Article

The Influence of the Green Product Milo UHT Drink on Consumer Purchase Interest Using the Simple Regression Analysis Method

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Abstract

This research aims to evaluate the influence of Green Product Milo packaging on consumer buying interest. A quantitative descriptive research method was used by applying path analysis through a questionnaire distributed to 120 Milo consumer respondents. The research results show that Green Product adoption has a positive effect on repurchase intention. The implication is that companies need to maintain Green Products by continuing to innovate quality and environmentally friendly products and increasing promotions through potential media such as Instagram. Statistical analysis shows that there is a significant relationship between the level of product completeness and consumer attractiveness ($p < 0.05$). Although the correlation between the level of environmentally friendly products and purchase intention is relatively weak (correlation 0.411), the regression model shows a positive influence. From the results of ANOVA calculations, this regression can be used to predict purchasing interest in environmentally friendly products. It can be concluded that Green Products have a significant influence on consumer buying interest by contributing 16.9% to the variability in buying interest. This research provides an important contribution to companies in making strategic decisions related to product development and marketing.

Keywords: ANOVA, Green Product, Milo UHT, Multiple Regression, Purchase Intention.

1. Introduction

Environmental changes in the 21st century caused by the fast-paced human lifestyle have sparked concerns about damage to ecosystems and the environment, thereby encouraging public interest in environmentally friendly products. Environmentally friendly products (green products) that prioritize environmental protection and human health have an important role in facing this challenge [1]. Increased awareness of the negative impact of instant lifestyles on the environment has become a major driver for the shift towards environmentally friendly products. In the 21st century, society is increasingly realizing that sustainable and responsible consumption is

the key to maintaining the sustainability of ecosystems and human health. Eco-friendly products not only provide a more sustainable and environmentally safe alternative, but also influence consumer behaviour to consider the product's impact on our planet. By prioritizing innovations that reduce carbon footprints, use renewable raw materials, and reduce waste, environmentally friendly products play a role in shifting the consumption paradigm towards greater sustainability [2]. In this context, this research aims to explore the influence of environmentally friendly products, especially MILO UHT products, on consumer purchasing interest [3]. This research will investigate the extent to which factors such as environmental

awareness, perception of the product, and lifestyle tendencies influence consumer purchasing interest in MILO UHT products. By deepening understanding of how environmentally friendly products such as MILO UHT can influence consumer behaviour, this research is expected to provide valuable insights for manufacturers in designing more effective and sustainable marketing strategies [4]. The formulation of the problem is how the green product MILO drinks affects consumer buying interest. The aim of this research is to determine the effect of environmentally friendly products on consumer buying interest, and analyse it using simple regression and SPSS software. This research is expected to provide deeper insight into the influence of environmentally friendly products on consumer purchasing behaviour in the context of MILO UHT products.

MILO UHT, a famous chocolate-flavoured drink brand that has been a favourite for several generations, has adopted environmentally friendly paper straws in its carton packaging [5]. By adopting environmentally friendly paper straws in their carton packaging, MILO UHT shows their commitment to contributing to environmental protection efforts while still meeting consumer needs for quality and reliable products [6]. This step is part of Nestlé Indonesia's efforts to provide environmentally friendly products to overcome the problem of plastic waste, in line with the development of the Green Product concept [7]. This step reflects Nestlé Indonesia's commitment to innovate in providing sustainable solutions by prioritizing the environment, thus supporting the company's vision to become a leader in the socially and environmentally responsible food and beverage industry [8]. Green Products are products that are designed and processed by paying attention to environmental impacts from production to use, so that they become a healthier and safer choice for consumers [9]. By considering the product life cycle as a whole, Green Products strives to reduce the carbon footprint, waste and pollution generated during the production, distribution, use and disposal processes [10]. Through the implementation of environmentally friendly practices such as the use of renewable raw materials, reduced use of hazardous chemicals, and recyclable packaging designs, Green Products offer a more sustainable choice for consumers who care about the environment [11]. The analysis

used in this research is multiple regression analysis.

Regression analysis is a statistical calculation to test how closely the relationship between variables is. Simple regression analysis aims to see how one variable influences other variables [12]. By using multiple regression analysis, this research can identify and measure the extent of influence of independent variables, such as packaging and taste, on the dependent variable, namely consumer purchasing interest in Indomilk milk products, while controlling the influence of other relevant variables [13]. In simple regression analysis, the relationship between variables is linear, where changes in variable X will be followed by constant changes in variable Y. Meanwhile, in a non-linear relationship, changes in variable X are not followed by variable Y proportionally [14]. In simple regression analysis, a linear relationship assumes that each unit change in the independent variable (X) will produce a consistent change in the dependent variable (Y) [15]. However, in a non-linear relationship, the interaction between variables X and Y does not follow a linear pattern, so that changes in one variable are not always followed by proportional changes in the other variable. This shows complexity in the relationships between variables that cannot be explained by linear assumptions [16].

2. Materials and methods

This research uses a quantitative approach using a survey method which involves the use of questionnaires as the main instrument in collecting primary data. The quantitative approach and survey method provide a structured framework for gathering data systematically, allowing for the measurement of variables and the examination of relationships between them in a rigorous and standardized manner. The target population is 120 Milo consumers who were randomly selected through distributing questionnaires to Milo consumers. Sampling was carried out using a purposive sampling technique, taking into account the characteristics of sample members who were Milo consumers and aged 15–25 years. To assess respondents' responses, a Likert scale with five ratings was used, ranging from "Strongly Agree" (5) to "Strongly Disagree" (1). Before distributing the questionnaire to respondents, a pre-test was carried out to test the

validity and reliability of the questionnaire according to the specified criteria.

The data collected focuses on the dependent variable, namely purchasing interest, and the independent variable, namely environmentally friendly products. The data analysis method used is simple regression analysis. Data was collected through a questionnaire from 120 Milo consumers aged 15-25 selected using proportional random sampling techniques. Data from the sample will be analyzed both manually and using SPSS software, by conducting statistical correlation and simple tests to explain the relationship between environmentally friendly products and consumer buying interest.

3. Results and Discussion

The following is the calculation table data consisting of variables X (Green Product) and Y (Buyer Interest). This data presents the relationship between the availability of environmentally friendly products and the level of buyer interest in the product which can be seen in table 1 below

Table 1. Data Consisting of Variables X (Green Product) and Y (Buyer Interest)

NO	Green Product (X)	Buyer Interest (Y)	X (X-X̄)	Y (Y- Ȳ)	XY	X^2	Y^2
1	20	20	0,73	3,90	2,86	400	400
2	25	25	5,73	8,90	51,03	625	625
3	15	18	-4,27	1,90	-8,11	225	324
4	18	19	-1,27	2,90	-3,67	324	361
5	18	16	-1,27	-0,10	0,13	324	256
...	...	...	...	...	...	...	...
116	19	15	-0,27	-1,10	0,29	361	225
117	19	16	-0,27	-0,10	0,03	361	256
118	17	14	-2,27	-2,10	4,76	289	196
119	20	15	0,73	-1,10	-0,81	400	225
120	21	14	1,73	-2,10	-3,64	441	196
Σ	2312	1932	0,00	0,00	435,80	45534	32242

In this research, it was found that the variables studied focused on consumer perceptions of MILO UHT packaging with paper straws and its

impact on the environment, as the independent variable (X), and consumer satisfaction regarding environmentally friendly MILO UHT packaging and its impact. on repurchase activity, as a variable. bound (Y). The results of simple correlation and regression analysis show that there is a significant relationship between consumer perceptions of environmentally friendly MILO UHT packaging and consumer satisfaction and the tendency to repurchase. These findings provide a deeper understanding of the importance of environmental aspects in influencing consumer behavior and its implications for consumer satisfaction and loyalty towards MILO UHT products .

Then manual calculations are carried out using the following formula:

$$\underline{X} = \frac{\Sigma X}{N} \qquad (1)$$

$$\underline{Y} = \frac{\Sigma Y}{N} \qquad (2)$$

So the results of the regression equation are obtained as follows:

$$b = \frac{\Sigma XY}{\Sigma X^2} = \frac{435,80}{45534} = 0,440 \qquad (3)$$

$$a = \underline{Y} - b\underline{X} = 16,1 - (0,193) = 7,6 \qquad (4)$$

$$Y' = 7,614 + 0,440X \qquad (5)$$

Next, the results of calculating the standard error of the estimate are obtained

$$Se = \sqrt{\frac{\Sigma Y^2 - a\,(\Sigma Y) - b(\Sigma XY)}{n-2}} = 2,64 \qquad (6)$$

3.1. SPSS Software Calculations

3.1.1. Linearity Test (Linearity Test)
    The linearity test results can be seen in table 2. as follows.

Table 2. Linearity Test ANOVA Output Table

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
Minat_Beli * Green_Product	Between Groups	(Combined)	343.004	12	28.584	3.853	.000
		Linearity	191.943	1	191.943	25.873	.000
		Deviation from Linearity	151.061	11	13.733	1.851	.054
	Within Groups		793.796	107	7.419		
	Total		1136.800	119			

In the SPSS output table, statistical tests provide actual Linearity test results. Results are determined based on significance at Linearity, namely 0.000. So it can be seen that the significance value < Probability of error or result is smaller than 0.05 so that H0 is rejected and H1 is accepted, which means the data is linear.

3.1.2. Trust test

The following are the results of the reliability test which can be seen in table 3.

Table 3. Output Reliability Statistics

Cronbach's Alpha	N of items
581	2

The results of the analysis using the Cronbach's alpha technique obtained a reliability coefficient of 0.581, this shows that the data used in the research was not reliable because the Cronbach's alpha value was <0.6 (0.581<0.6). Because there are no invalid variables, there is no need to carry out re-analysis after the variables are removed from the re-validity test without looking at the reliability coefficient.

3.1.3. Pearson Product Moment Correlation

The results of the Pearson Product Moment Correlation test can be seen in table 4 below.

Table 4. Pearson Product Moment output

		Green _ product	Interest _ purchase
Green_product	Pearson correlation	1	.411**
	Sig. (2-tailed)		.000
	N	120	120
interest_purchase	Pearson correlation	.411**	1
	Sig. (2-tailed)	.000	
	N	120	120

The p value < 0.05 = 0.000 < 0.05 then H0 is rejected. This means that there is a relationship (correlation) between green products and buying interest. Between green products and buying interest produces a correlation of 0.411. This means that a positive number (+) indicates a directly proportional direction between green products and buying interest. And shows a weak correlation between green products and buying interest because the value is <0.5.

3.2. Regression Relationship between Product Completeness and Consumer Attractiveness

3.2.1. Regression Coefficients

The following are the results of the regression coefficient test which can be seen in table 5 below.

Table 5. Output Regression Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.614	1.752		4.345	.000
	Green_Product	.440	.090	.411	4.896	.000

a. Dependent Variable: Minat_Beli

Based on the output above, the constant value (a) is 7.614, while the slope value (b) is 0.440, so the regression model y = 7.614 + 0.440X is obtained. Because p-value < 0.05 = 0.000 < 0.05, H0 is rejected so that there is a significant influence between the influence of green products on buying interest.

3.2.2. ANOVA

The results of statistical ANOVA output are shown in table 6.

Table 6. ANOVA output

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	191.943	1	191.943	23.971	.000^b
	Residual	944.857	118	8.007		
	Total	1136.800	119			

a. Dependent Variable: Minat_Beli

b. Predictors: (Constant), Green_Product

The ANOVA table shows whether a regression model can be immediately used to make predictions or not. From the ANOVA test or F test above, the calculated F is 23.971 with a significance level of 0.0000. Because the probability of 0.0000 is much smaller than 0.05, the regression model can be used to predict Purchase Intention.

3.2.3. Model Summary

The results of the Model Summary are shown in table 7 below

Table 7. Summary of Model Output

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.614	1.752		4.345	.000
	Green_Product	.440	.090	.411	4.896	.000

a. Dependent Variable: Minat_Beli

Based on the output above, the Output Model Summary value shows the R value which explains

how much one variable influences other variables. The R squared number in the table above is 0.169 which is the square of the correlation coefficient ($0.411 \times 0.411 = 0.169$). R square can be called the coefficient of determination (R squared), which means that 16.9% of the variation in purchasing interest can be explained by the Green Product variable. Meanwhile, the remainder (100% - 16.9% = 83.1%) was explained by other causes. R square ranges from 0 to 1. The smaller the R square, the weaker the relationship between the two variables.
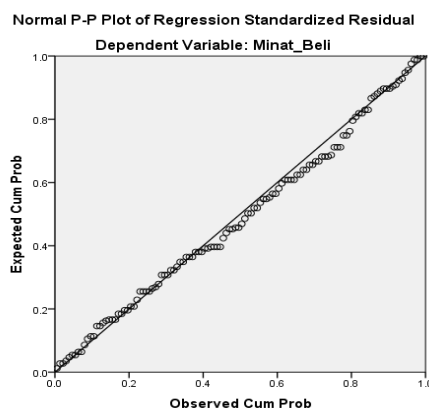
3.2.4. Plot Results Chart

Fig 1. Output Plot Results Graph

The chart above is a Normal Probability Plot which shows whether the normality test for the data used has been fulfilled or not (Figure 1). It can be seen that the distribution of data in the graph above can be said to be spread around this straight line, so it can be said to meet the normality requirements.

3.3. Analysis of SPSS Output Results

Based on the print out, the output correlation value is 0.693. This means that a positive number (+) indicates a directly proportional direction between green products and purchasing interest. For the regression output, a p-value of 0.000 is obtained so that H0 is rejected. If H0 is rejected then there is a significant influence between the green product variable on purchasing interest. This analysis can be used as a guide to provide advice to the Milo company.

3.4. General Data Pattern Analysis

The change in MILO UHT packaging to a green product, by replacing plastic straws with environmentally friendly plastic paper and cardboard packaging, has had a significant influence on consumer buying interest. Research involving 120 respondents using a Google Forms questionnaire showed consistent results, both from manual calculations and with the help of SPSS software. Simple regression analysis produces the equation $Y' = 7{,}614 + 0{,}440X$, with a Standard Error Estimate value of 2.83 and R square of 16.9%, indicating that 16.9% of the variation in buying interest can be explained by the green product variable. Meanwhile, e remaining 83.1% is influenced by other factors. The calculated F is 23.971 with a significance level of 0.0000 indicating that the regression model can be used to predict buying interest. The results of the Normal Probability Plot show that the data distribution meets the normality requirements, thus supporting the validity of the analysis carried out using SPSS software.

3.5. Advice for Nestlé Company

Based on the calculation results, it is known that the green product variable has a correlation of 0.411, which indicates a positive relationship between product completeness and consumer attractiveness. The regression results show a p-value of 0.000 which rejects H0 and shows that there is a significant influence between green products on purchase intentions. Therefore, researchers provide several suggestions to the Nestlé company to maintain the company's image and profits, including: First, keep the selling price of Milo UHT stable even though it uses environmentally friendly product packaging. Second, improve the quality of packaging for environmentally friendly products such as straws that are more durable to increase buyer interest. Third, strengthen green product promotion on Milo UHT packaging through advertising media to achieve green product goals and attract buyers' interest.

4. Conclusion

Based on the results of the analysis carried out, it was concluded that there was a significant relationship between the level of completeness of environmentally friendly products and consumer attractiveness as indicated by a p-value that was smaller than the 0.05 significance level. The correlation between the level of product

completeness and consumer purchasing interest has a value of 0.411, indicating a positive relationship although with weak strength because the value is less than 0.5. The resulting regression model shows that the level of green product (X) has a significant influence on purchasing interest (Y), as seen from the positive slope value (b). ANOVA analysis confirms that this regression model can be used to predict interest in purchasing environmentally friendly products. Even though green products have an influence of 16.9% on purchasing interest, most of the variability in purchasing interest is influenced by other factors at 83.1%. Based on the conclusions above, it can be recommended to expand the questionnaire with more questions to increase the variable variability value, as well as adding other variables that influence purchasing interest so that the research results are more varied. Apart from that, the variety of questions in the questionnaire also needs to be increased to obtain greater variable values. It is hoped that these suggestions can increase the validity and accuracy of research results and make the test a stronger reference for companies in the future.

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