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Citizens' Satisfaction on Kerala's Waste Management System with Special Reference to Thrissur City

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Introduction:

Urbanization has become a global phenomenon with the rapid growth of cities and towns. The process of urbanization brings with it various challenges, including the management of waste generated in urban areas. Kerala, a state located in the southern part of India, is known for its high urbanization rate and has implemented a comprehensive waste management system to address this issue. The state has adopted a decentralized waste management system that focuses on reducing, reusing, and recycling waste. The waste management system in Kerala involves various measures such as source segregation, composting, vermicomposting, biogas generation, and recycling. The state has also adopted the concept of 'Zero Waste', which aims to reduce waste generation and encourage recycling, and reusing of waste.

Source segregation is a critical component of the waste management system in Kerala. The state has mandated that all households and institutions should segregate waste at the source into dry and wet waste. The dry waste includes items such as plastic, paper, metal, and glass, while the wet waste includes biodegradable waste such as food waste and garden waste. The collected waste is then processed through composting, vermicomposting, or biogas generation, depending on the type of waste. The composting and vermicomposting process involves the conversion of biodegradable waste into nutrient-rich compost, which is then used for agriculture and gardening purposes. The biogas generated from waste is used as a source of energy. In addition to this, Kerala has also implemented a successful e-waste management system, where electronic waste is collected and recycled through authorized recyclers. The success of the waste management system in Kerala can be attributed to the involvement of the community, the support of the government, and the use of innovative technologies. The state has also been successful in creating awareness among the public about the importance of waste management and the need to reduce waste generation.

ISSN: 2455-8834

Volume:10, Issue:05 "May 2025"

Objectives of the study:

- To Access the citizens Perception regarding the waste management system of Kerala with special reference to Thrissur City.
- To measure the satisfaction of citizens regarding the waste management system of Kerala with special reference to Thrissur City.

Research Methodology:

The researcher adopts descriptive research designs for this study. Because the study is mainly focused the perception and satisfaction of the respondents regarding the waste management system in Kerala with special reference to Thrissur district. 130 respondents are considered for this study by adopting convenience-sampling technique. After ensuring reliability and validity of the research instrument, researcher employs various statistical tests such as mean, standard deviation, independent sample t test, ANOVA for data analysis.

Result and Discussion:

Table 1: Demographic Characteristics of the Respondents

Variable	Description	Frequency	Percentage
Gender	Female	88	68%
	Male	42	32%
Total		***130***	***100%***
Age	Below 25	12	9.2%
	26-35	26	20%
	36-45	38	29%
	46-55	19	15%
	Above 55	35	27%
Total		***130***	***100%***
Marital Status	Married	85	65%
	Unmarried	45	35%
Total		***130***	***100%***

ISSN: 2455-8834

Volume:10, Issue:05 "May 2025"

Educational qualification	Below +2	24	18%
	Graduation	38	29%
	Post-Graduation	28	22%
	Professional	19	15%
	Others	21	16%
Total		***130***	***100%***
Housing Type	Own Terrace House	68	52%
	Rent House	12	9%
	Flat	28	22%
	Apartments	22	17%
Total		***130***	***100%***
Year of Residence	Below 2 Years	14	11%
	2 Years -5 Years	16	12%
	5 Years – 10 Years	43	33%
	Above 10 Years	57	44%
Total		***130***	***100%***

(Source: Computed data)

The majority of respondents (68%) are Females. 65 % of respondents are married and most are coming from the age groups of 36-45 years old (29%) and having graduation (29%). 52% of respondents are found living in owned terrace types housing and around 44 % of them are reside more than 10 years at their current houses.

Perception of Citizens' regarding Kerala's Waste Management System

SI No.	Statements	Mean	Standard Deviation
1	I believe that proper waste management is important to protect the environment and public health	4.07	.594
2	I think that recycling and composting are effective methods to reduce the amount of waste that ends up	4.14	.529

ISSN: 2455-8834

Volume:10, Issue:05 "May 2025"

	in landfills.		
3	I believe that individuals have a responsibility to practice proper waste management at home and in their communities.	3.97	.655
4	I feel that businesses and industries should take a more active role in implementing sustainable waste management practices.	4.10	.555
5	I think that governments should provide more incentives and resources to encourage individuals and businesses to adopt sustainable waste management practices.	3.91	.621
6	The government plays a crucial role in ensuring effective waste management practices are implemented in the State.	3.90	.725
7	I believe that the government should be responsible for developing policies and regulations that promote sustainable waste management practices.	4.31	.466
Overall Perception		***4.05***	***.507***

(Source: Computed data)

Citizens' perception regarding waste management system measured through seven statements. Based on the result, the average mean score of the respondent's perception regarding the waste management system is 4.05 which means majority of the respondents having positive perception regarding the waste management system in Kerala with standard deviation ranging from 0.466 to 0.725.

Citizens' Satisfaction on Kerala's Waste Management System

SI No.	Statements	Mean	Standard Deviation
1	I feel that Kerala's waste management system	4.24	.615

ISSN: 2455-8834

Volume:10, Issue:05 "May 2025"

	provides sufficient opportunities and resources to practice sustainable waste management practices.		
2	I believe that Kerala's waste management system is successful in reducing the negative impact of waste on the environment and public health.	3.99	.669
3	I feel that Kerala's waste management system effectively manages the waste generated in my area.	4.20	.615
4	Overall, I am satisfied with Kerala's waste management system.	3.93	.558
Overall Satisfaction		***4.10***	***.554***

(Source: Computed data)

Satisfaction of the respondents measured through four statements. Based on the mean score the result shows that the highest mean score of the statement "I feel that Kerala's waste management system provides sufficient opportunities and resources to practice sustainable waste management practices" is 4.24 with a standard deviation of 0.615. The overall satisfaction of the respondents regarding the Kerala's waste management system found as 4.10 with a standard deviation of 0.554. It is observed that the majority of the respondents are satisfied with the Kerala's waste management system.

H_{0a}: There is no significant difference in the Citizens' Satisfaction on Kerala's Waste Management System based on their gender.

Particulars	Label	t	Significance
Citizens' Satisfaction on Kerala's Waste Management System	Male	0.474	0.637
	Female		

(Source: Computed data)

Above table shows, the result of independent sample t test for checking the significant difference in the Citizens' Satisfaction on Kerala's Waste Management System based on their gender. Result proves that the p value is greater than 0.05. Hence, it concludes that null hypothesis is accepted and respondent's satisfaction is same based on their gender.

H_{0b}: There is no significant difference Year of residence of the respondents and their Satisfaction on Kerala's Waste Management System.

ISSN: 2455-8834

Volume:10, Issue:05 "May 2025"

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.228	3	.743	2.486	.045
Within Groups	37.648	126	.299		
Total	39.875	129			

(Source: Computed data)

Above table shows, the result of ANOVA for checking the significant difference in the Citizens' Satisfaction on Kerala's Waste Management System based on their Year of residence. Result proves that the p value is less than 0.05. Hence, it concludes that null hypothesis is rejected and respondent's satisfaction is varied based on their area of residence. The post hoc test shows the respondents reside 5 years -10 years and more than 10 years are more satisfied compared to others.

H_{0c}: There is no significant difference Housing Type of the respondents and their Satisfaction on Kerala's Waste Management System.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	33.815	3	11.272	234.535	.000
Within Groups	6.060	126	.048		
Total	39.875	129			

(Source: Computed data)

Above table shows, the result of ANOVA for checking the significant difference in the Citizens' Satisfaction on Kerala's Waste Management System based on their hosing types. Result proves that the p value is less than 0.05. Hence, it concludes that null hypothesis is rejected and respondent's satisfaction is varied based on their hosing types. The post hoc test shows the respondents reside owned house are more satisfied compared to others.

Conclusion

In this study, the researcher found the majority of the respondents are satisfied with the Kerala's Waste Management System. According to a survey conducted by the Centre for Science and Environment, more than 80% of households in Kerala segregate their waste at the source. This is a significant achievement and shows that people are aware of the importance of proper waste

ISSN: 2455-8834

Volume:10, Issue:05 "May 2025"

management. The government of Kerala has implemented various programs and initiatives to promote sustainable waste management practices. For instance, the Suchitwa Mission was launched in 2007 to improve waste management in the state. The mission focuses on reducing waste generation, promoting segregation at source, and developing a sustainable waste management system. The people of Kerala appreciate these efforts and believe that the government is doing a good job in managing waste. However, there are also some challenges that need to be addressed. One of the challenges is the issue of plastic waste. Despite the ban on single-use plastic in the state, it is still prevalent in many areas. This is partly due to the lack of effective implementation and enforcement of the ban. People feel that the government needs to take more stringent measures to curb the use of plastic and promote eco-friendly alternatives.

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