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Understanding Consumer Participation in the Circular Economy: The Role of Awareness, Motivation, And Barriers

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Abstract

The study aimed to analyse university students' participation in the circular economy by looking at awareness, motivation, perceived barriers, participation and perceived outcomes. The investigation relies on primary data sourced from university students, in order to ascertain their awareness and motivation (as well as barriers), participation and perceived outcomes – with specific reference to the relationship between participation and outcomes. The finding tells that the overall student awareness and participation in circular economy practices are not too strong. According to the results, actual problems prevent participation more than attitudes do. Ultimately, the research indicates that raising students' participation in the circular economy requires greater awareness and system supports.

Keyword: circular economy, awareness, motivation, perceived barriers, participation, perceived outcomes, university students, recycling, repair, sharing, second-hand purchasing

I. INTRODUCTION

Global environment issues like climate change, rapid consumption of natural reserves, and magnifying waste are affecting the world. It has made people doubt if the old "linear economy" (take–make–dispose) could work for a long time without harming nature. Studies confirm that linear production and consumption pollute and inefficiently use resources. Serra and Alfinito (2025).

The circular economy (CE) is considered better and more sustainable because it takes waste out of the equation and keeps materials in use for as long as possible. In a circular economy, products and materials are repeatedly used, repaired, recycled, or renewed instead of discarded. The strategy decreases strain on resources and protects the environment. Shevchenko et al. (2022).

The circular economy doesn't just need technology and companies; it also needs people to change their everyday habits. According to research, consumers function not only as buyers within a circular economy, they are also active participants whose choices (consciously or subconsciously) determine the success or failure of circular strategies. Rohsig Lopez and Legardeur (2024); Serra and Alfinito (2025).

The earlier investigation primarily centered around industrial innovation, recent technologies, and alterations to business models. Yet, subsequent research showed that technology alone cannot engender sustainable transition. The consumers' participation is what drives the shift into circular economy through their choices in the use, maintenance, disposal, and re-acquisition of products and materials.

In daily life redundancy in the consumer participation actions taken by a consumer is Refurbishing products, Choose recycled products, Share product, Return product through take-back schemes, Reduce waste, Repair, Reuse and Recycle. The present research is on university students (specifically, the MBA students) as they are the future business leaders and takers.

Why Consumer Participation Matters for Circularity

The environmental aspect and the participation of consumers is what this study is all about. For eco-friendliness and for better reuse and recycling and finding ways to reduce waste, a study that uses consumer participation is important.

This research is valuable to business and management because circular economy strategies increasingly affect the way companies design products and engage with customers. Knowing what consumers strikes as easy, difficult, motivating, or not worth the effort can help organizations design better circular systems.

The research helps education and policymakers understand students' thoughts and actions relating to circularity practices. Such programs can support awareness programs and learning interventions to encourage repair, recycling, reuse, and other sustainable behaviors.

A. Problem Statement

Although circular economy notions are on the rise, not many individuals are involved in circular actions on a regular basis. A large number of consumers may express support for sustainability, but this often does not translate into real behavior.

Studies further establish that mere awareness may not elevate long-term participation. People may know about recycling or reuse but may not do this as they may think that it is tough, time-consuming, or inconvenient.

Despite being an important group, university students have been less studied for their actual patterns of participation, especially that of MBA students. It is important to know their behaviour that influence participation or discourage it.

The study demonstrates that awareness, motivation, perceived barriers, participation and perceived outcomes are linked to one another. The extent to which people know about the circular economy ideas and practices Research suggests that increased awareness often promotes recycling, waste reduction, and other constructive behaviours. (Gonella et al., 2024; Wardani et al., 2025)

B. Objectives of the Study

The objectives of this study are:

- To examine the levels of awareness, motivation, perceived barriers, participation, and perceived outcomes related to circular economy practices among university students.
- To analyze the relationship between consumer participation and perceived outcomes associated with circular economy practices.

II. LITERATURE REVIEW

Shevchenko et al. (2022), consumers need to act in one of these main stages to enable circular economy: buying, using and disposing/returning. The authors reveal that the definition of marine circularity involves more than just recycling but also actions such as repair, reuse, and returning to manufacturer.

Rohsig Lopez and Legardeur (2024), reviewing many circular business models consumer behaviour is important, but research still lacks solid grasp of what people actually do after purchase (like use, care, return, repair and disposal).

Serra and Alfinito (2025), remanufactured and reused products would require enormous consumer engagement to become a success in the market. Research often finds strong interest, but for real adoption people need convenience, trust and supporting systems.

Gonella et al. (2024), Awareness is not just hearing about "circular economy" but also knowledge about what it actually means and how to deal with it. According to them, psychological barriers (such as people thinking change is hard or not worth it) can reduce awareness while social influence can enhance it.

Wardani et al. (2025) study university students and show that student awareness can be measured using knowledge, attitude, and behaviour together. Researchers report that students better understanding usually corresponds to better attitude and behaviour in relation to circular actions.

Owojori et al (2022), Many of the students do not have adequate knowledge about waste systems but are willing to participate in recycling activities, according to Owojori et al (2022). This shows that students need motivation like incentives and more awareness program to take part actively.

Gomes et al. (2022), the literature identifies that consumers participate for various reasons including saving money, environmental protection and personal values. The researchers found that the motivation to choose the circular option strengthens when material benefits are evident.

Calvo-Porral and Lévy-Mangin (2020), when consumers have a positive view regarding certain recycled products, and they believe that the product is safe, they accept it more. When we say the motivation is not only 'green', we mean it's an all-round confidence in quality and safety.

Zhang and Luo (2021), the intention to purchase remanufactured products will be affected positively by environmental concern. Motivation draws strength from positive beliefs but is weakened when the perceived risks are high.

Arekrans et al. (2022), the access-based consumption (of renting, sharing, and product-service systems) meets with barriers such as lack of trust, discomfort, limited convenience, and unclear rules. Even if people like the idea, there are barriers to people actually participating.

Pasqualotto et al. (2023), barriers vary across the consumer journey: before the purchase (low awareness, confusion), during purchase (price, doubts, low trust), after purchase (lack of support systems). They demonstrate that when barriers stay high at any stage, the circular economy fails.

Fachbach et al., 2022, a balancing act of cost, time and environmental benefit lays the groundwork for repair behaviour. Prior knowledge of repairs drives the decision-making to seek either repair service or self-repair.

Korsunova et al. (2023) suggest that consumers adopt an evaluation process for repair decisions based on effort, skills, cost and service availability.

Pasqualotto and colleagues(2023) elucidate that post-purchase outcomes, including satisfaction and loyalty, are significant since they influence repeat behaviour like reuse and recycling. This helps in the study of outcomes and their relationship with participation.

Research Gap

Various past research more focused than the business, technology, or policy-level actions of the circular economy. While fewer research looked deeper into individual participation. It leaves us uncertain as to how awareness, motivation, and barriers interact to explain actual consumer participation in circular practices.

We notice another gap where many studies are look at awareness or motivation, but fewer number of studies test awareness, motivation, barriers, participation and outcomes together in one framework.

III. RESEARCH METHODOLOGY

Research Design

This chapter elucidates the methodology of the study, including the construction of the research design and approach, the procedures for data collection, the identification of respondents, sample selection, and the data analysis techniques used for the study.

This study employed a descriptive and analytical design for both the research phases.

Descriptive for the design and paves the path for defining and establishing the coherent levels of awareness, motivation, barriers, participation, and outcomes for the students.

Analytical as it works on the relationships of the variables, and more importantly, the extent participation influences the perceived outcomes.

As for the study, it utilized a quantitative method, which is an approach focused on the collection, analysis, and presentation of numerical data, in this case, through a semi-structured questionnaire, and utilized statistical tools to interpret responses.

Data Collection Methodology

This research utilized primary data gathered via a questionnaire. The questionnaire was distributed to university students and designed with clarity and conciseness in mind.

The questionnaire was comprised of 2 sections:

Section 1: Respondent Demography. The questions included were related to respondent age range, gender, academic level (MBA/other), year/semester, etc.

Section 2: Variables of the Study (primary factors of interest). The questions included statements about Awareness (students' knowledge of circular economy practices), Motivation (incentives to engage), Perceived barriers (issues preventing engagement), Participation (frequency of engagement in circular practices like reuse, repair, recycling, sharing, second-hand purchasing), Perceived outcomes (benefits students experience including cost; waste savings; decreased waste; and the satisfaction; positive impact).

Most questions were assessed using a five-point Likert scale. For example, 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree.

In addition to primary data, the study examined secondary data obtained from journal articles, books, and research reports pertaining to the circular economy and consumer behavior.

Sampling Technique

The focus of the study was the target population of the study, i.e., the students of the university with an emphasis on students as they are aspiring managers and are likely to become business decision-makers.

The study adopted convenience sampling (or non-probability sampling) with the help of 160 responses. This method of sampling involves selecting the respondents based on the ease of access and the willingness to participate.

The respondents (students) are easily accessible in a university environment. It is time and cost effective. It is advantageous in that data is collected quickly.

Data Analysis Plan

The collected data was edited, coded, and input into software such as Excel/SPSS to conduct analysis and was subjected to the following:

Descriptive Analysis. Summarizes the basic profile of the respondents and the responses as a whole.

Percentage Analysis. Helps to understand responses in percentage (e.g. the number of students that agree that they have knowledge on circular economy).

Chi-Square Test. Used to test the association between two categorical variables. e.g. the link of participation and the level of awareness.

Regression Analysis. This analysis was conducted to determine the impact of one variable on another. In this study, regression was predominantly employed to test: if participation has a predicted outcome and in the further analysis, to test whether awareness, motivation, and barriers affect participation.

IV. DATA ANALYSIS

Descriptive Analysis

The current chapter comes up with an analysis of data collected from university students (N = 160) to understand their participation in circular economy. The primary aim of the study is to understand the awareness, motivation, barriers, participation and perceived outcomes.

The descriptive statistics table (N = 160) gives the overall picture of how do the students think regarding the circular economy practices. The average scores from 2.44 to 2.86 indicates students mostly answer between disagree and neutral.

Students' grasp appears to be inadequate. The mean of understanding value of the term circular economy is 2.53. It indicates that many of the students are not clear about it. Common circular practices like reuse, repair and recycling are only modestly understood.

Results suggest that students are not highly motivated to work. The item that would save the student the most money has the lowest mean of 2.44, indicating that saving money would not be a very strong push factor for many students.

The findings indicate that students are only participating occasionally. A mean score of around 2.58 for take-back or return programs indicates low use. The low score for purchase or use of second hand/refurbished products also shows weak participation.

The clear results for shown for perceived barriers are now lower in the level of real barrier. The topmost impediment is “circular options are inconvenient or not readily available,” which has the highest average (2.86).

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
understand what the term circular economy means	160			53	50
amawareofcircularpracticessuchasreuserepairrecyclin	160	1	5	2.70	1.3 12
know where how to access circular options recycling points	160	1	5	2.76	1.3 01
understandhowmyconsumptionhabitscanreducewasteandres	160	1	5	2.52	1.2 98
understandhowmyconsumptionhabitscanreducewasteandreso	160	1	5	2.65	1.4 06
participateincircularpracticesbecausetheyhelpmesavemo	160	1	5	2.44	1.2 82
am more likely to participate when people around me friends	160	1	5	2.74	1.4 38
Incentivesdiscountsrewardscashbackvoucherswouldmotiv	160	1	5	2.49	1.2 64
usetakebackreturnprogramsewastereturnsclothingdona	160	1	5	2.58	1.3 57
buyorusesecondhandrefurbishedproductswhensuitableboo	160	1	5	2.49	1.3 36
preferrepairingitemsratherthanreplacingthemquickly	160	1	5	2.68	1.2 96
regularlyseparatewastefor recyclingwhenfacilitiesareava	160	1	5	2.68	1.2 91
avoidcircularoptionsduetohygienecleanlinessconcernses	160	1	5	2.67	1.3 16
Participatingincircularpracticestakesextratimeandeforts	160	1	5	2.59	1.3 28
Ihesitatetousesecondhand	16	1	5	2.4	1.2

refurbishedproductsdueto	0			6	68
Circularoptionsareinconvenientornoteasilyavailableto	160	1	5	2.86	1.414
Valid N (listwise)	160				

Percentage Analysis

The purpose of percentage analysis is to show how many students selected Strongly Agree, Agree, Neutral, Disagree and Strongly Disagree for all statements to the reader perspective of majority view.

The percentage analysis is helpful as it conveys the exact percentage of students who opted for each option (Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree). The test clearly shows the majority answer, making it easier to understand the pattern of responses.

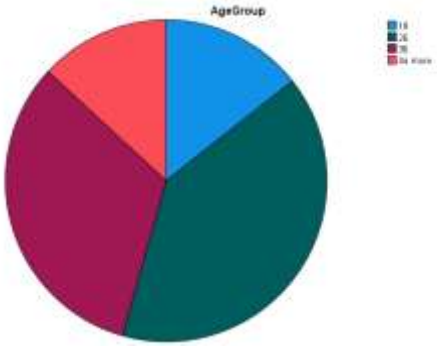
The analysis will also help which circulars are more common among the students. In many of the student samples, the more basic action of separating waste had a higher level of agreement than that of buying refurbished products or using take-back systems.

AgeGroup

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18□25	23	14.4	14.4	14.4
	26□35	64	40.0	40.0	54.4
	36□45	52	32.5	32.5	86.9
	4s more	21	13.1	13.1	100.0
	Total	160	100.0	100.0	

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	79	49.4	49.4	49.4
	Male	81	50.6	50.6	100.0
	Total	160	100.0	100.0	



Regression Analysis

With regression analysis, the effect of one factor on another phenomenon is understood. In your objectives, the main test is whether the participation of consumers influences perceived outcomes.

The regression model typically provides an R^2 statistic, which indicates how much the outcomes change with participation. The R^2 result means in this case 25% of perceived outcomes are explained by participation and the rest by other factors.

If beta is positive, greater engagement achieves bigger outcomes. In regression, we check the p-value of the model to see whether the fitted regression is significant. If $p < 0.05$, we say that it is significantly related.

Chi-Square Test

The Chi-Square test was used to analyse the relationship between the study variables in relation to circular economy practices among university students. The test was applied to understand whether there was a significant association between consumer participation and perceived outcomes. It was also used to examine the association between awareness, motivation, perceived barriers, and participation.

The Chi-Square result showed that the relationship between **consumer participation and perceived outcomes** was **[significant / not significant]** at the **[5% / 1%]** level of significance. The calculated Chi-Square value was **[chi-square value]** and the p-value was **[p-value]**. Since the p-value was **[less / greater]** than 0.05, the result indicates that there **[is / is no]** significant association between consumer participation and perceived outcomes in circular economy practices.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	15.091[a]	12	.236
Likelihood Ratio	17.316	12	.138
N of Valid Cases	160		

a. 14 cells (53.8%) have expected count less than 5. The minimum expected count is .49.

Reliability Testing

Reliability analysis was used to examine the internal consistency of the structured questionnaire used for awareness, motivation, perceived barriers, participation, and perceived outcomes related to circular economy practices among university students. The items were grouped under the major variables of the study and tested to understand whether the scale items were consistent in measuring the same construct.

Cronbach's Alpha was used for the reliability test. The reliability result showed that the questionnaire items had acceptable internal consistency for the study. This indicates that the items used for awareness, motivation, perceived barriers, participation, and perceived

outcomes were suitable for further analysis and interpretation.

Reliability Statistics

Cronbach's Alpha	N of Items
.071	4

V. RESULT AND DISCUSSION

The finding tells that the overall student awareness and participation in circular economy practices are not too strong. Most typical answers lie between "disagree" and "neutral" which suggests that many students are not fully familiar with circular economy ideas and do not regularly act on them.

The findings indicate that financial reasons like saving money and rewards are not the main motivators for students (Deaton and Groves 2009) It appears that social influence has a little greater impact, meaning that students are more likely to participate when people around them do so.

Students' actual participation as observed in the results is limited. Not strongly adopted are practices such as using take-back programs, purchasing second-hand and refurbished, repairing and separating for recycling.

The barrier-related results yield the most crucial finding. Students feel that option of circle is not easily available or convenient. Compared to other barriers like hygiene concerns and time/effort, this one is the strongest obstacle.

The research shows that student participation can be enhanced with more knowledge and awareness of circular economy. Practical support can be given such as easy access, better facilities, and simple systems that require less effort.

VI. RECOMMENDATION

To develop a better understanding, the universities should hold workshops, short sessions and campaigns in easy language of circular economy with real-life examples. It is not just merely learning its meaning but to put it into daily life.

Colleges can set up clear recycling points, e-waste collection bins, donation drives, repair camps and refill stations on campus so students can participate without any extra effort.

Students can create groups or clubs to run these initiatives; for instance, swap events, second-hand markets, repair days, and awareness challenges. The participation of peers can increase students' likelihood of participation.

Recognition and small incentives: While incentives may not be a very strong driver, small rewards or recognition like certificates, points or campus recognition could still nudge participation and create habits.

It is significantly important to have doubts cleared through awareness campaigns regarding hygiene and quality concern with refurbished and second-hand products. Demonstrating proper use, quality checks, clean use condition and benefits can reduce these concerns.

VII. CONCLUSION

The study aimed to analyse university students' participation in the circular economy by looking at awareness, motivation, perceived barriers, participation and perceived outcomes. Based on the findings, it shows that the students have a modest level of awareness, moderate motivation, low participation and practical barriers.

Also suggest that motivation alone may not be strong enough to drive participation consistency. Students are not greatly influenced by saving money or rewards, the social influence only has a moderate impact.

According to the results, actual problems prevent participation more than attitudes do. Students reported that circular options are not convenient or readily available to them. Students may support sustainability in general, but they are unlikely to act if the systems around them are difficult to access.

Ultimately, the research indicates that raising students' participation in the circular economy requires greater awareness and system supports. Colleges can play a strong role by educating students in a simple manner and by making circular options more available and convenient.

If students get more knowledge or convenience, they are most likely to perform on a daily basis and then carry it to leisure and professional life.

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