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EXPLORING THE KNOWLEDGE, ATTITUDE, AND PRACTICE (KAP) AMONG YOUTH TOWARDS CIRCULAR ECONOMY PRACTICES IN LUCKNOW

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INTRODUCTION:

The circular economy (CE) is a crucial framework for promoting sustainability in an era of environmental challenges and resource depletion. Unlike the traditional linear economy, which follows a 'take-make-dispose' model, CE emphasizes the continuous use of resources through strategies such as recycling, reuse, and refurbishment.This shift in perspective is especially pertinent in consumer electronics, where swift technological progress results in a substantial rise in e-waste. Youth play a pivotal role in this transformation as consumers and future leaders, making exploring KAP toward circular economy principles essential.

The research question guiding this study focuses on understanding the KAP of youth in Lucknow regarding circular economy practices, specifically in consumer electronics. This research is significant for several reasons. First, it provides insights into youth's awareness and understanding of CE principles, which are critical for fostering sustainable behaviors. Second, analyzing attitudes towards circular products can help identify the barriers that prevent youth from adopting more sustainable practices. Finally, examining the sustainable practices associated to the use and disposal of electronic products can inform policymakers and educators about the necessary interventions needed to promote a circular economy.

The objectives of this study are:

1. To assess youth's knowledgeof circular economy practices concerning consumer electronic products in Lucknow City.
2. To analyse youth's attitudes towards adopting consumer electronics aligned with circular economy principles.
3. To analyse the sustainable practices of youth related to the use and disposal of consumer electronic products.
4. To examine how demographic factors influence youth's knowledge, attitudes, and practices (KAP) towards the circular economy in consumer electronics.

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The KAP model underpins this study, examining youth's knowledge, attitudes, and practices (KAP) regarding the circular economy (CE) in consumer electronics. "Knowledge" covers awareness of CE concepts like recycling and responsible consumption, "attitude" reflects beliefs about CE initiatives, and "practice" refers to behaviors like recycling or discarding electronics. By analyzing how demographic factors influence KAP, the study identifies gaps and misconceptions, offering insights for targeted education and policies to promote sustainable practices. This research contributes to CE literature, emphasizing youth's critical role in advancing sustainable solutions.

Abbreviations and Acronyms

KAP: Knowledge, Attitudes and Practices

CE: Circular Economy

E-Waste: Electronic Waste

EoL: End-Of-Life

EEE: Electrical and Electronic Equipment

LITERATURE REVIEW:

In addressing the KAP of youth towards CE, existing literature provides valuable insights into consumer behaviour concerning e-waste management and circular practices. Studies have indicated that the EoL management of electronic products plays a crucial role in CE, particularly regarding consumer engagement with repair, reuse, and recycling processes. Islam et al. (2021) demonstrated that improper disposal of e-waste, often alongside household waste, remains a significant barrier to achieving CE goals. Their findings emphasised that consumer behaviour is the starting point for determining the circularity path of products. Studyingconsumers' motivations and challenges when interacting with CE initiatives is essential.

The role of knowledge in shaping consumer attitudes and practices has been further explored by Wang et al. (2020),who found that increased knowledge about product history, remanufacturing and recycling significantly impacted consumers' attitudes towards remanufactured products. However, the study also noted that excessive knowledge about the recapture process could reduce consumers' intentions to switch to remanufactured products, especially when the perceived price of new products was high. This highlights a complex relation between knowledge and consumer decision-making in the CE framework.

Furthermore, awareness of CE programs remains limited in many regions. Kuah and Wang (2020) revealed that despite consumers' willingness to engage with sharing platforms, concerns about the reliability, exploitation, and quality of recycled products hindered broader

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acceptance. This reluctance was partially attributed to a lack of awareness of available CE facilities, which aligns with the findings of Koistila (2020), who identified cultural barriers, such as low consumer awareness and misperceptions about product lifetimes, as critical obstacles to adopting circular practices.

Additionally, consumer preferences for EoL scenarios, particularly in the domain of e-waste management, are influenced by gender. Women were more likely than men to support environmentally friendly EoL options, including repair and recycling, and were willing to pay a premium for such products (Atlasonet al., 2017). This suggests that gender-based segmentation could effectively promote CE initiatives, particularly in consumer electronics, where product design and disposal methods are crucial in circularity.

Socioeconomic factors, such as income and education levels, also significantly impact consumer behaviour regarding CE. Mykkänen and Repo (2021) found that consumers' willingness to reuse and recycle varied based on demographic factors, highlighting the need for targeted strategies to enhance participation in CE programs. The study highlighted that domain-specific approaches tailored to the socioeconomic backgrounds of consumers were more effective than generalized campaigns. Istudor et al. (2023) demonstrated that despite the rational consumer profile observed in Romania, there was a low willingness to access second-hand EEE products. They proposed that awareness campaigns and better access to recycling facilities could significantly enhance consumer engagement.

Environmental values have also been identified as significant drivers of pro-environmental behaviour. Ofori and Opoku Mensah (2022) found that perceived behavioural control and environmental intentions were the strongest predictors of sustainable e-waste management. Consumers who felt they had control over their recycling options were likelier to engage in environmentally friendly practices. This suggests empowering consumers through education and infrastructure development is criticalin promoting CE practices.

Consumer willingness to pay for circular products is another vital element of purchasing behaviour. Boyer et al. (2021) revealed that consumers were typically inclined to pay a premium for products that contained moderate levels of circular content. However, their willingness decreased when the proportion of recirculated content increased, indicating that while consumers may support circular products in theory, there are limitations to their acceptance in practice.

Research on the socioeconomic influences on e-waste management further supports the importance of demographic factors in shaping consumer practices. Mapa et al. (2021) showed that gender, age, and household income significantly influenced how e-waste was managed in residential areas. They showedthat urban consumers were more likely to

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engage in sustainable practices than their rural counterparts, who favoured stockpiling or informal disposal methods.

Research Gap

Despite extensive CE research, gaps remain inthe study of youth-specifically, their knowledge, attitude, and practices with electronics. Addressing these could inform targeted educational policies.

METHODS:

This study adopted a descriptive and exploratory survey design with a quantitative approach. Primary data were collected from 400 youths attending universities in Lucknow, aged 18 to 26, through a self-developed structured questionnaire administered online and offline. A purposive sampling method was used to select participants. Data analysis included reliability, frequency, factor, and chi-square analyses. After data collection, the data were cleaned, coded, and analysed to evaluate the levels of Knowledge (K), Attitudes (A), and Practices (P) dimensions. Questionnaires were distributed, and respondents rated KAP on a 5-point Likert scale from"Strongly Disagree" to "Strongly Agree". Z-scores were calculated for each variable, then categorized into five levels from"Very Low" to"Very High" coded from 1 to 5.

RESULTS:

Reliability Analysis

The results of the reliability analysis of KAP are provided in Table 1 below

Table 1- Reliability Statistics

Reliability Statistics		
Scale	**Cronbach's Alpha**	**N of Items**
Knowledge	.781	15
Attitude	.722	15
Practice	.740	15

Interpretation-The tableshows that the data ishighly reliable for all three scales, as the values exceed 0.7.

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Demographic Analysis

Table 2 throws light on the demographic distribution of the respondents

Table 2-Demographic Profile

Demographic Variable	Category	Frequency (Percentage)
Age	18-20	113 (28.25%)
	21-23	167 (41.75%)
	24-26	120 (30.0%)
	Total	**400 (100%)**
Gender	Male	183 (45.75%)
	Female	217 (54.25%)
	Total	**400 (100%)**
Educational Qualification	Undergraduate	219 (54.75%)
	Postgraduate	141 (35.25%)
	PhD	40 (10.0%)
	Total	**400 (100%)**
Type of University	Public	233 (58.25%)
	Private	167 (41.75%)
	Total	**400 (100%)**
Family Income (INR)	< 3 Lakhs	87 (21.75%)
	3-6 Lakhs	113 (28.25%)
	6-9 Lakhs	121 (30.25%)
	> 9 Lakhs	79 (19.75%)
	Total	**400 (100%)**
Residence Type	Urban	183 (45.75%)
	Semi-Urban	139 (34.75%)
	Rural	78 (19.5%)
	Total	**400 (100%)**

Interpretation: The demographic data of 400 respondents shows a slight skew, with most aged 21-23 (41.75%), female (54.25%), and pursuing undergraduate degrees (54.75%).

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Public universities dominate (58.25%), 30.25% report incomes of 6-9 lakhs, and urban residents form 45.75% of the sample.

Factor Analysis: Identifying Key Factors Influencing Knowledge of CE Practices in Consumer Electronics

Table 3 shows the critical knowledge factors related to CE

Table 3- Key Factors Influencing Knowledge of CE Practices in Consumer Electronics

KMO	Bartlett'sSignificant	Variance (%)	Factors	Key Statements	Loadings
0.82	0.000	44.5%	Awareness of Circular Economy	I am aware of what a circular economy means.	0.78
			Recycling & Reuse	I know the circular economy promotes recycling and reuse of electronics.	0.82
			Environmental Impact	I understand the impact of improper disposal of electronics.	0.75
			Local Recycling Knowledge	I know the process of recycling e-waste in Lucknow.	0.69
			Policy Awareness	I am aware of policies promoting a circular economy in e-waste management.	0.71
			Global Initiative Awareness	I am aware of global initiatives for sustainable electronics.	0.68
			Obsolescence Awareness	I understand the concept of 'planned obsolescence' in electronics.	0.70

Interpretation: A KMO value of 0.82 and sig of 0.000 indicate strong sampling adequacy, explaining 44.5% variance (1st component). The critical factors identified reflectconsumers' knowledge regarding the CE in electronic goods.

Key Factors Influencing Attitude of CE Practices in Consumer Electronics

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Table 4 shows the critical Attitude factors related to CE

Table 4- Key Factors Influencing Attitude of CE Practices in Consumer Electronics

KMO	Bartlett'sSignificant	Variance (%)	Factors	Key Statements	Loadings
0.70	0.000	57.3%	Prolonging Product Life	I believe in extending the life of my electronics.	0.73
			Support for Policies	I support policies that encourage recycling and reuse of electronics.	0.76
			Willingness to Pay	I am willing to pay more for circular economy products.	0.81
			Disposal Responsibility	I feel responsible for the proper disposal of electronics.	0.70
			Preference for Circular Brands	I prefer buying from companies adhering to circular principles.	0.73
			Waste Reduction Priority	Reducing electronic waste should be a priority.	0.74
			Support for Recycling Initiatives	I support initiatives encouraging the recycling of electronics.	0.68
			Sustainability Focus	Adopting circular economy practices is crucial for	0.75

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Interpretation: A KMO value of 0.70 and sig of 0.000 indicate strong sampling adequacy, explaining 57.3% variance (1st component). The critical factors identified reflectconsumers'attitudes regarding the CE in electronic goods.

Key Factors Influencing CE Practices in Consumer Electronics

Table 5 shows the critical Practice factors related to CE

Table 5- Key Factors Influencing Practice of CE Practices in Consumer Electronics

KMOBartlett'sSignificant Variance (%) Factors Key Statements Loadings

KMO	Bartlett'sSignificant	Variance (%)	Factors	Key Statements	Loadings
0.77	0.000	68.7%	Regular Repairs	I regularly repair my electronic devices to extend their use.	0.72
			Upgrading Devices	I prefer upgrading rather than buying new devices.	0.74
			E-waste Recycling	I recycle old electronics at designated recycling centres.	0.79
			Eco-Friendly Disposal	I dispose of e-waste in environmentally friendly ways.	0.77
			Donating/Selling Devices	I donate or sell my old electronics rather than throwing them away.	0.68
			Refurbished Purchasing	I am considering purchasing refurbished electronics.	0.70
			Eco-Friendly Preferences	I prioritise eco-friendly options for new devices.	0.71
			Modular Design	I choose electronics with modular designs for easy repair/recycling.	0.73

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Interpretation: A KMO value of 0.77 and sig of 0.000 indicate strong sampling adequacy, explaining 68.7% variance (1st component). The critical factors identified reflectconsumers'practice regarding the CE in electronic goods.

Hypotheses testing

Table 6 reveals the hypotheses testing results.

Table 6- Demographic factors & KAP

Dependence between Demographic Factors and Knowledgeof Circular Economy Practices in Consumer Electronics		
Hypotheses	**Asy. Significance**	**Result**
H1: There are significant differences in the knowledge of CE practices among respondents across different age groups	0.021	Accepted
H2:There are significant differencesin the knowledge of CE practices among respondents across differentgender groups	0.032	Accepted
H3:There are significant differencesin the knowledge of CE practices among respondents across differentlevels of educational qualification groups	0.015	Accepted
H4:There are significant differencesin the knowledge of CE practices among respondents across differenttypes of university groups	0.072	Not Accepted
H5:There are significant differencesin the knowledge of CE practices among respondents across differentfamily income level groups	0.085	Not Accepted
H6:There are significant differencesin the knowledge of CE practices among respondents across different residence type groups	0.045	Accepted
Dependence between Demographic Factors and Attitudeof Circular Economy Practices in Consumer Electronics		
Hypotheses	**Asy. Significance**	**Result**
H7: There are significant differencesin the attitude towardsCE practices among respondents across different age groups	0.019	Accepted

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H8: There are significant differencesin the attitude towardsCE practices among respondents across differentgender groups	0.024	Accepted
H9: There are significant differencesin the attitude towardsCE practices among respondents across differentlevels of educational qualification groups	0.011	Accepted
H10: There are significant differencesin the attitude towardsCE practices among respondents across different types of university groups.	0.212	Not Accepted
H11: There are significant differencesin the attitude towardsCE practices among respondents across different	0.065	Not Accepted
H12: There are significant differencesin the attitude towardsCE practices among respondents across different residence type groups	0.037	Accepted

Dependence between Demographic Factors and Practiceof Circular Economy Practices in Consumer Electronics		
Hypotheses	**Asy. Significance**	**Result**
H13: There are significant differencesin the practice ofCE practices among respondents across different age groups	0.001	Accepted
H14: There are significant differencesin the practice ofCE practices among respondents across different gender groups	0.041	Accepted
H15: There are significant differencesin the practice ofCE practices among respondents across different educational qualification groups	0.031	Accepted
H16: There are significant differencesin the practice of CE practices among respondents across differenttypes of university groups	0.710	Not Accepted
H17: There are significant differencesin the practice ofCE practices among respondents across differentlevels of family income groups	0.025	Accepted
H18: There are significant differencesin the practice ofCE practices among respondents across different residence type groups	0.014	Accepted

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Interpretation- The findings indicate that knowledge and attitudes toward CE practices in consumer electronics differ significantly across age, gender, education, and residence type. At the same time,no significant difference is visible across the different kinds of universities and different levels of family income. Regarding the level of practiceofCE practices, there are significant differences among all demographic groups except the type of university.

DISCUSSION

This research offers important insights into the factors that influence knowledge, attitudes, and practices related to the CE in consumer electronics among youth in Lucknow.The first factor identified is awareness of CE, with participants expressing knowledge about recycling, environmental impacts, and local recycling processes. This shows a growing awareness of the importance of sustainable practices among consumers. The factors reflecting attitudereveal a solid commitment to prolonging product life, supporting policies, and willingness to pay more for sustainable products. This demonstrates that many consumers are inclined to adopt CE practices, particularly in light of their perceived responsibility for proper disposal and preference for circular brands. The factors focusing on practice show that many participants actively engage in practices like regular repairs, recycling, and eco-friendly disposal. These findings imply that awareness and attitudes may effectively translate into practices, contributing to more sustainable consumer behaviour.

Notably, the study reveals that age, gender, education, and residence type significantly influence knowledge and attitudes toward circular economy practices in consumer electronics, while the kind of university and family income do not. This finding supports previous research highlighting that younger and more educated individuals exhibit greater awareness and favourable attitudes towards sustainability (Atlason et al., 2017; Mapa et al., 2021; Mykkänen& Repo, 2021). Moreover, all demographic factors, except university type, are linked to actual engagement in these practices, indicating that demographic characteristics shape awareness and participation in circular economy initiatives among youth in Lucknow.

Future studies could examine the impact of government policies and public attitudeson circular economy adoption and explore regional variations. Expanding demographic diversity can provide broader insights into barriers and trends in sustainable practices.Further studies could expand geographically for broader applicability and use mixed methods to incorporate qualitative insights alongside quantitative data.

CONCLUSION

This study has accomplished its objectives by assessing the KAP of youth in Lucknow City regarding CE practices in consumer electronic products. First, the analysis revealed

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that youth possess a moderate level of knowledge about CE practices, with key factors like awareness of the circular economy, recycling and reuse, and environmental impact standing out. Second, attitudes toward CE practices were favourable, as many participants supported prolonging product life, endorsing CE policies, and taking responsibility for proper disposal. Third, the sustainable practices of youth, including regular repairs, recycling, and eco-friendly disposal, were well-aligned with CE principles.

Finally, demographic factors, particularly age, gender, education, and residence type, significantly influenced youth's knowledge, attitudes, and practices regarding CE. However, factors like family income and university type showed limited impact. Overall, the study highlighted that youth in Lucknow are increasingly aware and engaged in CE practices, but targeted interventions could further enhance their participation and support.

RECOMMENDATIONS

Following recommendations can be put forth for duffer stakeholders

Recommendations for Policymakers:

- Launch targeted campaigns to educate the public on circular economy (CE) principles, especially recycling and e-waste disposal. Emphasize global sustainability efforts to align local practices with international initiatives.
- Introduce policies that promote recycling and the reuse of electronics, and provide incentives for businesses adopting CE models.
- Offer tax rebates or subsidies for consumers purchasing circular economy-certified electronics.

Recommendations for Educators:

- Include CE principles in educational programs, especially in electronics and environmental science courses.
- Encourage hands-on activities like repairing and refurbishing devices to foster practical understanding of CE practices.
- Partner with industry players for research, internships, and fieldwork focused on sustainable electronics practices.

Recommendations for Industry Stakeholders:

- Prioritize modular designs for easy repairs and upgrades to extend product life.
- Set up accessible e-waste recycling centers to support eco-friendly disposal.
- Market CE products, highlighting their environmental benefits, and offer trade-in programs for refurbished electronics.

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These actions will drive the adoption of circular economy practices and contribute to sustainability in the electronics sector.

LIMITATIONS AND FUTURE SCOPE

The study in Lucknow highlights young adults' KAP on CE in electronics but lacks generalizability to diverse regions. Future research should expand geographically and address barriers to CE adoption among youth.

REFERENCES

1. Atlason, R. S., Giacalone, D., &Parajuly, K. (2017). Product design in the circular economy: Users' perception of end-of-life scenarios for electrical and electronic appliances. Journal of Cleaner Production, 168, 1059-1069. https://doi.org/10.1016/j.jclepro.2017.09.082
2. Boyer, R. H., Hunka, A. D., Linder, M., Whalen, K. A., & Habibi, S. (2021). Product labels for the circular economy: are customers willing to pay for circular? Sustainable Production and Consumption, 27, 61-71. https://doi.org/10.1016/j.spc.2020.10.010
3. Cordova-Pizarro, D., Aguilar-Barajas, I., Rodriguez, C. A., & Romero, D. (2020). Circular economy in Mexico's electronic and cell phone industry: Recent evidence of consumer behaviour. Applied Sciences, 10(21), 7744. https://doi.org/10.3390/app10217744
4. Dhull, R., &Shreshtha, D. M. (2021). Consumer Awareness about E-Waste in Rural and Urban Haryana. The Journal of Contemporary Issues in Business and Government, 27(3), 228-234. Retrieved from https://cibgp.com/au/index.php/1323-6903/article/view/1590
5. Islam, M. T., Huda, N., Baumber, A., Shumon, R., Zaman, A., Ali, F., &Sahajwalla, V. (2021). A global review of consumer behaviour towards e-waste and implications for the circular economy. Journal of Cleaner Production, 316, 128297. https://doi.org/10.1016/j.jclepro.2021.128297
6. Istudor, N., Dumitru, I., Filip, A., Stancu, A., Ro?ca, M. I., &Cânda, A. (2023). Integration of Circular Economy Principles in Consumer Behaviour for Electrical and Electronic Equipment. Amfiteatru Economic, 25(62), 48-62.
7. Koistila, K. (2020). Cultural barriers to circular economy adoption: Consumer awareness and attitudes towards refurbished ICT devices. https://urn.fi/URN:NBN:fi-fe2020042922907
8. Kuah, A. T., & Wang, P. (2020). Circular economy and consumer acceptance: An exploratory study in East and Southeast Asia. Journal of Cleaner Production, 247(3), 119097. https://doi.org/10.1016/j.jclepro.2019.119097

9. Mapa, M. T., George, F., Peters, D., Dinggai, M. S., & Jafar, A. (2021). The effect of social-economic background on electric and electronic waste (e-waste) management amongst residential areas in Kota Kinabalu City, Sabah, Malaysia. The Journal of Contemporary Issues in Business and Government, 27(2), 5299-5312. Retrieved from https://cibgp.com/au/index.php/1323-6903/article/view/1432

10. Mykkänen, J., & Repo, P. (2021). Consumer perspectives on arranging circular economy in Finland. Sustainability: Science, Practice and Policy, 17(1), 349-361. https://doi.org/10.1080/15487733.2021.1977500

11. Ofori, D., & Opoku Mensah, A. (2022). Sustainable electronic waste management among households: a circular economy perspective from a developing economy. Management of Environmental Quality, 33(1), 64-85. https://doi.org/10.1108/MEQ-04-2021-0089

12. Pourranjbar, A., &Shokouhyar, S. (2023). Shedding light on the efficiency of the product-service system in waste from electrical and electronic equipment: A social media analysis of consumer tweets. Journal of Cleaner Production, 415, 137545. https://doi.org/10.1016/j.jclepro.2023.137545

13. Shah, G. L. (2017). Determinants of mobile phone waste recycling and end-of-life management in Johor (Doctoral dissertation, UniversitiTeknologi Malaysia).

14. Vidal-Ayuso, F., Akhmedova, A., & Jaca, C. (2023). The circular economy and consumer behaviour: Literature review and research directions. Journal of Cleaner Production, 137824. https://doi.org/10.1016/j.jclepro.2023.137824

15. Wang, Y., Zhu, Q., Krikke, H., & Hazen, B. (2020). How product and process knowledge enable consumers switching to remanufactured laptop computers in circular economy. Technological Forecasting and Social Change, 161, 120275. https://doi.org/10.1016/j.techfore.2020.120275