FOOD IMPULSIVE BUYING AND PERSONAL NORMS AS PREDICTORS ON FOOD-WASTING BEHAVIOR IN ADOLESCENTS IN MAKASSAR CITY, INDONESIA

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Abstract

Food-wasting behavior can occur when someone does not finish the food they have taken. It can also be seen in purchasing or taking more food than they can consume. Food-impulsive behavior and personal norms are assumed to predict food-wasting behavior, and this study aims to prove this assumption. Personal norms reflect an individual's personal value system in specific situations that can influence specific behaviors, while food impulsive behavior refers to consumers' tendency to buy impulsively, without reflection, immediately, and impulsively. This research was conducted in Makassar City on 150 adolescents aged 12 to 19 years old, and the data were analyzed using multiple linear regression. This study provides three findings. First, food-impulsive behavior and personal norms together can predict food wasting by 32.5% ($p=0.000$; $p<0.05$). Second, food-impulsive behavior positively predicts food-wasting behavior by 11% ($p=0.000$; $p<0.05$), indicating that the higher someone's food-impulsive behavior, the higher their food-wasting behavior. Third, personal norms can negatively predict food-wasting behavior by 21.5% ($p=0.000$; $p<0.05$), indicating that the higher someone's personal norms, the lower their food-wasting behavior.

Keywords: Food-Impulsive Buying, Personal Norms, Food-Wasting Behavior

1. Introduction

Waste is the result of human daily activities in order to meet their needs. Like other countries in the world, waste is also a problem in cities in Indonesia, including Makassar City. The uncontrolled dumping of waste holds the capacity to impair natural environments, which may subsequently undermine human welfare (Hasbiah, 2015; Lumbo, 2017; Nurhayati & Burhanto, 2023). The National Waste Management Information System of the Ministry of Environment and Forestry, states that waste accumulation in Indonesia reaches more than 20 million tons/per year, with the managed waste of 65.98% and unmanaged waste reaching 34.02%, and the most dominant type of waste namely food waste of 41.4% of the total composition of existing waste, (SIPSN, 2023).

Because waste is the impact of human activities, an increase or decrease in the volume of waste is closely related to human behavior. Food waste is the result of the loss of food at the stage of consumption by humans, which is referred to as food waste, (Mondéjar-Jiménez et al., 2016), and

also when consumers throw away food due to excessive purchases, (Tsai et al., 2020). Food-wasting behavior is also a term that is often encountered, which can be interpreted as a condition where individuals buy or take food beyond their ability to consume these foods. Food-wasting behavior has a negative impact on the environment, among others reported (FAO, 2014; FAO UN, 2013; *Food Wastage Footprint Full-Cost Accounting*, 2014; Qian et al., 2020), that food-wasting carried out during the Covid-19 pandemic caused the accumulation of household waste, with fruit and vegetables being the food that was most often disposed of and became waste.

Food waste in Indonesia has the highest percentage compared to other waste compositions as reported by SIPSN in 2022. This is in line with the 2021 United Nations Environment Program (UNEP) report which states that in 2019, as many as 931 million tons of food or about 17% is waste and contributes 10% to the greenhouse effect. Efforts to reduce the volume of food waste continue to be encouraged by making it one of the issues in the sustainable development goals in the responsible consumption and production section, which at point 12.3 aims to halve global food waste per capita at the retail and consumer levels by 2030. In Makassar City, where this research was conducted, there were around 32% of students in Makassar City who had a high littering behavior (Datu et al., 2022), it is possible that the waste they dispose of is food waste.

There are several factors that cause behavior (Hagger, 2019; Papalia et al., 2009), include food-wasting behavior, including differences in per capita income or economic levels (UNEP, 2021), awareness (Grandhi & Appaiah Singh, 2016; Rachman et al., 2015), moral judgment (Misiak et al., 2020), human consumption (Cooreman-Algoed et al., 2021; Jones-Garcia et al., 2022), knowledge and attitude (Rachman, 2017). One of the things in human consumption that is assumed to affect food-wasting behavior is food impulsive buying. Likewise, moral judgments are related to individual personal norms that determine the realization of a behavior.

This study aims to look at the influence of personal norms and food impulsive buying on food-wasting behavior. Personal norms are interpreted as a reflection of personal value systems in certain situations (Klöckner, 2013), and can also be interpreted as individual beliefs that can be used as personal standards for evaluating behavior (Onwezen et al., 2013), as well as While food impulsive buying is a consumer tendency to buy spontaneously,non-reflectively, immediately, and kinetically, (Rook & Fisher, 1995). Personal norms are discussed in the Norm Activation Model (NAM) theory to explain how behavior occurs, (Abrahamse, 2019; Caldeira et al., 2019; Cederberg & Sonesson, 2011). According to the Norm Activation Model theory, in influencing behavior, personal norms are influenced by awareness of consequences, ascription of responsibility, subjective norms, and perceived behavioral control. There are many behaviors that can be predicted by personal norms, including pro-environmental behavior (De Groot et al., 2021), and conversational behavior (Niemiec et al., 2020).

Impulse purchases are related when consumers buy without careful evaluation of the product, (Handgraaf et al., 2017; Tsai et al., 2020). A survey result in 2018 in the USA conducted by OnePoll (*Food Tops List of Impulse Purchases, These Unplanned Buys Cut across Generations*, 2018) stated that 71% of adults buy food and groceries unplanned. As many as 21% of respondents admitted buying for impulsive reasons. Parents and partners are shopping friends who most influence the environmental awareness (Rachman et al., 2015), include the impulsive shopping (Chen et al., 2021).

2. Method

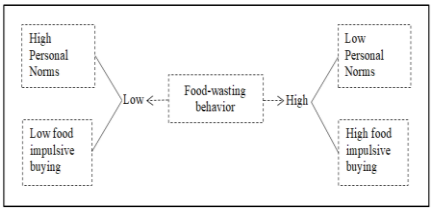

Fig. 1. Research Framewor

Food-wasting behavior is a condition where individuals buy or take food beyond their ability to consume these foods. It is suspected that the varying levels of food-wasting behavior are due to variations in personal norms and food impulse buying that one has. There are 3 hypotheses to be proven in this study, *first*, personal norms and impulsive food buying together can predict food-wasting behavior. *Second*, personal norms can predict food-wasting behavior negatively; the higher the personal norms, the lower the food-wasting behavior, and vice versa. *Third*, food impulsive buying can positively predict food-wasting behavior; the higher the impulsive food buying, the higher the food-wasting behavior, and vice versa.

The research was conducted in Makassar City, Indonesia with 150 respondents aged 12 to 19 years. Data were analyzed using multiple linear regression (Garson, 2016) which was analyzed in SPSS software. Data is taken using a measurement scale to measure personal norms, food-impulsive buying, and food-wasting behavior.

The following research model will be analyzed, in which food-wasting behavior becomes a criterion variable from 2 predictor variables, namely personal norms and food-impulsive buying.

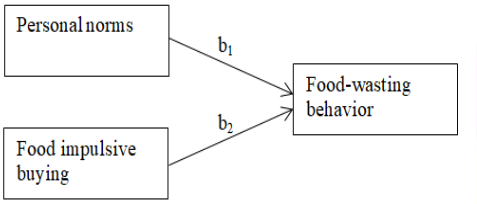

Fig. 2. Research Model

3. Result and Discussion

The results of the analysis will present descriptive of respondents, descriptive statistics of the three variables (food-wasting behavior, personal norms, and food-impulsive buying), a summary model of the influence of personal norms and food-impulsive buying on food-wasting behavior, and a regression equation that can be formed from these models.

1. Respondents

Table 1. Respondents

		Jumlah	
Gender	Male	50	150
	Female	100	
Level of education	Junior High School	66	150
	Senior High School	84	

2. Descriptive analysis

Data were analyzed descriptively to describe the level of food-wasting behavior, personal norms, and food-impulsive buying.

Table 2. Descriptive Statistics

	Mean	Std. Deviation	N
Food-wasting behavior	18.820	8.528	150
Personal norms	43.067	4.510	150
Food-impulsive buying	23.733	8.646	150

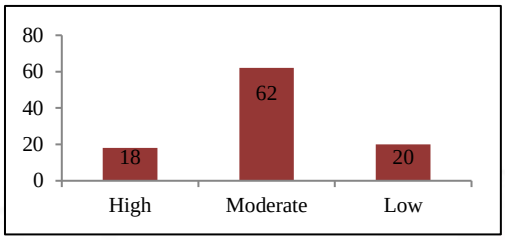

Fig. 3. Percentage Level of Personal Norms

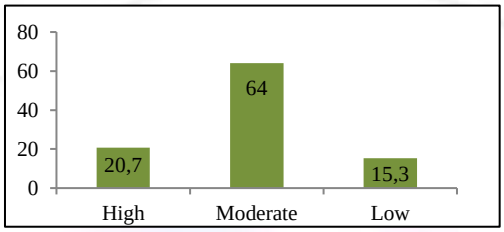

Fig. 4. Percentage Level of Food-Impulsive Buying

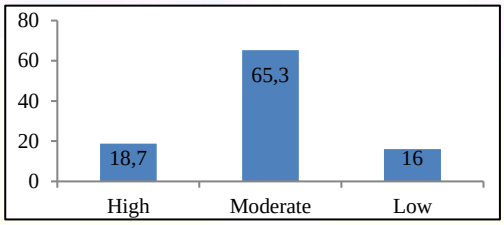

Fig. 5. Percentage Level of Food-Wasting Behavior

The results of the descriptive analysis show that the majority of respondents are at a moderate level for personal norms (65.3%), food impulsive buying (62%), and food-wasting behavior (64%). These findings indicate that there are variations in the levels of personal norms, food-impulsive buying, and food-wasting behavior which are distributed into high, medium, and low categories. This finding is in line with the findings of (Datu et al., 2022) in their research located in Makassar City. In that study, it was found that personal norms also varied with the moderate majority category. There are several factors that influence the variation in personal norms, including social norms, bio-altruistic values, egoistic value orientations (Kim & Seock, 2019), self-transcendence (Nordlund & Garvill, 2003) morals, justice, and authority (Jansson & Dorrepaal, 2015).

Food-impulsive buying also varies in the findings of this study. Several factors can influence the variation in food-impulsive buying, including reference groups, social factors, and extraversion (Su & Lu, 2018). In online purchases, impulsive buying is influenced by websites, marketing, and product variations (Karim et al., 2021). Variations in food-wasting behavior were also found in this study. Factors that can influence variations in food-wasting behavior include normative, habitual, intentional, and situational factors (You et al., 2020), culture (Pelau et al., 2020), and the presence of cultural differences in viewing morality as a factor influencing wasting food (Misiak et al., 2018).

3. The influence of personal norms and food impulsive buying on food-wasting behavior

The following is a summary model of the influence of personal norms and food-impulsive buying together on food-wasting behavior:

Table 3. Results of analysis of the influence of personal norms and food-impulsive buying together on food-wasting behavior

Variable	R^2*	Cont.	F**	Sig. F***
Personal norms and food-impulsive buying on food-wasting buying	0.325	32.5%	35.343	0.000

Note. *R Square= Determinant coefficient; **F= The value of the regression coefficient test by stimulant; ***Sig. F= Significance value of F, p<0.05

Based on the analysis of the influence of personal norms and food-impulsive buying together on food-wasting behavior, an R square value of 0.325 is obtained. These results indicate that the contribution given by personal norms along with food-impulsive buying to food-wasting behavior is 32.5%. The size of this contribution is significant at the 5% significance level (p=0.000; p<0.05). Thus the first hypothesis which states that personal norms and food-impulsive buying together can predict food-wasting behavior, is accepted. Furthermore, the 32.5% contribution will be analyzed, and how much contribution each has for personal norms and food-wasting behavior.

4. *The influence of personal norms on food-wasting behavior*

Variable	R^2*	Contr.	F**	Sig. F***	b****
Personal norms on food-wasting behavior	0.110	11%	18.252	0.000	-0.523

Table 4. Results of analysis of the influence of personal norms on food-wasting behavior
Note. *R Square= Determinant coefficient; **F= The value of the regression coefficient test by stimulant; ***Sig. F= Significance value of F, p<0.05; ****b=Coefficient of regression

Based on the analysis of the influence of personal norms on food-wasting behavior, an R square value of 0.110 is obtained, which means that the contribution of personal norms to food-wasting behavior is 11%. The size of this contribution is significant at the 5% significance level (p *The influence of personal norms on food-wasting behavior* =0.000; p<0.05), and the value of the effect coefficient (b) is -0.523. Thus the second hypothesis which states that personal norms can negatively predict food-wasting behavior, is accepted. These results indicate that the higher the personal norms, the lower the level of food-wasting behavior, and vice versa.

This research was conducted on adolescents aged 12 to 19 years, and these findings are in line with findings where personal norms can predict the intention to perform or not perform a behavior, in adults. As reported in the study of (Obuobi et al., 2023) that personal norms can increase the intention to reduce food waste. Personal norms can predict behavior both negatively and positively, among other things because they can be associated with moral obligations which can be a motivation for carrying out a behavior (Tomasello, 2020), Moral obligation gives an individual a feeling of discomfort when doing something that is contrary to something that is not in line with the morality he holds, including in the case of food-wasting behavior. Individuals with a moral obligation regarding food-wasting behavior will tend to be people who care about environmental issues, such as hunger. Thus they will increase their intention not to engage in food-wasting behavior, by trying to avoid food-wasting behavior.

Social norms internalized in personal norms affect behavior both directly and indirectly (Kim & Seock, 2019). Individuals tend to have the urge to follow the behavioral tendencies of their social groups to be accepted in the group. So when social groups tend to do food-wasting behavior, individuals will tend to do the same thing, and vice versa

In the Norm Activation Model (NAM) theory, personal norms can influence behavior because personality will be high if a person is also high in awareness of consequences, ascription of responsibility, subjective norms, and perceived behavioral control. Individuals with high personal norms will also have a high sense of responsibility for their actions and decisions, including in terms of tending to avoid food-wasting behavior. Individuals will also tend to have an awareness of the consequences of the decisions they take or the behavior they show. Including awareness of the consequences that will occur to the environment when food-wasting behavior is carried out.

5. The influence of food impulsive buying on food-wasting behavior

Variable	R^2*	Contr.	F**	Sig. F***	b****
Food-impulsive buying on food-wasting behavior	0.215	21.5%	46.787	0.000	0.461

Table 5. Results of analysis of the influence of food-impulsive buying on food-wasting behavior

Note. *R Square= Determinant coefficient; **F= The value of the regression coefficient test by stimulant; ***Sig. F= Significance value of F, p<0.05; ****b=Coefficient of regression

Based on the results of the analysis of the effect of food-impulsive buying on food-wasting behavior, an R square value of 0.215 is obtained, which means that the contribution of food-impulsive buying to food-wasting behavior is 21.5%. This contribution is significant at the 5% significance level (p=0.000; p<0.05), and the value of the regression coefficient (b) is 0.461. Thus the third hypothesis which states that food-impulsive buying can positively predict food-wasting behavior is accepted. These results indicate that the higher the food impulsive buying, the higher the person's food-wasting behavior, and vice versa.

Extroversion and neuroticism in personality, negative emotions, collectivism in culture, and cognitive and affective factors of impulsive buying tendencies were found to be positively correlated with impulsive buying behavior, whereas self-control showed a negative impact on impulsive buying behavior (Wang et al., 2022). Impulse purchases occur without careful consideration regarding consumption needs that can be consumed so individuals tend to lose control over the amount of food purchased. For example, they buy too much food, when the food has a short expiration date and is stale, so that in the end the food will be thrown away. (Iyer et al., 2020), in his research stated that self-control is a mediator of traits, motives, resources, and marketing toward impulsive buying.

6. The equation of the linear regression

The multiple regression equation for 2 predictors and one criterion is, $Y = a + b_1X_1 + b_2X_2$. Thus the regression equation:

$Y = a + b_1X_1 + b_2X_2$
Food-wasting behavior = 29.990 + (-0.523)*personal norms
+ 0.461*food impulsive buying
Food-wasting behavior = 29.990 - 0.523*personal norms
+ 0.461*food impulsive buying

Fig. 6. The Multiple Regression Equation

4. Conclusion

From this study, we can conclude that both personal norms and food-impulsive buying can predict food-wasting behavior. It's just that personal norms affect negatively, the higher the personal

norms a person has, the smaller the opportunity to engage in food-wasting behavior. While food-impulsive buying has a positive effect on food-wasting behavior, that the higher a person's food impulsive buying, the higher the food-wasting behavior he does. The implication of the results of this study is that knowing that personal norms and food-impulsive buying can influence food-wasting behavior significantly, it can be traced how personal norms and food-impulsive buying influence food-wasting behavior. Thus the research results also provide us with factors that need to be intervened to increase personal norms and to reduce food-impulsive behavior.

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6. References

Abrahamse, W. (2019). Understanding the Drivers of Human Behaviour. In *Encouraging Pro-Environmental Behaviour* (pp. 11–25). Elsevier. https://doi.org/10.1016/B978-0-12-811359-2.00002-0

Caldeira, C., De Laurentiis, V., & Sala, S. (2019). *Assessment of food waste prevention actions: Development of an evaluation framework to assess performance of food waste prevention actions*. Publications Office of the European Union. https://food.ec.europa.eu/system/files/2019-12/fs_eu-actions_eu-platform_jrc-assess-fw.pdf

Cederberg, C., & Sonesson, U. (2011). *Global food losses and food waste: Extent, causes and prevention; study conducted for the International Congress Save Food! at Interpack 2011, [16 - 17 May], Düsseldorf, Germany* (J. Gustavsson, Ed.). International Congress Save Food!, Rome. Food and Agriculture Organization of the United Nations. https://www.fao.org/3/i2697e/i2697e.pdf

Chen, X., Kassas, B., & Gao, Z. (2021). Impulsive purchasing in grocery shopping: Do the shopping companions matter? *Journal of Retailing and Consumer Services*, *60*, 102495. https://doi.org/10.1016/j.jretconser.2021.102495

Cooreman-Algoed, M., Minnens, F., Boone, L., Botterman, K., Taelman, S. E., Verbeke, W., Devleesschauwer, B., Hung, Y., & Dewulf, J. (2021). Consumer and Food Product Determinants of Food Wasting: A Case Study on Chicken Meat. *Sustainability*, *13*(13), 7027. https://doi.org/10.3390/su13137027

Datu, S. S., Radde, H. A., & Sudirman, S. (2022). *Littering Behavior Ditinjau dari Theory Planned Behavior pada Mahasiswa di Kota Makassar*.

De Groot, J. I. M., Bondy, K., & Schuitema, G. (2021). Listen to others or yourself? The role of personal norms on the effectiveness of social norm interventions to change pro-environmental behavior. *Journal of Environmental Psychology*, *78*, 101688. https://doi.org/10.1016/j.jenvp.2021.101688

FAO (Ed.). (2014). *Mitigation of food wastage: Societal costs and benefits*. FAO.

FAO UN. (2013). *Food wastage footprint: Impacts on natural resources: summary report*. FAO. https://www.fao.org/3/i3347e/i3347e.pdf

Food Tops List of Impulse Purchases, These unplanned buys cut across generations. (2018). https://www.insiderintelligence.com/content/food-tops-list-of-impulse-purchases

Food wastage footprint full-cost accounting: Final report. (2014). Food Wastage Footprint.

Garson, G. D. (2016). *Partial Least Squares: Regression & Structural Equation Models*. Statistical Associates Publishing. https://www.smartpls.com/resources/ebook_on_pls-sem.pdf

Grandhi, B., & Appaiah Singh, J. (2016). What a Waste! A Study of Food Wastage Behavior in Singapore. *Journal of Food Products Marketing*, *22*(4), 471–485. https://doi.org/10.1080/10454446.2014.885863

Hagger, M. S. (2019). The Reasoned Action Approach and the Theories of Reasoned Action and Planned Behavior. In M. S. Hagger, *Psychology*. Oxford University Press. https://doi.org/10.1093/obo/9780199828340-0240

Handgraaf, M., Griffioen, A., Bolderdijk, J. W., & Thøgersen, J. (2017). Economic Psychology and Pro-Environmental Behaviour. In R. Ranyard (Ed.), *Economic Psychology* (1st ed., pp. 435–450). Wiley. https://doi.org/10.1002/9781118926352.ch27

Hasbiah, A. (2015). Analysis of Local Wisdom as Environmental Conservation Strategy in Indonesia. *Journal Sampurasun : Interdisciplinary Studies for Cultural Heritage*, *1*(1). https://doi.org/10.23969/sampurasun.v1i1.19

Iyer, G. R., Blut, M., Xiao, S. H., & Grewal, D. (2020). Impulse buying: A meta-analytic review. *Journal of the Academy of Marketing Science*, *48*(3), 384–404. https://doi.org/10.1007/s11747-019-00670-w

Jansson, J., & Dorrepaal, E. (2015). Personal Norms for Dealing with Climate Change: Results from a Survey Using Moral Foundations Theory. *Sustainable Development*, *23*(6), 381–395. https://doi.org/10.1002/sd.1598

Jones-Garcia, E., Bakalis, S., & Flintham, M. (2022). Consumer Behaviour and Food Waste: Understanding and Mitigating Waste with a Technology Probe. *Foods*, *11*(14), 2048. https://doi.org/10.3390/foods11142048

Karim, M. W., Chowdhury, M. A. M., Masud, M. A. A., & Arifuzzaman, Md. (2021). Analysis of Factors influencing Impulse Buying behavior towards e-tailing sites: An application of S-O-R model. *Contemporary Management Research*, *17*(2), 97–126. https://doi.org/10.7903/cmr.20457

Kim, S. H., & Seock, Y.-K. (2019). The roles of values and social norm on personal norms and proenvironmentally friendly apparel product purchasing behavior: The mediating role of personal norms. *Journal of Retailing and Consumer Services*, *51*, 83–90. https://doi.org/10.1016/j.jretconser.2019.05.023

Klöckner, C. A. (2013). A comprehensive model of the psychology of environmental behaviour—A meta-analysis. *Global Environmental Change*, *23*(5), 1028–1038. https://doi.org/10.1016/j.gloenvcha.2013.05.014

Lumbo, S. G. (2017). Enduring Climate Change And Food Insecurity Through Charcoal Production: A Poverty Coping Strategy Of Reluctantindigenous Women In The Philippines. *Journal Sampurasun : Interdisciplinary Studies for Cultural Heritage*, *3*(1), 33. https://doi.org/10.23969/sampurasun.v3i1.164

Misiak, M., Butovskaya, M., & Sorokowski, P. (2018). Ecology shapes moral judgments towards food-wasting behavior: Evidence from the Yali of West Papua, the Ngorongoro Maasai, and Poles. *Appetite*, *125*, 124–130. https://doi.org/10.1016/j.appet.2017.12.031

Misiak, M., Kruger, D., Kruger, J. S., & Sorokowski, P. (2020). Moral judgments of food wasting predict food wasting behavior. *British Food Journal*, *122*(11), 3547–3565. https://doi.org/10.1108/BFJ-07-2019-0576

Mondéjar-Jiménez, J.-A., Ferrari, G., Secondi, L., & Principato, L. (2016). From the table to waste: An exploratory study on behaviour towards food waste of Spanish and Italian youths. *Journal of Cleaner Production*, *138*, 8–18. https://doi.org/10.1016/j.jclepro.2016.06.018

Niemiec, R. M., Champine, V., Vaske, J. J., & Mertens, A. (2020). Does the Impact of Norms Vary by Type of Norm and Type of Conservation Behavior? A Meta-Analysis. *Society & Natural Resources*, *33*(8), 1024–1040. https://doi.org/10.1080/08941920.2020.1729912

Nordlund, A. M., & Garvill, J. (2003). Effects of values, problem awareness, and personal norm on willingness to reduce personal car use. *Journal of Environmental Psychology*, *23*(4), 339–347. https://doi.org/10.1016/S0272-4944(03)00037-9

Nurhayati, A., & Burhanto, G. (2023). THE OPENNESS OF ACCESS AND BEHAVIOR OF DISPOSING OF GARBAGE ON THE RIVERBANKS. *Journal Sampurasun : Interdisciplinary Studies for Cultural Heritage*, *9*(1), 21–32. https://doi.org/10.23969/sampurasun.v9i1.7054

Obuobi, B., Zhang, Y., Adu-Gyamfi, G., & Nketiah, E. (2023). Households' food waste behavior prediction from a moral perspective: A case of China. *Environment, Development and Sustainability*. https://doi.org/10.1007/s10668-023-03136-w

Onwezen, M. C., Antonides, G., & Bartels, J. (2013). The Norm Activation Model: An exploration of the functions of anticipated pride and guilt in pro-environmental behaviour. *Journal of Economic Psychology*, *39*, 141–153. https://doi.org/10.1016/j.joep.2013.07.005

Papalia, D. E., Olds, S. W., & Feldman, R. D. (2009). *Human development* (Eleventh edition). McGraw-Hill.

Pelau, C., Sarbu, R., & Serban, D. (2020). Cultural Influences on Fruit and Vegetable Food-Wasting Behavior in the European Union. *Sustainability*, *12*(22), 9685. https://doi.org/10.3390/su12229685

Qian, K., Javadi, F., & Hiramatsu, M. (2020). Influence of the COVID-19 Pandemic on Household Food Waste Behavior in Japan. *Sustainability*, *12*(23), 9942. https://doi.org/10.3390/su12239942

Rachman, I. (2017). EFFECT OF ENVIRONMENTAL EDUCATION WORKSHOP ON THE KNOWLEDGE, ATTITUDE, AND BEHAVIOR CHANGES OF THE STUDENT OF ELEMENTARY SCHOOL -STUDY CASE IN LEBAK SILIWANGI – BANDUNG, INDONESIA -. *Journal Sampurasun : Interdisciplinary Studies for Cultural Heritage*, *2*(2), 132. https://doi.org/10.23969/sampurasun.v2i2.171

Rachman, I., Toru, M., & Yustiani, Y. M. (2015). Influence of Parent's Behavior to the Children Awareness on the Environmental Preservation. *Journal Sampurasun : Interdisciplinary Studies for Cultural Heritage*, *1*(1). https://doi.org/10.23969/sampurasun.v1i1.22

Rook, D. W., & Fisher, R. J. (1995). Normative Influences on Impulsive Buying Behavior. *Journal of Consumer Research*, *22*(3), 305–313.

SIPSN. (2023). *Komposisi Sampah* [Dataset]. https://sipsn.menlhk.go.id/sipsn/public/data/komposisi

Su, C., & Lu, P. (2018). A study of the factors influencing customers' impulse buying behavior in restaurants. *Advances in Hospitality and Tourism Research (AHTR)*, *6*(1), 47–67. https://doi.org/10.30519/ahtr.421377

Tomasello, M. (2020). The moral psychology of obligation. *Behavioral and Brain Sciences*, *43*, e56. https://doi.org/10.1017/S0140525X19001742

Tsai, W.-C., Chen, X., & Yang, C. (2020). Consumer Food Waste Behavior among Emerging Adults: Evidence from China. *Foods*, *9*(7), 961. https://doi.org/10.3390/foods9070961

UNEP. (2021). *Food Waste Index Report 2021* (Food Waste Index Report 2021). United Nations Environment Programme. https://www.unep.org/resources/report/unep-food-waste-index-report-2021

Wang, Y., Pan, J., Xu, Y., Luo, J., & Wu, Y. (2022). The Determinants of Impulsive Buying Behavior in Electronic Commerce. *Sustainability*, *14*(12), 7500. https://doi.org/10.3390/su14127500

You, F., Bhamra, T., & Lilley, D. (2020). Why Is Airline Food Always Dreadful? Analysis of Factors Influencing Passengers' Food Wasting Behaviour. *Sustainability*, *12*(20), 8571. https://doi.org/10.3390/su12208571