

## **Residents Social Behavior in The Implementation of Denpasar City Waste Management Policy**

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### **ABSTRACT**

With the increasing level of waste generation in Denpasar city reaching above 1000 tons per day in the midst of rapid population growth and a surge in tourism activities, residents' adherence to waste management procedures constitutes a vital component in the government policy strategy towards tackling waste management challenges related to health, hygiene and environmental sustainability. This study aims to ascertain and analyze, implementation of Denpasar City waste management policy, to ascertain and analyze the social behavior of Denpasar city residents in the implementation of waste management policy, and to find out and analyze factors influencing the implementation of Denpasar city waste management policy. Data were obtained through in-depth interviews with research informants selected through purposive sampling technique, observation, and review of documents. Triangulation method was used for data validation while Miles-Huberman's interactive data analysis model was used analysis. Conclusion drawn from this research is that residents' parochial and non-compliance behavior to waste management standard operational procedures hinder effective implementation of waste management policy in Denpasar city.

**Keywords:** Waste Management; Policy Implementation; Social Behavior

### **INTRODUCTION**

The increasing level of waste generation in urban cities worldwide is a global challenge confronting governments and stakeholders with the negative impact of hazardous waste on human society in general, and specifically on public health and the environment (Daraba et al., 2018; Simatupang & Akib, 2011)(Darwis et al., 2019; Nasrullah et al., 2018; Niswaty et al., 2016; Saggaf et al., 2014; Salam & Rosdiana, 2015). Recent studies predict that by the year 2050, waste generation in world cities is expected to reach around 3.40 billion tons. In the year 2016, world cities produced around 2,01 billion tons of waste, which is equivalent to about 0,74 kilograms of waste generated per person every day. Cities in the Asian continent alone will generate around 1,8 million tons of waste by the year 2025 (Kaza, et al., 2018). Recognizing waste as a global challenge being faced by all cities around the world and the fact that no single strategy or policy model can work perfectly in waste management for all cities, the UN-Habitat, Third Global Report on solid waste management in the world's cities; re-emphasized the need for good governance, and new social agreements between the citizens and their government as important elements in mitigating waste problems.(Un-Habitat, 2010). Such capacity for good governance among other components include the ability for government to utilize its human,

economic, and natural resources properly, as well as the implementation of effective public policies that will guarantee a sustainable environment. However, a governments' effort to continuously revise its waste management policy as a regulatory approach towards mitigating the negative impacts of waste on the environment and public health requires corresponding obligations from the citizens. If there is a lack of obligation on the part of citizens to obey government policy, the problem(s) for which a policy is formulated and implemented to correct can be inhibited, but this also raises questions regarding the strategies for implementing such a policy.

Countries with densely populated cities on the Asian continent including Indonesia, Singapore, Japan, Thailand, South Korea, China, the Philippines, and Malaysia among others are faced with the urgent need to continue re-evaluating their waste management policies for proper waste management towards building environmental sustainable and livable cities.(Index, E. P. 2018). For Indonesia, being the fourth (4th) largest country in the world by population (world bank., 2019), waste management challenges still raise administrative, social, environmental and public health concerns to date, especially in its densely populated cities such as Denpasar city. Implementation of waste management laws such as regulation number 11 of 2016, concerning waste management standard operational procedures, and regulation number 36 of 2018, banning the use of plastic bags, has not succeeded in tackling increasing waste generation and waste management challenges in Denpasar city as more than 1000 tons of municipal waste is being disposed at the Suwung landfill every day, above its 800 tons maximum acceptance capacity.(Parjono, et al., 2019). Waste continues to pose negative environmental challenge to tourism and public health in Denpasar city being the hub that provides access to other cities in the Lesser Sunda Islands.( Saragi, 2018). If waste challenges are not adequately tackled through proactive solutions that will include resident's participation and adherence to standard operational procedures on waste management, possibilities exist that it may have an undesirable spillover effect on the tourism sector, and consequently leading to a decrease in Denpasar city's Gross Domestic Product (GDP), which to a large extent is dependent on tourism and related economic activities.

A previous study conducted by Mmereki, et al., (2016). which focused on "comparative analysis of solid waste management in developed, developing and lesser developed countries", concluded that lack of cooperation among stakeholders, institutional structural weaknesses, lack of legalized recycling, and uncoordinated ad hoc approaches are possible reasons why developing and underdeveloped countries are inefficient in their waste management practices. The purpose of this study is to cover the gap in understanding the social behavior of residents in the implementation of of Denpasar city waste management policy and to discover factors influencing the implementation of waste management policy in Denpasar city.

The 1989 Basel Convention defines waste as substances or objects disposed or intended to be disposed of, or that requires to be disposed of, according to the provisions of national law. (Kummer, 1992; Cole, et al., 2019), however, Davidson, (2011), observes that the practice of waste management is not uniform among countries (developed and developing countries) regions (urban and rural areas), and that different sectors, adopts their most suitable approach.

Hotta, et al., (2016), noted, that the implementation of municipal waste policy is the responsibility of local governments in accordance with the Indonesian national law number 38

of 2007, which stipulates that the central and provincial governments are responsible for formulating regulations as well as guidelines for regional landfill and supervision. Accordingly, the Republic of Indonesia national law number 18 of 2008 describes waste as the rest of human daily activities or natural processes in the form of solid or semi-solid substances, organic or inorganic that are not biodegradable or unrecoverable which are considered to be useless and disposed of, into the environment, while waste management refers to the systematic, holistic and sustainable activities for the handling of waste. (Kusminah, 2018)

The views of Visvanathan, et al., (2003), and Aja, et al, (2014), are in agreement on the notion that problems of municipal waste management in Asia, are caused due to inadequate institutional facilities to deal with problems ranging from lack of expertise, financial resources, law enforcement and administration of environmental regulations, many of which are not in accordance with current needs, coupled with the lack of public awareness and environmental ethics that results in uncontrolled waste disposal.

Policy implementation connotes the idea of an interactive process between setting goals and actions directed towards achieving them.(Colebatch, 2018). Strengthening the above definition, O'Toole, (2000), noted that policy implementation is what develops between the government's intention to do something and its final impact after an action. Khan, (2016), highlighted the observation that policy implementation for policy experts such as Stewart et al., (2007), and Simon, (2010), involves the roles of actors, and administrative processes towards the achievement of government goals. While Simon sees policy implementation as the application of policy by the government administrative machine to achieve the goal. Stewart, et al., noted that policy implementation involves various stakeholders, organizations, procedures, and techniques working together to enforce policies towards the achievement of policy objectives.

According to Agustino, (2016), four key factors that determine the success of any policy implementation which are as follows: (i) communication, (ii) resources, (iii) disposition, and (iv), the bureaucratic structure. Blumstein, et al., (2010) noted that social behavior consists of interactions between results and consequences that are the same in relation to the form of variables; duration, and function, hence social interactions provide the foundation for a broad array of behavioral phenomena. Oyero et al, (2014), stated that social behavior refers to the general behavior exhibited by individuals in a society, which is a response to what is considered acceptable or is regarded as unacceptable. Similarly, Hofmann and DiBartolo, (2014), stated that Social behavior, like all human behavior, is driven by two motivational systems which are partly independent approaches, namely the desire to gather positive social outcomes and the desire to avoid negative social outcomes.(p, 540).

Lam, (2019) noted social behavior represents a response-to-stimulus (S-R) exchange and often involves social exchanges where people are motivated to get valuable gifts (*reward*) or lose something of value (*cost*). Social behavior is learned throughout a person's life cycle so that the ability to relate to others, stand for one's right, express one's opinion as well as feelings or facing criticisms, among other abilities depends on the process of socialization.(Solano, 2014),

For Geeta, (2018), human behavior refers to the range of behaviors shown by humans and which are influenced by culture, attitudes, emotions, values, ethics, authority, relationships, hypnosis, persuasion, coercion and/or genetics. Bobb, (2018) noted that a person's behavior is associated with dispositional causes (such as internal traits, abilities, feelings, personality) or

situational causes (such as the situation or environment in which they live). Situational and dispositional factors seem to explain the different levels of conformity and deviant behaviors in the social environment.

## **METHOD**

This research used the qualitative descriptive method and obtained research data from both primary and secondary sources, through in-depth interviews with informants, observation, and review of documents. The purposive sampling technique was used in selecting research informants comprising of Denpasar city residents including households, traders, tourists, and waste collectors, heads of suburban districts, villages, and government employees. Interview data and observation notes were summarized in a document and coded to get a theme. Triangulation method is used for data validation while Miles-Huberman interactive data analysis model was used for data analysis.

## **RESULT AND DISCUSSION**

Waste generation in Denpasar city is on the increase due to increase in waste sources caused by population growth, increased economic and tourism activities. Denpasar city consist of residents with individual differences in terms of ethnicity, culture, duration of residency, perception and educational background. While some neighborhoods were found to have temporary disposal sites, waste banks as well as waste collection and disposal systems, however, some neighborhood lack adequate waste management facilities and infrastructures. Some residents also lack awareness of proper waste management procedures and are parochial towards the implementation of waste management policy.

### **Standard Operational Procedure for Denpasar City Waste Management Policy**

Implementation of waste management policy in Denpasar city is mainly based from both national and regional waste management laws number 18 of 2008 and Denpasar City Mayor's Regulation Number 11 of 2016, concerning waste management disposal and standard procedures. Standard Operational Procedures (SOP) for waste management are in the following sequence; (1) Collection; in the form of taking and transferring waste from waste sources to temporary shelters or integrated waste treatment facilities. (2.) Sorting; in the form of grouping and separating waste according to content, size, and/or type of the waste. (3.) Transporting; in the form of carrying waste from the source and/or from a temporary waste collection station or from an integrated waste treatment facility to Landfill. (4.) Processing; in the form of changing the characteristics, composition, and amount of waste; and/or (5.) Waste final processing, in the form of returning waste and/or residue from the previous processing to the environment safely. (Perwali, 2016). Though there have been efforts to adopt technology-based recycling through government initiatives and international partnerships with companies having requisite technology; (MacRae. 2012). The Suwung Landfill with a waste acceptance capacity of 800 tons per day still remains the final disposal site for most waste generated, whereas waste generation in Denpasar city is currently estimated above 1000 tons per day.

The implementation of Denpasar city waste management policy number 11 of 2016 concerning the procedure for waste disposal and management is supervised by the Environment, Life and Hygiene Agency with the policy objective of improving public health, environmental sustainability and adapting waste as a resource.(DLHK. 2019). The Environment, Life, and Hygiene Agency coordinates waste management procedures by giving direct guidance to the administrative heads of sixteen (16) suburban districts and twenty-seven (27) villages regarding SOP for waste management in their respective areas. While the villages / sub-urban districts head conduct guidance, supervision, and coordinates with the heads of the neighborhoods/ and households on procedures regarding waste Management in their respective areas. This policy strategy of demanding strict adherence to SOP issued from the Environment, Life, and Hygiene Agency to sub-urban district and village heads corroborates with basic assumptions of the rational model of policy implementation as by highlighted by Khan and Khandaker, (2016), which notes that successful policy implementation requires vivid clarification of objectives, mission, detailed planning, appropriate job assignments, effective monitoring, evaluation, comprehensive standard operational procedures, as well as necessary techniques to help implementers determine the scope of their responsibilities according to policy objectives.

### **Social behavior of residents in waste management**

Situational and dispositional influences seem to explain the different levels of conformity and deviant behaviors in the social environment. (Bobb. 2018).Among the many challenges concerning waste management which the Environment, Life and Hygiene Agency has to deal with in the implementation of waste management policy in Denpasar city is ensuring that residents adhere to waste management procedures and avoid indiscriminate disposal of waste in the rivers, drainage channels and streets which are not in sync with the ecosystem. Based on the results of this study it was found despite Denpasar city government's policy strategy towards enhancing inclined citizens' awareness through socialization of waste management policies and procedures to residents in coordination with the suburban districts and villages heads, non compliance attitude among residents due to lack of awareness of waste management procedures is still prevalent. Dispositional factors including individual differences in residents perceptions and attitudes, influences some residents engagement in the performance of pro-environmental behaviors while some do not and are indifferent to adhering to waste management procedures or performs social behaviours which enhances environmental sustainability in line with Denpasar city waste management policy objectives. Distance of some residents' home to temporary disposal sites also leads to the behaviour of throwing waste indiscriminately at undesignated areas often based on the perception that such behavior is within their control and no one is watching. People become accustomed to throwing their waste in streets and other inappropriate places, as there had been no formal system for sorting and disposal in their community, so when changes are implemented people are not changing their disposal behavior out of pure habit and custom (Yousif and Scott, 2007).

Situational influences including educational level of residents, cultural and social composition of Denpasar city are significant factors affecting effective implementation of waste management policy. The attitude of indiscriminate waste disposal of household waste is still prevalent because of differences in residents' educational background, which influence residents understanding of personal hygiene, sanitation, environmental sustainability and the way they

coach their household in adapting to waste management procedures. Also, being a multicultural society, differences in cultural background among Denpasar city residents give rise to variations in resident's conformity, adherence to and participation in waste management activities, caused by lack of understanding during peer communication with waste management facilitators, coupled with the revelation that it requires length of time for foreign tourists who visits Denpasar city to adjust and acculturate with the environmental ethics related to waste management, and all this put together hinders effective implementation of waste management policy. Past studies have substantiated the finding, that social problems (such as indiscriminate disposal of waste) range from the rational choice of individuals, who, acting in their interests, lose sight of the collective interests of the communities in which they live (Bartels., 2002). These also corroborate with the findings of Dwipayanti, et al., (2011) which concluded that social and demographic aspects also emerged as important factors to ensure the sustainability of a system in which communities are expected to independently manage and fund the operations of waste management facilities.

### **Factors influencing the implementation of waste management policy**

The policy implementation theory of George C Edward, highlighted Communication, resources, disposition, and bureaucratic structure as four key factors significant for the successful implementation of public policy (Agustino. 2016).

The efforts of communicating waste management policies and waste management procedures to Denpasar city residents by the Environment, Life and Hygiene Agency show some positive influence in the implementation of waste management policy as it is enhancing citizens' awareness. Communications regarding waste management policy and procedures by the Environment, Life and Hygiene Agency can be classified into external and internal communication. External communication takes the form of verbal or written transmissions and disseminating information to residents through the use of billboard adverts, symposia, focus groups and media announcements with the aim of increasing citizens' awareness and encouraging their adherence to waste management procedures. The internal communication aspect focuses on the clarity and socialization of waste management policy towards achievement of waste management policy objectives as well as monitoring of waste management procedure from within the Environment, Life, and Hygiene Agency organizational structure. The communication process in waste management system is best to be considered at community level, because they are largely responsible for its effectiveness, and they take a number of actions aimed at ensuring its successful course. (Stepień & Białecka., 2015)

*Resources* factor include the human staff as well as facilities and infrastructures that support waste management procedures and the implementation of waste management policy in Denpasar city. In addition to staff who are assigned different roles and responsibilities for the purpose of waste management, Denpasar city Environment, Life and Hygiene Agency also maintains waste management facilities and infrastructures comprising of waste transport fleets, waste containers, waste banks, temporary disposal sites and final disposal site (landfill) in Suwung, South Denpasar. Both human and infrastructural resources facilitate waste management procedures by providing residents with wider access to waste management

facilities thereby eliminating the distances between residents' households and temporary waste disposal sites. One of the reasons why some residents indiscriminately dispose their waste at odd places is the lack of access to waste bank facilities and the long distances between their homes and temporary disposal sites. Denpasar City Government has in the bid to increase resident's awareness and participation piloted a web-based and mobile waste bank service application in the form of Environmental Awareness and Caring Information Systems. (DLHK, 2019)

Another factor influencing the implementation of Denpasar city waste management policy is disposition (*attitude*). Disposition highlights commitment to duty of the waste management workforce and the effects it exerts on the successful implementation of waste management policy. Waste management workforce in Denpasar city has made commendable efforts in handling waste but there is still need for stronger commitment to duty, especially on punctuality and consistency to the routine collection, sorting, and disposal of waste from households, waste banks, and temporary disposal sites. Attitude of some waste management workforce in not adhering to city's waste management standard operational procedures when not been directly monitored by supervisors affects their job performance and consequently the effective implementation of waste management policy.

Finally, the government bureaucratic structure contribute significantly to the implementation of waste management policy in Denpasar city as there is an appreciable level of coordination, chain of command, distribution of authority and division of labor among organizational units involved in the implementation of the Denpasar city waste management policy. The Environment, Life and Hygiene Agency through fragmentation of job roles among the coordinating units and waste management workforce ensures that waste management is coordinated in collaboration with heads of sub-districts, villages and neighborhood levels of city administration so as to facilitate implementation of waste management policy in their respective areas through inclusive community participation. This policy strategy is in line with the views of Khan and Khandaker (2016) which notes that the right bureaucratic structure will help implementation success; fast, clear and two-way communication will help ensure better performance during policy implementation; while the greater involvement of people (key stakeholders or those who benefit from the policy) as collaborators, the greater the opportunities for successful policy implementation.

## CONCLUSION

Implementation of Denpasar city waste management policy is not yet optimal partly due to the social behavior of some residents of not complying with waste management procedures. Social behavior plays a dominant role in the implementation of waste management policy, from society can emerge a culture that is parochial in adhering to government policies concerning waste management procedures, thus creating an untidy environment harmful to public health. The bureaucratic structure have contributed positively in influencing implementation of waste management policy in Denpasar city, what seem inadequate however, is the quantity and quality of waste management facilities and infrastructures as well as the commitment to duty of some waste management workforce who do not adhere to standard operational procedures (SOP) for waste management. Theoretically, the social environment influences people's (social) behavior and social behavior can become a predominant culture which in turn affects the effective

implementation of waste management policy. Secondly, the culture of disorderliness and negative behavior of society can be curtailed by strict law enforcement and transformational leadership from the government.

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