



Assessment Of The Socio-Economic And Housing Conditions Of The Rag Pickers: A Case Of Lucknow

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Abstract: India is a fast-growing economy with a high urbanization rate. Waste management is becoming more evident in urban development. The government and the NGOs are concerned about the rising levels of waste generation happening with the development. The cities are feeling the pressure of the waste generated which is not managed properly and is often left unattended at various places in the city. There is high pressure on the ULB's to manage the city's waste. The ULBs, with its limited resources; manages to collect waste from some parts of the city i.e. dump sites, residential colonies, door to door collection, etc. and dumps it into a landfill as the final solution. Central Pollution Control Board (CPCB) has reported that during the last decade Municipal Solid waste (MSW) has increased by 2.44 times. When one landfill site becomes a heap of waste and has engulfed the whole patch of valuable land, a new site is then found to start the whole process again while no plan to manage the waste being generated. Rag pickers are the most important and integral part of the waste management in the cities, they are involved in the sector to earn their livelihood but in turn, are benefiting the environment by recycling the waste collected. The rag pickers are forced to live in poor housing conditions near waste yards or shanty slums because of the nature of their business. To assess the socio-economic condition of the rag pickers sample survey was conducted and data was analyzed to establish a relation between the housing conditions and its dependence on socio-economic factors.

Index Terms - Rag pickers, waste, waste segregation, housing, waste collection.

I. INTRODUCTION

The waste management industry has two sectors working – formal and informal, the formal one being the sector run by the ULB's or the government bodies and the other being the informal sector comprising of individual operating waste collectors and rag pickers. The informal sector also works for removing the city waste and keeping the city clean but with a different motive of earning their living. These rag pickers are unknowingly working towards a better tomorrow, towards sustainable development. The informal sector also collects the waste from various sources which are not even covered by the ULB's like streets, landfill sites, riverbanks, tourist areas, household, etc. but just dumping it in the landfill site it processes and trades the waste to earn a living. The whole process culminates in the recycling of waste and the process of reuse. The waste collectors collect the waste and segregate it into different types like glass, MLP, plastic, cardboard, paper, metal, etc. and then process it and send it for recycling, see Fig. 1.

II. NEED FOR STUDY

The rag pickers reduce the load on the ULB's in managing the city's waste and also help in reducing the expenses of government (Dixit & Mishra, 2007). In his study found that despite their low economic and social status, waste pickers and collectors are making an important contribution to society & by saving the government's expenditure for disposing of waste. Trading and recycling help in boosting the nation's GDP. The government has recognized the work of these rag pickers and waste collectors and the benefits they are creating for the government, as they are responsible for managing of more than half of the total waste generated, but these people are forced to live in poor conditions (Ejaz, Akhtar, Nisar, & Naeem, 2010). In his study has highlighted the Scavengers and their role in the recycling of waste and stated that they are making an important contribution to the environment and in the economy. Out of total waste collected, only 12.45% of waste is scientifically processed and the rest is disposed of in open dumps (CPCB, 2013). They don't have any storage



Figure 2: Holi gate market stretch (Source: Author)

Figure 1. Waste Cycle (Source – Author)

and segregation space hence they do it within their residential areas which are also not well managed and are temporary. Most of these people are homeless people who are making their living by collecting the waste in the daytime and spent the night time on footpaths, roadsides, temporary hutment, makeshift tents, or some JJ cluster they have formed on any unauthorized land. They cannot move to a better housing option as their nature of work requires them to work from places away from the normal residential colonies and settlements. The present study aims to find the relation between the socio-economic factor and housing condition of the rag pickers and assess the problems these people are facing due to the nature of the work which is influencing their housing status.

III. PROFILE OF STUDY AREA

Lucknow as an example of a humid subtropical climate with cool, dry winters from mid-November to February and dry, hot summers with thunderstorms from late March to June has been chosen as the study area. It is situated at 26.8467° N, and 80.9462° E, referring to geographic coordinates. The rainy season is from July to September when the city gets an average rainfall of 896.2 millimeters (35.28 in) from the south-west monsoon winds, and occasionally frontal rainfall will occur in January. In winter, the maximum temperature is around 25 °C (77 °F) and the minimum is in the 3 °C (37 °F) to 7 °C (45 °F) range.

The study area for the sample survey was chosen within the city limits of Lucknow which has many settlements of rag pickers and waste collectors. The area around the river Gomti has several settlements of the rag pickers who are operating their business of collection and segregation on the unauthorized government or encroached lands. A sample survey was conducted on the informal rag pickers in the Hussainabad area of Lucknow. The area has few waste collectors and rag pickers JJ clusters operating informally on encroached and rented land. The rag pickers are living in squatter settlements over the place just beside the heritage structure of Hussainabad Clock Tower and Art gallery, see Fig. 2.

The area is a privately owned patch of land having an area of 11,535 sq. m. The site is situated on the land between the Hussainabad heritage zone and river Gomti. The site is accessible both from the clock tower side and the riverside through the road over the embankment along the river. The site is adjacent to a small private bus workshop and stand. A total of 36 families are residing in the patch with a population of 225-250 people. The land patch is at a distance of just 80 meters from the Hussainabad clock tower, see Fig. 2. The location is strategically fit for the rag pickers as they can cover the nearby residential areas of *Chowk*, waste collection from the King George Medical University, a daily collection of waste generated by the tourist area within the proximity of the site. The site is along the bund of river Gomti which is an underdeveloped area that does not easily come to the eyes of the daily commuter and city dwellers.

IV. CURRENT CONDITION OF STUDY AREA

The proximity of a popular tourist destination has made the authorities to install a makeshift partition of the tin sheets just to block the view from the clock tower's side, see Fig. 3. The site is having temporary hutments made from plastic sheets and tin sheets. The conditions within the site are very unhealthy as a residential space as there is waterlogging in the site with waste scattered all along with stray animals roaming the site.

The rag pickers are living within the site and are also conducting their trade from inside. The houses have waste collected beside them for segregation and further post-processing. Rag pickers have also made a temporary segregation and processing center within the site which they use to segregate and post-process the waste collectively and temporarily store the waste before selling it out.

V. DATA & SOFTWARE USED FOR MODELLING

Primary data collection was done by the means of sample survey consisting of the questions relating to the social and economic background of the rag pickers. The question was formed to assess the social, work, economic, working techniques, and housing of the rag pickers and waste collectors. The sample survey was done on 50 rag-pickers working in the Hussainabad area of Lucknow. The data was further quantified and was entered into IBM SPSS software to run further tests and analysis.



Figure 3. Location of the study area at Hussainabad (Source- Google earth imagery)



Figure 4. Rag pickers settlement at Hussainabad
(Source: Author)



Figure 5. Makeshift tin sheet partition towards clock tower
(Source: Author)

VI. METHOD

Correlation analysis between the variables was done to establish the important relations between the variables. The independent t-test was done to assess the tubular value or the p-value at a 95% confidence interval and significance of the value in the dataset.

The correlation values between the variables were computed to assess the negative or positive correlation between the variables. The data has been collected by conducting sample surveys in rag picker colonies which have been specific to the employment and housing of these people. To provide a solution case of the informal and formal segregation center and working environment integrated with housing facilities have been done, cases of low-cost housing have also been considered.

VII. RESULT AND DISCUSSION

The following inferences were derived from the research.

- Rag picking is a well-organized sector that has several people employed and contributing a lot to the waste management of the city.
- The informal sector is efficiently doing the job of segregating the waste which is not done in case of the waste collection by the corporations and is contributing to a sustainable environment through recycling the waste.
- They managed to get money but were forced to live in unhealthy conditions due to the nature of their work as they need segregation and storage near their home.
- 70% of people were willing to pay for proper housing for a small sum from their monthly income.
- An overwhelming majority of the survey reported that they are the main income earners in their households, and more than percent of their households depend on the informal economy for survival.
- The participants are primarily own account workers, usually working alone without any paid or unpaid help, and the work is year-round.
- The work is very much site-specific for the rag pickers as they are collecting waste within a set boundary daily or from a particular area or place be it commercial or residential.

4.1 Waste Segregation and Post processing

Rag pickers who are segregating the waste are also going for the post-processing of the waste to generate more income. The positive correlation value suggests that the post-processing is an important part of the job for the people who are segregating the waste before selling it and hence require a space within the segregation center which should accompany a storage facility.

4.2 Need of Housing and Payment for Housing

The p-value shows the significance of the housing for the waste collectors. The rag pickers need proper housing and are ready to pay a part of their monthly income for housing. The provided housing can be financed and can be replayed in specific years to gain ownership of the house.

4.3 Distance of Workplace is inversely connected to the mode

The workplace and dwelling place is very important for the rag pickers to reduce commutation charges and due to the nature of work. The areas of the rag pickers are well defined for waste collection. The Negative correlation value of -0.3899 shows that as the distance increases the mode of collection changes from foot to the vehicle and on foot waste collectors generally move in a radius of 3 Km to collect waste.

Table 1: Analysis Table

Variables	Degree of freedom (between groups)	α value Level of Significance (at 95% confidence)	Tabular value or p value	Statistical Value	Result	Correlation	Result
Nature of dwelling and access to toilet	1	0.05	0.001212	$p < \alpha$	Significant	0.2315	Positive
Waste segregation and Post Processing	1	0.05	0.01923	$p < \alpha$	Significant	0.2802	Positive
Need of housing and payment for housing	1	0.05	0.0185	$p < \alpha$	Significant	0.3314	Positive
Distance of Workplace and Mode of Collection	1	0.05	0.000524	$p < \alpha$	Significant	-0.3899	Negative
Nature of dwelling and place of cooking	1	0.05	0.000844	$p < \alpha$	Significant	0.3596	Positive
Gender and Segregation	2	0.05	0.023	$p < \alpha$	Significant	0.2069	Positive
Monthly Income and nature of dwelling	1	0.05	0.00652	$p < \alpha$	Significant	-0.4098	Negative

4.4 Kitchen is an important requirement

Most of the workers are living in shanty tents and *semi-pucca* houses which are not having the facility of the kitchen as they are forced to cook outside in the unhygienic environment. The p-value of 0.000884 shows that the significance of the kitchen for the dwellings types of waste collectors.

4.5 Involvement of women in segregation activities

The relation of the gender and segregation activities shows less involvement of the women in the segregation activities rather in the collection practices as the segregation centers are male-dominated. The positive correlation value tells that the involvement of women in segregation activities should be improved by creating separate facilities for them.

4.6 Income is not the criteria for housing status

The p-value of 0.00652 shows the significance of the relation between the income and the current condition of housing, despite earning an average sum of 15,000 INR the rag pickers are living in the same conditions which are due to the nature of their work as they need a place for waste storage and segregation which cannot be done at all places. The correlation value of -0.4098 strongly shows the negative correlation these datasets have with each other which shows generating proper income is not a factor that is responsible for the current housing conditions that these people are living in.

VIII. CONCLUSION

Rag pickers are the backbone of the current waste management scenario and they by the process of recycling are contributing to the environment. The current system does not recognize the work of the informal sector of waste management and has no plan to efficiently manage or integrate this informal sector into the current system. These people are an important part of the urban system that we are currently living in which is growing at a very fast pace, which means that with development the problem of waste generation is going to increase and better solutions for waste management need to be worked out. The current solutions appear to be formalizing the informal sector or integrating it with the current system to facilitate better functioning of the waste management system.

The waste collectors being an integral part of our urban system are always neglected and are looked upon. There is no proper setting for them within the design limits of the cities and towns, hence these people operate from the left out or shady areas within the city where they can carry out with their business without disturbance. There has to be a proper solution for the housing and settlement for them. The government should look upon the solutions to formalize the system as initiated by some NGO's operating in the metro cities. Integrating the informal sector would increase the recycling process and the waste would not simply go into the landfill site and stay there for many years to come and pollute the environment. Simply providing only the housing solution or providing only the business opportunities would not work for the community a wholesome solution if the answer to the current problem by fulfilling both the requirements for overall development.

Appendix A. Questionnaire for sample survey

Respondents Name: _____ Date of Survey: _____

Age: _____ Location: _____

Gender: _____ Religion: _____

1. What is your educational qualification?

Illiterate [] Primary [] Secondary [] Senior Secondary []

2. How many members are there in your family?

1 [] 2 [] 3 [] 4 [] >4 []

3. How are you engaged in the work?

Part-time [] Full time [] some weekdays []

4. What is your marital status?

Unmarried [] Married [] Divorced [] Widowed []

5. Is your whole family engaged in the same work?

Yes [] No [] Maybe []

6. From where do you collect waste?

Household [] Society [] Landfill [] Streets [] Commercial Areas []

7. How many hours daily do you spent collecting waste?

1-3 Hours [] 4-6 Hours [] 7-9 Hours [] 10-12 Hours [] >12 Hours []

8. What mode do you use to collect the waste?

On Foot [] Handcart [] Bicycle [] Tricycle [] Motorized Vehicle []

9. How much is the distance of your workplace from your home?

<1 Km [] 1-2 Km [] 3-5 Km [] 5-10Km [] >10 Km []

10. For how many years you have been collecting waste?

<1 year [] 1-5 Years [] 5-10 Years [] 10-20 Years [] >20 Years []

11. Which type of waste do you generally collect?

Bio degradable [] Glass [] Plastic [] Metal [] Others []

12. How much waste do you collect daily?

<5 Kg [] 5-10 Kg [] 10-20 Kg [] 20-30 Kg [] > 30 Kg []

13. Do you also segregate the collected waste?

Yes [] No [] Maybe []

14. Where do you segregate the waste collected?

A source [] At home [] At storage [] Segregation center [] anywhere []

15. Do you post-process the waste after segregation?

Yes [] No [] Maybe []

16. When do you sell the waste collected?

Daily [] Consecutive days [] Twice a Weekly [] Weekly [] 15 Days []

17. What is the monthly income of your whole family?

< 5000 [] 5000-10,000 [] 10,000-15,000 [] 15,000-20,000 [] >20,000 []

18. Have you received any training on segregation, storage and management of waste?

Yes [] No [] Maybe []

19. Where do you live?

Own house [] Slum [] Footpath [] Employers' Land []

20. What is the nature of your dwelling?

Kutchra house [] Semi Pucca house [] Pucca house [] Tents [] Semi covered []

21. Do you have access to toilet facility?

Within house [] Community toilet [] Sulabh Toilets [] Open defecation []

22. Do you have access to clean drinking water facility?

Yes [] No [] Maybe []

23. Do you have access to an electricity facility?

Yes [] No [] Maybe []

24. Where do you cook your food?

Kitchen [] Living room [] Outside house [] Community Kitchen []

25. Do you feel the need for proper housing for you and your family?

Yes [] No [] Maybe []

26. Are you willing to give a part of your monthly income for proper housing?

Yes [] No [] Maybe []

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