Research Paper Environment

# Waste Collection by Rag Pickers in the Cities – A Brief Report

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**ABSTRACT**

*Besides compostable waste, the municipal waste consists of inorganic materials such as glass, metal, rubber, plastic and other miscellaneous items that could be recovered by the way of recycling. The involvement of an unorganized sector consisting of waste pickers, scrap and waste traders in recycling and all together assisting in translocating waste to processing factories is very common in developing countries. Several studies on the involvement of rag pickers in waste collection and disposal have been published from India and abroad (Beede and Bloom, 1995; Reddy and Galab, 1998; Agarwal and Gupta, 2002 so on). A similar but extensive study was made in Vijayawada and Eluru corporations with attempts to assess the role of waste collectors in the recovery and reduction of solid waste and also to evaluate their indirect involvement in waste segregation, collection, reduction and disposal through reuse and recycling including the occupational hazards which were least attended.*

Keywords : Municipal solid waste - MSW, rag pickers, scraps, segregation, recycling.

**Methodology**

The snowball method intended to gather information on the role of rag-pickers in waste reduction, and to find out their socio-economic status, health and hygienic problems was followed.

The survey was conducted among waste pickers in the corporation of Vijayawada and Eluru during 20/01/2013 to 25/02/2013 with the help of a structured interview schedule. One hundred out a total of about 400-450 rag pickers involved in the activity in both the cities i.e. Vijayawada and Eluru were randomly selected and interviewed. Special care was given to spread the sample geographically around the corporation such as residential area, slum area near railway stations, dumping sites in both the cities (i.e., Vijayawada and Eluru).

In order to get clear picture of the social status, economic status, health status and problems encountered by them, questions on various aspects like their age, sex, educational qualification, languages known, quantity of waste collected per day, sale of the waste, monthly income, other sources of income, precautionary measure taken by them while collecting waste, occupational health problems faced by them were included in the questionnaire.

**Results and Discussion**

**1.1 Occupational area:**

Rag pickers operate on residential and commercial area, markets, offices, educational institutions, railway stations, bus stations and dumping sites. It was noticeable that 52.6% persons preferred to collect waste from railway and bus stations, 42.10 % persons collected waste from market and commercial areas, only 2.63% persons are collecting wastes from residential areas and 2.63% from offices and educational institutions in Vijayawada. Whereas in Eluru, 47.5% persons collected wastes from residential areas, 30% from offices and educational institutions and 22.5% from market and commercial areas. Railway station and bus station were the least opted areas in Eluru because of the fear of police who interfered with their collection of the waste.

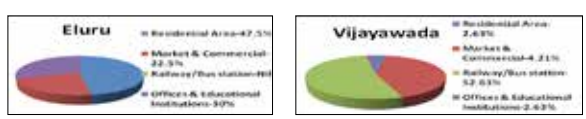


**Figure 1.1 (a&b): Pie diagram representation of areas of operation of rag-pickers.**

**1.2 Duration of waste collection**

It was observed that 55.26% of waste collectors were engaged in their work for more than 8 hours, 47.36% of persons preferred to work below 5 hours in Vijayawada. Whereas majority of waste collector's i.e. 97.5 % preferred to work below 5 hours and only 2.5% waste collectors worked 5-8 hours in Eluru.

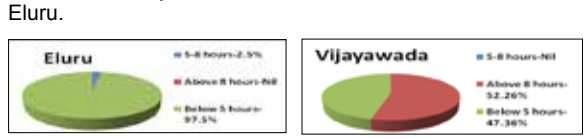


**Figure 1.2 (a&b): Pie diagram representation of working hours per day of rag-pickers**

**1.3 Vehicle used for collection of waste**

It was observed that 63.15% in Vijayawada and 22.15% rag-pickers in Eluru used vehicle for the waste collection and the rest 22.5% in Vijayawada and 77.5% in Eluru did not used vehicle for the waste collection.

**Figure 1.3 (a&b): Pie diagram representation of vehicle used for the collection of waste**

**The type of vehicle used**

The persons using vehicles mostly i.e. 83.33% preferred to have tricycle for the waste collection and the rest 16.66% preferred to use bicycle in Vijayawada. Whereas in Eluru all the waste collectors i.e., 100% preferred to use bicycle.

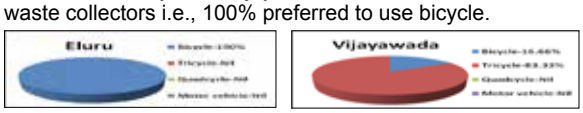


**Figure 6.3 (a&b): Pie diagram representation of type of vehicle used for the collection of waste**

1.4 Number of people go for the collection of waste

A noticeable feature was that 81.57% of the rag-pickers in Vijayawada opted to go for waste-collection in the group of two whereas the remaining 18.42% of them preferred to go singly for the waste collection. Whereas in Eluru 85% of people preferred to collect waste singly, whereas remaining 15% of people preferred to go in the group of two.

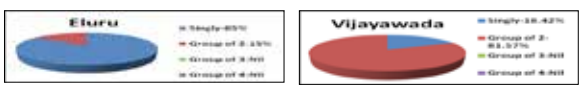


**Figure 1.4 (a&b): Pie diagram representation of single or group collection**

**1.5 Family assistance**

From figure 6.5 it is clear that 94.73% of the rag pickers were assisted by their family members whereas 5.26% of them were not assisted by their family members in Vijayawada. Whereas in Eluru 72.5% of the rag pickers were not assisted by their family members and only 27.5% were assisted by their family members.


**Figure 1.5 (a&b): Pie diagram representation of assistance to the rag pickers from the family members**

**1.6 Nature of work (Full time/Part time)**

The survey result showed that 100% were full time workers in Vijayawada whereas in Eluru 52.5% were full time workers and 47.5 % were part time workers. A rag picker began his work as early as 4 am, in order not to miss the waste. Whenever the bag was full, they returned to the store or trade centre to sell these earnings.


**Figure 1.6 (a&b): Pie diagram representation of nature of work i.e., full time/part time**

**1.7 Days preferred for waste collection**

Mostly all the rag pickers in Vijayawada and Eluru preferred to collect the wastes on working days.


**Figure 1.7 (a&b): Pie diagram representation of days preferred for waste collection.**

**1.8 Time of collection**

Figure 6.8 shows the result of the time preferred for waste collection.63.15% of the waste collectors collected the waste in afternoon and the rest 36.84% of them preferred to collect the waste in the forenoon in Vijayawada. Whereas in Eluru 62.5% of the waste collectors preferred to collect the waste in the forenoon and the rest 37.5% of them preferred to collect the waste in the afternoon.

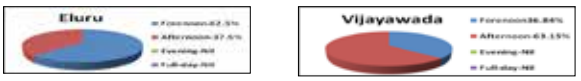


**Figure 1.8 (a&b): Pie diagram representation of time of the day preferred for waste collection.**

**1.9 Distance travelled for the collection of waste**

Figure 1.9 show data on the distance travelled in Km by rag pickers. 52.63% of them travelled a distance of more than 10 Km and the remaining 47.36% travelled a distance of 5-10 Km in Vijayawada. Whereas in Eluru mostly all i.e. 100% of them travelled 5-10Km for the waste collection. It showed that majority of them travelled more distance for waste collection.


**Figure 1.9 (a&b): Pie diagram representation of distance travelled for the collection of waste**

**1.10 Duration of collection of the waste**

Mostly all the rag pickers in Vijayawada and Eluru preferred to collect waste daily, rather than twice a week or monthly once.

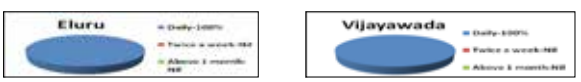


**Figure 1.10 (a&b): Pie diagram representation of duration of collection of the waste**

**1.11 Quantity of waste collected per day**

The quantum of waste collected per day by waste collectors in Vijayawada and Eluru corporations is given in the figure below. It can be noted that majority i.e. 52.63% collected nearly 50-75 Kg, 31.51% collected 25-50 Kg and the rest 15.78% collected 0-25 Kg waste in Vijayawada. Whereas in Eluru nearly 85% collected 0-25 Kg waste and the remaining 15% collected 25-50 Kg waste.

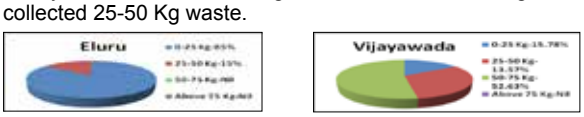


Figure 1.11 (a&b): Pie diagram representation of quantity of waste collected per day

**1.12 Waste Segregation**

It can be read from Figure 6.12 that nearly 86.84% of the rag pickers collected waste materials without being segregated the site and remaining 13.15% segregated the waste materials at the site itself in Vijayawada. Whereas in Eluru 62.5% did not segregate the waste and the remaining 37.5% segregated the waste at the site.

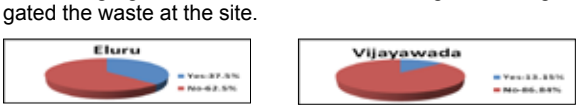


Figure 1.12 (a&b): Pie diagram representation of number of rag pickers sorting the waste material at the site itself

**1.13 Sale of collected waste**

From the Figure 6.13 it can be noted that majority of the rag pickers i.e., 86.84% in Vijayawada and 62.5% in Eluru did not sell the collected waste on the same day. The remaining 13.15% in Vijayawada and 37.5% in Eluru sold the waste on the same day.


Figure 1.13 (a&b): Pie diagram representation of number of rag pickers sale of the waste material on the same day

**1.14 Duration of payment**

From figure 6.14, it is clear than mostly i.e., 100% of the rag pickers received the cost of waste collected on the weekends.


**Figure 1.14 (a&b): Pie diagram representation of duration of time for the payment of waste**

**1.15 Monthly income**

From the Figure 6.16, a picture of the income earned by rag pickers could be understood. Nearly 86.84% in Vijayawada and 60% in Eluru earned more than 1500 per month. Whereas the remaining 13.15% in Vijayawada and 37.5% in Eluru earned nearly 100-1500 per month.

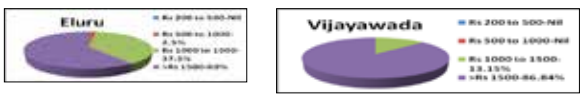


**Figure 1.15 (a&b): Pie diagram representation of monthly income according to waste collection**

**1.16 Other sources of income**

Figure 6.17 shows that nearly for all of the waste collectors, rag picking was the only source of income.


**Figure 1.16 (a&b): Pie diagram representation of other sources of income**

**1.17 Precautionary measures while collecting the waste**

The survey showed (Figure 6.18) that nearly all fo the waste collectors who were interviewed did not adopt any precautionary measures during the waste collection. Lack of precautionary measures might produce health hazards to them.


**Figure 1.17 (a&b): Pie diagram representation of any precautionary measures used by the rag pickers for handling the toxic wastes.**

**1.18 Any health problems?**

The health hazards of waste collectors who took part in the survey are given in the Table 6.19. It indicated that 97.36% had body pains and 2.63% had wounds and injuries in Vijayawada whereas in Eluru nearyl all ie., 100% suffered from body pains. Lack of precautionary safety measures and lack of awareness regarding health were the main causes of health diseases. Rag pickers did not take care of their health because of ignorance and poverty.

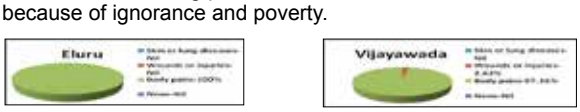


**Figure 1.18 (a&b): Pie diagram representation of the health problems faced by rag pickers**

**1.19 Any occupational health problems?**

The figure 6.20 reperesented the percentage of the rag pickers suffering from occupational health problems. According to it 65.78% of rag pickers replied yes and the remaining 34.21% replied no in Vijayawada whereas in Eluru 37.5% replied yes and 62.5% replied no.

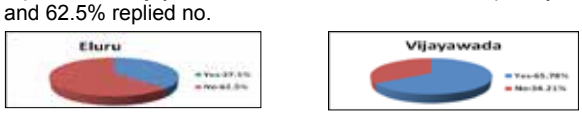


**Figure 1.19 (a&b): Pie diagram representation of any occupational health problems faced by the rag pickers**

**1.20 Job selection**

One question asked to waste collectors was the reason for taking up this particular job. The answer of nearly 100% of waste collectors in Vijayawada and Eluru was no other alternative available to them. It was also hereditary to them. It was further understood from interviews that the reason for taking up the job was family circumstances mainly some of them were wanderers who later joined company with rag pickers.


**Figure 1.20 (a&b): Pie diagram representation of reason for doing this type of work**

**1.21 Period of service**

A major percentage of collectors i.e. 65.78% were for three years in this field, while the remaining 34.21% worked for two years in Vijayawada whereas in Eluru 62.5% worked for two years and the remaining 37.5% worked for three years.


**Figure 1.21 (a&b): Pie diagram representation of length of service as rag pickers**

**1.22 Public attitude**

From the Figure 6.23, it is clear that 52.63% felt a non-cordial attitude while the remaining 47.36% respondents felt that the public had a cordial attitude towards them in Vijayawada. Whereas in Eluru 87.5% of the rag pickers faced a non-cordial attitude and remaining 12.5% faced cordial approach from the public.


**Figure 1.22 (a&b): Pie diagram representation of attitude of public towards the rag pickers**

**Discussion:**

The survey conducted among waste collectors of Vijayawada and Eluru corporations focusing on their socio economic and health status, and involvement in waste recovery and recycling revealed their notable role played in waste management. In both the corporations waste collectors belonging to both sex and almost all age groups have been found involved in scavenging work. In Delhi, 35% were found female workers and 65% males (Pillai and Khan, 2002). The present investigation showed that young, middle and old aged people were engaged in rag picking. Scavengers collect materials that have been discarded as waste and add value to them by sorting, cleaning, and altering the physical shape to facilitate transport or by combining materials to make commercially viable products (Phiman Thirarattanasunthon, Wattasit Siriwong, Mark Robson, Marija Borjan, 2012). Several hundreds of people are engaged in waste linked business throughout the country and elsewhere. According to Gunnasekaran (1989), the number of waste pickers in Madras city was around 8000 to 10,000. A later study reported that in Madras, the number of waste pickers were about 30,000 which was approximately 1% of the population (Sudhir Muraleedharan, V. R., and Srinivasan, G, 1998). Recently it was reported that health hazards associated with rag picking were confusion, laceration, gastrointestinal problems, eye infections, lower back pain, skin disorders and malnutrition (Nishat, 2002). According to C.K. Wachukwu, Mbata, C. A., and Nyenke, C. U, 2010, the ragpickers pose a great threat to the society by spreading and distributing potential pathogens to people in larger society. The survey conducted among the community showed that majority of the households discarded hazardous wastes with other wastes. These are corrosive, toxic, ignitable or reactive items that produced risks or injury or poisoning particularly to children and people who sorted the waste (Shaheda Niloufer, A.V.V.S. Swamy, 2011).

**Conclusion:**

The rag pickers played a part in solid waste management in their own way by channelizing the recyclable materials. They could reduce the expenditure of the corporation. As the rag pickers collected mostly materials like plastic and metals, the sorting of solid waste became easier to the municipal workers in both the cities. Rag picking also provided livelihood to them and it was virtually a form of self-employment. Besides that rag picking is one of the most dangerous and in-human activity where the rag pickers are exposed to harsh weather conditions surrounded by stray animals and infectious solid waste that may induce them with many diseases. At the same time they were also nuisance for certain reasons: Children were forced to undertake rag picking activity; As the rag picking was centered on recyclables, it led to spreading of waste dumps; some of them got involved in anti-social activities; and They sometimes encroached into the landfill sites and set fire to waste dumps.

Considering the strength of rag pickers active in both the corporations and their potential to effectively dispose about 2.5 tones of solid waste/day, it is suggested that steps should be taken to improve the working condition of the rag pickers. The corporations shall register the rag pickers involved in work and issue health cards to them so as to enable them to get treatment from ESI hospitals. Their work should be given support by the corporations in every city by providing them some income to work near the dumpsites, helping in segregation and other activities like bio-decomposition of organic wastes near to the dump sites and manure production, using this manure produced to grow small nurseries and maintain these nurseries which can provide livelihood not only to individual families of rag pickers, but to some group of families. If such integrated approaches are followed at the dump sites in association with rag pickers not only their living conditions can be improved but it would be a holistic approach to municipal solid waste management.

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