Factors Affecting Green Purchase Behavior of AMDK Aqua Life on College Student Consumers in Surakarta City

Evy Nuryudhiani[1a◆], Lobes Herdiman[1b], Susy Susmartini[1c]

Abstract. *The fundamental accomplishment of the Sustainable Packaging Coalition (SPC) concept is to replace unnecessary plastics used in the packaging and towards a green packaged product concept that is sustainable and environmentally friendly. Aqua Life's innovative bottled water contributes to achieving sustainability with packaging made from recycled and recyclable materials. Consequently, this study extended the Value Attitude Behavior (VAB) model by using the following construct: environmental consciousness, attitudes toward environmental issues, attitudes toward eco-social benefits, green product information, green product quality, availability of desired green packaged products, and green product attributes; to explain consumers' green purchase behavior. This study was to survey 251 college students in Surakarta city. The data were analyzed using the Partial Least Square-Structural Equation Model (PLS-SEM) method. The results show that environmental consciousness, attitudes toward environmental issues, green product information, availability of desired green packaged products, and green product attribute as a significant predictor.*

Keywords: *Green Packaged Product; Green Purchase Behavior; Partial Least Square-Structural Equation Model; Sustainable Packaging Coalition; Value Attitude Behavior*

I. INTRODUCTION

Bottled Drinking Water (AMDK) is water processed using certain technologies, met drinking water requirements, and packaged in plastic bottle or another packaging (SNI, 2015). Plastic bottle packaging is cheaper than glass bottle packaging because it can reduce raw material costs. Plastic bottles allow companies to cost savings in shipping because they are lighter and more manageable (Fajarini et al., 2021). However, plastic bottle also has the disadvantage of not being able to decompose quickly naturally (non-biodegradable), so they impact the environment and contribute to the waste generated.

Ocean Conservancy at the International Coastal Cleanup in 2017 revealed a total of 205,687 tons of plastic bottles and 276,483 tons of plastic bottle caps, part of the ten types of waste that dominate the coasts in the world (WWF, 2018). Various kinds of plastic bottle waste produced by residents in Surakarta City, an average of 14000 Kg per day, contributed 36% of the total waste (Indramawan, 2020). The consumption of packaged beverage products in Surakarta City is quite a lot in college student clusters to fulfill the practical drinking water needs. College students are a population that has the potential to contribute to plastic bottles and cap waste to the environment. Based on PDDikti data in 2021, the college student population in Surakarta City is 177,304 people, or 33.92% of the total population of 522,728 people (BPS Central Java, 2021). There is a relationship between the amount of plastic bottle waste between the number of students in a city and the amount of drinking water consumed in plastic bottles.

Environmental issue can be overcome through the design of green packaged products and needs to be introduced to students about AMDK products that have sustainable value. The Indonesian government's implement green packaging with the issuance of the Regulation of the Minister of Environment and Forestry of the Republic of Indonesia, namely the Roadmap for Reducing Waste by Manufacturers No.

[1] Industrial Engineering Department, Faculty of Engineering, Universitas Sebelas Maret, Jl. Ir. Sutami No.36, Kentingan, Surakarta, 57126, Indonesia

[a] email: evynuryudhiani@student.uns.ac.id
[b] email: lobesh@gmail.com
[c] email: susysus2011@gmail.com
◆ corresponding author

P.75/MENLHK/SETJEN/KUM.1/10/2019. The Danone Aqua AMDK industry has used plastic bottles according to government regulations through the product name Aqua Life by introducing it as a green packaged product. Aqua Life AMDK PET plastic bottles are made from 100% recycled plastic and can be recycled, not using additional PVC plastic labels and replacing with embossed.

Aqua Life's product support with green packaged products aims to stimulate consumers to green purchase behavior to reduce plastic waste to support environmentally friendly insights. Value Attitude Behavior (VAB) model can study student consumer habits in buying bottled drinking water to understand conscious environmental behavior with the relationship between environmental awareness from green purchasing behavior in society. Due to environmental damage and increasing levels of environmental awareness, this model has also been applied to the study of green buying behavior (Cheung & To, 2019; Y. Kim & Choi, 2005; Tan, 2011).

Cheung & To's research (2019) shows that environmental consciousness affects attitudes toward environmental issues and that the attitude toward eco-social benefits and green product information positively affects green purchase behavior. Cheung & To (2019) also claims that green product quality is one of the factors that can moderate the effect on green purchase behavior. Green purchase behavior research (N. T. Nguyen et al., 2021) shows that the availability of the desired green packaged product and product attributes positively affects green purchases. Therefore, the VAB model of research development (Cheung & To, 2019) becomes a reference in this study using the Partial Least Square – Structural Equation Model (PLS-SEM) method for student cluster consumers by adding the desired green packaged product variable and product attribute as well as the variable green product quality as a moderating variable.

This research aims to provide information to beverage companies in plastic bottles regarding green purchase behavior in supporting the purchase of green packaged products. Many manufacturers are willing to meet consumer needs with a green concept, according to the Sustainable Packaging Coalition (SPC) with eight environmentally friendly packaging criteria. An ultimate goal is a cradle-to-cradle approach or a closed-loop system for all packaging materials (Blakistone & Sand, 2018). The fundamental achievement of the SPC concept is to replace the unnecessary plastics currently used in the packaging supply chain and move towards a green concept in a product in a sustainable direction. Increasing purchases of green packaged products will reduce the amount of plastic waste in the environment. Thus, sustainable packaging is one of the consumer's habitual interests that will be seen in the future.

II. RESEARCH METHOD

Theoretical Framework and Model Construction

The determination of the variable operation for this research is developing the Value Attitude Behavior (VAB) model. Based on Homer & Kahle (1988), behavior in the VAB model is formed from the influence of values that affect attitudes, and attitudes affect behavior. The development of the VAB model can be carried out for certain situations that study values, attitudes, and behavior. This study adjusts the shopping behavior variable to green buying behavior. Then the development or addition of variables is carried out with the aim of knowing the factors that influence green buying behavior. Green buying behavior can be interpreted as an act of consuming products that are beneficial to the environment (K. Lee, 2009). People who adopt green buying behavior will avoid products that can damage living organisms that cause environmental damage during the manufacturing process or during the product use process.

Environmental Conciousness

Cheung & To's research (2019) shows that environmental consciousness affects attitudes toward environmental issues and attitudes towards eco-social benefits. Environmental conciousness has become a human value that

reflects individual recognition, value judgment, and belief in minimizing environmental damage (H. Y. Kim & Chung, 2011). When an individual has a strong environmental conciousness, he will be more concerned about protecting the environment (Ritter et al., 2015). Cheung & To's (2019) states that consumers with strong environmental awareness are likely to be concerned about eco-social benefits and concern for the environment can also lead someone to maximize eco-social benefits when buying a product.

H1   = Environmental Consciousness positively affects Attitude Toward Environmental Issues (EC->ATEI)

H2   = Environmental Consciousness positively affects Attitude Toward Eco-Social Benefit (EC->ATESB)

Attitude Toward Environmental Issues

Attitudes towards environmental issues are individual attitudes that are formed due to concerns about environmental damage or environmental issues. Consumers who care about the environment are more likely to develop positive beliefs in protecting the environment and reducing the amount of environmental damage (Gadenne et al., 2011). When an individual has a good attitude toward the environment will show more attention to environmental problems and may encourage to replace non-green products with green ones (Cheung & To, 2019). Consumer attitudes towards environmental issues positively affect the purchase intention of green products (Kumar et al., 2017).

H3 = Attitude Toward Environmental Issues positively affects Green Purchase Behavior (ATEI->GPB)

Attitude Toward Eco-Social Benefits

Attitude toward eco-social benefits is a condition where an individual has a good attitude towards the environment, shows more attention to environmental problems and focuses on eco-social benefits. When consumers know that these attitudes benefit society, then consumers will buy more green products (Kumar et al., 2017). Attitudes toward eco-social benefits might encourage consumers to replace non-green products with green ones (Cheung & To, 2019)

H4   = Attitude Toward Eco-Social Benefit positively affects Green Purchase Behavior (ATESB->GPB)

Green Product Information

Green product information is defined as information from products that can influence purchasing decisions, including product features, environmental benefits, health effects, and potential economic benefits in the medium and long term (Leire & Thidell, 2005). Green product information can measure consumer screening for good green products derived from consumer knowledge, such as labels and specifications (Ritter et al., 2015). When consumers receive information related to environmentally friendly products at the place of purchase, they will find it easier to decide whether to buy the product or not based on the evaluation that has been done.

H5 = Green Product Information positively affects Green Purchase Behavior (PI->GPB)

Availability of Desired Green Packaged Product

Availability is considered a contextual factor was influencing green behavior (Joshi & Rahman, 2015). When consumers find it difficult to access green products, it will affect their buying behavior (Vermeir & Verbeke, 2006). Even when green products are available in general stores, the lack of appropriate mass media and store communication reinforces consumer perceptions of the unavailability of green products. Green products are not easily visible in stores, and environmentally conscious consumers do not know where to find them, dramatically increasing the time they take(Barbarossa & Pastore, 2015). When consumers find it difficult to access green products, their attitude-behavior gap is affected (Nguyen et al., 2020)

H6 = Availability of Desired Green Packaged Product positively affects Green Purchase Behavior (AV->GPB)

Product Attribute

Product attributes are more related to consumer preferences and judgments to distinguish them from other products. Consumers

show a selection of attributes including price, brand perception, taste, capacity, and packaging design (C. W. Lee & Liao, 2009). The attributes of green packaged products must be considered with sustainable value (Rokka & Uusitalo, 2008). Price and taste must be fulfill before consumers consume green packaged beverage (van Birgelen et al., 2009). Nguyen et al., (2021) indicated that product attributes affect green purchase behavior.

H7 = Product Attribute positively affects Green Purchase Behavior (PA->GPB)

Green Product Quality

Green product quality is the perceived quality of a green packaged product that influences consumer to buying it. Green product quality measures the overall human perception of the quality of these environmentally friendly products (Ritter et al., 2015). Borin et al., (2011) indicated that green product quality influences consumer behavior. As green products consume less energy or resources, consumers believe that using these products can bring more benefits and strengthen consumers' intentions to buy environmentally friendly products. Cheung & To's research (2019) show that green product quality is one of the factors that can moderate attitudes toward environmental issues and green purchase behavior.

H8 = Green product quality moderates the positive relationship between Attitude Towards Environmental Issues and Green Purchase Behavior (M ATEI->GPB)

Green packaging products that have good quality can produce less packaging and minimize the use of chemicals in their production, and this can strengthen consumers' positive attitudes toward the benefits of eco-social benefits in purchasing environmentally friendly products (Souza et al., 2017). Cheung & To's research (2019) indicated that the quality of green products is one of the factors that can moderate attitudes toward eco-social benefits and green purchase behavior

H9 = Green Product Quality moderates the positive relationship between Attitude Towards Eco-Social Benefits and Green Purchase Behavior (M ATESB->GPB)

High-quality products provide credible information about strict environmental management system standards (To & Lee, 2014). Consumers with credible green product information tend to believe in the environmental benefits generated and will increase their interest in buying environmentally friendly products. Cheung & To's research (2019) indicated that the quality of environmentally friendly products is one of the factors that can moderate the relationship between green product information dan green purchase behavior.

H10 = Green Product Quality moderates the positive relationship between Green Product Information dan Green Purchase Behavior (M PI->GPB)

Convenience, availability, and product quality have an important role in consumer decision making (Gan et al., 2008). Product quality can be a good starting point in providing satisfaction and production for customer loyalty (Doorn and Verhoef, 2011). Therefore, this research argues that green product quality moderate the effect of the relationship between the availability of the desired green packaged product and green purchase behavior

H11 = Green Product Quality moderates the positive relationship between Availability of Desired Green Packaged Product and Green Purchase Behavior (M AV->GPB)

Price is an essential attribute in evaluating green packaged products, followed by high quality and functionality (Martinho et al., 2015). High-quality products attract consumers with a more substantial aesthetic harmony between the product and the environment (Tran, 2009). Therefore, this research argues that green product quality moderates the effect of the relationship between green product attribute and green purchase behavior

H12 = Green Product Quality moderates the positive relationship between Product Attribute and Green Purchase Behavior (M PA->GPB)

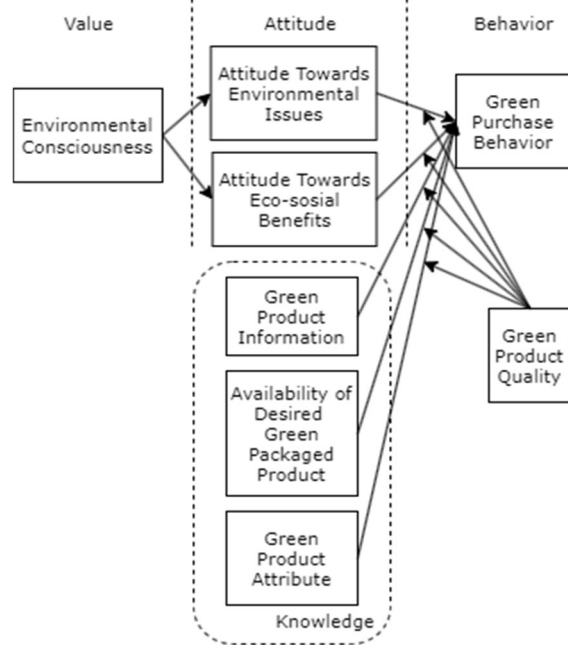Figure 1 shows the SEM model and Table 1 shows the indicators of each variable.

Figure 1. SEM Model

Population and Research Samples

This research was conducted in Surakarta City, with the primary respondents were college students in the Surakarta City. In theory, the SEM sample size repodents to the number of question items from the latent variables used in the questionnaire, namely n x 5 to n x 10 (Hair et al., 2017). Primary data collection is done by distributing questionnaires. Dissemination of online questionnaires using social media in the form of Google Form. The implementation time is three weeks, from June 14 – 3 July, 2022. Respondents are said to be valid if they meet the requirements, namely college students in Surakarta City and are bottled drink water consumers. The total respondents obtained were 264 respondents, but only 251 responses that met the requirements for data processing.

Data Analysis Techniques

Data analysis techniques on PLS with

Table 1. Indicators Measurement

Construct		Indicators	References
EC	EC1	concern for the future of the earth	Cheung & To, 2019; Nguyen et al., 2021
	EC2	awareness to reduce the amount of plastic waste, use of chemicals, water, and energy	
	EC3	concern for environmental issues	
ATEI	ATEI1	interest in reading news or reports on environmental issues	Cheung & To, 2019; Nguyen et al., 2021
	ATEI2	stop buying products from companies that harm the environment	
	ATEI3	green packaged products have an important role in the environment	
ATESB	ATESB1	Contribute to people's lives now and in the future	Cheung & To, 2019; Nguyen et al., 2021
	ATESB2	contribute to environmentally focused business	
	ATESB3	Buying green friendly packaging products is a wise choice	
PI	PI1	specifications that describe the characteristics of environmentally friendly packaging products	Cheung & To, 2019; Su et al., 2021
	PI2	websites or fan pages that are constantly updated	
AV	AV1	availability of time for shopping	Barbarossa & Pastore, 2015
	AV2	environmentally friendly packaging product placement	
PA	PA1	Eco-friendly packaging products have reasonable prices	Nguyen et al., 2021
	PA2	have a volume that is acceptable to consumers	
	PA3	aesthetics of green packaged products	
Q	Q1	green packaged product quality	Cheung & To, 2019
	Q2	green packaged product funcionallity	
GPB	GPB1	buy more green packaged products than conventional products	Cheung & To, 2019; Kim & Choi, 2005
	GPB2	more money spent on the purchase of green packaged products than conventional products	

SmartPLS software version 3.0 with the following stages:

1. Outer Model Measurement, that consist of:
   a. Convergent Validity. According to Marcelino et al., (2020), a correlation is said to meet convergent validity if it has a loading factor value of more than 0.50.
   b. Discriminant Validity. According to Pering (2021), this discriminant validity test uses cross-loading values of each construct must be higher than the correlation value between constructs in a model
   c. Average Variance Extracted (AVE). Discriminant validity can be said to be achieved if the AVE value is greater than 0.50.
   d. Composite Reliability. Data that has composite reliability of more than 0.7 has high reliability more than 0.6 for all constructs on cronbach alpha.
2. Inner Model Measurement. Testing of the Structural Model (Inner Model) is done by looking at the R-Square R-Square (R2) value, predictive relevance (Q2), and goodness-fit model test.
3. Hypothesis Testing. Hypothesis significance testing by looking at parameter coefficient values and statistical significance values in algorithm bootstrapping report-path coefficients. The t-statistical value is greater than the t-table and p-value greater than 0.05 (t-table significance 5% = 1.96)

Table 2. Convergent Validity Outer Model

	Construct	Outer Loading		Construct	Outer Loading
EC	EC1	0.840	PI	PI1	0.913
	EC2	0.783		PI2	0.927
	EC3	0.781		PI3	0.913
ATEI	ATEI1	0.885	AV	AV1	0.935
	ATEI2	0.871		AV2	0.942
	ATEU3	0.782	PA	PA1	0.782
ATESB	ATESB1	0.871		PA2	0.652
	ATESB2	0.853		PA3	0.876
	ATESB3	0.690	Moderating	M ATEI	1.454
GPB	GPB1	0.913		M ATESB	0.994
	GPB2	0.914		M PI	1.346
Q	Q1	0.917		M AV	1.086
	Q2	0.935		M PA	1.076

Table 3. Cross Loading Outer Model

	ATEI	ATESB	AV	EC	GPB	M ATEI	M ATESB	M AV	M PA	M PI	PA	PI	Q
ATEI	0.847												
ATESB	0.619	0.809											
AV	0.390	0.544	0.939										
EC	0.457	0.602	0.459	0.801									
GPB	0.730	0.596	0.473	0.481	0.913								
M ATEI	-0.335	-0.121	-0.208	-0.084	-0.242	1.000							
M ATESB	-0.177	-0.074	-0.044	-0.012	-0.091	0.448	1.000						
M AV	-0.279	-0.040	0.048	0.009	-0.194	0.695	0.450	1.000					
M PA	-0.216	-0.125	-0.118	-0.060	-0.207	0.689	0.566	0.594	1.000				
M PI	-0.334	-0.146	-0.201	-0.064	-0.254	0.767	0.490	0.723	0.587	1.000			
PA	0.572	0.555	0.396	0.522	0.553	-0.160	-0.135	-0.117	-0.128	-0.181	0.775		
PI	0.538	0.584	0.507	0.417	0.587	-0.309	-0.198	-0.249	-0.227	-0.368	0.432	0.918	
Q	0.666	0.494	0.351	0.384	0.489	-0.574	-0.440	-0.470	-0.526	-0.498	0.486	0.493	0.926

III. RESULT AND DISCUSSION

Outer Model Measurement

Convergent Validity

The first test on the outer model is convergent validity. Table 2 shows the convergent validity by looking at the loading factor. A correlation is said to meet convergent validity if it has a loading factor value of more than 0.50 (Marcelino et al., 2020). If there is a loading factor that is below 0.5, then the indicator is removed. Based on data processing using SmartPLS 3, there is no indicatior that it has a loading factor value of less than 0.5. So, it is said that all indicators are valid.

Discriminant Validity

The model is said to be feasible for research if the cross-loading value of the indicator variable on the latent variable must be greater than the other latent variables (Pering, 2021). Table 3 shows the value of cross loading. Based on the cross-loading value, it shows that all the indicator variable values for the latent variables are greater than the correlation values between the other latent variables. So, it is said that all constructs in this research are valid.

Average Variance Extracted (AVE)

The next discriminant validity assessment can be achieved if the AVE value is greater than 0.5 (Pering, 2021). Based on the AVE value in Table 4, all variables in this study can be accepted because they have an AVE value > 0.5. So, the variables are convergently valid and variable already has indicators that can be used for further analysis.

Composite Reliability dan Cronbach Alpha

Construct reliability test was conducted, which was measured by two criteria, namely composite reliability and Cronbach alpha. A latent variable is a reliable measuring instrument if the composite reliability value is more than 0.7 and Cronbach's alpha value is more than 0.6 (Sudargini, 2021). Table 5 shows composite reliability and Cronbach alpha. Based on calculation, the results of composite reliability all constructs are more than 0.7, and Cronbach's alpha more than 0.6. This shows that all the constructs of this study have become a fit

measuring instrument and all the questions used to measure each construct have good reliability.

Inner Model Measurement

The inner model's evaluation was tested after the outer model's evaluation. Testing on the inner model tested by looking at the R-Square (R2) value, predictive relevance (Q2), and goodness-fit model test. Table 6 shows the results of testing the inner model.

Table 4. Average Variance Extracted (AVE)

	Average Variance Extracted
ATEI	0.718
ATESB	0.654
AV	0.881
EC	0.642
GPB	0.834
M ATEI	1.000
M ATESB	1.000
M AV	1.000
M PA	1.000
M PI	1.000
PA	0.601
PI	0.842
Q	0.858

Table 5. Composite Reliability and Cronbach Aplha

	Cronbach's Alpha	Composite Reliability
ATEI	0.806	0.884
ATESB	0.737	0.849
AV	0.865	0.937
EC	0.723	0.843
GPB	0.801	0.910
M ATEI	1.000	1.000
M ATESB	1.000	1.000
M AV	1.000	1.000
M PA	1.000	1.000
M PI	1.000	1.000
PA	0.693	0.817
PI	0.906	0.941
Q	0.835	0.924

Table 6. Inner Model

	R Square	Q^2	GoF
ATEI	0.209	0.143	
ATESB	0.363	0.224	0.704
GPB	0.633	0.500	

The R-Square value measures how much the exogenous variable can influence the endogenous variable. R2 values of 0.67, 0.33, and 0.19 show that the model is strong, moderate, and weak (Aryadhe et al., 2018). In the test, it was found that one construct on Attitude Toward Environmental Issue had a weak influence, one construct on attitude toward eco-social benefits had a moderate effect, and seven constructs on green purchase behavior had a moderate effect.

The value of Q^2 aims to determine how well the resulting observation value is. According to Hair et al., (2017), a value of Q2 > 0 indicates the model has a relevant predictive value and if the value of Q2 < 0 indicates that the model lacks a relevant predictive value. The test results show that the Q^2 value of the three constructs is greater than 0.

The GoF value measures how well the overall model under study is. Gof's assessment was carried out to validate the combined performance of the outer and inner models that evaluate the overall structural and measurement model. The test results obtained a GoF value of 0.704 so that the model has a 70.4% fit.
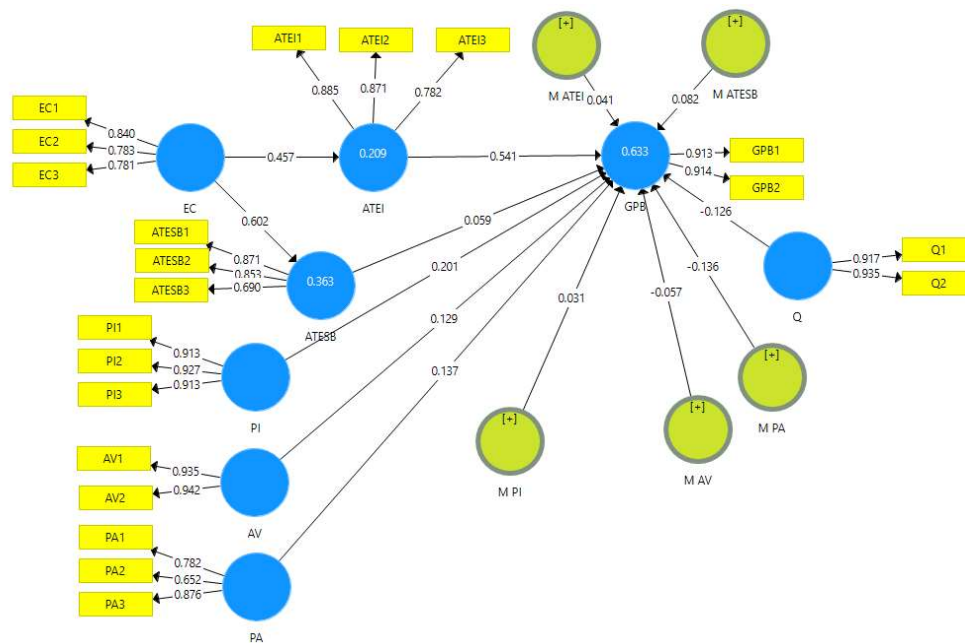

Figure 2. Path Coefficient

Table 7. Hyphotesis Test

Path Hyphotesis		Path Coefficient	T Statistics	P Values	Results
EC -> ATEI	H1	0.457	7.061	0.000	Not Rejected
EC -> ATESB	H2	0.602	0.956	0.000	Not Rejected
ATEI -> GPB	H3	0.541	2.221	0.000	Not Rejected
ATESB -> GPB	H4	0.059	8.752	0.340	Rejected
PI -> GPB	H5	0.201	14.899	0.003	Not Rejected
AV -> GPB	H6	0.129	0.608	0.027	Not Rejected
PA -> GPB	H7	0.137	1.569	0.011	Not Rejected
M ATEI -> GPB	H8	0.041	0.834	0.543	Rejected
M ATESB -> GPB	H9	0.082	2.093	0.117	Rejected
M PI -> GPB	H10	0.031	0.421	0.674	Rejected
M AV -> GPB	H11	-0.057	2.553	0.405	Rejected
M PA -> GPB	H12	-0.136	2.954	0.037	Not Rejected

Hypothesis Testing

This hypothesis testing stage analyzes whether there is a significant effect between exogenous and endogenous variables. Analysis of the direction of the relationship between exogenous and endogenous variables using path coefficients and the level of significance using p-value and t statistics through the bootstrapping method. If a p-value of 0.05 (alpha 5%) is obtained with t statistics greater than t table (1.96), it can be concluded that the result is significant or the hypothesis H1 is accepted and vice versa. Figure 2 shows the results of the model path coefficients, and Table 7 shows the results of hypothesis testing.

Based on the results of hypothesis testing, environmental consciousness affects attitudes toward environmental issues and eco-social benefits. Meanwhile, attitude toward eco-social benefits does not affect green purchase behavior (H4 rejected). This is not consistent with Cheung's research, (2019), because students may not have a sense of social utility when buying an environmentally friendly product. Environmental and ethical issues are often considered too complex for one person to make a difference, meaning one needs to make significant lifestyle changes.

Green product information, availability of desired green packaged products, and product attribute have a significant positive effect on green purchase behavior. Relevant to previous research, that product information, availability of the desired green packaged product, and product attributes can be positive considerations for purchasing green products (Barbarossa & Pastore, 2015; Cheung & To, 2019; Su et al., 2021).

Green product quality has a significant positive moderating effect on the relationship between product attributes and green purchase behavior. This proves that consumers consider product attributes, consumers will also see the quality of the products offered. In accordance with the statement of Martinho et al., (2015), price is an important factor in evaluating green packaged products, followed by high quality and functionality.

Based on PLS-SEM results, 4 out of 5 hypotheses of green product quality moderation on green purchase behavior were rejected (H8, H9, H10, and H11). This confirmed studies that green product quality might not be one of the best facilitators for consumers to purchase more green products(Chan, 1999; Schebesta, 2018). However, we cannot rule out the possibility that the quality of green products may exert a more significant moderating effect on the relationship to green repeat buying behavior in the future.

IV. CONCLUSION

This study aims to explain the factors that influence the green purchase behavior of AMDK Aqua Life products in student cluster consumers in Surakarta City. This study shows that environmental consciousness affects attitudes toward environmental issues and eco-social benefits. Company intervention can be done by strengthening consumer confidence in environmental care behavior by holding seminars related to the attachment between humans and environmental issues that occur or by educating the public about how important it is that humans and environmental problems have an attachment to protect and care for each other through social media such as Instagram, Youtube, Twitter, and others. Danone Aqua can make events or campaigns with the theme of environmental care by using Aqua Life products as a form of care can also be carried out. This study shows that green product information, availability of desired green packaged products, and product attributes affect green purchase behavior. Interventions can be done by constantly updating the mass media and websites with product information and environmentally friendly commitments. Companies can work with retailers so that Aqua Life products can be placed in separate departments or shelves that display environmentally friendly packaging products. In addition to make it easier for consumers to find this product, price comparisons with conventional products, usually lower, will not prevent consumers from buying environmentally friendly packaged products. Eco-labels with

environmentally friendly specifications can also be added to the Aqua Life bottled water. Thus, it is expected that there will be an increase in the purchase of environmentally friendly packaging products by student cluster consumers in Surakarta City. Finally, further studies need to consider a wider range of participants to provide broad generalizations.

REFERENCES

Aryadhe, T., Suryani, A., & Sudiksa, I. B. (2018). Pengaruh Sikap dan Norma Subjektif Terhadap Niat Beli dan Keputusan Pembelian. *E-Jurnal Manajemen Unud, 7*(3), 1452–1480. https://doi.org/https://doi.org/10.24843/EJMUNUD.2018.v7.i03.p012

Badan Pusat Statistik Propinsi Jawa Tengah. (2021). Https://Jateng.Bps.Go.Id/Indicator/12/766/1/Jumlah-Penduduk-Menurut-Kabupaten-Kota-Di-Jawa-Tengah.Html.

Badan Standardisasi Nasional. (2015). *SNI 3553.* www.bsn.go.id

Barbarossa, C., & Pastore, A. (2015). Why Environmentally Conscious Consumers Do Not Purchase Green Products: A Cognitive Mapping Approach. *International Journal, 18*(2), 188–209. https://doi.org/http://dx.doi.org/10.1108/QMR-06-2012-0030

Blakistone, B., & Sand, C. K. (2018). *Using Sustainable Packaging Technologies to Respond to Consumer, Retailer, and Seafood Industry Needs.* International Smoked Seafood Conference Proceedings, 75–79. https://doi.org/10.4027/isscp.2008.16

Borin, N., Cerf, D. C., & Krishnan, R. (2011). Consumer Effects of Environmental Impact in Product Labeling. *Journal of Consumer Marketing, 28*(1), 76–86. https://doi.org/10.1108/07363761111101976

Chan, R. Y. K. (1999). Environmental Attitudes and Behavior of Consumers in China. *Journal of International Consumer Marketing, 11*(4), 25–52. https://doi.org/10.1300/J046v11n04_03

Cheung, M. F. Y., & To, W. M. (2019). An Extended Model of Value-Attitude-Behavior to Explain Chinese Consumers' Green Purchase Behavior. *Journal of Retailing and Consumer Services, 50*, 145–153. https://doi.org/10.1016/j.jretconser.2019.04.006

Fajarini, I., Amal, M. I., Oktavilia, S., & Utami, S. (2021). *Peningkatan Perekonomian Melalui Daur Ulang Plastik dan Minyak Jelantah.* Prosiding Seminar Nasional UNIMUS, 4, 2608–2618.

Gadenne, D., Sharma, B., Kerr, D., & Smith, T. (2011). The Influence of Consumers' Environmental Beliefs and Attitudes on Energy Saving Behaviours. *Energy Policy, 39*(12), 7684–7694. https://doi.org/10.1016/j.enpol.2011.09.002

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (Second Edition). SAGEPublications,Inc.

Homer, P. M., & Kahle, L. R. (1988). Structural Equation Test of the Value-Attitude-Behavior Hierarchy. *Journal of Personality and Social Psychology, 54*(4), 638–646. https://doi.org/10.1037/0022-3514.54.4.638

Indramawan, R. S. (2020). *Kajian Peran Pemulung dalam Pengurangan Volume Sampah di TPA Putri Cempo Kota Surakarta.* Universitas Muhammadiyah Surakarta.

Joshi, Y., & Rahman, Z. (2015). Factors Affecting Green Purchase Behaviour and Future Research Directions. *International Strategic Management Review, 3*(1–2), 128–143. https://doi.org/10.1016/j.ism.2015.04.001

Kim, H. Y., & Chung, J. E. (2011). Consumer Purchase Intention for Organic Personal Care Products. *Journal of Consumer Marketing, 28*(1), 40–47. https://doi.org/10.1108/07363761111101930

Kim, Y., & Choi, S. M. (2005). Antecedents of Green Purchase Behavior: An Examination of Collectivism, Environmental Concern, and PCE. *Advances in Consumer Research, 32*, 592–599. http://www.acrwebsite.org/volumes/9156/volumes/v32/NA-32http://www.copyright.com/.

Kumar, B., Manrai, A. K., & Manrai, L. A. (2017). Purchasing Behaviour For Environmentally Sustainable Products: A Conceptual Framework and Empirical Study. *Journal of Retailing and Consumer Services, 34*, 1–9. https://doi.org/10.1016/j.jretconser.2016.09.004

Lee, C. W., & Liao, C. S. (2009). The Effects of Consumer Preferences and Perceptions of Chinese Tea Beverages on Brand Positioning Strategies. *British Food Journal, 111*(1), 80–96. https://doi.org/10.1108/00070700910924254

Lee, K. (2009). Gender Differences in Hong Kong Adolescent Consumers' Green Purchasing Behavior. *Journal of Consumer Marketing, 26*(2), 87–96. https://doi.org/10.1108/07363760910940456

Leire, C., & Thidell, Å. (2005). Product-Related Environmental Information to Guide Consumer Purchases - A Review and Analysis of Research on Perceptions, Understanding and Use Among Nordic Consumers. *Journal of Cleaner Production, 13*(10–11), 1061–1070.

https://doi.org/10.1016/j.jclepro.2004.12.004

Marcelino, D., Widodo, A., Administrasi Bisnis, P., & Komunikasi dan Bisnis, F. (2020). Green Purchase Intention pada Konsumen Nutrifood di Bandung: Peran Environment Concern dengan Mediasi Green Trust. *Jurnal Sekretaris dan Administrasi Bisnis, 4*(1), 1–20. http://jurnal.asmtb.ac.id/index.php/jsab

Martinho, G., Pires, A., Portela, G., & Fonseca, M. (2015). Factors Affecting Consumers' Choices Concerning Sustainable Packaging during Product Purchase and Recycling. *Resources, Conservation and Recycling, 103*, 58–68. https://doi.org/10.1016/j.resconrec.2015.07.012

Nguyen, A. T., Parker, L., Brennan, L., & Lockrey, S. (2020). A Consumer Definition of Eco-Friendly Packaging. *Journal of Cleaner Production, 252*. https://doi.org/10.1016/j.jclepro.2019.119792

Nguyen, N. T., Nguyen, L. H. A., & Tran, T. T. (2021). Purchase Behavior of Young Consumers Toward Green Packaged Products in Vietnam. *Journal of Asian Finance, Economics and Business, 8*(1), 985–996. https://doi.org/10.13106/jafeb.2021.vol8.no1.985

Pering, I. M. A. A. (2021). Kajian Analisis Jalur dengan Structural Equation Modeling (SEM) Smart-PLS 3.0. *Jurnal Satyagraha, 03*(02), 28–48. http://ejournal.universitasmahendradatta.ac.id/index.php/satyagraha

Ritter, Á. M., Borchardt, M., Vaccaro, G. L. R., Pereira, G. M., & Almeida, F. (2015). Motivations for Promoting the Consumption of Green Products in an Emerging Country: Exploring Attitudes of Brazilian Consumers. *Journal of Cleaner Production, 106*, 507–520. https://doi.org/10.1016/j.jclepro.2014.11.066

Rokka, J., & Uusitalo, L. (2008). Preference for Green Packaging in Consumer Product Choices – Do Consumers Care? *International Journal of Consumer Studies, 32*(5), 516–525. https://doi.org/10.1111/j.1470-6431.2008.00710.x

Schebesta, H. (2018). Revision of the EU Green Public Procurement Criteria for Food Procurement and Catering Services - Certification Schemes as the Main Determinant for Public Sustainable Food Purchases? *European Journal of Risk Regulation, 9*(2), 316–328. https://doi.org/10.1017/err.2018.24

Souza, A. A. A., Alves, M. F. R., Macini, N., Cezarino, L. O., & Liboni, L. B. (2017). Resilience for Sustainability as An Eco-Capability. *International Journal of Climate Change Strategies and Management, 9*(5), 581–599. https://doi.org/10.1108/IJCCSM-09-2016-0144

Su, D. N., Duong, T. H., Thanh Tran Dinh, M., Nguyen-Phuoc, D. Q., & Johnson, L. W. (2021). Behavior Towards Shopping at Retailers Practicing Sustainable Grocery packaging: The influences of Intra-Personal and Retailer-Based Contextual Factors. *Journal of Cleaner Production, 279*. https://doi.org/10.1016/j.jclepro.2020.123683

Sudargini, Y. (2021). Peran Supervisi Akademik dan Motivasi Kerja Terhadap Peningkatan kompetensi Guru SMA Negeri di Pati. *Journal of Industrial Engineering & Management Research, 2*(6), 13–21. https://doi.org/https://doi.org/10.7777/jiemar

Tan, B.-C. (2011). The Role of Perceived Consumer Effectiveness on Value-Attitude-Behaviour Model in Green Buying Behaviour Context. *Australian Journal of Basic and Applied Sciences, 5*(12), 1766–1771.

To, W. M., & Lee, P. K. C. (2014). Diffusion of ISO 14001 Environmental Management System: Global, Regional and Country-Level Analyses. *Journal of Cleaner Production, 66*, 489–498. https://doi.org/10.1016/j.jclepro.2013.11.076

Tran, B. (2009). Green management: The Reality of Being Green in Business. *Journal of Economics, Finance and Administrative SCIENCE, 14*(27), 21–45. https://doi.org/10.46631/jefas.2009.v14n27.02

van Birgelen, M., Semeijn, J., & Keicher, M. (2009). Packaging and Proenvironmental Consumption Behavior: Investigating Purchase and Disposal Decisions for Beverages. *Environment and Behavior, 41*(1), 125–146. https://doi.org/10.1177/0013916507311140

Vermeir, I., & Verbeke, W. (2006). Sustainable Food Consumption: Exploring the Consumer "Attitude - Behavioral Intention" GAP. *Journal of Agricultural and Environmental Ethics, 19*(2), 169–194. https://doi.org/10.1007/s10806-005-5485-3

WWF. (2018, May). *Lets Reduce Waste to Protect Our Sea!* wwf.or.id: https:// wwf.or.id/?65643/Lets-Reduce-Waste-to-Protect-Our_Sea.