

The Purpose of Intention to Use Composting For Waste Management in Bandung Area

Yasmin Dwinadine^{1*}, Emiliana Dewi¹

¹ School of Business and Management, Institut Teknologi Bandung, Bandung, Indonesia

*Corresponding Author: yasmin_dwinadine@sbm-itb.ac.id

Accepted: 31 July 2020 | Published: 10 August 2020

Abstract: *The amount of organic waste predicted to increase due to the increasing number of the human population on earth. Organic waste can be harmful if it is not managed properly, can release a lot of methane gasses to the atmosphere, and can be destructive for the earth in the long term because it worsens the effect of global warming. For saving the earth from further destruction, all of the people around the world should change their method of managing organic waste with composting. However, in Indonesia, the most common method to process organic waste is piling it up on the landfill. This research wants to find the right solution for society to use composters continuously to process organic waste properly to create a sustainable environment. PASMA, as a business that cares about environmental issues, will develop a compost bin with features desired by users to use it continuously so that it can help reduce the destructive effects of climate change and create a sustainable environment. But because there is a lack of research PASMA has difficulty developing a business strategy to penetrate the product. Hence, to find a solution, the researcher will look for goals from people who do not want to use composting, stop using composting, and always use composting by analyzing literature reviews and in-depth interviews. PASMA will conduct research for the target market of PASMA which are men and women, 20-55 years old who lives in Bandung, Indonesia. After conducting the research, the cause of people not wanting to use composting as a method for treating organic waste is a lack of concern for the environment. They also did not know the benefits of composting because they did not feel that composting would benefit them. The results of the analysis, PASMA must increase public awareness about the bad effects of organic waste if it is not processed properly and the importance of using composting. The way to actualize this solution is to develop partnerships, create content, and campaigns on the PASMA Instagram page. In helping to create a sustainable environment, PASMA suggests that the government will take more firm actions to society. In addition, in the future, the researcher suggests further research on how to change people's habits in processing waste from a psychological perspective.*

Keywords: sustainable environment, climate change, composting, intention to use, in-depth interview.

1. Introduction

Food waste is every piece of remaining food that will never be eaten or used again, whether already cooked, still raw, or already thrown away from many different sectors of the food supply chain. Food waste is considered as organic waste because it can decompose naturally by mother nature. The Food and Agriculture Organization of the United Nations stated that almost 1.3 billion tonnes of foods are missing in the food supply chain, which consists of any

foods such as processed food, animal-based products, and vegetarian-based products. In the next 25 years, the amount of Food Waste has estimated to keep rising, especially in Asian countries. It happens because of the growth of the economy and the number of humankind's population (Kunwar Paritosh, Sandeep K. Kushwaha, Monika Yadav, Nidhi Pareek, Aakash Chawade, and Vivekan, 2016).

This current society, which produces food waste and food loss, has significant destruction on the natural environment. If food loss and food waste do not treat in the right way, it will release methane gas that is 84 times more destructive than CO₂ from transportation pollution. It is more destructive because methane gas is more capable to absorbs heat than carbon dioxide (edf.org, 2020). Methane gas also helps Greenhouse Gas (GHG) to develop if not treated in the right way (Kunwar Paritosh, Sandeep K. Kushwaha, Monika Yadav, Nidhi Pareek, Aakash Chawade, and Vivekan, 2016). Greenhouse gas can worsen climate change because it breaks down the ozone layers and resulting in global warming. In Indonesia, the temperature has risen annually for 0.3 Celsius and has had some significant impacts on the environment (Hulme and Sheard, 1999; Boer and Faqih, 2004). The effects on the environment occur in many circumstances such as water availability (Wang et al, 2006), sea-level rise (Wassmann et al, 2004), biodiversity and ecosystem services (Wilkinson, 2004), food sources availability (Cruz et al, 2007), including human health (McMichael et al, 2003). Other than global warming, the effect of not treat organic waste in the right way, such as piling up organic waste in the landfill can result in a massive explosion because of the accumulated trapped methane gasses inside the pile. One of the most tragic explosions caused by methane gas is at TPA Leuwigajah, Cimahi, with a size of 60 meters high and 200 meters wide in 2005, this tragedy should not happen again in the future. The explosion at the landfill has murdered 150 people in a blink of an eye (Wishnu Pradana, 2020). Another explosion happened in 2011 at TPA Bantar Gebang that injured three people (Fahmi Firdaus, 2011), in 2019 TPA Bakung, Lampung (Lampost, 2020), and TPA Temesi, Bali also have an explosion (Kilas Bali, 2019). Ironically the explosion keeps happening in 2020. There are another two TPA in 2020 that exploded, which are TPA Bengkala, Bali (Nyoman Suarna, 2020), and TPA Sekoto Badas, Kediri (Radio Andika, 2020).

There are several better options that we can do to treat waste so we can prevent tragedies from happening again; one of them is by prevention. For prevention, we can manage the food before it becomes a waste. It could start by handling unwanted food excess and stop supplying foods above the society demand (Papargyropoulou et al, 2014 and Smil, 2004). We can also prevent food waste by distributing food waste that still has a good quality to eat and has not rotten yet to another customer who needs it (Francesca Giroto, Luca Alibardi, and Raffaello Cossu, 2014). Food waste can produce benefits too if we treat it right by upcycling the food waste. It can be by feeding the food waste to animals, gas collection from the landfill, and turning food waste into compost or composting. (Krista L. Thyberg and David J. Tonjes, 2016)

Until now, composting is still the best option to treat waste because it is the most simple but can minimize the adverse effect of food waste, and it is also beneficial for the environment (X.F. Lou and J. Nair, 2009). It can be helpful because the formation of humic substances that are composing will restore the nutrients of food waste, or it can be the process of carbon absorption (Francesca Giroto, Luca Alibardi, and Raffaello Cossu, 2014). However, based on the statement of Director General of Waste, Waste and B3 Management, Ministry of Environment and Forestry, Tuti Hendrawati Mintarsih, In Indonesia, the most common

method of treating waste is by piling it on the landfill for 69%. Then followed by 10% of waste buried under a land, 7% of waste treated by composting or upcycling, 5% waste burned, and the rest of it does not process (Kominfo Jatim, 2015).

Therefore, PASMA is born to help save the environment from further destruction by human activity of processing food waste. PASMA will help by creating green products that are desirable for people to use and spread awareness of the importance to save the environment. PASMA will start to aim the potential customers in Bandung because PASMA want to have steady business growth, therefore, before reaching a large group of customers from several cities, PASMA wants to start by focusing on the customers who live in Bandung. However, the lack of empirical studies about the behavior of Indonesian customers who do not want to do composting makes it harder to find the solution to penetrate composting into the Indonesian market to reduce the effect of climate change. Therefore, this study aims to find the right ways to make the compost bin desirable to use by Indonesian customers. The researcher aims to examine how to make customers use composting as their method of managing waste to support creating a sustainable environment. To find the right solution, the researcher will aim to see all of the factors considered by the potential customer to use the composting method continuously. Furthermore, the researcher will also aim to find the primary purposes of people who do not proceed to change their attitude of treating waste with composting.

2. Literature Review

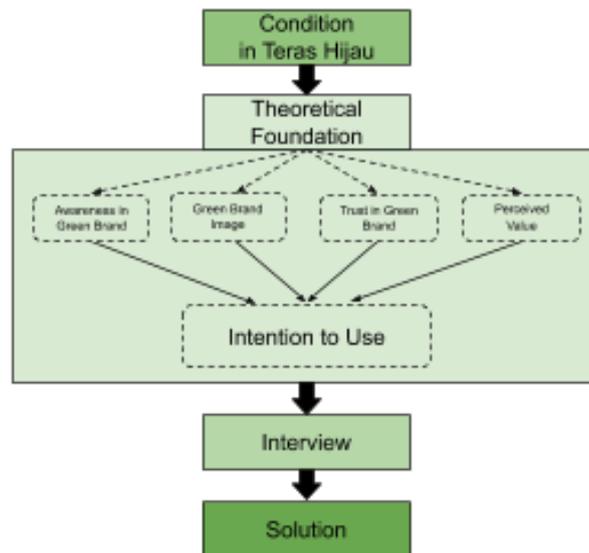


Figure 1: Conceptual Framework

Intention to Use: According to The Theory of Reasoned Action (TRA) from Martin Fishbein and altered and broaden by Fishbein and Icek Azjen in the following decades, an intention to use is a purpose or a possibility that someone will act in a precise way in particular circumstances. The aim is the role of two factors: attitude toward personal patterns and implementing the action (Mohammad Saleem, 2016).

Awareness in a green brand: is the sense for a customer to identify and to revive that a brand is environmentally friendly. Customers that are aware of a green product are usually aware of an environmental issue. If consumers have a genuine consciousness of the benefit and

knowledge of the environment, they will most likely use an environmentally friendly product (Oliandes Sondakh, 2013). If the customer has an awareness of a green brand, the higher chance customers will buy and use green products instead of other regular products (Mohammad Saleem, 2016; Keller, and Lane, K. 2011).

Green brand image: is a complete series of responses, perceptions, and judgments towards a brand in the customers' consciousness, which corresponds to consumers' concern for environmental sustainability and safety for the environment (Mohammad Saleem, 2016; Chen. Y, 2010). If the company has a positive reputation, it strengthens the consumer's purpose to use green products (Mohammad Saleem, 2016; Ko. E, 2013).

Trust in a Green Brand: Trust in a green brand is the result of the belief that using the green product is necessary and useful to reach the customer's personal value of creating a sustainable environment (Mohammad Saleem, 2016; Chen. Y, 2010). Customer trust is also influenced by the feeling of satisfaction after using the green product (Mohammad Saleem, 2016; Kang, S. 2012). Customer trust is major in building a long term commitment to using a green product. Furthermore, it already validated that customer trust has an impact on raising the customer's intention to use green products (Mohammad Saleem, 2016 ; Lee, J. 2011).

Perceived Value: Green brand perceived value is a customer's overall evaluation of the complete advantage of service and product based on a customer's experience (Mohammad Saleem, 2016; Chen. Y, 2010). It is based on a customer's experience when using a green product that successfully delivers the expectations and needs of a green product. The customers also feel like there are many more benefits when using green products than regular conventional products (Mohammad Saleem, 2016; Patterson, P. & Spreng, R. 1997; Chen, Y. & Chang, C. 2012). It is also crucial for the customer to think that when they use the green product, society gives them positive support (Mohammad Saleem, 2016).

3. Methodology

The researcher wants to have detailed information from the respondent; therefore, this research will use in-depth interviews to explore new possibilities of customer's actions, problems, and ideas in detail (Carolyn Boyce and Palena Neale, 2006). In this research, the population that the researcher will choose is people who live in Bandung, because PASMA chooses Bandung people as their target market. In this research, the researcher will use non-probability technique sampling, which is a judgemental sampling. According to Maholtra (2010), with judgemental sampling, the researcher will choose a sample based on the researcher's judgment that will be suitable for the research and does not let every kind of individual get the chance to be selected. The researcher will investigate people in the range of age 20-55 years old who live in Bandung. The chosen samples have three different personas. The first one is people who never used composting before, the second one is people who discontinued using composting, and the third one is people who continuously use composting. The purpose of investigating three different personas is to compare the values that make them act differently towards the compost bin. The researcher believes that with these samples, the research questions will have the right solution.

The researcher wants to explore all of the factors that possibly affect PASMA's potential customer intention to use composting. The questions will investigate how low, medium or high the samples are about environmental awareness, green brand image, trust in a green brand, and perceived value. The researcher wants to find detailed statements about their

reason to use composting or choose another organic waste management method. Therefore, the researcher will conduct a semi-structured interview because a semi-structured interview uses open-ended questions that allow digging deeper respondents' purpose to use composting but still follows the researcher's guidance. Hence, the answer does not swerve away from the research (Cohen and Crabtree, 2006).

Before the interview begins, the researcher will prepare open-ended questions. After that, the researcher will collect the data through an in-depth interview. Before the interview starts, the researcher will ask for permission to use the information as the input of research. The interviewer will continue to dig deeper into the respondents' experience when using the composting and examine the variables that already stated in the empirical study of Jordanian customer's towards the green brand. If the data already has the same pattern in five different people of each persona, or we have found the saturated data, the investigation will stop and be ready to be analyzed.

After conducting an in-depth interview, the researcher will analyze the data with three steps, which are open coding, axial coding, and selective coding.

Open Coding

In open coding, we will thoroughly examine the transcript of the interview and categorize respondents' words with the same motive or interest. Each group of sentences will unite by a code (Strauss and Corbin 1990).

Axial Coding

After we gather the codes that filled with the words from respondents' that have the same motive or interest, the codes that have a link with each other and have the same purpose will be united by a code that has a more significant scope (Strauss and Corbin 1990).

Selective Coding

In selective coding, we will reread the interview transcript then find a bigger picture from the axial codes that we already made. We will unite the axial codes by a single code that represents the axial codes (Strauss and Corbin (1990)

4. Results and Discussions

Based on the interview, the researcher found that each sample of the persona shows a pattern in their statements. Hence, the researcher proceeds to analyzes the data with open coding, axial coding, and selective coding to find the core of the sentences regarding awareness, green brand image, trust in the green brand, and perceived value.

Table 1: The Result of Data Analysis

	Awareness	Green Brand Image	Trust in Green Brand	Perceived Value
Never Want to Do Composting	Low	Low	Low	Low
Discontinued Composting	Low	Low	Low	Low

Continuously Composting	High	Low	High	High
-------------------------	------	-----	------	------

Based on the analysis, samples who never want to do composting and discontinued to use composting categorized as low in all four factors. On the other hand, the samples continuously using composting are high in awareness, trust in the green brand, and perceived value but low in green brand image.

Table 2: Description of Low and High Regarding Awareness

Category	Factors
Low	Knows that: <ul style="list-style-type: none"> • Organic waste does not significantly damage the environment • Climate change cannot be prevented • The environment is reasonable to keep changing • There still another way to reduce climate change than composting
High	Knows that: <ul style="list-style-type: none"> • Organic waste can produce harmful methane gas • Composting can reduce the effect of climate change

The awareness of the sample will be considered as low if the factors from their statement conclude that the sample does not do anything significant regarding environmental damage issues caused by organic waste. They are aware that global warming and the environment are gradually worsening, but they believe that organic waste does not have a significant contribution to damage the environment. They feel that if they manage organic waste, the activity will not dramatically prevent global warming from worsening.

On the other hand, the awareness of the sample will categorize as high if the conclusion of factors from their statement reveals that they are conscious about organic waste will contribute significant damage to the environment and able to worsen the effect of global warming. They are aware that if they manage their organic waste properly, it will help to prevent environmental damage.

Table 3: Description of Low and High Regarding Green Brand Image

Category	Factors
Low	<ul style="list-style-type: none"> • Make composting equipment by themselves • The features are more important • More care about the function.
High	N/A

The green brand image consideration will categorize as low if the conclusion of factors from the sample's statement is showing that the sample cares more about features of the product rather than the brand. For the samples who use composting continuously, the reason they use composting as the method of managing waste is from the features that successfully can process organic waste. For the samples who never used composting and discontinued to use composting, they value tools or products for composting who have great features that can successfully turn organic waste into fertilizer rather than the brand.



Table 4: Description of Low and High Regarding Trust in Green Brand

Category	Factors
Low	<ul style="list-style-type: none"> ● Doesn't feel the benefit ● Composting creating more problems in life ● Failed to make compost ● Composting is not useful for everyday life ● Not utilize the fertilizer
High	<ul style="list-style-type: none"> ● Composting is beneficial for everyday life ● Composting solves the problem in life ● Channels the personal value of creating a more sustainable environment ● Success to make compost

The trust in the green brand will consider as low if the sample does not feel the benefit of using composting. The sample does not believe that composting can solve their everyday problem. The sample feels that composting is useless and creates more problems in their life because the fertilizer can not be used in their daily life. The sample feels fine without using composting at all because they do not need fertilizer. However, trust in the green brand will consider as high if the sample feels the benefit of using composting. Composting is solving their daily life problems and satisfied with the result of composting. They feel composting is an important activity to do. The action of composting also can channel their value in creating a better environment; they feel good when they do compost activity.

Table 5: Description of Low and High Regarding Perceived Value

Category	Factors
Low	<ul style="list-style-type: none"> ● Believe that there are some other better ways to manage waste ● Got negative feedback from society ● The results of composting don't meet the expectation about composting ● The overall experience of composting is bad
High	<ul style="list-style-type: none"> ● Composting is one of the best ways to manage waste ● Got positive feedback from society ● Overall experience is very good ● The results of composting meet the expectation

The perceived value will be considered as low if the sample feels like there is a better option to manage their organic waste other than composting because composting does not result in favorable outcomes. They choose another option of managing waste because they feel the other option offering more benefits than composting. They also do not enjoy the process of composting because it feels inconvenient such as releasing bad odor, inviting disturbing animals, impractical to process the waste, and need a lot of space.

In contrast with the samples who use composting continuously, the perceived value is considered high because the sample feels that composting is the best option to manage organic waste. They realize that composting offers more benefits than other methods of managing organic waste. They feel the effort to compost is worth it because the result is beneficial for them. They succeed to process food waste into composting and enjoy the process of composting.

5. Conclusions and Implications

Based on the analysis, the root cause of people who do not use composting as their method to manage their waste is low in awareness, low trust in the green brand, and low perceived value. We only choose three variables by eliminating the factor about “Green Brand Image” because the statements between people who are continuously using composting and people who discontinued or never used composting do not show any differences. The samples agreed that when using a product, the most important thing is the function rather than the brand.

The purpose of potential customers who do not intend to use composting is because they do not know the urgency of composting. They have low awareness regarding the harmful effect of organic waste and the lack of knowledge regarding the importance of using composting for creating a better environment and decreasing the adverse impact of global warming. Furthermore, the customers feel that composting does not bring any benefit for their life and will create uncomfortable feelings when using composting. They think that the experience of using composting is inconvenient and creates more problems in their life.

The factor that is considered by the potential customers to make composting suitable and desirable to use continuously as the method in managing waste is the user of composting feel that the activity is beneficial for them and solve their daily problem. Furthermore, potential customers feel that the process of composting is worth doing; the customers’ overall experience of composting is worth the benefit that they got. Other than that, composting is convenient to use; it is better to make composting as comfortable, easy to use, and enjoyable.

Based on the factors considered by the customers to make composting suitable and the purpose of potential customers not intend to use composting, there are some ways to make customers use composting properly to create a sustainable environment. We have to change the image of composting to be beneficial and essential to raise awareness regarding the harmful effect of organic waste and the importance of using composting as the method to manage waste. Furthermore, we need to eliminate the inconvenient feelings of using composting such as lousy odor, make their house dirty, invite disturbing animals, impractical to process the waste, and need a lot of space, so the customers should feel that composting is beneficial, important, and convenient to us

6. Future Research

The researcher suggests doing further research regarding finding the intention to use composting for waste managing from the psychology point of view. From investigating more the topic with the psychology point of view, we can understand further about the behavior of people and have a more strategic solution to change the routine of people. Especially managing waste with piling up the organic waste in the landfill is already a form of culture in Indonesia. It will be hard to change it if the base mindset of people already set to piling up organic waste in the landfill. Therefore, to help increase the number of people to use composting, besides creating a business strategy, we should also generate solutions from a psychology perspective.

References

Boyce, C., & Palena, N. (2006). *Conducting In-Depth Interview: A Guide for Designing and*

- Conducting In-Depth Interviews for Evaluation Input. *Pathfinder International*.
- Chen, Y. S., & Chang, C. H. (2012). Enhance green purchase intentions. *Management Decision*, 50, 502 – 520.
- Cohen, D. and Crabtree, B. (2006). Qualitative Research Guidelines Project. *New Jersey: Robert Wood Johnson Foundation*.
- Kang, S. (2012). Investigating the antecedents of green brand equity: a sustainable development perspective. *Corporate Social Responsibility and Environmental Management*. Vol. 19, pp 306.
- Keller. and Lane, K. (2011). Conceptualizing, measuring, and managing customer-based brand equity. *Journal of Marketing*, 57(1), 1-22.
- Lee, J. (2011). The different effects of online consumer reviews on consumers' purchase intentions depending on trust in online shopping malls an advertising perspective. *Internet Research*. Vol. 21 (1), pp. 187-206.
- Malhotra, N.K. (2010). Marketing research: an applied orientation. 6th ed. *New Jersey: Prentice Hall Inc*.
- Patterson, P. G., & Spreng, R. A. (1997). Modeling the relationship between perceived value, satisfaction and repurchase intentions in a business-to-business, services context: *An empirical examination. International Journal of Service Industry Management*.
- Saleem, M. & Zabadi, A. (2016). Impact of Green Brand Trust, Green Brand Awareness, Green Brand Image, Trust in Green Brand, and Green Brand Perceived Value on Consumer's Intention to Use Green Products: An Empirical Study of Jordanian Consumers. *International Journal of Advanced Research*.
- Sondakh, O. (2013). Environmental Friendly Product Buying Behavior. *IEEE International Conference on Business Innovation and Technology Management Conference*.
- Strauss, A. and Corbin, J. (1990). Basics of Qualitative Research: Grounded Theory Procedures and Techniques, *Beverly Hills, CA: Sage Publications*.
- Patterson, P. G., & Spreng, R. A. (1997). Modeling the relationship between perceived value, satisfaction and repurchase intentions in a business-to-business, services context: *An empirical examination. International Journal of Service Industry Management*.