ISSN Online: 3006-4708
ISSN Print: 3006-4694
SOCIAL SCIENCE REVIEW ARCHIVES
https://policyjournalofms.com

An Urban Waste Management System: Challenges in Losar District Rawalpindi

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DOI: https://doi.org/10.70670/sra.v3i4.1379

Abstract
The study aims to investigate the urban waste management system and rising challenges in Losar district, Rawalpindi. Exploratory research is chosen as methodology of research, whereas interview guides are taken as the tool of research with further related instruments. The data collection process was based on qualitative data acquisition strategies with exploratory research focus. In six months with each phase of the two months research plan, the first phase was allocated for area identification, rapport establishment, sample drawing as well as figuring out key informants of study. In the second phase, administration of Interview guide (IG) was done to start acquiring data from prospective respondents. The last phase included data refining and analysis and completing research write up. Hence, this research scopes for policy makers to execute related projects in the realms of urban societies in Rawalpindi and the rising issues with urban waste mismanagement. The present study will not only help project managers to have some more insights about rising issues that may give a hand of contribution to sensitise government authorities for stepping up to control the challenges within this study's realm.

Keywords: Urban Waste; Waste Management System; Losar; Waste Mismanagement Crisis.

Introduction

The waste management patterns are majorly under the influence of rapid urbanization leading the citizens of Rawalpindi towards waste mismanagement crisis. Therefore, this research emphasises on the untold stories of urban waste management crisis in Rawalpindi district. Nonetheless, the fact still is there, that Urban waste mismanagement is not just the story of Rawalpindi but this can be witnessed in different regions of Pakistan. Moreover, the study sheds light to the fact that the residents of this area are facing numerous challenges with mismanaged urban waste that triggers urban challenges (Akbar et al., 2024).

Under the realms of Urban Waste Management System, the study goal resonates around the practical implementable projects such as urban trash projects that should be developed as a strategy, in order to maintain and improve the generation of garbage. Where, such project outcomes majorly help to develop the sense of recycling and reusing instead of wasting (Conley et al., 2019). The whole research revolves around the core theme i.e. "Urban Waste Management System and Challenges".

Local urban challenges are significantly rising issues in Rawalpindi. Hence, the studies like the current research should be a voice of other researchers of the same domain as well. The story of urban waste management is echoing everywhere in Rawalpindi and other cities of Pakistan, locals even have much knowledge but this phenomenon is still ignored and people are even getting conformed with it and related

authorities seemed to be in hibernation for many years related to this matter (Ali et al., 2019) .
Urban waste management worldwide contributes to a complex intersection of techniques, social, and political dysfunctions. There are many organizations with existing scholarships approaching to solve the issue of waste management through a technocratic perspective, by overcoming the deficits in infrastructure, financial resources, and the technological era. In this study, different valuable insights are brought into the logistical challenges of waste governance, in order to get an explanation for why crises persist despite repeated policy interventions (Marshall & Farahbakhsh, 2013).
For people, the administration of waste is a focal thought for wellbeing, prosperity, personal satisfaction, influence on the climate, productive economies, and environment change. Besides, these contemplations have spurred everything from sewage frameworks to natural guidelines and the treatment of clinical and atomic waste. Human culture is as of now portrayed by fast populace development and urbanization, and hence the capacity to evaluate and figure the systems behind metropolitan waste creation and decrease squander has colossal advantages for strategy and arranging, key innovative turns of events, and environmental displaying (Loughran, 2020).
Guerrero and Maas (2013) demystified that 'in numerous nations, full scale garbage age (for instance waste from all sources) continues to rise coupled with people and monetary turn of events. Several countries (France, Hungary, Japan, the Slovak Republic, and Spain) have had the choice to isolate their overall trash creation from monetary changes. How much junk is made, its substance, and its source change by country; they are associated with the economy's plan as well as the level of purchase being developed and cleaner advancement. Common solid waste age in the OECD district extended in lockstep with private discretionary compensation and GDP during the 1990s. This upward design has moved back since the 2000s'.

Review of Literature

This section begins with the aim to address the key themes and concepts that are focused in research core inquiry. It is embedded with different spectacles of beliefs of scholars shaped up with their conducted and approved research studies. Where, these scholars cited their views under the same context that the current study holds and the researcher is aiming to elaborate on. This study with this literature review section has positioned itself into a critical discourse that has moved above the surface level by narrating the lack of capacity to investigate the systematic causality of failure in urban waste management systems.
Hoitink & Fahy (1986) stated that collection, limit, transportation, and last expulsion of solid wastes are significant inquiries in enormous metropolitan networks and districts, according to a couple of assessments. SWG is causing outrageous difficulties in metropolitan regions across East and North Africa, as well as in most emerging countries. The essential driver of these issues is credited to these organizations' juvenile economies, which gets a handle on their lamentable solid waste organization execution.
Hoitink et al., (1986) further examined that 'meanwhile, other monetary limits, for instance, typical family size, number of rooms, month to month pay, and work status influence the SWG and its creation. Hence, there is an association between the synthesis of solid waste and assembling social activities. Various components influencing the substance of solid waste and its sum in families recollect changes for source-orchestrating approaches to acting and things usage. The key troubles that impact MSW chiefs in all nations are socio-social, money related, genuine, political, and normal elements, as well as open resources'.
Minghua and Xiumin, (2013) questioned 'how much thoughtful solid garbage made today should be around 675 million tons. In the OECD district, the regular individual makes 520 kg of waste every year, which is 20 kg more than in 1990 anyway 30 kg not precisely in 2000. Europeans produce roughly 110 kg less per capita than those in the Americas, but 100 kg more than people in the OECD Asia-Oceania region. According to the World Bank, around 2 billion tons of metropolitan junk were made generally in 2016 (basically 270kg per person), and this sum should continue to rise'.
According to Sharholy and Ahmad, (2008) 'Raw or prepared of any food substances that are disposed of or

expected or should have been deserted," as per the European Union. Food squanders, then again, are characterized as "un-eaten food varieties and food arrangement squanders from homes and business foundations including cafés, supermarkets, and produce stands, institutional cafeterias and kitchens, as well as modern sources like representative break rooms" by the US Environmental Protection Agency (EPA). Moreover, the United Nations recognizes "food misfortune" and "food squander.'

Swyngedouw and Heynen (2003) said 'Squanders adversely affect the climate, representing a serious wellbeing risk. The adverse consequences influence the two; people and creatures, and it can bring about infection flare-ups, diminished future, and a perilous climate. A few squanders rot, yet those that don't smell and create methane. An ozone harming substance that contributes incredibly to the nursery impact. The impacts of methane on the climate and that's what on human wellbeing following, show up squander. The air, water, and land are totally contaminated by squandering. There are a few sorts of air pollution emerging from stench, smoke, and residue.

Thorneloe and Weitz (2002) deciphered that 'a critical part of the populace's day to day routines in wretched destitution and in regrettable experiencing conditions, presents serious wellbeing's dangers to the families and the local area at large. Squander is a basic issue with regards to both turn of events and the climate. It is almost certain because of human movement. People are delivering more trash than any other time, not similarly because of populace development all through the ages, yet in addition because of the changing idea of utilization and the cosmetics of strong waste.

According to Klich (2007), agriculture is the primary source of agricultural solid waste creation. Every phase of farming activity, from land clearing through harvest, generates agricultural waste. Solid waste is generated throughout the process of preparing the pen for the animals' arrival on the farm, preparing the pasture/paddock, and slaughtering and selling the animals. Another source of agricultural solid waste is a poor road network for transporting harvested food from the farm to the market or storage. This is largely due to poor road infrastructure in some developing countries, which may result in a road accident or a delay in agricultural produce reaching markets. When there is a vehicle accident, perishable agricultural produce is readily wasted'.

Creating more sustainable and equitable waste management services necessitates a number of technical considerations. While ashes from heating and cooking, for example, were noted as significant components of domestic garbage in North America until the mid-nineteenth century, plastic has only been individually recorded since the 1970s'. 'Arising poisons enter the climate from many anthropogenic sources and are transported throughout ecological frameworks,' according to Gavrilescu and Demnerová (2015).

According to Bai, Nath, and Capon (2012), 'the world's human population now lives in urban communities, and with that extent anticipated to grow for a long time, urban communities are key predictors of future manageability and human wellbeing, as well as prosperity'. The benefit of linking metropolitan climate, welfare, and prosperity outcomes is already widely recognized, but the horde linkages are still far from being demonstrated experimentally, let alone regulating metropolitan urban planning, strategy, and administration.

Buonanno, Stabile, and Morawska (2014) said, "In the last twenty-initial 100 years, the nature and level of human correspondence in different created conditions can overall effect general flourishing." Today, the researchers spend nearly 90% of our late memory inside a collection of encased microenvironments'

Considering a theoretical framework of the study, from a critical economic-justice perspective, it has been revealed that the "efficiency" is underpinned by systemic exploitation. So, the Informal recyclers are working without any health insurance, social protection as well without fair compensation. These laborers are subsidizing the irresponsibility of the affluent classes effectively by the transformation of informal labor into forms of state-sanctioned exploitation.

For anthropology of consumption, Reno (2015) has demonstrated that the rich populations have generated more environmentally persistent waste, especially in the production of plastics and packaging materials is more prevalent in wealthier populations. Whereas the poorer communities accommodate the production of biodegradable refuse. There is an empirical link between the high consumption of lifestyles and the

disproportionality among the health factors faced by the residents of low-income neighborhoods and the informal recyclers. This has been discovered that the unequal ecological distributions have underlined the urban waste economies.

According to the Research by Sarwar (2017) on 'informal settlements' just like Losar, 'it is concluded that economic constraints, with limitations to space and inability to afford the private collection, and direct compulsion of residents, were engaged in environmentally damaging practices like open waste burning due to having limited access to resources. Based on these findings, the pollution which is present in the informal neighborhoods is often considered a rational adaptation to poverty instead of a reflection of environmental ignorance'.

Materials And Methods

This study adopts an interpretivist and qualitative research paradigm grounded into the principals of Urban Anthropology (Pervin and Mokhtar, 2022). The core methodology is exploratory which is an essential tool to achieve the goals for research. The exploratory method is providing us the necessary context and casual depth to explain how urban waste mismanagement creates the challenges in Losar District, Rawalpindi. The researcher has used purposive and snowball sampling to capture diverse perspectives and have achieved saturation of different themes in which sample size and saturation of roughly 20 households in-depth interviews with 10 to 15 key informant interviews was administered.

Table 1. Operational Steps in Research

Sr#	Steps	Procedures
1-	Research Orientation	The researcher get inclined to explore how the urban waste mis-management triggers challenges in Losar, Rawalpindi
2-	Sampling	Researcher has used purposive and snowball sampling to capture diverse perspectives and have achieved saturation of different themes in which sample size and saturation of roughly 20 households in-depth interviews with 10 to 15 key informant interviews was administered.
3-	Data Assessment	All primary qualitative data (IDIs, KIIs) are recorded in audio form with the consent and transcribed verbatim from Urdu/Punjabi into English. Field notes and observational data were meticulously organized, categorized, and cataloged along with the supporting evidence in terms of photographs and visual data.
4-	Summarization of data	Acquired Data is then processed with summarization process
5-	Interpretations	Interpretations are administered with finalization of findings

The semi-structured interviews have been conducted with 20 household decision makers, who have been

balanced by gender, class and neighborhood. The KI teams were selected based on their personal attitude towards cleanliness, self-reported disposal habits, expectations from the government authority services and the designed waste hierarchy for example who does garbage work and how they are viewed (Lim et al., 2020). These interviews have been in Punjabi and Urdu in order to capture Nuance. This method has helped to extract rich narratives of daily life and environmental ethics at home. All primary qualitative data (IDIs and KIIs) are recorded in audio form with the consent and transcribed verbatim from Urdu/Punjabi into English. Field notes and observational data were meticulously organized, categorized, and cataloged along with the supporting evidence in terms of photographs and visual data.

Results and Discussions

This section presents the results based on analyses with administered exploratory findings from the fieldwork conducted in Losar, District Rawalpindi. The qualitative synthesis of data based on the analysis elaborates on the urban waste crisis beyond the descriptive failure to robustly address the understanding of its persistence. According to Mr. Farhan (IDI, Age 51, Banker, Resident), saying we pay the higher cant taxes because we expect discipline, results but if the cleaner appointed officially doesn't come for five days, the garbage stays there for that we are not supposed to keep the smell of that garbage in our own houses just for staying on Cant Board. So, if they break their contracts of providing services, then the spread of trash is not our responsibility but of the authorities. As we have just put that waste into a corner just because of negligence of the appointed cleaner.

He has further illustrated the moral neutralization where the failure of a state serves as a justification for non-compliance. Actually, the irregular delivery of service grants permission ethically to neglect the waste segregation and the disposal responsibility. This issue is not considered a lack of awareness, but it can be considered a rational withdrawal of the social contract. This finding critically refutes the policies that focus only on "Lack of Civic Education".

However, based on the analysis, the problem is not just the negligence of duty but a rational choice to divest a commitment that is violated by the authority itself, and due to this, the whole campaign has failed. The responsibility of practicing delegating waste in order to contest boundary zones, actually, is a core finding that supports the argument based on institutional pluralism Kraatz and Block (2017). So the areas like Losar, lack clarity in their demarcation and are deemed unincorporated, and also, they will receive zero guaranteed services.

According to Mr. Aftab (KII, RCB Sanitation Supervisor), the Losar extension areas are really complicated as the maps were designed based on old structures. Hence, some of the streets are not covered officially in the cantonment area under the RMC. But they are illegally defined under the RMC. Depending upon these RMC says, they are not having enough resources like they don't have trucks for that. So, that specific point for the dumping is Nullah, where the unclaimed area uses to dump their garbage. They are led to put their garbage as fighting the bureaucracy for a single street seems more difficult.

This analysis provides an important explanation of facts within the Anthropology of Bureaucracy. This "unclaimed" status is not seen as an administrative accident; in fact, it is a calculated political move that allows the agencies to provide low-cost services based on statistics that will be generated in low-revenue provisions, and politically in the marginalized peripheries. This fragmentation has created a geographical neglect, due to which the most vulnerable spaces absorb the heaviest ecological burden. So by providing a structural explanation for the high density of uncollected waste, the major highlighted areas with issues are countered.

In the Losar, there is a severe dualism in economy and status due to which the consumption patterns show the waste complexity, while poverty determines who performs the hazardous labor of recovery. The informal sector, where children are included more, shows that it is the economic backbone of recycling, recovering, and collecting all recoverable paper and plastics. Mostly, children are found doing such work.

According to Ms. Shahnaz (IDI, Age 28, Waste Picker, Losar Extension) put forth her experience, the best

things like new plastic materials, cardboards and many other recyclable materials are thrown away by the middle class houses. They have just mixed them altogether. If these materials are not separated by us these materials will go into the landfill in trucks that should not move to there so we collect all the necessary things as we work in the filth that is a source of money to us.

By the sayings of Mrs. Naseem (IDI, Age 42, Daily Wage Worker), there is no dustbin available to them and they are also not having a huge space into a small room. The waste collector authority is not punctual and also they charge to pick up that garbage. So due to having a state of poverty we burn the plastic bags and dry stuff at night. Although it is a terrible smoke, due to cheaper access and faster sources to resolve garbage we are forced to burn the garbage.

This demonstrates that economic constraints, such as the cost of disposal and lack of household space, are more powerful factors than environmental consciousness of an individual. For the poor working class, waste is a threat essentially due to the purity of the home and a source of shame, and burning is considered to be the cheapest. There are the most efficient risk minimization strategies available, despite their contribution to regional health hazards. So the evidence points towards the technical models that overlook the microeconomic realities of urban poverty.

The analysis of waste disposal into the nullahs has revealed a deep-seated cultural logic and a spatial ethic that explains the factors of persistent externalization of pollution.The perception of the nullah as gandagi (filth) territory, separate from the pak (pure) home, provides a crucial cultural explanation for the continuation of environmental degradation. By the saying of Mr. Riaz (Age 65, Community Elder): The main priority of our families inside a house is that it should be pure and clear in order to perform our spiritual values like prayers and for the safety of the family from disease. Whereas the outside of a house the drains and Nullahs are used for dirt gandagi (filth). So the main thing is that there is no shame in throwing the garbage outside the house as it is considered that when it rains the dirt will automatically be gone.as its been this way from the decades.

This statement has established that the act of dumping is a culturally sanctioned ritual of spatial purification, where the collective shame of waste is exported to the public domain. For instance, this is done by making the waste move out of their sites, whether it is dumped on the street side. The invocation of Allah or kismet (fate) acts as a risk-buffering mechanism, as it is considered that this helps them to cope with the hazards caused by pollution. This allows the community to live alongside the severe pollution without succumbing to constant anxiety. They are effectively substituting institutional responsibility with a belief in natural or divine intervention.

This cultural logic is the ultimate explanatory factor, basically idealizing the reason why people continue to use the nullah along with physical barriers or local clean-up drives at that place. Interviews have confirmed that the health consequences like Dengue, Malaria are widely known to be caused by stagnant water, garbage-choked nullahs, but the behavior of the people persists, creating a state of normalized risk acceptance to the health hazards and many other factors.

According to the saying of Ms. Farida (IDI, Age 35, Homemaker, near Nullah): it seems that every year there is a high risk of dengue fever after rain and even within the streets someone gets this virus. As we know that mostly the water is blocked by the garbage which in results causes illness although knowing the facts we still dump s there is no other option than throwing to prevent smell in the house.so by saying sickness is a fate we keep on doing same pollution creating things that results in diseases.

The continuous dumping has created the known health consequences, that has been explained by the social and cognitive cost-benefit analysis. Basically, the immediate, high cost of storing foul-smelling waste inside the home is causing a threat to purity and social shame, whereas it outweighs the cyclical, abstract cost of a disease perceived as fate. This normalization has caused the destruction of behavior to persist, as the residents are used to adapting to these risk factors rather than successfully mobilizing against the systematic failure that causes it. The public health crisis is actually a crisis caused by pollution, and therefore, this is considered to

be a cultural constraint.
The respondents reported that almost every residential, organization and human activity in Pakistan produces some kind of waste. Many different types of waste are produced, including municipal solid waste, harmful waste, industrial non-harmful waste, agricultural and animal waste, medical waste, radioactive waste, construction and demolishing debris, extraction and mining waste, oil and gas production waste, fossils which are triggering the crisis linked with urban waste mismanagement.

Conclusion

The research study revolves around the crisis situation emerging with waste mismanagement in Losar. The significant conclusion of the study shows that lack of technical planning, shortage of proper waste disposal systems plays a substantial role in exacerbating the waste crisis situations. Nonetheless, the matter of fact is that it's just one side, however, the fragmented government and political system, long-term culturally endorsed values, and various economically shaped life-style patterns define why and how these waste management crises are manifested.
While comprehending the reviewed studies and the given research results, it clearly signifies jurisdictional disputes are gradually undergoing morphosis and are turning towards institutional escape paths. It's also a matter of concern, that an informal system is making its roots deeply solidified and getting a significant hold on communities in the research locale which is why there is no real co-ordination between the public and respectable authorities that are designated to deal with the real waste crisis.
There were many respondents in the study who have clearly raised their voices and told the story of their finances that are not enough to regulate the waste disposal with alternative private means through self-management and hence they find only a solution to keep the waste with them nearest to their accommodations that they find cheap and waiting that the responsible authorities will arrive to dispose it one day. Mr. Aftab narratives that were recorded and analytically discussed can be referred for this conclusive statement of the study.

Recommendation

The study establishes a strong recommendation that the only waste crisis can not be sorted out or instantly managed without quick agendas on technological fixes or the campaigns run for occasional clean-ups by the policy-maker calls and other respective institutes and authorities. So the conclusive point arises in this research that what is fundamentally needed to cater to these crisis situations is to rebuild in a sense of political, social and cultural accountability, institutional justice system as well as acquisition of strong public trust. A streamlined and unified service system of RCB and RMC on an authoritative domain can also help to rebuild the system and drive the desired results in managing the waste crisis.
Moreover, promoting establishments of private public waste management institutes and giving them the chance to get funding and maintain strong service standards. Furthermore, recognition of an informal recycling system where private workers take part to introduce the social protection standards and propose incentives for house-hold level waste management can incredibly switch waste crises to end practically with proven rewarding choices at domestic levels.
In the end, it is equally important to quote that everyone in authority and in the affected neighbourhood should collaborate and work for the vision to reshape the polluted spaces and convert them to the same as they seem in the first place. They should collectively work to turn nullahs to develop safest public areas where there is proper supportive sanitation providing each resident a back to feel a sense of accountability to maintain it through the shared ownership. Conclusively, the waste mismanagement in Losar is the key reflection on the story of fractures that exists in the cultural, political as well as economic system of Rawalpindi. Just the address on each of these fractures can help to call the system of justice. Only then a hope can emerge which solely centers on bridging up sustainable as well as fair system of waste management Losar, Rawalpindi.

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