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Waste Management in the Various Municipalities of Various Socio-Economic Conditions (An Empirical Evidence from Pakistan)

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Abstract

This paper investigates the waste management system of Pakistan while lifting a question on awareness, importance and the practices of waste management with a debate that whether or not the perceived awareness and importance of waste management has really turned up into the waste management practice in Pakistan. The findings confirms that there is no significant perceived awareness and sense for managing wastes (importance) in the various municipalities of all of the provinces of Pakistan and therefore, they do not generate the healthy waste management practices in almost every municipality and at times the practices are pathetic.

Keywords: Waste Management System, Waste Fractions, Sense for managing wastes, Municipality.

1. Introduction

Growing urbanization and variations in the epitome of life have resulted the increasing number and varieties of wastes and wastes fractions in an exponential trend, which has taken an angle of threat for

already degraded surroundings. However, in current years, waste to energy expertise have been developed to boot out clean energy via the combustion of municipal solid waste in specially designed power vegetation equipped with the most contemporary pollution control equipment to avoid emissions, which are being deployed and functional in developed and rising nations. Unlike, it is different for developing and poor developing nations to have such effective waste management practices. In developing countries similar to Pakistan, institutions stimulate with the responsibility to create decisions on waste management, but the implementation phase is lacking and which tunes the occasions of disasters (Bruce, 2004).

Pakistan's effort to raise the living principles of its citizens has always turned up into the fiasco due to unfaithfulness of its care takers along with the incorrect and non sincere decisions for its nations, for instance; the economic development has always given an importance over ecological issues. Therefore, this territory despite of having the bestowed beauty is being suffered by the various ecological degradations (Burn, 2003). It is an ironical truth that the country like Pakistan has approved legislation to protect its surroundings which is now only in the history (Carter & Ellram, 1998).

It is also quite evident that Pakistan is in major turmoil and suppression of ethnic wars and political instability that societal issues such as waste management are being ignored. Improvement was observed to a slight level but then the attention in such developing countries deviates due to other aggressive socio-economic issues. This paper is an attempt to measure the amount and various types of waste fractions in the major municipalities of Pakistan which are attributed with the different socio-economic conditions.

2. Literature Review

With better awareness in today's era, the nations and countries cannot ignore ecological issues, which includes the cleanness of municipalities and stronger community mandates for environmental accountability.

There are organizations for nursing the health of the nation in respect to natural contamination/pollution/noise pollution and toxic wastes. They are governmental organization/sectors allocated especially to design and monitor the expenses caused for handling the different kinds of pollutions and toxic wastes and to give a cleaner and greener place to live (Baumol, 1997).

Being specific to the investigation of Pakistan, it has made little effort to raise the living standards of its citizens but economic development has taken preference over ecological issues since its birth. Lack of awareness for proper control over wastes and utilization of hazardous chemicals, automobile emissions, and industrial action has contributed to a figure of environmental and health risks and especially in the case of water pollution. The country suffers through a lack of potable water owing to industrial waste. In the cities, widespread employ of low-quality petroleum, combined with a theatrical expansion in the figure of vehicles on Pakistani infrastructure has led to important air pollution problems. As urbanization continues and the inhabitants are growing rapidly, Pakistan does want to prosper but does not cater the right ways to encounter major socio-economic issues such as waste control (Khan & Anwar, 2003).

The utilization of hazardous chemicals and industrial action has contributed to a figure of environmental and health hazards. The industrial wastes are volumes of the gaseous, liquid or hard wastes produced by developed and other industrial processes. These emissions are merely partially controlled by pollution manage methods. Industrial waste is discharged into the surroundings in substantial quantities. The matter of consequence is to what level and to what degree is this trash damaging to health and environment (Gupta, 1995). A great deal of the country suffers as of a lack of potable water owing to industrial waste and undeveloped flow off that contaminates drinking irrigate supplies. Poverty and far above the ground population growth have aggravated, to an extent it has caused ecological dilemmas and problems (Ghaffar, Kazi & Salman, 2000).

Moreover, from viewpoint of a day-to-day routine, people throw away many things ranging from ordinary trash to old packaged items, cleaning resources and various junks, big quantities of

pesticides and fertilizers are also on leach in the environment (Walton & Melnyk, 1998). It is obvious that the commodities i.e. food, drinks, clothing, medicines, furnishings, computers, cleaning resources, publications etc are in diverse forms of packaging. The main purposes of these packagings are to defend the contents from germs/viruses/dirt (Sarkis, 1995), hence, most of them are not destructive to the environment in conditions of toxicity, but their after use bulk cause and create the solid waste and hence the environmental degradations (Hanna & Newman, 1995).

Other significant sources of pollution are transport and the pharmaceutical waste, (Johnson & Wang, 1998) are the causes of acute poison. Plastics can reason the blockage of drainage and hence water natural diseases (Batool & Ch, 2009).

In the waste management handling, recycling has made a key role. All over the world recycling has usually occurred because it has been efficient and economical. Since 1970s and onwards, the perception of recycling in contemporary rich societies has been present even more, something that is articulated by existing or proposed hard waste legislation. In Sweden, 1994 the producer blame ordinance, which has governed the compilation and recycling of packaging resources, newsprint, cars and tires. Furthermore, environmental legislators in numerous European countries require so as to a bulky part of the waste paper flow should be recycled moderately than deposited in landfills.

The good handling of waste management has few aspects: political, communal, environmental, financial and technical. These factors include the ease of use of technical, financial, and human resources. Being specific to the developing countries like Pakistan, proper and appropriate methods/techniques are not being imposed to achieve proper waste management. However, working from ground level, there are ordinary needs that have to be addressed by all nations for desired outcome in managing wastes and attaining a balanced improvement mark. As natural environment around us has also become dynamic, it is necessary to predict and to recognize the problems in managing the wastes for prompt action. Sometimes, forecasting the natural atmosphere and quantity of waste that may arise is difficult. A managerial mechanism is required to make sure the regular contribution for managing the wastes (Fleischmann & Van, 1997).

There are number of schemes internationally, which relies on the atmosphere revitalizations, water cleansing and food production capabilities of higher vegetation to rejuvenate person wastes and replenish the existence support materials (Murphy, 1995) but the issues relating to mounting solid wastes are fast acquiring gigantic size in the rising countries of Asia. The majority of the countries, still continue to primarily focus on achieving high economic enlargement and pay scant attention to waste management. For Pakistan sort of state, where waste management is not dealt with seriousness and is negligible mostly are due to numerous reasons and lack of awareness and concern in this domain by the policy makers.

3. Research Methodology

3.1. Description of Data and Econometrical Technique

To investigate the awareness, importance and the practices of waste management, the morphological analysis was performed for the major municipalities with the diverse socio-economic condition. For interrogating the presence of various kinds of wastes along with their awareness and sense for managing them and their impact upon the waste management practices, the morphological analysis was performed by measuring the 14 different waste fraction which were categorized into 6 different categories which include Organic Wastes (Garden waste, Other biodegradable waste); Paper Wastes (Paper, cardboard, waxed card board and aluminum card board); Glass waste (Glasses); Metal wastes (metallic cans and other metallic packaging); Plastic wastes (plastic bags, plastic packaging wastes, and hard plastics); and Pharmaceutical/ medical wastes (used bandages, other medical wastes). To shower the lights on the socio economic situations of various municipalities of Pakistan the literacy rates and municipalities budget to GDP ratios are taken as the proxies.

The seven different municipalities which include Municipalities of Karachi (KMC), Hyderabad (HMC), Lahore (LMC), Multan (MMC), Peshawar (PMC) and Quetta (QMC) have been interrogated in connections with all above outlined variables.

For measuring evidence of wastes presence in all outlined municipalities the data for masses of each outlined wastes measured in metric tons was collected for each municipality for the period of 2005.6 to 2011.6. The raw data was then converted into relative scores in percentage for each waste considered in this paper.

4. Findings and Results

The main focus of this paper is to interrogate the presence of diverse nature of wastes, awareness for wastes management, sense to manage wastes and practices of wastes management at the various municipalities of Pakistan which are attributed with different level of socio economic conditions. Table 1 lifts an irony on the preference for ecological issues by the Govt. of Pakistan. Surprisingly no lift has been given to cleanness at any outlined municipalities during the period of 2005.6 to 2011.6 as shown by the negligible budget allocated for various municipalities.

The findings further revealed that municipality of Peshawar evidently confirms the presence of wastes at most while the awareness for waste management and its managing sense along with the waste management practices also found substantially low for this municipality.

Results also confirmed that the municipalities of Karachi and Lahore are evidently having less wastes presence as they are effectively managed due to the more awareness for waste management and better sense to manage wastes as confirmed by the empirical results in table 2.

Table 1: Socio-Economic Conditions at outlined Municipalities

Major Municipalities	Socio-Economic Conditions at outlined Municipalities	
	Literacy Rates in % (2005.6-2011.6)	Municipality budget to GDP Ratio in % 2005.6-2011.6)
KMC	77%	0.06%
HMC	46%	0.03%
LMC	75%	0.07%
MMC	45%	0.04%
PMC	52%	0.05%
QMC	39%	0.01%

Table 2: Evidence of Wastes Presence and Waste Management at outlined Municipalities

Major Municipalities	Evidence of Wastes Presence (Relative Scores in Percentage)							Awareness for waste Management	Sense to Manage Wastes	Practices of Wastes Management
	OW	PPW	GW	MTW	PLW	MDW	TW			
KMC	0.005	0.02	0.007	0.04	0.04	0.02	0.132	0.31	0.31	0.33
HMC	0.010	0.04	0.006	0.05	0.04	0.03	0.176	0.19	0.11	0.10
LMC	0.015	0.02	0.005	0.02	0.03	0.02	0.110	0.31	0.33	0.34
MMC	0.04	0.03	0.004	0.03	0.05	0.03	0.184	0.13	0.16	0.15
PMC	0.03	0.05	0.009	0.02	0.07	0.04	0.219	0.04	0.02	0.04
QMC	0.02	0.04	0.009	0.02	0.06	0.03	0.179	0.04	0.05	0.04
OVER ALL	0.12	0.20	0.04	0.18	0.29	0.17	1.000	1.00	1.00	1.00

5. Conclusion and Discussion

This study has concluded the very interesting story on the structure and conditions of various municipalities of Pakistan. It is found that the municipalities with the better socio economic conditions are cleaner than those with poor socio economic conditions. While, for the cleaner municipalities the

awareness for wastes management, sense to manage wastes and waste management practices are higher than the rest. The findings of this paper are also confirmed by various other authors, for instance, Batinic et al. (2011) confirmed that the nations or territories with different GDP, have also different shares of particular waste fractions and this association can also be observed at municipality levels. The municipality of Peshawar which has an awful situation in the matters of cleanness and has the equal poor sense to manage the waste which is note able while the socio economic condition as shown in table 1, of this municipality is not as bad as the municipality of Quetta where the cleanness is far better.

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