

## Empirical Study Of Greenwashing Antecedent And Its Consequences On The Purchase Intention Of Environmental Friendly Products

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### Abstract

This study aims to examine the phenomenon of alleged greenwashing at PT Tirta Fresindo Jaya as the producer of Le Minerale bottled water with variables recommended in several previous studies, including Greenwashing, Skepticism, Confusion, Information and Knowledge, and Green Purchase Intention. The population in this research were the people of Central Java who know Le Minerale's disposable gallon products. The sample in this research was 233 respondents who were taken using a purpose random sampling method. Results of research conducted using Structural Equation Modeling (SEM) processed with AMOS software, it shows that: (1) Greenwashing has a significant positive effect on skepticism. (2) Greenwashing has a significant positive effect on Confusion. (3) Skepticism has no effect on green purchase intention. (4) Confusion has no effect on green purchase intention. (5) Skepticism does not mediate the effect of greenwashing on the green purchase intention. (6) Confusion does not mediate the effect of greenwashing on the green purchase intention. (7) Information and knowledge do not moderate the relationship of confusion to the green purchase intention.

**Keywords** : greenwashing, skepticism, confusion, information and knowledge, green purchase intention

## INTRODUCTION

The accumulation of waste and other forms of waste, as well as other forms of environmental pollution, can lead to a depletion of the ozone layer, eutrophication, and global warming, all of which pose a hazard to living ecosystems (Putra & Suryani, 2015). This condition encourages people to be more receptive to environmentally friendly consumption by using products with safe materials, packaged in ecologically friendly packaging that can be reused and recycled. In other words, this condition encourages people to be more environmentally conscious consumers (Putra & Suryani, 2015; Shamdasani et al., 1993). Products that prioritize the principles of reuse and recycle, such as organic and sustainable products, are thought to be able to reduce environmental problems (Sasetyaningtyas, 2019).

Green marketing is seen as the best strategy to respond to this trend by showing the company's concern for environmental issues through its products and services (Chang, 2011; Chen & Chang, 2013). Environmentally friendly actions and claims in green marketing should be synchronous, factual and accurate, so that if they are not fulfilled, the company will be deemed to be committing fraud or greenwashing. (Chen et al., 2014; Khan et al., 2020). Greenwashing actions by companies

according to Forehand & Grier (2003) in the future will have an impact on many things, including confusion, skepticism, and the intention to buy environmentally friendly products.

This study will analyze the alleged greenwashing phenomenon at PT. Tirta Fresindo Jaya as the producer of Le Minerale AMDK. PT. In 2020, TFJ released a disposable gallon product which claimed to be environmentally friendly. Le Minerale single-use gallon packaging, according to the official leminerale.com website, is considered free of the harmful chemical substance bishpenol A (BPA), then considered more hygienic because of its non-repeated use, and the resulting plastic waste is considered safe for the environment because it is made from PET which is 100 percent can be recycled (Marulliarahali, 2022) .

The various advantages offered by the Le Minerale disposable gallon quickly caught the public's attention and caused a lot of controversy. Many people have doubts and consider this innovation as an act of greenwashing , including the Indonesian Consumers Foundation (YLKI), Greenpeace Indonesia, the Indonesian University inorganic chemical laboratory, and so on. On Twitter, the Le Minerale disposable gallon became a trending topic and attracted quite serious discussion from netizens, especially on November 16 2020, with 1.2 thousand tweets out of a total of 1.7 thousand tweets during the week, November 13 to 19 2020. According to Netray's analysis, as many as 880 tweets were detected as negative sentiment, 420 other tweets were positive, and the rest were considered neutral. The following is an infographic on the frequency of tweets by netizens highlighting the newest product from Tirta Fresindo Jaya.

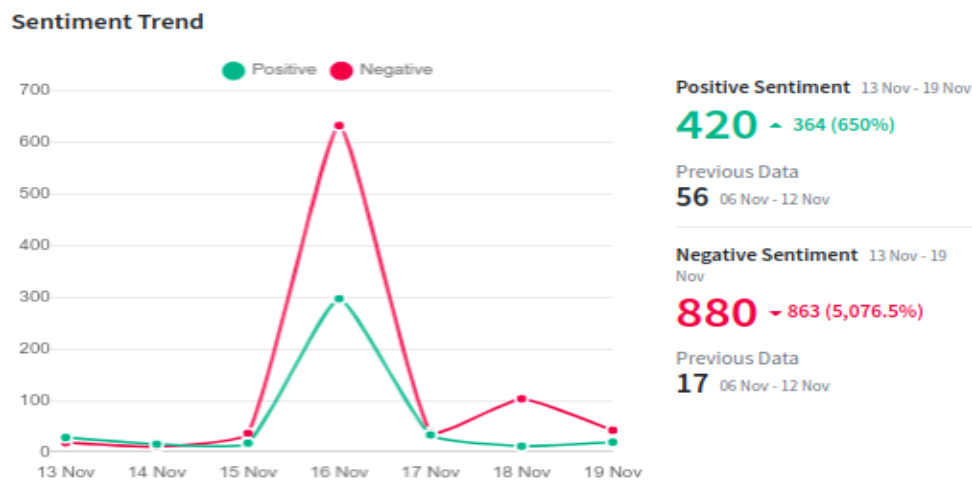


Figure 1. Infographic of Tweet Frequency on November 16, 2020  
 Source: <https://analysis.netray.id> (2020)

## LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

### The Effect of Greenwashing Against Skepticism

Delmas & Burbano (2011) stated that greenwashing is an act of misleading companies regarding environmental claims of a product or service to present an image of a company that cares about the balance of nature. Nguyen et al., (2019) revealed that greenwashing can making it difficult for consumers to select and determine products with appropriate eco-friendly claims and benefits. This difficulty in the future will result in low consumer trust (Marchand, A.; Walker, 2008) . The low

trust and behavior of constantly asking for the authenticity of this product is interpreted by Boush, DM; Friestad, M.; Rose (1994) as skepticism.

**H<sub>1</sub>:** Greenwashing has a positive effect on skepticism

### **The Effect of Greenwashing on Confusion**

The act of greenwashing triggers information overload among consumers by spreading too much information that is too similar, unclear, and sometimes even ambiguous (Mitchell, V.-W., & Papavassiliou, 1999) . This excess of information will burden consumers, then make it difficult for them to determine the product, and in the end consumers will often fail to interpret the environmentally friendly attributes of a product or service (Walsh et al., 2007) . Consumer failure to correctly and appropriately interpret the eco-friendly features of a product or service in the information processing phase is defined by Turnbull et al., (2000) as consumer confusion.

**H<sub>2</sub>:** Greenwashing has a positive effect on confusion.

### **The Effect of Skepticism on Purchase Intentions for Environmentally Friendly Products**

More and more individuals today are getting interested in eco-friendly products or services. They are willing to pay more and voluntarily promote it, either through social media or word of mouth (Nielsen, 2014). When consumers buy environmentally friendly products or services, they feel they have become part of a community that maintains the sustainability of nature (Maignan et al., 2005). Of course that is very good. However, when consumers are aware that the environmentally friendly products or services they are going to buy are similar to conventional products in general, both in terms of function, benefits, convenience, etc., doubts and negative perceptions of consumers will arise from the company (Bhattacharya, 2012). ; Schlegelmilch et al., 2013) . Doubtful consumers will reconsider their intentions and even purchase decisions and in the end, consumers often do not buy the product or service (Obermiller et al., 2005) .

**H<sub>3</sub>:** Skepticism has a negative effect on intention to purchase environmentally friendly products

### **The Effect of Confusion on Intention to Purchase Environmentally Friendly Products**

According to Tarabieh (2021) one of the obstacles to buying is consumer confusion. Confusion itself can arise due to limited cognitive abilities of consumers in managing information, especially if the information provided by companies regarding a product or service that claims to be environmentally friendly is minimal (Chen & Chang, 2013; Khan et al., 2020) . Consumers will experience difficulties when evaluating a product in the future (Walsh et al., 2007) . They don't know whether the product or service they are buying is suitable or not for them. At that point, the probability that the consumer will cancel the purchase is very high (Matzler et al., 2011) .

**H<sub>4</sub>:** Confusion has a negative effect on intention to purchase environmentally friendly products

### **The Effect of Skepticism in Mediating the Relationship between Greenwashing and Intention to Purchase Environmentally Friendly Products**

Chen & Chang (2013) revealed that greenwashing can cause doubts or skepticism among consumers. When consumers are in doubt, the behavior that appears tends to be negative, such as finding fault with products and delaying purchase decisions (Leonidou & Skarmeas, 2017; Obermiller

et al., 2005) . Based on this description, the researcher concludes that skepticism has a mediating effect on the relationship between greenwashing and the intention to purchase environmentally friendly products. This statement is confirmed by research by Akbar (2021) and Nguyen et al., (2019) which shows that skepticism mediates the relationship between greenwashing and the intention to buy environmentally friendly products.

**H<sub>5</sub>:** Skepticism mediate the effect of greenwashing on the purchase intention of environmentally friendly products.

### **The Effect of Confusion in Mediating the Relationship between Greenwashing and Intention to Purchase Environmentally Friendly Products**

Now, any company is demanded by consumers to always fulfill their wishes in various ways, as long as they don't use manipulative tactics. Forehand & Grier (2003) revealed that the company's manipulative actions will only get negative reactions, such as boycotts and low product purchase intentions, from consumers. The company's manipulative actions include, one, the lack of information on a product provided by the company (Mitchell, V.-W., & Papavassiliou, 1999) . This action makes consumers confused because they do not know whether the product they are going to buy is suitable and how to use it later. Two, greenwashing behavior (Walsh et al., 2007) . Greenwashing allows false claims made by companies to mix with existing facts. Consumers will find it difficult to distinguish which products are truly environmentally friendly and which are not, as a result consumers are confused and purchase decisions will often be delayed (Leonidou & Skarmas, 2017; Obermiller et al., 2005) . Based on the explanation above, the researcher concludes that consumer confusion acts effect on the intention to purchase environmentally friendly products. This statement is reinforced by the research of Parguel et al., (2011) and Tarabieh (2021) which revealed a negative effect of confusion on the intention to purchase environmentally friendly products.

**H<sub>6</sub>:** Confusion mediates the effect of greenwashing on the intention to purchase environmentally friendly products.

### **Information and Knowledge Moderate Confusion and Intention to Buy Environmentally Friendly Products**

Consumers are often confused and experience difficulties when choosing environmentally friendly products or services, therefore the role of information and knowledge on current issues is very important here (Nguyen et al., 2019) . Information and knowledge assist consumers in distinguishing products that are too similar, too unclear, or even have benefits that are different from what is explained (Khan et al., 2020) . Consumers can sort and choose these products or services through details, such as health benefits and side effects, environmentally friendly features, economic value, and others (Leire, C.; Thidell, 2005) . So, the higher the information and knowledge, the lower the possibility for consumers to be confused and this has a positive effect on the intention to purchase environmentally friendly products (Paço et al., 2013; Tseng, S.-C.; Hung, 2013) . The above statement is reinforced by the research of Fabiola & Mayangsari (2020) and Hoque (2020) which reveals that there is a positive influence of information and knowledge on the intention to purchase environmentally friendly products and is specifically confirmed by the research of Khan et al., (2020) which shows information and knowledge positively moderates the relationship between consumer confusion and purchase intention of green products.

H<sub>7</sub> : Information and knowledge positively moderate the relationship between consumer confusion and purchase intention of environmentally friendly products.

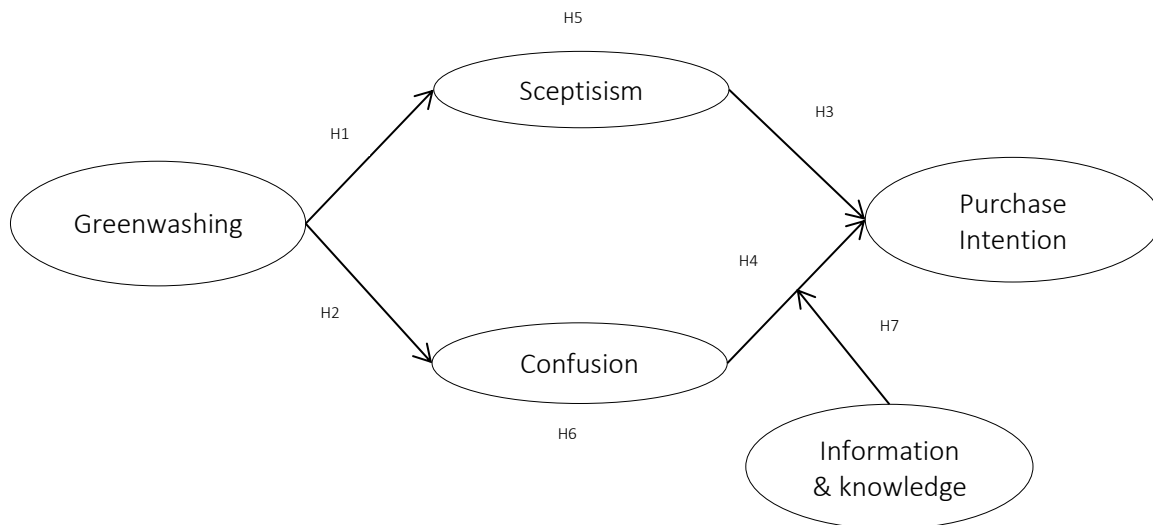


Figure 2. Research Model

## RESEARCH METHOD

This research is a quantitative research with a population involving the community middle schooler who knows about Le Minerale disposable gallon products. The sample was determined to be 217 respondents with a purposive sampling method (Suliyanto, 2018) . structural Equation Modeling (SEM) is used as an analysis tool to then be processed using AMOS software , because it is Structural Equation Modeling (SEM) is effective for solving complex research models (Suliyanto, 2011) . Data in this study were collected via googleform . Basis for decision making on hypothesis testing this study raced at the level of significance of 95% or  $\alpha = 0.05$ . CR value  $\leq$  t table or  $P \geq 0.05$  signifies that hypothesis rejected and otherwise if mark CR  $>$  t table or  $P < 0.05$ , so hypothesis is supported.

## RESULTS AND DISCUSSION

Table 1. Goodness of fit test

<i>Goodness of Fit Index</i>	<i>Cut-Off Value</i>	<b>Results</b>	<b>Model Evaluation</b>
Chi Square	Expected small	904118	marginal
probability	$\geq 0.05$	0.000	marginal
RMSEA	$\leq 0.08$	0.123	marginal
Chi Square / df	$\leq 2.00$	4,498	marginal
GFI	$\geq 0.90$	0.790	marginal
AGFI	$\geq 0.90$	0.736	marginal
TLI	$\geq 0.95$	0.759	marginal
CFI	$\geq 0.94$	0.790	marginal

Source: Primary data processed, 2022

The chi-square value in table 1 above has a significance level of 0.000 which is 904,118, which means that the model is acceptable but does not indicate a good model. Other measurement indices, such as TLI, CFI, RMSEA, GFI, AGFI, also indirectly confirm the same thing because the range of index values is not expected (marginal position). This can happen because there are variations in the data that are spread and normally distributed so that the model has a low fit or marginal fit.

Table 2. *Confirmatory Factor Analysis*

Code	Items	loading
<b>Greenwashing</b>		
GW1	I think there are ambiguous words to the eco-friendly features of Le Minerale disposable gallons	0.75
GW2	I think there is an easily misconstrued graphic in the eco-friendly features of Le Minerale single-use gallons	0.71
GW3	I think Le Minerale's single-use gallon products have vague claims	0.84
GW4	I think Le Minerale's disposable gallon products exaggerate their eco-friendly features or benefits	0.82
GW5	I think there is information hidden in the Le Minerale disposable gallon product	0.70
<b>Skepticism</b>		
S1	I have doubts about Le Minerale's disposable gallon products, whether they are truly environmentally friendly or not	0.81
S2	I suspect the eco-friendly features of Le Minerale's disposable gallon products	0.88
S3	I do not believe that Le Minerale single-use gallon products meet existing environmental standards	0.79
S4	I think there is a misleading label or packaging on the Le Minerale disposable gallons	0.77
<b>Confusion</b>		
K1	I find it difficult to recognize Le Mineral products because they have similar environmental friendly features to other products	0.75
K2	I find it difficult to recognize the eco-friendly features/claims of Le Mineral products due to use	0.75
K3	I had a hard time deciding that buying Le Minerale single-use gallon products was the right choice	0.73
K4	I find it difficult to choose a gallon product that has almost the same eco-friendly claims	0.75
K5	I don't think I have enough information about Le Minerale disposable gallons	0.64
<b>Information and Knowledge</b>		
IK1	I think there is reliable information regarding Le Minerale single-use gallon products	0.72
IK2	There is a product label or packaging that explains the eco-friendly features of the Le Minerale disposable gallon product	0.73
IK3	There is an advertisement explaining the eco-friendly features of Le Minerale disposable gallon products	0.78
IK4	There are other media that explain the eco-friendly features of Le	0.83

Code	Items	loading
	Minerale disposable gallon products	
	<b>Purchase Intention</b>	
GPI1	I will be buying Le Minerale disposable gallon products in the near future	0.69
GPI2	I would consider purchasing the Le Minerale disposable gallon product over any other product	0.76
GPI3	I will find out more about Le Minerale disposable gallon products	0.61

Source: Primary data processed, 2023.

All of the variables in the model pass the convergent validity test for their measurement construct. This is shown by the fact that all of the indicators have factor loading values that are greater than 0.50.

Table 3. Reliability Test Results and Variance Extraction

Variable	Indicator	Loading Factor $\geq 0.5$	Reliability ( $\geq 0.70$ )	AVE( $\geq 0.5$ )	Results
Greenwashing	X1.1	0.730	0.866	0.563	Valid
	X1.2	0.739			
	X1.3	0.794			
	X1.4	0.756			
	X1.5	0.732			
Scepticism	X2.1	0.809	0.887	0.662	Valid
	X2.2	0.865			
	X2.3	0.793			
	X2.4	0.785			
Confusion	X3.1	0.741	0.846	0.525	Valid
	X3.2	0.770			
	X3.3	0.738			
	X3.4	0.710			
	X3.5	0.659			
Information & Knowledge	M1.1	0.746	0.851	0.588	Valid
	M1.2	0.740			
	M1.3	0.766			
	M1.4	0.812			
Purchase Intention	Y1.1	0.750	0.728	0.500	Valid
	Y1.2	0.700			
	Y1.3	0.605			

Source: Primary data processed, 2023.

Table 3 above reveals that each variable has a reliable gauge because the reliability score for each variable is above 0.70. The table also confirms that each latent variable is the result of a fairly large extraction from its dimensions. This is indicated by the variation value of each variable which is greater than 0.50. Hypothesis testing is carried out based on the CR score which is causally related to the results of SEM data processing.

Table 4. Structural Equational Regression Weight

Variable	Estimates	CR	P
<i>Greenwashing</i> to Skepticism	.933	10,633	***
<i>Greenwashing</i> to Confusion	.715	7,673	***
Skepticism of Intention to Purchase Environmentally Friendly Products	-.158	-.912	.362
Confusion about Intentions to Purchase Environmentally Friendly Products	-.024	-.102	.919
Information and Knowledge of Purchase Intentions for Environmentally Friendly Products	.629	4,876	***

Source: Primary data processed, 2022.

Table 4 reveals that there are two hypotheses with a critical ratio (CR) value that is smaller than the cutoff value (1.96) and a probability significance value greater than 0.05. This indicates that hypotheses 3 and 4 are rejected, namely the effect of skepticism and confusion on the intention to purchase environmentally friendly products, so that the mediation hypothesis and moderation of skepticism and confusion, namely hypotheses 5, 6, and 7 are also automatically rejected due to the absolute requirement to accept the influence of mediation and moderation. is the existence of a mediating or moderating variable relationship to the dependent variable.

The results of this study indicate that greenwashing has a positive effect on skepticism. This indicates that the act of Le Minerale releasing disposable gallon products accompanied by claims of environmentally friendly features can increase the feeling of suspicion or skepticism in the community if not followed by supporting practices. This skepticism can occur because the concept of being environmentally friendly at Le Minerale disposable gallons is considered contrary to the real conditions, where all forms of single-use plastic are generally difficult to be recycled.

The results of this study also disclosed that greenwashing has a positive effect on confusion. This indicates that the greenwashing actions carried out by PT. Tirta Fresindo Jaya can cause and exacerbate the probability of consumer failure in interpreting the environmentally friendly attributes of a product, or what is commonly referred to as confusion (Turnbull et al., 2000). Respondents' answers shows that the main cause of confusion is the excess or lack of information, whether on labels, advertisements, official website, as well as consumer information limits. Then, another cause of confusion is the similarity in claims for eco-friendly disposable gallons of Le Minerale with other bottled water products. Consumers believe that the environmentally friendly features offered are too common without additional effort, leading them to question whether or not the disposable gallon innovation exaggeration claims it can be easily recycled is merely a marketing trick or a genuine attempt by PT. Tirta Fresindo Jaya to reduce the amount of plastic.

The results of this study prove that skepticism has no effect on the intention to purchase environmentally friendly products. This unpredictability in consumer purchasing intention is a direct result of the significant differences in consumer perceptions and attitudes of Le Minerale disposable gallons. The results of this study are not in line with several previous studies. Some of these studies include the research of Bursan et al., (2022), Leonidou & Skarmeas (2017), Nguyen et al., (2019) in their research which stated that skepticism has a negative effect on the intention to purchase environmentally friendly products. The findings of this study demonstrate that confusion does not influence consumers' intentions to buy environmentally friendly products in any way. This indicates that consumers who are confused about environmentally friendly products, especially Le Minerale disposable gallons, do not necessarily have low purchase intentions. This can happen because many



consumers ignore indications of greenwashing and have a desire to buy just to try or compare Le Minerale with other brands in the future.

The findings of this research show that skepticism does not act as a mediator in the connection between greenwashing and the intention to buy environmentally friendly products. The inability of skepticism to mediate the relationship between greenwashing and purchase intention of environmentally friendly products indicates that consumer doubts arising from greenwashing have not been able to cause changes in consumer purchase intentions. Some consumers who are skeptical may lose their purchase intention and some other consumers may remain interested in making a purchase transaction, but this is generally motivated by certain factors and is not caused by suspicion of a product's environmentally friendly features. The ease of use of the product, the cleanliness of the gallon containers, and the preference of customers for the parent brand, Le Minerale, rather than any of the other bottled water companies are some of the reasons for this.

This study found no mediation between greenwashing and environmentally friendly product purchase intentions. The fact that consumers' difficulties in recognizing differences and identifying environmentally friendly products, particularly disposable gallons of Le Minerale, have not been able to change consumer purchase intentions is demonstrated by the inability to mediate the confusion between greenwashing and the intention to buy eco-friendly products. This suggests that the difficulties consumers have experienced as a result of greenwashing have not been able to change consumer purchase intentions. According to consumers, changes in consumer purchase intentions for environmentally friendly products are caused by factors including pricing, user situations, and so on.

This study's findings show that information and knowledge have no effect on the relationship between confusion and the intention to buy environmentally friendly products. There is in fact a positive and direct influence of information and knowledge on the consumer's intents to purchase products claiming to be environmentally friendly. This occurs as a result of the fact that in the earlier test, confusion did not have an effect on the intention to buy environmentally friendly products. There are high expectations among the majority of consumers for the clarity of information on environmentally friendly features of a product.

## CONCLUSION

The results of the analysis show that: greenwashing has a positive effect on skepticism and confusion, information and knowledge has a positive effect on the intention to purchase environmentally friendly products, greenwashing has no effect on the intention to purchase environmentally friendly products *through* skepticism and confusion and information and knowledge does not moderate the relationship between confusion and purchase intention eco-friendly product. The conclusion of the analysis results is mainly based on the *gab* phenomenon, namely the existence of allegations of *greenwashing* and confusion influencing the intention to buy environmentally friendly products through a psychological mechanism, both mediation and moderation are rejected or not accepted.

Several managerial/practical recommendations can be formulated from the conclusions above in order to reduce the skepticism or confusion that arises as a result of greenwashing actions. These recommendations are as follows (1) Detailed information submitted. PT.TFJ needs to communicate the steps for recycling Le Minerale disposable gallons, especially in the process of collecting and transporting the disposable gallons, to whom and where consumers must deposit Le Minerale disposable gallons. This aims to eliminate the public's negative perception of Le Minerale

disposable gallons, as described in the first, third and fifth indicators of greenwashing, namely the presence of ambiguous words, unclear claims, and hidden information regarding the gallon's environmentally friendly features. Le Minerale disposables (2) Improved 100% eco logo on Le Minerale disposable gallons. PT. TFJ needs to improve the elements of the 100% eco logo on disposable gallons by reducing the word "100% eco" and increasing or highlighting the word "Recycleable". This is intended to at least reduce the possibility of easily misinterpreted graphics on the disposable gallon feature, such as statements or questions on the second greenwashing indicator (3) Addition of RBU in each city or various Le Minerale single-use gallon waste solid points. This aims to anticipate public or consumer perceptions that PT. TFJ exaggerates the eco-friendly features of its products, as explained in the fourth greenwashing indicator.

Several other managerial/practical recommendations can also be formulated in order to increase the intention to purchase environmentally friendly products by information and knowledge. These recommendations include (1) Controlling the quality of information. PT. Tirta Fresindo Jaya can do this by clarifying on well-known podcasts or podcasts, procuring advertisements with reputable brand ambassadors or associations for the concept of "environmentally friendly", and so on. This must be continued because consumers believe that there is reliable information regarding Le Minerale disposable gallons, such as the statement of the first indicator of information and knowledge (2) Improving the quality of information. PT. Tirta Fresindo can improve the quality of information on environmentally friendly features on their Le Minerale gallon packaging or labels by including the recycling process or techniques on the disposable gallon packaging or labels. This needs to be done because the majority of consumers or the public believe that there is a product label or packaging that explains the environmentally friendly features of Le Minerale disposable gallons, such as statements on the second indicator of information and knowledge (3) Expansion of corporate communication channels and tips. PT. Tirta gallon Fresindo Jaya can do this by organizing socialization or seminars related to Le Minerale disposable waste treatment procedures, activities or sponsorship with environmental associations, and providing advertisements with an attractive "environmentally friendly" concept with a longer duration or more frequent frequency. This must be continuously attempted because most consumers believe that there are advertisements or other media that explain the environmentally friendly features of Le Minerale disposable gallons, as in the third and fourth statements.

The theoretical recommendations that can be given are that future research is expected to use theories other than SOR to underlie research related to the Effect of *Greenwashing* on Intention to Purchase Environmentally Friendly Products through Skepticism and Confusion Moderated by Information and Knowledge. This is because the results of the study verify that the use of SOR theory to analyze the effect of greenwashing on the intention to purchase environmentally friendly products through skepticism and confusion moderated by information and knowledge in developing countries is not appropriate because organisms do not cause or influence responses in this case.

Several limitations were found in this study. These limitations which includes collecting the distribution of questionnaires that have been distributed on a Central Javanese scale, still getting dominant respondent answers from Banyumas and bestatus students or students so that the variations in answers from respondents in this study are still lacking and the lack of some respondents' ability to answer open questionnaire questions in full, so observations made by researchers to be limited. Future research is expected to be able to obtain a wider variety of respondents who have the ability to answer thoroughly by distributing questionnaires through more channels and platforms related to research, both through the community, the kudata.id page, and so

on. Future research is also expected to be able to distribute questionnaires directly by meeting respondents to avoid selection bias and obtain more accurate respondent answers.

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