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EFFICIENCY OF SOLID WASTE MANAGEMENT AT TAMAN KIN MEE, IPOH: POTENTIAL EFFECTS OF SOLID WASTE ON THE ENVIRONMENT

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ABSTRACT

Efficient solid waste management is important in sustainable urban development. The increasing rate of waste generation in the city is currently a major challenge to local authorities. Recycling is an effective approach to reduce solid waste disposed. Various initiatives have been implemented by various parties in Malaysia to improve recycling practices among the community in Malaysia. A study been conducted on efficiency of solid waste management at taman kin mee, ipoh: potential effects of solid waste on the environment. The study was focused to a few issues and problems related to factors that contribute to the solid waste managemnet on resident area like misunderstanding in solid waste management including the process of collection, transportation, treatment, lack of public awareness on environmental care and hygiene which it cause an effect to the environmental such as Residential Environment, effects on the soil (Soil Contamination) and also Water Contamination . Ths aim of this issues is, to identify the level of knowledge and to evaluate practices of the community in residential area, Taman Kin Mee, Ipoh on solid waste management. Furthemore, This case study also want to explore more on background and site on Taman Kin Mee, Ipoh Perak. There are two (2) methods used that include questionnaire, and observation on this case study.

Keywords: Solid waste, effect of solid waste, management

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INTRODUCTION

Efficient solid waste management is important in sustainable urban development. The increasing rate of waste generation in the city is currently a major challenge to local authorities. Recycling is an effective approach to reducing solid waste disposed. Various initiatives have been implemented by various parties in Malaysia to improve recycling practices in the community in Malaysia. However, the percentage of Malaysians who practice recycling is very small compared to communities in neighboring countries such as Singapore and Thailand (Azhar, 2013).

Therefore, the number of landfills in Malaysia is increasing from year to year to accommodate the quantity of solid waste generated from households, industry, construction sites and educational institutions (schools, colleges, universities). An increase in the number of landfills will have a negative impact on environmental well-being, social and economic development. Simple and efficient recycling systems and technologies need to be introduced to the community to improve recycling practices (Azhar 2013).

This pollution can be life threatening and give worrying long-term side effects (Abdul, 1993). Solid waste is considered a non-material useful and does not bring any benefit and may harm if saved. Thus, often the remains are discarded and piled on landfills either use disposal techniques disposal or other. Garbage can be categorized into two, namely garbage domestic and non-domestic waste (Ridwan, 1994). Domestic waste is waste materials disposed of from the home or kitchen. For example, like a bottle, glass, aluminium cans, plastic bags, paper, junk clothes and even food waste. Non-domestic waste is waste materials generated from industries, construction sites, shopkeepers or markets and offices. These waste materials consists of various types including sales waste, disposal waste and waste from the manufacturing process (Abdul, 1993).

Issues that have on the site are misunderstanding in solid waste management including the process of collection, transportation, treatment, lack of public awareness on environmental care and hygiene which it cause an effect to the environmental such as Residential Environment, effects on the soil (Soil Contamination) and also Water Contamination. This aim of this issues is, to identify the level of knowledge and to evaluate practices of the community in residential area, Taman Kin Mee, Ipoh on solid waste management and it have two objective which is to identify the current practice problems of solid waste management in residential areas involving the process of collecting, transportation, treatment, and disposal. The second objective is to study effective solution methods for solving the problem of unmanaged solid waste production.

LITERATURE REVIEW

Definition of Solid Waste

Municipal solid waste is considered a non-material useful and does not bring any benefit and may harm if saved. According to JPSPN (2021), the Solid Waste Management and Public Cleansing Act 2007, in Section 2, defines solid waste as waste that includes scrap material or unwanted surplus or rejected products arising from the use of any process; anything required to be disposed of because it is broken, torn, contaminated or otherwise damaged; or any other material. Thus, often the remains are discarded and piled in landfills either using disposal techniques disposal or other. Garbage can be categorized into two, namely garbage domestic and non-domestic waste (Ridwan, 1994). Domestic waste is waste materials disposed of from the home or kitchen. For example, bottles, glass, aluminum cans, plastic bags, paper, junk clothes and even food waste.

Definition of Solid Waste Management

Solid-waste management is the collection, handling, and disposal of solid waste that is thrown away after serving its purpose or becoming unusable. Unsanitary circumstances brought on by improper municipal solid waste disposal can result in environmental contamination and epidemics of vector-borne diseases, which are illnesses spread by rodents and insects. The handling of solid waste involves intricate technical issues. They also present a wide range of management and solution challenges in the areas of administration, economy, and society.

The Importance of Solid Waste Management

There are two importance of solid waste which are to protecting the environment and protecting community health. This is because solid waste management at the time is not very strong in managing all the solid waste that has been collected. This management will ensure that solid waste can be managed properly without any problems in the future.

The waste disposal and landfills / dumps

The word "landfill" is widely misused owing to the fact that there is no rigid definition, and hence the operational aspects of landfill are unclear (Idris et al., 2004). A site may be referred to as a "landfill" when in fact is an "open dump".

Characteristic of landfills / dumps

Solid waste has four characteristics of landfills which are corrosive, ignitability, reactive and toxic. For corrosive, these are wastes that include acids or bases that are capable of corroding metal containers. Ignitability is waste that can create fires under certain conditions, e.g., waste oils and solvents. Reactive these are unstable in nature which they cause explosions, and toxic fumes when heated. Toxicity is waste which is harmful or fatal when ingested or absorbed.

Types of landfills / dumps

There are two basic concepts of landfill which are currently being practiced. They are: Dry-tomb landfill: This is the usual modern landfill design which prohibits water inflow. The landfill has a good surface drainage system, caps, and liners so that the waste material stabilizes without additional moisture. Bioreactor landfill: This type of landfill incorporates the addition of moisture into the landfill to accelerate the stabilization of waste material. Normally, leachate is circulated back into the landfill to maintain the moisture content of the waste for further degradation process.

THE EFFECT OF SOLID WASTE ON THE ENVIRONMENT

Residential Environment

The Malaysian Waste Management Association (WMAM) reported an increase in household solid waste produced in residential areas by 20% to 30% during the MCO (Trisha, 2020). Increased use of delivery services which also means more plastic and boxes will be used and more solid waste produced (Badrum, 2020). In addition, excess solid waste usually must be burned in residential areas. The result of open burning will cause air pollution. It will also produce toxic effects that eventually result in the green areas around it dying and withering.



Figure 1: Example of Effect on Residential Environment

Effects on the soil (Soil Contamination)

Soil Contamination occurs when chemicals or other substances change the natural composition of the soil. This type of pollution occurs when it is contaminated from a landfill or directly releases industrial waste such as petroleum hydrocarbons, liquids, pesticides, lead, and other heavy metals into the soil. The most common chemicals involved are solvents, pesticides, lead, and other heavy metals.

It will pose a health risk, because of direct contact with contaminated soil, vapors from contaminants, and from contamination of both in-ground and underground water supplies. Contaminated soil and resulting cleanup are a time-consuming and expensive task, requiring a wide range of geological, hydrological, chemical, computer modeling, and GIS skills for Environmental Contamination

Water Contamination

Water is a great solvent, Metro Transfer Station (2017) claims, and it can hold a wide variety of chemical solutes. Water can therefore avoid pollution by moving while doing so. Frequently contain solutes such different chemicals and gases. Contaminated water (leachate) flowing from landfills results in serious water source pollution. Chemical residues (especially undecomposed organics) can be fatal and have serious effects if touched or inhaled.



Figure 2: Example of Water Contamination

Impact on the quality of community life.

According to UNEP (1996), solid waste pollution caused by the ineffectiveness of the solid waste management system has a direct impact on public health, deterioration of environmental quality and aesthetic problems in stages for the short term and long term. Examples of the impact on the quality of life towards community such as disease is attracting the attention of disease vectors. It also causes the number of animals and insects to increase.

METHODOLOGY

Research Design

This study involved residents of Taman Kin Mee, Ipoh. The development of research methodology is an important aspect of research studies. Research methodology is the path through which need to focusing on site area on Taman Kin Mee, Ipoh that is on residential area. This shows the way in which this study formulates problems and objectives as well as displays the results from the data obtained. The design and methodology of this study also shows how the research results will ultimately be obtained in line with meeting the objectives of the study.

Therefore, this discusses the research methods used during the research process. This covers research methodologies from research strategies to dissemination of results. To meet the objectives of the study, qualitative and quantitative research methods are taken in general. This study uses this mixed strategy because data are obtained from all aspects of data sources during the study period. Therefore, the purpose of this methodology is to meet the plans and targets of the study that has been made in Ipoh, especially in residential areas Taman Kin Mee.

Observation Survey

Observation techniques can be part of solidly quantitative. It is also an activity that involves the detailing from the observation and hearing process in order to master or to get the accurate information. The data will be Observe from Google Earth and been collecting data from internet about current practice of solid waste in residential area.

Questionnaire Survey

The questionnaire survey was prepared by using Google form .The questionnaire was divided into three sections which is for part A, which was the respondents background, part B, which was the respondents 'perception of current management practices solid waste in residential area, and part C, which was the respondent opinion. The results of the analysis will be presented in the form of pie charts.

ANALYSIS AND FINDINGS

Analysis and findings will be done after all the data is collected from the respondents. The data was obtained from the respondents to find out the knowledge, attitudes, and practices of communities in Taman Kin Mee, Ipoh on waste management and also to provide recommendations on solid waste management to ensure a better waste management system in future.

CONCLUSION

Solid waste is waste from human socioeconomic activities that is dirty and considered useless and solid waste management is one of the main problems faced by most towns. If this solid waste is not curbed, it will affect the local population and cause pollution. Among the effects of solid waste disposal are Residential Environment, Effects on the soil (Soil Contamination), Water Contamination, Air pollution and Impact on the quality of community life. This effect will bring harm to the local population if not curbed. Therefore, this study is very important based on the effects of solid waste, and it will be dangerous if it is not prevented.

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