(RESEARCH ARTICLE)

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The influence of green product quality and green environmental concern on customer loyalty through green perceived value of Tupperware product consumers in the city of Surabaya, Indonesia

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Abstract

The increasingly advanced development of technology and industry has caused the emergence of various environmental problems, including global warming, environmental pollution and forest destruction. Inorganic waste currently threatens the world's ecosystem. Furthermore, many consumers today are aware of green products in various products. This research examines the relationship between green environmental concerns, green product quality, green perceived value on customer loyalty to Tupperware products in the city of Surabaya, Indonesia. This research uses the Structural Equation Modeling Partial Least Square (SEM-PLS) method to test the relationship between variables. It was found that green product quality, green perceived value and customer loyalty influenced consumer loyalty towards Tupperware products in Surabaya. This research can expand the literature review regarding customer behavior on green product image.

Keywords: Customer Loyalty; Green environment; Green Product Image; Tupperware

1. Introduction

Based on data from the Central Statistics Agency (BPS), waste production in the city of Surabaya is estimated to reach 738.32m^3 per day. This number continues to increase significantly every year. According to KLHK records, the amount of plastic waste increased in the Rungkut District area, Surabaya city, from 7.99% in 2017 to 22.83% in 2020. Then in the Benowo Surabaya TPA, which also experienced an increase from 12.96% in in 2013 to 22.01% in 2020. With the increase in the amount of waste, the Mayor of Surabaya issued Mayor Regulation (Perwali) number 16 of 2022 concerning reducing the use of plastic bags in the city of Surabaya. In the Perwali, chapter 4, article 4 paragraph 1, regulates reducing the use of plastic bags, which is implemented by prohibiting the use of plastic bags and the obligation to use environmentally friendly shopping bags. With the issuance of this Perwali, it is hoped that it can minimize the amount of plastic waste used in the city of Surabaya.

Plastic is one of the pieces of furniture that cannot be separated from everyday life, especially for housewives. The use of furniture made of plastic has made it easier for housewives to carry out their daily activities. Therefore, plastic is one of the wastes that is widely used by housewives, because apart from having good durability, furniture made from plastic also has a relatively more economical price, so the demand for equipment made from plastic is getting higher every time. the year. The increase in plastic materials is a concern for human health and survival. Apart from the fact that plastic materials are difficult to decompose, using plastic materials is also not good for your health. Many housewives use plastic storage utensils with poor materials, so that if they are used repeatedly it will cause the food to become unsuitable for re-consumption and will have an impact on health problems. These irregular consumption patterns and

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lifestyles cause very serious environmental problems, thus encouraging people to change their lifestyles. Thus, people are increasingly aware of the dangers of plastic waste for the environment.

In line with current developments, and supported by the ease of finding information about environmental issues on the internet, the significance of safeguarding the environment for the benefit of future generations is becoming more widely recognized among the populace. The environment surrounding consumers will be impacted both directly and indirectly by the products and services they select [1]. Concern for the environment, which is a major factor in product selection, can educate customers about environmental issues and provide them with information about green environmental concern, or ecologically friendly products. Thus, the current increase in the amount of plastic waste can cause people to be wiser in purchasing products. This becomes a challenge for companies to include environmental friendliness in their marketing strategies.

The field of marketing has an important meaning in providing valuable information regarding product ideas and their development, so that it is hoped that company marketing can make environmentally friendly products and services a success directly to consumers, which in the end is expected to achieve competitive advantage. Green marketing helps facilitate increasing customer knowledge about environmentally friendly products or services and explaining their benefits. When the business sector promotes green marketing and its marketing plans effectively, consumers will volunteer to travel longer distances and also pay more to behave well and be environmentally responsible [2]. The green marketing concept refers to fulfilling human needs and desires without damaging the environment, so companies need to adopt green marketing for three reasons, namely handling environmental pressures, achieving competitive advantage and increasing product value. Thus, green marketing can meet customer needs and desires effectively and efficiently to increase consumer satisfaction and adopt practices that minimize the environment to benefit society and the environment as a whole [3].

Apart from green marketing, customer assessment of products or services that have experienced benefits is very important in future business development. Consumers who care more about the environment will be more aware of it and provide assessments with strict standards. For this reason, knowledge about green perceived value will cause customer satisfaction to increase and the company's competitive position to become stronger. Where green perceived value itself is a consumer's comprehensive assessment of all the benefits received and what is sacrificed based on desires regarding the environment [4]. Thus, when customer expectations match what they experience and feel, loyalty will be created towards that customer. According to [5] the promise to return for favored goods or services in the future is known as customer loyalty. The definition of customer loyalty is a pattern of behavior in which a client chooses to make recurrent purchases of goods and services from the same seller, so forging a devoted bond with them. Thus, it can be stated that customer loyalty is associated with repeated purchases of selected products or services from the same company compared to products or services from other companies.

Customers are becoming more knowledgeable about environmental issues and interested in learning about environmentally friendly items as a result of today's growing environmental concerns. With increasing public concern for the environment, companies must make good products, where the materials used do not harm the environment. Green product quality is an ecological product that is environmentally friendly, which describes goods that incorporate recycling to protect the environment [6]. In the California Green Solution study in 2007, it was stated that 37% of consumers really care about the environment. Consumers tend to like products that are environmentally friendly because they are very concerned about their health and the environment as well as information on how the product is prepared, how long it lasts, and also how to dispose of it as an evaluation of environmentally friendly products. According to [7], green products are defined as having features, packaging, and design that are ecologically friendly, energy-efficient, pollutant-free, and waste-recycling.

One product that is environmentally friendly and often used in everyday life is food storage containers from the popular brand, namely Tupperware. Tupperware products are one of the products that produces several household appliances, which include storage containers, serving containers, as well as several other kitchen utensils. Tupperware is classified as a green product or green product quality, because its products are environmentally friendly in their use. This has attracted consumers' interest in purchasing Tupperware products, apart from the fact that the quality of Tupperware's products is durable and long-lasting and provides a lifetime guarantee for its users, which is a distinct advantage for Tupperware products. The varied designs of Tupperware products make consumers interested in buying them. Currently, Tupperware products have entered the Top Brand ranks in the plastic container category. Until now, Tupperware still dominates the plastic container market with rival brands Lion Star, Lock &Lock, Claris and Maspion.

Therefore, amidst the current increasing public awareness of the environment, it is important for companies to meet customer needs by differentiating their products through developing green product quality or green packaging. With these efforts, companies can achieve customer loyalty and competitive advantage.

Several previous studies have also investigated green product quality, environmental concerns, and green perceived value on customer loyalty, but still show inconsistent results. Research conducted by [8] found that environmental concerns have no effect on customer loyalty. Meanwhile, research conducted by [9] found that environmental concern had a positive effect on purchase intention. The same results were also shown in the research of [10] in their research which tested the moderating role of environmental concern in the relationship between perceptions of environmentally friendly practices and hotel loyalty components. In a survey of tourists using hotels showed that customers related to the hotel's core business and environmentally friendly practices were positively related, which consequently influenced customers' purchase intentions towards the hotel. In research conducted by [11] and [12] it was found that product quality has a significant effect on customer loyalty. However, this is different from research conducted by [13] which found that product quality has no effect on customer loyalty.

Based on the background and inconsistencies above, researchers are interested in re-examining environmental concerns, green perceived value, and product quality on customer loyalty, by carrying out developments. Researchers added a mediating variable, namely green perceived value, to find out whether there were still inconsistencies with this variable.

2. Literature Review

The marketing mix, also referred to as the 4Ps, constitutes a set of adjustable marketing components that companies utilize to attain objectives within their target market. As outlined by [14], it is the predominant approach employed by businesses to determine the presentation of their product offerings to specific market segments. Acting as a crucial tool for marketers, the marketing mix encompasses diverse elements within a marketing strategy, facilitating the successful implementation of positioning and overall strategy [15]. Comprising four fundamental elements—product, price, place, and promotion—the marketing mix, as per [16], serves as a toolkit of controllable marketing instruments that companies integrate to elicit the desired response from the target market.

Green product quality encompasses aspects such as product features, design, and packaging, emphasizing attributes like energy efficiency, pollution prevention, waste recycling, and environmental friendliness. As indicated by [17], the significance of green product quality has grown, becoming a crucial consideration for consumers seeking environmentally friendly products. Nowadays, it's insufficient for companies to merely label their products as "green"; they must also meet consumer expectations regarding environmental impact, fostering customer loyalty and gaining a competitive edge. Per [18], perceived quality plays a pivotal role in evaluating products, serving as a primary dimension in the decision-making process. Commencing with product quality can be instrumental in generating satisfaction, fostering customer loyalty, and enhancing overall production, as noted by [19]. Performance, features, dependability, adherence to specifications, longevity, serviceability, appearance, and perceived quality are all seen as markers of product quality.

Environmental concern refers to the extent of a person's understanding of problems in the environment and actions to try to solve existing problems or show a person's desire to contribute personally to the solutions they provide [20]. Green environmental concern is individual attention to the environment and environmental issues. Green environmental concern is a belief, attitude and level of individual concern for the environment. Green environmental concern refers to consumers' attitudes towards environmental quality for the benefits that will be felt by the entire community in the future [21]. Green environmental concern refers to the belief, attitude, and degree of worry that people have for the environment. A person's concern for the environment is one of the primary indicators of their pro-environmental conduct, according to a variety of green marketing publications [22]. Green environmental concern is a responsibility in dealing with environmental problems which not only improves the quality of the organization but also increases consumer loyalty. According to [23], the indicators used by green environmental concern are as follows: Caring about the situation on earth, namely having a role in what will happen on this earth if we don't care about the environment. Humans must maintain environmental balance in order to survive. Humans must be aware that protecting the environment is an obligation. Humans often cause disturbances in nature which result in dangerous consequences, which means knowing the consequences of disrupting nature due to human actions. Take action to reduce environmental damage. Get involved in actions to reduce environmental damage.

[24] stated that the net profit from customers' total assessment through product or service evaluation is used to reflect green perceived value. Accordingly, every advantage that customers get from eating an organic food that will benefit

them or that they would experience as a result of ingesting the product is a measure of the product's perceived value. Many researchers have defined green perceived value as added value or profits and benefits obtained from a product that is consumed, which can later create satisfaction or fulfill expectations for the product. Companies can apply environmental concepts to marketing activities which can increase the company's sales value. Green marketing can provide benefits and advantages because the products produced are environmentally friendly products and consumers are confident that the organic products produced are not dangerous for consumption so they can provide a good brand image. Green marketing is a strategic response to environmental influences that span the entire lifecycle of goods or services, encompassing design, production, packaging, labeling, use, and disposal. Companies often employ green marketing strategies to influence consumer behavior, encouraging eco-conscious purchasing decisions and fostering a perceived value associated with environmental responsibility. As outlined in [4], one tangible aspect of green marketing that consumers can perceive and evaluate is the green perceived value. According to [5], this concept represents the disparity between a potential customer's assessment of all the benefits and costs of an offer compared to its alternatives. Green perceived value forms an emotional connection between consumers and producers, manifesting as economic, functional, and psychological benefits derived from using products and services to fulfill specific needs. Customer value, a metric influenced by costs and benefits, involves considerations such as monetary outlay, time, energy, and psychological investments. The benefits encompass products, services, personal satisfaction, and image enhancement. It is essentially the consumer's holistic evaluation of a product based on their perception of what they gain versus what they sacrifice, including the price paid. As [25] points out, customer value is multifaceted, encompassing Emotional Value, Social Value, Performance Value, and Price Value.

As per [26], the definition of loyalty is the unwavering determination to continually repurchase a favored good or service in the future, regardless of external factors like marketing campaigns and situational circumstances that could otherwise cause a person to switch. Customer loyalty measures how attached a customer is to a specific product or service and predicts whether or not they would look at other brands. The benefits of client loyalty go beyond protecting your business from threats and rivals; they also include perceptional rivalry and helping your business thrive as a whole. Dedicated clients are essential to a business's growth since they frequently offer insightful recommendations and ideas for raising the caliber of services and goods. Furthermore, these customers tend to prioritize the company's offerings over price concerns due to their trust in the company's services and product quality. As stated by [19], consumer loyalty involves a customer's enduring commitment to a brand, store, or supplier, built on positive attributes developed through long-term purchases. [27] outlines indicators of loyal customers, including regular repeat purchases, cross-purchasing between product and service lines, referring others to the brand, and demonstrating resilience to competitive pressures.

The conceptual framework of this research as below figure
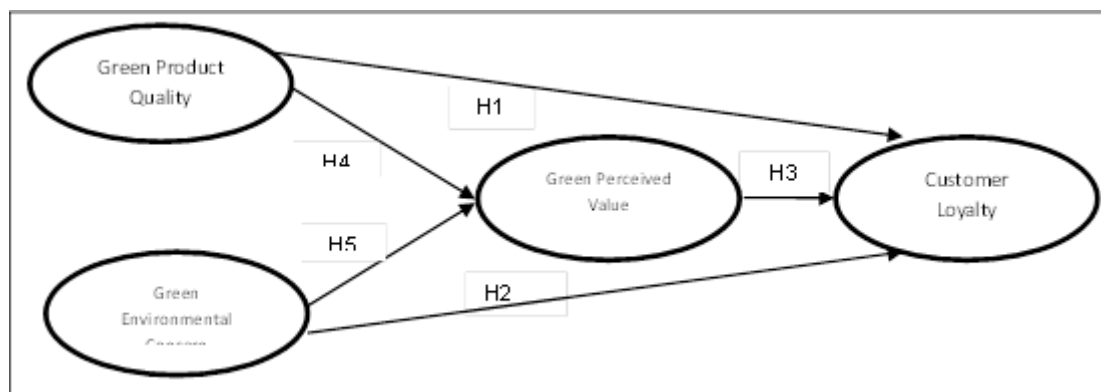
Figure 1 Conceptual Framework

2.1. Hypothesis of Research

Primarily based at the problem statement and conceptual framework, there are hypotheses proposed:

- H1: Green product quality has a positive and significant effect on customer loyalty.
- H2: Green environmental concerns have a positive and significant effect on customer loyalty.
- H3: Green perceived value has a positive and significant effect on customer loyalty

- H4: Green product quality has a positive and significant effect on green perceived value and has an impact on customer loyalty.
- H5: Green environmental concerns influence green perceived value and have an impact on customer loyalty

3. Methods

This research uses quantitative methods which aim to describe, confirm and prove hypotheses regarding the observed phenomena. This quantitative approach is also carried out by collecting and analyzing data, using survey and experimental strategies, carrying out measurements and observations, as well as testing theory with statistical tests [28]. The research is classified as explanatory research because of the well stated problem formulation and research objectives. This study used the Structural Equation Model (SEM) analytical method, which makes use of the Variance-Based SEM approach, also referred to as partial least square (PLS). PLS uses the random doubling technique, often known as bootstrapping, to reduce worries with the assumption of normalcy. Furthermore, as prediction and theory development are the main goals of the research, the implementation of PLS is in line with those goals. The program Smart PLS 3.0 was used to analyze the data.

This research was carried out in the Surabaya City area and its surroundings. The population in this research for quantitative research is loyal Tupperware consumer consumers, an infinite population. Based on the unknown size of the population and the need for research to target specific criteria as research subjects, this study uses non-probability sampling as its sampling method. This study combines a purposive sampling approach with a non-probability sampling strategy, that is, a sampling procedure by identifying specific considerations [29]. The following are the sample criteria that will be used in this research: 1) Men and women with an age range of >17 years, 2) Have at least 2 or more Tupperware products, 3) Have purchased products from Tupperware at least 2 or more times. In this study, the number of indicators used has been determined, namely 20, so that if the sampling theory by [30] is used above, 200 samples will be obtained which will be the number of respondents to be studied.

Respondents' answers to surveys are measured using a Likert scale. The Likert scale is a tool for gauging the thoughts and perceptions of individuals or groups about social phenomena. These variable indicators serve as the foundation for putting together equipment components, which can take the shape of queries or statements. For the purpose of quantitative analysis, responses were evaluated specifically as follows: I agree completely and received a score of 5. I agree with a score of 4. Undecided was rated on a 3-point scale. I disagree, it is evaluated on 2 points. If I strongly disagree, 1 point is given.

4. Results

4.1. Instrument Test Results

4.1.1. Test of Validity

The validity test is carried out by comparing the calculated r and the r table. If the calculated r is greater than the table r and the value is positive and sig <0.05, then the item or statement or indicator is declared valid. In this study, the number of samples (n) = 30, the size of df can be calculated by df = 30-2, so df = 30-2 = 28. With df 28 and a = 0.05 (5%), the result is r table = 0.361. The following are the results of the validity test of this research.

Table 1 Validity Test Results

Variable	Item	r-count	r-table	Sig	Std. Sig	Remark
Green Product Quality	GPQ1	0.958	0.361	0.000	0.05	Valid
	GPQ2	0.818	0.361	0.000	0.05	Valid
	GPQ3	0.847	0.361	0.000	0.05	Valid
	GPQ4	0.958	0.361	0.000	0.05	Valid
	GPQ5	0.760	0.361	0.000	0.05	Valid
	GPQ6	0.703	0.361	0.000	0.05	Valid
	GPQ7	0.958	0.361	0.000	0.05	Valid
	GPQ8	0.958	0.361	0.000	0.05	Valid
Green Perceived Value	GPV1	0.718	0.361	0.000	0.05	Valid
	GPV2	0.879	0.361	0.000	0.05	Valid
	GPV3	0.505	0.361	0.000	0.05	Valid
	GPV4	0.718	0.361	0.000	0.05	Valid
	GPV5	0.879	0.361	0.000	0.05	Valid
Green Environmental Concern	GEC1	0.670	0.361	0.000	0.05	Valid
	GEC2	0.652	0.361	0.000	0.05	Valid
	GEC3	0.637	0.361	0.000	0.05	Valid
	GEC4	0.564	0.361	0.000	0.05	Valid
	GEC5	0.611	0.361	0.000	0.05	Valid
Customer Loyalty	CL1	0.555	0.361	0.000	0.05	Valid
	CL2	0.674	0.361	0.000	0.05	Valid
	CL3	0.599	0.361	0.000	0.05	Valid
	CL4	0.624	0.361	0.000	0.05	Valid
	CL5	0.775	0.361	0.000	0.05	Valid

Source: processed field data

4.1.2. Test of Reliability

Reliability test measurements were carried out by comparing Cronbach Alpha values > 0.70 [31]. The results of the reliability test in this research are as follows:

Table 2 Reliability Test Results

Variable	Cronbach's Alpha	Standard	Remark
Green Product Quality	0.964	0.70	Reliable
Green Perceived Value	0.887	0.70	Reliable
Green Environmental Concern	0.800	0.70	Reliable
Customer Loyalty	0.800	0.70	Reliable

Source: processed field data

Upon examination of the reliability test results table, it is evident that all variables within the constructs exhibit a Cronbach alpha value exceeding 0.70. Consequently, it can be inferred that the statement items employed in this study

are deemed reliable. Reliability shows that the variable items in this research can be trusted and relied upon as research measuring tools.

4.2. Structural Equation Model Partial Least Square Analysis

4.2.1. Evaluation of the Measurement Model (Outer Model)

Convergent Validity

Convergent validity is employed to assess the validity of relationships between indicators and their respective latent constructs or variables. When convergent validity reveals a value lower than the loading factor or is inadequate, it indicates that the item may not be suitable for measuring the construct. The size of the loading factor indicates the effectiveness of indicators in measuring variables. According to a general guideline, an item is considered reliable if it possesses a loading factor value exceeding 0.7 in confirmatory research, while a loading factor within the range of 0.6 to 0.7 is deemed acceptable for exploratory research [32]. It is essential for the loading factor to be positive and greater than 0.60, meeting the criteria for reliability indicators. The outcomes of the reliability indicator testing are presented in the subsequent table.

Table 3 Reliability Indicator Test Results

Variable	Item	Loading Factor	Cut off	Remark
Customer Loyalty	CL1	0.838	0.7	Valid
	CL2	0.704	0.7	Valid
	CL5	0.790	0.7	Valid
Green Environmental Concern	GEC1	0.861	0.7	Valid
	GEC2	0.755	0.7	Valid
	GEC3	0.727	0.7	Valid
Green Product Quality	GPQ2	0.741	0.7	Valid
	GPQ3	0.771	0.7	Valid
	GPQ4	0.767	0.7	Valid
	GPQ6	0.721	0.7	Valid
Green Perceived Value	GPV2	0.750	0.7	Valid
	GPV3	0.872	0.7	Valid

Source: processed field data

Discriminant Validity

An additional technique for determining discriminant validity is to examine the cross-loading value. If the loading factor value in a relevant variable is higher than the indicator's correlation value in other variables, the indicator is considered valid. The following table displays the findings of the discriminant validity values used in this study.

Table 4 Discriminant Validity Test Results Through Cross Loading

Item	CL	GEC	GPQ	GPV	Remark
CL1	0.838	0.586	0.392	0.528	Valid
CL2	0.704	0.438	0.334	0.388	Valid
CL5	0.790	0.440	0.530	0.473	Valid
GEC1	0.613	0.861	0.358	0.556	Valid
GEC2	0.404	0.755	0.342	0.365	Valid
GEC3	0.426	0.727	0.289	0.413	Valid
GPQ2	0.338	0.266	0.741	0.276	Valid
GPQ3	0.366	0.289	0.771	0.309	Valid
GPQ4	0.378	0.346	0.767	0.375	Valid
GPQ6	0.501	0.341	0.721	0.398	Valid
GPV2	0.432	0.357	0.333	0.750	Valid
GPV3	0.535	0.565	0.414	0.872	Valid

Source: processed field data

Indicators CL1, CL2, CL5 produce a loading factor that is greater than the cross correlation of these indicators on other variables. Thus, the indicators CL1, CL2, CL5 are declared valid in measuring the dimensions of customer loyalty. Then the GEC1-GEC3 indicators produce a loading factor that is greater than the cross correlation of these indicators on other variables. Thus, the GEC1-GEC3 indicators are declared valid in measuring the green environmental concern dimension. Furthermore, the GPQ2-GPQ6 indicators produce a loading factor that is greater than the cross correlation of these indicators on other variables. Thus, the GPQ2-GPQ6 indicators are declared valid in measuring green product quality. Finally, the GPV2-GPV3 indicators produce a larger loading factor compared to cross correlation of these indicators with other variables. Thus, indicators GPV2-GPV6 were declared valid in measuring green perceived value.

Assessing discriminant validity can be accomplished through examination of the Average Variance Extracted (AVE) values. To establish discriminant validity, it is necessary for the AVE value associated with each variable to exceed 0.5. The findings of the discriminant validity testing via Average Variance Extracted (AVE) are outlined below.

Table 5 Discriminant Validity Test Results Via Average Variant Extracted

Variable	Average Variance Extracted	Cut-off	Remark
CL	0.607	0.5	Valid
GEC	0.614	0.5	Valid
GPQ	0.563	0.5	Valid
GPV	0.662	0.5	Valid

Source: processed field data

Based on the table above, it shows that the AVE value of each variable is greater than 0.5, so each variable is said to be valid.

Composite Reliability

The assessment of composite reliability aims to determine if items or indicators within an instrument can yield consistent and accurate measurements through multiple uses. Composite reliability serves as the calculation method to evaluate construct reliability. According to the stipulated criteria, a construct is considered reliable if its composite reliability exceeds 0.70. The outcomes of the composite reliability calculation are detailed in the summary provided in the subsequent table.

Table 6 Composite Reliability Test Results

Variable	Composite Reliability	Remark
CL	0.822	Valid
GEC	0.826	Valid
GPQ	0.837	Valid
GPV	0.796	Valid

Source: processed field data

Based on the table above, it can be seen that the composite reliability value for the customer loyalty, green environmental concern, green product quality and green perceived value variables is greater than 0.70. In this way, all indicators that measure these variables are declared reliable.

4.2.2. Structural Model Evaluation (Inner Model)

Coefficient of Determination (R2)

The Adjusted R-Squares value is employed to elucidate the impact of specific exogenous latent variables on the potential influence of endogenous latent variables. The outcomes of the Adjusted R-Squares calculation are available in the summary provided in the ensuing table.

Table 7 Adjusted R-Squares

Variable	Adjusted R-Squared
CL	0.527
GPV	0.392

Source: processed field data

Based on the table above, it can be seen that the Adjusted R-Squares value of the customer loyalty variable is 0.527 or 52.7%. This can show that the diversity of the variables green environmental concern, green product quality, and green perceived value can be explained by the customer loyalty variable of 52.7%, or in other words the contribution of customer loyalty to green environmental concern, green product quality, and green perception value is 52.7%, while the remaining 47.3% is the contribution of other variables not discussed in this research and this value is included in the high category, indicating that customer loyalty has high predictive power regarding green environmental concerns, green product quality, and green perceived value.

Then the Adjusted R-Squares value of the green perceived value variable is 0.392 or 39.2%. This can show that the diversity of green perceived value variables can be explained by green environmental concern and green product quality of 39.2%, or in other words the contribution of green environmental concern and green product quality to green perceived value is 39.2%, whereas the remaining 61.8% is the contribution of other variables not discussed in this research and this value is included in the middle category, indicating that green environmental concern and green product quality have strong predictive power on green perceived value.

Predictive Relevance (Q2)

Predictive relevance is used to measure how good the value is produced by the research model used. The following is the calculation of predictive relevance in this research.

$$Q^2 = 1 - (1 - R_1^2)(1 - R_2^2)$$

$$Q^2 = 1 - (1 - 0.527)(1 - 0.392)$$

$$Q^2 = 1 - (0.473)(0.608)$$

$$Q^2 = 1 - 0.288$$

$$Q^2=0.712$$

The calculation above shows that this research model has a Q^2 value of 0.712 where the customer loyalty variable can be predicted by green environmental concern, green product quality, and green perceived value by 71.2%, while the rest is influenced by other variables.

Goodness of Fit (GOF)

Goodness of fit (GOF) index is used to determine the overall accuracy of a model from the outer model and inner model. GOF calculations in PLS analysis use R^2 and AVE values. The following is the GOF calculation in this research.

Table 8 Goodness of Fit (GOF) Calculation

Variable	R2	AVE
GPQ		0.563
GEC		0.614
CL	0.527	0.607
GPV	0.392	0.662

Source: processed field data

Goodness of Fit (GOF) calculation is as follows:

Average AVE value

$$AVE= ((0.563+0.614+0.607+0.662))/4=0.6115$$

Average R^2 value

$$R^2= ((0.527+0.392))/2=0.4595$$

$$GOF= \sqrt{(AVE \times R^2)}$$

$$GOF= \sqrt{(0.6115 \times 0.4595)}$$

$$GOF = \sqrt{0.28098}$$

$$GOF = 0.53$$

Based on the GOF calculation results above, it shows that the model in this research is robust, so hypothesis testing can be carried out.

Effect Size

Table 9 Effect Size

Variable	Effect Size
Green environmental Concern → Customer loyalty	0.180
Green environmental Concern → Green Perceived Value	0.301
Green Product Quality → Customer loyalty	0.112
Green Product Quality → Green Perceived Value	0.096
Green Perceived Value → Customer loyalty	0.090

Source: processed field data

Effect size, often known as the partial F-test, is a statistical measure that is utilized to ascertain the ratio of variance of specific exogenous factors to endogenous variables. The summary shown in the following table displays the effect size calculation findings.

Based on the table above, the effect size value produced by the green environmental concern variable on the customer loyalty variable is 0.180 and greater than 0.35 (large), which means it is included in the large category. The effect size value produced by the green environmental concern variable on the green perceived value variable is 0.302 and is greater than 0.35 (large), which means it is included in the large category. Then the effect size value produced by the green product quality variable on the customer loyalty variable is 0.112 and less than 0.15 (medium), which means it is included in the small category.

Furthermore, the effect size value produced by the green product quality variable on the green perceived value variable is 0.096 and less than 0.15 (medium), which means it is included in the small category. Likewise, the effect size value of the green perceived value variable on customer loyalty is 0.090 and less than 0.15 (medium), which means it is included in the small category.

4.3. Hypothesis test

Testing the direct and indirect effects of exogenous variables on endogenous variables is done through hypothesis testing. According to the test criteria, there is a positive and significant influence of the exogenous variable on the endogenous variable if the path coefficient is positive and the p-value is less than 0.05 (significant level = 5%).

4.3.1. Direct Effect

The results of testing the direct influence hypothesis can be seen from the following table.

Table 10 Direct Effect Test Results

Hypothesis	Relationship	Path Coefficient	P Value	Remark
1	Green Product Quality → Customer Loyalty	0.265	0.000	Significant
2	Green Environmental Concern → Customer Loyalty	0.365	0.000	Significant
3	Green Perceived Value → Customer Loyalty	0.265	0.000	Significant

Source: processed field data

Based on the results of the direct influence test in the table above, it can be explained that the coefficient value for each variable influence path is as follows:

- Hypothesis 1: Green product quality influences customer loyalty

Customers' loyalty is positively and significantly impacted by green product quality among Surabaya Tupperware users. The path coefficient is 0.265 with a P-Value of 0.000 and less than 0.05 (significance threshold = 5%), which indicates that H1 is accepted, according to the path coefficient table. This indicates that among Tupperware users in Surabaya, green product quality has a favourable and significant impact on customer loyalty. This implies that a green product's likelihood of boosting customer loyalty increases with its quality.

- Hypothesis 2: Green environmental concern influences customer loyalty

Green environmental concerns have a good and considerable impact on Tupperware users' customer loyalty in Surabaya. The path coefficient is 0.365 with a P-Value of 0.000 and less than 0.05 (significance threshold = 5%), which indicates that H2 is acceptable, according to the path coefficient table. This indicates that among Tupperware users in Surabaya, green environmental quality has a favourable and significant impact on consumer loyalty. This implies that customer loyalty is more likely to rise in environments with increasing levels of greenness.

- Hypothesis 3: Green perceived value influences customer loyalty

Customers' loyalty is positively and significantly impacted by green perceived value among Surabaya Tupperware consumers. The path coefficient is 0.265 with a P-Value of 0.000 and less than 0.05 (significance threshold = 5%), which

may be explained by the table, indicating that H3 is accepted. This indicates that among Tupperware users in Surabaya, green perceived value has a favourable and significant impact on customer loyalty. Accordingly, there is a greater chance that the perceived value of greenery will rise the higher it is.

4.3.2. Indirect Effect

Testing for the possibility that a variable could serve as a liaison or middleman between the independent and dependent variables is known as the indirect effect hypothesis test. Intervening influence analysis was carried out to determine whether the variable acts as a full, partial or non-mediating mediating variable by looking at the value of the specific indirect effects in the SmartPLS output results using the Bootstapping technique. The results of indirect influence testing are presented as follows:

Table 11 Indirect Effect Test Results

Hypothesis	Relationship	Path Coefficient	P Value	Remark
4	GEC – GPV- CL	0.124	0.000	Significant
5	GPQ – GPV - CL	0.070	0.000	Significant

Source: processed field data

Based on the results of indirect hypothesis testing in the table above, the results of the research hypothesis can be described in detail as follows:

- Hypothesis 4: Green product quality influences customer loyalty through green perceived value.

The perceived value of green products among Surabaya Tupperware users has an indirect impact on consumer loyalty. With a P-Value of 0.000 and less than 0.05 (significance threshold = 5%), the table explains why H4 is accepted: the coefficient of influence of green product quality on online customer loyalty through green perceived value is 0.124. This demonstrates that, among Tupperware users in Surabaya, green environmental concern has a positive and large impact on customer loyalty through green perceived value. Accordingly, there is a greater chance of a rise in customer loyalty the higher the perceived value of green, which is a result of improved green environmental concern.

- Hypothesis 5: Green environmental concern influences customer loyalty through green perceived value.

Table above provides an explanation of how the perceived value of green products influences online customer loyalty through a coefficient of influence of 0.070, with a P-Value of 0.000 and less than 0.05 (significance level = 5%). This indicates that H4 is accepted. This demonstrates that, among Tupperware users in Surabaya, green perceived value has a favourable and large impact on customer loyalty. Accordingly, there is a greater chance of a rise in consumer loyalty the higher the perceived value of green products, which is a function of their superior quality.

5. Discussion

5.1. The Effect of Green Product Quality on Customer Loyalty

The results of the analysis using SmartPLS 4 show that green product quality on customer loyalty has a t-statistic value of 5.243. This value is greater than the t-table value of 1.96, so t-statistics > t-table and has a p-value of 0.000. This value is less than 0.05. This shows that green product quality has a positive and significant effect on customer loyalty among Tupperware consumers. Thus, increasing product quality in Tupperware products can increase consumer loyalty. For this reason, the first hypothesis (Ha1) which states that green product quality influences customer loyalty among Tupperware consumers is accepted.

Product quality is the main key for companies so that their business continues to experience growth and can compete in the market. [16] assert that a product's or service's capacity to meet or satisfy customer needs is what defines its quality. Customer satisfaction can lead to customer loyalty by meeting the requirements and wishes of the customer. People are more aware of the significance of selecting environmentally friendly items due to the rising public concern for the environment. The results of this research show that the quality of Tupperware products is in accordance with what consumers need. Tupperware products are classified as green products or environmentally friendly products. This is because the quality of Tupperware products is durable and long-lasting, so this attracts people to continue buying or

using these products. This is in accordance with the research results of [33] who found that green product quality influences customer loyalty.

5.2. The Influence of Green Environmental Concern on Loyalty

According to the findings of the SmartPLS 4 hypothesis test, the green environmental concern variable has a 0.000 p-value and a t-statistic value of 6.725. At 1.96, the t-statistic value is higher than the t-table value. so that the p-value is less than 0.05 and the t-statistics> t-table. This demonstrates that there is a positive and noteworthy correlation between the green environmental concern variable and consumer loyalty. Therefore, people are more likely to prefer to utilize environmentally friendly items the more concerned they are about the environment. Because of this, it is agreed upon that the second hypothesis (Ha2), which claims that buyers of Tupperware are more devoted to the brand because of green environmental concerns. The findings of this study are corroborated by studies by [9], which discovered a relationship between environmental concern and green buying intention, and by [34], which discovered a substantial relationship between environmental concern and purchase intention.

The increasing amount of plastic waste every year which causes environmental damage, has made people increasingly aware and concerned about the importance of protecting the environment. This makes people wiser in buying and using a product. The greater concern for the environment will lead consumers to develop their knowledge about the environment and increase their interest in environmentally friendly product information. In this way, people will start to take action to reduce waste, namely by using products that are environmentally friendly, so that consumers will buy or use a product by considering the impact of the product on the environment. This is in accordance with the results of this research which shows that environmental concern influences customer loyalty to Tupperware products, where Tupperware products are environmentally friendly products because they are durable and long-lasting and can be used repeatedly, so this attracts consumers' interest in making purchases. towards Tupperware products. This is supported by research by [10] who found that customer perceptions in the hotel business link environmentally friendly practices with customer loyalty related to purchases, namely the customer's intention to visit the hotel. Customers consider environmental friendliness in using the hotel. [35] also found that environmental concern influences purchase intention.

5.3. The Effect of Green Perceived Value on Customer Loyalty

Using SmartPLS 4 for hypothesis testing, the green perceived value variable yielded a p-value of 0.000 and a t-statistic value of 5.262. Since the t-statistic value is higher than the 1.96 t-table value, the p-value is less than 0.05 and the t-statistics are greater than the t-table. This demonstrates that among Tupperware customers, green perceived value has a favorable and noteworthy impact on customer loyalty. This implies that customer loyalty will rise in direct proportion to the level at which consumers perceive the value of going green. Put another way, customers are devoted to Tupperware and will always use these products since they place a high value on them. Research by [36], which discovered that green perceived value had a positive and significant effect on green purchasing intention, lends support to this. As a result, the third hypothesis (Ha3), according to which customers of Tupperware view green value as having an impact on customer loyalty, is accepted.

In general, the most important factor in purchasing a product is perceived value or the consumer's assessment of a product. A product can be said to provide value to customers if it can offer benefits and can differentiate the product from competitors. Where the assessment is based on the benefits that have been received or felt compared to the costs that have been incurred by consumers. Consumers will tend to buy products that provide more value for them. If consumers have felt benefits or satisfaction from using the product, consumers will make repeat purchases or use the product continuously. [37] said that perceived value is a crucial factor in influencing purchase intentions in addition to being a significant determinant in preserving long-term client connections.

Based on the results of this research, consumers have a high perceived value of Tupperware products. This value is based on the benefits that are obtained when using Tupperware products, where Tupperware is a product that is classified as a green or environmentally friendly product. This product has ecological benefits because it participates in reducing plastic waste. Apart from that, it also has economic benefits because it is durable and long-lasting so it can be used many times by consumers. This makes consumers participate in environmental care activities. In this way, the benefits received by consumers from using Tupperware products are commensurate with the prices they have paid, thereby increasing consumer loyalty. This is in accordance with the research results of [38], [39] who found that green perceived value has a positive effect on purchase intention.

5.4. The Effect of Green Product Quality on Customer Loyalty Mediated by Green Perceived Value

Using SmartPLS 4, the hypothesis test yielded a p-value of 0.000 and a t-statistic value of 3.789. Since the t-statistic value is 1.96, which is higher than the t-table value, the p-value is less than 0.05 and the t-statistics > t-table. This demonstrates that consumer loyalty is positively and significantly impacted by green product quality, which is mediated by green perceived value. Higher product quality will raise a product's perceived worth among consumers, increasing their loyalty to the brand. In other words, the better the quality of the product owned by Tupperware, the value perceived by consumers in the product will increase, which means that the greater the benefits received by consumers in using Tupperware products compared to the costs incurred. Thus, this provides satisfaction to consumers. Consumer satisfaction will increase their sense of trust in Tupperware products, so that higher consumer trust will give them the opportunity to buy Tupperware products repeatedly. The higher the consumer's confidence in a product, the greater the consumer's opportunity to make repeat purchases.

A smart place to start when trying to satisfy and win over customers is with high-quality products. A product's ability to consistently satisfy customer needs might be considered its own measure of quality. High product quality will gain greater acceptance from consumers and will lead to satisfaction for them. In the midst of increasing levels of public concern for the environment today, consumers are wise in purchasing products. Consumers will consider the impact of the product on environmental sustainability. Apart from environmental appeal, consumers will also consider the benefits provided by the product. How much benefit do consumers get compared to the costs they incur? The higher the value perceived by consumers towards environmentally friendly products, the more satisfaction they will give them, which will lead to customer loyalty. This is in accordance with the research results of [40] who found that product quality influences consumer loyalty to Tupperware products.

5.5. The Influence of Green Environmental Concern on Customer Loyalty Mediated by Green Perceived Value

Using SmartPLS 4, the hypothesis test yielded a p-value of 0.000 and a t-statistic value of 4.442. Since the t-statistic value is higher than the 1.96 t-table value, the p-value is less than 0.05 and the t-statistics are greater than the t-table. This demonstrates that customer loyalty is positively and significantly impacted by green environmental concerns, which are mediated by green perceived value. This implies that the greater the degree of environmental concern among consumers, the consumer's perceived value of environmentally friendly products will increase, thereby causing consumer loyalty. Thus, the 5th hypothesis (Ha5) which states that green environmental concerns influence customer loyalty which is mediated by green perceived value in Tupperware products is accepted.

Consumers who care about the environment will direct them to develop their knowledge about the environment and increase their awareness of environmentally friendly products. For this reason, consumers will start taking action to reduce the use of products that can pollute the environment by starting to use products that are environmentally friendly. [41] also stated that individuals who strive to save natural resources and preserve the environment will reduce the use of materials that can pollute the environment and prefer to use environmentally friendly products. Using Tupperware products can contribute to preserving the environment. Its durable and long-lasting quality means that this product can be used many times. Therefore, this product is classified as a green product or environmentally friendly product because it can reduce plastic waste, so that using Tupperware products makes consumers participate in activities that care about the environment. This is what attracts people to make purchases of Tupperware products. This is in accordance with the research results of [35] which found that environmental concern has an effect on customer loyalty.

5.6. Managerial Implication

This research provides practical implications for an organization. The results of this research can be used as input for organizations to increase customer loyalty. Organizations can find out the factors that need to be maintained, improved or improved related to research variables, namely green product quality, green environmental concern and green perceived value. It is hoped that the results of this research can contribute to knowledge in the application of marketing management theory, especially in consumer behavior.

6. Conclusion

The aim of this research is to determine the influence of green product quality and green environment concern on customer loyalty through green perceived value on Tupperware product consumers in Surabaya. Based on the results of hypothesis testing, the following conclusions can be obtained:

- Green product quality has a positive and significant effect on customer loyalty among Tupperware consumers. The higher and better the products the company has, the higher the customer loyalty value will be.
- Green environmental concerns have a positive and significant effect on customer loyalty among Tupperware consumers. This means that the higher a person's level of environmental awareness, the higher the person's loyalty to buying environmentally friendly products.
- Green perceived value has a positive and significant effect on customer loyalty among Tupperware consumers. The higher someone feels that the product they purchased is useful or provides advantages, the higher someone's loyalty.
- Green product quality has a positive and significant effect on customer loyalty which is mediated by green perceived value among Tupperware consumers. Green perceived value is able to bridge the relationship between green product quality and customer loyalty. The higher the green product value, the greener perceived value will be created which will increase customer loyalty.
- Green environmental concern has a positive and significant effect on customer loyalty which is mediated by green perceived value among Tupperware consumers. Green perceived value is able to bridge the relationship between green environmental concern and customer loyalty so that the higher the green environmental concern value, the greener perceived value will be created which will increase customer loyalty.

Compliance with ethical standards

Disclosure of conflict of interest

The Authors wish to declare that none has any interest to disclose.

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