

## Article

# Community Attitude Toward The Behavior of Reducing and Handling Plastic Waste In Air Manis Beach Area, Padang City

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**Abstract.** The aim of the study was to describe people's attitudes towards the behavior of reducing and handling plastic waste in the Air Manis Beach area of Padang City. This research method uses a qualitative approach in the form of grounded theory. The data were analyzed in two stages, namely concept formation and concept development. The results of the study describe people's attitudes towards the behavior of reducing and handling plastic waste as seen from: (1) the degree of public knowledge about plastic waste reduction and management; (2) public understanding of the impact of plastic waste; (3) cultural values believed by the community.

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## 1. Introduction

Reducing and handling plastic waste is an interesting and important topic to discuss because it relates to all social structures. Plastic waste can be produced by each individual so that this waste appears everywhere. If there is no effort to reduce and handle plastic waste from the community, it can be predicted that one time waste will become a major problem in the community. A part from damaging the environmental ecosystem, waste also has an impact on public health and comfort. The

health impact due to inappropriate solid waste management can disrupt the respiratory system, digestive system, low birth weight in infants and cancer.

Air Manis Beach is one of the tourism destinations and icons in the city of Padang. As a regional asset, this area needs to be preserved and comfortable for the surrounding community, including tourists visiting Air Manis Beach. This area is always crowded with tourists, both domestic and foreign. The number of visitors has a positive impact on the community's economy and increases local income. The use of plastic bags or goods made from plastic has always been the choice of traders to use as a means of trading for them. This condition makes the amount of plastic waste generation is always large and is one evidence of an increase in the amount of plastic waste generation in the Air Manis Beach area. In terms of the quantity of waste generation at Air Manis Beach, it cannot be presented in exact numbers, but the behavior of the merchant community and visitors in handling waste that is not according to what it should be, is also one of the factors that causes waste generation to always increase.

The people of Air Manis Beach still show less supportive behavior towards government efforts to handle waste. People are still happy to dispose of rubbish inappropriately, allowing trash to scatter, even throwing garbage on the beach, which will eventually be carried away by the ocean currents and will cause various problems both for human life and the impact on the environment. This requires effective waste management so that the waste problem can be gradually resolved. Various countries emphasize public awareness as the main effective step in dealing with the problem of waste including plastic waste. The State of Malaysia focuses on the awareness of its people by creating environmental programs in every educational institution so that students have good knowledge and are able to practice it as behavior (1). African countries also make public awareness and participation the main focus so that waste management can be carried out better. This public awareness or participation is supported by the provision of a recycling center that accommodates household waste which aims to reduce the amount of waste that will be processed in landfills (2). The people of Chile, especially people in coastal areas, enforce surveillance and prosecution methods in an effort to raise and increase public awareness in environmental care through good waste handling. In addition, environmental education to the community is directly channeled through concrete actions such as cleaning beaches to providing recycling infrastructure (3).

Promotion of awareness to reduce waste is also a major element in the waste management process in the United States. Government agencies, entrepreneurs, and communities work together in educating the whole community through simple waste reduction programs that can be done so as to motivate each individual to reduce their waste starting from home. In addition, there are collaborations with various companies or organizations to handle the amount of waste on a larger scale. This is possible because environmental protection agencies in the United States support and sponsor such programs to reduce waste in more innovative and cost-effective ways (4). The Austrian state applies survey and interview methods to get an overview or measure public awareness so that the provision of information or waste management campaigns is in accordance with the needs of the community and becomes right on target (4).

Handling plastic waste requires a lot of thought, time, effort and money. This can be reduced if the handling of plastic waste is pursued from a preventive rather than curative side. Preventive efforts to handle plastic waste will be more efficient and effective. If directed at efforts to prevent a drastic increase in waste generation, both in community settlements and in existing Temporary Disposal Sites and Final Disposal Sites. One of the preventive efforts to control the increase in plastic waste generation is through improving community behavior in addressing the reduction and

handling of plastic waste. If the community shows normative behavior in reducing and handling plastic waste, the problem of reducing and handling plastic waste in the community can gradually be minimized.

The main aspect related to the generation of plastic waste is the behavior of the community both in producing plastic waste and behavior in reducing and handling plastic waste. This study examines people's attitudes towards plastic waste reduction and handling behavior in the Air Manis Beach area. This study can generate information about people's attitudes towards the behavior of reducing and handling plastic waste, where this information can be used as input and one of the considerations for the Environment Agency and the Tourism and Culture Office as the parties directly responsible for the tourist area in developing plastic waste management programs. according to the needs and abilities of the community, especially at Air Manis Beach. Research on the study of people's attitudes towards the behavior of reducing and handling plastic waste in West Sumatra in general and in Air Manis Beach in particular has not been found. This is what motivates the author to examine people's attitudes towards plastic waste reduction and handling behavior through a study. The purpose of this study was to describe the attitude of the community towards the behavior of reducing and handling plastic waste at Air Manis Beach, Padang City (Padang City, as shown figure 1).

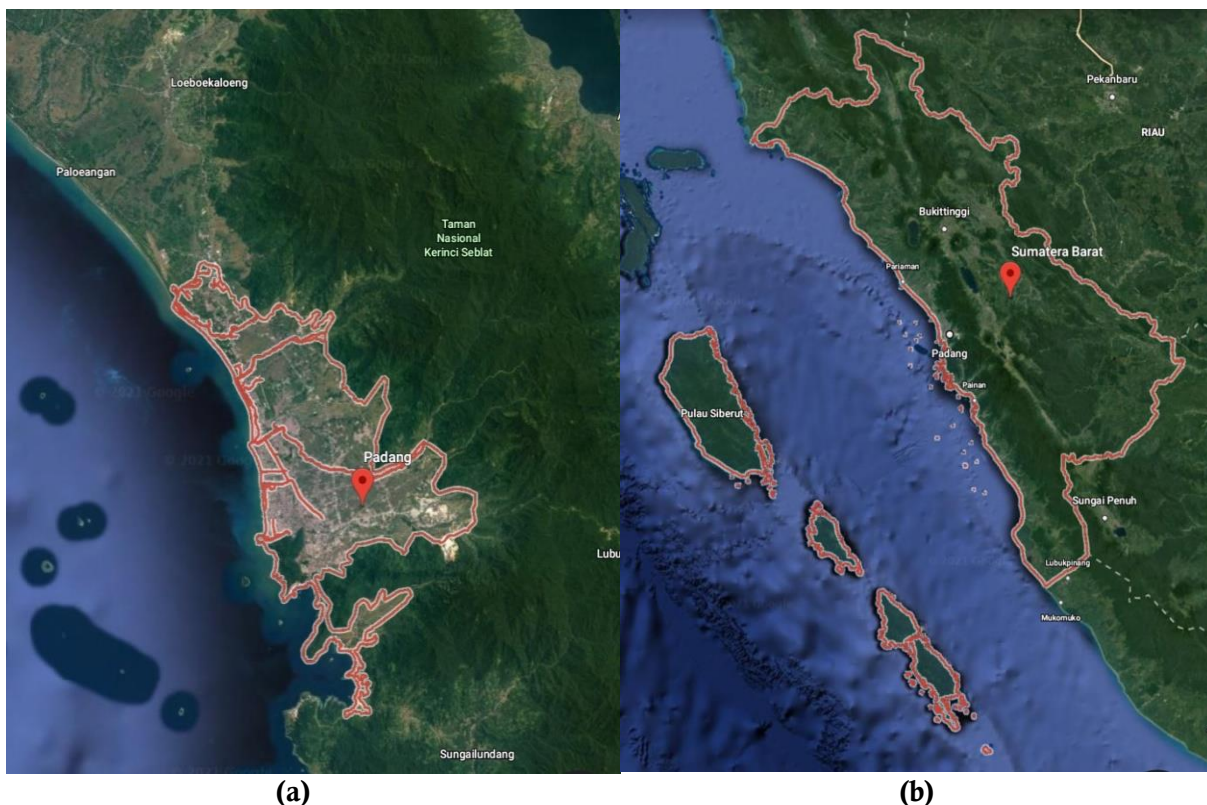


Fig. 1. Padang City map from Google Earth (a) and West Sumatra map from Google Earth (b)

## 2. Method

This study examines people's attitudes towards plastic waste reduction and handling behavior in the Air Manis Beach area as shown in fig.2. This research was conducted using a qualitative approach in the form of grounded theory. Data collection techniques are observation, interview, and documentation study. The research was conducted through the stages of preparation, implementation, and interpretation as shown in fig. 3. In the preparation stage, the preparation of instruments in the form of interview and observation guidelines was carried out, which was then carried out by validating the instruments. After that, at the implementation stage, data collection was carried out through interviews, observation and documentation study. At the data collection stage, triangulation was also carried out on the data that had been collected. The research informants were traders and visitors to Air Manis Beach ( as shown in Table 1) and related agencies. Interpretation as the meaning of data that has been collected so that it becomes information .The data analysis followed the stages of the qualitative descriptive analysis technique proposed by Speziale and Carpenter (2003) [1]. The last stage is writing a report in the form of a completed research report and a written research article.



Fig. 2. Air Manis Beach from Google Earth

**Tabel 1. Inclusion and Exclusion Criteriae**

Inclusion Criteria	Visitors and traders who sell around the Air Manis Beach area and are members of the Air Manis Village, Padang City
	Willing to be an informant in research by signing an informed consent sheet
Exclusion Criteria	In the productive age range (15-65 years)
	Migrant traders selling around the Air Manis Beach area
	Not able to answer the questions given
	A person who is deaf and/or mute

### 3. Results and Discussion

The analysis of people's attitudes towards the behavior of reducing and handling plastic waste in this study is seen from three aspects, namely; degree of public knowledge about the reduction and handling of plastic waste, community understanding of the impact of plastic waste, and the cultural values that people believe in waste management. The degree of public knowledge about plastic waste implies that there is a level of information obtained by the community about handling and reducing plastic waste. The degree of public knowledge in this case is grouped into four levels, namely not knowing at all about reducing and handling plastic waste, not knowing but wanting to distinguish plastic waste handling, knowing but not wanting to distinguish between handling plastic waste and non-plastic waste, and knowing and willing to differentiate handling plastic waste with other waste.

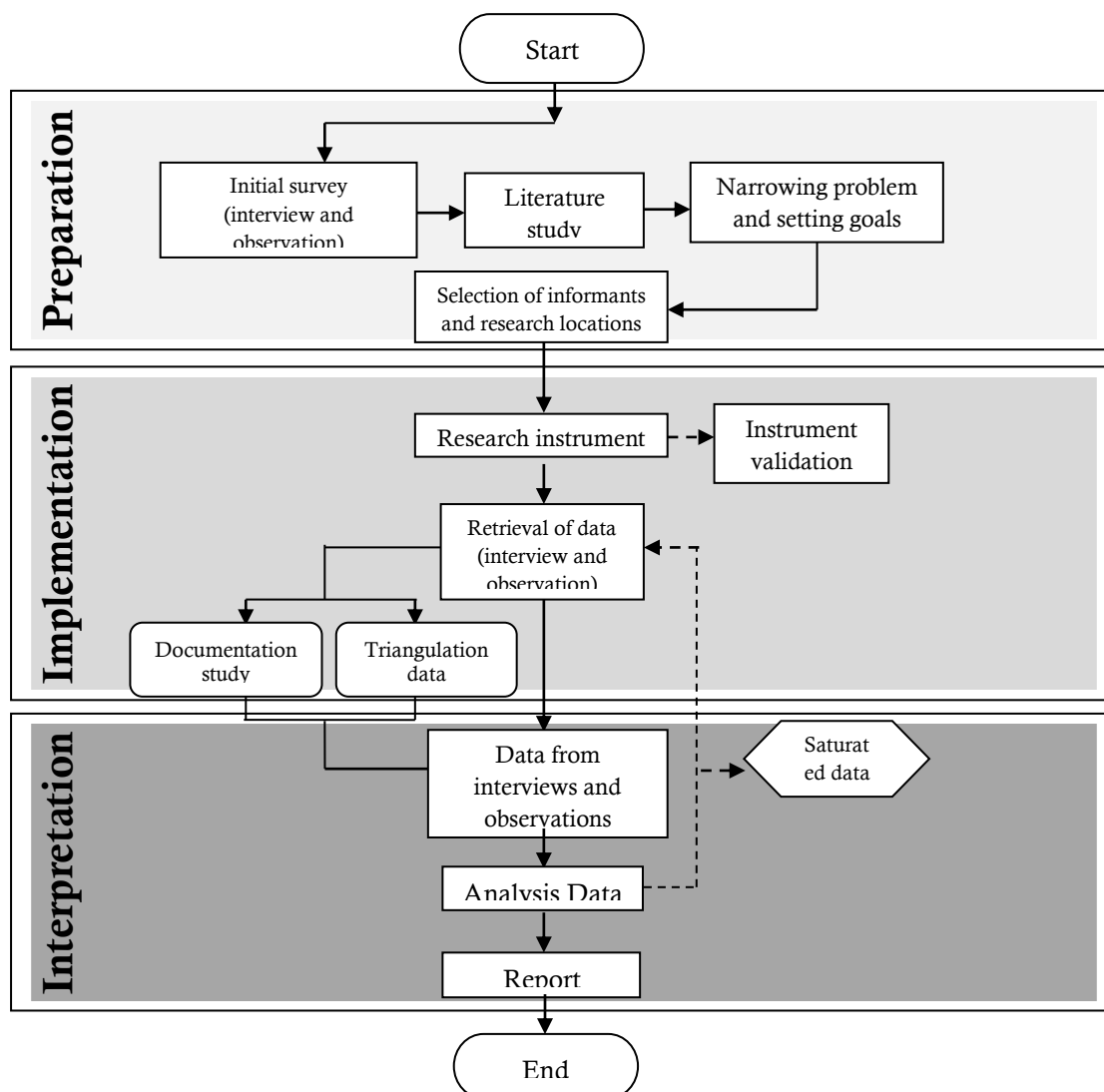


Fig. 3. Research Stages

The results showed that the degree of public knowledge at the level of ignorance meant that the community / informants did not have information about the proper and correct reduction and handling of plastic waste. The informant mentioned that *".. There is a lot of plastic need for a deck, the easiest to get. Use it of course according to your needs, but you don't need to save it. I don't know how to handle it, it's the same as other food waste .."*. Regarding the generation of waste, another informant stated that:

*... The plastic waste comes from food wrappers that I sell, the amount depends on the number of people who buy it here. If the food doesn't use plastic packaging, there isn't a lot of plastic waste. In fact, there could be no plastic waste, because no one is shopping ... At this beach, the most plastic ones are asked by visitors to make their dirty clothes ... I don't know if plastic waste is different from other waste (managing), it's not the same, the difference is one from food waste the other is plastic food wrap.*

Still in this regard, the informant stated that: *"I use plastic as necessary. Sometimes you give them a little plastic shopping, so it's only natural that we buy and we are given plastic as a place to shop. The service is like that... the handling of what is called garbage is thrown away but if it is processed specifically for plastic waste I don't know..."*. The next informant said that: *"... I don't like to carry extra bags like that. It's easier to ask for plastic, you can get it everywhere. ... People say the handling is different, but I don't know for sure what's different..."*.

This data shows that the informant knows the source of the emergence of plastic waste, but does not know anything about handling plastic waste. According to him, handling plastic waste is the same as other waste. This means that there are still people who do not know anything about reducing and handling plastic waste.

The level of public knowledge in the category of not knowing but being able to differentiate in the handling and reduction of plastic waste means that the informants do not have information about reducing and handling plastic waste but taking action to reduce and handle plastic waste properly without them knowing it. The informant's actions were influenced by habits that were carried out since childhood and imitating the behavior of parents. The informant stated:

*... Before there was an appeal to bring a drinking tube from home, I used to carry a thumbler (drinking bottle) and carry food supplies wherever I went, because from a young age my parents made it a habit to bring drinking tubes and food supplies to reduce snacks outside. So, for example, if you go and don't bring a drinking tube in particular, it feels like something is missing or it's left. I didn't know that carrying a drinking tube could also reduce the use of plastic. ....*

Another informant said *"... I don't know how to process or recycle waste. But at home, my dad likes to separate the bottles or plastic bags. My parents have always liked to separate the bottles or plastic bags at home. The bottles were later used by my parents for research or given to people who used to collect garbage around my house. Because I often see it, I finally joined my parents in separating bottles from food waste to be given more. My younger siblings also joined in, not bad enough to help others...."*

Based on the data above, it can be concluded that there are people who do not know that plastic waste is different from other waste but have already sorted the waste according to its type. These actions were carried out without having any information or understanding on how to reduce and manage plastic waste properly, but they were able to manage plastic waste properly.

Community behavior in this category is formed from the habits that exist in their environment, especially those in the family. The lack of knowledge / information about waste management for some people is not an excuse for reducing and handling plastic waste. The waste handling behavior they exhibit is the result of learning and exemplary from parents and other family members. A child will act in accordance with the usual actions of his parents. Education from parents and habits at home affect the development and formation of individual personalities [2, 3].

Furthermore, the level of public knowledge in the category of knowing but not wanting to differentiate means that the informant has information about the handling and reduction of plastic waste, furthermore, the level of public knowledge in the category of knowing but not wanting to differentiate means that the informant has information about the handling and reduction of plastic waste,, but does not yet have the desire to handle plastic waste properly. The informant stated the reason for not having enough time to handle waste. According to him, *"... if you need plastic, use it, if you don't need it, don't use it ... about handling waste, I've seen posters like that when I went shopping to a shop. Its contents are to reduce plastic waste. If I shop just a little, I don't need to carry a bag everywhere, just use plastic"*. Information about handling plastic waste is also obtained from students who are members of the community who care about waste. The informant stated: *"... on this beach there are students who clean up rubbish every week, so they know a little about reducing plastic waste ... I don't have the chance to go to the deck if I have to manage garbage like that ... a mother has small children, You know what if the child is small, deck ..."*. Another informant stated that *"... I have heard the issue, now everywhere use the slogan reduce plastic waste, use less straw. If you have to bring your own straw, what do you do ... have your own straw, but it's complicated, especially carrying a bag. It's not every day that you shop using plastic, right ... but you don't have the chance to choose one by one, let alone recycle it. If I don't work maybe I can, but I work, go home early in the evening. So that's it, I didn't have time...."*

This data implies that reducing and handling plastic waste properly and properly is still considered light, so it prefers or prioritizes other work than handling waste properly. Busyness in the office, busyness at home, and no one helping out with trading work are reasons that cause them not to have enough time to handle plastic waste properly and properly. The fulfillment of basic needs such as food, shelter, security and livelihoods becomes their main focus and priority so that waste is not a special concern for them. When waste has a direct impact on public health or causes environmental damage, waste will be looked at and considered as an important problem [4, 5]. Public knowledge at the level of knowing and wanting to differentiate between waste means that informants have information about reducing and handling plastic waste and have applied it in their daily lives. The informant stated that:

*"... I don't know, but we just use plastic as necessary... you collect it like plastic bottles, sell them later, to add income... sometimes you can spend all day shopping, kid, so there's no income. If the plastic bottles are sold, the money is not bad... if the plastic bags are still good, some are re-washed and then stored, usually many visitors are also looking for plastic bags, especially for the dirty cloth...."*

The informant also conveyed the same thing as follows:

*... Lots of plastic bottles on the beach on the deck, which you can still clean. Now there are those who want to buy plastic bottles. Mother, collect the good ones and sell them. There are families who collect plastics, they will sell them, the money can be saved, just like on deck. So if there aren't many people shopping, mom is picky about the best bottles to sell ...*

This data shows that the waste handling they do is still motivated by the desire to earn profits from selling plastic waste. It has not been found that the community wants to handle waste due to its impact on health and the environment. This behavior is motivated by the economic value of plastic waste. Waste handling is carried out because they want to get profit from selling plastic waste, not because of the impact of plastic waste on health and the environment [6, 7].

Public understanding of the impact of plastic waste found that some people did not know the impact of waste both on health and its impact on the environment. Almost all informants gave answers that were less certain. His statement seemed hesitant and lacked focus. This understanding also colors people's behavior in handling plastic waste. They often leave a pile of trash around them, because they feel it's not their trash. Some of them also chose to wait until the garbage was removed

by officers rather than executing it immediately. They prefer to hold the scent of garbage even though it smells, rather than cleaning it themselves.

Furthermore, it was found that people in the category of understanding but not caring about the impact of plastic waste. This community understands some of the impacts of plastic waste but has not paid attention to the impact that plastic waste can cause on health and its impact on the environment. The informant said:

*... Garbage is a source of disease, stomach ache, smells, just dirty. If you use a plastic plate, plastic spoons like this are not easy to break the deck. Fear of being solved by little kids. It just fell a little and kept breaking, so I had to buy a new deck. The mother lost a lot. The glass is black like that because of traces of tea drinks and deck coffee, usually it's like that when plastic cups are like that. You must have washed all the glasses and plates clean, using scrubbing ash too ....*

Other informants also mentioned:

*... The impact must be bad, right, garbage is a place for bacteria, it is definitely a danger to health, for the skin, especially if it is consumed. Mother deliberately placed the drink slightly in front of the deck so that it looked directly at the visitors. The drink didn't get hot on the deck, the mother used an umbrella. If this water is a gallon because it's been used for a long time, it's called the deck. At least when it leaks, then mom will replace it. It's still good to use, as long as it doesn't leak ...*

The data above means that they know some of the impacts of plastic waste on health, but their behavior still shows that this waste does not need to be differentiated. They keep plastic waste from joining with other garbage. Even the plastic waste is thrown away carelessly. They do not yet understand the impact of using plastic food utensils on health. According to them, if the utensils they use are not made of plastic, there is a risk of breaking and causing harm to them.

Plastics have various types and are multifunctional in people's lives. Plastics are used for food packaging, tableware, to household utensils. These different types of plastic have their respective functions and uses, so how to use them and use them must be right so as not to have an effect that can adversely affect public health. These plastic particles can enter the human body by inhalation, ingestion, and through the process of storing food and beverages with inappropriate plastic packaging.

Plastic particles that enter are carcinogenic will settle in the body and can cause health problems such as digestive disorders, endocrine systems, lung disorders, neurological disorders, reduce reproductive potential, thereby increasing the mortality rate. This impact is not felt directly in the human body, but the accumulation that occurs continuously and then settles in the body increases the chance of health problems. This condition causes public awareness and initiative not yet formed so that it affects their behavior in reducing and handling plastic waste [8-12].

The community's lack of knowledge and understanding of the impact of plastic waste affects people's awareness and willingness to manage plastic waste appropriately. Plastic waste that is not properly managed has an impact on health and the environment. Therefore, information regarding the stages of handling plastic waste needs to be complemented by the impact of plastic waste so that public awareness and will is stronger and encouraged to manage plastic waste appropriately. Public understanding of the effects of plastic waste on health is considered effective to build and increase public awareness and its activities will lead to behavior in handling plastic waste appropriately in a sustainable manner [13-15].

Based on the description of people's behavior in handling plastic waste, it can be stated that in general the knowledge of reducing and handling plastic waste in the community is still low. Knowledge can be an individual benchmark to build awareness in carrying out a behavior. The knowledge that is already owned by the community has not been able to determine changes in



public awareness in reducing and handling plastic waste properly and correctly. The level of education of the community cannot ensure that they have good and sufficient knowledge about reducing and handling plastic waste. Whatever the level and type of education, information or knowledge about reducing and handling plastic waste needs to be owned by all levels of society [3, 4, 16].

Convenience in reducing and handling plastic waste will also increase individual participation even though they do not have sufficient knowledge or information about proper plastic waste management. An understanding of the environment greatly influences the formation of individual character to care and have awareness of the environment. Thus any environmental problems, especially the reduction and handling of plastic waste can be resolved and carried out continuously .

Community culture in waste management means that there are values that are embedded and have become a habit in the community. This belief directs their thinking to justify what they usually do, so it is difficult to be invited to get used to the right. One example of cultural values that people believe is the need to burn plastic waste. Burning plastic waste for traders is a necessary routine when trading around Air Manis Beach. The informants believed that the smoke generated from burning the garbage would bring good things and ward off bad things for the shops and their sales. The informant stated: "... *If this garbage is burned, it will smoke. Well, that smoky warung is a great deck. If possible, smoke this place. Just like humans who need a bath ..* ". Another informant also expressed the same thing, "... *bad things or bad things can disappear from the smoke of the garbage. That's why it continues to smoke here from burning trash...* ".

In addition, according to them, burning plastic waste is also needed as a way to maintain comfort in their place of sale. Burning garbage is a mosquito repellent medium. The informant said that: "... *this garbage smoke can help repel mosquitoes, son, the air gets a bit warm ... you opened a shop here, sir ...* ". *In the morning there are a lot of mosquitoes on the deck around 7-8 o'clock in the morning because it is still cold, then we burn the garbage, it's smoky, by 10 o'clock the mosquitoes are gone ...* ".

Culture is any action or idea that is created and believed in society. Culture becomes a reference for people in deciding to carry out an activity or action in everyday life. The culture is varied, which indicates that each region will have different beliefs and behavior patterns in dealing with the same problems such as reducing and handling plastic waste. Every action or activity that is cultured in society has positive and negative values. This negative value is obtained when the culture adopted and believed by the community is not in accordance with the development of science so that it will have a negative impact both in the short and long term. The results of research in India show that people who are accustomed to being exposed to open burning systems will increase health problems due to the release of toxins such as dioxins through garbage burning smoke which will cause cancer and other health problems [17, 18].

It is predicted that cultural strengthening has stability in the formation or pattern of behavior both individually and in society for a long period of time so that the tendency for changes in community behavior can be said to be very small. The Minangkabau culture that is owned by the people of West Sumatra has one of the main principles, namely "adaik basandi syarak, syarak basandi Kitabullah" which means that all customs or cultures that exist in society must encode with Islamic law, namely the Al-Quran and Hadist. Islam is a religion that highly upholds cleanliness so that every adherent is encouraged to maintain cleanliness both personal and environmental hygiene. The behavior of burning rubbish or not maintaining the cleanliness of the environment means that it is against the teachings or values contained in Minangkabau culture and also Islam. Therefore, the

Minangkabau community must re-enforce norms in accordance with the Minangkabau's culture which is based on the Islamic religious law [19].

Culture has an important role in forming beliefs so that it can build people's behavior in everyday life, including behavior in reducing and handling plastic waste. The formation of behavior in society is not only seen from the adequacy of information or knowledge possessed by each individual, but the cultural values inherent in society have a significant impact on community motivation and participation in plastic waste management. Information on the increase in the generation of plastic waste due to the high consumptive power of the community towards plastics and sufficient knowledge of the plastic waste management process cannot guarantee a change in the behavior of people who already have a cultural orientation or point of view in managing the environment. Environmental management based on this cultural orientation is carried out continuously without looking at or assessing the impacts that may occur in the short term or the long term [20-22].

The cultural approach has positive relationships and values to encourage active participation in society. Therefore, the cultural aspects of society need to be considered in planning the provision of knowledge related to plastic waste management both in terms of delivery methods, the substance of knowledge required, and the target recipients of information. Information or knowledge that is actual and in accordance with the needs of the community will affect the culture inherent in society. The involvement of cultural aspects in convincing and encouraging changes in behavior in reducing and handling plastic waste can form a new identity that is entrenched in society and proper plastic waste management can be carried out continuously [19, 20].

#### 4. Conclusions

Based on the analysis of attitudes towards people's behavior in reducing and handling plastic waste, it can be concluded that people's attitudes towards plastic waste management behavior are formed by 3 aspects, namely the degree of public knowledge about reducing and handling plastic waste, public understanding of the impact of plastic waste, and community culture that is not good in plastic waste management. In general, this research supports the concept of behavior which is analyzed according to Theory of Planned Behavior. Behavior formation factors contained in Theory of Planned Behavior are still found in the field by researchers. So it can be said that this research supports the theory of behavior based on the Theory Planned of Behavior. The community is expected to be able to apply knowledge and information about plastic waste management in their daily lives, so that regulations or policies that have been set by the government can be implemented properly without requiring close supervision from the government.

#### References

- [1] Speziale HJS, Carpenter, D.R. (2007).Qualitative research in nursing: Advancing the humanistic imperative (4th edition). Philadelphia: Lippincott.
- [2] Gardner B, Sheals K, Wardle J, McGowan L.(2014).Putting habit into practice, and practice into habit: a process evaluation and exploration of the acceptability of a habit-based dietary behaviour change intervention. *International Journal of Behavioral Nutrition and Physical Activity*;11:135.
- [3] Marshall RE, Farahbakhsh K.(2013).Systems approaches to integrated solid waste management in developing countries. *Waste management*;33:988-1003.

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- [4] McAllister J.(2015).Factors influencing solid-waste management in the developing World.
- [5] Moore SA.(2012).Garbage matters: Concepts in new geographies of waste. *Progress in Human Geography*;36:780-99.
- [6] Hoornweg D, Bhada-Tata P. (2012).What a waste: a global review of solid waste management: World Bank, Washington, DC.
- [7] Ncube F, Ncube EJ, Voyi K.(2017).A systematic critical review of epidemiological studies on public health concerns of municipal solid waste handling. *Perspectives in public health*;137:102-8.
- [8] Chandran M, Tamilkolundu S, Murugesan C. Conversion of plastic waste to fuel.(2020).In: *Plastic Waste and Recycling: Elsevier*. p. 385-99.
- [9] Wright SL, Kelly FJ.(2017).Plastic and human health: a micro issue? *Environmental science & technology*;51:6634-47.
- [10] Syberg K, Hansen SF, Christensen TB, Khan FR. Risk perception of plastic pollution: Importance of stakeholder involvement and citizen science.(2018).In: *Freshwater Microplastics: Springer, Cham*. p. 203-21.
- [11] Tussakinah W, Masrul M, Burhan IR.(2018).Hubungan Pola Makan dan Tingkat Stres terhadap Kekambuhan Gastritis di Wilayah Kerja Puskesmas Tarok Kota Payakumbuh Tahun 2017. *Jurnal Kesehatan Andalas*;7:217-25.
- [12] Al-Khatib IA, Kontogianni S, Nabaa HA, Al-Sari MI.(2015).Public perception of hazardousness caused by current trends of municipal solid waste management. *Waste Management*;36:323-30.
- [13] Essuman N.(2017).Knowledge, Attitudes and Practices of Coastal Communities on Waste Management in Ghana.
- [14] Maharani A, Dewilda Y, Darnas Y, Dewata I. (2019).Community-based solid waste management planning in the Administrative Village of Surau Gadang, Padang City. *IOP Conference Series: Earth and Environmental Science: IOP Publishing*. p. 012017.
- [15] Xiao L, Zhang G, Zhu Y, Lin T.(2017).Promoting public participation in household waste management: A survey based method and case study in Xiamen city, China. *Journal of Cleaner Production*;144:313-22.
- [16] Mamady K.(2016).Factors influencing attitude, safety behavior, and knowledge regarding household waste management in Guinea: a cross-sectional study. *Journal of environmental and public health*.
- [17] Dumbili E, Henderson L. The challenge of plastic pollution in Nigeria.(2020).In: *Plastic Waste and Recycling: Elsevier*. p. 569-83.
- [18] Samarasinghe R.(2012).The influence of cultural values and environmental attitudes on green consumer behaviour. *The Journal of Behavioral Science*;7:83-98.
- [19] Leung K, Morris MW.(2015).Values, schemas, and norms in the culture–behavior nexus: A situated dynamics framework. *Journal of International Business Studies*;46:1028-50.
- [20] Crociata A, Agovino M, Sacco PL.(2015).Recycling waste: Does culture matter? *Journal of Behavioral and Experimental Economics*;55:40-7.
- [21] Agovino M, Cerciello M, Musella G.(2019).The effects of neighbour influence and cultural consumption on separate waste collection. Theoretical framework and empirical investigation. *Ecological Economics*;166:106440.
- [22] Minelgaitè A, Liobikienè G.(2019).The problem of not waste sorting behaviour, comparison of waste sorters and non-sorters in European Union: Cross-cultural analysis. *Science of The Total Environment*;672:174-82.
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