies implement strategies specific to the circular economy in the category of those with a low or medium level of circularity.
-strategies with a high degree of circularity are implemented within medium and large companies that invest in research-development-innovation.
-the decision-making centre within companies, regarding the development and implementation of strategies specific to the circular economy, is the top management.
The study was carried out based on a survey that includes economic agents, who carried out their activity between January and February 2023. The survey carried out is simple random.
Inclusion criteria in the study:
-persons active in the economic-social environment, located in all regions of the country.
-specialists - people who have direct tangents with the studied field.
-legal entities that have expressed their desire to participate in the study.
Exclusion criteria: people who did not complete at least half of the questionnaire.

RESULTS AND DISCUSSIONS

The research undertaken and the results obtained (57 responses) made it possible to draw some conclusions regarding the degree of implementation of specific circular economy strategies at the level of Romanian companies, in the current conditions of the market economy. Thus, the results revealed the fact that, among the respondents, the vast majority are companies with private capital, Romanian or foreign, which operate mainly in Romania and the European Single Market, but also on other markets (USA or Asia).
Also, the vast majority (over 45%) are large and medium-sized companies, whose field of activity is services and trade and are in the maturity period from the point of view of the development stage, which implies a sufficient experience of great to understand the role that the circular economy plays in the development of any market.
Most of the companies under analysis have market shares below 15% and do not occupy important positions at the national level in terms of turnover, but they know their competitors very well, appreciating the level of competition on the market as very high. This can only be beneficial; the results being reflected in the quality of the products and services offered.
The company's clients are, in their vast majority, both legal and natural persons.
The **second section** presents the answers given by the respondents regarding the competitors. Thus, the majority appreciates the competitive environment as particularly

strong. The respondents chose as the main sources of information regarding them, the information obtained from the mass media, the study of products/services, the analysis of the profile of actual and potential customers and their socio-demographic structure. Also, the competitive advantage of the company is seen as the low cost of the products or services offered, the level of training of the employees and the notoriety of the brands. It can be stated that the majority of respondents believe that they offer better value for money than the competition.

The **third section** refers to the organizational culture of the companies, as a support for the development of the activity. Following the results obtained, it is found that the majority of respondents know the specific values and ethics of the organization in which they work, considering that they are in perfect harmony with their own beliefs, this demonstrates the connection between the organization itself and its own employees. Also, to a very large extent, the organization is considered to offer prospects for professional and personal development.

Regarding the organization's values, the most important sources of information are regulations and periodic meetings with employees, followed by presentation websites. The future performance of the organization as a whole is obviously influenced by financial performance and adaptability to change. Human values and communication also play an important role. The prestige of the organization is given by the care it shows towards the environment, community initiatives, the importance given to ethics and financial transparency.

The **fourth section** sought to obtain answers related to the perception of the circular economy concept as an alternative to the linear model of the current economy and the extent to which this model is found in practice. Thus, the concept of circular economy is known and understood in a percentage of over 75%, companies being interested and having various concerns related to this aspect (47% of respondents); it should be noted here that the remaining 53% of respondents either believe that companies are not interested in activities specific to the circular economy, or do not know what this entails. The existence of clear strategies, specific to the circular economy, within the companies is confirmed by 24.6% of the respondents, and the decision-making centre in this regard is indicated as top management (69.6%) or middle management (26.8%), as a direct result of the fact that there are still areas/ sectors where there is no well-defined decentralization of decision centres to departments.

This confirms the hypothesis according to which the decision-making centre within companies, regarding the development and implementation of strategies specific to the circular economy, is the top management.

The main factors that prevent companies from developing and implementing circular economy strategies, as revealed by the study, are: allocated budget (46.4%), low level of education about circular economy activities (16.1%) and lack of understanding of the benefits circular economy system (14.3%). Other contributing factors are lack of experience in recycling activities, poor recycling legislation and poorly applied/implemented legislation (Fig. 6).

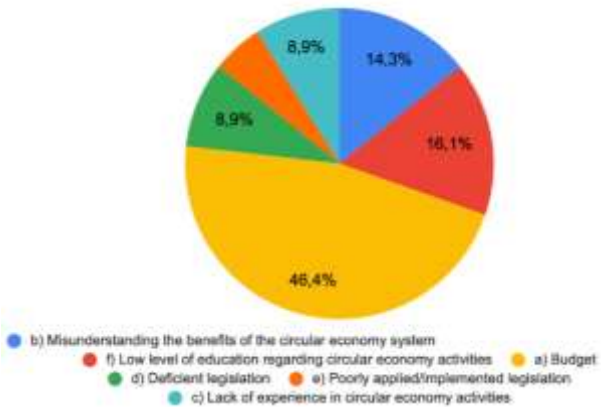

Fig. 6. Factors that influence the implementation of strategies specific to the circular economy
Source: own study based on empirical research.

We consider that this confirms the hypothesis according to which, in Romania, although there are clear and obvious concerns both in the academic and in the economic environment, the application of the principles and strategies of the circular

economy, with all that it entails, is limited, due to an education insufficient business environment in this direction, the lack of budgets to support the implementation or investments in research-development-innovation or a deficient national legislation. The main aspects identified by respondents, regarding the actions that must carry out for applying the principles of the circular economy, have been: the reduction of the impact on the environment through the efficiency of energy consumption (60%) and the use of renewable energy sources (10%), repair (6,7%), recycling/recovery (13.3%), reuse (10%). ***Thus, the hypothesis according to which most companies implement strategies specific to the circular economy in the category of those with a low or medium level of circularity is confirmed (Fig. 7).***

Also, in the case of companies that implement strategies specific to the circular economy, it is noted that strategies with a low degree of circularity, aimed at reducing, for the most part, the impact on the environment, are most often used, regardless of the size of the company (Fig. 8).

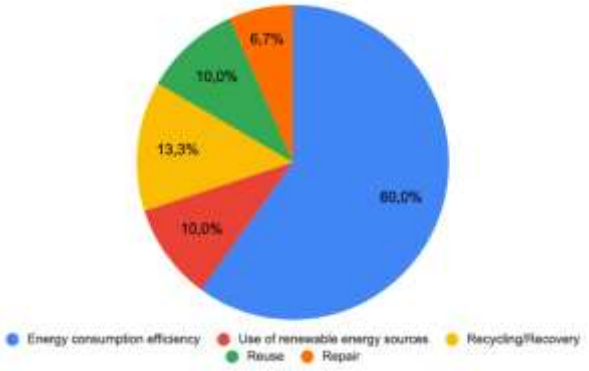

Fig. 7. Actions that can be found in the concerns of companies in the direction of applying the principles of circular economy
Source: own study based on empirical research.

At the same time, strategies with a medium degree of circularity, such as those aimed at reuse and repair, cannot be said to be specific only to large companies, as the study shows that smaller companies are also interested in this aspect.

Regarding strategies with a high degree of circularity, they are chosen by medium and large companies that also invest in research-development-innovation. We can say, therefore, that ***the hypothesis according to which strategies with a high degree of circularity are implemented within medium and large companies that invest in research-development-innovation is confirmed.***

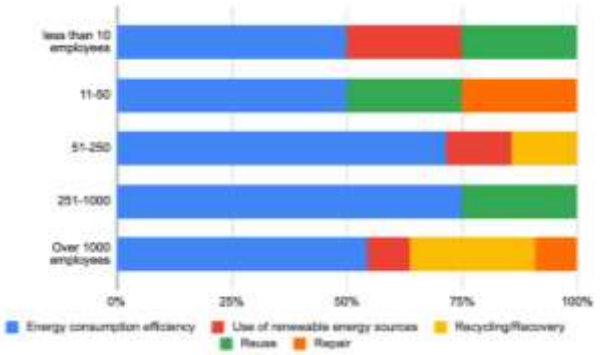

Fig. 8. Distribution of responses regarding the preference for a particular type of circular strategy by company size
Source: own study based on empirical research.

Investments in research-development-innovation are the basis of the transition to the circular economy. In the case of the companies in the study, just over half (52%) of them invest in research-development-innovation, as a necessity regarding the transition to circularity. The companies in this category are, as a rule, of medium to large size, and the distribution of investments, according to the structure of the social capital, is presented in Fig. 9.

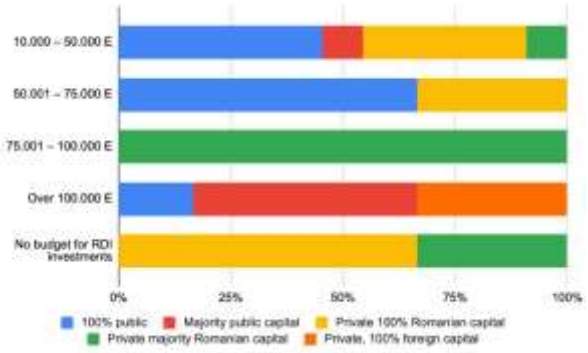

Fig. 9. Distribution of companies that invest in RDI according to the structure of the social capital
Source: own study based on empirical research.

Companies that have budgets greater than 100,000 euros for research-development-

innovation investments are mainly state-owned or majority-owned or foreign-owned companies that know the advantages of such an approach. These companies are, as I stated, in their vast majority, of medium to large size, with a well-developed organizational culture and with an obvious orientation towards sustainability in the activity they carry out.

CONCLUSIONS

Shifting to a circular economy model is the most recommended solution to many of the today's environmental problems, although the costs are extremely high. Handled carefully, however, it would be the best chance for economic and industrial regeneration.

The instability of the international environment makes it difficult to change, for now, the perspective on the role and importance that the circular economy should have in the life of an organization.

Our research study revealed that, on the Romanian market, although the companies and institutions are familiar with the circular economy concept, there is still a long way to undertake until the concept would be fully applied.

The main setbacks are correlated with small to non-existing budgets for investment in research and innovation for most companies, a low level of education in this area and lack of understanding completely the benefits circular economy system.

The poorly applied legislation or even the lack of it, for some sectors of the economy, also influence the orientation towards circularity.

However, there are companies on the Romanian market that have understood that they must change in order to face the new challenges that constantly appear, regardless of their nature, and to be able to compete successfully on international markets.

Those companies have a strong organisational culture and care about the environmental problems, are involved in community initiatives and consider that ethics and financial transparency are mandatory in their activity.

At the level of the single European market, although the concern regarding the transition to the circular economy is clear and obvious, solutions must be found to reduce the gaps between the different member states, by increasing the degree of circularity in the case of the states at the bottom of the ranking (in this case, Romania).

This can be achieved through a series of measures adopted primarily at the national level, such as the development of strategies specific to the circular economy, where they do not exist or are underdeveloped, calling on specialists for the creation and implementation of a sustainable development vision, designing specific programs, implementing them and evaluating the results on a realistic basis, are just some of the recommendations that can be made.

Obviously, it is not solely up to companies to change their vision and certain mentalities, public institutions also play a decisive role. Changing the legislation to support investments in research-development-innovation by granting aid or tax exemptions (within the limits allowed, however, by the European Union, to create a fair competitive climate), giving up bureaucracy and setting up the infrastructure would encourage investors foreigners and, for that matter, any company that has activities here.

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