

GROWTH OF TECHNOLOGY AND RISING E- WASTE PROBLEMS: A STUDY CONDUCTED IN MYSURU

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Abstract

Technology has become an important part of our daily life. People use smartphones, laptops, computers, and other electronic devices for education, work, communication, shopping, and entertainment. As the use of these devices increases, so does the amount of electronic waste (e-waste). Improper disposal of e-waste can cause serious environmental and health problems. This study, "Growth of Technology and Rising E-Waste Problems: A Study Conducted in Mysuru," aims to understand how technological growth is contributing to rising e-waste in Mysuru. The study also examines people's awareness of e-waste disposal and the reasons for replacing electronic devices. A descriptive research design was used. Primary data were collected from 60 respondents using a structured questionnaire through a convenience sampling technique. The findings show that 42.63% of respondents said better internet facilities and technology-related jobs have increased the purchase of smart devices. 57.38% said online sales and exchange offers encourage them to replace electronic devices earlier, while 57.37% believed that software and hardware updates make them buy upgraded devices. The study also found that 77.05% of respondents dispose of their old electronic devices through local scrap dealers instead of authorized recycling centers. The study concludes that rapid technological growth has increased e-waste generation in Mysuru. It recommends creating public awareness, improving recycling facilities, and encouraging responsible e-waste disposal to protect the environment and support sustainable development.

INTRODUCTION

Technology has become an essential part of modern life. Today, people use electronic devices such as mobile phones, laptops, computers, tablets, televisions, and other digital gadgets for various purposes. These devices help people communicate, learn, work, shop, access information, and enjoy entertainment. The development of technology has made life easier, faster, and more convenient. As technology continues to advance, the use of electronic devices is increasing rapidly worldwide. In recent years, Mysuru has experienced significant technological growth. The city has seen an increase in internet usage, online education, digital banking, e-commerce, and information technology services. Students use smartphones and laptops for learning, employees use computers for work, and businesses rely on digital technologies for their daily operations. The increasing availability of affordable electronic products and internet services has encouraged more people to adopt technology in their everyday lives. While technology provides many benefits, it has also created a major environmental challenge known as electronic waste or e-waste. E-waste refers to discarded electronic devices that are no longer useful or have reached the end of their life cycle. Examples of e-waste include old mobile phones, computers, laptops, chargers, batteries, printers, televisions, and other electronic equipment. As new and advanced models are introduced into the market, people often replace their old devices with newer ones. This leads to a continuous increase in e-waste generation. The e-waste problem is growing rapidly in Mysuru. Many people are unaware of the proper methods for disposing of old electronic items. In some cases, e-waste is mixed with household waste or discarded in open areas. Electronic products contain harmful substances such as lead, mercury, cadmium, and other toxic materials. When these materials are not properly disposed of, they can contaminate soil, water, and air, causing environmental pollution and health risks. The increasing generation of e-waste has become a matter of concern for governments, environmental organizations, and society. Proper management of e-waste is necessary to reduce its harmful effects. Recycling and safe disposal methods can help recover valuable materials from electronic products and reduce environmental damage. Creating public awareness about responsible e-waste disposal is also important for sustainable development. In Mysuru, the growing use of technology and the rising amount of e-waste are closely connected. As people continue to rely on electronic devices, the challenge of managing e-waste grows more significant. Understanding this relationship is important for developing effective solutions to the problem. Therefore, this study focuses on technological growth and the rising e-waste problem in Mysuru. The study aims to

examine how technological advancement contributes to e-waste generation, assess public awareness of e-waste disposal, identify environmental concerns, and propose appropriate measures for proper e-waste management and recycling. The findings of the study may help raise public awareness and encourage responsible use and disposal of electronic products.

REVIEW OF LITERATURE

Jagtap et al. (2026) GREEN GRID: A Web-Based E-Waste Recycling Platform. The research introduced a digital platform designed to encourage responsible e-waste disposal through awareness programs, rewards, and smart recycling services. The study highlighted technology-based solutions for sustainable e-waste management. **UNITAR & ITU (2024)** Global E-Waste Monitor 2024. The report stated that global e-waste generation continues to increase rapidly while recycling rates remain low. It highlighted the urgent need for better collection, recycling, and policy measures. **Sharma & Jain (2022)** E-Waste Management in Urban India. This study focused on the increasing e-waste problem in Indian cities. The authors found that rapid urbanization, digitalization, and increased purchasing power have contributed to higher e-waste generation. The study recommended strengthening awareness programs, improving recycling infrastructure, and encouraging responsible disposal practices. **Bhutta et al. (2021)** Electronic Waste: A Growing Concern. The researchers examined the environmental and economic impacts of e-waste. The study showed that valuable metals and materials can be recovered through proper recycling. It concluded that efficient recycling systems can reduce environmental damage while generating economic benefits. **Forti et al. (2020)**. The report highlighted the impact of digitalization and technological advancement on e-waste generation. The authors observed that the increasing use of smartphones, computers, and electronic gadgets has resulted in a substantial rise in e-waste. The study emphasized the importance of sustainable consumption and recycling. **Awasthi & Li (2017)** Management of Electrical and Electronic Waste. The study focused on the challenges of e-waste management in developing nations. The researchers found that a lack of consumer awareness and improper disposal methods contribute significantly to environmental problems. The study recommended educational programs and better waste collection systems. **Balde et al. (2017)** Global E-Waste Monitor. This report provided information on global e-waste generation. The authors reported a continuous increase in e-waste due to technological growth and rising consumption of electronic devices. The study stressed the need for sustainable policies and responsible recycling practices to manage increasing e-waste volumes. **Kumar & Holuszko (2016)** Electronic Waste and Existing Processing Routes. The study examined different methods used to process electronic waste.

The researchers found that developing countries face several challenges, including a lack of infrastructure, poor awareness, and inadequate recycling systems. The study suggested strengthening regulations and promoting formal recycling sectors. **Kiddee, Naidu & Wong (2013)** Electronic Waste Management Approaches. This study discussed various methods of e-waste management. The authors emphasized the importance of proper collection, transportation, recycling, and disposal of electronic waste. They concluded that effective management practices can help reduce environmental pollution and recover valuable materials from discarded electronics. **Ongondo, Williams & Cherrett (2011)** A Global Review of E-Waste Management. The researchers reviewed e-waste management practices around the world. They found that increasing consumer demand for electronic products and shorter product life cycles are major reasons for the growth of e-waste. The study recommended improving recycling facilities and public awareness to reduce e-waste problems.

STATEMENT OF THE PROBLEM

Nowadays, people use more electronic devices like mobile phones, laptops, and computers in their daily lives. As new technology is introduced, old devices are often replaced, creating more e-waste. Many people do not dispose of e-waste properly, which can cause environmental problems. Therefore, this study aims to understand how the growth of technology is increasing e-waste in Mysuru and why proper disposal and recycling are important.

NEED FOR THE STUDY

Technology has become an important part of daily life, leading to increased use of electronic devices. As a result, the amount of e-waste is growing rapidly in Mysuru. Improper disposal of e-waste can harm the environment and human health. Therefore, this study is needed to understand the e-waste problem, create awareness about proper disposal methods, and promote effective recycling and waste management practices.

OBJECTIVES OF THE STUDY

1. To study the adoption of new technologies and the use of electronic devices among people.
2. To understand people's awareness regarding e-waste and disposal practices.
3. To examine the impact of technological growth on e-waste generation.
4. To analyze the influence of demographic factors such as age, education, and income on electronic device usage and e-waste management.

HYPOTHESIS

H0: There is no significant relationship between the rate of technology adoption (household/corporate electronic purchases) and the volume of e-waste generated in Mysuru.

H1: There is a significant positive relationship between the rate of technology adoption and the volume of e-waste generated in Mysuru.

RESEARCH METHODOLOGY

Research methodology refers to the systematic process used to collect, analyze, and interpret data for the study. This study adopts a descriptive research design to understand the relationship between technological growth and the increasing e-waste problem in Mysuru. Data is collected from respondents using a structured questionnaire and analyzed using simple statistical methods.

Research Design: The study uses a descriptive research design to examine the growth of technology and its impact on e-waste generation in Mysuru.

Research Approach: The required information is collected through:

- Structured questionnaire
- Direct interaction with respondents

Sources of Data

- **Primary Data:** Data collected directly from respondents through questionnaires and personal interactions.
- **Secondary Data:** Data collected from books, journals, research articles, websites, government reports, and other published sources related to technology and e-waste.
- **Sample Size:** A sample size of 60 respondents is selected for the study.
- **Sampling Technique:** Convenience sampling technique is used for selecting respondents.

Limitations of the Study:

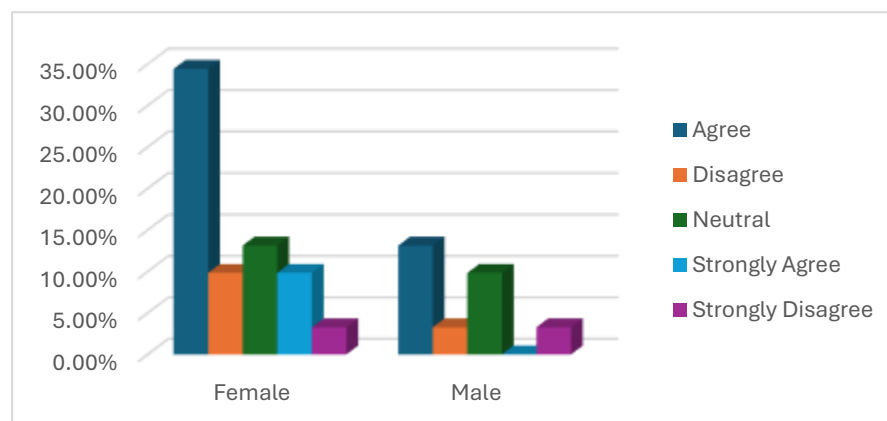
- The study is limited to respondents in Mysuru city.
- The sample size is limited to 60 respondents.

- Responses are based on the opinions and awareness of respondents.
- Time and resource constraints may affect the scope of the study.

DATA ANALYSIS

1. Demographic Question

1. Age group						
Gender	18 - 24	25 - 34	35 - 44	45 - 54	55 ears and above	Grand Total
Male	14.75%	8.20%	4.92%	1.64%	0.00%	29.51%
Female	52.46%	8.20%	4.92%	3.28%	1.64%	70.49%
Grand Total	67.21%	16.39%	9.84%	4.92%	1.64%	100.00%

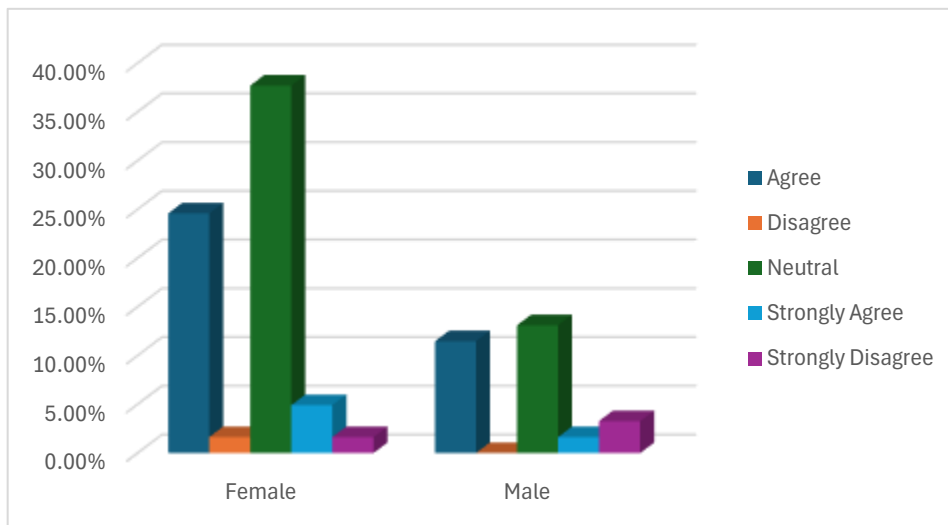


Analysis: The table shows that 70.49% of respondents were female and 29.51% were male. The majority of respondents belonged to the 18–24 years age group (67.21%), followed by 25–34 years (16.39%), 35–44 years (9.84%), 45–54 years (4.92%), and 55 years and above (1.64%). Female respondents aged 18–24 years (52.46%) formed the largest segment of the sample.

Interpretation: The findings indicate that the study was predominantly represented by young adults aged 18–24 years and female respondents. Therefore, the results mainly reflect the views and experiences of younger individuals, particularly females, regarding technology usage and e-waste-related issues.

2. The availability of high-speed internet and tech jobs in Mysuru has significantly increased my household's purchase of new smart devices.

Gender	Agree	Disagree	Neutral	Strongly Agree	Strongly Disagree	Grand Total
Male	11.48%	0.00%	13.11%	1.64%	3.28%	29.51%
Female	24.59%	1.64%	37.70%	4.92%	1.64%	70.49%
Grand Total	36.07%	1.64%	50.82%	6.56%	4.92%	100.00%

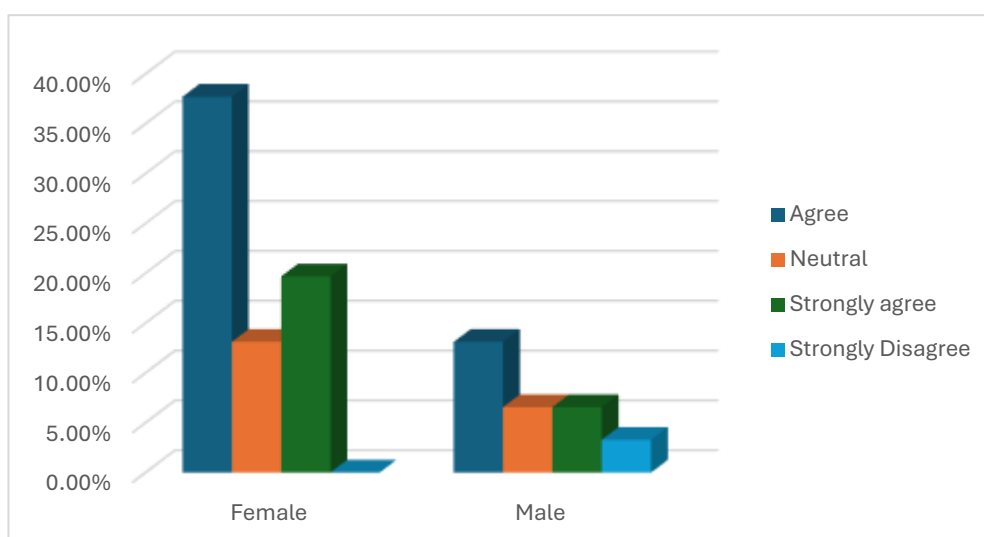


Analysis: The table shows that 36.07% of respondents agreed and 6.56% strongly agreed that the availability of high-speed internet and tech jobs in Mysuru has increased their household's purchase of new smart devices. 50.82% were neutral, while 1.64% disagreed and 4.92% strongly disagreed. Female respondents recorded higher agreement (24.59%) compared to male respondents (11.48%).

Interpretation: The findings indicate that 42.63% of respondents (Agree + Strongly Agree) believe that improved internet access and technology-related employment opportunities have encouraged the purchase of new smart devices. However, the high proportion of neutral responses (50.82%) suggests that many respondents are uncertain about this impact. Overall, females appear to perceive a stronger influence of technological growth on device purchases than males.

3. Online festival sales and digital exchange offers encourage me to replace functioning smartphones or laptops earlier than necessary.

Age group	Agree	Disagree	Neutral	Strongly Agree	Strongly Disagree	Grand Total
18 - 24	31.15%	8.20%	16.39%	4.92%	6.56%	67.21%
25 - 34	9.84%	1.64%	4.92%	0.00%	0.00%	16.39%
35 - 44	4.92%	3.28%	0.00%	1.64%	0.00%	9.84%
45 - 54	1.64%	0.00%	1.64%	1.64%	0.00%	4.92%
55 years and above	0.00%	0.00%	0.00%	1.64%	0.00%	1.64%
Grand Total	47.54%	13.11%	22.95%	9.84%	6.56%	100.00%

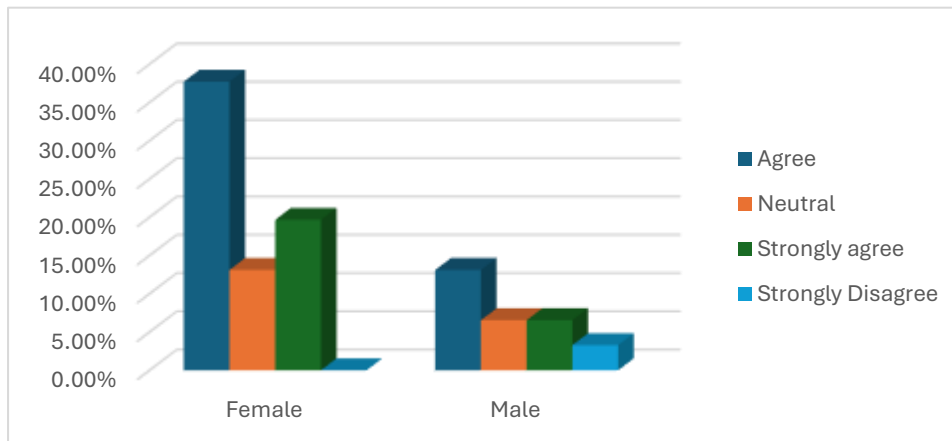


Analysis: The table shows that 47.54% of respondents agreed and 9.84% strongly agreed that online festival sales and digital exchange offers encourage them to replace functioning smartphones or laptops earlier than necessary. 22.95% were neutral, while 13.11% disagreed and 6.56% strongly disagreed. The 18–24 years age group recorded the highest level of agreement (31.15%) among all age groups.

Interpretation: The findings indicate that 57.38% of respondents (Agree + Strongly Agree) are influenced by online sales and exchange offers to replace electronic devices before they are necessary. This trend is particularly strong among younger respondents aged 18–24 years. Such purchasing behaviour may contribute to increased electronic waste generation and faster disposal of still-functional devices.

4. Local educational institutions and workplaces in Mysuru mandate software and hardware updates that force me to buy upgraded devices.

Age group	Agree	disagree	Neutral	Strongly Agree	Strongly Disagree	Grand Total
18 - 24	27.87%	8.20%	19.67%	8.20%	3.28%	67.21%
25 - 34	4.92%	4.92%	3.28%	3.28%	0.00%	16.39%
35 - 44	4.92%	0.00%	1.64%	3.28%	0.00%	9.84%
45 - 54	1.64%	0.00%	1.64%	1.64%	0.00%	4.92%
55 years and above	1.64%	0.00%	0.00%	0.00%	0.00%	1.64%
Grand Total	40.98%	13.11%	26.23%	16.39%	3.28%	100.00%

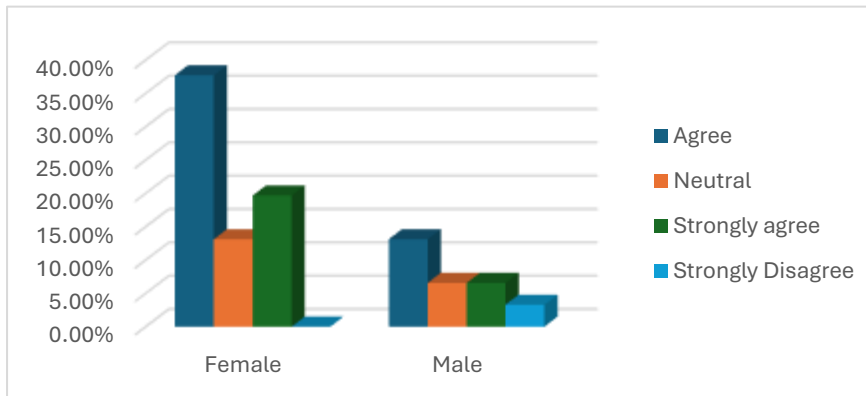


Analysis: The table shows that 40.98% of respondents agreed and 16.39% strongly agreed that local educational institutions and workplaces in Mysuru mandate software and hardware updates that force them to buy upgraded devices. 26.23% were neutral, while 13.11% disagreed and 3.28% strongly disagreed. The 18–24 years age group recorded the highest level of agreement (27.87%) and strong agreement (8.20%).

Interpretation: The findings indicate that 57.37% of respondents (Agree + Strongly Agree) believe that software and hardware update requirements influence them to purchase upgraded devices. This perception is strongest among respondents aged 18–24 years. The results suggest that institutional and workplace technology demands may contribute to increased device replacement and, consequently, higher e-waste generation.

5. I usually sell or give my old electronic waste to local, informal scrap dealers rather than formal recyclers.

Gender	Agree	Neutral	Strongly agree	Strongly Disagree	Grand Total
Female	37.70%	13.11%	19.67%	0.00%	70.49%
Male	13.11%	6.56%	6.56%	3.28%	29.51%
Grand Total	50.82%	19.67%	26.23%	3.28%	100.00%



Analysis: The table shows that 50.82% of respondents agreed and 26.23% strongly agreed that they usually sell or give their old electronic waste to local informal scrap dealers rather than formal recyclers. 19.67% were neutral, while only 3.28% strongly disagreed. Female respondents showed higher agreement (37.70%) and strong agreement (19.67%) than male respondents.

Interpretation: The findings indicate that 77.05% of respondents (Agree + Strongly Agree) prefer disposing of e-waste through informal scrap dealers instead of formal recycling channels. This suggests that informal methods are the most common mode of e-waste disposal among respondents. Such practices may lead to improper e-waste management and environmental risks due to the lack of formal recycling processes.

SPSS TEST

HYPOTHESIS TEST

The categories of 7. The availability of high-speed internet and tech jobs in Mysuru has significantly increased my household's purchase of new smart devices. occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
The categories of 8. I prefer buying a brand-new electronic device rather than getting an older one repaired locally in Mysuru. occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.

N Par Tests

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
7. The availability of highspeed internet and tech jobs in Mysuru has significantly increased my household's purchase of new smart devices.	61	1	5	3.38	.840
9. Online festival sales and digital exchange offers encourage me to replace functioning smartphones or laptops earlier than necessary.	61	1	5	3.41	1.055
10. I routinely purchase electronic accessories (e. g., smartwatches, wireless earbuds, chargers) due to changing lifestyle trends.	61	1	4	3.07	1.124
Valid N (listwise)	61				

ANOVA with Cochran's Test

	Sum of Squares	df	Mean Square	Cochran's Q	Sig
Between People	111.172	60	1.853		
Within People Between Items	25.783	3	8.594	35.145	.000
Residual	108.467	180	.603		
Total	134.250	183	.734		
Total	245.422	243	1.010		

Grand Mean = 3.68

Findings

- Young Users: 67.21% of the respondents were aged 18–24 years, showing that young people use technology the most.
- Smart Device Usage: 42.63% of the respondents said that better internet and technology jobs have encouraged them to buy more smart devices.
- Online Offers: 57.38% of the respondents said that online sales and exchange offers make them replace their devices earlier.
- New Device Purchase: 57.37% of the respondents said that software and hardware updates in colleges and workplaces make them buy new devices.
- E-Waste Disposal: 77.05% of the respondents said they sell or give their old electronic devices to local scrap dealers instead of authorized recycling Centers.

Conclusion:

The study shows that the growing use of technology in Mysuru has increased the use of electronic devices and also increased e-waste. Many people replace their devices because of new technology, online offers, and work or college requirements. Improper disposal of e-waste can harm the environment and human health. Therefore, people should be aware of proper e-waste disposal and use authorized recycling Centers.

Suggestions

- Create awareness among people about proper and safe e-waste disposal.
- Establish more authorized e-waste collection and recycling centers in Mysuru.
- Encourage people to repair and reuse electronic devices before buying new ones.
- Strengthen government rules and promote proper e-waste recycling through authorized recyclers.

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