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A Study On Socio-Economic Condition And Challenges Faced By The Haritha Karma Sena Workers In Vatakara Taluk

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Abstract

The rapid urbanization and industrial expansion in Kerala have led to a significant increase in waste generation, which has put immense pressure on the current waste management systems. The Government of Kerala has proactively responded to these challenges by introducing innovative, community-focused approaches to waste management that are both efficient and sustainable. The Haritha Karma Sena (HKS), a collaborative initiative, represents a strategic transformation in Kerala's waste management practices, emphasizing a holistic system of waste reduction, segregation, and recycling instead of merely focusing on disposal. Women members receive training in waste collection and segregation, along with education on public waste management, enabling HKS to serve as both a service provider and a catalyst for social change. In this context, the study examines the socio-economic and working conditions related to the challenges encountered by HKS workers. Primary data were gathered from 100 HKS workers in the Vatakara taluk of Kozhikode district, Kerala, utilizing a snowball sampling method with a structured questionnaire. The Haritha Karma Sena workers are predominantly middle-aged, possess moderate educational qualifications and have a relatively stable and moderate monthly income. These workers are vital in promoting environmental sustainability and public health by overseeing waste collection, segregation, and recycling at the community level. The study indicated that the HKS volunteers have demonstrated significant potential in their initiatives related to waste management and environmental preservation.

Keywords: Haritha Karma Sena, Waste Management, Segregation, Recycle, Women

Introduction

In India rapid urbanization, overpopulation and inefficient systems contribute to a growing waste crisis. Waste management has become an essential service that need to be provided by Government for the wellness of public. Due to the rapid growth at which economies are expanding along with the rising living standards, led to increase the quantity and complexity of waste generated. Today waste management has become a serious issue in Kerala. Growth of unmanageable waste generation and garbage pile-ups is creating a lot of ecological issues such as global warming (Maya et.al, 2019). Urbanization and rapid industrial growth have resulted in a sharp rise in garbage creation, placing enormous strain on existing waste management systems. Improper garbage disposal has far-reaching environmental implications, such as pollution, water contamination, and negative health effects on communities. Kerala has taken proactive steps to address these difficulties by implementing innovative, community-centric ways to trash management that are both effective and sustainable. Haritha Karma Sena (HKS) represents a strategic shift in Kerala's waste management practices, focusing on a comprehensive system of waste reduction, segregation, and recycling rather than just disposal (Sajeev Kumar, 2024)

Haritha Karma Sena plays a vital role in achieving the goal of a waste free Kerala. Haritha Karma Sena is a professional team consisting of Kudumbashree Women who will be assigned with the responsibility of collection, transportation, processing, recycling, disposal, and management of waste materials in association with respective LSGs and Suchithwa Mission. The Harithakarma sena mainly focuses on collection and processing of inorganic waste. There are 1018 Harithakarma sena units are functioning across the state. Out of this, 926 units are working in rural areas and 92 units in urban areas. 23,546 women in rural areas and 4,678 women in urban areas are part of the force. Harithakarma sena is carrying out activities such as, giving awareness on waste management to the public, providing guidance on composting systems that can be installed in homes and institutions, providing necessary equipment for homes and institutions to dispose organic waste at source, and ensuring doorstep collection of non-organic waste.

Haritha Karma Sena provides guidance to households on organic waste management. They also deal with problems arising from disposal of waste at source and ensure assistance of Green Aid Institution if required. They are also looking for new income opportunities by starting Green enterprises that manufacture new products from waste materials. Haritha Karma Sena is also engaged in activities like organic farming, manufacturing of environment-friendly products and providing environment-friendly equipment on rent. The activities carried out by Haritha Karma Sena aimed at sustainable waste management are being carried out under the leadership of local bodies and under the supervision of Suchithwa Mission, Haritha Kerala Mission and Kudumbashree. There will be atleast 2 sena member per local body ward. Each member will collect non-biodegradable waste from around 250 households. Non-organic wastes that are kept clean in households are collected at regular intervals. A user fee is charged for the service as fixed by the local bodies. The waste collected from the households is delivered to the mini material collection center and from there it is transported

to the material collection center. Local governments will hand over plastic waste that can be recycled to the companies that can use it. Non-recyclable plastic waste is sent to a resource recovery center and is shredded and used for road construction. This enables the recycling of such plastic (Kudumbashree, 2023)

Kerala has received national attention for its innovative, community-based waste management practices. The programme represents a shift from traditional sanitation methods to an inclusive, decentralized, and community-driven model, making these women the backbone of Kerala's waste management revolution. At the core of this success is the Haritha Karma Sena, a group of trained workers, mostly women, who manage waste at the grassroots level by collecting, sorting, and promoting recycling in homes and public spaces. While their contribution to a greener Kerala is commendable, these worker's lives are marked by significant difficulties and risks. Against this background the study the analyze the socio-economic development and challenges of women through Haritha Karma Sena in Vatakara Taluk.

Objectives of the Study

- To analyze the socio-economic and working conditions of Haritha Karma Sena workers
- To investigate the challenges faced by Haritha Karma Sena workers in their line of work.

Statement of the Problem

Despite the pivotal role Haritha Karma Sena (HKS) workers play in Kerala's decentralized waste management system, their contributions often undervalued and overlooked, particularly in Vatakara Taluk of the Kozhikode district. These workers, who are primarily women, encounter multiple challenges including financial insecurity, health hazards, lack of safety measures, and social stigma. Furthermore, insufficient institutional support and inadequate infrastructure worsen their working conditions. This study examines the socio-economic development and challenges faced by Haritha Karma Sena workers in Vatakara taluk, highlighting the need for policy interventions and systemic reform to ensure both environmental sustainability and social justice.

Review of Literature

Shameerdas (2024) emphasized the role of Haritha Karma Sena (HKS) in managing non-biodegradable waste through source-level segregation and the use of resource recovery facilities (RRFs) with shredding and baling equipment. Nishad (2024) found that Haritha Karma Sena efforts have made a positive impact on waste management in Kerala, serving as an inspiring example for other communities. Continuous monitoring and evaluation will help in further improvement and ensure a sustainable waste management system for a healthier and eco-friendly future. Parvathy Ravikumar (2024) found that 59 percent of respondents perceived HKS as moderately effective and 68 percent believed it supported sustainable development goals at the panchayat level. Kumar and Radha Krishnan (2018) revealed that HKS improved garbage segregation and recycling rates, resulting in cleaner public environments and less landfill waste. However, they point out that, while the effort has received positive community support, a lack of suitable infrastructure, such as trash processing facilities,

remains a significant barrier. The report emphasizes that HKS scalability is dependent on overcoming these infrastructural constraints.

Methodology

The study is descriptive in nature and analytical methodology is used to study the experiences of Haritha Karma Sena (HKS) workers in Vatakara Taluk. The study will concentrate on studying the challenges, and socio-economic working implications of female waste management workers. The study used both primary and secondary data. A qualitative approach was also employed to gain insight into the real-life experiences of the HKS workers. Primary Data were collected from 100 HKS workers in Vatakara taluk, Kozhikode district, Kerala using a snowball sampling method with structured questionnaire. Secondary Data sourced was collected from various academic literature, government reports, media articles, and prior studies on HKS and waste management. The study used frequency, percentage, Cronbach alpha and factor analysis for data analysis was carried out.

Findings of the Study

Socio-economic and working condition significantly influence an individual's personality and traits. Table 1 and 2 presents information on the socio-economic and working conditions of the selected Haritha Karama Sena workers in the study.

Table-1
Socio-Economic Profile of the Haritha Karama Sena Workers

Particulars		Number of Respondents (N=100)	Percentage
Age	Less than 35 years	20	20.0
	35-55 years	74	74.0
	Above 55 years	6	6.0
Education	Lower or upper primary level	18	18.0
	SSLC	65	65.0
	Plus two	17	17.0
Marital Status	Unmarried	2	2.0
	Married	73	73.0
	Widow	22	22.0
	Divorced	3	3.0
Monthly	Below 10000	25	25.0

Income	10000-12000	73	73.0
	Above 12000	2	2.0

Source: Field Survey, 2025

The table illustrates the socio-demographic characteristics of 100 Haritha karma sena workers. In terms of age, a significant majority of the respondents (74 percent) belong to the 35–55 years age bracket, suggesting that most workers are in their middle age. Approximately 20 percent are under 35 years old, while only 6 percent exceed 55 years, indicating a relatively small number of elderly participants. Concerning educational attainment, the majority of respondents (65 percent) have completed their SSLC, followed by 18 percent who have achieved lower or upper primary education. A lesser percentage (17 percent) have completed plus two level education, demonstrating that most individuals possess education ranging from basic to secondary levels. In terms of marital status, a substantial majority of the respondents (73 percent) are married. Widows make up 22 percent of the sample, while only 2 percent are unmarried and 3 percent are divorced. This indicates that most respondents bear family responsibilities. Regarding monthly income, the majority of respondents (73 percent) earn between ₹10,000 and ₹12,000 each month. About 25 percent earn less than ₹10,000, while only 2 percent earn more than ₹12,000.

Table-2
Working Condition of the Haritha Karma Sena Workers

Particulars		Number of Respondents (N=100)	Percentage
Period of participation	Below 1 year	16	16.0
	1 to 5 years	56	56.0
	5 to 10 years	28	28.0
Number of houses to be covered in a day	Below 20	1	1.0
	20-30	43	43.0
	30-40	22	22.0
	Above 40	34	34.0
Training programme provided by the authority	Yes	100	100.0
	No	0	0
Type of waste collected	Plastic cover	31	31.0
	Bags	27	27.0
	Chappals	20	20.0
	Glasses	12	12.0
	Cloths	10	10.0
Precaution taken while	Uniform	34	34.0

collection	Mask	29	29.0
	Shoes	12	12.0
	Gloves	25	25.0
Transportation of waste	Directly	17	17.0
	Carts	12	12.0
	Lorries	66	66.0
	Others	5	5.0
Working hours	Less than 6 hours	51	51.0
	6-8 hours	32	32.0
	Above 8 hours	17	17.0
Primary source of income	Yes	89	89.0
	No	11	11.0

Source: Field Survey, 2025

The table illustrates the working conditions of Haritha karma sena workers engaged in waste collection activities. In terms of participation duration, the majority of respondents (56 percent) have been involved in this work for 1 to 5 years, followed by 28 percent with 5 to 10 years of experience. Only 16 percent have less than one year of experience, indicating that most respondents have moderate to significant work experience. Regarding the number of houses serviced daily, 43 percent of respondents collect waste from 20–30 houses, while 34 percent manage more than 40 houses each day. Approximately 22 percent cover 30–40 houses, and merely 1 percent handles fewer than 20 houses, suggesting a relatively high daily workload for the majority of workers. The table indicates that all respondents (100 percent) have participated in training programs provided by the authority, reflecting complete institutional support for basic training.

In terms of the types of waste collected, plastic covers represent the largest portion (31 percent), followed by bags (27 percent) and chappals (20 percent). Glass (12 percent) and cloth (10 percent) are collected by a smaller percentage of respondents, underscoring the dominance of plastic-related waste. With respect to safety precautions during waste collection, 34 percent of respondents wear uniforms, 29 percent use masks, and 25 percent don gloves, while only 12 percent wear shoes. This indicates a partial adherence to safety protocols, with room for improvement in the use of comprehensive protective gear. Regarding waste transportation, the majority of respondents (66 percent) utilize lorries, while 17 percent transport waste directly, 12 percent use carts, and 5 percent employ other methods. This demonstrates that mechanized transportation is the primary approach adopted. In terms of working hours, over half of the respondents (51 percent) work for less than 6 hours per day, while 32 percent work for 6–8 hours and 17 percent exceed 8 hours, indicating varying work durations among the workers. Ultimately, waste collection constitutes the main source of income for a significant majority of respondents (89 percent), while merely 11 percent rely on it as a secondary source.

Challenges faced by the Haritha Karama Sena workers

The establishment of a solely female group at the grassroots level within the formalized waste management framework originated from a principle embedded in Kerala's solid waste management policy. This principle sought to create broader employment and income-generating opportunities, as well as to increase the participation of women in the waste management process. The formalized waste management program aims to guarantee fair opportunities and benefits for female staff and workers, thereby enhancing their employment conditions and work environments (Government of Kerala, 2020). However, despite the importance of their services, Haritha karma sena workers face numerous challenges in the course of their daily work. In this regard, factor analysis is employed to identify the challenges encountered by the Haritha Karma Sena workers.

The Cronbach's alpha to test the reliability or internal consistency of the scale, gave a value of 0.851 greater than the norm of 0.70 indicating good scale reliability. To determine the appropriateness of applying factor analysis, the KMO and Bartlett's test measure were computed and the results are presented in table 3.1. KMO statistics is .796 which is signifying higher than acceptable adequacy of sampling. The Bartlett's test of Sphericity was also found to be significant at one percent level providing evidence of the presence of relationship between variables to apply factor analysis.

Table-3.1
KMO and Bartlett's Test Measures

KMO and Bartlett's Test	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.796
Bartlett's Test of Sphericity Approx. Chi-Square	338.445
Degrees of freedom	78
Significance level	.000

Source: Estimation based on Field Survey, 2024

The communalities for each variable were assessed to determine the amount of variance accounted by the variable to be included in the factor rotations. All the variables had value greater than 0.50 signifying substantial portions of the variance accounted by the factors. Table 3.2 enlists the Eigen values, their relative explanatory powers and factor loadings for 13 linear components identified within the data set.

Table- 3.2
Rotated Component Matrix

Factors	Components				
	1	2	3	4	5
Financial insecurity				.694	
Increase in health hazard					.789
Lack of safety measures	.822				
Low and unstable wages				.757	
Lack of work equipments	.758				
Refusal to pay user fee		.830			
Showing unfriendly responses		.807			
Irresponsibilities in waste segregation		.845			
Absences of adequate resources allocation			.875		
Lack of follow up system			.836		
Absence of waste disposal function	.824				
Lack of co-operation from management					.877
Eigen value	3.619	1.562	1.463	1.167	1.018
Percentage of variance	27.835	12.015	11.254	8.977	7.833
Cumulative percentage	27.835	39.850	51.103	60.080	67.913

Source: Estimation based on Field Survey,2025

Extraction Method: Principal Component Analysis

Rotation Method: Varimax with Kaiser Normalization, rotation converged in 5 iterations

The component matrix resulting from the Kaiser rotation, as presented in table 3.2, reveals that the first component demonstrated substantial loadings across three dimensions: the absence of safety measures, insufficient work equipment, and the lack of a waste disposal function, which collectively accounted for nearly 28 percent of the variance. The second component indicated significant loadings for three dimensions: refusal to pay user fees, exhibiting unfriendly responses, and irresponsibility in waste segregation, which together elucidated 12 percent of the variance. The third component displayed significant loadings for two dimensions: the absence of adequate resource allocation and the lack of a follow-up system, which combined accounted for 11 percent of the variance. The fourth component illustrated significant loadings for two dimensions: financial insecurity and low, unstable wages, which together explained 9 percent of the variance. The fifth component revealed significant loadings for two dimensions: an increase in health hazards and a lack of cooperation from management, which together accounted for 8 percent of the variance. These represent the various challenges encountered by Haritha Karma Sena workers in their line of work. Similarly, Sapkota et al. (2020) noted in their study that waste workers consistently confront numerous challenges, including systemic marginalization,

stigma, and discrimination within social contexts, as well as negative and unwelcoming public reactions towards these workers.

Conclusion

The study found that waste collection is a significant and structured occupation for the majority of respondents, although enhancements in safety protocols and workload management may be required. The Haritha Karma Sena workers are predominantly middle-aged, possess moderate educational qualifications and have a relatively stable and moderate monthly income. These workers are vital in promoting environmental sustainability and public health by overseeing waste collection, segregation, and recycling at the community level. However, the workers encounter challenges such as insufficient wages, a lack of appropriate safety gear and health hazards from exposure to toxic waste, social stigma, inadequate training, and inconsistent employment conditions. Tackling these challenges is crucial not only for enhancing the welfare and dignity of the workers but also for guaranteeing the long-term success of sustainable waste management programs. The study indicated that the HKS volunteers have demonstrated significant potential in their initiatives related to waste management and environmental preservation.

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