

Conceptualization Of Circular Economy And Sustainability At The Business Level. Circular Economy And Sustainable Development



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ABSTRACT

This research examines participants' familiarity with circular economy concepts, the integration of these concepts in their organizations, encountered barriers, levels of awareness and understanding, implemented circular practices, perceived benefits, the importance of sustainability, financial or operational challenges, motivators for embracing circular economy, and the accessibility of support and resources. The findings indicate that participants have an average degree of awareness regarding circular economy concepts. While some organizations have completely or partially implemented circular economy principles, a significant portion has not yet integrated them, suggesting a need for more initiatives. Financial limitations, supply chain restrictions, and a lack of knowledge are the primary barriers to adoption. Employee knowledge and comprehension of circular economy concepts have room for improvement. Commonly implemented circular practices include renewable energy use, material recycling, and product lifespan extension. Perceived benefits include cost savings, resource conservation, and increased stakeholder participation. Sustainability may not be considered important in overall strategy and decision-making by a majority of participants. Financial or operational difficulties are experienced by some organizations during the adoption of circular economy principles. Motivators for embracing circular economy include cost savings, brand reputation, regulatory compliance, and stakeholder expectations. Participants highlight a need for more support and resources to implement circular economy projects. Overall, the survey highlights the varying levels of familiarity, integration, challenges, awareness, and understanding of circular economy concepts among participants, and underscores the importance of addressing barriers, raising awareness, and providing sufficient support and resources for advancing circular economy principles.

Keywords: Circular economy, Familiarity, Integration, Barriers, Awareness, Understanding, Circular practices, Benefits, Sustainability, Challenges, Motivators, Support, Resources etc.

1. INTRODUCTION

The circular economy is a sustainable alternative to the conventional linear economy that has attracted a lot of interest in recent years (Brown and Evans, 2018). Resources are mined, converted into goods, utilised, and eventually thrown away as trash in a linear economy (Smith and Davis, 2021). A circular economy, on the other hand, attempts to keep resources in use for as long as possible by recycling, reusing, and remanufacturing in order to minimize waste, increase resource efficiency, and maximize the value of resources (Johnson and Thompson, 2018). They are bound by promises not only legally but are accountable before God in the future. This accountability is not only limited to the obligations of the husband and wife but the rights that are obtained by each other in love. These obligations and rights are for the husband

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to provide a decent livelihood, protect children and wives not only education. But also to the attitudes and behavior that the husband applies as the head of the family to his children and wife. In the shift to a circular economy, businesses are essential. As a way to lessen their impact on the environment, improve resource efficiency, and open up new economic prospects, they can adopt circular economy ideas and practices (Carter and Rogers, 2016). However, there are many difficulties and complications involved in conceptualizing and putting circular economy plans into practice at the company level (Johnson and Roberts, 2019). For the circular economy to be implemented and successfully integrated, it is crucial to comprehend how companies understand and accept it (Lee and Chen, 2017).

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Significance of Research

Despite the expanding quantity of literature on sustainability and the circular economy, there is still a lack of knowledge on how companies interpret and implement the ideas of the latter. By offering insights into the various approaches, difficulties, and possibilities firms face when incorporating circular economy principles, this research seeks to close that gap.

By looking at how businesses conceptualize the circular economy, this research can offer useful advice for companies looking to implement sustainable practices. The research findings can help companies better understand the driving forces behind the adoption of the circular economy and can be used to drive decisions about supply chain management,

product design, and resource management.

The results of the study might help formulate policy suggestions for legislators and regulatory agencies. Policymakers may create efficient frameworks and incentives to facilitate the shift to a circular economy on a broader scale by having a better understanding of the obstacles and difficulties firms experience when adopting circular economy practices (Smith, 2020). The study is consistent with the Sustainable Development Goals (SDGs), especially SDGs 12 (Responsible Consumption and Production) and 9 (Industry, Innovation, and Infrastructure). The research aids in attaining these objectives by promoting sustainable production and consumption habits and encouraging industry innovation by examining the circular economy's possibilities for firms.

This research fills an essential gap in the literature by looking at how circular economy and sustainability are conceptualized at the company level. It also offers useful information for companies, legislators, and the larger sustainability community. In the end, the discoveries may help improve circular economy procedures and the pursuit of sustainable development objectives at the local, regional, and international levels

Research Questions

- How are the circular economy and sustainability viewed and defined by businesses?
- How much do firms incorporate the ideas of the circular economy into their daily operations and decision-making?
- What are the primary impetuses and reasons why firms choose to implement circular economy practices?
- What obstacles and difficulties do firms encounter when putting the ideas of the circular economy into practice?
- What possible effects and effects may circular economy strategies have on sustainability and corporate performance?

2. LITERATURE REVIEW

Circular Economy and Sustainability at the Business Level

At the level of business, sustainability and economy integrates sustainable development prin-

principles into business practices and the adoption of the closed-loop systems for endorsing the product life extension, reduction of waste and endorsing the resource efficacy. The aim of this approach is primarily decreasing the impact on the environment, enhancing the social well-being, and driving the growth of the economy within the more sustainable way.

Sustainable development is related to pursuing the growth of the economy where as taking into account the aspects of the environment and social perspective for ensuring the enduring well-being. It is the framework that aids in aligning the sustainable development via stressing need of transition from the linear "take-make-dispose" model towards more circular one, here resources are kept within the usage for the longer period of time via remanufacturing, reusing and the recycling.

When at the business level, sustainable practices are adopted, that this integrates the social and environmental consideration within the core operations and strategies of the business. These integrates, materials accountable resources, reducing materials source, minimizing waste generation, lessening energy and water consumption, endorsing the usage of renewable energy, and aids in making sure that within the whole supply chain there are ethical labour practices followed.

Circular economy is endorsed to the greater extent because of the increased level sustainable production and within which raw materials are kept longer within the production cycles and can be utilized repeatedly, hence, due to this less amount of waste is generated. From its name it is suggested that resources are kept within economy for as long as possible, endorsing the use of waste that is product like the raw material for other industries.

It is the source of protecting the environment as this aids in minimising the natural resources consumption, and evades the generation of the waste. Through this local economy get benefited via endorsing the production models grounded on reusing of nearby waste as raw material. Through circular economy, employment growth can be attained. Due to local resources reuse, less depen-

dence attained on raw materials that are imported.

Closed-Loop Systems

These are vital to the notion of the circular economy. These integrates, processes and products designing that aids in enabling the circulation of the resources and reducing the wastes. Via extension of the products lifespan new resources demand can be decreased, lowering the impact of the environment and generation of the waste.

By incorporating reverse logistics into the product lifecycle, closed-loop systems—also referred to as closed-loop supply chains or closed-loop manufacturing—are systems created to reduce waste and enhance resource efficiency. The typical "take-make-dispose" linear paradigm is changed into a circular one in a closed-loop system where goods and materials are reused, recycled, or remanufactured. Key components of closed-loop systems include the following:

Product Collection:

After a product's initial use period is over, it is gathered through a variety of channels, including take-back programs, refunds, or recycling facilities. The producer, merchant, or specialist third-party groups can help with this collection.

Reverse Logistics:

After the items are gathered, reverse logistics procedures are used to transport and manage them. Sorting, cleaning, and refurbishing are some of the tasks involved in this process to get the items ready for recycling or reuse.

Reuse and refurbishment:

In a closed-loop system, goods that are still usable or are repairable are reconditioned and made available for resale or reuse. The lifespan of the product is increased as a result, and the need for new items is decreased.

Remanufacturing:

Products that can't be reused immediately go through the process of being disassembled, having worn-out parts replaced, and then being rebuilt in accordance with their original specifications. Products that have been

remanufactured are practically “as good as new” and may be put back on the market.

Recycling and Material Recovery:

To recover valuable materials, products that cannot be repaired or remanufactured are recycled. Materials like metals, polymers, and glass are removed and utilized as inputs in recycling processes to create new goods. Closed-loop systems provide the following advantages:

Resource Conservation:

Closed-loop systems minimize resource depletion and environmental impact by reducing the need for virgin resources through reuse and recycling.

Waste Reduction:

By keeping goods and materials in use for longer periods of time and minimizing the quantity of garbage transferred to landfills or incineration, closed-loop systems seek to reduce waste output.

Cost Savings:

Closed-loop systems may result in cost savings by lowering material and manufacturing costs. They may also present potential for income creation from goods that have been repaired or remanufactured.

Environmental Impact:

Closed-loop systems help to reduce energy use, greenhouse gas emissions, and pollution levels by completing the loop and minimizing the need for the extraction and production of new materials. To develop closed-loop solutions, stakeholders including manufacturers, merchants, customers, and recycling or remanufacturing plants must work together. It requires setting up effective networks for collection and reverse logistics, designing products with circularity in mind, and promoting consumer awareness of and participation in recycling and reuse initiatives.

Product Life Extension

An essential element of the circular economy is the extending of product life. It entails making items as durable, repairable, and upgradeable as possible. Businesses may extend the usable life of their goods, lower the demand for new product production, and save resources by designing items

that are simpler to repair, update, or refurbish. Additionally, encouraging the resale or donation of used goods or providing repair services might support a more circular and sustainable approach.

Product life extension refers to techniques and measures used to extend a product’s lifespan and usefulness over the period of time for which it was initially designed. It entails making measures to increase a product’s useful life, durability, and value, hence lowering the need for early disposal or replacement. There are various methods for extending the life of a product:

Maintenance and Repair:

Timely repairs and routine maintenance may help a product last longer. This involves doing routine maintenance, changing out worn-out components, and fixing any functioning problems. A product may perform ideally for a longer period of time if it is properly maintained, which can save small issues from turning into significant failures. Retrofitting and Upgrading: Upgrading entails improving a product’s features or performance by changing out specific parts or including new functionality. An existing product must be retrofitted to satisfy new standards, laws, or user needs. By increasing a product’s capabilities or modifying it to meet changing demands, upgrading and retrofitting can increase its usefulness.

Refurbishment and remanufacturing:

Refurbishment is the process of bringing an old or worn-out object back to life via both aesthetic and practical fixes. By deconstructing the product, swapping out parts, and reconstructing it to adhere to original standards, remanufacturing goes a step further. A product’s lifespan can be increased through refurbishment and remanufacturing by giving it a second chance.

Software updates and patches:

For goods that rely on software, frequent updates and patches may fix bugs, enhance performance, and offer new features. The product can stay useful and functioning for a longer time by keeping the software up to date.

Repurposing and reusing:

A product can be utilized again or repurposed for a different purpose rather than being discarded. This entails finding alternate applications for the product or changing it to fulfill a different purpose in order to increase its lifespan and decrease waste. Recycling and material recovery techniques can assist recover valuable materials from a product when it has reached the end of its useful life. Recycling lessens the impact on the environment by recycling materials and reducing the need to mine new resources.

Manufacturers and customers may support sustainability initiatives by decreasing waste, preserving resources, and lessening the environmental effect of products by using product life extension strategies. By maximizing the usefulness and value of items, it also provides economic benefits by lowering the demand for repeated replacement.

Gaps and Limitations in the Existing Literature

The present literature has a considerable gap when it comes to the business level conception of circular economy and sustainability due to its restricted industry emphasis. While other sectors, such service-based or technology-oriented businesses, have gotten less attention, most studies have mostly concentrated on industries like manufacturing and retail. The applicability and difficulties of circular economy methods across a larger variety of sectors should be investigated in further study.

The viewpoints and experiences of firms in emerging countries have largely been ignored in prior research, which have mostly concentrated on industrialized economies. The generalizability and comprehension of circular economy methods in many economic and cultural contexts are constrained by this spatial bias. To give a thorough knowledge of circular economy adoption and sustainability practices, future research should try to include more varied samples from different areas. The majority of research in this area has been cross-sectional, which makes it difficult to track patterns and changes over time. Studies that follow the installation and results of circular economy activities in organizations can offer insightful information about the long-term effects and difficulties of sustainable practices.

SMEs are important to the economy, but the literature frequently ignores the particular difficulties and possibilities they may have in implementing circular economy techniques. Future studies should focus further on the unique obstacles that SMEs experience and consider ways to make it easier for them to participate in circular economy projects. Comparing and evaluating firms' sustainability efforts is difficult in the lack of established metrics and measurement tools for circular economy operations. To allow uniform assessment and reporting of circular economy processes, standardized indicators and measurement frameworks must be created and used.

3. METHODOLOGY

Research Design

This section directs how information is gathered and analysed in general. For this study, survey approach was used to gather data from a wide range of firms. This design enables an analysis of the beliefs, behaviours, and issues around circular economy and sustainability at the corporate level.

Data Collection and Sampling

A representative sample of companies from various industries was chosen using a stratified random sampling approach. The sample size was 49 employees total from different companies of the relevant sector, distributed proportionally based on the size of the industry. An online survey that was given to business owners, managers, and sustainability experts was used to gather data. In order to gather both quantitative and qualitative data, the survey had both closed-ended and open-ended questions.

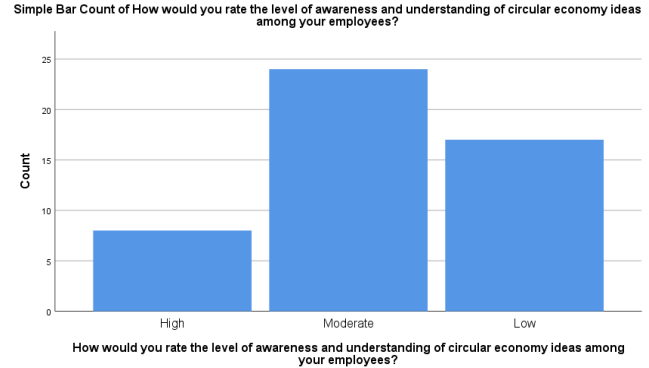
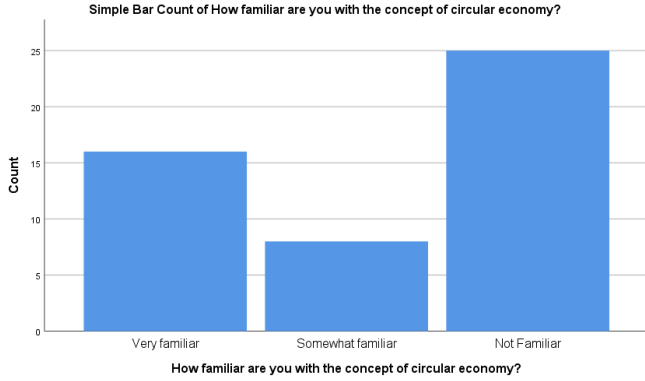
Research Instrument

The assessment tool used in this study was a structured questionnaire that was created based on already-validated scales and variables relevant to sustainability and the circular economy. There were multiple-choice questions on the survey. The questionnaire measured things like adoption of circular practices, perceptions of implementation difficulties, and awareness and understanding of circular economy ideas.

Data Analysis

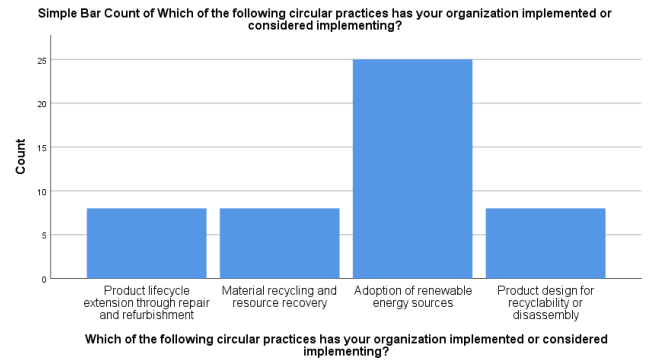
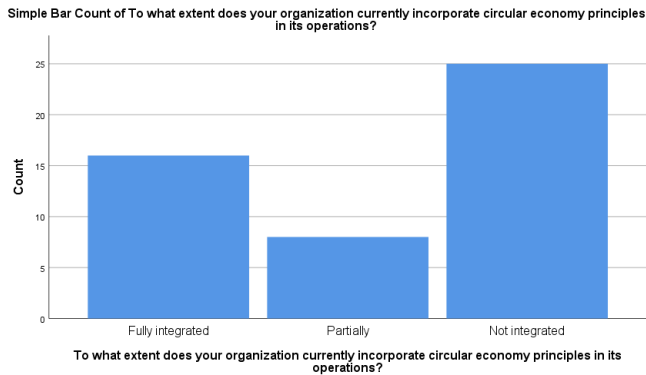
Graphs will be used to analyse data. As it is the quantitative analysis, graphs will aid in presenting the visual representation

It is clearly seen from the above mentioned graphs that 15 participants said financial constraints, 15 said supply chain constraints and the 19 said lack of awareness and understand.



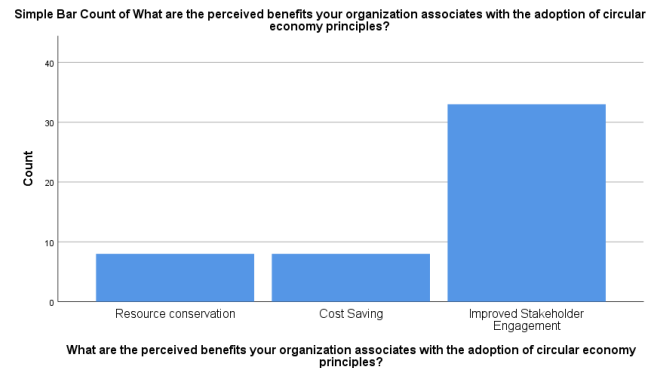
It is clearly seen from the above mentioned graphs that 16 participants are familiar with the circular economy concept. 8 participants were somewhat familiar while the remaining out of 49 were not familiar.

It is clearly seen from the above mentioned graphs that 8 participants said high, 24 said moderate and 17 said low.



It is clearly seen from the above mentioned graphs that 17 participants said fully integrated, 7 said partially integrated and remaining said not integrated.

It is clearly seen from the above mentioned graphs that 8 participants said product lifecycle extension thru repair and refurbishment. 8 said material recycling and resource recovery, 33 said adoption of RE sources and no one said product design for recyclability and disassembly.



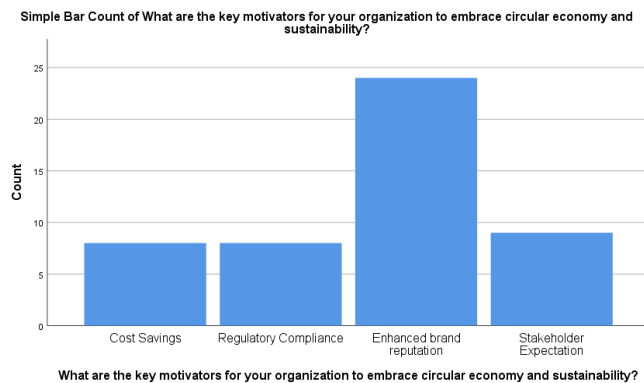
It is clearly seen from the above mentioned graphs that 8 said resource conservation 8 said Cost saving and rest said improved stakeholder engagement.



It is clearly seen from the above mentioned graphs that 8 said very important, 17 said somewhat important and 24 said not important.

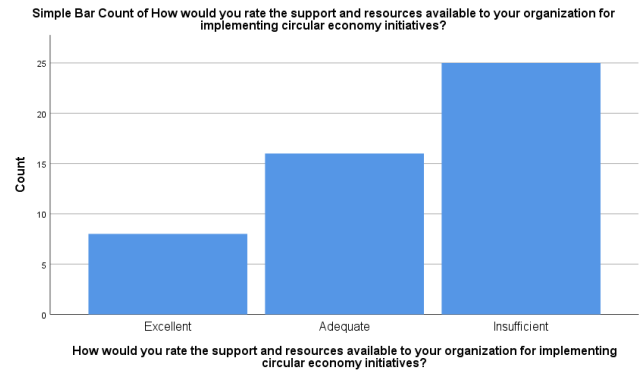


It is clearly seen from the above mentioned graphs that 25 said yes and 24 said no.



It is clearly seen from the above mentioned graphs that 9 said stakeholder expectation, 24 said enhanced brand reputation 8 said reg-

ulatory compliance and 8 said cost saving.



It is clearly seen from the above mentioned graphs 9 said excellent, 16 said adequate

5. Conclusion

Several key findings can be drawn from the survey responses and analysis regarding the participants' familiarity with circular economy concepts, the degree of integration in their organizations, barriers encountered, awareness and understanding levels, implemented circular practices, perceived benefits, importance of sustainability, financial or operational challenges, motivators for embracing circular economy, and the accessibility of support and resources. Circular economy familiarity: According to the study, 16 out of 49 participants are familiar with the idea, while 8 people are just slightly familiar with it, and the rest participants are not at all familiar. This shows that the respondents' degree of awareness is around average. Circular Economy Principles Implementation: According to the statistics, 17 participants said their organizations completely implemented circular economy principles, while 7 others noted partial implementation. But a sizable portion of participants claimed that their companies weren't yet merged. This demonstrates the necessity for more initiatives to promote circular economy principles. Barriers and Challenges: According to the poll, financial limitations, supply chain restrictions, and a lack of knowledge and understanding are the primary obstacles preventing firms from adopting circular economy principles. To ease the transition to a circular economy, several issues must be resolved. The respondents were asked to assess the degree of employee knowledge and comprehension of concepts related to the circular econ-

omy. According to the statistics, 24 out of 49 participants gave it a moderate rating, 8 people gave it a good rating, and the remaining participants gave it a bad rating. This indicates that there is potential for improvement in raising staff members' awareness and comprehension of the fundamentals of the circular economy.

Implemented Circular Practices: Participants in the study were questioned about the circular practices that their firms had adopted or were considering. The most often stated activities were the use of renewable energy sources (33 participants), material recycling and resource recovery (8 participants), and extending the lifespan of products through repair and refurbishing (8 participants). It's noteworthy that no one brought up product design for recycling and disassembly, suggesting a possible area for development.

Benefits perceived: According to study results, participants link the implementation of circular economy concepts to a variety of advantages. Eight individuals each emphasized cost savings and resource conservation, while the remaining participants underlined increased stakeholder participation. These advantages complement the overarching objectives of circular economy procedures. The majority of participants (24 out of 49) ranked sustainability as being unimportant to the overall strategy and decision-making of their firm. This data raises the possibility that there may be a lack of understanding of the importance of sustainability in corporate operations and decision-making procedures. When asked whether there were any financial or operational difficulties as a result of the adoption of circular economy principles, 25 participants said yes, while 24 said there were none. To achieve a seamless transition, these difficulties must be addressed and overcome.

Cost savings (mentioned by 8 participants), improved brand reputation (24 participants), regulatory compliance (8 participants), and meeting stakeholder expectations (9 participants) were the main drivers for embracing the circular economy, according to the participants.

Support and Resources: Participants were asked to rank the resources and assistance that their organizations had access to for putting circular economy projects into action. While 25 individuals thought it was insufficient, 16 participants

thought it was adequate, and 9 persons gave it an exceptional rating. This shows that more assistance and funding are required to encourage the adoption of circular economy principles. The poll therefore reveals the participants' various levels of acquaintance, integration, difficulties, awareness, and comprehension of circular economy methods. It also emphasizes the necessity of removing obstacles, raising awareness, and giving sufficient assistance and resources to advance the concepts of the circular economy.

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