Waste Management Analysis

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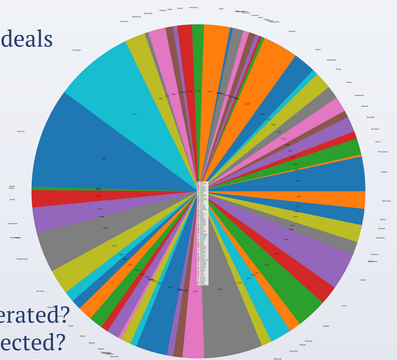
Introduction

Waste management (or waste disposal) includes the processes and actions required to manage waste from its inception to its final disposal. This includes the collection, transport, treatment and disposal of waste, together with monitoring and regulation of the waste management process and waste-related laws, technologies, economic mechanisms. Waste can be solid, liquid, or gaseous and each type has different methods of disposal and management. Waste management deals with all types of waste, including industrial, biological, household, municipal, organic, biomedical, radioactive wastes. In some cases, waste can pose a threat to human health. Waste management can be improved by asking the following questions:



1.What is the amount of waste generated?
2. What is the amount of waste collected?
3. What is the amount of waste left after being collected? and what are the key reasons for that?
4. What is the root occurrence of these reasons?
5. What can we do to prevent this from happening?
6. What are the steps taken to improve Waste Management?

Methods

Design
Survey done by municipal corporations.

Participants
73 Urban local bodies have been surveyed based on 19 factors.

Analysis
We can use Pandas library to import csv files. Pandas is a software library written for the Python programming language for data manipulation and analysis. In particular, it offers data structures and operations for manipulating numerical tables and time series.

Data is been cleaned and analysed for Garbage statistics. The below are the findings of the analysis.

1. Highest amount of Garbage is lifted in Khammam with 9.69% is being collected. We can see in the below graph for other ULB's Garbage collection.
2. We can see the sanitation data area plot which indicates the sanitation for particular ULB's. We can see that Garbage is fully lifted in only one ULB (Nirmal). Which says that it has one of the best sanitations strategies.
3. We can see that at most 8 ULB's Waste is been collected completely and other ULB's Waste is been not collected completely. Red lines show that the waste is been not collected in specific ULB's.
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Results

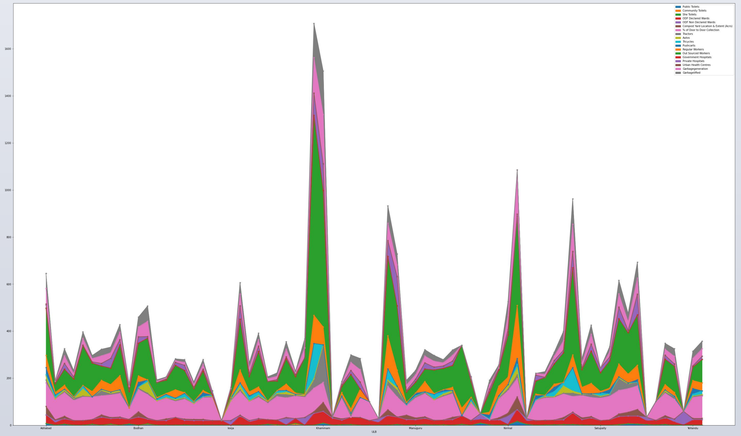

Figure 1. shows the Area Plot for Sanitation in different ULB's which suggests that the Garbage generated and Garbage Collected are in different proportions. Which means all the Garbage is not been collected some of the Garbage is been disposed improperly due to lack of dustbins and improper segregation.

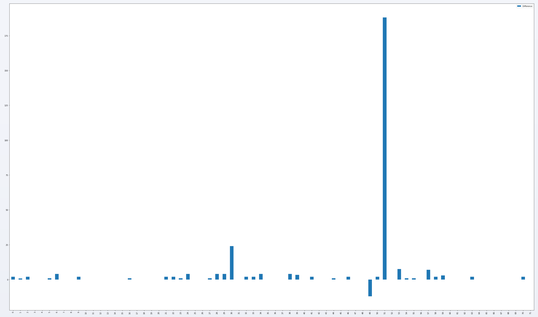

Figure 2. shows the bar plot for Difference between Garbage generated and Garbage Collected. This shows that some of the ULB's are performing well enough to Collect all the Garbage like Nirmal ULB.

Conclusions

Sanitation is one of the key functions of the ULB and the Health Section of ULB is responsible for all sanitation work in the limits of the ULB. Maintenance and upkeep of urban infrastructure such as roads, sewerage drains, preventive measures for control of diseases and epidemics, solid waste management, etc., are some of the key processes which help in maintaining the sanitary conditions of the ULBs. The key processes of Sanitation-Solid Waste Management function involve allocation of employees for sweeping and garbage removal, cleaning of drains, allocation of the vehicles for garbage transportation and disposal of garbage at the dumping ground, maintenance of the vehicles, maintenance of the public toilets, controlling of pigs, dogs and carrying out anti-malarial operations, etc.

Recommendations

1.We can use door to door collection for efficient waste management.
2. Segregation of waste can be helpful in prevention of harmful gases.
3. Reuse and recycle.
4. We use methods used in Nirmal ULB to improve the Waste Management.

References

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3. https://www.un.org/esa/dsd/susdevtopics/sdt_pdfs/meetings2010/icm0310/2a_Agamuthu.pdf