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Analyzing The Impact Of Public Water Pricing On Consumer Satisfaction In Malappuram Municipality

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ABSTRACT

This study explores the relationship between public water pricing and consumer satisfaction within Malappuram Municipality. The primary objectives were to assess consumer perception of the public water supply system and evaluate customer satisfaction in relation to the price of water. Data were collected through a structured survey of 70 local residents, and a chi-square test was employed to analyse the statistical relationship between water pricing and satisfaction levels. The findings indicate that consumers generally have a positive perception of the water supply services and consider the pricing to be reasonable. Statistical analysis showed no significant relationship between the price of water and customer satisfaction, suggesting that other service-related factors influence satisfaction more strongly. The study highlights the importance of focusing on overall service delivery to maintain and enhance consumer satisfaction with public water services.

KEYWORDS: Sustainable, Public water, environment, water supply, Public water pricing.

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INTRODUCTION

A public water supply system provides water for human consumption through pipes or other constructed conveyances to at least 15 service connections or serves an average of at least 25 people for at least 60 days in a year. A public water supply system may be publicly or privately owned. The purpose of municipal water delivery systems is to transport portable water from a water treatment facility to residential consumers for use as drinking water, water for cooking, water for sanitary conditions and other water use in domestic environment.

Drinking water system in Kerala can be broadly classified into two categories, the first one is the schemes owned and operated by the state Government through the Kerala water authority and local government. Second one is family managed drinking water supply which includes families creating their own drinking water resources by constructing well on their house compounds and managing the water supply source by themselves, the provision of piped water supply in rural areas is the responsibility of the state Government and funds have been provided in the state budgets right from the commencement of first Five Year Plan
Kerala Water Authority is one of the main agencies for design, construction, operation, and maintenance of water supply and sewerage schemes in the whole state. KWA has been implementing piped water supply schemes based on surface and ground water sources, It also executes multilateral and bilateral funded projects and accelerated rural water supply schemes on behalf of the Government of India

The public water supply system in Malappuram Municipality is primarily managed by the Kerala Water Authority (KWA), which is responsible for ensuring regular water distribution and maintaining service quality. The system aims to provide safe and affordable drinking water to both urban and semi-urban households. Water is supplied through a network of pipelines and storage reservoirs, covering most residential and commercial areas. Despite this, consumers often report issues related to water pressure, supply frequency, and billing practices. Understanding how pricing policies influence consumer satisfaction is therefore crucial for improving service efficiency and public trust.

RESEARCH GAP

The review of existing studies on water policy and sustainability in India reveals several critical research gaps. Singh and Goyal (2023) identified that despite progressive water policies, there is a significant gap between policy formulation and implementation, particularly due to weak institutional coordination, limited stakeholder participation, and inadequate use of modern technologies like GIS and remote sensing. Similarly, Rathee and Mishra (2022) emphasized that Indian water policies lack climate-resilient planning, wastewater reuse strategies, and uniform institutional capacity across states, leading to poor enforcement and inconsistency in outcomes. Renjith Kumar and Zacaria (2023) highlighted that in Kerala, decentralization in urban water conservation remains largely theoretical, as administrative centralization, limited technical expertise, and weak interdepartmental coordination hinder local-level execution. Furthermore, the study on promoting water sustainability through participatory co-design approaches in urban Kerala pointed out that while participatory models enhance local acceptance, there is a lack of long-term evaluation, scalability, and integration between community initiatives and institutional frameworks. Together, these studies indicate that the major research gap lies in bridging the disconnect between policy design and ground-

level implementation through stronger institutional mechanisms, community participation, and adaptive, technology-driven management strategies for sustainable water governance in India.

STATEMENT OF THE PROBLEM

Consumer perception of public water supply and satisfaction with pricing are critical factors in assessing the effectiveness of water services. In Malappuram Municipality, the Kerala Water Authority (KWA) provides water through a public supply system, but little is known about how consumers perceive the service and whether the price charged affects their satisfaction. This study aims to examine consumer perception of KWA's water supply services and assess customer satisfaction with the pricing, providing insights that can help improve service delivery and public trust.

OBJECTIVES OF THE STUDY

1. To identify the consumer's perception towards public water supply
3. To identify the satisfaction level of customers against the price of water

RESEARCH METHODOLOGY

5.1 Sources of Data

Primary data: Collected through a structured questionnaire administered to respondents in Malappuram Municipality.
Secondary data: Collected from books, journals, and online sources relevant to the study.

5.2 Sample Design

Data were collected from 70 respondents in Malappuram Municipality using the purposive sampling method, targeting consumers who use the public water supply system through pipelines.

5.3 Tools and Statistical Tests Used

- Data were collected using a questionnaire.
- Chi-square test was employed to analyse the relationship between the price of water and the satisfaction level of customers.

5.4 Test of Hypothesis

Chi-square Test was applied to determine the relationship between the price of water and customer satisfaction.

- Null hypothesis (H_0): There is no significant relationship between the price of water and the satisfaction level of customers.
- Alternative hypothesis (H_1): There is a significant relationship between the price of water and the satisfaction level of customers.

ANALYSIS OF DATA

6.1 Table no 1: Customer perception about overall water supply service

Opinion	No of respondents	Percentage
Quality	16	22.8
Reliability	19	27.14
Billing system	27	38.5
Service quality	8	11.4
Total	70	100%

Source: Primary Data

Interpretation

The above table reveals that 38.5% of customers expressed satisfaction with the billing system of the Kerala Water Authority (KWA), indicating noticeable improvement in this area. About 11.4% of customers shared their opinion regarding the overall service quality of KWA, suggesting that service delivery has also shown some improvement.

6.2 Table No: 2 Level of satisfaction with respect to price

Opinion	No. of respondents	Percentage
Highly satisfied	39	55.7
Satisfied	16	22.8
Neither satisfied nor Dissatisfied	8	11.4
Dissatisfied	4	5.7
Highly dissatisfied	3	4.2
Total	70	100%

Source: Primary data

Interpretation

The above table shows that a majority of respondents (55.7%) are highly satisfied with the price charged by the Kerala Water Authority (KWA) for water supply. Additionally, 22.8% of respondents are satisfied, indicating that most consumers perceive the water tariff as reasonable and affordable. Only a small proportion, 4.2%, reported being highly dissatisfied, suggesting that pricing policies are generally acceptable to the majority of consumers**.**

6.3 Test of hypothesis

This test is done to find out the significant relationship between the price of water and satisfaction level of customers, the variables used are the price of water and effect of price of water to the satisfaction level of customers of KWA

Null hypothesis (h0)
There is no significant relationship between the price of water and satisfaction level of customers.

Alternative hypothesis (h1)
There is significant relationship between the price of water and satisfaction level of customers

Price of water	Satisfaction level of customers				
	Highly satisfied	Satisfied	Dissatisfied	Highly dissatisfied	Total
30-40	10	6	1	0	17
40-50	9	9	1	1	20
50-60	18	6	2	2	28
Above 60	2	3	0	0	5
Total	39	24	4	3	70

Source: Primary Data

6.4 Chi-square calculation

O	E	O-E	(O-E)2	(O-E)2/E
10	9.47	0.53	0.28	0.02
9	11.4	-2.4	5.76	0.50
18	15.6	2.4	5.76	0.36
2	2.7	-0.7	0.49	0.18
6	5.8	0.2	0.04	0.006
9	6.8	2.2	4.84	0.7
6	9.6	-3.6	12.86	1.35
3	1.7	1.3	1.69	0.99
1	0.9	0.1	0.01	0.01
1	1.14	-0.14	0.0196	0.017
2	1.6	0.4	0.16	0.1
0	0.2	0	0	0
0	0	0	0	0
1	0.8	0.2	0.04	0.05
2	1.2	0.8	0.64	0.53
0	0	0	0	0
				4.713

Level of significance of Chi-square = 0.05 choose to test
Formula is Chi-square=(O-E)2/E, O=Observed frequency, E = Expected frequency, E = (row total*column total)
Grand total
Degree of freedom = (r-1) *(c-1)
= (4-1) *(4-1)
= 3*3 = 9
Table value of Chi-Square at 5% level of significance at 9 degrees of freedom
Chi-square value =16.91 Computed value = 4.713

Inference:
Since the calculated Chi-square value (4.713) is less than the table value (16.91) at a 5% level of significance with 9 degrees of freedom, the null hypothesis (H_0) is accepted. This indicates that there is no significant relationship between the price of water and the satisfaction level of customers. Hence, the satisfaction of customers does not significantly depend on the price of water charged by the Kerala Water Authority (KWA)

CONCLUSION

The study examined consumer perception of public water supply and their satisfaction with the pricing of water services provided by the Kerala Water Authority (KWA) in Malappuram Municipality. The findings reveal that consumers generally hold a positive perception toward KWA services and consider the water pricing to be reasonable. While the statistical analysis showed that the price of water does not have a significant impact on overall customer satisfaction indicating that the price is not a major factor influencing satisfaction, consumer contentment depends more on service delivery and billing efficiency. Overall, the public water supply system is perceived positively, and ensuring consistent improvements in service quality will further enhance customer satisfaction.

REFERENCE

1. Government of Kerala. (n.d.). *Working Group Report on Drinking Water and Sewerage for the Twelfth Five-Year Plan (2012–2017)* [PDF]. Government of Kerala, State Planning Board.
2. Kerala Water Authority. (n.d.). *Official website of Kerala Water Authority*.
3. State Planning Board, Government of Kerala. (2013). *Economic Review 2012*. Thiruvananthapuram: Government of Kerala.
4. Centre for Water Resources Development and Management (CWRDM). (n.d.). *Domestic water and sanitation in Kerala: A situation analysis*. Kozhikode: CWRDM.
5. A review of India's water policy and implementation toward a sustainable future. *Journal of Water and Climate Change, 16*(2), 493–510. IWA Publishing.
6. Water policies in India: A critical review. *Indian Journal of Science and Technology, 15*(35), 1829–1836.
7. Decentralized urban water conservation in Kerala: An assessment of institutional uncertainties. *Journal of Environmental Management and Policy Review*, *2*(1), 45–58.
8. Promoting water-sustainability: A participatory co-design approach for addressing water-supply challenges in urban Kerala, India. *Environmental Challenges, 8*, 100686. Elsevier.