

## EXPLORING THE FOOD WASTE PRODUCED BY YOUTH: A CASE STUDY IN DKI JAKARTA

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### ABSTRACT

This study aims to explore food waste generated by young people with case studies in DKI Jakarta starting from planning and shopping for food, cooking food, storing and evaluating food, the types of food waste that usually arise up to the stage of processing food waste. This type of research is exploratory qualitative. Research data collection method is semi-structured in-depth interviews with the determination of informants using purposive sampling method. Based on the results of in-depth interviews, the average informant tends to have the potential to generate food waste at every stage starting from planning and shopping for food, cooking of food and storage and grading of food. In conclusion, there are still many young people who throw away food waste because they do not plan meals regularly and cook food in more portions, the food waste is on average not sorted and not processed before being disposed of. edible fruit peels and bread crusts as well as unavoidable food waste such as fish bones and fruit skins that cannot be consumed. In conclusion, there are still many young people who throw away food waste because they do not plan meals regularly and cook food in more portions, the food waste is on average not sorted and not processed before being disposed of. edible fruit peels and bread crusts as well as unavoidable food waste such as fish bones and fruit skins that cannot be consumed. In conclusion, there are still many young people who throw away food waste because they do not plan meals regularly and cook food in more portions, the food waste is on average not sorted and not processed before being disposed of.

**Keywords:** *young people, food waste, spontaneity*

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### INTRODUCTION

The world produces around 1.3 billion tonnes of food waste annually (Bellotti et al., 2018; Grandhi & Appaiah Singh, 2016). The composition of waste in Indonesia is dominated by food waste with an accumulation of around 12 million tonnes. Leftover food waste that is not processed can be a serious problem, especially for environmental health. Food waste that is disposed of carelessly can cause an unpleasant odor that invites disease-carrying vectors such as rats, cockroaches and so on to land and breed so that they can carry disease to humans who live in the vicinity (Hall et al., 2009). Community behavior towards food waste is very complex. However, usually, the source of food waste comes from leftover plates, spoilage due to poor planning, and overstock due to impulsive and reckless grocery shopping patterns (Lazell, 2016). Of all social groups, young people are predicted to easily generate food waste (Bravi et al., 2019; Secondi et al., 2015). There are various factors that encourage young people to dispose of leftover food waste more often, these factors include the higher spontaneity of young people, minimal food-management skills and consideration of economic factors and environmental awareness which tends to be low (Eurobarometer, 2014; Przezbórska-Skobiej & Wiza, 2021). In addition, young people who live independently tend to throw away food leftovers more often. This is because young people who live not with their parents or live alone will decide on food preferences up to the stage of managing the food waste that is produced

(Nikolaus et al., 2018). The main objective of this research is to find out the practices that cause food wastage among people who are still classified as young people (NEGARA, 2009).

**METHOD**

This research is exploratory qualitative research to understand how young people plan and shop for food, prepare food, store food, assess its eatability, and how dispose of food that is not consumed. This study was conducted in DKI Jakarta Province between November and December 2022. As a province with a high population density and population mobility and a high rate of food waste generation, DKI Jakarta Province needs to conduct exploratory research on food management practices for young people. Determination of informants was carried out by purposive sampling, namely informants who meet characteristics such as young people aged 16-30 years, single and live independently or do not live with their parents, are responsible for their own food consumption. The number of informants obtained in this study were 23 people. This study adopted a framework adapted from Schanes et al (2018).

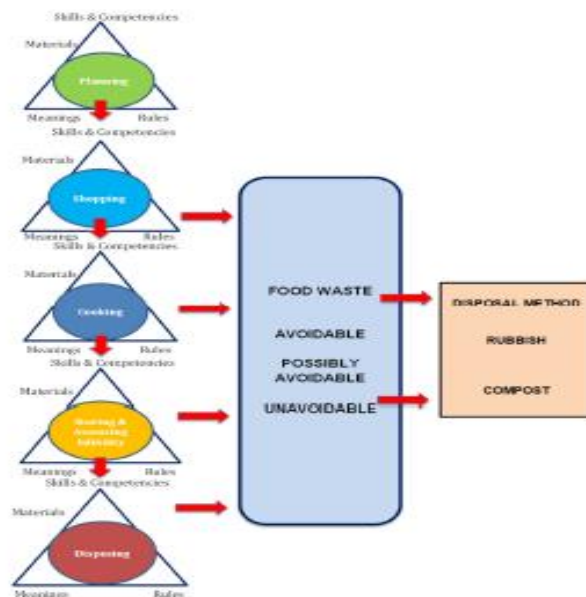


Figure 1. Conceptual framework for food waste waste practices

Data collection was carried out using a semi-structured interview method with the following questions:

**Table 1. Semi-structured interview questions**

How do you plan what you will eat? Often planned or more flexible?
In your opinion, does meal planning affect the food waste you produce?
When cooking, how is the portion of the food being cooked? As needed at the time or often too much?

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Food Management Practices	In your opinion, does cooking portions of food more affect the food waste you produce?
	How do you judge that the food you store is still suitable for consumption?
	In your opinion, does the assessment of your food and food storage affect the food waste you produce?
Types of food waste generated	How often do you throw away leftover food?
	What kind of food waste do you usually throw away?
Measures against food waste	Among the following methods, how do you treat the food waste (disposed of mixed with other waste, sorted before being disposed of, composted independently) or tell me if there is another method

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## **RESULTS AND DISCUSSION**

### **Food Planning and Shopping**

The results showed that 3 out of 23 informants planned their meals regularly, while 20 other informants were used to not planning their meals. The informant who planned his meals stated that he usually planned meals to be consumed once a week, "every Sunday I usually plan what I will eat in the next week because usually on Sunday mornings I go to the market or supermarket to shop for groceries and then store them so they don't go back and forth." -back" (A9). Other informants who routinely plan meals provide another reason that their food planning is carried out every day from morning to evening because it relates to a diet program, "meals must be arranged from breakfast, lunch, what to eat for dinner so that the diet program is achieved and not messy" (A2). In planning and shopping for food, the average informant made a shopping list on their respective smartphones according to the menu they had planned to buy. Meanwhile, informants who did not plan stated that they did not make food plans because they found it difficult, "it's complicated to make plans, so when you go home from college when you're hungry, you just go to the warteg, that night what's in the fridge to cook" (A22), another informant who didn't plan food said that they don't plan meals regularly, tend to be more flexible "if planning is very rare, at least if I remember what to buy at the supermarket it's cooked but if I make regular plans, I don't like it" (A16). With regard to the effect of food planning practices on the generation of food waste, the informant who did the planning stated that the food planning he did had an effect on the food waste generated, the informant tended to throw away food waste less because all the food was consumed, "I almost never throw away food, maybe because it is planned what to cook so no food is wasted. All of them are cooked on average" (A9). Meanwhile, one of the informants who did not do food

planning said that it was quite often to throw away leftover food because the amount of food was sometimes excessive so that it was not consumed, "Well, usually what is thrown away is the leftovers in the refrigerator, because they are not used.

### **Cooking food**

The results showed that all informants often cooked on average. With regard to cooking portions, 16 out of 23 informants tend to often cook more than what is needed to be eaten after cooking. The informant who cooked in larger portions said that he often cooked more so that the food could be eaten at once in several times "In the morning it is usually cooked for one day, if possible until the next morning dry dishes such as tempeh orek or fried ones are made" (A11). While the informant who cooked not in more portions said that cooking was enough to eat at that time to maintain the taste and freshness of the food "rarely do not even ever cook more, definitely cook at that time to be eaten right away so that the taste of the food does not change and is still fresh" (A7). Informants who cooked in larger portions said they tended to throw away leftover food as a result of spoiled food due to excess, "it happens almost often, it's mostly rice. Because the rice is plugged in the rice cooker, the hope is that it can eat up to 1-2 days, but sometimes when you come home from campus, the rice you forget to plug in is stale. That's how it usually is" (A7).

### **Assessment of Stored Food**

The results showed that on average all informants carried out the necessary food stocks in a few days. Informants' ways of assessing food ingredients that are still suitable for consumption tend to vary. One informant said that the assessment of food that was still suitable for consumption was based on the characteristics of food ingredients such as smell and color, this applies to food ingredients such as fish, vegetables or other wet food ingredients, "smell the smell, if the fish is no longer suitable, usually the fishy taste is different." if you see the vegetables, if they are wilted, it means they are not fresh for cooking, if they are not like that, it means they can still be cooked" (A4). Another informant said, the assessment of food that is still suitable for consumption is seen from the expiration date, "usually for corned beef or frozen food, there must be an expiration date, right? Judging from there, if you keep it in the refrigerator for too long, but as long as it hasn't expired, it's still suitable for eating" (A11). Apart from that, other informants also said that food that is still suitable for consumption is food that has not changed in texture and color, "usually it happens in bread. If white bread is stored in a slightly damp place so that it has not expired suddenly it becomes moldy, if it's like that then it can't be consumed, doesn't that mean" (A9). One of the informants stated that the informant often felt confused about distinguishing the best before date and expiration date, so sometimes food ingredients that had just passed the best before date had been thrown away by the informant because they felt that the two dates were the same, "the confusion is usually the same best before date expired date. Usually, if you have corned beef, there is one,

### **Types of Food Leftovers Generated**

The results showed that all informants had disposed of leftover food waste, the only difference being the intensity of throwing it away. 17 out of 23 informants stated that they often disposed of food waste while the remaining 6 tended to be very rare. The categories of food

waste that are usually thrown away are food leftovers from excess portions that are stale and food stocks that have expired in the refrigerator. One informant said that to minimize food waste, the effort he made was as much as possible to prevent the food from being expired or spoiled, "I am most abstinent from wasting food so as much as possible nothing is wasted, vegetables even though the kale is a bit yellow for example, but as long as it's not rotten, I'll definitely cook it and it's proven to be safe" (A11). Food waste that is usually disposed of is divided into two types of food waste, namely the Avoidable Food Waste category or food waste that can be avoided such as rice, foods that can be eaten but are not liked such as the edges of bread and edible fruit skins such as apple peels, other categories. is Unavoidable Food Waste or food waste that cannot be avoided such as fish bones, inedible fruit skins, onion skins. Of all the types of food waste generated, the majority is Avoidable Food Waste, namely wasted rice. edible but disliked foods such as bread crusts and edible fruit skins such as apple skins, another category is Unavoidable Food Waste or food waste that cannot be avoided such as fish bones, inedible fruit skins, onion skins. Of all the types of food waste generated, the majority is Avoidable Food Waste, namely wasted rice. edible but disliked foods such as bread crusts and edible fruit skins such as apple skins, another category is Unavoidable Food Waste or food waste that cannot be avoided such as fish bones, inedible fruit skins, onion skins. Of all the types of food waste generated, the majority is Avoidable Food Waste, namely wasted rice.

### **Measures against Food Leftovers**

The results showed that as many as 15 informants threw away food waste without sorting or mixing it with other waste, 4 informants sorted food waste first before throwing it away and 4 informants did compost. Informants who disposed of food waste without sorting it or mixing it with other waste said that they did not have a special trash can for food waste, so food waste was usually thrown directly into the trash, "In the boarding house there is no special trash can for food waste, so all the waste is mixed become one" (A12). The informant who sorted food waste before disposing of it said that in the neighborhood where they live there is a composting machine so the task of the residents living in the complex is only to sort food waste. "At Mr. RT's house there is a compost bin that PKK women usually work on, so we only need to set aside food leftovers at each other's homes, they will process them later" (A1). The informant who made the compost said that there was an extracurricular program on campus that taught how to make compost from food waste, besides that the informant was increasingly motivated to make compost from food waste because there were plants in the informant's residence that needed fertilizer, "I have some flower plants and The results of fertilizer from food waste besides being cheap are also very useful. I got a composting lesson from campus, coincidentally BEM had a program so I joined it" (A3). The informant who made the compost said that there was an extracurricular program on campus that taught how to make compost from food waste, besides that the informant was increasingly motivated to make compost from food waste because there were plants in the informant's residence that needed fertilizer, "I have some flower plants and The results of fertilizer from food waste besides being cheap are also very useful. I got a composting lesson from campus, coincidentally BEM had a program so I joined it" (A3). The informant who made the compost said that there was an extracurricular program on campus that taught how to make compost from food waste, besides that the informant was increasingly motivated to make compost from food waste because there were plants in the

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## **DISCUSSION**

This study found that several practice errors in food management were factors causing food waste to be generated among young people. The results of the research from food planning practices show that only a small proportion of the informants who carry out food planning and the informants who carry out food planning on average succeed in minimizing food waste while the group of informants who do not carry out food planning tends to produce food waste due to the presence of food ingredients that are not consumed and eventually damaged because they do not know what it will be processed into. This result is in line with a study in Italy which showed that young people who do not plan their grocery shopping tend to generate the greater waste generation of food waste, this is because, without a shopping list, shopping patterns tend to be more impulsive so that many groceries are ultimately purchased not out of necessity but out of desire (di Talia et al., 2019). In addition, another study in Spain showed that implementing a shopping list initiated by the youth movement was able to minimize the generation of food waste by 28% in the City of Murcia, the movement was then able to reduce environmental problems, namely leptospirosis disease which is believed to be caused by rats that often roam around unmanaged food waste (Mondéjar-Jiménez et al., 2016), this research is in line with the results of this study which showed that informants who routinely make food plans tend to minimize food waste because the food ingredients purchased are consumed. shopping patterns tend to be more impulsive so many groceries are ultimately purchased not because of need but because of desire. In addition, another study in Spain showed that implementing a shopping list initiated by the youth movement was able to minimize the generation of food waste by 28% in the City of Murcia, the movement was then able to reduce environmental problems, namely leptospirosis disease which is believed to be caused by rats that often roam around unmanaged food waste, this research is in line with the results of this study which showed that informants who routinely make food plans tend to minimize food waste because the food ingredients purchased are consumed.

With regard to the assessment of stored food, the informant revealed that the mistake of distinguishing between the best before date and the expiration date causes food that is still

suitable for consumption to be wasted. The results of this study are in line with research conducted in England that consumers who are able to distinguish the best before date and expired date tend to be able to minimize mistakes in disposing of food waste compared to consumers who cannot distinguish between the two dates (van der Werf et al., 2019). In addition, Norway was able to get out of the problem of food waste because it made it easier for consumers to understand the difference between the best-before date and the expiration date.

The majority of informants often cook excess portions when cooking. Informants who cooked excess portions also revealed that the intensity of throwing away leftovers was more frequent as a result of the practice of disposing of excess leftovers. This is in line with research which shows that the more the portion of food cooked exceeds the need to eat, the more food waste there will be, due to the psychological tendency of humans, most of whom get bored quickly with something (Cappellini, 2009).

With regards to the composition of the waste, the majority of the food waste produced is avoidable *food waste such* as rice, namely food that can be avoided to be wasted. *Ariseavoidable food waste* This tends to occur due to excess portions in cooking food. Unfortunately, the majority of informants tend to dispose of food waste by mixing it with other types of waste. The reason is that there is no special trash can for leftover food waste in the informant's environment. This is in line with research which shows that the availability of material infrastructure ranging from special waste bins, to proper sorting and recycling of food waste will support good food waste management practices (Bernard & Bernard, 2013; Schouten et al., 2014).

## **CONCLUSION**

The majority of young people still practice the wrong management of food waste which then results in the generation of food waste. On average, young people who do not carry out meal planning tend to throw away food waste as a result of unplanned purchased food ingredients that are ultimately not consumed. Then, on average, young people experience food judgment errors when differentiating the best-before date and expired date so that food that is still fit to eat because it has just passed the best-before date is discarded because it is considered expired. In addition, on average, young people who cook food excessively tend to throw away leftover food waste because the food consumed is stale because it is not consumed. On average, young people throw away avoidable food waste such as rice, this type of food waste arises due to excess portions during the cooking process. The majority of young people dispose of leftover food waste without sorting it out with other types of waste, the reason is that there is no supporting material infrastructure such as special trash cans for food waste or compost bins.

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