A MINI PROJECT REPORT ON

PRICE SENSITIVITY ANALYSIS OF COFFE CONSUMPTION IN BANGALORE

MINI PROJECT SUMBITTED IN FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF

MASTER IN BUSINESS ADMINISTRATION

FROM

Bangalore central university

Submitted by

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REG NO. MB206214

UNDER THE GUIDANCE OF

ASSOCIATE PROF. RIZWANA KHANUM

AL-AMEEN INSTITUTE OF MANAGEMENT STUDIES AFFILIATED TO BANGALORE CENTRAL UNIVERSITY

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This is to certify that this mini project entitled a study" **Waste segregation: adoption and opinion of households in Bangalore"** has been successfully completed by BIBIFATHIMA Reg. MB206211 during the year 2021-2022 and the report is submitted in partial fulfilment of the requirements for the award of the degree of Master of Business Administration as prescribed by Bangalore Central University under the guidance of Prof.RIZWANA KHANUM

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TITLE OF MINI PROJECT: "Waste segregation: adoption and opinion of households in Bangalore"

NAME OF THE GUIDE: DR.Y.V SHESHADRI

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I hereby declare that the project report entitled **"Waste segregation: adoption and opinion of households in Bangalore"** has been prepared by me under the supervision and guidance of PROF.RIZWANA KHANUM, during the year 2021-22 in a partial fulfilment of the university regulations for the award of the degree of "MASTER OF BUSINESS ADMINISTRATION" by "BANGALORE CENTRAL UNIVERSITY".

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ACKNOWLEDGEMENT

I take this opportunity to sincerely to thank all those who have encouraged me either directly or indirectly in completing the mini project.

I am thankful to **Dr. B.A Anuradha** Principal of AL-AMEEN INSTIUTE OF MANAGEMENT STUDIES, Bangalore for giving this opportunity to undergo the mini project.

I am deeply thankful to **Prof. DEEPAK SINGH M.C** Associate Prof. & HOD, MBA department for his constant support throughout the mini project.

I am extremely grateful to my guide **PROF.RIZWANA KHANUM** Al-Ameen Institute of Management Studies for his valuable guidance, Suggestions and constant support throughout this project, which enable me to complete the mini project.

I am also thankful to **BANGALORE CENTRAL UNIVERSITY** for making this mini project a part of our curriculum. It has been a wonderful experience which has helped me gain knowledge and partial exposure in the process of the mini project.

Last but the least I present my heartfelt thanks to my, family, friends and well-wishers for their help and support.

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INTRODUCTION

CHAPTER: 1

Waste segregation

The amount of waste generated nowadays has created enormous problems, hence segregation of our waste is vital. Certain products are not biodegradable but can be reused or recycled; in fact, it is estimated that a bigger fraction of garbage can be recycled, a portion of waste can be turned to compost, and just a small portion of waste can be dumped. Every day, household garbage should be segregated into different bins for different types of waste, such as wet and dry waste, which should be disposed of separately. Wet wastes such as leftover foods, vegetables, peels, and other wet wastes should be disposed of in an organic waste converter such as My Green Bin, and compost can be used as plant manure. Cans, alum Toxic wastes such as pharmaceuticals, batteries, dried paints, outdated bulbs, and dry shoe polish should also be disposed of in a dustbin.

If we do not dispose of garbage in a methodical manner, the country will require more than 1400 sq km of land, equivalent to the size of the city of Delhi, by 2047 to dispose of it. foils, plastics, metal, glass, and paper are examples of dry trash that can be recycled.

India's pride, Bengaluru is nearly 500 years old and has grown from a small time settlement when Kempe Gowda, the architect of Bengaluru, built a mud fort in 1537 and his son marked the city boundaries by erecting four watch towers. Today Bengaluru has grown well beyond those four towers into a sprawling metropolis of more than 6 million people and is referred to as the Silicon Valley of India - accounting for more than 35 percent of India's software exports.

Bengaluru's temperate climate, high quality educational, scientific and technology institutions coupled with a thriving IT and Bio-Technology and manufacturing industry makes Bengaluru one of the most sought after global destinations. India's pride and widely regarded as the Silicon Valley of the east, Bengaluru is now a metropolis of unusual characteristics, also the

Knowledge Capital of the country. Bruhat Bengaluru is at the van guard of cultural, intellectual and social developments.

The Bruhat Bengaluru Mahanagara Palike is keen to establish a durable and wholesome relationship with all the constituents, who are proud to call the City of Bengaluru as their "own".

Bangalore is fast turning into a 'garbage city' with mounds of garbage visible at almost every street corner, driving people to desperation as heavy rains have compounded the problem. The mounting garbage across the state capital has drawn the ire of not only the common people but also Governor H.R. Bhardwaj and the high court.

Bhardwaj has twice this week expressed displeasure at the failure of the BJP-ruled Bangalore civic body to keep the city clean. Hoping to shake it up, he said he was ready to clear the garbage if 20 workers were

Those who have to walk past the stinking mounds, particularly in market areas, covering their noses have taken to deriding the garden city as garbage city. The problem got acute as heavy rains lashed many parts of the city almost daily since Sunday flooding the roads with garbage and adding to the stink.

The around eight million population of the city daily generates 5,000 tonnes of garbage, which was being dumped in three landfills on the outskirts of the city in spite of increasing protests from the people living around those areas. Even then the city was not clean as heaps of garbage were to be found in many places.

The problem took a turn for the worse following a July 11 directive by the Karnataka State Pollution Control Board to stop dumping the garbage at Mavallipura, the biggest of the three landfills.

Waste segregation: adoption and opinion of households in Bangalore

In a bid to intensify its garbage collection drive and curb corruption, the Palike is putting in place a new solid waste management policy. It has proposed stricter rules to make contractors accountable and bring in segregation at source. Will it work?

Bangalore generates around 4,000 tonnes of garbage on a daily basis and the Bruhat Bangalore Mahanagara Palike (BBMP) pays about 9,400 people and employs machines to clear them. But despite these efforts, the sobriquet 'Garden City' seems to be making way for 'Garbage City'.

BBMP is not the only one to blame though — people and their ignorance have also contributed to the resultant mounds of garbage dumps on the streets. Moreover, the civic body has failed to monitor the garbage collection operations. The civic body now wants to clear the mess by introducing a new policy, which emphasises on garbage segregation at source and bring in strict rules for the contractors.

As for garbage collection, the Palike admits that there is a huge political lobby behind allocation of contracts. Because of the involvement of higher-ups, it says it often fails to prevent false-billing. Sadly, it doesn't even possess records on the amount of garbage collected and fails to discipline the process of garbage collection.

According to a BBMP official, garbage contractors have made crores of rupees after taking up BBMP contracts. "I have seen them coming in bicycles to BBMP office seeking contract for garbage collection, now they have huge money. How did they become so rich in just a few years' time? Simple, there is huge corruption in garbage collection and transportation. Not all the garbage collected reaches the designated place," he said.

Contracts for solid waste management expired in March 2019, but they renewed them for a few more years and that would be in force till fresh tenders are called.

Recently, the Palike decided to allot tenders in packages that is two or three wards would come under a single package. Besides, the new policy framed would ensure better management of solid waste.

BBMP commissioner Siddiah said the policy would ensure that organic and non-biodegradable wastes are segregated at source — that is at the household level. It will also set up bio-methanisation plants that would generate power from wet waste and convert plastic into crude oil.

Strict conditions

BBMP's new policy would impose stricter regulations on the contractors. However, the focus would still be on door-to-door collection with special emphasis on segregation. BBMP, in its tender policy, has insisted collection of wet waste on a daily basis and dry waste once in a week. Contractors are told to collect dry waste in the phased manner a specific day for each locality.

Besides, the onus of sensitising the people falls on contractors under the new policy. A contractor would have to organise awareness campaigns as well. BBMP has also made it clear that if people give mixed waste, it would be the responsibility of the contractor to segregate them.

Time schedule

With numerous complaints pouring in from residents over garbage collectors not turning up regularly in certain areas, the new policy lays emphasis on a fixed time schedule for the collection of waste at the doorstep. It suggests a 25:75 ratio for the use of pushcarts and auto tippers for garbage collection. The new policy also aims to streamline the operations and calls for efficient collection and transportation methods.

Auto tippers should have a built-in loud speaker system to announce its arrival and the pushcarts should have bells. In order to bring in accountability and transparency, the contractors would have to maintain a record and submit it in electronic format along with the monthly bills.

Collection centres

BBMP has planned to open dry waste collection centres in each ward. Recently, it opened one at Shivajinagar. Of the 4,000 tonnes of garbage produced, 30 per cent is dry. Instead of transporting them to landfills, these centres would sell them to private companies for recycling. As per the new policy, wet waste would be transferred from auto tippers/ pushcarts to decentralised composting units, while the dry waste would be transferred to the nearest collection centres.

Safe transport

As of now, it is usual to spot open garbage vehicles with waste spilling on to the roads. The BBMP has directed the contractors to strictly avoid such instances. As a major chunk of garbage is generated in the commercial areas, the BBMP has directed the contractors to target hotels, vegetable vendors, meat stalls and market areas.

RWAs and NGOs

With more and more residents' welfare associations and NGOs actively participating in solid waste management, the BBMP has framed a new rule in its policy to allow them to take over the garbage collection. In its tender policy, it has mentioned that if self-help groups come forward to take up garbage collection, they would be entrusted to them.

Waste stream

A waste stream is the flow or movement of wastes from the point of generation (e.g., a household or veterinary practice) to final disposal (e.g. incineration, landfill, etc.).

Hazardous waste

A subcategory of solid waste, the EPA defines hazardous waste as items that are classified as solid waste and that are potentially dangerous or harmful to the environment or human health.

Hazardous waste is further subdivided into listed, characteristic, universal, dual, and mixed wastes.

In addition to the broader categories relevant to veterinary practices, dual and mixed wastes need special attention because they may be under-recognized, leading to potential miscategorization and improper disposal. If either of these is generated at your facility, it is vital to make sure that the company you use to dispose of each of these is authorized to do so.

For more information:

Environmental Protection Agency (EPA) Hazardous Waste Regulations

- 40 CFR 261 identifies and lists all hazardous materials regulated by Resource Conservation and Recovery Act (RCRA).
- 40 CRF 262 discusses the requirements of hazardous waste generators, which depending on the situation, veterinarians may be classified.

Veterinary Compliance Assistance (VetCA)

- Hazardous Materials—Overview
- Hazardous Waste Determination
- Reducing Hazardous Materials

Listed waste:

A subcategory of hazardous waste, listed waste is subdivided into 4 categories: F-listed, K-listed, P-listed and U-listed wastes. These substances are specifically defined in the RCRA. For more information on these types of waste, view the specific entries in the Code of Federal Regulations (CFR).

F-listed wastes :

solid wastes from non-specific sources and include certain spent solvents and chemical baths as well as certain waste water items and other categories. These wastes are most likely to be found in the laboratory of a veterinary practice. Examples include acetone, methanol, toluene, xylene, and methylene chloride. Subcategories F001 through F005 are the most relevant for veterinary practices.

K-listed wastes :

include those generated during the manufacture of pesticides, pigments, chemicals, wood preservatives, etc. They are generally not found in veterinary practices, but may be found at facilities that manufacture veterinary pharmaceuticals.

P-listed wastes **:**

Are products or chemicals that are *acutely toxic*, which means that a very small amount has severe or lethal effects (oral dose LD_{50} of 50 mg/kg or less), and include arsenic, warfarin, epinephrine (but not epinephrine salts), nitroglycerine, certain chemotherapeutic agents, and others.

U-listed wastes :

Are products that are *toxic* and some also possess other characteristic waste properties such as ignitability, corrosivity or reactivity), and include acetone, chloral hydrate, ethylene oxide, formaldehyde, mercury, phenol, reserpine, certain chemotherapeutics, and others.

Of the listed wastes, the P-, U- and F-listed (and, in particular, the F001-F005 subcategories) are the most important and should not be overlooked because violation of regulations regarding these products can result in strict disciplinary action.

Characteristic waste:

Characteristic wastes are hazardous solid wastes that possess the certain characteristics of ignitability, corrosivity, reactivity, or toxicity. (For more information: 40 CFR 261.20 – 261.24) You'll notice that this overlaps with the definition of U-listed wastes – characteristic waste is a category of waste that is somewhat of a "catch-all" for waste that isn't specifically listed (K-, F-, P- or U-listed) but possess one or more of the 4 characteristics of ignitability, corrosivity, reactivity or toxicity.

Universal waste:

Universal wastes are hazardous solid waste items that are widely generated by all sectors of the population. This category includes items such as batteries, certainlight bulbs, pesticides in some situations, and mercury-containing equipment.

Mixed waste

Mixed wastes are hazardous solid waste items that are radioactive. This includes waste materials associated with radionuclide (radioisotope) generation and use in veterinary medicine.

Dual waste

Dual wastes are both hazardous solid waste and infectious or potentially infectious items (regulated medical waste). Examples include non-empty syringes containing hazardous waste pharmaceuticals with needles attached.

Household hazardous waste

As the name indicates, household hazardous wastes are hazardous solid wastes that are generated in small amounts by individual households across the nation. This category includes various household cleaners, paints, solvents and other chemicals. Some of the items in this category, such as batteries, light bulbs and pesticides, are also considered universal waste.

Non-hazardous waste

Non-hazardous wastes, which comprise the other category of solid waste, are solid wastes that do not meet the Resource Conservation and Recovery Act (RCRA) and are not subject to RCRA Subtitle C regulations. However, it is not safe to assume that waste classified as "non-hazardous" poses no risk. This category is further subdivided into municipal solid waste and industrial waste.

Municipal solid waste

Municipal solid waste is a broad category of non-hazardous solid waste that includes animal carcasses as well as the typical garbage or trash.

Agricultural solid waste

Agricultural solid waste is a subcategory of municipal solid waste and is waste that is generated by the rearing of animals and the production or harvesting of crops or trees. This category includes animal waste and animal carcasses.

Industrial solid waste

Industrial solid waste is a second subcategory of non-hazardous solid waste and includes solid waste generated by industrial processes and manufacturing. This category also includes medical waste and regulated medical waste, which are particularly relevant for veterinarians.

Medical waste/Regulated medical waste

Medical waste is industrial solid waste "generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals" according to the Medical Waste Tracking Act of 1988. Depending on the situation, this category may include potentially infectious animal wastes, bedding, carcasses or tissues.

Regulated medical waste, more typically known as "biohazard" or "infectious" waste, includes the following:

- Equipment, instruments, utensils, and fomites (any substance that may harbor or transmit pathogenic organisms) of a disposable nature from the rooms of patients who are suspected to have or have been diagnosed as having a communicable disease and must, therefore, be isolated as required by public health agencies;
- Laboratory wastes, such as pathological specimens (e.g. all tissues, specimens of blood elements, excreta, and secretions obtained from patients or laboratory animals) and disposable fomites attendant thereto;
- Surgical operating room pathologic specimens and disposable fomites attendant thereto and similar disposable materials from outpatient areas and emergency rooms.

t's all part of a big change in how Bangalore thinks about its trash, something that other fast-growing cities around the world may find instructive as they wrestle with their own waste problems. All garbage in Bangalore used to be hauled by truck out to landfills on the edge of the city. But in 2012, residents near those landfills revolted, turning away the trucks and forcing trash to pile up in the city.

Bangalore's response is a multi-pronged initiative called *Kasa-Muktha*, which means "Garbage-Free" in the local Kannada language. It's moving away from a centralized model of waste disposal, where all waste is hauled out of the city. In its place is is a more decentralized system, with the waste largely recycled or burned at the neighbourhood level.

It hasn't been a simple transition. The biggest trouble is that that new system requires people and businesses to sort their "wet" waste (food and organic matter) in a separate bin from their "dry waste" (paper, plastic, glass, wrappers, etc.) Residents have been slow to catch on, as they are habituated to putting all their kitchen waste into plastic bags.

Efforts to change the culture through a "one house, two bins" campaign haven't worked. Purushottam, who manages a recycling centre run by an NGO called Saahas in the upmarket

Koramangala area, says they have even demonstrated to local residents how a wet waste bin can be lined with an old newspaper to make it easier to clean after it is emptied, to no avail.

But the days of cajoling are numbered, says the city corporation's joint commissioner for health and solid waste management, K C Yatish Kumar. The new Municipal Solid Waste Rules empower him to impose fines on those who don't segregate their waste, and he intends to exercise that power. The corporation could also instruct municipal workers not to accept mixed waste on their garbage collection rounds. it was collected during such a drive.

Then there is the problem of waste that has little recycling value. The dry waste centres are becoming creative about finding some uses. Mary Fernandes, project manager for the NGO Global Communities in India, points to one recycling centre had made its own roof out of used Tetra Pak, a material used in cartons. The centre now supplies the material to a company making recycled furniture. Tetra Pak otherwise has few buyers in the separate waste stream of sanitary napkins. In just one of Bangalore's 196 wards, 1.2 tons of sanitary napkins in dry waste. Now, an awareness campaign has begun to create.

Many hazardous substances are still turning up in the waste meant for recycling. Bangalore is an IT hub, and electronics form a major waste stream that needs to be separated and handled with kid gloves. The concept of "branded litter" — to force big producers of electronic goods to take back their own waste — has thus gained currency.

More odious for the waste-pickers working out of the new recycling centres is the presence scrap market.

One of the biggest challenges is the waste collectors. In Bangalore's previous waste collection model, garbage contractors were paid by the amount of garbage they transported and the distance they covered. "Naturally, the powerful transport lobby did all it could to trip up the segregation and recycling plans," says Nalini Shekar, co-founder of the waste-pickers association Hasirudala.

Some of these waste contracts are still in place. That gives front-line garbage collectors an incentive to short-circuit the recycling system by remixing the segregated waste and dispatching it to landfills. City corporation commissioner Lakshmi Narayan maintains that these are simply the teething troubles of a new program: "If some *pourakarmikas* (municipal workers) continue to mix waste, that is because the dry waste centres are not yet functional in that area."

The city is signing new deals with the contractors, to pay them not by the amount they transport to landfills but by the men and material they provide in making the new system work. These new contracts are currently in place in 55 out of the 196 city wards. Contractors there have replaced some of their garbage trucks with auto-rickshaws (three-wheelers) to take the dry waste to the recycling centres.

All of this could be undermined to a degree if the city decides to go in a completely different direction. Some are pushing to build waste-to-energy plants that would burn all waste, wet and dry. Brian English, director of program innovation at Global Communities, which had taken the lead in advocating the formal use of Bangalore's large community of waste-pickers for recycling, strikes a pragmatic note: "I think it's possible to imagine decentralized recycling centres operating in the same cities with waste-to-energy systems," English says. "This happens in many countries. Given the growing volumes of waste, it makes sense to have a multi-pronged approach."

About BBMP:

Waste Management in Bruhat Bangalore Mahanagara Palike (BBMP)

- ***City Statistics***
- ***Area: 800 sq. km***
- ***Population(2008): 78 lakhs***
- ***Households: 25 lakhs***
- ***Commercial Properties: 3.5 lakhs***
- ***No of Zones: 8***
- ***No of Wards: 198***

Per capita waste ~ 350 grams per day (gamp) (domestic waste)

- Households contribute to ~ 54% percent of the total waste;
- Markets &function halls contribute to 20% and commercial establishment &institutions contribute to 17% and others 9%
- Segregation of waste at source 10%
- Composition of Municipal Solid Waste:
- Physical composition of MSW (%)
- Chemical composition of MSW (%)

History of BBMP:

The history of municipal governance of Bangalore dates back to March 27, 1862, when nine leading citizens of the city formed a Municipal Board under the Improvement of Towns Act of 1850. Later, a similar Municipal Board was also formed in the Cantonment area of the city.

The two boards were legalized in 1881, and functioned as two independent bodies called the Bangalore City Municipality and the Bangalore Civil and Military Station Municipality. The following year, the concept of elected representatives come into being and also saw the introduction of property tax.

After Indian independence, the two Municipal Boards were merged to form the Corporation of the City of Bangalore in 1949, under the Bangalore City Corporation Act. The corporation then consisted of 70 elected representatives and 50 electoral divisions. The name of the council then changed — first to Bangalore City Corporation (BCC) and then to Bangalore Mahanagara Palike (BMP).

The history of the vibrant city of Bangalore goes back to the year 1537 A.D. What began with the construction of a Mud fort and erection of 4 watch towers, has not seen full stop even today. The city with such a humble beginning has grown in to a sprawling metropolis with 800 sq km and houses about 75 lakh people.

The city has got recognition at both national and international level as the silicon city with major growth of the IT sector. The city is witness to various technological developments of the world and at the same time has retained its grand cultural identity. With this brief introduction of the city, I take privilege in presenting the annual budget of the BRUHAT BANGALORE MAHANAGARA PALIKE (BBMP) for the year 2018

In this budget an effort is made to meet the new challenges the city is facing in view of the growing demands for infrastructural improvements. Although the main thrust in this year's

budget is on the development of the infrastructural facilities, other areas have also been given their due attention.

Increasing population of the city has laid severe stress on the existing infrastructure facilities. As a result the quality of life has been affected. However, BBMP as an urban local body has taken several measures to improve the basic amenities and to provide a good.

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The primary focus of the BBMP would be to provide a responsive, transparent and accountable administration to meet the myriad challenges being faced by the growing city. As in the previous years this year also there is a huge resource gap. This is a normal phenomenon when our requirements are too many and the resources to meet them are limited. In our effort to give a responsive administration, no stone has been left unturned.

Problem in waste Management

Waste Management:-

Understanding how to segregate waste Clarifying all you wanted to know about waste segregation - the what, why, where and how to do it! From food waste to recyclables, e-waste to biomedical waste.

What do you mean by waste segregation?

Waste segregation basically means keeping wet and dry wastes separately, so that dry can be recycled and wet waste can be composted.

Why should do it?

So that it reduces waste that reaches landfills and reduces pollution to air and water So that different processes- composting, recycling, incineration can be applied to different kinds of waste How do I practice waste management at home? Keep separate containers for dry and wet waste in the kitchen Keep two bags for dry waste collection- paper and plastic , for the rest

of the household waste Keep plastic from the kitchen clean and dry and drop into the dry waste bin. Keep glass /plastic containers rinsed of food matter Send wet waste out of the home daily. Store and send dry waste out of the home , once a week. Keep a paper bag for throwing the sanitary waste

What is the first few steps to initiating waste management in the apartment complex? Form a group of like-minded people Explain waste segregation to your family / neighbours in your apartment building. Get the staff in the apartment building to also understand Get separate storage drums for storing the dry waste and wet waste. Have the dry waste picked up by the Dry waste collection centre or your local scrap dealer DRY WASTE

What is Dry Waste?

Paper, plastics, metal, glass, rubber, thermocol, Styrofoam, fabric, leather, rexine, wood – anything that can be kept for an extended period without decomposing. Will dry waste smell if I store it for a week? Not if it is clean and dry. Make sure that plastic sachets of milk, curds, oil, idli batter, any food item, are cleaned of all their contents and dried before being put in the dry waste bag. Then they will not stink. Will I have problems with cockroaches, rats or flies? Only if any food residue or organic matter is present in the dry waste. Clean dry waste will not attract any vermin.

How do store pizza and cake boxes?

Clean the pizza or cake boxes of all food residue – with a wet kitchen cloth, or rinse them quickly in water and let them dry out before putting them in the dry waste container.

How do store pickle, sauce bottles?

Sauce bottles should be rinsed thoroughly with water. Pickle bottles can be cleaned with soap and water, as they contain oil. Basically, no food residue must be left in the bottles. Clean them as you would to reuse them. (You can use wipe with a newspaper piece to remove the oil) What do I do with milk packets, dosa packets, and yoghurt containers? Clean them thoroughly. Open out the milk, yoghurt and dosa batter packets completely at one end, and wash out all the residue (hot water helps clean milk packets better).

They can be put to wash with the dishes in the sink, then dried on a line, and put into the dry waste bag. If I order take away from a local darshini- do I have to rinse the plastics bags/containers? Oh yes. Any plastic containing any food has to be rinsed, or washed with soap and water if required, and dried before being put into the dry waste bag. Should I rinse my juice containers/ tetra packs? Yes, otherwise ants will be attracted to the sugar in the juice.

Will my biscuit/bread packet attract ants? How do I store them? Make sure all the bread / biscuit crumbs are shaken out of the packet, so they do not attract ants. If the biscuits are too oily, the packet may need to be washed with soap and water.

What do I do with old clothes/ shoes/ handbags/belts/toys? If they are still in usable condition, they should be given to some organisation that collects them. If they are totally unusable, or very damaged, they are still categorised as dry waste.

If clothes are soiled with body fluids, they become sanitary waste. If they are soiled with paint, or any chemicals, they are HHW (household hazardous waste). What do I do with old bed linen/ mattress/ pillows etc? Same as above.

What do I do with my old furniture/ broken glass table? Old furniture can be recycled, if not, along with broken glass it can disposed of as debris or rubbish (inerts). What do I do with old crockery / non-stick pans etc? If they are not broken, they are recyclable dry waste. If broken, debris or rubbish (inerts). What do I do with my old taps/ broken sanitary ware? Old taps – recyclable dry waste.

Broken sanitary ware – debris or rubbish (inert). What do I do with my old brooms/ floor cleaning cloths/ dry mops/ bathroom cleaning brush? If it is clean and dry, plastic portions can be recycled and the rest can be considered as sanitary waste. Natural What is the best method of storing dry waste? Store it in a bag in the utility area after cleaning and drying till it is picked up. (Article continues below the poster...) E-WASTE

What is e-waste?

E-waste or electronic waste consists of batteries, computer parts, wires, electrical equipment of any kind, electrical and electronic toys, remotes, watches, cellphones, as well as

bulbs, tubelights and CFLs. How do I store e-waste? Store them in separate container which is kept closed, away from moisture and in which nothing else is put.

WET WASTE

What is wet waste?

Wet waste consists of kitchen waste - including vegetable and fruit peels and pieces, tea leaves, coffee grounds, eggshells, bones and entrails, fish scales, as well as cooked food (both veg and non-veg). Can I compost at home? Of course. Home composting can be easily done in Daily Dump's pot system, or in any aerated container. I don't have time to compost at home, what are my alternatives? If you live in a large apartment building, a community composting system like tank composting or an OWC could be set up for all the wet waste from the residents. If not, the wet waste can be given out every day to the BBMP. If I don't use a plastic liner, how do I dispose my food waste in the bin? Before the advent of the bin liner, we would all put our garbage directly in the bin, and wash it everyday. That is what we will have to do now. The bin can be lined with a newspaper liner or a layer of sawdust if you don't want to put the wet waste directly into it.

BIOMEDICAL WASTE

What is biomedical waste?

This includes used menstrual clothes, sanitary napkins, disposable diapers, bandages and any material that is contaminated with blood or other body fluids. How do I dispose sanitary pads, diapers, condoms/soiled cotton?? They should be wrapped in a newspaper, marked with a red cross, and given every day to the BBMP. What do I do with waxing strips?

Used waxing strips are sanitary waste - they should be wrapped in a newspaper, marked with a red cross, and given to the BBMP. How do I dispose human hair/nails? Sanitary waste. Wrap in a newspaper, mark with a red cross, and give everyday to the BBMP.

HAZARDOUS WASTE

What are hazardous wastes?

HHW or household hazardous wastes include three sub-categories – E-waste; toxic substances such as paints, cleaning agents, solvents, insecticides and their containers, other chemicals; and biomedical wastes like used syringes, expired medicines, thermometers, used cosmetics etc..

How do I dispose expired medicines/ injections? Expired medicines and injections, used syringes come under HHW or household hazardous wastes. They should be stored separate from other categories of waste and given to the BBMP once every quarter.

What about razor?

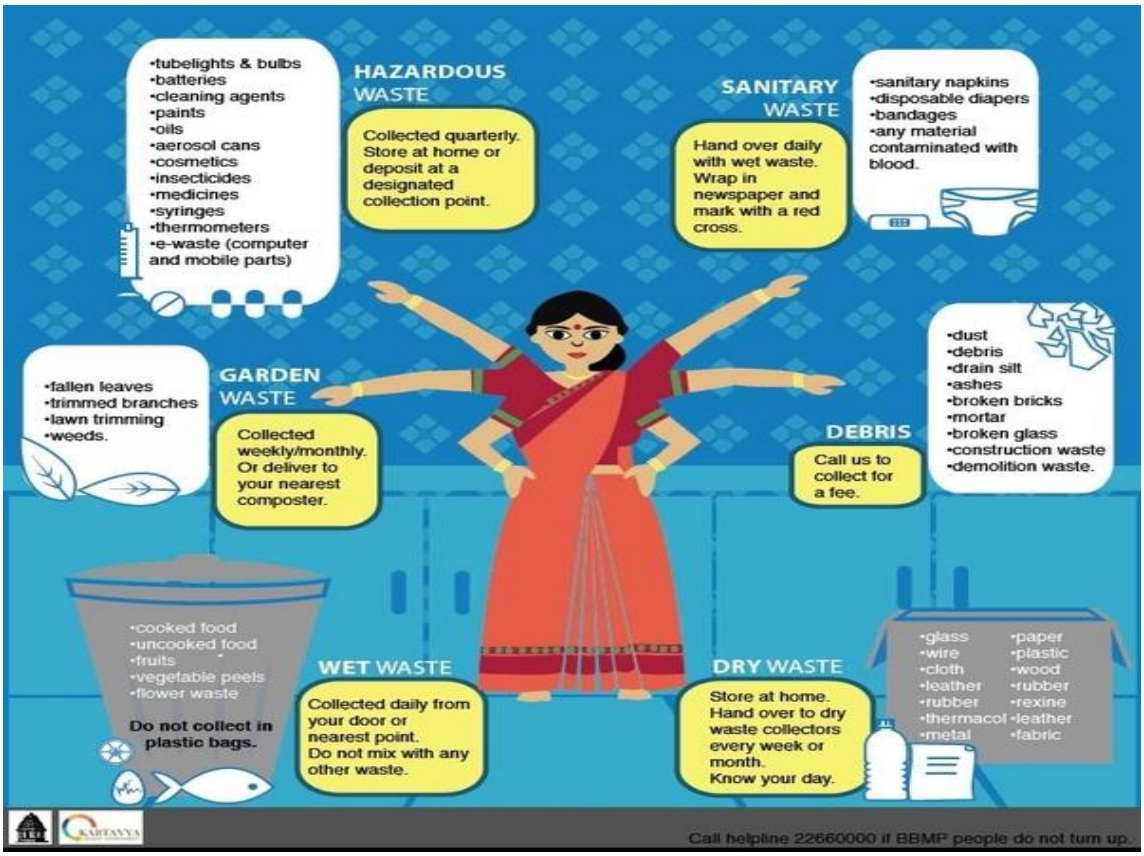
It is HHW or household hazardous waste, like used syringes, etc. It should be stored separate from other categories of waste and given to the BBMP. I have just painted my room. How do I dispose half used paint cans? They come under HHW or household hazardous wastes. They should be stored separate from other categories of waste and given to the BBMP once every quarter.

Under what category do I place cosmetics? They come under HHW or household hazardous wastes. They should be stored separate from other categories of waste and given to the BBMP once every quarter. What about pesticides, cleaning solutions, mosquito repellants? Same as above. What do I do with my tube lights and other bulbs? Same as above.

GARDEN WASTE

What does with garden waste?

Garden waste will be collected by the BBMP on specified days or can be dropped off at the nearest specified park for composting. Leaves can be



Types of waste segregation

1.Wet waste

Fruit peels, leftovers, vegetable skins, undercooked meals, coffee or tea powder, and yard trash such as leaves and twigs are all examples of this.

Maintain a drum, container, or bin where such garbage can be deposited in order for it to be turned into rich organic compost. You have a choice of composting methods. Vermicomposting, aerobic and anaerobic composting are some examples.

2.DRY WASTE

Dry trash is separated into two categories: recyclable and non-recyclable. Dry waste includes items such as used paper towels, hazardous chemical or food containers, foam materials, and dishware that cannot be recycled or reused.

Pet bottles, plastic carry bags, newspapers, glass bottles, shoes, plastic cutlery, types, and cardboard are examples of dry recyclable garbage.

If recyclable garbage is separated even further, it can be sold for money or other items. You can submit your dry garbage to a variety of sources, including internet kabaddi walls, local scrap dealers, recycling centers, radii walls, and municipal organizations. Dry recyclable waste includes pet bottles, plastic carry bags, newspapers, glass bottles, shoes, plastic cutlery, types, and cardboard. It is possible to sell recyclable waste for money or other products if it is segregated even further. Dry waste can be sent to a variety of locations, including online kabaddi walls, local scrap dealers, recycling centers, radiales, and governmental organizations.

3.SANITARY WASTE

Sanitary waste includes diapers (for adults and newborns), synthetic sanitary napkins, hygiene-related goods, condoms, tampons, and soiled napkins. Linens, bedding, things tainted with blood or body fluids, soiled plaster casts, and other forms of dressings make up medical waste. To prevent disease transmission, medical and sanitary waste must be burned, microwaved, or autoclaved. Because not every city or town in India has the infrastructure to properly process waste, the easiest method to dispose of it is to wrap it in newspaper and label it with a red dot for easy identification.

4.E -WASTE

You should be aware of three categories of electrical waste: Bulky: Fridge, microwave, or anything else that is cumbersome to transport. Tube lights, light bulbs, toner cartridges, batteries, monitors, and screens are all potentially hazardous. Anything containing a chemical.

Cables, chargers, microwaves, and electronic devices such as computers and phones are all non-hazardous.

BIOMEDICAL WASTE

Biomedical waste is any kind of waste containing infectious (or potentially infections) materials. it may also include waste associated with the generation of biomedical waste that visually appears to be of medical or laboratory origin (e.g., packaging, unused bandages, infusion kits, etc.,) as well research laboratory waste containing biomolecules or organisms that are mainly restricted from environmental release. As detailed below, discarded sharps are considered biomedical waste whether they are contaminated or not , due to the possibility of being contaminated with blood and their propensity to cause injury when not properly contained and deposed of , biomedical waste is type of biowaste, biomedical waste may be solid or liquid , example of infectious waste include discarded blood ,shop unwanted microbiological cultures and stocks ,identifiable body parts (including those as result of amputation) ,other human are animal tissue , used bandages and dressings , discarded gloves ,other medical supplies that may have been in contact with blood and body fluids , and laboratory waste that exhibits the characteristic described above ,waste sharps includes potential contaminated Used and unused discard needles , scalpels , lancets and other devices capable of penetrating skin.

WASTE MANGEMNET

The processes and actions necessary to manage trash from its inception to its final disposal are referred to as waste management (or waste disposal). This comprises waste collection, transportation, treatment, and disposal, as well as waste management process monitoring and control, as well as waste-related laws, technologies, and economic systems.

Waste can be solid, liquid, or gaseous, with various disposal and management strategies for each. Industrial, biological, residential, municipal, organic, biomedical, and radioactive wastes are all dealt with via waste management. Waste can, in some situations, be harmful to human health. Throughout the entire waste management process, there are health concerns. Health problems can occur in a variety of ways, both indirectly and directly. Directly, through solid waste management, and indirectly, through water, soil, and food use. Human activity, such as the mining and processing of basic resources, produces waste. Waste management aims to limit waste's negative effects on human health, the environment, global resources, and aesthetic.

HOW WASTE SEGREGATION STARTED IN BANGALORE BY BBMP

For the first time, the BBMP has issued Solid Waste Management Byelaws (SWM). The bye-laws establish eight different waste streams – wet, dry, sanitary, non-recyclable, non-biodegradable, household hazardous, building and demolition trash, and slaughterhouse waste – with the goal of complete waste segregation. It specifies unique processing strategies for each of these. The proposed bye-laws also include harsh penalties for offences such as rubbish burning or non-segregation, as well as violations of the plastic ban. The fines have been increased by five times, according to D Randeep, BBMP Additional Commissioner (SWM).

The bye-laws also include additional rules such as e-waste collection from residents' homes and the ability to use the BBMP's SWM services during public events. It offers ward committees a bigger involvement in preparing ward-level SWM plans and includes measures for parikramas' welfare. The bye-laws will be sent to the state Urban Development Department for publication in the gazette, according to Randeep. "The draught is currently being translated into Kannada. "Both the English and Kannada versions of the translation will be given to the UDD for notice once it is ready," he says. The public would have 30 days after receiving notice to file complaints and recommendations on the draught. The BBMP Council is meant to discuss the document and implement any valid ideas. The bye-laws will take effect after the new draught is adopted and the UDD has been notified.

ROAD MAP AND VISION

In July, the BBMP released the city's solid waste management road map and vision that aims to achieve:

- 100 percent door to door collection of waste
- 100 percent segregation of waste by December 2021
- Only 13-15percent of the collected waste going to landfills
- Zero tolerance for plastic use and garbage black spots.

COLLECTION, TRANSPORTATION, PROCESSING, AND DISPOSAL OF SOLID WASTE:

- Waste generation have to segregation solid waste at source, into the following categories:

1. Wet waste (bio degradable)
2. Dry waste(non-biodegradable)
3. Domestic hazardous waste (includes sanitary napkins, diaper, tampons)
4. Constructions and demolition waste
5. Garden and horticulture waste
6. E-waste

- Waste should not be put into plastic garbage liner bags for handing over to BBMP service providers. Only respective bins should be used, and only bin-to-bin transfer is allowed.
- Color of the bins should be:
    1. Green for bio degradable \wet waste.
    2. Blue for non-bio degradable \dry waste.
    3. Red for domestic hazardous and sanitary waste.

- E-waste will be collected door-to-door by the BBMP at least once every two weeks. You must pay for this service dependent on the amount of rubbish you have. You can currently only deposit e-waste at designated drop-off locations.
- Commercial poultry, fish, meat, and slaughter waste should be kept in a fully closed, sanitary environment. For primary collection and secondary transportation of such waste, the BBMP should designate closed-container bins and vehicles. Depending on the amount of garbage, the waste creator should pay a user charge.
- The BBMP will designate at least one day per week for bulky waste collection — that is, waste weighing more than 10 kg per day – as well as bulk horticulture and garden waste collection.
- BBMP plans to build composting and bio-methanation facilities at fruit and vegetable markets that generate more than 100 kg of wet waste per day
- In commercial areas, market associations or shop owners should be required to construct separated waste containers
- On payment of service charges, the BBMP will collect some types of segregated solid waste (such as bulky waste from individual residences) from residents' homes. At the end of this article, you'll find a list of service fees for various categories.
- The BBMP will examine all old and operational dumpsites and, when possible, engage in biomining and bioremediation.
- Construction and demolition waste should be stored on the owner's or occupier's property. Permission should be sought if such waste must be stored in public locations.

BANGALORE IMPLEMENTS WASTE SEGREGATION MEASURES

After a one-month deadline set by the Karnataka high court to make the city litter-free, the Bruhat Bangalore Mahanagar Palike has initiated various garbage segregation operations.

The BBMP wants garbage to be separated at the source, as this will reduce the amount of waste generated by the city. The state government responded by naming a new commissioner to lead the city's corporation, the Bruhat Bengaluru Mahanagara Palike (BBMP), who devised a plan to reduce landfilling. Wet garbage will be composted under his plan, and the resulting compost

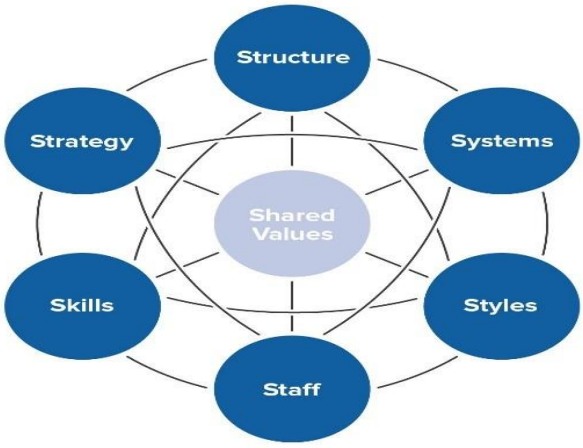
will be provided to farmers for use as organic fertilizer. Paper, plastic, and metal will be recycled, while non-recyclable garbage will be compacted in landfills. The BBMP has partnered with the state's organic farming mission to provide farmers in Bangalore with separated organic waste. The city corporation will collect organic wet waste such as food on a daily basis and dry recyclable garbage once a week, according to recently announced rules. The new laws were enacted following residents' protests in July and August near two landfills in Bangalore, which resulted in waste being left uncollected on the streets. Goel has mandated that bulk garbage generators such as hotels, restaurants, and residential flats compost at source or use bio-methanization procedures to handle waste.

FOLLOWING ARE SOME INITIATIVES

- This initiative encompasses all aspects of life, including homes, offices, schools, malls, and hospitals.
- Its goal is to encourage residents to separate waste into dry and wet waste at the source, as well as to train rag pickers and municipal staff to collect only segregated waste and classify it into several categories such as bottles, newspapers, plastic, and electronic waste.
- The Palike has designated nodal officials to inspect garbage collection, Dry Waste Collection Centers (DWCC), and other waste disposal systems in each of the 22 wards.
- In addition, a third-party committee comprised of representatives from the Resident Welfare Association, NGOs, and other volunteers will conduct an audit to determine the state of waste clearing in these wards.
- Contractors have been warned that if the waste is not removed, their license In Bangalore, the BBMP has partnered with ITC to launch their WOW (wealth out of waste) programmed. Yetiyur, BTM layout, Koramangala, Katriguppe, Saraki, Ejipura, JP Nagar, and Pattabhiram Nagar are among the 12 wards where this project is being implemented (near Jayanagar). It may be expanded to 20 more wards in the near future. would be revoked.
- Another initiative of the BBMP is garbage-free wards. The Chief Minister will launch this project for 22 wards on July 24th. In all of these wards, segregation at the source

would be made necessary under this strategy. Garbage collection companies have been instructed to train pourakarmikas to only collect separated waste from homes.

MICKIS 7, S MODEL: -



The McKinsey 7s model is a strategic tool and framework for evaluating the performance of managers and enterprises. For successful change management processes as well as regular performance enhancements, the McKinsey 7s model specifies seven important factors for a company that must be focused and aligned.

- ✓ Strategy: -

Waste Management's strategic direction and overall business strategy are well-defined and communicated to all workers and stakeholders. This aids the corporation in managing performance, directing operations, and developing various approaches that are in line with the corporate strategy. Furthermore, the creation and communication of the business plan makes Waste Management processes more visible and aligns the company's duties.

✓ **Structure: -**

Waste Management's strategic direction and overall business strategy are well-defined and communicated to all workers and stakeholders. This aids the corporation in managing performance, directing operations, and developing various approaches that are in line with the corporate strategy. Furthermore, the creation and communication of the business plan makes Waste Management

✓ **Systems: -**

Waste Management has well defined and well-defined mechanisms in place to ensure that business operations are managed successfully and that conflicts and disputes are avoided. Waste Management's systems are mostly departmental in nature, and include things like:

- Human resource management

- Finance

- Marketing

- Operations

- Sales

- Supply chain management

- Public Relation Management

- Strategic leadership

- ✓ **Style: -**

Waste Management is led in a participative manner. Waste Management is able to engage and include its staff in decision-making processes and managerial decisions by using a participative leadership style. This also allows the leadership to communicate with employees and other managerial groups on a frequent basis in order to identify and resolve any possible disputes, as well as receive feedback on strategic approaches and operations. Waste Management is possible to improve employee motivation and organisational engagement and ownership among employees and other stakeholders through participative leadership.

- ✓ **Staff: -**

Across its global operations, Waste Management has a suitable number of personnel. Employees for various job types and positions are employed both inside and externally, depending on the level of urgency and skill required. As a result, it is clear that Waste Management employs individuals who are skilled in their respective job tasks and positions. To familiarise themselves with the organisation and its ideals, all workers receive on-the-job training. For skill level enhancement, both external and in-house training is available.

Employee skill levels at Waste Management are sufficient to accomplish the company's business goals, as all work responsibilities and positions are structured to enable the attainment of business goals.

- ✓ **Skills: -**

Waste Management employs a commendable workforce with exceptional talents and capabilities. All personnel are hired based on their

qualifications and merit. Waste Management takes pride in hiring the best individuals and training them further to help them achieve their goals.

▪ STATEMENT OF PROBLEM

Bangalore city is one of the fastest growing city of India. It has seen an unprecedented increasing population in last few decades all thanks to, development of industries in the city leading to raise in demand and strength in existing public infrastructure.

In order to provide adequate commercial facilities to the residents BBMP have developed several strategies, but lack of proper maintenance has left the city in poor condition causing health hazards to the residents. The current study is conducted to find out the present status of the city particularly in terms of their waste management./Waste segregation: Adoption and opinion of households in Bangalore

▪ NEED FOR THE STUDY

1. Waste management reduce the effect of waste on the environment, health and so on it can also help reuse or recycle resources such as paper, cans, glass, and so on, there is various type of waste management that include the disposal of solid liquid gaseous or, hazardous substances

CHAPTER 2

RESEARCH METHODOLOGY

OBJECTIVE OF THE STUDY:

- To study waste segregation, adoption and opinion of house holds in Bangalore
- To study the various methods adopted in waste segregation.

METHODOLOGY OF THE RESEARCH

The research is purely descriptive. The information was gathered using only secondary data. Secondary data was obtained from a variety of periodicals, textbooks, newspapers, magazines, internet sources, and online research reports for this study.

TOOLS FOR COLLECTION OF DATA COLLECTION

PRIMARY DATA:

Primary data for the study was collected through observation and discussion with the localities.

SECONDARY DATA:

Secondary data for the study was collected through magazines, journals, periodicals, newspapers, publications and internet.

DISCUSSION OF THE TOPIC:

The collected data was discussed keeping in view the objectives of the study.

LIMITATIONS OF THE STUDY:

- There might be bias in the information provided by the respondents.
- The study is conducted in Bangalore city.
- Time was constraint.

CHAPTER 3

SWOC Analysis:

STRENGTHS

- The location of the solid waste management Centre has been established.
- Waste collection on a regular basis
- Waste purchasing centers are being established.
- Recycling centers are being established.
- Strong waste management information and training programmes in the division.
- Taxation on waste.
- Availability of funds.

WEAKNESSES

- Inadequate dumping management
- Food waste sorting is inefficient.
- Problems with the composting process.
- Lunch manufacturing is hampered by a lack of processing capacity.
- Failures in the manufacturing of sludge fertilizer

OPPORTUNITIES

- External help from government and industry organization's for the installation of a biogas plant in a solid waste management Centre
- There are five trash separating bins on display.
- New technologies are being used to process MSW.

CHALLENGES

- Segregation of waste at source.
- Compost making from wet waste within the premises or area.
- Recycling of dry waste.
- Adopting a nearby park or open place for collection and waste segregation.

CHAPTER-4

ANALYSIS/OUTCOMES

- For Administrative purpose BBMP is divided into 8 zones, 3 zones in old Area (core area) & 5 zones in new area(adjacent 7 CMC's & one TMC) .
- About 70% of the MSW (Municipal Solid waste) activity starting from primary collection to disposal has been outsourced & 30% is managed by BBMP.
- There are about 4300 Pourakarmikas (Sweepers) of BBMP & 10000 Pourakarmikas (Sweepers) from contractor who performs Door to Door collection & sweeping activities.
- In some of the area in the new zones the Door to Door collection, activity is entrusted to Self Help Groups (SHG's). which are basically below poverty women's groups.

- In some of the residential areas the Residential Welfare Associations (RWA's) are involved in Door to Door collection & decentralization of composting the waste
  Primary Collection (Door to Door collection).

- The primary collection is performed using pushcarts & auto tippers. There are around 11000 pushcarts & 650 auto tippers for Door to Door collection of waste.

- Waste is collected in the unsegregated form as segregation is not practiced at source.
  Secondary collection and Transportation
- There are about 600 MSW transportation vehicles including, Compactors, Tipper Lorries, Dumper placers & Mechanical Sweepers both BBMP and contractors.

The waste collected from the households is brought to a common point ie., secondary locations from where the waste is shifted to the treatment sites through compactors & tipper lorries. Segregation at source & the secondary storage is not happening hence unsegregated waste reaches the processing plants. Street Sweeping activity. Street sweeping is performed both manually & mechanically. In some of the highly commercial activity areas sweeping is done at night & in the VIP areas the sweeping is done Mechanically.

The street sweeping waste is carried along with the primary collection waste to the land fill sites. Decentralized processing plants Some of the areas where RWA's are performing Door to Door collection, the waste is segregated at source & the organic waste is composted in the community in a small scale.

BBMP has setup a 15 ton capacity decentralized plant to process organic waste as well as recycle the plastic, metal etc BBMP has established an decentralizes one ton capacity aerobic composting unit at Malleshwaram market (West Zone) using organic waste convertor.

Generally around 30 to 40 percent of inert rejects which includes recyclables are going to the scientific landfill. Attempt is being made to utilize all the recyclables Small quantity of Waste Plastic are segregated and used in the construction of pavement roads.8% of Poly blend is mixed in the asphalt.

It is seen there is possibility of converting the plastics into diesel by following depolymerization technology which is yet to be implemented in large scale.

Our aim is to adopt zero waste management or reduced the quantity of inerts that goes to landfills by less than 10% by recycling other inerts wherever possible.

Vehicle Tracking System using GPS

• To bring in accountability for the distance traveled by the vehicles GPS/GPRS Based Tracking system is implemented.

• About 350 vehicles are fitted with the GPS, CCTV and Hand held device

• CCTV cameras have been installed at all the processing sites at the entry and exit points to view the vehicles reached.

• Also a ticketing system using Hand Held Device, which collect the data and send it to the central server for monitoring and analysis.

• The entire truck numbers and operation schedule is automatically down loaded to the Hand Held device through GPRS

CHAPTER 5

LEARNING OUTCOMES

- **Primary Collection:** (Door to Door collection) The primary collection is performed using pushcarts & auto tippers There are around 11000 pushcarts & 650 auto tippers for Door-to-Door collection of waste. Waste is collected in the unsegregated form as segregation is not practiced at source.
- **Secondary collection and Transportation:** There are about 600 MSW transportation vehicles including Compactors, Tipper Lorries, Dumper placers & Mechanical Sweepers both BBMP and contractors. The waste collected from the households is brought to a common point ie., secondary locations from where the waste is shifted to the treatment sites through compactors & tipper lorries. Segregation at source & the secondary storage is not happening hence unsegregated waste reaches the processing plants.
- **Street Sweeping activity :** Street sweeping is performed both manually & mechanically. In some of the highly commercial activity areas sweeping is done at night & in the VIP areas the sweeping is done Mechanically. The street sweeping waste is carried along with the primary collection waste to the land fill sites.
- **Decentralized processing plants:** Some of the areas where RWA's are performing Door to Door collection, the waste is segregated at source & the organic waste is composted in the community in a small scale. BBMP has setup a 15 ton capacity decentralized plant to process organic waste as well as recycle the plastic, metal etc BBMP has established an decentralizes one ton capacity aerobic composting unit at Malleshwaram market (West Zone) using organic waste convertor**.**
- **Dry waste collection centers :** Dry waste collection centers has been set up for recycling the dry materials like plastic, paper, glass, metals etc
- **Processing & Disposal sites:** In order to comply with MSW rules, The BBMP has setup processing & Disposal facilities on PPP model.
- An estimated 5000 tonnes of garbage is produced by Bangalore city every single day. In the last few days, garbage was not being transported to the land fill even though it

was picked up from most sites in trucks. After villagers around the Mavellipura dump yard on the outskirts of Bangalore protested against dumping of trash for the last 10 years, that too in an unscientific manner, dumping had come to a halt.

- The temperature in Bangalore dipped to 18 degree Celsius in the last two days, an effect of cyclone Nilam in the Bay of Bengal. Rainfall over the last two days made matters worse, with garbage spilling over streets. With half-filled pet bottles and tender coconuts filled with stagnated rains water, the fear of dengue looms large over the city. Due to a recent outbreak of the water borne disease, more than 500 cases of dengue were reported in Bangalore in the last one month.
- Finding a new land fill site is not the permanent solution. Segregation of waste at source is the way forward. Once each home segregates waste, the municipal authority or the BBMP would have to treat waste. As of now, Bangalore does not have a fully operational waste treatment plant which can process garbage to the magnitude of 5000 tonnes.After the rain, garbage and muck on Bangalore streets**.**
- Temperatures in Bangalore may have dropped after Wednesday's rain; however its garbage problem has now resurfaced. Locals have once again complained that garbage hasn't been picked since the last few days up in many localities, creating a mess.
- While the municipal authorities claim that garbage from most parts of Bangalore is being cleared, mountains of muck is still found in some prime locations. The rain only made it worse for commuters as the already piled up filth began flowing onto the roads.
-

Former Karnataka Chief Minister Basavaraj Bommai now estranged from his party, the BJP, used this as an opportunity to hit out at the state government. "If Bangalore Municipal Corporation doesn't clear the garbage on war footing, then I will sit in protest in front of the corporation office. This never happened when I was in power. This type of garbage has never been here like this for the last 15 years," he said.

- The garbage problem in Bangalore is not new. In August, the garden city witnessed several tonnes of filth strewn across the city as the main dump at Mavallipura outside the city - that usually receives the city's waste - was closed following protests by villagers living in the area and a closure notice from the state's pollution control board.

- After the waste began piling up, the clean-up finally began after pressure from the public and the media. Even the Karnataka High Court criticised the corporation's functioning following a Public Interest Litigation filed on the garbage issue.

SUGGESTIONS :

1. Educate and enforce segregation at source. All SWM contracts to be reworked to mandate collection and transportation of segregated waste. Bins in high traffic public spaces. Visible commitment of the system to segregation of all waste streams
2. 2. Bulk generators to manage their own waste. Remove any SWM cess for bulk generators. Introduce certification system
3. 3. Move towards a decentralised waste management & disposal system. Plan processing infrastructure through arrangements for every 8-10 contiguous assembly segments
4. 4. Need to gravitate towards dealing with sub-categories of dry waste for storage and transportation
5. 2. Enforce Extended Producer Responsibility (EPR). Non-recyclable packaging materials need to go.
6. Align Solid waste management (SWM) policy with market dynamics. Destination bound waste processing by categories way to go.
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12. Align Solid waste management (SWM) policy with market dynamics. Destination bound waste processing by categories way to go.

The study on the topic, Waste Management BBMP at Bangalore which helped me a lot to attain knowledge and gaining experience. This study gives the very good opportunity to know about the. This Management, Company and Behaviour their levels of satisfaction and belief s study will be

of great benefit for the future career.

The learning experience of this study is as follows,

- It enhanced my knowledge & improves my skill about Waste Management.
- It provided a lot of practical exposure on Waste Management.
- It thought me to how utilise the time and also to value the time.
- It provided idea on how to plan your steps to arrive at a particular expected result.
- It provided us with an experience about the corporate world in which we will be working in a short time from now.

Conclusions :

All incineration based technologies are capital intensive and also costly to operate. In addition concerns about emission control, ash disposal, long term regulatory issues, have not been fully addressed. During the process some of the ash floats out with the hot air. This is called fly ash. Both the fly ash and the ash that is left in the furnace after burning have high concentrations of dangerous toxins such as dioxins and heavy metals. Disposing of this ash is a problem. The ash that is buried at the landfills leaches the area and cause severe contamination.

Burning garbage is not a clean process as it produces tons of toxic ash and pollutes the air and water. A large amount of the waste that is burnt here can be recovered and recycled. In fact, at present, incineration is kept as the last resort and is used mainly for treating the infectious waste. In addition, the quality of municipal waste of a typical Indian city make the less suitable for disposal by incineration as compared to other simpler composting technologies.

BIBLIOGRAPHY

Dr. BP Naveen, S. p. (AApril 2020). *solid waste management: current scenario and challenges in bengaluru.* london: intechopen.

Amanagement, S. w. (n.d.).

naveen, B. (nov 2021). *Scenario of waste management nexus in banaglore.* haryana india: B.P. Naveen.

shivi khanna, a. b. (sep 2019). *Household waste management policy and practices in bengaluru.* bangalore: shivi khanna.

Books Referred

Babin, Z. (2007). *Marketing Reassearch.* South Western Cengage Learning.

Dr. BP Naveen, S. p. (april 2020). *solid waste management: current scenario and challenges in bengaluru.* london: intechopen.

Iacobiucci, G. A. (2007). *Marketing Research* . ThomsonSouth Western.

management, S. w. (n.d.).

naveen, B. (nov 2021). *Scenario of waste management nexus in banaglore.* haryana india: B.P. Naveen.

Parasuraman, A. (2009). *Mareketing Research* . Biztantra.

WEBSITES

www.shodhganga,com

www.ibtef.org.in

www.researchgate.in

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Submission date: 28-Dec-2021 02:00AM (UTC-0500)
Submission ID: 1736041636
File name: email.pdf (548.34K)
Word count: 10769
Character count: 64650

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