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MEDIATING ROLE OF ENVIRONMENTAL COMMITMENT BETWEEN SOLID WASTE MANAGEMENT BEHAVIOR AND SOCIAL PERFORMANCE: FEMALE EMPLOYEE PERSPECTIVE

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Article Info

Abstract

The present study aimed to examine the impact of solid waste management behaviour (SWMB) on social performance (SP) and the mediating role of environmental commitment (EC) between SWMB and SP in Pakistan's chemical industry. To test the proposed hypotheses of the present study, the adopted questionnaire helped collect data from 161 cases of chemical industry female employees through a non-probability convenience sampling strategy. In this regard, the concerned HR department was requested to fill out the questionnaire on printed form. The present study's findings confirmed that three direct effects, including SWMB on SP, SWMB on EC and EC on SP, were positive and significant. In addition, EC revealed a partial mediation effect (indirect effect) between SWMB and SP within Pakistan's chemical industry. Therefore, this study industry's policymakers and top management should consider these variables in their future policies.

Keywords:
Environmental Commitment; Solid Waste Management Behavior; Social Performance

Introduction

The collection of practices and personal steps people in communities perform as they manage their waste disposal systems and recycling activities represents solid waste management behaviour (Nguyen et al., 2023). Social performance directly connects with waste management behaviour because it includes how environmental practices impact community members' health and their commitment to public contact and nature conservation. People who demonstrate effective solid waste management conduct enhance social performance because their approach minimizes environmental and public health threats while building community unity and citizenship awareness (De Feo & Ferrara, 2024). Communities that actively join solid waste management programs achieve better social results by gaining heightened awareness among citizens, enhanced public pride, and strengthened cooperation between community members and government officials. Such actions positively impact urban sustainability by minimizing pollution levels and demonstrating efficient resource utilization, thus improving the general quality of life for the community members. The advancement of social performance depends critically on solid waste management behaviour because they establish fundamental practices for environmental protection and community disaster mitigation (Tsai et al., 2021).

The dedication to sustainable practice and environmental stewardship marks a person or organization as one that steers its behaviour toward social outcomes. Studies establish a connection between the intense environmental commitment of both people and communities, which boosts their involvement in sustainable practices, including waste recycling and power conservation and neighborhood environmental work programs (Sarfraz et al., 2023). Environmental conditions improve from these actions alongside strengthened social performance since they generate interactive community activities, social solidarity, and communal responsibility. Research has demonstrated that communities that support environmental causes enable residents to participate in waste management decisions that achieve better results (Subri et al., 2025). Our dedication pushes partners to collaborate and create innovative solutions that fight social difficulties, including poor and unhealthy living conditions. Through its impact on education and socioeconomic position as well as institutional backing, environmental dedication builds a pathway that lets sustainable actions benefit communities socially and develop their strength.

The chemical companies in Pakistan deal with multiple environmental problems that endanger public health and damage the environment (Adnan et al., 2024). Disposing of hazardous waste improperly causes pollution in soil and water. Several sites with inadequate waste handling systems directly send toxic waste into landfill sites or water bodies. The polluted resources dangerously damage nature and harm people who drink from these sources and farm on affected land (Sharma et al., 2024). The chemicals used in manufacturing produce both VOCs and particulate matter that become dangerous pollutants in the air. Dangerous plant emissions cause respiratory problems and health risks to the residents who live close by. Plants run old equipment systems that do not follow present environmental rules and create more pollution. Controlling agencies typically lack proper enforcement power to monitor ecological laws effectively. Due to weak environmental control systems, most companies can continue to perform harmful actions (Boulhaga et al., 2023).

Many studies in Pakistan's chemical industry have not fully explored how social performance responds to solid waste management behaviour and whether environmental commitment works as an intermediary. The chemical sector drives national growth but faces substantial ecological problems, primarily through poor waste handling and polluting operations. Few scientific studies show how solid waste management affects social outcomes when conducted by chemical sector companies. Research is missing on how environmental commitment is an intermediary factor between companies. To properly study the impact of waste management on social performance, scientists need to understand how strong environmental commitment affects this relationship in this sector. The research gaps open an opportunity to examine the relationship interactions between solid waste management and the social responsibility performance of chemical firms, especially their environmental commitment.

Theoretical foundation and Hypotheses development

This study is based on social cognitive theory as the basis for understanding solid waste management behaviour within environmental commitment and social performance. SCT shows that human actions are affected by personal, behavioral, and environmental elements and teaches us to learn from examples while building our confidence (Firmansyah & Saepuloh, 2022). When people and businesses encounter intelligent waste management methods and local activities, they can make positive waste-handling habits part of their behaviour. Environmental commitment works as an intervening point showing someone's dedication to environmentally safe activities. Social performance acts as the dependent outcome by showing how properly handling waste brings better health conditions, social connections, and increased community trust. Connecting these elements with SCT allows us to find out how supporting environmental commitment creates better social results from sound solid waste handling behaviour (Raghu & Rodrigues, 2022).

Hypothesis development

Solid waste management behavior

Solid waste management behaviour shows strong connections to social performance according to existing literature that utilizes SCT to explain behaviour change through observation and environmental interactions. Communities participating in recycling and waste disposal actions achieve better public health results while lowering environmental pollutants, thus providing residents with a superior quality of life (Alimoradiyan et al., 2024). People who witness good waste management behaviour in their peers develop community-wide responsibility, due to which others become motivated to repeat those practices and create a positive cycle of social performance. Research indicates that sustainable waste management efforts by people and organizations produce an environmental stewardship culture that builds community trust and collaborative relationships (Salsabila et al., 2024). Solid waste management behaviour alongside social performance creates an essential pattern for community development that promotes sustainability (Etim, 2024). In the light of above past studies following alternative hypothesis have been developed:

H1: SWMB is positively related to SP.

H2: SWMB is positively related to EC.

Mediating role of environmental commitment

The environmental commitment of people leads them to actively support community-based activities, promote sustainable policy developments, and spread environmental awareness throughout their social circles, which results in enhanced community benefits from waste management initiatives (Ambarita et al., 2024). Focusing on environmental commitment helps researchers investigate essential psychological and social variables affecting sustainable behaviour adoption, including individual self-efficacy beliefs, community standards, and population connection (Uslu et al., 2023). Analyzing these variables will lead to developing strategies to boost environmental commitment, producing more substantial results regarding social performance (Alzghoul et al., 2024). Multiple factors must be understood through combined analysis because policymakers and stakeholders need to create efficient waste management programs which generate environmental and social advantages in this era of growing sustainability awareness. The study uses a broad approach which fills the literature gaps and contributes to sustainable development research in diverse contexts. In the light of above past studies following alternative hypothesis have been developed:

H3: EC is positively related to SP.

H4: EC mediates the relationship between SWMB and SP.

Methodology

Data procedure

The researchers utilized a quantitative approach to acquire primary data about the connections between solid waste management actions and environmental dedication, as well as social effect measurements in Pakistan's chemical industry female employees. A methodical questionnaire contained validated scales to evaluate the primary variables. Researchers selected participants from Pakistan's chemical industry

because this economic sector generates substantial environmental impact and serves as a vital field for sustainable practice analysis. The researcher employed a convenience sampling approach to pick 161 participants representing multiple organizations throughout the industry. The organization's HR department reached out to assist with participant recruitment while setting up an efficient questionnaire delivery system explicitly targeted for participants. The research team received All participant information with strict confidentiality to build a reliable atmosphere that motivated truthful responses. This research design is intended to deliver a detailed understanding of how waste management practices affect social outcomes mediated by environmental commitment in Pakistan's chemical industry.

Scale development

The solid waste management behavior as independent variable with four items from the study of (Raghu & Rodrigues, 2021). The sample item was "I have the responsibility to reduce the amount of waste generated".

The environmental commitment was considered as mediating variable and three research items were taken from the research of (Rubel et al., 2023). The sample item was "I feel like I am responsible for the environmental issues at my organization".

The social performance considered as the dependent variable and four items taken from study of (Amin et al., 2024). The sample was "We improved investments on various social projects such as, education, culture, and sports".

Results and Discussion

Reliability and Validity of Instrument

The results showed in the Table 1 the data for three variables, each factor shows good reliability Cronbach Alpha values range between 0.810 and 0.881, with Solid waste management behavior reaching the highest value and environmental commitment reaching the lowest. The scale measuring solid waste management behaviour shows lower construct reliability than the other factors at 0.690, although social performance comes closest to ideal at 0.738. Every construct (including solid waste management behaviour) tells us 69% to 73% of the variation in our data, which shows they perform well at explaining this factor.

Table 1. Reliability and Validity of Instrument

Factor	Items SPSS coding	Item loading	Cronbach Alpha value	Composite reliability	Average variance extraction
Solid waste management behavior	SWMB1	0.792	0.850	0.899	0.690
	SWMB2	0.809			
	SWMB3	0.862			
	SWMB4	0.859			
Environmental commitment	EC1	0.849	0.810	0.888	0.725
	EC2	0.852			
	EC3	0.853			
Social performance	SP1	0.922	0.881	0.918	0.738
	SP2	0.771			
	SP3	0.845			
	SP4	0.891			

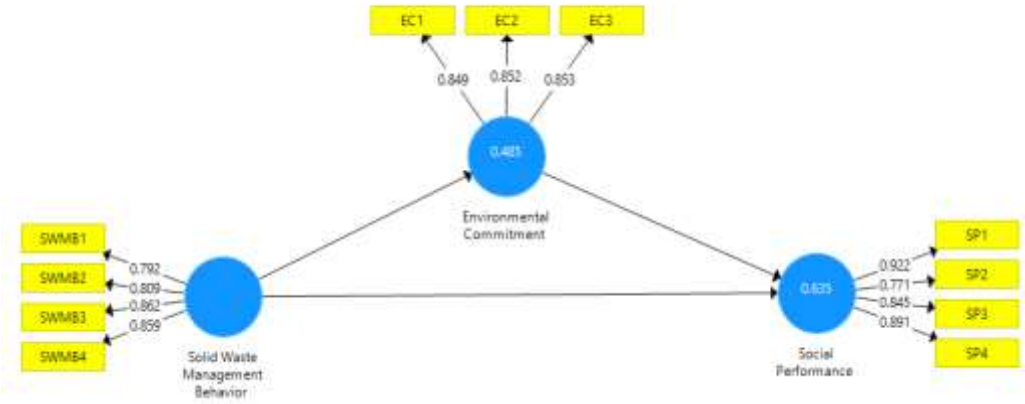

Figure 1. Measurement Model

Hypothesis Testing

A statistical test revealed the links between practical waste disposal actions, environmental commitments, and social performance. Substantial evidence supports the impact hypothesis since solid waste management behaviour produces a 0.485 beta value with a test statistic of 8.586 and zero per cent rejection possibility from the analysis. Good solid waste management enhances how well a business performs in society.

The second research objective explored how strong solid waste management affects environmental commitment. The data showed 0.696 beta, 17.648 t-value, and 0.000 p-values to support our theory more strongly. Better waste management approaches create stronger environmental dedication among organizations.

The third research goal tested the effect of environmental commitment on how well businesses serve society. Research findings support our hypothesis with a 0.379 beta value, a t-value of 6.222, and an extremely low p-value of 0.000. Organizations that share more significant environmental commitment perform better regarding social capabilities.

The research determined how environmental commitment functions as a link between solid waste management behavior and social performance. The results show partial mediation because the beta is 0.264, t is 5.916, and p is 0.000. These outcomes show that solid waste management directly affects social performance, which environmental commitment helps transmit. These results show that waste management practices impact social performance, and environmental responsibility works as an essential link.

Table 2. Hypothesis Testing

Path direction	Beta value	T-value	P-value	Remarks
Solid Waste Management Behavior -> Social Performance	0.485	8.586	0.000	Supported
Solid Waste Management Behavior -> Environmental Commitment	0.696	17.648	0.000	Supported
Environmental Commitment -> Social Performance	0.379	6.222	0.000	Supported
Solid Waste Management Behavior -> Environmental Commitment -> Social Performance	0.264	5.916	0.000	Partial mediation effect

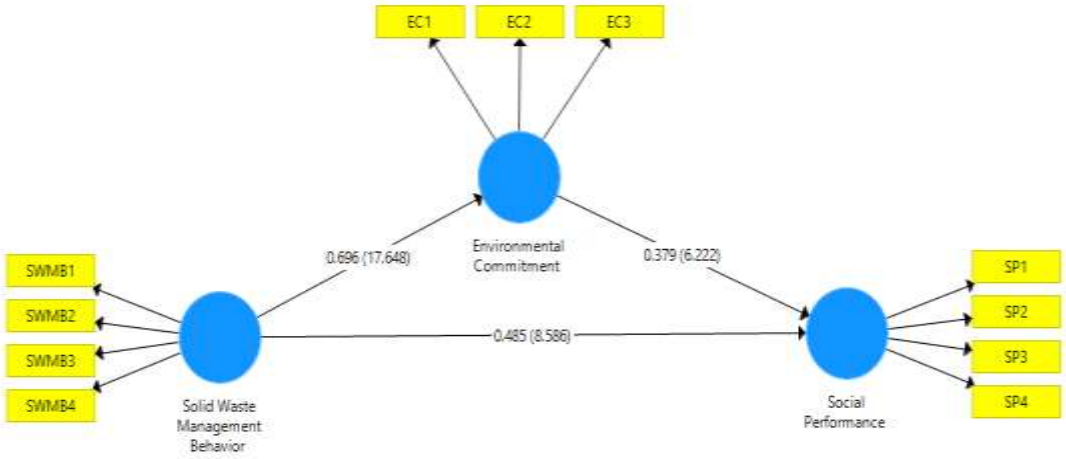

Figure 2. Structural Model

Discussion

The test results prove that how people handle solid waste affects both environmental responsibility and social results most effectively in developing Pakistan. Effective waste management revealed itself by directly increasing social impact and environmental duty. Studies from Pakistani urban areas prove communities maintain better civic values when they deliver effective waste control. Research shows that focusing on waste management at personal and business levels creates a society that cares for the environment, improving social results.

The discovery of environmental commitment as a mediator shows how well trash disposal habits drive social results. Research from developing areas like India and Bangladesh shows that environmental commitment helps spark social initiatives, which means that a community that defends nature tends to act positively for society. Research has uncovered unique results showing poor institutional waste support can prevent expected social enhancements. In Pakistan's specific areas, inadequate infrastructure and low community understanding reduce waste management results, which create minor changes in social or environmental achievements. Our results confirm that sound waste management leads to more social benefits, mainly when communities fully support the program and official policies help it succeed.

Concluding Remarks

In this study hypothesis test results showed that waste-handling care affects environmental commitment and social performance. The data shows an effective link between how people handle waste, how well they perform socially, and how devoted they are to environmental protection. When businesses handle waste effectively, it improves social performance and motivates them to defend the environment longer. These results match studies that show how environmental practices affect social life in developing nations, especially Pakistan. The research shows that community success needs integrated waste management methods to boost social and ecological results.

Practical Implications

The study results benefit policymakers and community leaders working for sustainable development in Pakistan and worldwide. Officials must create solid waste management systems through proper budget decisions and training programs for personnel to handle waste correctly. Participation through community activities builds a more substantial commitment to waste management from people. Educational training programs teach people how to protect the environment, which leads them to embrace sustainable habits that enhance social progress. Making public awareness higher through content that shows proven success stories helps communities begin better waste define methods. NGOs can join forces with government waste programs to improve results since many NGOs understand the local community and support networks.

Strong monitoring systems will help analyze waste management results to recommend better practices while fixing weak points in existing plans. We should develop rewards that boost business and community involvement when they build sustainable waste-handling systems. Stakeholders who focus on these essential factors will create a sustainable environment while improving social results and local quality of life through responsible waste control programs.

Future research directions

The future studies should base their selection methods on diverse populations, such as stratified or random samples, to show results that work throughout all chemical industry areas and other fields. Long-term research on solid waste behaviour will show how people develop environmental values while keeping track of their social results. Profiling chosen groups through interviews and focus groups gives us insight into employees' reasons for environmental commitment and helps us understand what affects their workplace waste management behaviour. How leaders and company values influence workers' environmental dedication would offer important information. Examining multiple industries or regions allows us to find their highest standards and most innovative strategies toward waste sustainability as part of global environmental talks.

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