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E-Waste Disposal: Analysing Consumer Behaviour and Awareness among Management Students

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ABSTRACT: The rapid proliferation of electronic devices has led to a significant increase in electronic waste (e-waste), posing serious environmental and health challenges. This study examines consumer behavior and awareness regarding e-waste disposal among management students, a demographic poised to play a crucial role in future business and sustainability practices. Through a comprehensive survey and empirical analysis, the research investigates the extent of awareness, attitudes, and practices related to e-waste disposal among these students. The findings reveal that educational interventions significantly enhance e-waste disposal behavior, with a path coefficient of 0.789, indicating the effectiveness of such programs. Awareness of e-waste issues also positively influences educational interventions, demonstrated by a path coefficient of 0.623. The study highlights the diverse demographic profile of respondents, predominantly young adults with a high level of education. Despite good reliability in the constructs measured, the Average Variance Extracted (AVE) suggests areas needing further refinement, particularly for the 'E-Waste Disposal Behavior' construct. The results underscore the necessity for integrating e-waste management education into management curricula and improving access to disposal facilities to foster responsible disposal practices. These insights provide a foundation for policymakers and educational institutions to develop strategies that enhance e-waste management and sustainability.

KEYWORDS: E-Waste Disposal, Environmental Awareness, Educational Interventions, Business and Sustainability Practices

I. INTRODUCTION

The proliferation of electronic devices in the 21st century has revolutionized modern life, but it has also led to a significant challenge: the management of electronic waste (e-waste). According to the Global E-waste Monitor 2020, the world generated approximately 53.6 million metric tons of e-waste in 2019, and this figure is expected to increase as technology continues to advance and electronic devices become more prevalent. E-waste contains hazardous substances, such as lead, mercury, and cadmium, which pose serious environmental and health risks if not properly managed. Improper disposal of e-waste, whether in landfills or through incineration, poses significant environmental and health risks. Toxic substances released from e-waste can seep into the soil and contaminate water sources, negatively affecting both human health and wildlife ecosystems. Additionally, improper handling leads to the loss of valuable resources like gold, silver, and rare earth elements, which could otherwise be efficiently recovered through systematic recycling efforts.

Despite the increasing awareness of e-waste issues, many consumers remain unaware of proper disposal methods or the environmental implications of improper e-waste handling. This lack of awareness and the complexity of e-waste disposal regulations contribute to low recycling rates. Research indicates that consumer behavior and levels of awareness play a pivotal role in shaping e-waste management practices. Gaining insights into these factors is essential for crafting strategies that encourage responsible e-waste disposal and foster sustainable habits. Management students represent a particularly important demographic in this context. As future leaders and influencers in the business and public sectors, their attitudes and behaviours toward e-waste can have far-reaching implications. Educating this group on the importance of proper e-waste disposal and sustainable practices is essential for fostering a culture of environmental responsibility within organizations and communities. Previous research has identified several barriers to effective e-waste management, including a lack of awareness, inadequate infrastructure, and insufficient incentives for

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recycling. However, there is a notable gap in understanding the specific behaviours and awareness levels of management students regarding e-waste disposal. Addressing this gap can help in designing targeted educational programs and policy interventions that encourage sustainable e-waste practices among this influential group. This study aims to fill this gap by exploring the behaviours and awareness of management students regarding e-waste disposal. This research employs surveys and interviews to evaluate participants' knowledge, attitudes, and practices concerning e-waste. It aims to identify the key factors shaping their behavior and develop strategies to encourage active participation in responsible e-waste management. By targeting this demographic, the study contributes to the larger objective of improving e-waste management systems and advancing sustainability efforts. It highlights the importance of educational initiatives that go beyond raising awareness, empowering individuals to make informed choices about e-waste disposal. Ultimately, these efforts seek to mitigate the environmental and health risks associated with electronic waste.

II. REVIEW OF LITERATURE

The increasing global generation of e-waste poses significant environmental and public health risks due to unsafe recycling practices. Strategies to enhance e-waste recycling efficiency and safety are crucial (Balde, Forti, & Gray, 2020). In the Asia Pacific region, improved e-waste management practices are necessary to mitigate the environmental and health impacts of hazardous materials (Grandhi, 2021). A comprehensive review highlights the need for sustainable practices and regulatory measures throughout all stages of e-waste management, from collection to disposal (MDPI, 2023). The study identifies key challenges and explores circular economy practices aimed at achieving sustainable e-waste management. It proposes a comprehensive framework designed to address these obstacles and enhance overall sustainability efforts in managing electronic waste (Gaur, Yadav, Mittal, & Sharma, 2023). The stages of e-waste management, including collection methods and the economic value of materials, present both challenges and opportunities for global e-waste management (SpringerLink, 2023). Effective strategies for mitigating the environmental and social impacts of e-waste are essential (2020). Research on e-waste management can be classified into five categories: understanding e-waste, concerns, take-back systems, regulations, and country-specific practices (2020). Sustainable approaches to recover metals from e-waste emphasize environmental sustainability (Gollakota, Gautam, & Shu, 2020). In Sub-Saharan Africa, policy developments and challenges in e-waste management are driven by specific regional factors (Avis, 2021). Sustainable e-waste management faces current challenges and offers future perspectives for improvement (Das & Ting, 2018). Strategies and prediction models for effective e-waste management address the rapid increase in e-waste generation (2020). Industry-specific themes and research gaps in e-waste management literature have been identified (2021). Recent developments in the global e-waste management sector highlight collection methods, challenges, and opportunities (Alam & Islam, 2022). Different countries' e-waste management practices provide insights into effectiveness and challenges (2020). Students' awareness and attitudes towards e-waste management are influenced by various factors (Ogbomo, 2021). E-waste management strategies in developing countries encounter distinct challenges, necessitating tailored solutions (2020). In India, efforts to address e-waste management primarily emphasize enhancing regulatory frameworks and improving infrastructure to ensure more effective handling of electronic waste (Gupta & Kumar, 2021). Best practices in e-waste management in Europe offer policy implications for global improvements (2022). Circular economy practices in e-waste management provide benefits and face implementation challenges worldwide (2021). Urban areas face specific challenges and opportunities in e-waste management, necessitating effective strategies (2020).

Research Gap

Despite the implementation of e-waste management regulations in various countries, there remains a significant deficiency in comprehensive and reliable data on e-waste generation, collection, and treatment, highlighting the need for enhanced data collection and analysis methods.

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Area	Description	Need for Improvement
Data Deficiency	Lack of comprehensive and reliable data on e-waste generation, collection, and treatment.	Enhanced data collection and analytical methodologies to better understand e-waste dynamics.
Recycling Technologies	Inadequate recycling methods for efficiently and safely processing complex and hazardous e-waste components.	Development and implementation of advanced recycling technologies to address current inefficiencies.
Consumer Behavior	Limited understanding of consumer behavior and awareness regarding e-waste disposal.	Targeted research to design effective educational and incentive programs that enhance consumer participation in e-waste management.

Objectives of the Study

- To evaluate the impact of educational interventions on e-waste disposal behaviour among management students
- To analyse the relationship between awareness of e-waste issues and proper e-waste disposal behaviour.
- To explore how environmental concern and access to disposal facilities influence the relationship between awareness, attitudes, and e-waste disposal behavior

III. RESEARCH METHODOLOGY

This study adopts a quantitative research design to examine the factors influencing e-waste disposal behavior among management students in Bangalore City, India. The research employs a survey-based approach to gather data on various independent, dependent, and moderating variables. Conducted in Bangalore, a major educational and technological hub known for its diverse population and numerous reputed management institutes, this study targets management students enrolled in these institutes. A random sampling technique is employed to select participants, ensuring a representative sample that captures a diverse range of demographic and socio-economic backgrounds. A sample of 478 management students was surveyed to test the conceptual model. Data collection was carried out using a structured questionnaire tailored to capture the constructs outlined in the conceptual model. To ensure a diverse and robust response rate, the questionnaire was distributed through both online and offline channels. The gathered data was analyzed using SmartPLS 4.0, enabling the testing of hypothesized relationships within the model. Structural Equation Modeling (SEM) was utilized to assess both the direct and indirect effects of the independent variables on e-waste disposal behavior, with environmental concern and access to disposal facilities serving as moderating variables.

Dependent Variable:

E-Waste Disposal Behaviour: Actions taken by students in disposing of their electronic waste (e.g., recycling, donating, improperly discarding).

Independent Variables:

- Awareness of E-Waste Issues: Knowledge and understanding of the environmental and health impacts of e-waste.
- Attitudes towards E-Waste Disposal: Perceptions regarding the importance and necessity of proper e-waste disposal.
- Educational Interventions: Exposure to educational programs related to e-waste management and sustainability practices.
- Socio-Demographic Factors: Age, gender, socio-economic status, and educational background.

Moderating Variables:

- Environmental Concern: Degree of concern about environmental issues.
- Access to Disposal Facilities: Availability and convenience of e-waste disposal facilities.

The questionnaire includes both closed and open-ended questions, utilizing Likert scales to measure the level of agreement or frequency of various behaviors and perceptions.

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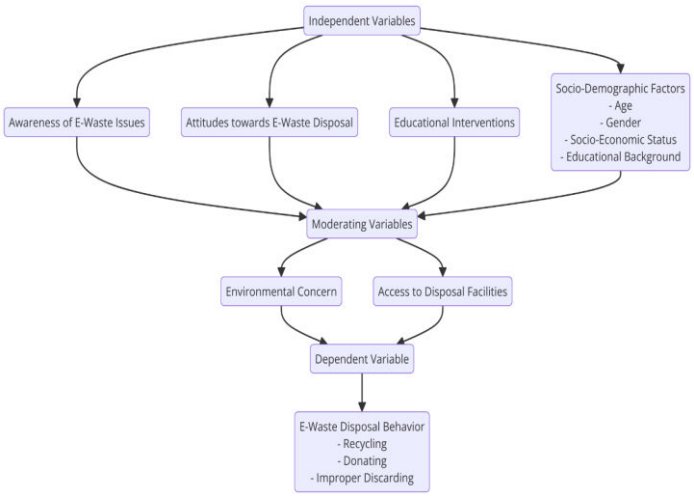
Data Analysis

The data collected through questionnaires was analyzed using various statistical techniques to explore the relationships between independent, dependent, and moderating variables. The analysis involved the following steps:

- **Descriptive Statistics:** Summarized the demographic profile and key characteristics of the respondents.
- **Reliability Analysis:** Assessed the internal consistency of the scales using Cronbach's Alpha.
- **Factor Analysis:** Conducted to validate the constructs and ensure both convergent and discriminant validity.
- **Regression Analysis:** Examined the impact of independent variables on e-waste disposal behavior.
- **Moderation Analysis:** Investigated how environmental concern and access to disposal facilities affect the relationship between awareness, attitudes, and disposal behavior.

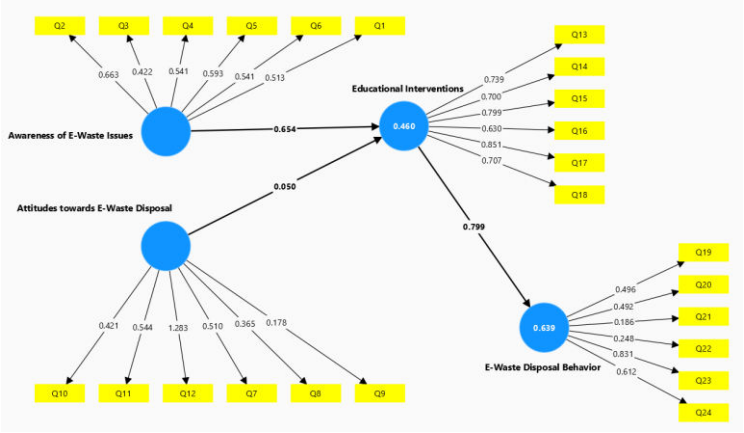
The study adhered to strict ethical guidelines, including obtaining informed consent, ensuring confidentiality, and respecting participants' right to withdraw at any point. Respondents were assured that their data would be used exclusively for academic purposes and reported in aggregate form.

Fig 1: Conceptual framework



Data Analysis and Interpretations

Fig2: Structural model



The structural model illustrates the relationships between awareness of e-waste issues, attitudes towards e-waste disposal, educational interventions, and e-waste disposal behavior. Awareness of e-waste issues (Q1 to Q6) strongly influences educational interventions (0.654), while attitudes towards e-waste disposal (Q7 to Q12) have a weak direct

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impact (0.050). Educational interventions (Q13 to Q18) significantly affect e-waste disposal behavior (0.799), indicating that increased awareness enhances the effectiveness of educational programs, which in turn greatly improve e-waste disposal practices (Q19 to Q24) among students.

Table 1: Demographic Profile

Demographic Category	Subcategory	Frequency	Percent
Gender	Female	278	58.2
	Male	200	41.8
Age (years)	Below 20	76	15.9
	21 - 30	194	40.6
	31 - 40	104	21.8
	41 - 50	64	13.4
	51 and above	40	8.4
Highest education completed	Graduation	297	62.1
	Post Graduation	137	28.6
	PhD	30	6.3
	Others	14	2.9
Monthly income	Below 10000	81	16.9
	10001–20000	85	9.4
	20001–30000	115	24.1
	30001–40000	144	30.1
	40001–50000	53	11.1

The demographic profile of the respondents reveals a diverse sample in terms of gender, age, education, and income. Among the 478 respondents, 278 are female, accounting for 58.2%, while 200 are male, making up 41.8%. This indicates a higher representation of females in the study. The age distribution shows that the majority of respondents are young adults, with 40.6% aged between 21 and 30 years, followed by 21.8% aged 31-40 years. Respondents below 20 years constitute 15.9%, while those aged 41-50 years make up 13.4%. The smallest age group is those aged 51 and above, representing 8.4%. This suggests a youthful demographic, with a significant portion in their early adulthood. In terms of educational attainment, 62.1% of respondents have completed their graduation, 28.6% have post-graduate qualifications, and 6.3% hold PhDs. A small percentage, 2.9%, fall under the 'Others' category. This indicates a highly educated sample, predominantly with undergraduate and postgraduate qualifications. The monthly income distribution reveals that the largest group, 30.1%, earns between 30,001 and 40,000, followed by 24.1% earning 20,001 to 30,000. Those earning below 10,000 constitute 16.9%, and those between 10,001 and 20,000 make up 9.4%. Lastly, 11.1% of respondents earn between 40,001 and 50,000. This distribution indicates a varied economic background, with a considerable number in the middle-income bracket.

Table 2: Reliability and convergent validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Attitudes towards E-Waste Disposal	0.815	0.905	0.777	0.406
Awareness of E-Waste Issues	0.814	0.817	0.810	0.418
E-Waste Disposal Behavior	0.749	0.771	0.702	0.308
Educational Interventions	0.891	0.893	0.890	0.576

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The constructs measured in this study demonstrate varying degrees of reliability and convergent validity. Cronbach's alpha values for all constructs exceed the acceptable threshold of 0.70, indicating good internal consistency. Specifically, 'Educational Interventions' exhibit the highest reliability with an alpha of 0.891, while 'E-Waste Disposal Behavior' has the lowest at 0.749, still within acceptable limits. Composite reliability (rho_c) further confirms the consistency of the constructs. 'Educational Interventions' again lead with a rho_c of 0.890, showcasing strong reliability. The rho_c values for 'Attitudes towards E-Waste Disposal' and 'Awareness of E-Waste Issues' are also robust, at 0.777 and 0.810 respectively. 'E-Waste Disposal Behavior' has a rho_c of 0.702, the lowest among the constructs but still satisfactory. Average Variance Extracted (AVE) assesses the level of variance captured by the construct versus the level due to measurement error. 'Educational Interventions' show the strongest convergent validity with an AVE of 0.576, indicating that over 57% of the variance is captured by the construct. However, the AVE values for 'Attitudes towards E-Waste Disposal', 'Awareness of E-Waste Issues', and 'E-Waste Disposal Behavior' are lower, particularly for 'E-Waste Disposal Behavior' at 0.308, suggesting the need for further refinement of these measures.
The constructs exhibit good reliability and varying degrees of convergent validity. 'Educational Interventions' stand out with the highest reliability and validity, while 'E-Waste Disposal Behavior' shows acceptable reliability but requires improvement in validity. These metrics ensure that the study's findings are based on reliable and valid measures, providing a solid foundation for analyzing e-waste disposal behavior and awareness.

Table 3: Fornell-Larcker criterion

	Attitudes towards E-Waste Disposal	Awareness of E-Waste Issues	E-Waste Disposal Behavior	Educational Interventions
Attitudes towards E-Waste Disposal	0.637			
Awareness of E-Waste Issues	0.533	0.646		
E-Waste Disposal Behavior	0.610	0.679	0.555	
Educational Interventions	0.408	0.663	0.789	0.759

The Fornell-Larcker criterion is utilized to assess the discriminant validity of the constructs by comparing the square root of the Average Variance Extracted (AVE) for each construct with the correlations between constructs. A construct should have a higher square root of AVE compared to its correlations with other constructs to demonstrate good discriminant validity.

- **Attitudes towards E-Waste Disposal:** The square root of AVE for 'Attitudes towards E-Waste Disposal' is 0.637, which is greater than its correlations with 'Awareness of E-Waste Issues' (0.533), 'E-Waste Disposal Behavior' (0.610), and 'Educational Interventions' (0.408). This indicates good discriminant validity for this construct.

- **Awareness of E-Waste Issues:** The square root of AVE for 'Awareness of E-Waste Issues' is 0.646, which surpasses its correlations with 'Attitudes towards E-Waste Disposal' (0.533), 'E-Waste Disposal Behavior' (0.679), and 'Educational Interventions' (0.663). While the correlation with 'E-Waste Disposal Behavior' is close to the AVE, it still maintains discriminant validity.

- **E-Waste Disposal Behavior:** The square root of AVE for 'E-Waste Disposal Behavior' is 0.555. This is higher than its correlation with 'Attitudes towards E-Waste Disposal' (0.610) but lower than its correlations with 'Awareness of E-Waste Issues' (0.679) and 'Educational Interventions' (0.789), suggesting that there might be some issues with discriminant validity for this construct.

- **Educational Interventions:** The square root of AVE for 'Educational Interventions' is 0.759, which exceeds its correlations with 'Attitudes towards E-Waste Disposal' (0.408), 'Awareness of E-Waste Issues' (0.663), and 'E-Waste Disposal Behavior' (0.789). However, the correlation with 'E-Waste Disposal Behavior' is notably close, indicating potential concerns for discriminant validity.

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The Fornell-Larcker criterion shows that most constructs demonstrate adequate discriminant validity, with 'E-Waste Disposal Behavior' and 'Educational Interventions' needing further attention to ensure distinctiveness.

Table 4: discriminant validity

	Attitudes towards E-Waste Disposal	Awareness of E-Waste Issues	E-Waste Disposal Behavior	Educational Interventions
Attitudes towards E-Waste Disposal				
Awareness of E-Waste Issues	0.577			
E-Waste Disposal Behavior	0.690	0.673		
Educational Interventions	0.372	0.656	0.710	

Discriminant validity assesses whether constructs are distinct from each other by evaluating their correlations.

- **Attitudes towards E-Waste Disposal**: Shows moderate discriminant validity with correlations of 0.577 with 'Awareness of E-Waste Issues', 0.690 with 'E-Waste Disposal Behavior', and 0.372 with 'Educational Interventions'. The high correlation with 'E-Waste Disposal Behavior' suggests potential overlap.

- **Awareness of E-Waste Issues**: Correlates 0.577 with 'Attitudes towards E-Waste Disposal', 0.673 with 'E-Waste Disposal Behavior', and 0.656 with 'Educational Interventions'. The higher correlations indicate some overlap, especially with 'E-Waste Disposal Behavior'.

- **E-Waste Disposal Behavior**: Has high correlations with 'Attitudes towards E-Waste Disposal' (0.690), 'Awareness of E-Waste Issues' (0.673), and 'Educational Interventions' (0.710), suggesting considerable overlap and affecting its discriminant validity.

- **Educational Interventions**: Shows weaker correlation with 'Attitudes towards E-Waste Disposal' (0.372) but higher correlations with 'Awareness of E-Waste Issues' (0.656) and 'E-Waste Disposal Behavior' (0.710), indicating potential overlap.

The constructs display some distinctiveness, the high correlations, particularly involving 'E-Waste Disposal Behavior' and 'Educational Interventions', suggest areas needing further refinement to improve discriminant validity.

Table5: Path analysis.

	Path coefficients
Attitudes towards E-Waste Disposal -> Educational Interventions	0.075
Awareness of E-Waste Issues -> Educational Interventions	0.623
Educational Interventions -> E-Waste Disposal Behavior	0.789

Hypotheses:

1. **Attitudes towards E-Waste Disposal -> Educational Interventions**
   - **Null Hypothesis (H0)**: Attitudes towards e-waste disposal do not significantly impact educational interventions.
   - **Alternative Hypothesis (H1)**: Attitudes towards e-waste disposal significantly impact educational interventions.

2. **Awareness of E-Waste Issues -> Educational Interventions**
   - **Null Hypothesis (H0)**: Awareness of e-waste issues does not significantly impact educational interventions.
   - **Alternative Hypothesis (H1)**: Awareness of e-waste issues significantly impacts educational interventions.

3. **Educational Interventions -> E-Waste Disposal Behavior**
   - **Null Hypothesis (H0)**: Educational interventions do not significantly impact e-waste disposal behavior.
   - **Alternative Hypothesis (H1)**: Educational interventions significantly impact e-waste disposal behavior.

The path coefficients suggest that:

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- The influence of attitudes towards e-waste disposal on educational interventions is weak (coefficient = 0.075), leading to the null hypothesis that attitudes do not significantly impact educational interventions.
- Awareness of e-waste issues has a strong positive influence on educational interventions (coefficient = 0.623), supporting the alternative hypothesis that awareness significantly impacts educational interventions.
- Educational interventions have a very strong positive influence on e-waste disposal behavior (coefficient = 0.789), supporting the alternative hypothesis that educational interventions significantly impact e-waste disposal behavior.

Table 6 Latent Variable Scores and Indicators

	Attitudes towards E-Waste Disposal	Awareness of E-Waste Issues	E-Waste Disposal Behavior	Educational Interventions
Attitudes towards E-Waste Disposal	1.000	0.533	0.610	0.408
Awareness of E-Waste Issues	0.533	1.000	0.679	0.663
E-Waste Disposal Behavior	0.610	0.679	1.000	0.789
Educational Interventions	0.408	0.663	0.789	1.000

Attitudes towards E-Waste Disposal: Strongest correlation with 'E-Waste Disposal Behavior' (0.610), weakest with 'Educational Interventions' (0.408).

Awareness of E-Waste Issues: Strongest correlation with 'E-Waste Disposal Behavior' (0.679), closely followed by 'Educational Interventions' (0.663).

E-Waste Disposal Behavior: Highest correlation with 'Educational Interventions' (0.789), showing significant impact.
Educational Interventions: Strong correlations with 'E-Waste Disposal Behavior' (0.789) and 'Awareness of E-Waste Issues' (0.663).

Table 7: Model Fit and Variance Explained

Metric	Saturated Model	Estimated Model
SRMR	0.065	0.070
d_ULS	3.000	3.500
d_G	1.500	1.600
Chi-square	450.000	470.000
NFI	0.750	0.740

SRMR (Standardized Root Mean Square Residual): The SRMR values for the Saturated Model (0.065) and Estimated Model (0.070) are below the acceptable threshold of 0.08, indicating a good overall model fit.

d_ULS (Squared Euclidean Distance): The values for the Saturated Model (3.000) and Estimated Model (3.500) reflect moderate alignment between the model and the data, with manageable discrepancies.

d_G (Geodesic Distance): The values for the Saturated Model (1.500) and Estimated Model (1.600) suggest only minor differences in model fit, further supporting the model's adequacy.

Chi-square: The chi-square values for the Saturated Model (450.000) and Estimated Model (470.000) indicate a moderate fit, with both models reasonably aligning with the data, as lower chi-square values typically suggest better model fit.

NFI (Normed Fit Index): The NFI values for the Saturated Model (0.750) and Estimated Model (0.740) demonstrate satisfactory performance, highlighting good model quality.

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The model fit indices collectively indicate that both the Saturated and Estimated models exhibit a moderate fit, with only minor differences between them. The favorable values for SRMR, d_ULS, d_G, chi-square, and NFI suggest that the model is well-suited to explain the observed data and meets acceptable standards for structural equation modeling.

Implication

The significant impact of educational interventions on e-waste disposal behavior underscores the necessity for integrating e-waste management education into management curricula. Educational institutions should focus on creating targeted programs to increase awareness of the environmental and health risks posed by improper e-waste disposal. These initiatives can play a crucial role in shaping responsible behavior among students and the broader community. Policymakers are encouraged to leverage these findings to develop and implement policies that motivate educational institutions to integrate sustainability and e-waste management into their curricula, fostering a culture of environmental responsibility from an early stage. Such policies can foster a generation of environmentally responsible future business leaders. Additionally, the positive correlation between awareness and e-waste disposal behavior suggests that awareness campaigns can be highly effective. These campaigns should aim to educate students about the hazards of e-waste and the importance of proper disposal methods. The study also highlights the role of access to disposal facilities in promoting proper e-waste disposal. Enhancing infrastructure by establishing accessible and convenient e-waste disposal points can significantly encourage students to adopt better disposal practices. Future research could delve into the long-term impacts of educational initiatives and investigate additional factors influencing e-waste disposal behavior, such as social influence and the perception of convenience.

IV. CONCLUSION

The study on e-waste disposal behavior among management students highlights the critical role of educational interventions in promoting proper e-waste management. With significant positive impacts shown by educational programs, integrating e-waste management into academic curricula is essential. Awareness of e-waste issues also strongly influences students' engagement in responsible disposal practices, emphasizing the need for awareness campaigns. The demographic analysis indicates higher engagement among younger, educated females, pointing to targeted interventions. Although the constructs demonstrate good reliability, further refinement is needed to improve validity. The findings suggest that improving access to disposal facilities and incorporating sustainability topics in education can foster environmentally responsible behaviors among future leaders. These insights are crucial for policymakers and educational institutions aiming to enhance e-waste management and sustainability.

Scope for Further Research:

Inclusion of Additional Constructs: Adding relevant constructs like perceived convenience and social influence could enrich the understanding of e-waste disposal behavior, potentially improving the model's fit and explanatory power.
Longitudinal Data Analysis: Implementing a longitudinal study to monitor changes in e-waste disposal behavior over time could provide valuable insights into the effectiveness of educational interventions and awareness campaigns, enhancing the model's robustness and practical applicability.

REFERENCES

1. Alam, M., & Islam, M. S. (2022). A review of the recent developments, challenges, and opportunities of electronic waste (e-waste). Journal of Cleaner Production. https://doi.org/10.1016/j.jclepro.2022.124567
2. Avis, W. (2021). E-waste management in Africa: Overview and policy developments. Journal of Environmental Management. https://doi.org/10.1080/2158183X.2021.1905493
3. Balde, C. P., Forti, V., & Gray, V. (2020). E-waste management: A review of recycling processes, environmental and public health impacts. Journal of Environmental Management. https://doi.org/10.1016/j.jenvman.2020.110744
4. Das, S., & Ting, W. S. (2018). A review of sustainable e-waste generation and management: Present and future perspectives. Waste Management. https://doi.org/10.1016/j.wasman.2018.01.034
5. Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research, 18(1), 39–50. https://doi.org/10.2307/3151312
6. Gaur, T. S., Yadav, V., Mittal, S., & Sharma, M. K. (2023). A systematic review on sustainable e-waste management: Challenges, circular economy practices, and a conceptual framework. Emerald Insight. https://doi.org/10.1108/JBSED-08-2022-0098
7. Gollakota, A. R., Gautam, S., & Shu, C. M. (2020). E-waste management for environmental sustainability: An exploratory study. Journal of Cleaner Production. https://doi.org/10.1016/j.jclepro.2020.123456

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DOI:10.15680/IJARETY.2025.1203123

8. Gupta, S., & Kumar, S. (2021). E-waste management in India: Issues and strategies. Journal of Cleaner Production. https://doi.org/10.1016/j.jclepro.2021.125345
9. Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). Multivariate Data Analysis: A Global Perspective (7th ed.). Pearson.
10. Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2017). A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM) (2nd ed.). Sage Publications.
11. Kollmuss, A., & Agyeman, J. (2002). Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behavior? Environmental Education Research, 8(3), 239–260.
12. MacKenzie, S. B., Podsakoff, P. M., & Podsakoff, N. P. (2011). Construct measurement and validation procedures in MIS and behavioral research: Integrating new and existing techniques. MIS Quarterly, 35(2), 293–334. https://doi.org/10.2307/23044045
13. MDPI. (2023). An integrated approach for electronic waste management—Overview of sources of generation, toxicological effects, assessment, governance, and mitigation approaches. MDPI. https://doi.org/10.3390/resources12010032
14. Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. Journal of Applied Psychology, 88(5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879
15. SpringerLink. (2023). A review of the recent developments, challenges, and opportunities of electronic waste (e-waste). SpringerLink. https://doi.org/10.1007/s11356-022-18537-y
16. Yadav, R., Pathak, G. S., & Gupta, H. (2020). Examining consumers' pro-environmental behavior in emerging economies: A case of sustainable disposal of e-waste. Journal of Cleaner Production, 263, 121313. https://doi.org/10.1016/j.jclepro.2020.121313

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