"SUSTAINABLE PRACTICES AMONG EMPLOYEES OF E-WASTE MANAGEMENT COMPANIES OF COIMBATORE CITY"

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ABSTRACT:

This research paper deals with the concept of Sustainable practices in E-Waste Management Companies of Coimbatore City focuses to examine the role of human resource management (HRM) in promoting sustainability within the e-waste sector. As the electronic waste generation continues to rise the living of the human kind, the companies had to implement regulations that would benefit the environment. So this must start from the early stage like ethical hiring practices, employee welfare programs, workplace safety protocols, and skill development initiatives to enhance efficiency and sustainability. The research study explores how green HRM policies, employees the involvement in sustainability efforts, and workplace conditions that influences the job satisfaction and productivity. By analysing the concepts like key challenges such as occupational hazards, regulatory compliance, and talent retention, offers an insights into optimizing strategies for a more sustainable and responsible e-waste management industry.

Key words: Sustainable practices, E-Waste Management, Green HRM, Workplace safety, Employee welfare, Regulatory Compliance.

INTRODUCTION:

India is the largest nation, it is well-reputed with value and career prospect. However, if we take a peek at the bad side of this era there is this huge influx of e-waste with a feeling of about 3.2 million. India has emerged as the biggest e-waste developer. There is a constant increasing amount of e-waste in developing countries like India, particularly in Coimbatore, has escalated environmental as well as HR-related issues. But it can be avoided if there are good HR practices, such as ethical recruitment, occupational safety, and skill development programs, is essential for improving efficiency and worker welfare. These steps are required as they turn the nation into a desirable place to live. The risky environment the employees are subjected to is the sudden shift of their workplace and as it also aims to recruit, there should be strict HR practices and adherence to India's E-Waste Management rules and extended producer responsibility guidelines. Corporate Social Responsibility initiatives enhance sustainability even more. But this process of making all the corporate and working firms to be available for this kind of remedies to help them lower their growing e-waste should be embraced by all the individuals who are involved. But there are challenges like economic limitations and opposition to the changes that hamper effective implementation. A concerted effort in the form of government policies, industry cooperation, and ongoing innovation is necessary to develop a sustainable workforce and provide responsible e-waste management.

OBJECTIVE OF THE STUDY:

- To identify the current practices and challenges in e-waste management in Coimbatore.
- To assess the environmental and health impacts of improper e-waste disposal in the region.
- To propose sustainable and efficient strategies for improving e-waste collection, recycling and disposal systems.

REVIEW OF LITERATURE:

Sustainable practices for e-waste management have gained international recognition because of their role in resolving environmental and health hazards (Kumar et al., 2017). Germany, Sweden, and Japan are examples of nations that have developed robust HR systems focusing on occupational health policy, ethical hiring, and staff training (Awasthi & Li, 2018). Developed countries incorporate green HRM approaches such as waste reduction training and incentives to promote sustainable practices.

India, the world's fifth-largest e-waste producer, has HRM issues because of the prevalence of the informal sector, which puts workers at risk of harmful chemicals. The E-Waste Management Rules, 2016, came into force to control recycling operations and make waste disposal responsible. Studies indicate that e-waste management companies formalized with green HRM practices have greater worker satisfaction and lower turnover rated (Borthakur & Govind, 2019). These efforts include occupational health and safety initiatives, equitable remuneration, competency development, and employee involvement in sustainability (Pathak & Srivastava, 2017).

Occupational health and safety are still important because of the dangers of exposure to harmful chemicals, which result in serious medical complications (Singh et al., 2020).

Compliance with safety standards, the utilization of protective gear, and regular medical checks are required steps. Ensuring compliance are regulatory agencies like CPCB and TNPCB. Training and skill development form the cornerstone in ensuring safe handling of e-waste, boosted by initiatives such as Skill India, which maximizes worker capabilities (MSDE, 2020). Employee retention is still a problem because of unsafe working conditions and few career advancement opportunities. Adopting sustainable HRM practices like competitive pay, safe working environments, career development opportunities, and employee involvement can reduce high turnover rates. Companies that adopt sustainability-oriented HR policies experience reduced turnover and enhanced job satisfaction (Jain et al., 2019). In order to promote sustainable HRM in Coimbatore's e-waste industry, a number of policy initiatives must be implements. These involve reinforcing regulatory enforcement, enhancing workplace safety practices, increasing skill development schemes, improving employee welfare programs, and organizing awareness campaigns on sustainable waste management. These measures will promote environmental accountability and help ensure the long-term sustainability of the industry.

RESEARCH METHODOLOGY:

This research utilizes a research design focused on studying sustainable practices among e-waste management firms in Coimbatore. The population of study is 60 e-waste firms to get an in-depth analysis of HR practices in the industry. A Simple Random Sampling method was used to give equal chances of selection and reduce bias, and thus the sample size was 30 firms. The study was done in Coimbatore by employing both primary and secondary means of data collection. Primary data was collected from structured questionnaires and face-to-face interviews with employees and HR professionals, providing useful first-hand information on the contribution of sustainable HR practices towards employee retention and environmental sustainability. Secondary data was gathered using resources like journal articles, books, company documents, government government documents, industry reports, and reputable websites to evaluate trends and substantiate the major findings. This mixed research method enhances the reliability and richness of the study, which allows for an overall understanding of HR practices in the e-waste management sector.

DATA ANALYSIS AND INTERPRETATION

SIMPLE FREQUENCY ANALYSIS

DEMOGRAPHIC DATA INTERPRETATION:

The demographic analysis of respondents in Coimbatore's e-waste management sector highlights a diverse workforce with a balanced age distribution. Among them, 35% belong to both the 18-25 and 26-35 age groups, while 24% fall within the 36-45 category, and 7% are between 46-60 years old. The gender composition reveals a female-dominated workforce (66%), compared to 35% males. In terms of education, 48% possess undergraduate degree, 35% are graduates, and 17% hold postgraduate qualifications, indicating a moderately skilled workforce. All respondents are employed in the private sector, underscoring the industry's structured employment framework. Regarding income levels, the majority (72%) earn between ₹25,000- ₹50,000 range, signifying a concentration in the lower to mid income bracket.

In terms of E-waste awareness and disposal behaviour, 65% of respondents are somewhat familiar with the concept of e-waste, whereas 35% have no familiarity at all. Disposal habits differ, with 45% occasionally, discarding electronic waste, 41% doing so regularly, and 14% rarely disposing of it. Recycling practices are inconsistent, as 35% actively recycle, another 35% do so sometimes, while 31% do not recycle at all. Geographically, 62% of respondents reside in urban areas, while 38% are from rural regions, indicating a greater level of awareness and participation in e-waste management in urban settings. Access to recycling centers remains a concern, as only 38% find them highly accessible, whereas 62% consider them somewhat accessible, emphasizing the need for enhanced recycling infrastructure and awareness programs.

CORRELATION:

Variables	**Pearson Correlation**	**Significance level**
AVGESM	**.736**	**.000**
AVGESS	**.768**	**.000**
AVGECS	**.739**	**.000**
AVGESA	**.753**	**.000**
AVGCSD	**.640**	**.000**
AVGETD	**1**	

INTERPRETATION:

The correlation analysis highlights strong positive relationships among key e-waste management factors, underscoring their interdependence. E-Waste Storage and Management (AVGESM) exhibits a significant correlation (r=0.736, p=0.000), indicating its crucial role in overall waste handling efficiency. E-Waste Storage System (AVGESS) has the highest correlation (r=0.768, p=0.000), emphasizing the impact of a well-organized storage system on sustainable practices. Similarly, E-Waste Collection System (AVGECS) shows a strong correlation (r=0.739, p=0.000), reinforcing the importance of efficient waste collection. E-Waste Social Accountability (AVGESA) also demonstrates a high correlation (r=0.753, p=0.000), highlighting the significance of ethical disposal and corporate responsibility in sustainable e-waste management. While E-Waste Training and Development (AVGCSD) has a relatively lower correlation (r=0.640, p=0.000), it remains essential in enhancing workforce competency for better waste management. Lastly, AVGETD, with a perfect correlation of 1, appears to represent an aggregate measure of all factors. These findings emphasize the necessity of a holistic approach that integrates storage, collection, social responsibility, and training to ensure efficient and sustainable e-waste management.

REGRESSION:

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	164.277	5	32.855	7.618	.000b
	Residual	99.202	23	4.313		
	Total	263.479	28			
a. Dependent Variable: AVGECS						
b. Predictors: (Constant), AVGETD, AVGCSD, AVGESA, AVGESM, AVGESS						

H0: There is no significant relationship between AVGECS and the predictor variables AVGETD, AVGCSD, AVGESA, AVGESM, AVGESS. In other words, these independent variables do not significantly impact AVGECS.

H1: At least one of the predictor variables AVGETD, AVGCSD, AVGESA, AVGESM, or AVGESS has a significant effect on AVGECS.

The ANOVA results confirm that the regression model predicting AVGECS based on AVGETD, AVGCSD, AVGESA, AVGESM, and AVGESS is statistically significant (F=7.618, p=0.000). The model accounts for a substantial portion of the variance in AVGECS, as indicated by the higher regression sum of squares (164.277) compared to the residual sum of squares (99.202). With a p-value below 0.05, the null hypothesis (H0), which suggested that the independent variables do not significantly predict a AVGECS, is rejected. Instead, the alternative hypothesis (H1) is accepted, confirming that at least one predictor variable has a significant impact on

AVGECS. These results underscore the strong relationship between the dependent and independent variables, reinforcing the importance of these factors in influencing AVGECS.

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.058	2.794		-0.21	.984
	AVGESM	.095	.171	.131	.553	.596
	AVGESS	.406	.359	.279	1.132	.269
	AVGESA	.083	.166	.119	.501	.621
	AVGCSD	.019	.229	.021	.081	.936
	AVGETD	.297	.226	.326	1.315	.202
a. Dependent Variable: AVGECS						

The regression analysis results indicate that none of the independent variables (AVGESM, AVGESS, AVGESA, AVGCSD, and AVGETD) exhibit a statistically significant impact on the dependent variable (AVGECS), as all p-values exceed the standard 0.05 threshold. Among them, AVGETD has the highest standardized coefficient (Beta=0.326) suggesting it has the strongest relative influence; however, its significance value (p=0.202) indicates that this effect is not statistically meaningful. Similarly, AVGESS shows a moderate Beta value of 0.279, but its p-value (0.269) suggests an insignificant relationship. Additionally, the constant term (-0.058) is non-significant (p=0.984), further indicating that the model does not reliably predict AVGECS. Overall, these findings suggest weak relationships between the independent and dependent variables, implying that other factors may better account for variations in AVGECS.

FINDINGS:

- ✓ Most respondents (69%) fall within 18-35 age group.
- ✓ The bulk of those surveyed (65.5%) are female.
- ✓ The predominance of participants (48.3%) are undergraduates.
- ✓ The predominance of respondents (100%) are employed in the private sector.
- ✓ The predominance of respondents (72.4%) have an income range of ₹10,000-₹25,000.
- ✓ Most of the respondents (65.5%) are somewhat familiar with the concept.
- ✓ The bulk of those surveyed (44.8%) dispose of e-waste occasionally.
- ✓ A significant portion of respondents (34.5%) engage in recycling either regularly or occasionally.
- ✓ The bulk of participants (62.1%) are from urban areas.
- ✓ The majority of participants (62.1%) find recycling centers somewhat accessible.

SUGGESTION:

To enhance sustainable HR practices in Coimbatore's e-waste management industry, organizations should emphasize employing prudent training programs in handling wastes in a safe and responsible manner, attaining occupational health and safety standards, and provision of protective equipment for employees. Development of employee welfare in terms of adequate remuneration, opportunities for career progression, and provision of improved working conditions can enhance job satisfaction and job retention. Creating awareness through workshops and CSR programs can promote responsible e-waste disposal and recycling behaviour. Additionally, increased cooperation between industries, regulatory agencies, and government organizations is vital for implementing more stringent e-waste management policies and promoting green HRM policies. Creating financial incentives and support mechanisms for sustainable HR practice-embracing companies will further lead to long term environmental and social sustainability within the sector.

CONCLUSION:

This research on sustainable HR practices among e-waste management firms in Coimbatore highlights the importance of human resources strategies in encouraging environmental sustainability and employee welfare. Although green HRM practices like ethical recruitment, workplace safety, and development enable sustainability, challenges such as budget constraints, legal compliance, and employee retention continue to be of concern. The results show low statistical correlations between the HR factors under consideration and the efficiency of e-waste management, calling for a more integrated approach with policy implementation, employee training, and corporate social responsibility initiatives. Improving sustainable HRM by enforcing stricter laws, employee engagement

programs, and improves workplace amenities can significantly enhance the effectiveness and sustainability of e-waste management, leading to a more responsible and environmentally friendly industry in Coimbatore.

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