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The Effect of Facilitating Conditions on Recycling Intention on Le Minerale through Recycle Point with a Theory of Planned Behavior Approach (Study on Consumers of Le Minerale Jabodetabek)

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A R T I C L E I N F O

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A B S T R A C T

This research aims to analyze the influence of Facilitating Conditions, Attitude, Perceived Behavioral Control, and Subjective Norm on Recycling Intention among Le Minerale consumers in Jabodetabek through the Recycle Point program, using the Theory of Planned Behavior framework. This study employed a quantitative causal research design with purposive sampling techniques, involving 184 respondents residing in Jabodetabek. Primary data were collected using a structured questionnaire with Likert scales, analyzed with SmartPLS 4.0. The findings reveal that Facilitating Conditions significantly affect Recycling Intention, Subjective Norm and Attitude also significantly influence Recycling Intention, while Perceived Behavioral Control shows no significant impact. These results suggest that strengthening infrastructure and recycling facilities is essential to encourage sustainable consumer behavior in supporting circular economy programs.

INTRODUCTION

Currently, the problem of plastic waste is a serious issue in sustainable development that is in line with the 2030 Sustainable Development Goals (SDGs) agenda. Indonesia as one of the member countries of the United Nations is also committed to supporting the achievement of this global target. The concept of business sustainability has become an integral part of the company's strategy in various sectors, including the bottled water (bottled water industry). A number of companies recognize the importance of maintaining a balance between economic benefits, social care, and environmental sustainability. This is in line with Hindardjo's view, which emphasizes that sustainability strategies are not only social responsibility, but also opportunities for long-term growth. Thus, plastic waste management is a concrete step that needs to be implemented to achieve the SDGs goals, especially in the aspect of a healthy, safe, and conservation-oriented environment. (via et al., 2024)

Indonesia is one of the largest contributors of plastic waste in the world, ranking fifth with waste production reaching 65.2 million tons per year. Most of this plastic waste ends up in landfills, while some of it goes into the ocean and exacerbates environmental pollution. This data shows that the high consumption pattern of plastic products, especially bottled drinking water, has a significant contribution to the waste problem. emphasized that if there are no strategic steps in reducing the use of single-use plastics, then the threat to the environment in Indonesia will be even more serious. (Permata et al., 2024)

In addition to increasing consumption, another phenomenon that triggers environmental problems is the preference of households in Indonesia for the use of bottled drinking water. BPS data (2023) shows that around 40.64% of households use refillable water or branded bottled water as their main source of drinking water, while only 8.92% still use tap water. This shows that people's dependence on bottled water is getting bigger. Le Minerale as one of the main players in the bottled water industry in Indonesia has managed to attract the attention of consumers with product innovations, including easily recyclable PET bottles and single-use gallons. This product is produced by PT Tirta Fresindo Jaya which is part of PT Mayora Indah Tbk.

This is a serious challenge in waste management policies in Indonesia, because when people are trying to reduce waste, certain product innovations actually increase the environmental burden. Therefore, the Recycle Point program launched by Le Minerale is important as a solution to balance consumer needs with environmental sustainability commitments. Recycle Point is a strategy adopted by Le Minerale to support the National Circular Economy Movement. This program invites consumers to return waste PET bottles and single-use gallons to the collection point that has been provided. Consumers can even take advantage of the garbage pick-up service in collaboration with Le Minerale's partners. Data from recyclepointleminerale.com shows that these collection points are spread across various areas of Greater Jakarta.

The Indonesian Waste Entrepreneurs Association (APSI) said that single-use PET packaging, including Le Minerale gallons, has the potential to be recycled effectively. In addition to supporting waste reduction, this packaging

recycling also provides economic value for small communities engaged in the waste management sector. With the support of adequate facilities and infrastructure, the community's intention to recycle (recycling intention) can increase. This is in accordance with the concept of Facilitating Conditions in the Unified Theory of Acceptance and Use of Technology (UTAUT) which emphasizes the importance of facility support in encouraging certain behaviors.

Previous research has shown that recycling intention can be influenced by various factors, such as attitude, subjective norms, perceived behavioral control, and facilitating conditions. affirming that an individual's positive attitude towards the environment can increase the intention to recycle. Meanwhile, research found that facilitating conditions play an important role in supporting the intention to use internet-based recycling applications. Thus, this study places Facilitating Conditions as the main variable to understand the behavior of Le Minerale consumers in Greater Jakarta in utilizing Recycle Points. (Aerospace, 2013)

Based on this background, this study aims to analyze the influence of Facilitating Conditions on the Recycling Intention of Le Minerale consumers in Greater Jakarta through Recycle Point with the Theory of Planned Behavior approach. This research is expected to make a theoretical contribution in enriching the literature on consumer behavior related to recycling, as well as providing practical benefits for companies in developing more effective sustainability strategies. In addition, the results of this study are expected to support the government in achieving the target of reducing plastic waste as stated in the 2030 SDGs agenda.

LITERATURE REVIEW

Sustainable Development Goals (SDGs)

Sustainable development is a global principle to achieve a balance between human development and environmental sustainability. The United Nations has formulated the Sustainable Development Goals (SDGs) that are on the world agenda until 2030, with a primary focus on the human, planetary, peace, prosperity, and partnership aspects. Environmental problems, especially plastic waste, are a major challenge disrupting the global ecosystem. The Paris Agreement underscores the importance of collective efforts to reduce greenhouse gas emissions that are closely related to the problem of plastic waste. adding that global plastic production has reached 360 million tons per year, with 79% ending up in the natural environment without adequate recycling. This makes plastic management an important factor in supporting the SDGs, especially Goal 12 on sustainable consumption and production patterns. (Aziz & Najicha, 2024) (Harsono , 2023)

Green Marketing

Increasing consumer awareness of the environment encourages companies to implement green marketing as a marketing strategy that emphasizes environmentally friendly products. Explains that green marketing not only builds the company's image, but also strengthens relationships with

consumers who are increasingly concerned about sustainability issues. Define green marketing as the process of identifying consumers who are aware of environmental conservation, and are willing to choose products that minimize environmental damage. Green marketing includes environmental knowledge, green products, green costs, and green promotions that influence consumer purchasing decisions. Thus, an environment-based marketing strategy is not just an image, but a strategic opportunity to create new habits of consumers who are more concerned about nature conservation. (Saefurrahman & Nizhamuddin, 2024) (Taali & Maduwinarti, 2024)

Theory of Planned Behavior (TPB)

The Theory of Planned Behavior (TPB) was developed by Ajzen & Fishbein (1980) as an improvement of the Theory of Reasoned Action by adding the construct of Perceived Behavioral Control. According to , TPB explains that a person's behavior is determined by behavioral intention, which is influenced by attitude toward behavior, subjective norms, and perceived behavioral control. The SDGs are relevant in explaining ecological behavior, as individual internal and external factors can influence their decision to recycle. Khoiruma & Harsono (2023) call the SDGs one of the most effective theories in predicting human behavior related to the environment. Thus, TPB is the main theoretical framework in this study, because it is able to measure the influence of psychological variables on consumers' recycling intentions. (Iskandar & Saragih, 2018)

Attitude

Attitude or attitude is defined as an evaluation of a person's emotional evaluation, beliefs, and behavioral tendencies towards an object or idea. mentioning that attitudes can be positive or negative, depending on the individual's knowledge and experience. Nurcholidah & Harsono (2021) added that attitudes are views or feelings that affect a person's tendency to act towards certain objects. In the context of recycling, a positive attitude towards the environment will encourage individuals to be more intentional in environmentally friendly behavior. The indicators used in this study refer to Wan et al. (2021), among others: "recycling is good, useful, useful, responsible, and reasonable." (Suharyat, 2009)

Perceived Behavioral Control (PBC)

Perceived Behavioral Control refers to a person's perception of the ease or difficulty of performing a behavior. Nu'man & Noviati (2021) stated that PBC reflects past experiences as well as anticipation of obstacles that may be faced. Cahyani & Firmialy (2022) assert that an individual's perception of control can determine how likely they are to act according to their intentions. PBC indicators according to Wan et al. (2021) include opportunities for recycling, ease of process, technical knowledge, time, and availability of space for recycling. In the context of this study, PBC is expected to explain how behavioral control affects the intention of Le Minerale consumers in utilizing Recycle Points.

Subjective Norm

Subjective norms are the extent to which a person is motivated to follow the views of others who are considered important in their lives. Achadi et al. (2022) say that subjective norms are formed from social beliefs that affect a person's intentions. Simanihuruk et al. (2022) added that subjective norms are a reflection of the extent to which individuals are willing to follow the opinions of their social groups. In the context of recycling, the support of family, friends, or the social environment can increase a person's tendency to participate. The indicator of subjective norms used in this study is the approval and support of important people around consumers for recycling activities.

Facilitating Conditions

According to Ambarwati et al. (2021), facilitating conditions is the extent to which a person believes that organizational and technical infrastructure can support a behavior. Liu et al. (2022) emphasized that the existence of means such as smartphones, digital applications, or physical facilities has a significant effect on certain behavioral intentions. In the context of recycling, Sozoniuk et al. (2022) emphasize the importance of the availability of waste collection facilities, training, and technical support. In this study, the facilitating conditions variable is the main focus to assess how the support of the Le Minerale Recycle Point facility can encourage consumers to intend to recycle.

Recycling Intention

Recycling intention is defined as an individual's willingness to carry out used goods recycling activities. Wan et al. (2021) found that place attachment can influence pro-environmental behaviors, including recycling intentions. X. Zhang et al. (2021) add that understanding the specific benefits of recycling becomes an important factor in encouraging individuals to act. Sujata et al. (2021) also emphasized that the use of social media can strengthen recycling intentions. Thus, the recycling intention indicators in this study include participation in recycling activities, the use of social media to support recycling, choosing used plastic for shopping, and intending to buy products from recycled materials.

Hypotheses Development

Attitude and Recycling Intention

Attitude is a positive or negative evaluation of an individual towards a certain behavior. In the context of the Theory of Planned Behavior (TPB), a positive attitude towards the environment encourages individuals to intend to take environmentally friendly actions, such as recycling. Research by Wan et al. (2021) proves that attitudes have a significant effect on recycling intentions, where individuals who have a positive view of the benefits of recycling are more likely to do so. Sujata et al. (2021) also emphasized that attitudes play an important role in shaping pro-environmental behavior, In addition, according to Hanafiah (2025), attitude has a positive and significant effect on intention. Therefore, the first hypothesis is proposed:

H1: Attitude has a positive effect on Recycling Intention in Le Minerale consumers through Recycle Point.

Perceived Behavioral Control and Recycling Intention

Perceived Behavioral Control (PBC) is an individual's perception of the ease or difficulty of performing a behavior, which reflects past experiences and anticipated obstacles. According to Ajzen (1991), PBC influences a person's intention in acting. However, some studies show mixed results. Khan et al. (2021) found that PBC had a non-significant effect on recycling intentions, while Aselna (2024) showed the opposite, that PBC had a strong influence in the context of packaging waste management in Yogyakarta. Thus, this study re-examines the relationship in the context of Le Minerale.

H2: Perceived Behavioral Control has a positive effect on Recycling Intention in Le Minerale consumers through Recycle Point.

Subjective Norm and Recycling Intention

Subjective norms are an individual's beliefs about the extent to which important people in his or her life support or reject a behavior. In SDGs, subjective norms have an important role in encouraging a person to take certain social actions. Research by Sujata et al. (2021) shows that the support of family, friends, and the social environment has a significant effect on recycling intentions. This finding is strengthened by Mauliate & Dyah (2024) who explain that subjective norms are able to encourage consumer participation in reverse logistics. Therefore, a third hypothesis is proposed:

H3: Subjective Norm has a positive effect on Recycling Intention in Le Minerale consumers through Recycle Point.

Facilitating Conditions and Recycling Intention

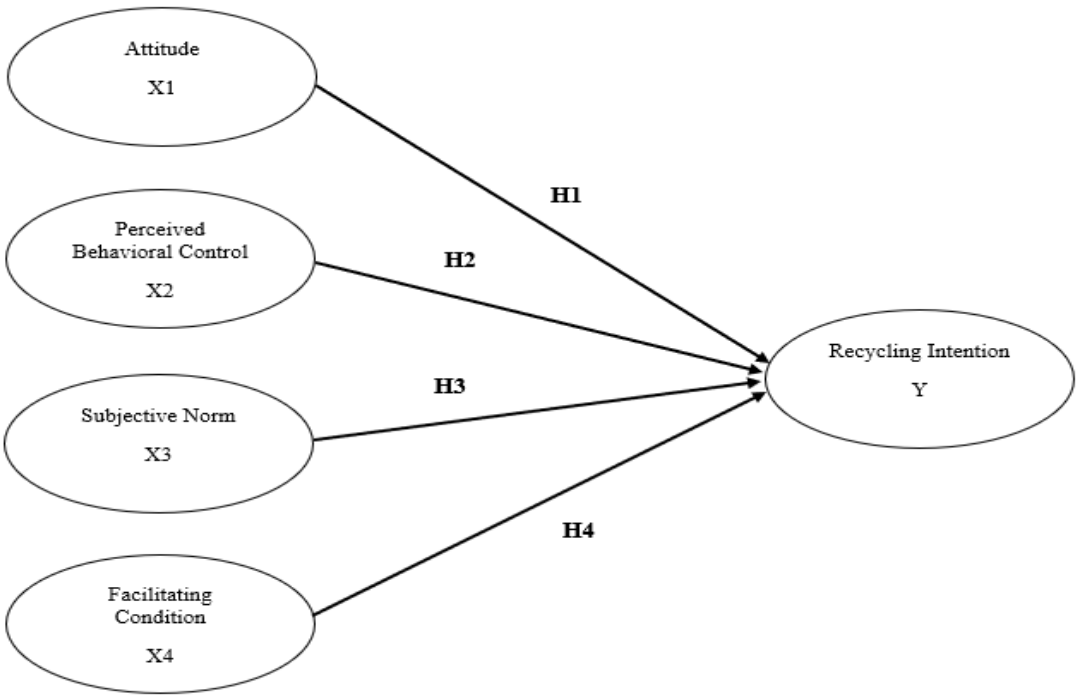
Facilitating Conditions are the availability of infrastructure, resources, and support that allow a person to perform a behavior. In the UTAUT model, facilitating conditions is a key factor that influences user behavior in utilizing technology and facilities (Liu et al., 2022). Nugroho (2024) shows that facility conditions play an important role in increasing the intention to use smart waste management applications. In this context, the existence of Le Minerale's Recycle Point is expected to increase consumers' intention to recycle.

H4: Facilitating Conditions has a positive effect on Recycling Intention for Le Minerale consumers through Recycle Points.

Research Framework

The conceptual framework of this study is based on the Theory of Planned Behavior (Ajzen, 1991) by adding relevant facilitating conditions constructs in the context of Recycle Points. This study examined the influence of four independent variables, namely Attitude, Perceived Behavioral Control, Subjective Norm, and Facilitating Conditions on the dependent variable Recycling Intention.

Figure 1. Reseach Framework



METHODOLOGY

Research Design

This study uses a quantitative approach with a type of causal research, which is research that aims to determine the influence or cause-and-effect relationship between variables. According to Sugiyono (2019), quantitative causal research is used to test hypotheses through numerical data measurement and statistical analysis. In the context of this study, a causal design was chosen to analyze the influence of attitude variables, perceived behavioral control, subjective norms, and facilitating conditions on recycling intention in Le Minerale consumers in the Greater Jakarta area. This approach is in accordance with the framework of the Theory of Planned Behavior which is used to explain the relationship between attitudes, norms, perceptions of control, as well as facility support to the intention of recycling behavior.

Population and Sample

The population of this study is Le Minerale consumers who are domiciled in the Greater Jakarta area. Given the large population, this study uses a purposive sampling technique with the following criteria: (1) respondents are active consumers of Le Minerale, (2) domiciled in the Greater Jakarta area, and (3) know the Recycle Point program launched by Le Minerale. The number of samples was determined using the formula Hair et al. (2010) which states that the minimum sample size is 5 times the number of indicators used. With a total of 38 indicators in this research questionnaire, the minimum sample number is 190 respondents. This study succeeded in collecting data from 184 valid respondents,

who were considered to be the minimum requirements for analysis using Partial Least Squares Structural Equation Modeling (PLS-SEM).

Data Collection

Primary data were obtained through the distribution of online questionnaires on a Likert scale of 1–5, ranging from "strongly disagree" to "strongly agree". The questionnaire was compiled based on indicators of research variables adapted from previous research, including Wan et al. (2021) for the variables of attitude, subjective norms, perceived behavioral control, and recycling intention, and Liu et al. (2022) for the variables of facilitating conditions. The data was collected during the period from January to March 2024. Meanwhile, secondary data was obtained from official reports from Le Minerale, government publications, scientific journals, and news articles related to the issue of plastic waste management and the implementation of the Recycle Point program.

Research Instrument

The research instrument in the form of a questionnaire consists of two main parts. The first section contains questions related to the identity of respondents, such as age, gender, domicile, and frequency of consumption of Le Minerale. The second part contains statements related to the research variables. Attitude variables were measured by five indicators; perceived behavioral control with five indicators; subjective norms with four indicators; facilitating conditions with four indicators; and recycling intention with five indicators. All indicators are measured on a five-point Likert scale, which provides interval data for advanced statistical analysis.

Data Analysis

The data analysis technique used Partial Least Squares Structural Equation Modeling (PLS-SEM) with the help of SmartPLS 4.0 software. This method was chosen because it is suitable for predictive research, using non-normal data, and relatively small sample sizes (Hair et al., 2017). PLS-SEM analysis is carried out through two main stages, namely (1) external model evaluation which includes convergent validity, discriminant validity, and reliability; and (2) internal model evaluation which includes determination coefficient (R^2), predictive relevance (Q^2), and hypothesis testing through t-statistical and p-value tests. With this approach, the research can comprehensively examine the relationship between variables and assess the level of significance of each hypothesis.

RESEARCH RESULT

Measurement Model

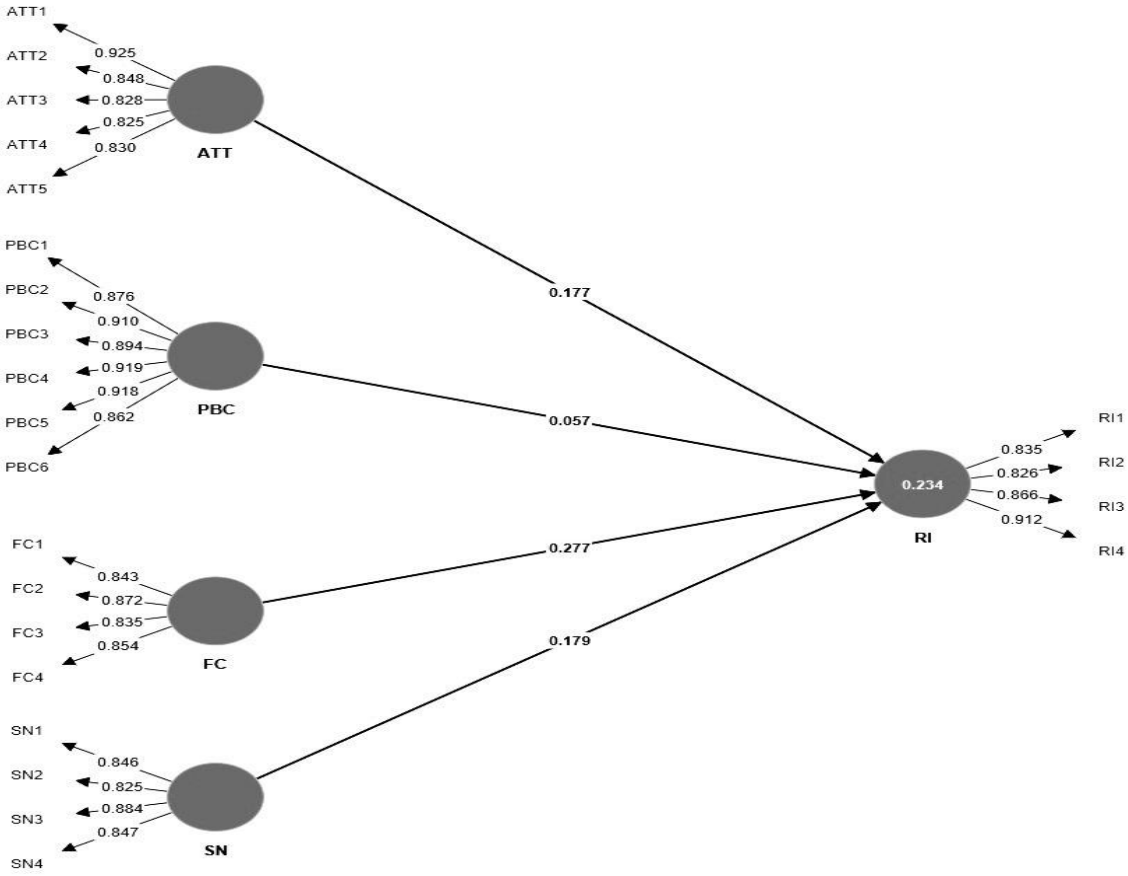


Figure 2. PLS 4.0 Algorithm Results

The results of PLS processing in Figure 4.1 show the connection between the latent construct and its indicators. All indicators displayed are already connected to the variables they represent. This initial stage is important to see if the model can proceed to validity and reliability testing.

Table 1. Convergent Validity Test Results

Variabel	**Indicator**	Ave	Loading Factor
Recycling Intention (Y)	**RI1**	0.74	0.835
	RI2		0.826
	RI3		0.866
	RI4		0.912
Attitude (X1)	**ATT1**	0.727	0.925
	ATT2		0.848

	ATT3		0.828
	ATT4		0.825
	ATT5		0.83
Perceptual Behavior Control (X2)	**PBC1**	0.804	0.876
	PBC2		0.91
	PBC3		0.894
	PBC4		0.919
	PBC5		0.918
	PBC6		0.862
Subjective Norms (X3)	**SN1**	0.724	0.846
	SN2		0.825
	SN3		0.884
	SN4		0.847
Facility Conditions (X4)	**FC1**	0,725	0.843
	FC2		0.872
	FC3		0.835
	FC4		0.854

Based on Table 1, all items have a loading factor value greater than 0.7 and an AVE value greater than 0.5. This shows that each indicator is valid in measuring its latent construct. Thus, the conditions of convergent validity are met and the research instrument is declared feasible.

Tabel 2. Pengujian Discriminant Validity (Cross Loading)

	FC	PBC	RI	SN	ATT
FC1	0.843	0.342	0.335	0.230	0.258
FC2	0.872	0.312	0.317	0.161	0.352
FC3	0.835	0.164	0.305	0.142	0.179
FC4	0.854	0.378	0.365	0.224	0.224
PBC1	0.303	0.876	0.184	0.211	0.252
PBC2	0.306	0.910	0.195	0.175	0.186
PBC3	0.345	0.894	0.173	0.179	0.195
PBC4	0.331	0.919	0.275	0.324	0.210
PBC5	0.346	0.918	0.254	0.222	0.230
PBC6	0.278	0.862	0.152	0.148	0.088
RI1	0.253	0.217	0.835	0.213	0.208
RI2	0.271	0.172	0.826	0.191	0.284
RI3	0.380	0.202	0.866	0.348	0.212
RI4	0.401	0.228	0.912	0.279	0.386
SN1	0.213	0.257	0.272	0.846	0.254
SN2	0.166	0.164	0.198	0.825	0.276
SN3	0.193	0.227	0.317	0.884	0.270

SN4	0.189	0.166	0.231	0.847	0.193
ATT1	0.352	0.222	0.341	0.249	0.925
ATT2	0.297	0.162	0.276	0.401	0.848
ATT3	0.198	0.167	0.288	0.262	0.828
ATT4	0.195	0.210	0.220	0.168	0.825
ATT5	0.186	0.185	0.228	0.135	0.830

Results of cross loading test in Table 2. shows that each indicator has the highest loading value in the construct it is measured compared to other constructs. This means that there is no overlap between indicators, so that the instrument meets the discriminant validity.

Table 3. Correlation Among Major Constructs

	FC	PBC	RI	SN	ATT
FC	**0.851**	0.382	0.429	0.252	0.324
PBC	0.357	**0.897**	0.249	0.250	0.232
RI	0.390	0.239	**0.860**	0.331	0.346
SN	0.225	0.245	0.307	**0.851**	0.319
ATT	0.297	0.222	0.324	0.292	**0.852**

The bold numbers in the diagonal are the square root of AVE for each construct. Above the diagonal are the HTMT values. Below the diagonal are correlation between construct.

Table 4. Reliability Test Results

Variabel	*Composite Realibility*	*Cronbach Alpha*
Attitude (X1)	0.925	0.906
Perceptual Behavior Control (X2)	0.979	0.952
Subjective Norms (X3)	0.898	0.874
Facility Conditions (X4)	0.877	0.874
Recycling Intention (Y)	0.911	0.884

The Composite Reliability (CR) and Cronbach's Alpha (CA) values of the entire construct > 0.70. This means that the research instrument has high reliability. In other words, each construct can be measured consistently by its indicators.

Structural Model

Table 5. R-Square Value Test Results

Variabel	R-Square
Recycling Intention	0.234

An R^2 value of 0.234 for the Recycling Intention variable shows that the construct of Attitude, Perception Behavior Control, Subjective Norms, and Facility Conditions is able to explain 23.4% of the variation of Recycling Intention. The remaining 76.6% is explained by factors outside of this research model.

Table 6. F-Square Value Test Results

Variabel	F-Square
Attitude – Recycling Intention	0.035
Perceptual Behavior Control – Recycling Intent	0.004
Subjective Norms – Recycling Intentions	0.037
Facility Condition – Recycling Intention	0.082

The F^2 value is used to see the magnitude of the relative influence of exogenous constructs on endogenous constructs. Based on Table 7, all F^2 values are in the subcategory (<0.15). However, Facility Conditions contributed relatively higher (0.082) than other variables.

Table 7. Model Fit Test Results

	Saturated Model	*Estimated Model*	Information
SRMR	0.063	0.063	*Acceptable Fit*

The SRMR value of 0.063 is smaller than the limit of 0.08, so the model can be categorized as fit. This means that the research model is feasible to use for subsequent hypothesis testing.

Table 8. Hypothesis Test

Hypothesis	**Original sample (O)**	**T statistics**	**P values**	**Information**
Attitude (X1) – Recycling Intentions (Y)	0.177	2.388	0.017	Accepted
Perceptual Behavior Control (X2) – Recycling Intentions (Y)	0.057	1.004	0.315	Rejected
Subjective Norms (X3) – Recycling Intentions (Y)	0.179	2.397	0.017	Accepted
Facility Condition (X4) – Recycling Intentions (Y)	0.277	3.016	0.003	Accepted

shows the results of the bootstrapping test. The relationship path between Attitudes, Subjective Norms, and Facility Conditions to Recycling Intentions is significant. While the Perceptual Behavior Control to Recycling Intention

pathway is insignificant. These findings will be discussed further in the Discussion section.

DISCUSSION

The results of the study show that consumer attitudes have a significant effect on the intention to recycle through the Le Minerale Recycle Point program in the Greater Jakarta area. These findings are in line with the basic assumptions in Ajzen's Theory of Planned Behavior (TPB), where attitudes towards a behavior are one of the main determinants of an individual's intention to do so.

The results of the hypothesis test also revealed that the subjective norm variable has a significant effect on recycling intention. These findings show that social encouragement, whether from family, friends, or the surrounding environment, plays an important role in shaping consumers' intention to participate in the Recycle Point program.

The condition of the facility was also found to have a significant effect on recycling intentions, which means that the better the facilities provided by Le Minerale, the higher the desire of consumers to engage in these activities.

In contrast to other variables, perceived behavioral control did not have a significant effect on recycling intention. This means that even if a person feels capable of doing recycling activities, it does not directly increase their intention to participate in the Recycle Point program. These findings are not entirely in line with the Theory of Planned Behavior, because within the framework of the SDGs, perceptual behavior control is usually one of the important determinants. However, in the context of this study, this can be explained by the presence of more dominant external factors, such as facility support and social influence.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of a study on the influence of facilitating conditions on recycling intention on Le Minerale consumers in the Greater Jakarta area with the Theory of Planned Behavior approach, several things can be concluded. First, consumer attitudes have been proven to have a positive and significant effect on the intention to recycle. This shows that the more positive an individual's view of recycling activities, the more likely they are to be actively involved in the Recycle Point program. Second, subjective norms also have a significant influence, which means that social impulses from people around them play an important role in shaping environmentally friendly behavior intentions. Third, the condition of the facility has a positive and significant effect on recycling intentions, so the existence of adequate supporting facilities is the key to the success of this program. Fourth, perceptual behavior control did not have a significant effect, indicating that the individual's perception of personal abilities was not the main factor in forming recycling intentions in the context of this study. Overall, this research model is able to explain some variation in consumer recycling intentions, although there are still other external factors that can be further investigated.

Based on the findings of the study, there are several practical and academic recommendations. On behalf of the Le Minerale company, it is

important to continue to increase the availability of recycling facilities that are easily accessible, transparent and convenient for consumers. In addition, social campaigns need to be expanded to strengthen collective norms in society, for example through collaboration with communities, schools, and government agencies. For the government, regulatory support and economic incentives can be an additional stimulus in increasing public participation. For further research, it is recommended to include other external variables such as media influence, public policy, and financial incentives so that the model can explain recycling behavior more comprehensively. Thus, the results of the research are expected to make a real contribution to increasing the effectiveness of recycling programs in Indonesia.

ADVANCED RESEARCH

This study provides an understanding of the influence of attitudes, subjective norms, perceptual behavior control, and facility conditions on recycling intentions in Le Minerale consumers through the Theory of Planned Behavior approach. However, the research model was only able to explain 23.4% variation in recycling intentions, so there is ample room for exploration of other variables. Follow-up studies can integrate external factors such as the influence of government policies, mass media campaigns, financial incentive programs, and the role of local communities in motivating environmentally friendly behaviors. In addition, the research can be expanded with a comparative approach between different brands of bottled water or other geographical areas outside Greater Jakarta to see for cultural differences and consumer characteristics. The use of the longitudinal study method is also recommended in order to capture the dynamics of changes in recycling behavior over a certain period of time. By developing the direction of this research, it is hoped that the model of consumer behavior in the context of recycling will become more comprehensive and can contribute more to the development of environmental sustainability strategies in Indonesia.

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