VILNIUS UNIVERSITY

FACULTY OF ECONOMICS AND BUSINESS ADMINISTRATION
MASTER OF BUSINESS PROCESS MANAGEMENT

Murad Dashdamirli

Darbuotojų Sprendimų Mediavimo Vaidmuo Diegiant žiedinės Ekonomikos Praktikas Azerbaidžane: Struktūrinių Lygčių Modeliavimo Metodas	**The Mediating Role of Employee Decisions in the Adoption of Circular Economy Practices in Azerbaijan: A Structural Equation Modelling Approach**

Supervisor Prof. Dr. Dalius Serafinas

Vilnius, 2026

TABLE OF CONTENTS

LIST of ABBREVIATIONS

Circular Economy - (CE)

Circular Economy Orientation - (CE)

Employee Decisions – Readiness for Change - (ED)

Circular Economy Implementation - (CEI)

Theory of Planned Behavior - (TPB)

Value–Attitude–Behavior Model - (VAB)

Structural Equation Modelling - (SEM)

INTRODUCTION

The circular economy is regarded as a new method of creating value and consequently enhancing social welfare. By extending the lifespan of products through improved design and service concepts, this system brings waste back from the end of the supply chain to its beginning, aiming to increase efficiency through the repeated use of resources. In today's economic order, the production process generally takes place through obtaining raw materials from nature, processing them into new products, and then returning them to nature as waste after use. This process represents a linear structure with a clear beginning and end.

In other words, the linear economy refers to the traditional "take–make–dispose" approach, in which raw materials are extracted and turned into products, and after use, they are mostly discarded as waste that cannot be recovered. This model constitutes the basis of the current globally dominant economic system.

In contrast, the circular economy aims to reduce economic growth from the consumption of limited natural resources. Products and materials are kept in productive use for as long as possible; when they reach the end of their life cycle, they are effectively reintegrated into the system. The concept of the circular economy originates from various schools of thought and theoretical approaches that oppose the current economic system based on the excessive use of natural resources.

In recent years, as resource supply security and resource efficiency have been recognized as critically important for the sustainable prosperity of both economies and businesses, the circular economy approach has been receiving increasing attention worldwide (Rizos, Tuokko & Behrens, 2017, p. 1). It is believed that the circular economy will contribute to achieving higher production levels with fewer resources and will be effective in reducing material and energy consumption (Peck, Richter & Delaney, 2020, p. 6). With the world's population approaching 8.5 billion and the growing middle class demanding access to increasingly complex products, pressure on the planet's natural boundaries is expected to rise. Therefore, the circular economy model—which treats unnecessary consumer products not as waste but as production inputs—offers significant potential for societies to reduce their environmental footprint (De Jong, Gaas, Kraak, Bergena & Usanov, 2016, p. 9). As a result, the concept of the circular economy has increasingly gained acceptance in many countries in recent years.

In contrast to this, the transition to a circular economy in Azerbaijan is a matter of the future, still. The country with its national strategies such as "Azerbaijan 2030: National Priorities for Socio-Economic Development," has indeed made an important step in the race towards sustainability by accepting the ideas of sustainability. However, the application of circular economy concepts in the industrial and business sectors is still very little. The majority of companies still follow the old ways of producing and consuming, meaning that the strategies of waste management, resource reuse, and eco-design are not yet in place. Moreover, the current institutional and regulatory frameworks are still not completely developed, and the knowledge of the advantages of the circular economy among workers and organizations is still very limited. This indicates a gap between the intentions of the policymakers and the reality on the ground.

In this particular context, the human factor turns out to be quite important in making transitions to circular economy successful. The entire process of turning an organization into a sustainable one is strongly reliant on the preparedness, willingness and acceptance of the workers regarding new ways of production and resource management. On the other hand, if you don't have the individual behavioral changes and the decision-making of the employees aligned with the goals, then even policies concerning the circular economy that have been very well designed could not reach the results they were meant to. That is why the present research aims to explore the mediating role of the employees' decisions and their readiness for circular change in the link between circular economy orientation and its implementation in the case of the enterprises in Azerbaijan. The significance of this study emanates from its role in linking the theoretical view with the practical side in the case of developing countries. This research aims to reveal the interaction between organizational orientation and employee readiness so that it can inform the decision-making of the government, enterprises, and sustainability practitioners in the country, specifically in Azerbaijan. Besides, the findings might be used as a yardstick for other nations' gradual adoption of circular economy practices, which are now being practiced in mature markets like Germany. Therefore, the research not only broadens the understanding of the literature concerning the adoption of circular economy but also reveals the human aspect behind the sustainable changes as a critical factor.

The concept of circular economy has been widely studied in the international scientific literature. There are numerous scientific studies on the impact of circular economy on resource efficiency, environmental protection and sustainable economic development, especially in the European

Union countries. The main focus of these studies is on institutional mechanisms, technological innovations and regulatory frameworks.

However, studies on employee behavior, decision-making mechanisms, and the level of employee readiness for circular change in the implementation of circular economy at the enterprise level are limited. Especially in developing countries, including Azerbaijan, empirical studies on this topic have been almost nonexistent. This indicates a significant gap in existing scientific knowledge. The scientific novelty of the master's thesis is that the study empirically examines for the first time the mediating role of employees' decision-making and employee's readiness for circular change in the process of implementing the circular economy in enterprises operating in Azerbaijan. The study assesses the relationship between the orientation towards the circular economy and its actual implementation from the perspective of the human factor. This approach scientifically reveals the importance of not only the technical and institutional, but also the behavioral and organizational aspects of the circular economy. The main problem of the master's thesis is that despite the existence of strategic documents and policies on the promotion of the circular economy in Azerbaijan, the practical implementation of this approach at the enterprise level remains weak. This situation indicates that there is a discrepancy between the orientation towards the circular economy and its real implementation.

The master's thesis aims to determine the mediating role of employees' decision-making and readiness for circular change in the relationship between circular economy orientation and its implementation in enterprises operating in Azerbaijan. To achieve this goal, the following tasks have been set:

- systematization of the concept and basic principles of circular economy based on scientific literature;
- analysis of the mechanisms for implementing circular economy at the enterprise level;
- investigation of the theoretical foundations of the concepts of employees' decision-making and employees' readiness for circular change;
- empirical assessment of the relationship between circular economy orientation, employees' readiness for circular change, and implementation level;
- preparation of practical recommendations based on the results obtained.

Theoretical and empirical research methods were used in the master's thesis. In the theoretical part, methods of analysis, comparison, systematization and generalization of scientific literature were used. Within the framework of the empirical research, the survey method was applied, the collected data were analyzed using statistical analysis methods and structural equation modeling (SEM). The selected methods were justified in accordance with the goals and objectives of the study. The master's thesis consists of an introduction, eight chapters, conclusions and suggestions, a list of used literature and appendices. The introduction presents the relevance, purpose, problem and methodological foundations of the research. The first and second chapters analyze the concept of circular economy and its theoretical foundations. The following chapters explain behavioral theories and empirical research methodology. The empirical part presents and analyzes the results obtained. The main results are summarized in the conclusions and suggestions section and practical recommendations are put forward. The main limitations of the study are related to the limited number of respondents participating in the survey and the fact that the data is based on subjective assessments. These factors may create certain limitations in generalizing the results. In the process of preparing the master's thesis, artificial intelligence tools were used to edit the scientific text in terms of language, check terminological compatibility and improve the structure. Artificial intelligence did not directly interfere with the collection, analysis of empirical data and the formulation of research results.

1. EMPIRICAL STUDY RESULTS CIRCULAR ECONOMY MATERIAL FLOW ANALYSIS

1.1 Background and Problem Statement

The central aim of this study is to investigate the mediating influence of employees' readiness for circular change (Employee Decisions - Readiness for Change, ED) in the link between circular economy orientation (CE) and circular economy implementation (CEI) in companies in Azerbaijan. The research intends to disclose the extent to which the circular economy-oriented approaches of firms are connected to the innovation and sustainability-oriented attitudes of employees. In this regard, the research locates the frequently neglected "human factor" in the middle of the sustainability discourse and asserts that environmental change is not only technological but also behavioral. The concept of the circular economy represents a paradigm shift that aims to transform production and consumption processes on a global scale. The effective implementation of this system depends not only on the adoption of environmentally friendly production technologies but also on employees' attitudes toward change, their behavioral tendencies, and their level of environmental awareness. In this context, the study seeks to identify how organizational orientations are reflected in individual behaviors and how this interaction shapes the success of circular economy practices. Within the research model, Structural Equation Modeling (SEM) was employed to analyze the direct, indirect, and total effects between circular economy orientation, employees' readiness for circular change, and the level of implementation. Data obtained from 257 participants was tested for scale reliability and through confirmatory factor analyses. The results indicated that circular economy orientation positively affects employees' openness to change ($\beta = .563$, $p < .001$) and that this effect significantly strengthens circular economy implementation ($\beta = .188$, $p < .001$). Furthermore, employees' readiness for circular change was found to have a partial mediating effect between orientation and implementation ($\beta = .106$, $p < .001$). These findings clearly demonstrate that human resources play a crucial role in the success of sustainable transformation within enterprises.

Azerbaijan has gradually brought up the matter of circular economy in its new and modern policies in the coming years. On the other hand, the implementation of the policies has still faced some significant structural and behavioral barriers. Many companies based in Azerbaijan are still practicing the linear production and consumption model, and at the same time, have not

implemented the circular economy principles which include resource efficiency, waste management, and reuse to the proper extent. Employees' level of environmental awareness, openness to innovation, and willingness to participate in organizational change are the factors that determine the success of the transformation. Hence, the present study is an important contribution to the literature by interpreting the human factor deeply in the meeting of sustainability goals in Azerbaijan. Understanding the interaction between organizational culture, leadership approach, and employee behavior during the transition to the circular economy is another goal of the study. A number of companies try to put into practice sustainability policies only because of the pressures from outside or the legal obligations but do not succeed in creating an institutional culture of awareness that would make employees' participation in the process voluntarily. This kind of scenario is a challenge in ensuring the long-term sustainability of circular economy strategies. The research reveals that the cognitive, emotional, and behavioral responses of employees to change have an impact on the environmental performance of enterprises directly.

Theoretically, the study is based on the Theory of Planned Behavior (TPB) and the Value–Attitude–Behavior (VAB) models. These models explain how individuals' environmental values and beliefs transform into concrete pro-environmental actions through behavioral intentions. By integrating these theoretical frameworks within the context of the circular economy, the research presents a unique model that measures the influence of employees' attitudes and perceptions on circular practices. Thus, it contributes a micro-level behavioral perspective to the circular economy literature, which has predominantly been discussed at the macro level (policies, regulations).

This research in practical terms is quite useful for both business and policymaking positions. Transitioning to a circular economy will deliver benefits not only for the environment but also for the company's reputation, long-term economic efficiency, and competitiveness. The findings indicate that the implementation of circular economy measures is very much dependent on the employees' confidence and their willingness to accept the changes. Hence, companies need to offer various programs such as training and development, introduction of incentive systems that lead to employee involvement, and also shaping up an organizational culture that favors creative thinking. On the policy front, the results of this study reinforce the "Azerbaijan 2030: National Priorities for Sustainable Socio-Economic Development" framework. The research points to the fact that to realize its targets of resource efficiency, waste reduction, and green growth, the human element

must be a key part in the country's efforts to incorporate the circular economy into national strategies. More specifically, raising the environmental awareness of staff in both the public sector and the private sector is crucial for Azerbaijan to achieve a level of sustainability on par with that of the European Union and OECD countries. In conclusion, this research demonstrates that the transition to a circular economy is not merely an economic necessity but also a social and cultural transformation. The findings indicate that employees' readiness for circular change strengthens the relationship between circular economy orientation, and its implementation suggests that future sustainability policies should be designed in a human-centered manner. Thus, this study not only provides an original theoretical contribution to the literature but also offers a concrete roadmap for sustainable production and consumption policies in Azerbaijan.

1.2. Research Questions and Hypotheses

This research aims to examine the relationships among circular economy orientation (CE), employees' readiness for circular change (Employee Decisions – Readiness for Change, ED), and circular economy implementation (CEI). In today's context, the adoption of sustainable production and consumption practices by enterprises is directly linked not only to technological innovations but also to employees' reactions to the process of change. Therefore, explaining the relationship between enterprises' circular economy orientation and their level of implementation through employees' readiness for circular change constitutes an important research subject both theoretically and practically. The circular economy approach encompasses objectives such as the efficient use of resources in production and consumption processes, reduction of waste, and support for sustainable development. However, the successful implementation of these goals depends not only on strategic planning and technological infrastructure but also on employees' willingness to adopt new systems, their environmental awareness, and their openness to innovative behaviors. This highlights the necessity of a "human-centered understanding of sustainability" in organizational transformation processes. The research model developed in this study is designed to understand the impact of individual attitudes and organizational orientations on circular economy practices. The theoretical foundation of the model is based on the Theory of Planned Behavior (TPB) and the Value–Attitude–Behavior (VAB) model. According to the Theory of Planned Behavior, individuals' behavioral intentions are determined by their attitudes, subjective

norms, and perceived behavioral control (Ajzen, 1991). In this theory, employees' levels of environmental awareness and their beliefs toward organizational change shape their intentions and actions related to participation in circular economy practices. The VAB model, on the other hand, posits that individuals' value systems influence their environmental attitudes and behaviors (Homer & Kahle, 1988). Therefore, individuals' sensitivity to the environment and their awareness of sustainability determine their contribution to enterprises' circular economy processes. This theoretical framework supports the relational structure among the three key variables examined in the research. Circular economy orientation (CE) refers to enterprises' sustainability strategies, resource efficiency goals, and environmentally friendly production policies. Employees' readiness for circular change (ED) represents individuals' willingness to engage in organizational change processes, their capacity for adaptation, and their openness to innovation. Circular economy implementation (CEI) reflects the extent to which enterprises transform these strategic orientations into actions — that is, the integration of environmentally friendly production, recycling, reuse, and waste management practices into corporate life. This study focuses on a connection that is frequently overlooked in the literature — the bridge between organizational strategies and employee behavior. The success of the transition to a circular economy depends not only on the strategic decisions of top management but also on employees' willingness to embrace change, openness to learning, and innovative behaviors. Employees' active participation in this process enhances enterprises' environmental performance and their capacity to achieve long-term sustainability goals (Ghisellini, Cialani & Ulgiati, 2015; Kirchherr, Reike & Hekkert, 2017).

1.2.1 Research Questions

- How does the orientation towards circular economy affect the employee readiness for circular change?

- Does the circular economy orientation directly impact the implementation of circular economy practices?

- Will the employee readiness for circular change of the employees serve as a mediator in the link between the orientation towards circular economy and its implementation?

1.2.2 Hypotheses

H1: CE (Circular Economy) orientation has positive impact on Employee Readiness for Circular Change (ED*)*

H2: Employee Readiness for Circular Change (ED) has positive impact on Circular Economy Implementation (CEI*)*:

H3: Circular Economy Orientation (CE) has positive impact on Circular Economy Implementation (CEI*)*:

H4: Employee readiness for circular change (ED) plays a vital role in mediating CE on CEI:

2. THE CONCEPT OF CIRCULAR ECONOMY

2.1. Definition and Fundamental Principles of the Circular Economy

The concept of the circular economy (CE) is now one of the main pillars of the most talked-about and swiftly growing notions relating to sustainable development. It is a widely accepted notion helping to grow the eco-friendly and resource-wise modern economies that face challenges. Kirchherr, Reike and Hekkert (2017, p. 221) mention the circular economy as a modern-day and continuously gaining popularity system that is all about sustainability. The past decade has been a period when the circular economy term became practically known everywhere, but its roots in the form of economic theory can be traced back to earlier periods. The cycle of resource use rather than disposal and extraction was only once very clearly pointed out to be a requirement for sustainable life on earth by Boulding in his 1966 book "The Economics of the Coming Spaceship Earth". Boulding made the point that to live sustainably on earth humans have to switch from the linear model of resource extraction to the circular one, in which resources are reused constantly and thus never disposed of. Unlike the circular model, the linear economic system which has a "take-make-use-dispose" pattern at its core is still the main prevailing model. In this pattern, nature's raw materials are taken out, going through a transformation process and then they are either consumed or thrown away as waste (McDowall et al., 2017, p. 1; Pearce & Turner, 1989, p. 6). Such practices are characterized by a low degree of sustainability, since the resources simply cross the economic system and then disappear, thus not being available for further use (Pearce & Turner, 1989, p. 6). The circular economy confronts this model with the idea of using the materials for as long as possible through the implementation of product life extension, design improvement,

and waste turnaround right from the beginning of the supply chain to the end (Braungart, McDonough & Bollinger, 2007, p. 249). The circular economy, as described by the Ellen MacArthur Foundation (2013) and others, revolves around the ideas of reuse, repair, refurbishment, remanufacturing, recycling, and the integration of renewable energy sources with a focus on conserving resources and minimizing environmental impacts. Although the various authors do mention the same central concepts, they refer to them with different keywords. For instance, Pearce and Turner (1989) look at CE very positively and call it a huge breakthrough in the continual flow of materials. They define CE as consisting of keeping material heaps closed, not emitting waste, and containing the overall economic impact on nature to a minimum, all through properly organized production and consumption along the circling flows (Pearce & Turner, 1989, pp. 25–31).

Theoretically, the circular economy is a paradigm that includes the entire life cycle (from cradle to grave) of a product and not only waste management processes but also the design, production, distribution, and consumption processes as well as the economic system's business models (Ghisellini et al., 2015, p. 14; Planing, 2015, p. 2). The green product design and the better practices of consumption are among the changes drawn around the broader structural trend that supports the environment (Huppes & Ishikawa, 2005, pp. 38–39; Stahel, 2013, p. 7). Product design is one of the critical factors in this regard, because the design decisions will affect the whole value chain and consequently the extent of reuse, repair, remanufacture, and recycling possible (Bocken, de Pauw, Bakker & van der Grinten, 2016, pp. 309–310).

Legal incentives might play a crucial role in the transition to circularity, since companies usually refrain from prolonging the life of products, as it might be in conflict with the profit-driven models based on planned obsolescence (Geisendorf & Pietrulla, 2017, pp. 772–780). It is the case that a change from product selling to service provision where companies remain accountable for maintenance, repair, and performance can make the adoption of circular principles by firms a lot easier (Geisendorf & Pietrulla, 2017, pp. 772–780). Through the design of products for multiple life cycles and the offering of repair services, firms are allowed to create completely circular systems and lower their carbon footprint along the whole value chain (Bocken et al., 2016, pp. 309–310). Approaches of circular economy were to be adopted not only in the design of products but also through aligning production, distribution, and consumption processes. This entails drastic

reduction of the use of non-recyclable and toxic materials so that at their end-of-life stage, the products can either be completely incorporated again into the industrial process or be safely disposed to the natural environment (Ekins et al., 2019, pp. 10–12; Kirchherr et al., 2017, pp. 224–226). As per Nobre and Tavares (2021), during the product end-of-life phase, the cleanest possible form should be used for returning the products to either the industry or nature (Nobre & Tavares, 2021, pp. 3–4). Furthermore, circularity promotes cooperation among various sectors, which, in some cases, companies' wastes could become other companies' inputs, and this practice is also a characteristic of industrial symbiosis (Geisendorf & Pietrulla, 2017, pp. 775–781).

In the literature, the classification of circular strategies is typically done using the "R frameworks" which are already familiar terms. The most basic among them is the 3R framework which consists of reduce, reuse, and recycle (Okorie et al., 2018, p. 6). The framework of 4Rs has a recovery addition, whereas the 6Rs model takes into account redesign and remanufacture (Okorie et al., 2018, p. 6). The extensive 9R framework—refuse, rethink, reduce, reuse, repair, refurbish, remanufacture, repurpose, and recycle—gives a thorough classification of circular practices (Okorie et al., 2018, p. 6). Even though the 3R model, which is based on waste management, is still predominantly used in China and other countries, wider 4R, 6R, and 9R frameworks deal with the issue of circularity at deeper system levels (Okorie et al., 2018, p. 6). The fundamental activities of the circular economy, which comprise recycling, remanufacturing, reuse, maintenance, and lifetime extension, are the basis for resource efficiency and environment-friendly practices. Recycling refers to the whole process starting from the collection and sorting, through processing, up to the reintroduction of the material into production and it is common in nearly all sectors like construction, metal and textile manufacturing, wood, paper, and plastics, waste management, electrical equipment, machinery, and even transportation (Ghisellini et al., 2015, p. 14). In the process of remanufacturing, among others, the inspection, disassembly, cleaning, reprocessing, and reassembly the compared new state of the used products or their components are very similar to new ones (Mhatre, Panchal, Singh & Bibyan, 2021, p. 16). Reuse policies allow that the goods can perform their actions after the first consumption, whereas maintenance uses smart material choices and repairs to prolong the product's life. The European Union was the first to implement circular economy policies on a global scale, which made it the most advanced area in CE research, policy-making, and institutional development (Ghisellini et al., 2015, p. 14). Hence, the evaluation

of EU circular economy policies is a crucial step for learning the proper way of applying circular principles and for the detection of benchmarks that are applicable to non-EU countries.

2.2. Comparison with Linear Economy

The modern global economic system has been formed for a long time mainly on the basis of the linear economy model. As is known, modern industrial production operates on the principle of a linear economy. That is, the main raw materials for the production process are taken from the environment, converted into new products, used and, after the end of their use, removed from the system as waste. In other words, the material circulation in the existing production process remains open. This model is characterized by the principle of "take raw materials - produce products - use - dispose of" and waste is perceived not as a resource with potential economic value, but as an additional burden that must be eliminated. Although the linear economy model accelerated economic growth in the early stages of industrial development, in modern times it clearly demonstrates its unsustainability against the background of a growing population, intensive consumption habits and a limited resource base. In the current conditions, where global problems continue to escalate, the failure to redirect waste for reuse increases pressure on existing raw materials sources, accelerates resource depletion, and the environment is more exposed to pollution caused by waste. In this regard, the need for service networks and multidimensional supply chains that allow the transformation of waste into new resources is growing. It is precisely these limitations that have been one of the main factors that have conditioned the formation of the concept of the circular economy. The concept of the CE has penetrated a wide range in recent years, from academic research to strategic projects of large corporations, thanks to the technological achievements brought by the new industrial revolution. Of course, the circular economy is not a new idea, but in the past few years it has created significant potential for more efficient development of the economy. In order to form a systematic understanding of the relationship and integration of this phenomenon with other concepts, it is considered appropriate to look at modern scientific discussions, research directions and Industry 4.0 initiatives.

For example, the concept of a "zero waste" economy creates a different picture compared to existing production activities. In other words, the concept of waste does not exist for the circular economy and a system is envisaged in which the products used today are raw materials for the

production of tomorrow's products. To achieve this, it is not enough to achieve radical technological innovations alone, it also requires deep structural changes, responsibilities and initiatives in the production sphere. In this direction, the European Union has demonstrated its leadership in this area by creating the first foundations of a new economic framework for the circular economy. In December 2015, the European Commission put forward an action plan for the circular economy and legislative proposals on waste management, and these initiatives, which include the circular economy package, have been implemented in stages since 2018. The European Parliament is currently closely monitoring the implementation of the action plan. European Union countries produce more than 2.5 billion tons of waste every year, and existing waste management legislation is constantly being updated to promote the transition to a circular economy model. According to official data from the European Parliament, since March 2020, the European Commission has been implementing this direction within the framework of the European Green Deal and has presented a new industrial strategy. This strategy includes priorities such as more sustainable product design, waste reduction and strengthening consumer rights and opportunities. Industry 4.0 and the circular economy are two of the most discussed topics of the last decades and have gradually attracted the attention of politicians, business circles and scientists all over the world. If initially these topics were described as two independent research areas, now they are represented by hybrid categories such as "Circular IR 4.0" and "Digital CE". There are a number of overlapping points in the scope of these topics. However, it is still too early to talk about a single conceptual framework that fully reflects the relationship between Industry 4.0 and the circular economy and explains the mechanisms of future implementation. However, the results of leading studies show that it is possible to develop mutual relationships and complementarity mechanisms at different levels.

The linear economic model views the earth's resources as limitless and easily exchanged. The basic purpose of this model is to produce more and gain profit through mass production. The consumer goods are generally of a very short lifecycle and their usage is in accordance with the "use-and-discard" consumerism. Waste is considered an unavoidable consequence of production, so only a little bit of effort is put into their reuse, repair, or resale. Recycling is regarded as the least favored option. Conversely, the circular economic model is built on an entirely opposite premise. In this case, resources are limited, and the objective is to get the maximum value from them. Waste will be avoided by continually using the materials for a longer time. Products will be

created in such a way that they will last longer and also be made suitable for reuse, repair, recovery, and resale. Recycling would be considered a last resort; it would be used only when no other alternatives are left. The concepts of the circular economy favor the reuse, recovery, and recycling of materials and products to the maximum extent possible (Table 1.). The idea is to minimize the use of resources and waste. This is mainly through the introduction of novel designs, efficient production methods, and the use of renewable materials and energy sources. The works directed towards the circular economy are aimed at changing the industry in a big way. The cycle here is such that the waste produced as a result of one process is turned into valuable raw materials for another, thus creating closed-loop systems. This method turns the community to a life of "repair and reuse" instead of the old "throw away and buy new" one.

Table 1. Differences Linear and Circular Models in Economy

LINEAR ECONOMY	CIRCULAR ECONOMY
Resources are seen as expendable and unlimited	Resources are seen as limited
Focus on producing more for economies of scale	Extract maximum value from resources
Waste managed as an essential part of the process	Target to prevent waste by keeping materials in use
Caters to use and throw consumption model	Loop materials back in as raw material
Products have a shorter lifespan	Products made to last longer
Limited focus on reuse, refurbishing, and resale	Optimized for reuse, refurbishing, and reselling
Recycling is a last resort	Recycling is considered the last option for materials

In contrast to the linear model, the circular economy is based on the reuse of resources, extending the life of products, minimizing waste, and organizing production processes in a more environmentally friendly way. In this model, the materials contained in products are not lost after use, but are recycled. This approach has advantages not only in terms of environmental protection, but also in terms of economic efficiency (Ellen MacArthur Foundation, 2021). For example, in the traditional economic model, a large amount of waste is generated as a result of the single-use of

plastic packaging. However, the circular economy approach encourages the recycling of this packaging. Sweden's plastic bottle return system is a successful example in this regard. Such systems, in addition to encouraging consumers to behave environmentally responsible, ensure the continuity of the economic cycle (European Environment Agency, 2023). The effective implementation of the circular economy is directly related not only to behavioral and policy changes, but also to technological innovations. In this context, the initiatives of leading technology companies attract particular attention. For example, Apple's Daisy robot aims to automatically disassemble used iPhone models and separate their components for reuse. 18 Daisy can disassemble more than 200 iPhones in an hour, removing batteries, cameras, rare earth metals, and other parts without damaging them. These materials are then reused in manufacturing, especially materials such as cobalt, which play a crucial role in batteries, and are recycled into new products. Through such technologies, Apple is both reducing waste and minimizing the demand for natural resources. This initiative demonstrates that the circular economy can be implemented not only theoretically, but also practically and technologically (Apple, 2023). The linear economy is based on mass production and rapid consumption. In this model, products have a relatively short lifespan, and the waste generated after consumption is either incinerated or landfilled. This increases carbon emissions and additional costs for waste management. In contrast, the circular economy focuses on the stage before waste is generated, starting from design and working towards a sustainable resource cycle. This requires smarter planning, innovation and technological solutions from manufacturers (OECD, 2022). According to the Ellen MacArthur Foundation, the circular economy model could create 700,000 new jobs in the European Union by 2030. This shows the importance of the model not only from an environmental perspective, but also from a social perspective (Ellen MacArthur Foundation, 2021). At the same time, according to the European Commission, 700 million tons of carbon emissions could be saved by adopting circular approaches (European Commission, 2020). These facts show that the circular economy is not just a theoretical concept, but an approach that delivers real and practical results. At present, the circular economy is considered a crucial solution for the sustainability problems facing worldwide production. Its practice demands a radical shift in the way of thinking, and the adoption of new habits in production and consumption. If we reconsider the linear industrial economy and adopt the circular economy concepts, we shall be able to make a world that is not just sustainable but also efficient in resource use and resilient for coming generations.
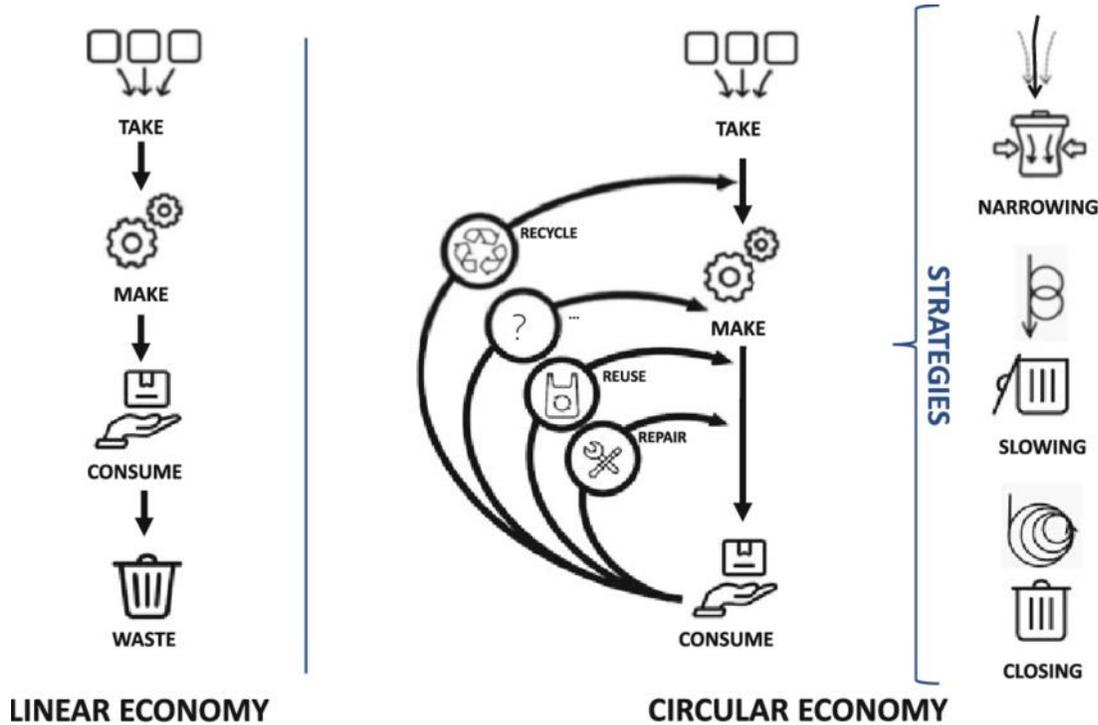
Figure 1. Linear and Circular economy (source: Fischer et al., 2023)

Thus, against the background of the limitations of the modern linear economic model, the circular economy is emerging as an alternative model aimed at increasing the efficiency of resource use, minimizing waste and ensuring ecological and economic balance through the organization of material flows in a closed loop.

2.3. Dimensions of the Circular Economy

The concept of circular economy (CE) is not a technical approach limited only to waste reduction or resource reuse. This model is a multidimensional and systemic development approach that reshapes the interaction of the economy, society and the environment. In the scientific literature, for a deeper understanding of the essence of the circular economy, it has been widely accepted to analyze it within the framework of economic, ecological and social dimensions. These dimensions are interdependent and only when applied together can sustainable development goals be achieved.

The history of society has been uninterrupted since the emergence of economic activity to this day. During the formation of primitive communities, early human society began to consciously struggle with nature in the form of communities and tribes. Global or general ecology is the essence of environmental protection. It studies the nature of the distribution of levels, their location and size, the activity of natural and anthropogenic ecosystems and the biosphere in general. Social ecology is also of great importance in the presented scheme. The main function of this section is to serve the formation of relationships and mutual relations between nature and society. Social ecology includes human ecology, medical ecology and sanitary-hygienic ecology of the environment. Social ecology is closely related to economic ecology. The division into groups according to the individual sections indicated in the structural system is carried out on the basis of certain regularities. For example, the ecology of biotic systems can be divided into groups of plant, animal and microorganism ecology. Each group, in turn, is divided into subgroups according to taxonomic units. The common characteristic factor for all the ecosystems mentioned is the environment of existence of ecosystems. As the environment of existence of ecosystems, the joint functioning of living and non-living ecosystems is considered one of the main conditions. As a result of this activity, a process of exchange of substances and energy takes place in ecosystems. In all societies, the production of material goods is constantly repeated in connection with the increase in the vital needs of people, it has its own specific factors. The production of material goods has always been and is still subordinated to satisfying people's consumption needs. All these issues occupy an important place in the subject of environmental economics. Environmental economics also embodies the necessary scientific and practical knowledge about modern market relations. The main issues of environmental economics are the provision and analysis of the increase in costs for maintaining normal natural conditions for reproduction, the assessment of the damage caused to the environment by natural resources and human activity. Environmental economics further strengthens the concept of the criterion of economic efficiency. From the point of view of the economics of nature use, this criterion should reflect not only the minimum social labor costs for satisfying each unit of society's needs, but also the minimum possible costs aimed at maintaining the dynamic balance of the circulation of substances in nature, which is disturbed as a result of human production activity. The essence of the concept of general (frontal) economics did not cause objections until recently. Only recently has the need to direct economic theory in the direction of ecology begun to be realized. The economic dimension of the circular economy sets the main goal

of increasing the efficiency of resource use, reducing production costs and ensuring long-term economic sustainability. In the traditional linear economic model, economic growth is achieved mainly by increasing the consumption of raw materials. This leads to rapid depletion of resources, increased costs and increased economic risks. In the circular economic model, economic value is created by keeping resources in circulation for a longer period of time. Preparing products for repair, reuse and remanufacturing processes from the design stage creates added value for enterprises. This approach reduces dependence on raw materials in production processes, minimizes import risks and allows for cost optimization. Within the economic dimension, the circular economy also encourages the formation of new business models. Product-as-a-service, sharing economy, long-life product strategies and return mechanisms are examples of these models. Such models both increase the stability of income for enterprises and create an advantage in market competition. Greening the world economy is an important factor in creating new opportunities for the development of non-resource economies. As a result of the rapid movement of these processes, a decrease in oil revenues may occur. On the other hand, the slowdown in oil consumption in the world energy market requires not only a bold diversification of the non-oil/gas sector, but also the support of non-oil/gas foreign exchange revenues to compensate for lost oil revenues. The fight against climate change, the wise use of natural resources and the protection of biodiversity are the main pillars of a sustainable and economically stable society. The Sustainable Development Goals (Sustainable Development Goals Report, 2020), the Paris Agreement on climate change, the country's development priorities and the efficient use of renewable energy sources imply the introduction of user-friendly and efficient energy technologies (Socio-Economic Development Strategy of the Republic of Azerbaijan for 2022-2026).

The social dimension of the circular economy is often overshadowed by economic and environmental aspects. However, the successful implementation of this model directly depends on human behavior, social values and institutional culture. The social dimension encompasses improving people's well-being, ensuring social justice and promoting inclusive development. The social dimension is directly related to the well-being, health and behavioral change of the population. Environmental initiatives act not only as technical measures, but also as a tool for shaping the environmental awareness of society. Improving the quality of the environment has a positive impact on public health indicators, increases labor productivity and creates conditions for reducing social costs. In this regard, the circular economy acts as a model that keeps the human

factor at the center of sustainable development. Internationally adopted declarations and multilateral initiatives strengthen Azerbaijan's commitments towards the transition to a circular economy. Calls for sustainable waste management, resource reuse and adaptation of production-consumption models to environmental imperatives create a methodological framework for the formation of national policies. In this context, the results of international studies clearly reveal the socio-economic impacts of the circular economy, especially in terms of extending the service life of products. TNO research institute specialist Dr. According to the study presented by Carlos Montalvo, keeping products in use for a longer period of time generates significant employment impacts, in addition to economic benefits for consumers and companies. In particular, the increase in labor-intensive activities in waste management, repair and maintenance leads to the creation of new jobs. At the same time, there is a possibility of a decrease in employment in sectors such as raw material extraction, primary production, wholesale and transport, which reflects the structural nature of the transition to a circular economy. A thorough examination of specific locations can shed light on the underlying societal issues, conditions, and constraints, even though the particular combination of more or less global societal processes and circumstances rarely maps uniformly onto different specific places, territories, and Socio-spatial dimensions of a circular economy125scales (especially at the global scale) (Cox, 2021). Despite their technological similarities, spatial context affects socio-environmental results (e.g. Deutz et al., 2015). The territory or scale of the location in question as defined by jurisdictional boundaries—whether urban, regional, or possibly national or supranational in the case of the European Union—is typically the focus of spatial analyses of CE (see, for example, Colombo et al., 2019; Johansson and Henriksson, 2020; Williams, 2023). The results of the study show that in many cases, the extension of the service life of products is accompanied by a decrease in the environmental impact during their life cycle. Although existing policy instruments such as consumer protection, guarantee mechanisms, safety standards, eco-design and the promotion of eco-innovation exist, the concept of product longevity has not yet been independently and systematically established in environmental policies and regulations. In this regard, the study highlights the creation of regulatory and legal mechanisms that encourage product repair, the provision of timely and transparent information to consumers, and the expansion of public debate. These represent opinions about their many branches, personnel, institutional memory, and other "untraded interdependencies" (Storper, 1995). Connections across scale and place may be reflected in

perspectives (Cox and Mair, 1998; Coe et al., 2008). According to various local and regional roles, even a place's physical limits might change (Warnaby, 2009). As a result, societal (and ecological) processes, including state policies at various scales, have an impact on places concurrently both inside and beyond of their local boundaries (Jonas, 2024). When taken as a whole, place, territory, and scale are distinct but overlapping ideas that are frequently employed interchangeably to describe the intricacy of social activities that take place within, around, and through space (Jessop et al., 2008). However, as discussed in the geographic literature on place, territory, and scale, this approach minimizes the multi-scalar operation of societal processes (Jonas, 2024). This contributes to the issue of "methodological territorialism" (Jessop et al., 2008), wherein one scale (such as the local) is analytically privileged at the expense of understanding the workings of another (such as the global). For instance, Gregson et al. (2015) examine how EU policy for the CE has effects outside of the Union because the policies aim to stop international waste flows by encouraging loop closing within the bloc. Similarly, the idealization of the local scale for closing loops in CE literature (e.g., Stahel, 2013) tends to minimize the relevance of broader (e.g., regional) collaborative networks for accomplishing such a transformation. On the other hand, concentrating on a particular scale—particularly national or higher—may obscure spatial differences at lesser scales. This raises doubts about the possibility of carrying out a "just transition" to a CE that is more socially and physically inclusive. Approaches centered on cities and/or regions are becoming more popular in the field of CE study. In order to promote CE projects and adapt to climate change, scholars have emphasized the critical role that cities and urban planning and governance may play (Petit-Boix and Leipold, 2018; Campbell-Johnston et al., 2019). A significant portion of this research looks at the obstacles and difficulties that cities (urban administrations) and their stakeholders may encounter when making the switch to a CE. Notably, city CE policies typically concentrate on projects related to current city activities (e.g., trash management, public health, and support of business-facing economic development) (Petit-Boix and Leipold, 2018; Fratini et al., 2019). In a similar vein, work with a regional focus is also beginning to emerge (Tapia et al., 2021; Bourdin et al., 2022) that looks at issues that policymakers face, like getting businesses to engage in industrial symbiosis (the exchange of pre-consumer residues between various entities; Chertow, 2000; Rincón-Moreno et al., 2022). This work's scalar concentration reflects its limited ability to directly effect approaches beyond the territory's spatial scale, but it also shows little consideration for inadvertent impacts.

**2.4. Global and Azerbaijan Circular Economy Policies**

In recent decades, the circular economy has become one of the main directions of sustainable development policies at the global level. Problems such as resource scarcity, climate change, increasing waste and ecosystem degradation have forced states to abandon the linear economy model and move towards more sustainable economic approaches. In this context, the circular economy is recognized as a strategic framework aimed at ensuring both economic development and ecological balance on a global scale.

The United Nations Sustainable Development Goals (SDGs), especially Goal 12 — "Responsible Production and Consumption", play an important role in integrating circular economy principles into global policies. This goal calls on states to use resources efficiently, reduce waste and minimize environmental risks in production processes. At the same time, combating climate change, reducing carbon emissions and increasing energy efficiency have also led to the strengthening of CE policies on the global agenda.

The European Union's "Strategy for Plastics in a Circular Economy" is the first policy framework adopted at EU level and is based on a material-specific life-cycle approach for plastic products. This approach aims to integrate the design, use, reuse and recycling stages of plastics within a single value chain and plays an important catalytic role in the transition to a circular economy. The strategy sets measurable objectives at EU level, with the aim of ensuring that all plastic packaging entering the EU market is reusable or recyclable by 2030 (European Commission, 2018). The strategy also identifies key action areas that promote cooperation between stakeholders along the value chain. The European Commission's call for industry representatives to make voluntary commitments has generated significant momentum in the sector towards increasing the use of recycled plastics in products. However, the assessment of the commitments submitted has shown that further efforts are needed to achieve the key objectives set out in the strategy. Specifically, a target has been set to ensure the use of 10 million tonnes of recycled plastic in new products by 2025. While commitments made by recycled plastic suppliers could theoretically make it possible to achieve this target, the demand generated by the industry is estimated at approximately 6.2 million tonnes per year for 2025. The Circular Plastics Alliance, established to address this gap, is designed to strengthen cooperation between businesses and

support the achievement of the strategy's objectives (European Commission, 2018). A number of important milestones have already been achieved towards ensuring better recycling of plastics. These include setting a 55% recycling target for plastic packaging by 2030, implementing separate collection obligations and improving extended producer responsibility (EPR) mechanisms. In particular, the differentiation of producer payments based on the principle of "eco-modulation" is seen as an important tool to encourage the design of products for recycling. The review of basic packaging requirements is seen as one of the main sources of further progress in this area (European Commission, 2018). The strategy aims to strengthen the interaction between economic and environmental objectives. The available scientific evidence on the potential health and environmental risks of microplastic pollution has made it necessary to restrict the use of intentionally added microplastics and to expand the knowledge base on measuring and labelling unintentional microplastic releases. The European Commission has also committed to developing a regulatory framework on the biodegradability of plastics, so that their use is only promoted where it is beneficial for the environment and does not negatively impact waste management systems. This includes raising awareness about the proper management of products at the end of their life (European Commission, 2018). The circular economy strategy for plastics also has an impact beyond the EU. The EU's leadership in bilateral and multilateral platforms, in particular through initiatives on single-use plastics, has contributed to safeguarding the international plastics agenda. In this context, the Global Plastics Platform, implemented jointly with the UN Environment Programme, and the International Partnership on Plastic Waste, planned under the Basel Convention, are of particular importance. In parallel, the EU provides technical and institutional support to developing countries in the fight against plastic pollution (European Commission, 2018). Given that around 80 percent of the environmental impact of products is formed during the design phase, the linear model based on the "take-make-use-dispose" principle does not provide sufficient incentives for manufacturers to make their products more circular. The fact that many products fail in a short time, are not suitable for reuse or repair, and are designed for single use are key indicators of this problem. In addition, the existence of the single market allows the European Union to set global standards in the field of product sustainability and to influence international value chains (European Commission, 2020). Although the normative and voluntary instruments currently adopted at EU level regulate to some extent the sustainability aspects of products, there is no single and comprehensive system of requirements in this area. In particular, the Ecodesign

Directive successfully regulates energy efficiency and certain circularity features for energy-related products. Meanwhile, mechanisms such as the EU Ecolabel and green public procurement, while having a wider scope, have limited impact due to their voluntary nature. For this reason, the European Commission plans to propose a new legislative initiative on sustainable product policy to ensure that products are climate neutral, resource efficient and circular (European Commission, 2020). Priority will be given to addressing product groups identified in the value chains under this Action Plan; these include electronics, ICT and textiles, as well as furniture and high-impact intermediate products such as steel, cement and chemicals. Other product groups will be identified on the basis of their environmental impact and circularity potential (European Commission, 2020a). This legislative initiative and other complementary regulatory or voluntary approaches will be designed to increase coherence with existing instruments governing the different stages of the product life cycle. The Commission intends for the principles of product sustainability to guide wider policy and legislative initiatives in the future. The Commission will also improve the effectiveness of the existing Ecodesign framework for energy-related products and will swiftly adopt and implement a new Ecodesign and Energy Labelling Working Plan for 2020–2024 for individual product groups (European Commission, 2020b). The European Commission showed interest in the circular economy in 2015 by presenting its first Circular Economy Action Plan (CEAP). The Action Plan implemented 54 measures, aiming to bring benefits to both the environment and the economy by promoting more recycling and reuse by 'closing the loop' in product life cycles (European Environment Agency [EEA], 2019). To encourage Member States to contribute to the development of a circular economy, the CEAP 2015 stated: 'Member States are invited to fully participate in EU measures, integrating and complementing them with national measures' (European Commission, 2015). This metric assesses Member States' progress in this area. Currently, there is no official EU-level data source that collects national and regional thematic policies in a structured manner. In 2019, the EEA/ETC collected these policies through a voluntary survey as part of its 'Even More from Less' report. A second survey was carried out in 2022, covering all EU-27 Member States (EEA, 2022).
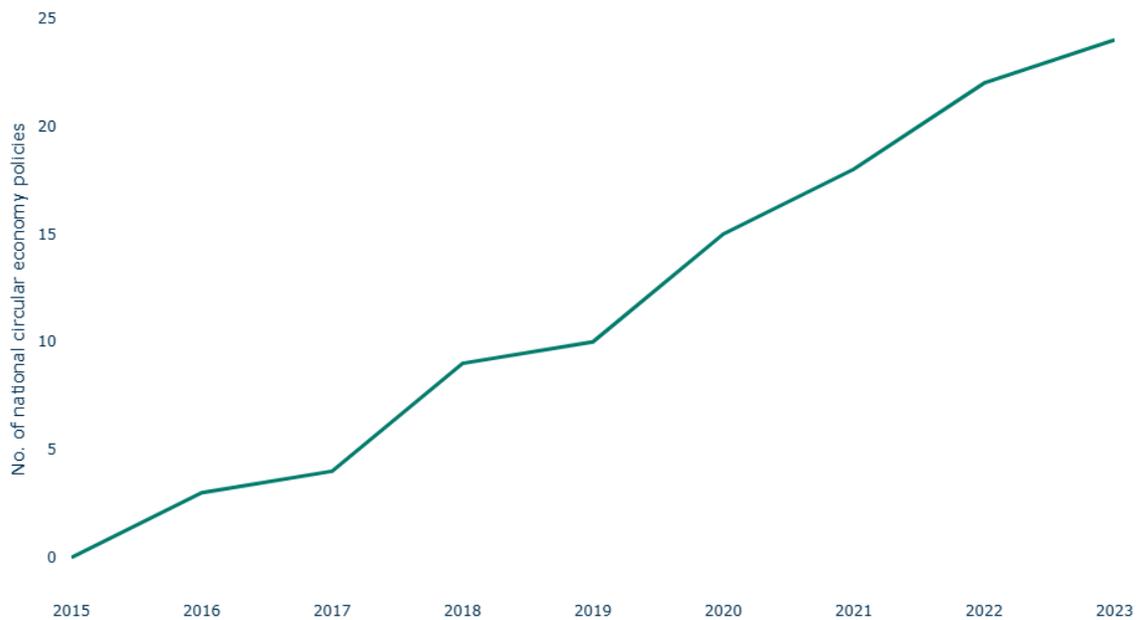
Figure 2. EU countries with national CE policies (Source: ETC/WMGE, 2019, Eionet, European Environment Agency)

  Azerbaijan is fully committed to the UN 2030 Agenda for Sustainable Development. To this end, we have launched a new development strategy up to 2030; this strategy, in turn, is aligned with the 2030 Agenda. Over the past year, Azerbaijan has made further progress in achieving the Sustainable Development Goals and has been ranked among the top 50 countries in the UN Sustainable Development Report 2022. Azerbaijan is among the 12 countries that submitted three Voluntary National Reviews at the High-Level Political Forum held under the auspices of ECOSOC. A clean environment and green development have been identified as one of the five priority areas of our new national development strategy. Despite the important role of the oil and gas sector in our economy, this transition is high on our development agenda. In this regard, Azerbaijan's non-oil sector grew by 11 percent in the first half of 2022, contributing to a 7.2 percent GDP growth.

Currently, Azerbaijan is one of the few countries that, in addition to being a reliable exporter of hydrocarbons to international markets, is gradually including sustainable energy in its development agenda. In this regard, we will raise our profile, including by introducing new elements of alternative and renewable energy. The recently signed Memorandum on a Strategic Partnership in the field of energy between the EU and Azerbaijan is a good example of Azerbaijan's constructive contribution to global energy security. Sustainability has also become a key direction in post-conflict reconstruction and rehabilitation activities in the liberated territories. New cities and villages are now being built from scratch, applying modern urban planning methods, the concepts of "smart city" and "smart village". After the war, $ 3 billion has already been allocated from the state budget for these purposes, and Azerbaijan is interested in investing more in the future. The liberated territory has been declared a "green energy zone". Located at the intersection of North-South and East-West transport corridors, Azerbaijan is a rising transit country. The corridors and routes passing through Azerbaijan offer competitive advantages for transport operators and businesses in terms of high-level infrastructure and fast, safe transit traffic.

3. THEORIES OF CONSUMER BEHAVIOR

The circular economy cannot be implemented with technologies and laws alone. If the consumer does not change, the system does not change. This is why the transformation of consumer behavior and the rise of social awareness are considered one of the main driving forces of the circular economy. Behavioral patterns such as sustainable consumption, reuse, extending the life of 143 products, and proper waste sorting determine the effectiveness of this system. In recent years, serious changes have been observed in the shopping habits of consumers around the world. According to the 2022 Global Sustainability Report of GfK ("Growth from Knowledge"), a leading research company specializing in international market research and consumer behavior based in Germany, 73% of respondents said that they take into account the environmental impact of a product when choosing it. This indicator has increased by 15 percent compared to 2017 (GfK, 2022). People now pay attention not only to price and quality, but also to the "green value" of the product. One interesting example is the "reparability index" in France, which indicates the level of repairability of products. This indicator is placed on the product label and influences consumer decision-making. As a result of this approach, Apple and Samsung have been forced to present the repairability indicators of their products on the French market, which directly affects consumer choices (OECD, 2022). At the same time, concepts such as "anti-fast fashion" and "minimalist lifestyle" are gaining popularity among the younger generation of consumers. A 2023 Deloitte study shows that Generation Z and Millennials now prefer second-hand and recycled products when shopping (Deloitte, 2023). These modifications are not merely individual preferences but also a means of market pressure - producers are obliged to shift their production of goods towards the more sustainable ones. Moreover, social awareness is being raised through public campaigns and initiatives. Global movements like #ZeroWaste, #PlasticFreeJuly, and #RightToRepair spur the shift of mindsets by making consumers more responsible environmentally. With such campaigns, the community turns into an even more vocal participant in the environmental battle, not just a buyer but also a driver of change. Among others, research has proved that the process of social norm and collective consciousness formation is a major factor that speeds up the transition to a circular economy. According to Wiederhold and Martinez (2018), the factors of social influence – mainly social media and the lifestyle of celebrities – make it easier for the shift from the traditional way of living to eco-friendly lifestyles to happen. Therefore, the increase of society's social awareness and the shifting of consumer behavior lead to the ascendance of the circular

economy and eco-innovations as a cultural movement rather than a technological and legal one. The consumer makes the market 145 – and the market alters the system.

The notion of consumer behavior is not a simple one; rather, it represents a dynamic and multifaceted direction of research that has been created on the basis of interactions between various scientific disciplines such as economics, marketing, psychology and sociology. Essentially, consumer behavior is described as the series of decisions and actions which include the selection, the trial, the assessment and the post-use attitudes of individuals towards a product or service. The initial stage of the concept was grounded upon the principles of rational choice and utility maximization, but as time went by, it became evident that consumer behavior cannot be reduced to just economic factors. Nowadays, approaches recognize consumer behavior as a continuous process determined by the simultaneous influence of psychological, social, cultural and institutional factors. The traditional economic view of the consumer is that of a "rational actor". This is so because the reasoning behind this view is that every individual is going to choose the alternative with the maximum utility by calculating costs and benefits among the available options. Nevertheless, through empirical research, it has been discovered that the actual consumer behavior is often not in line with this rational model. Emotions, habits, social pressures, lack of information, and uncertainty, among others, are factors that heavily influence consumer choices. Consequently, scholars from various fields have proposed more complicated and interdisciplinary theoretical frameworks to understand consumer behavior. Psychological approaches analyze consumer behavior through the prism of an individual's internal motivations, needs, values, and attitudes. Classical models such as Maslow's hierarchy of needs emphasize that consumption is not only about satisfying material needs, but also about social acceptance, self-expression, and spiritual satisfaction. According to this approach, consumer behavior is closely related to the personality traits and psychological state of the individual. In particular, the attitudes and values that individuals form towards the environment play an important role in explaining environmentally-oriented consumer behavior. Sociological approaches, on the other hand, explain consumer behavior within a social context rather than at the individual level. According to this approach, individuals' decisions are shaped by family members, circle of friends, social groups, and the general norms and values of society. The concept of social norms is of particular importance in guiding consumer behavior. People often try to adapt their behavior to the expectations of others, and this directly affects their consumption choices. For example, in societies where environmental

responsibility is accepted as a social norm, individuals are more inclined to sustainable and environmentally friendly behavior. Behavioral economics has been a major turning point in the development of consumer behavior theories. It criticizes the rational actor assumption of classical economics and emphasizes the role of cognitive constraints and psychological biases in decision-making. Behavioral economics shows that people often prioritize short-term benefits, underestimate risks, and make decisions based on habits. These characteristics are particularly important in the context of the circular economy, as environmental behavior is often related to long-term collective well-being rather than short-term individual benefits. Contemporary theories on consumers' behavior have similarly defined the decision-making process as a stepping-stone one. This process unfolds through the need recognition stage, the information search stage, the evaluation of alternatives stage, the purchase decision stage, and the post-purchase behavior stage. Environmentally conscious consumer behavior, however, may face numerous challenges throughout the entire process. For instance, absence of information or lack of clarity may hinder proper evaluation of environmental advantages, on the other hand, existing habits and comfort factors may create barriers for selecting greener options.

4. THEORETICAL APPROACHES TO ATTITUDE DETERMINANTS

4.1. Theory of Planned Behavior (TPB)

Consumer behavior is a complex field that studies how individuals, groups, and organizations make decisions to select, purchase, use, and dispose of goods, services, ideas, or experiences to satisfy their needs and wants. Understanding consumer behavior requires examining its historical and theoretical foundations, which span a number of disciplines, including psychology, sociology, economics, and marketing. The Theory of Planned Behavior (TPB) is considered one of the most widely used social-psychological models in explaining consumer behavior. This theory was introduced by Icek Ajzen as an advanced form of the Theory of Reasoned Action and aims to explain the mechanism of formation of individuals' behavioral intentions in a more comprehensive way. TPB is especially widely used in the study of environmental and sustainable consumer behavior, since these behaviors often depend on social and structural factors in addition to individual intentions.

According to the main assumption of TPB, human behavior is directly determined by behavioral intention. Behavioral intention is formed as a result of the interaction of three main determinants: attitude toward the behavior, subjective norms, and perceived behavioral control (Ajzen, 1991). Together, these three components explain the extent to which an individual is willing to perform a certain behavior. Attitude toward the behavior reflects how an individual evaluates the consequences of a specific behavior. If an individual believes that a certain behavior will produce positive consequences, his or her intention to perform that behavior is stronger (Ajzen, 2002). In the context of a circular economy, this is associated, for example, with the belief that separate collection of waste will contribute to environmental protection, efficient use of resources, and long-term social well-being. Studies have shown that positive attitudes toward environmental behaviors play an important role in consumers' orientation towards sustainable consumption choices (Chen & Tung, 2014).

Subjective norms represent an individual's perception of the attitudes of important social groups around them—family members, friends, colleagues, and society—to a particular behavior. People often try to adapt their behavior to environmental expectations in order to avoid social acceptance and negative reactions (Ajzen, 1991). When environmental behaviors rise to the level of social

norms, individuals are significantly more likely to perform these behaviors. Several empirical studies have confirmed that subjective norms have a strong influence on consumer behavior, especially in collectivistic cultures (Bamberg & Möser, 2007). Perceived behavioral control reflects an individual's subjective assessment of whether they have sufficient resources, skills, and opportunities to perform a particular behavior. This component is a key distinguishing feature of the TPB from previous models and plays an important role in the actual realization of behavior (Ajzen, 1991). Perceived behavioral control encompasses both internal factors (self-confidence, knowledge and skills) and external factors (infrastructure, economic opportunities, institutional support). In the context of a circular economy, the availability of recycling systems, access to repair services and the availability of sustainable products in the market directly shape consumers' perceived level of control (Yuriev et al., 2020).

One of the important advantages of TPB is its ability to explain the discrepancy between behavioral intention and actual behavior. The "intention–behavior gap", which is often found in the scientific literature, is often associated with a weakness in perceived behavioral control (Sheeran, 2002). For example, although a consumer wants to demonstrate environmental behavior, the lack of appropriate conditions and opportunities may prevent this intention from being translated into actual behavior. This approach is particularly useful in explaining why consumer behavior in the circular economy does not develop at the expected level. The Theory of Planned Behavior is widely used in empirical research on the circular economy and provides a suitable theoretical framework for structural equation modeling (SEM). By modeling the components of TPB as latent variables, the effects of consumer attitudes, social influences, and perceived control factors on behavioral intention and actual behavior can be measured (Hair et al., 2019). This approach allows for an empirical analysis of the multidimensional and complex nature of consumer behavior.

The application of TPB is particularly relevant in the Azerbaijani context. On the one hand, while environmental awareness and positive attitudes are increasing, on the other hand, circular behavior remains limited at the practical level. This situation can be explained by the weakness of subjective norms and the low level of perceived behavioral control within the TPB framework. The insufficient normalization of environmental behavior in the social environment and the incomplete formation of the relevant infrastructure make it difficult for consumer intentions to be transformed

into real behavior. The Theory of Planned Behavior provides a powerful and flexible theoretical framework for explaining consumer behavior in the context of a circular economy. This model comprehensively explains the mechanism of behavior formation by combining individual attitudes, social influences, and structural opportunities. However, TPB does not fully reflect the deep values and long-term motivations of individuals, as it mainly focuses on behavioral intention. This limitation is complemented by the Value–Attitude–Behavior model, which will be analyzed in the next section.

4.2. Value-Attitude-Behavior Model (VAB)

The VAB (Value-Attitude-Behavior) model is one of, if not the most important theoretical approaches dealing explicitly with the deeply rooted by--psychological determinants of consumer behavior. It points out that consumer behavior is determined not just by the situation, and rational decision making but also by an individual's basic values and long-term beliefs. VAB model is very much applicable in the area of unsustainable and environmentally friendly purchasing behavior, explaining human actions by relating them to long-lasting societal and environment goals instead of short-term personal benefits (Homer & Kahle, 1988). VAB theorists assume core values (values) of individuals shape their attitudes, and those attitudes, in turn, dictate behaviors. The model has a pyramid-like structure and posits that one has to penetrate through to the deepest level of motivation to grasp behavior. This way of looking at things lets one go beyond the particular situations and explain the consumer behavior in terms of the bigger social and cultural context. Values are fundamental beliefs that reflect the desired goals and principles in an individual's life. These values are usually stable and do not change in the short term. In the environmental context, values such as universalism, responsibility, concern for future generations, and respect for nature play a key role in shaping environmental behaviors (Schwartz, 1994). In terms of the circular economy, consumers with such values are more sensitive to the waste of resources and are more open to sustainable consumption patterns. The VAB model postulates that values are not the only factor influencing behavior; the strongest determinant is the individual's attitude towards that behavior. Attitude can be understood as the way a person rates a given behavior and the degree to which that behavior is in line with his or her values (Homer & Kahle, 1988). As an instance, a customer who gives high significance to environmental conservation will develop a very

considerate attitude towards waste recycling and product restoration. That positive attitude will in turn boost the probability of the behavior being acted upon in the last step. One of the benefits that the VAB model has in unraveling the complexity of environmental behaviors is that it takes us to the very root of the the behavior's motivation. TPB and similar models put more emphasis on future acts while the VAB model asserts the values that play the role of the facilitators of the intentions' formation. It is indeed the case that the VAB model can account for consumers' occasional choice of the less economically profitable yet more eco-friendly option (Kollmuss & Agyeman, 2002). In the sphere of the circular economy, the VAB model is vital since the circular behaviors usually call for the altering of habits and consumer culture transformation. The practices of using, repairing, and sharing goods for a long time get to the point of not only being backed up by organizational facilities but also by the person's values changing. The VAB model makes it easy to use the theoretical framework for explaining these changes in behavior that take long period. Scientific research shows that environmental values significantly influence consumers' attitudes and purchase intentions towards sustainable products (de Groot & Steg, 2008). However, high levels of value do not always translate into behavior. This is considered a limitation of the VAB model and is often explained by structural and social barriers. For this reason, the VAB model is often used in conjunction with other theoretical approaches such as TPB.

In the Azerbaijani context, the application of the VAB model is particularly useful in terms of understanding the cultural and value-oriented characteristics of consumer behavior. Traditional values, the concept of social responsibility, and collective thinking can play an important role in shaping environmental attitudes. However, in conditions where economic priorities prevail, the transformation of environmental values into behavior requires additional incentives and institutional support.

5. EMPIRICAL RESEARCH DESIGN AND STRUCTURAL EQUATION MODELLING APPROACH TO CIRCULAR ECONOMY ADOPTION IN AZERBAIJAN

5.1. Research Model and Hypotheses

With the use of a questionnaire designed within a quantitative research context, this study examines the opinions of individuals aged 25 and older. Surveys were distributed to participants based on a random sampling method. The collected data were analyzed using SPSS and AMOS. As part of structural equation modeling, goodness of fit was evaluated for the model. To investigate the relationship between the variables, the structural equation model was used to calculate covariance, correlation, and regression coefficients. Circular Economy Practices (CEI), Employee Decisions - Readiness for Change (ED), and Circular Economy Orientation (CE) were examined in the literature to construct the study's research model.
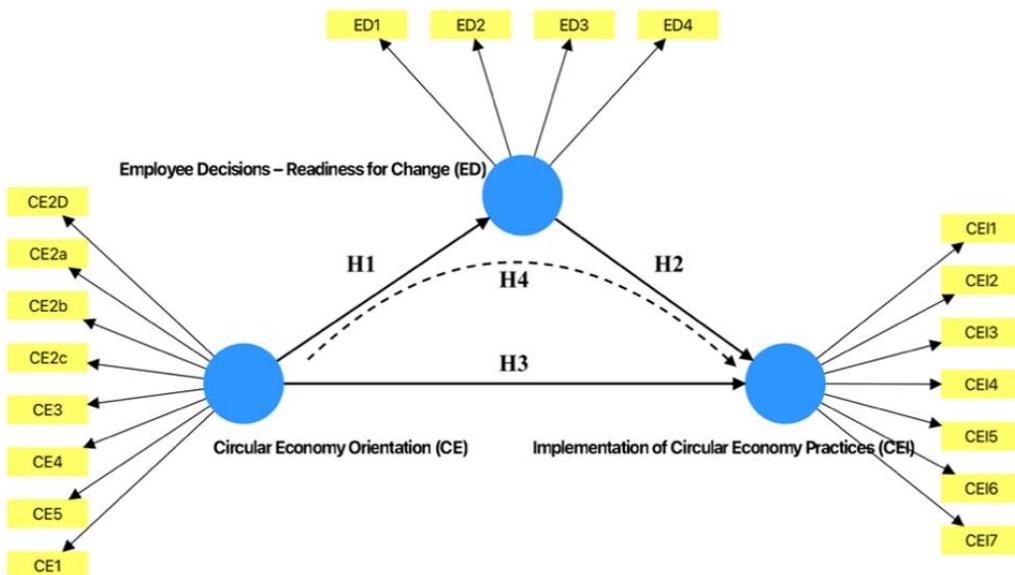
Figure 3. Research Model

Hypotheses

H1: CE (Circular Economy) orientation has positive impact on Employee Readiness for Circular Change (ED):

As the enterprise's circular economy orientation improves, employees become more inclined to change their work procedures to be more circular.

H2: Employee Readiness for Circular Change (ED) has positive impact on Circular Economy Implementation (CEI*)***:**

Employees who are willing to change their working processes for more circularities are likely to be more successful at implementing circular economy practices.

H3: Circular Economy Orientation (CE) has positive impact on Circular Economy Implementation (CEI*)***:**

Implementing circular economy practices is positively influenced by enterprise orientation towards circular economies.

H4: Employee readiness for circular change (ED) plays a vital role in mediating CE on CEI:

Circular economy orientation and implementation are related to employees' readiness to change their work procedures to promote greater circularity.

5.2. Population and Sample
Universe-Sample

The study sample comprises 257 individuals. Random sampling method was preferred in sample selection. This method refers to an approach in which every single individual in the universe has an equal probability of being included in the sample. Structural Equation Modeling (SEM), a multivariate statistical technique, enables the testing and prediction of causal relationships in line with observed data and theory-based hypotheses. The main advantages of this method include the ability to evaluate direct effects simultaneously, calculate indirect and total effects, incorporate multiple dependent variables into the model, and analyze measurement errors. However, the method has some limitations. These include recommending a sample size of at least 200 people to increase the validity and reliability of the model, although it can work with smaller samples (Jackson, 2003: 138).

5.3 Data Collection Tools

5.3.1 Circular Economy Orientation (CE) Scale

This scale has been developed to measure the degree to which businesses adopt circular economy principles. Scale: It includes multidimensional structures such as environmental awareness, sustainable design, waste minimization, supply chain sustainability, and environmental risk management. CE1–CE5 coded substances evaluate the extent to which companies take circular economy practices into account in the context of product design, production processes, and supply chain management.

5.3.2 Employee Decisions – Readiness for Change (ED) Scale

This scale measures the level of employees' willingness to participate in and adapt to circular economy practices. ED1–ED4 coded substances; It includes participation in reuse and recycling designs, attitudes towards supporting the recycling of waste products, increasing the use of renewable materials, and reducing environmental impacts. The scale aims to reveal the ecological sensitivity and openness of employees to change at the individual level.

5.3.3 Circular Economy Implementation (CEI) Scale

The CEI scale assesses the extent to which businesses actually implement circular economy strategies. CEI1–CEI7 coded substances; It covers indicators such as reducing environmental and social costs, increasing legitimacy in the eyes of stakeholders, cost savings, product/service diversity, economic performance, innovation level, and reduction of non-compliance costs. The scale reveals the extent to which companies translate their understanding of the circular economy into action.

5.4 Analysis of Data

SPSS is a statistical analysis software developed by IBM that is widely preferred by scientists and academics around the world. In this program, users can perform parametric and non-parametric analyses using univariate, bivariate, and multivariate models. For advanced structural

modeling, AMOS software was used, while SPSS for Mac version 25.0 was used to analyze the results.

It is commonly used to test theoretical models using the Maximum Likelihood (ML) method as part of Structural Equation Modeling (SEM) (Hair et al., 2014). An ML model parameter can be predicted by maximizing the likelihood function of a multivariate normal distribution. To assess variable item validity, SPSS provides detailed data analysis output during Exploratory Factor Analysis (EFA). As part of AFA, Principal Component Analysis (PCA), Major Axis Factorization, and Maximum Likelihood techniques were used. 5% significance and 95% confidence intervals were used for each analysis.

6. FINDINGS AND INTERPRETATION

The demographic details of the study participants are shown in Table 1. The age distribution reveals that the largest group is 25 to 35 years old, at 41.2%. This is followed by those aged 36–45 at 18.3%, 46–55 at 7.8%, and 56 and older at 2.7%. Regarding gender, men make up 58.8% of the participants, while women represent 41.2%. In terms of education level, 40.9% have a bachelor's degree, 30.4% hold a master's degree, 10.9% have a doctorate or higher, 10.1% have a high school diploma, and 7.8% possess an associate's degree.

Table 2. Demographic Characteristics

Age	n	%
25-35	106	41.2%
36-45	47	18.3%
46-55	20	7.8%
56 and over	7	2.7%
Gender		
Female	106	41.2%
Male	151	58.8%
Education		
Associate Degree	20	7.8%
Bachelor's Degree	105	40.9%
High School	26	10.1%
Master's Degree	78	30.4%
PhD or higher	28	10.9%
Sector		

NGO	16	6.2%
Other	28	10.9%
Private	138	53.7%
Public	75	29.2%
Years of Experiences		
1-5	177	68.9%
6-10	63	24.5%
11-15	11	4.3%
16 and above	6	2.3%

In the sectoral distribution, private sector employees constitute the majority, at 53.7%, followed by the public sector at 29.2%, other sectors at 10.9%, and non-governmental organizations (NGOs) at 6.2%. Upon examining the professional experience of the participants, it is evident that the vast majority (68.9%) have 1-5 years of experience, 24.5% have 6-10 years, and 4.3% have 11-15 years of experience. Only 2.3% have 16 years or more of experience.

6.1 Preliminary Analyses

In this study, a sample of n = 257 people was included in the analysis. Before starting the data analysis, pre-processing was conducted, and the raw scores were converted into z-scores. Outlier control was performed within the framework of 1.98 standard deviation limit values (Tabachnick & Fidell, 2007). Since survey studies may contain some data errors or inconsistencies due to their nature (Bentler & Chou, 1987), Structural Equation Modeling (SEM) stands out as a resistant method against normality assumption violations (Tabachnick & Fidell, 2007).

Within the scope of SEM, structures consisting of scale materials were brought together by the parceling method. Parceling enables the evaluation of averages of the scale items together, thereby reducing the disproportionate impact of a single item on the model and contributing to bringing

the data closer to a normal distribution. In this study, based on the **Circular Economy Orientation (CE), Employee Decisions – Readiness for Change (ED), and Implementation of Circular Economy Practices (CEI) scales**, parcels were created from randomly selected items in accordance with the item distribution statistics for each scale.

In line with the model developed by the researcher, these plots were included in the analysis using a random assignment method, which was supported by previous studies in the literature (e.g., Hu, 1999). These structures were then subjected to the Confirmatory Factor Analysis (CFA) process. In the CFA process, the variables were meticulously observed, and necessary arrangements were made until the model fit indices reached the desired level.

6.2 Descriptive Statistics and Reliability Analysis of Scales

This study employed Principal Component Analysis (PCA) in conjunction with reliability analyses for the following three basic scales: Circular Economy Orientation (CE), Employee Decisions - Readiness for Change (ED), and Implementation of Circular Economy Practices (CEI). As well as evaluating Cronbach's alpha coefficient, descriptive statistics were also obtained for each scale.

After analyzing the results, Nunnally (1978) determined that a reliability level $\alpha=.70$ is an acceptable reliability level. According to this conclusion, the scales used in the study were both psychometrically adequate and reliable measurement tools.

Table 3. Descriptive Statistics and Reliability Coefficient for the Circular Economy Orientation (CE) Scale.

Item Reliability Statistics

	Mean	SD	Item-rest correlation	If item dropped Cronbach's α
CE1	3.59	1.26	0.845	0.968

Item Reliability Statistics

	Mean	SD	Item-rest correlation	If item dropped
				Cronbach's α
CE2a	3.71	1.26	0.893	0.965
CE2b	3.69	1.21	0.897	0.965
CE2c	3.65	1.22	0.901	0.965
CE2d	3.66	1.24	0.861	0.967
CE3	3.71	1.20	0.880	0.966
CE4	3.68	1.21	0.880	0.966
CE5	3.68	1.26	0.890	0.966

Scale Reliability Statistics

	Mean	SD	Cronbach's α
(CE) Scale	3.67	1.12	0.970

Table 2 shows that Cronbach's alpha coefficient for the scale consisting of 8 items was approximately 0.970. A high value indicates the scale has high internal consistency. Further, item-to-total correlation coefficients ranged from 0.845 to 0.901. According to these results, the reliability of the scale is acceptable, and items are consistently related to the structures they measure.

Table 4. Descriptive Statistics and Reliability Coefficient for the Employee Decisions – Readiness for Change (ED) Scale

Item Reliability Statistics

	Mean	SD	Item-rest correlation	If item dropped Cronbach's α
ED1	3.82	1.11	0.831	0.870
ED2	3.88	1.09	0.788	0.884
ED3	3.71	1.20	0.761	0.896
ED4	3.90	1.13	0.801	0.880

Scale Reliability Statistics

	Mean	SD	Cronbach's α
(ED) scale	3.83	1.00	0.909

Table 3 provides Cronbach's alpha coefficient for the scale based on reliability analysis of the four items in the scale. With an alpha value of .909, this scale exhibits a relatively high degree of internal consistency. There were 0.761 to 0.831 item-to-total correlation coefficients on the scale. Based on these findings, the scale is generally dependable, and its items contribute sufficiently to represent the measured structure.

Table 5. Descriptive Statistics and Reliability Coefficient for the Implementation of Circular Economy Practices (CEI) Scale

Item Reliability Statistics

	Mean	SD	Item-rest correlation	If item dropped Cronbach's α
CEI1	3.75	1.14	0.850	0.947
CEI2	3.68	1.18	0.851	0.947
CEI3	3.70	1.17	0.848	0.947
CEI4	3.74	1.18	0.816	0.950
CEI5	3.86	1.12	0.868	0.946
CEI6	3.85	1.17	0.849	0.947
CEI7	3.75	1.22	0.830	0.949

Scale Reliability Statistics

	Mean	SD	Cronbach's α
(CEI) Scale	3.76	1.04	0.955

According to Table 4, Cronbach's alpha coefficient measures the reliability of the scale = 0.955. Seven items make up the scale. As a result of this value, the scale has a relatively high level of internal consistency. The item-total correlation coefficients of the scale items ranged from 0.816 to 0.868. These results indicate that the reliability of the scale is high and that the items consistently represent the structure they are intended to measure.

6.3 Correlation Analysis

In Table 5, we present the results of the correlation analysis between variables. In the study, employees' levels of Circular Economy Orientation (CE) and Employee Decisions - Readiness for Change (ED) were moderately positively related ($r = .564$, $p < .001$). As a result of this study, circular economy-oriented practices significantly increased employees' readiness for circular change. There was also a significant correlation between CE and Circular Economy Practices (CEI) ($r = .859$, p .001). According to this finding, the orientation of institutions towards circular economy principles influences their practices in this field.

Table 6. Correlation Analysis Results

Correlation Matrix

		CE Total	ED Total	CEI Total
CE Total	Pearson's r	—		
	df	—		
	p-value	—		
ED Total	Pearson's r	0.564	—	
	df	254	—	

Correlation Matrix

		CE Total	ED Total	CEI Total
	p-value	<.001	—	
CEI Total	Pearson's r	0.859	0.612	—
	df	254	255	—
	p-value	<.001	<.001	—

Further, ED and CEI had a significant and intense relationship (r = .612, p < .001). In terms of institutional adoption of circular economy practices, employee readiness is an important determinant. Generally, the results support the hypotheses presented in the study, and the variables are strongly correlated. CEI and CEI exhibit a high correlation, emphasizing the direct effects of organizational orientation in practices.
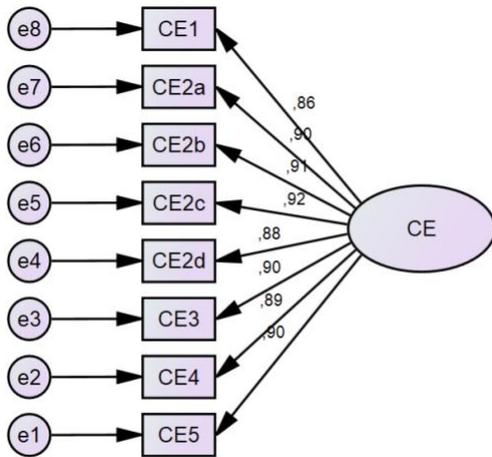
6.4 Confirmatory Factor Analysis (CFA)

Factor analysis can be used to examine the relationship between multiple observed variables and the underlying structures, or factors, which influence those variables. This analysis aims to determine a smaller number of fundamental structures (factors) that can explain the common variance among the observed variables by examining the correlation or covariance model. This method simplifies the original dataset and leads to a more straightforward structure (Reymont & Jöreskog, 1993).

Confirmatory Factor Analysis (CFA) is one of the two basic types of factor analysis; the other method is known as Exploratory Factor Analysis (EFA). CFA is a type of analysis based on a theoretical basis and aims to evaluate the extent to which a predetermined factor structure overlaps with the collected data set. In other words, CFA tests whether the factors assumed in line with a particular theory explain the variance in the observed variables. In this context, Gorsuch (1981)

stated that CFA is theoretically more meaningful and offers a powerful analysis technique for hypothesis testing.

In this study, Confirmatory Factor Analysis was conducted in line with the parcels created within the scope of the proposed theoretical model. The compatibility levels of the scales in the model were evaluated using predetermined goodness-of-fit indices. The most basic criterion among these indices is the Chi-square (χ^2) statistic. The difference between the realized covariance matrix and the expected covariance matrix shows the extent to which the model adapts to the data. Theoretically, a value of χ^2 close to zero indicates perfect harmony. However, in practice, the χ^2/sd ratio is taken into account, and the range of $0 \leq \chi^2/sd \leq 2$ indicates a good fit, and the range of $0 \leq \chi^2/sd \leq 5$ indicates an acceptable fit.

There are also the normalized fit index and comparative fit index that are used in CFA (Jöreskog & Sörbom, 1982; Hu & Bentler, 1999). A satisfactory fit was determined between the proposed theoretical model and the scales examined by the CFA.

CMIN=95,303; DF=20; CMIN/DF=4,765; NFI=,963; CFI=,970; TLI=,946

Figure 4. Circular Economy Orientation (CE) Scale Confirmatory Factor Analysis

Table 7. Circular Economy Orientation (CE) Scale DFA Fit Indices Values

CFI	TLI	IFI	NFI	($\chi 2$/Sd)	p
0.97	0.95	0.96	0.96	4,765	<0.001

Source: Hair et al., 2014.

As a result of the confirmatory factor analysis, the fit indices of the model were examined. The findings reveal that the model exhibits excellent agreement, with χ^2/df = 4.76, CFI = 0.97, TLI = 0.95, IFI = 0.96, and NFI = 0.96 values.
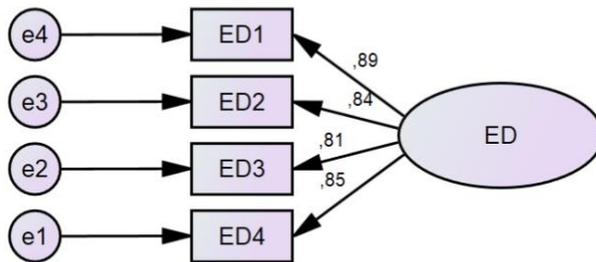
CMIN=2,216; DF=2; CMIN/DF=1,108; NFI=,997; CFI=1,000; TLI=,999;IFI=1,000

Figure 5. Employee Decisions – Readiness for Change (ED) Scale Confirmatory Factor Analysis

Table 8. Employee Decisions – Readiness for Change (ED) Scale DFA Fit Indices Values

CFI	TLI	IFI	NFI	($\chi 2$/Sd)	p
1.00	0.99	1.00	0.99	1,10	<0.001

Source: Hair et al., 2014.

As a result of the confirmatory factor analysis, the fit indices of the model were examined. The findings reveal that the model shows excellent agreement, with $\chi^2/df = 1.10$, CFI = 1.00, TLI = 0.99, IFI = 1.00, and NFI = 0.99 values.
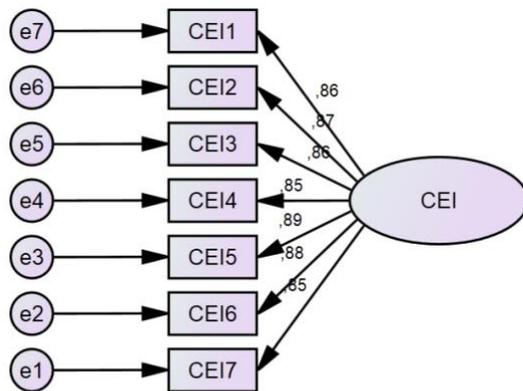
CMIN=62,202; DF=13; CMIN/DF=4,785; NFI=,965; CFI=,972; TLI=,955;IFI=,972

Figure 6. Implementation of Circular Economy Practices (CEI) scales Confirmatory Factor Analysis

Table 9. Implementation of Circular Economy Practices (CEI) Scale DFA Fit Indices Values

CFI	TLI	IFI	NFI	$(\chi2/Sd)$	p
.97	0.95	.97	0.96	4,78	<0.001

Source: Hair et al., 2014.

Following the confirmatory factor analysis, the model's fit indices were evaluated. The results indicate a strong fit, with values of $\chi^2/df = 4.78$, CFI = .97, TLI = .95, IFI = .97, and NFI = .96.
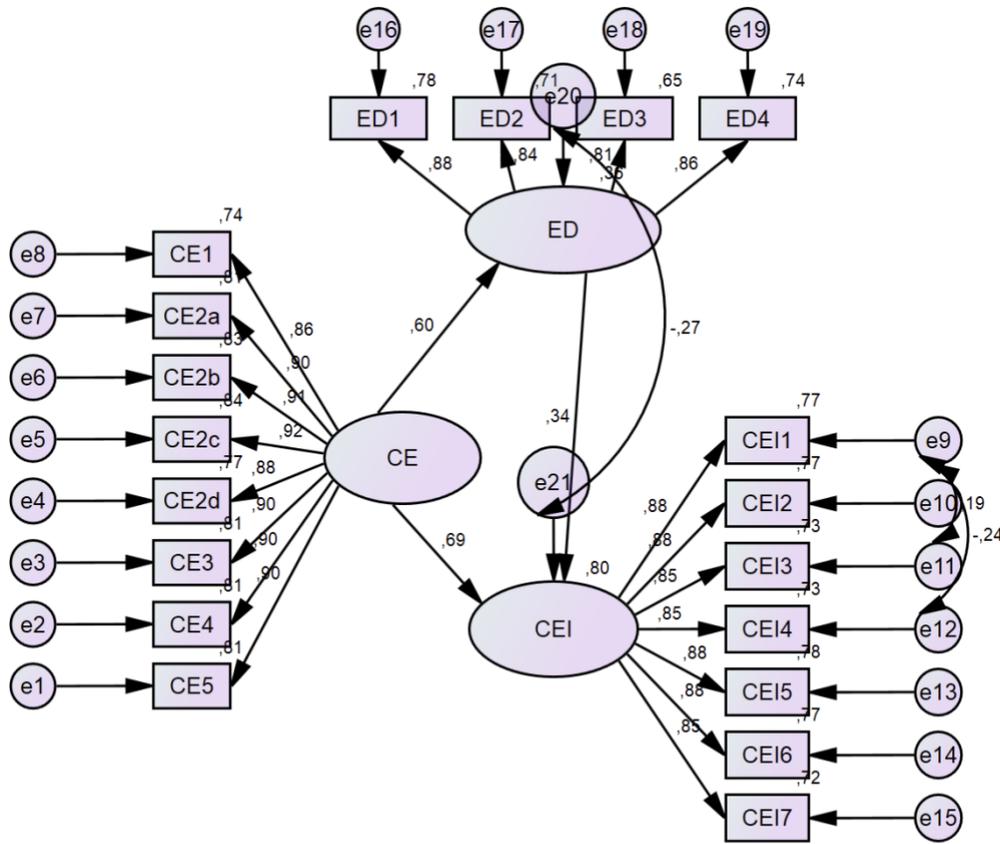
CMIN=420,886; DF=147; CMIN/DF=2,863; NFI=,927; CFI=,951; TLI=,936;IFI=,951

Figure 7. Structural Equation Model for Circular Economy Orientation, Employee Readiness for Change, and Circular Economy Implementation

Note. CE = Circular Economy Orientation; ED = Employee Decisions (Employee readiness for circular change); CEI = Circular Economy Implementation. Standardized path coefficients are reported. Model fit indices: χ^2 (147) = 420.89, p < .001; χ^2/df = 2.86; CFI = .951; TLI = .936; IFI = .951; NFI = .927.

As can be seen in Figure 5, the relationships between Circular Economy Orientation (CE) and Employees' Readiness for Change (ED) and Circular Economy Practices (CEI) were assessed within the framework of the structural equation model. The results of the analysis reveal that CE has a substantial effect on ED (β = .60, p <.001), while ED has a considerable positive impact on CEI (β = .34, p <.001). Furthermore, the direct effect of CE on CEI was high (β = .69, p <.001). In addition, the indirect impact of CE on CEI was found to be significant through ED and strengthened the total effect (β = .89, p <.001).

These findings suggest that the level of readiness among employees for change partially mediates the transformation of an institution's circular economy orientation into actual practices. When the fit indices were examined, it was understood that the model fit well with the data (χ^2/df = 2.86; CFI = .951; TLI = .936; IFI = .951; NFI = .927).

Table 10. Regression Weights and Hypothesis Tests for the Structural Model (N = 257)

Dependent Variable	Path	Independent Variable	Standardized Beta (β)	Unstandardized Estimate	Std. Error	t (C.R.)	Hypothesis	p
ED	←	CE	.563	.253	.023	10.910	H1: Accepted	< .001
CEI	←	ED	.188	.340	.067	5.099	H2: Accepted	< .001

Dependent Variable	Path	Independent Variable	Standardized Beta (β)	Unstandardized Estimate	Std. Error	t (C.R.)	Hypothesis	p
CEI	←	CE_	.753	.609	.030	20.385	H3: Accepted	< .001
CEI	←	CE (via ED)	.106 (indirect)	.086 (indirect)	—	—	H4: Accepted	< .001
CEI	←	CE (total)	.859	.695	—	—	—	< .001

The results of the analysis largely supported the hypotheses. First, within the scope of **H1**, circular economy orientation (CE) was found to have a significant and positive effect on employees' level of readiness for change (ED) (β = .563, p < .001). According to this study, organizations' focus on the circular economy encourages employees to adopt new methods of working.

A significant and positive correlation was found between employees' readiness for change levels and circular economy practices (CEI) (β = .188, p < .001). Based on these results, the H2 hypothesis was supported in the research model. Employers' readiness and willingness to change significantly contribute to the implementation of circular practices in enterprises.

CE correlated directly with CEI. The H3 hypothesis was accepted in the models (β = .753, p< .001). In light of this result, enterprises' circular economy strategies are strongly reflected in their practices, regardless of employees' readiness.

Within the research model, Hypothesis H4, which suggests that ED mediates the relationship between CE and CEI, was accepted. ED partially mediates this relationship, with a significant indirect effect (β = .106, p < .001).

6.5. Analysis Results

The three variables **Circular Economy Orientation (CE), Employee Decisions – Readiness for Change (ED),** and **Implementation of Circular Economy Practices (CEI)** were analyzed based on employee opinions within a structural equation model. SEM testing supported the hypotheses predicted by the research model. Employees' attitudes towards the circular economy positively influence their readiness for change (β = .563, p <.001). This leads to high acceptance of innovative processes and sustainable practices, especially in businesses focusing on the circular economy.

The readiness level of employees for change greatly influences circular economy practices (β = .188, p < .001). This indicates that employee motivation and willingness to adapt are crucial for corporate transformation. A strong relationship was observed between circular economy orientation and practices (β = .753, p < .001). Corporate strategic orientations have a significant impact on sustainable practices in enterprises, regardless of employee readiness.

Mediation analysis showed employee readiness partially mediates the relationship between CE and CEI. The significant indirect effect (β = .106, p < .001) indicates employees actively influence the success of transformation, not just passively involved. The success of circular economy practices depends not only on corporate orientation but also on employees' willingness to adapt to change. Employee participation is crucial when planning strategies for implementing effective sustainability policies.

7. DISCUSSION

The fundamental aim of the empirical study which took place as part of this dissertation was to analyze the employees' change readiness (ED) specifically on its mediation effect in the interaction between circular economy orientation (CE) and actual circular economy implementation (CEI) relationship. The findings obtained indicate that the successful execution of the circular economy at the enterprise level is not confined to strategic and technological capacities; rather the human factor – employee's values, and behavior or and acceptance of change – is central to the whole process. The outcome of the structural equation modeling (SEM) pointed out that circular economy orientation has a distinctly strong and positive effect on the readiness of the employees to change with a high level of significance (β = .563, p < .001). This indicates that environmental quality, sustainability goals, and resource-efficient policies which are set at the organizational level have a considerable impact on the employees' willingness to accept the change and their intended behavior at the individual level. Conversely, the direct effect of the employees' readiness to change on the circular economy implementation was also statistically significant (β = .188, p < .001). This finding indicates that the circular economy is not merely a consequence of the decisions made by the top management but also the influence of the active participation of the employees in daily operations. One of the most important findings of the study is that employees' readiness to change plays a partial mediating role in the relationship between circular economy orientation and its implementation (β = .106, p < .001). This result shows that although the strategic orientation of enterprises towards the circular economy directly affects the level of implementation, a significant part of this effect is realized through the psychological and behavioral readiness of employees.

This finding is of great theoretical importance, because the circular economy literature has long focused on macro-level factors – government policies, regulatory frameworks, technological innovations and market mechanisms. This study, however, highlights micro-level behavioral determinants and explains in more depth the socio-psychological foundation of the circular economy. The results show that circular economy strategies developed without taking into account human resources and organizational behavioral factors may not produce the desired results in practice.

7.1. Comparison of Findings with Literature

The results obtained are mostly in accordance with the previous research conducted on an international scale. For instance, Kirchherr, Reike and Hekkert (2017) mention that cultural and behavioral factors are among the main challenges to the circular economy. They argue that resistance to change within the organization is one of the key reasons that hinder the implementation of circular models the most. The output of this thesis strongly backs up this viewpoint and reveals that an unprepared workforce for change just complicates the conversion of the institutional acceptance of the circular economy into concrete outcomes. Simultaneously, the results attained through the lens of Ajzen's (1991) Theory of Planned Behavior (TPB) are also parallel to this research. The TPB posits that an individual's attitude, subjective norms and perceived behavioral control determine behavioral intention. In the present study, the circular economy orientation of a company acts as a potent normative and institutional signal for employees, directing their attitude towards change. The empowerment of employees through their being change-ready plays a pivotal role in facilitating the transit of behavioral intention to action - that is, to the adoption of the circular economy. The results also have significant explanatory power in the context of the VAB (Value-Attitude-Behavior) model. Circular values formed at the enterprise level influence the environmental attitudes of employees, and these attitudes are ultimately reflected in their behavior. This confirms once again that the circular economy is not only a technical and economic, but also a value-oriented transformation.

CONCLUSION AND RECOMMENDATIONS

1. The results of the empirical study show that the economic activity of the vast majority of enterprises operating in Azerbaijan is still based on the traditional linear economic model. Data obtained from 257 respondents participating in the survey-based analysis show that circular economy practices such as waste reduction, resource reuse, ecodesign and recycling are still not systematically applied in enterprises. According to the distribution by sector, 53.7% of respondents operate in the private sector and 29.2% in the public sector; this indicates that the majority of employees are still adapted to linear production and consumption models.

2. Structural equation modeling (SEM) results clearly show the changes in circular economy orientation (CE), employee readiness for change (ED) and circular economy implementation (CEI). SEM analysis shows that the enterprise's circular economy orientation increases employee change ($\beta = 0.563$, $p < 0.001$), which leads to their non-adoption of innovative and sustainable practices. Also, employee readiness for circular change has a negative effect on the deterioration of circular economy practices ($\beta = 0.188$, $p < 0.001$), indicating that this increase in human capital plays a critical role in corporate transformation.

3. According to the results of the mediation analysis, Employee Decisions – Readiness for Change (ED) plays a partial mediating role in the relationship between Circular Economy Orientation (CE) and Circular Economy Implementation (CEI) ($\beta = 0.106$, $p < 0.001$). This result reveals several important scientific and practical points. This finding shows that employees are not just passive participants; on the contrary, they directly influence the success of the transformation by playing an active role in daily operations. In other words, despite the strategic orientation of the enterprise, technological and institutional capabilities, the implementation of the circular economy does not produce effective results without the behavioral and psychological readiness of employees. This result confirms that employees are active subjects who not only follow procedures and rules, but also take initiatives and demonstrate innovative behaviors. Considering the partial mediation coefficient, it indicates the existence of both direct and indirect paths in the successful implementation of the circular economy. The direct path through the CE $\rightarrow$ CEI line

demonstrates the direct reinforcing effect of the enterprise's strategic orientation on the implementation. The indirect path through the CE → ED → CEI line clearly shows how the psychological and behavioral readiness of employees strengthens the implementation process. This proves that employees play a catalytic role in translating strategic intentions into real practical results. The mediation analysis proves that the successful implementation of the circular economy is a complex process. It is not limited only to technology, strategic planning and institutional capabilities, but is also closely related to the psychological and behavioral readiness of employees. The active participation of employees, flexible decision-making and change orientation are partially mediating, but critical elements in the implementation of the circular economy. This clearly shows that enterprises should not only develop a strategy, but also develop human capital and place employees at the center of the process.

4. It can be said that the implementation of circular economy in enterprises in Azerbaijan is still at an early stage, as the environmental awareness, openness to innovation, and willingness to participate in organizational changes of most employees have not yet been fully formed. The SEM results also show that even circular economy policies adopted at the strategic level are not implemented in real operations without active participation and readiness of employees for changes.

These findings hold a lot of significance for developing nations, such as Azerbaijan, which are in the process of changing their economy from one based primarily on natural resources to a more varied one. This research indicates that the country's strategies—such as "Azerbaijan 2030: National Priorities for Socio-Economic Development'—have very little chance of bringing about real change if they stay merely as nice-sounding policies. In order for these strategies to be adopted at the business level and integrated into everyday operations, it is necessary that the staff is psychologically and behaviorally prepared for the change. The survey results give an account of the predominance of the linear economic model in most Azerbaijani firms and the superficiality of environmental initiatives. If the workers do not see the circular economy strategies as intrinsic values, do not comprehend their meaning and advantages, and do not perceive the changes as helping them, the implementation will not scale up. The study findings, therefore, imply that the existing approach to the circular economy in Azerbaijan needs to be re-evaluated and redrafted in a more human-centered way. The results of this study provide important practical

recommendations for both business leaders and policymakers. First, the implementation of the circular economy should not be limited to technical investments and procedural changes. Employee education, training programs, and clear communication of the goals and benefits of the changes should be a top priority. Second, promoting environmental values at the organizational culture level and rewarding proactive behavior are key mechanisms to increase employees' willingness to change. The results show that a workforce that is ready to change acts as a catalyst for the implementation of the circular economy and accelerates the translation of strategic intentions into real results. From a public policy perspective, this study highlights the importance of integrating human capital into circular economy strategies. In addition to regulatory requirements, promoting environmental behavior through education, vocational training, and public awareness programs can yield more sustainable results in the long term. There are a few pathways for research in the future that are worth mentioning. One such example is the use of qualitative methods (in-depth interviews, focus groups) that can be a source of deeper knowledge regarding employees' intrinsic motivations for change. In addition, sectoral comparisons and longitudinal studies can help in understanding the process of circular economy transformation as it unfolds thru time. The overall analysis presented in the discussion section indicates that the successful implementation of the circular economy needs, besides technological and institutional changes, a deep social and behavioral transformation. Quite importantly, the workers' readiness to change is the main aspect of this transformation and it also acts as a link connecting the circular economy orientation and its implementation. This conclusion reinforces the idea that the circular economy is not just an economic model but a process of cultural and social change.

LIST OF REFERENCES

Journal Articles

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211.

Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology*, 32(4), 665–683.

Bamberg, S., & Möser, G. (2007). Twenty years after Hines, Hungerford, and Tomera: A new meta-analysis of psycho-social determinants of pro-environmental behaviour. *Journal of Environmental Psychology*, 27(1), 14–25.

Bentler, P. M., & Chou, C. P. (1987). Practical issues in structural modeling. *Sociological Methods & Research*, 16(1), 78–117.

Chen, M. F., & Tung, P. J. (2014). Developing an extended Theory of Planned Behavior model to predict consumers' intention to visit green hotels. *International Journal of Hospitality Management*, 36, 221–230.

de Groot, J. I. M., & Steg, L. (2008). Value orientations to explain beliefs related to environmentally significant behavior. *Environment and Behavior*, 40(3), 330–354.

Geissdoerfer, M., Savaget, P., Bocken, N. M. P., & Hultink, E. J. (2017). The circular economy – A new sustainability paradigm? *Journal of Cleaner Production*, 143, 757–768.

Ghisellini, P., Cialani, C., & Ulgiati, S. (2016). A review on circular economy. *Journal of Cleaner Production*, 114, 11–32.

Homer, P. M., & Kahle, L. R. (1988). A structural equation test of the value–attitude–behavior hierarchy. *Journal of Personality and Social Psychology*, 54(4), 638–646.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis. *Structural Equation Modeling*, 6(1), 1–55.

Jackson, D. L. (2003). Revisiting sample size and number of parameter estimates. *Structural Equation Modeling*, 10(1), 128–141.

Jöreskog, K. G., & Sörbom, D. (1982). Recent developments in structural equation modeling. *Journal of Marketing Research*, 19(4), 404–416.

Kirchherr, J., Reike, D., & Hekkert, M. (2017). Conceptualizing the circular economy.

Resources, Conservation and Recycling, 127, 221–232.

Kollmuss, A., & Agyeman, J. (2002). Mind the gap: Why do people act environmentally?
Environmental Education Research, 8(3), 239–260.

McDowall, W., et al. (2017). Circular economy policies in China and Europe. *Energy Research
& Social Science*, 31, 85–95.

Schwartz, S. H. (1994). Are there universal aspects in the structure and contents of human
values? *Journal of Social Issues*, 50(4), 19–45.

Sheeran, P. (2002). Intention–behavior relations. *European Review of Social Psychology*, 12(1),
1–36.

Yuriev, A., et al. (2020). Pro-environmental behaviors through the lens of the Theory of Planned
Behavior. *Resources, Conservation and Recycling*, 155, 104660.

Books

Gorsuch, R. L. (1981). *Factor analysis* (2nd ed.). Lawrence Erlbaum Associates.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate data analysis* (7th
ed.). Pearson.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th
ed.). Cengage.

Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). McGraw-Hill.

Reymont, A., & Jöreskog, K. G. (1993). *Applied factor analysis in the natural sciences*.
Cambridge University Press.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Allyn & Bacon.

Reports, Policy Documents, and Official Publications

Circle Economy. (2025-08-10). *The circularity gap report 2023*. (2023).
https://www.circularity-gap.world/2023

Circle Economy. (2025-08-10). *The circularity gap report: Poland*. (n.d.).
https://www.circularity-gap.world/poland

Deloitte. (2025-08-12). *The circularity gap report 2024*. (2024).
https://www.circularity-gap.world/2024

Ellen MacArthur Foundation. (2025-08-05). *Delivering the circular economy: A toolkit for
policymakers*. (2015). https://tinyurl.com/ztd4f2u

Ellen MacArthur Foundation. (2025-08-22). *Universal circular economy policy goals*. (2024).

https://ellenmacarthurfoundation.org

European Commission. (2025-09-10). *Closing the loop: An EU action plan for the circular economy*. (2015).

https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52015DC0614

European Commission. (2025-09-01). *A European strategy for plastics in a circular economy*. (2018).

https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52018DC0028

European Commission. (2025-08-05). *A new Circular Economy Action Plan*. (2020).

https://environment.ec.europa.eu/strategy/circular-economy-action-plan_en

European Commission. (2025-09-11). *A new circular economy action plan for a cleaner and more competitive Europe (COM/2020/98 final)*. (2020).

https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020DC0098

European Environment Agency. (2025-09-01). *Even more from less – Policies and progress in the EU*. (2019).

https://www.eea.europa.eu/publications/even-more-from-less

European Environment Agency. (2025-09-25). *Survey on national and regional circular economy policies*. (2022).

https://www.eea.europa.eu/publications/survey-on-national-and-regional

European Environment Agency. (2025-08-26). *Circular economy profile: Sweden*. (2022).

https://www.eea.europa.eu/countries-and-regions/sweden/circular-economy-profile

European Environment Agency. (2025-08-26). *Europe's circular economy in facts and figures*. (2023).

https://www.eea.europa.eu/publications/europes-circular-economy-in-facts

European Parliament. (2025-08-26). *Circular economy: Definition, importance and benefits*. (2023).

https://www.europarl.europa.eu/news/en/headlines/society/20151201STO05603/circular-economy-definition-importance-and-benefits

Government of the Republic of Azerbaijan. (2025-09-10). *Azerbaijan 2030: National priorities for socio-economic development*. (2021).

https://president.az/en/articles/view/50474

OECD. (2025-09-10). *Business models for the circular economy*. (2020).

https://www.oecd.org/environment/waste/business-models-for-the-circular-economy.htm

OECD. (2025-09-12). *Circular economy in Japan*. (2020).

https://www.oecd.org/environment/waste/circular-economy-in-japan.htm

United Nations. (2025-09-22). *Transforming our world: The 2030 Agenda for Sustainable Development*. (2015).

https://sdgs.un.org/2030agenda

United Nations. (2025-09-10). *The Sustainable Development Goals Report 2024*. (2024).

https://unstats.un.org/sdgs/report/2024/

World Bank. (2025-09-10). *Azerbaijan: Toward green and sustainable growth*. (2022).

https://www.worldbank.org/en/country/azerbaijan/publication/toward-green-and-sustainable-growth

Websites and Online Resources

Ellen MacArthur Foundation. (2025-09-22). *Chile's circular economy roadmap*. (n.d.).

https://www.ellenmacarthurfoundation.org

Ellen MacArthur Foundation. (2025-09-22). *North America*. (n.d.).

https://www.ellenmacarthurfoundation.org

Federal Ministry for the Environment (BMUV). (2025-09-22). *Kreislaufwirtschaftsgesetz*. (n.d.).

https://www.bmuv.de

Government of the Netherlands. (2025-09-25). *Circular Dutch economy by 2050*. (n.d.).

https://www.government.nl

Holland Circular Hotspot. (2025-08-26). *The United States*. (n.d.).

https://hollandcircularhotspot.nl

International Organization for Standardization. (2025-08-26). *ISO and the circular economy*.

(2024). https://www.iso.org

PACE. (2025-09-09) Platform for Accelerating the Circular Economy. (n.d.).

https://pacecircular.org

United Nations Environment Programme. (2025-08-28). *Building circularity*. (n.d.).

https://www.unep.org/explore-topics/resource-efficiency/what-we-do/building-circularity

United Nations Industrial Development Organization. (2025-08-28). *Circular economy*. (n.d.).

https://www.unido.org/our-focus/advancing-economic-competitiveness/industrial-resource-efficiency/circular-economy

United States Environmental Protection Agency. (2025-08-28). *Circular economy*. (n.d.).

https://www.epa.gov/circulareconomy

World Economic Forum. (2025-09-11). *Circular economy*. (n.d.).

https://www.weforum.org/topics/circular-economy

World Economic Forum, Ellen MacArthur Foundation, & McKinsey & Company. (2025-08-25).

Towards the circular economy: Accelerating the scale-up across global supply chains. (2014).

https://www.weforum.org/reports/towards-the-circular-economy-accelerating-the-scale-up-across-global-supply-chains

SUMMARY IN ENGLISH

VILNIUS UNIVERSITY

FACULTY OF ECONOMICS AND BUSINESS ADMINISTRATION
MASTER OF BUSINESS PROCESS MANAGEMENT

Murad Dashdamirli

The Mediating Role of Employee Decisions in the Adoption of Circular Economy Practices in Azerbaijan: A Structural Equation Modelling Approach

Supervisor Prof. Dr. Dalius Serafinas

75 pages, 10 tables, 7 figures, and 74 references

In recent years, against the backdrop of sustainable development problems, depletion of natural resources and increasing environmental risks, the concept of circular economy has gained particular relevance both in scientific literature and at the policy level. This approach, unlike the "buy-produce-use-dispose" model, aims to keep resources in circulation, reduce waste and extend the life cycle of products. However, the successful implementation of circular economy is closely related not only to technological and institutional mechanisms, but also to human factors and behavioral changes. The main purpose of this dissertation is to empirically investigate the mediating role of employee decisions – Readiness for Change (ED) in the relationship between circular economy orientation (CE) and circular economy implementation (CEI) in Azerbaijani enterprises. The theoretical framework of the study is based on the Theory of Planned Behavior (TPB) and the Value–Attitude–Behavior (VAB) model. The study used a quantitative methodology, data were collected from 257 respondents through a survey through random sampling and analyzed using the Structural Equation Modeling (SEM) method with SPSS and AMOS programs. The results showed that circular economy orientation has a positive and significant effect on employees' readiness to change ($\beta = .563$, $p < .001$) and employees' readiness to change directly affects the implementation of the circular economy ($\beta = .188$, $p < .001$). One of the main findings is that employees' readiness to change plays a partial mediating role between circular economy orientation and implementation ($\beta = .106$, $p < .001$). This result reveals that the circular economy is not only an economic and technological, but also a social and behavioral

transformation process. The study emphasizes the importance of formulating sustainable development and circular economy policies for Azerbaijan based on a people-centered approach, both theoretically and practically.

SUMMARY IN LITHUANIAN

VILNIAUS UNIVERSITETAS

EKONOMIKOS IR VERSLO ADMINISTRAVIMO FAKULTETAS

VERSLO PROCESŲ VALDYMO MAGISTRAS

Murad Dashdamirli

Darbuotojų Sprendimų Mediavimo Vaidmuo Diegiant žiedinės Ekonomikos Praktikas Azerbaidžane: Struktūrinių Lygčių Modeliavimo Metodas

Vadovas Prof. Dr. Dalius Serafinas

75 puslapiai, 10 lentelių, 7 paveikslai ir 74 šaltiniai

Pastaraisiais metais, atsižvelgiant į tvaraus vystymosi problemas, gamtos išteklių eikvojimą ir didėjančią riziką aplinkai, žiedinės ekonomikos koncepcija įgijo ypatingą aktualumą tiek mokslinėje literatūroje, tiek politikos lygmeniu. Šis požiūris, skirtingai nei „pirk-gamink-naudok-išmesk" modelis, siekia išlaikyti išteklius apyvartoje, sumažinti atliekas ir pailginti produktų gyvavimo ciklą. Tačiau sėkmingas žiedinės ekonomikos įgyvendinimas yra glaudžiai susijęs ne tik su technologiniais ir instituciniais mechanizmais, bet ir su žmogiškaisiais veiksniais bei elgesio pokyčiais. Pagrindinis šios disertacijos tikslas – empiriškai ištirti darbuotojų sprendimų – pasirengimo pokyčiams (PP) – tarpininkaujantį vaidmenį žiedinės ekonomikos orientacijos (PP) ir žiedinės ekonomikos įgyvendinimo (PPĮ) sąryšyje Azerbaidžano įmonėse. Tyrimo teorinis pagrindas pagrįstas Planinio elgesio teorija (TPB) ir Vertės, požiūrio ir elgesio (VAB) modeliu. Tyrime buvo naudojama kiekybinė metodologija, duomenys buvo surinkti iš 257 respondentų apklausos būdu atsitiktinės imties būdu ir analizuoti naudojant struktūrinio lygties modeliavimo (SEM) metodą su SPSS ir AMOS programomis. Rezultatai parodė, kad žiedinės ekonomikos orientacija daro teigiamą ir reikšmingą poveikį darbuotojų pasirengimui keistis ($\beta = 0,563$, $p < 0,001$), o darbuotojų pasirengimas keistis tiesiogiai veikia žiedinės ekonomikos įgyvendinimą ($\beta = 0,188$, $p < 0,001$). Viena iš pagrindinių išvadų yra ta, kad darbuotojų pasirengimas keistis atlieka

dalinį tarpininko vaidmenį tarp žiedinės ekonomikos orientacijos ir įgyvendinimo (β = 0,106, p < 0,001). Šis rezultatas atskleidžia, kad žiedinė ekonomika yra ne tik ekonominis ir technologinis, bet ir socialinės bei elgesio transformacijos procesas. Tyrime pabrėžiama, kaip svarbu Azerbaidžanui formuoti tvaraus vystymosi ir žiedinės ekonomikos politiką, pagrįstą į žmones orientuotu požiūriu, tiek teoriškai, tiek praktiškai.

Raktiniai žodžiai: žiedinė ekonomika, SEM metodas, vertybinis požiūris, elgesys, planuoto elgesio teorija, darbuotojų sprendimai

APPENDIX

Questionnaire for SEM Analysis

Questionnaire on Circular Economy Practices in the Workplace

Introduction

Dear Sir / Madam,

My name is **Murad Dashdamirli**, and I am conducting this research as part of my academic thesis on **Circular Economy (CE) practices in the workplace**. The purpose of this study is to understand how organizations adopt circular economy principles and how employee readiness and organizational orientation influence the successful implementation of these practices.

Circular economy strategies aim not only to reduce environmental impact, but also to foster innovation, cost savings, and long-term competitive advantage. Since organizational success largely depends on employees, this questionnaire focuses on both organizational practices and individual readiness for circular change.

The questionnaire will take approximately **6–8 minutes** to complete. All responses are **anonymous and confidential** and will be used **solely for academic purposes**.

Thank you for your valuable participation.

Instructions

Please indicate the extent to which you agree with each statement by selecting one of the following options:

1 – Strongly Disagree
2 – Disagree
3 – Neutral
4 – Agree
5 – Strongly Agree

Section 1: Demographic Information

1. **Gender**

   ☐ Male

   ☐ Female

2. **Age Group ?*__ (please, write your age in years)**

3. **Highest Level of Education**

   ☐ High School

   ☐ Associate Degree

   ☐ Bachelor's Degree

   ☐ Master's Degree

   ☐ PhD or higher

4. **Sector of Employment**

   ☐ Public

   ☐ Private

   ☐ NGO

   ☐ Other: _____

5. **Position in the Organization**

6. **Years of Work Experience**

Section 2: Circular Economy Orientation (CE)

Please indicate your level of agreement with the following statements:

- **CE1**: My company emphasizes measures to reduce greenhouse gas emissions (e.g., air emissions, harmful industrial outputs).

- **CE2a**: During product design, my company prioritizes reuse and repairability.

- **CE2b**: During product design, my company considers disassembly options to enable refurbishment and remanufacturing.

- **CE2c**: My company integrates the recycling of products and packaging into the design process.

- **CE2d**: My company incorporates upgradability and modular components in design to extend product lifespan.

- **CE3**: Minimizing, reusing, and recycling waste (e.g., defective parts, scrap materials, packaging residues) in production processes saves costs and increases profits.

- **CE4**: My company effectively manages its supply chain to enable the reuse and reproduction of products.

- **CE5**: My company implements waste management practices to prevent environmental accidents.

Section 3: Employee Readiness for Circular Change (ED)

Please indicate your level of agreement with the following statements:

- **ED1**: I am ready to participate in the design of products for reuse, recycling, and recovery of parts.

- **ED2**: I am prepared to support recycling systems for defective or used products.

- **ED3**: I know how to increase the use of recycled or renewable materials in the production process.

- **ED4**: I am ready to take action to reduce environmental impacts by implementing circular production methods.

Section 4: Circular Economy Implementation (CEI)

Please indicate your level of agreement with the following statements:

- **CEI1**: My company implements circular economy practices to reduce environmental, social, and societal costs.

- **CEI2**: My company actively pursues circular economy practices to increase its legitimacy in the eyes of stakeholders.

- **CEI3**: My company achieves significant cost savings through minimizing, reusing, and recycling activities.

- **CEI4**: In my company, the variety of products and services is increasing.

- **CEI5**: My company's economic performance indicators are improving.

- **CEI6**: There is an increasing number of innovations in my company.

- **CEI7**: My company's non-compliance costs are decreasing.

List of Tables

Table 1. Differences Linear and Circular Models in Economy

Table 2. Demographic Characteristics

Table 3. Descriptive Statistics and Reliability Coefficient for the Circular Economy Orientation (CE) Scale.

Table 4. Descriptive Statistics and Reliability Coefficient for the Employee Decisions – Readiness for Change (ED) Scale

Table 5. Descriptive Statistics and Reliability Coefficient for the Implementation of Circular Economy Practices (CEI) Scale

Table 6. Correlation Analysis Results

Table 7. Circular Economy Orientation (CE) Scale DFA Fit Indices Values Source: Hair et al., 2014.

Table 8. Employee Decisions – Readiness for Change (ED) Scale DFA Fit Indices Values Source: Hair et al., 2014.

Table 9. Implementation of Circular Economy Practices (CEI) Scale DFA Fit Indices Values Source: Hair et al., 2014.

Table 10. Regression Weights and Hypothesis Tests for the Structural Model (N = 257)

List of Figures

Figure 1. Linear and Circular economy (Fischer et al., 2023)

Figure 2. EU countries with national CE policies (Source: ETC/WMGE, 2019, Eionet, European Environment Agency)

Figure 3. Research Model

Figure 4. Circular Economy Orientation (CE) Scale Confirmatory Factor Analysis

Figure 5. Employee Decisions – Readiness for Change (ED) Scale Confirmatory Factor Analysis

Figure 6. Implementation of Circular Economy Practices (CEI) scales Confirmatory Factor Analysis

Figure 7. Structural Equation Model for Circular Economy Orientation, Employee Readiness for Change, and Circular Economy Implementation