The Determining Factors of Consumer Behavior to Substitute RON-88 (Premium) Fuel Consumption to Pertalite and Pertamax Fuel

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Abstract. The fuel reform policy in Indonesia is a new step for the government with the aim of distributing more environmentally friendly fuel. The use of Premium fuel is considered to be inappropriate in terms of emission standards, price acquisition and distribution distribution to the community. This will greatly affect the pattern of behavior in the use of fuel in people's lives. There needs to be an effort to substitute the use of subsidized fuel for Pertalite and Pertamax which are considered better. The data used in this study are primary data obtained from survey results and direct interviews with vehicle fuel users in West Java, Central Java and East Java. The method used in this study is the Logit Probit Regression method to analyze the factors that affecting consumer behavior in transition the use of Premium fuel to Pertalite and Pertamax. By doing a comparison between Logit and Probit Regression shows that the Logit Regression model is the best analysis model. The estimation results explain that the factors that significantly affecting the shift in the use of Premium fuel to Pertalite and Pertamax are gender, income level, number of vehicle units and public perception of green energy. Meanwhile, the level of education and distance to gas stations did not significantly affect the transition pattern of using Premium fuel in the community.

Keywords: Subsitute, Pertalite and Pertamax Fuel, RON-88 (Premium) Fuel, Logit Model

1 Introduction

1.1 Background

One of the main tasks of the government in providing protection and implementation of public policy is to provide assistance for subsidy programs. Indonesia is a country that has long implemented a subsidy policy as an important instrument in fiscal policy, especially the Premium fuel subsidy channel. This policy was taken by the government with the aim of encouraging equity in access to the economy and development. The need for fuel in Indonesia

is a very strategic commodity in the economy, both for the community and the industrial sector. This is inseparable from the distribution of subsidized fuel for the Indonesian people. The fuel has become a basic need for urban and rural communities like the daily food they consume [1]. Premium type of fuel is a contributor to the industrial and vehicle transportation sector because it is very suitable to be used as the main fuel for transportation vehicles, distribution of goods and human mobility. Figure 1 shows Indonesia's subsidized fuel consumption by type.
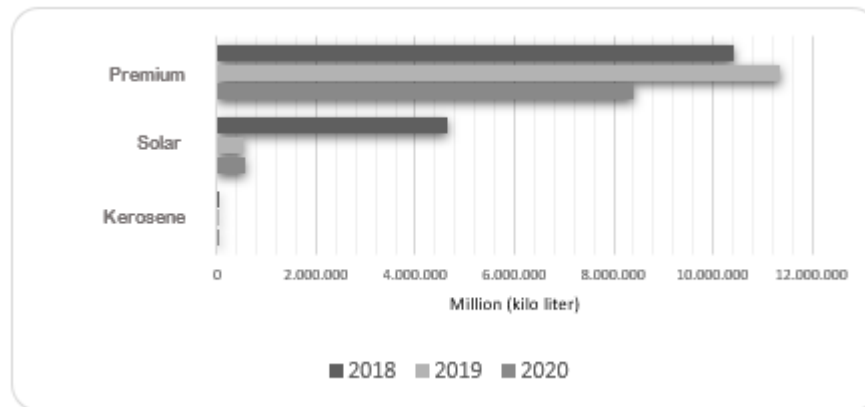

Fig. 1. Indonesia's Subsidized Fuel Consumption by Type

Based on these data, the level of consumption of subsidized fuel is still dominated by the use of Premium type fuel (RON 88). In 2018 the level of consumption of Premium fuel was only able to grow by 9% from 10.43 million kilo liters to 11.34 million liters. However, in 2020 the use of Premium subsidized fuel has decreased by a percentage reaching 26% with total consumption only reaching 8.38 million kilo liters. In addition, the amount of subsidized diesel fuel in 2019 decreased by 88% from 4.67 million kilo liters to 0.5 million kilo liters and the subsidized fuel type kerosene with a percentage decrease of between 6-7% with the final consumption level in 2020 it will only reach 199 kilo liters. Based on data from the Badan Pusat Statistik reported that the oil and gas trade balance experienced a deficit of US $ 10.97 million [2]. In terms of accumulation, the amount of oil and gas imports was able to reach US$ 22.15 million and was very dominant compared to the total export of US$ 11.18 million. Since 2016-2021 the oil and gas trade balance position has continued to experience a deficit in line with the increasing demand for fuel oil in the domestic market, while oil production is increasingly limited in number.

The high level of imports and the policy of providing subsidies by the government are considered to be very burdensome for the State Budget. The 2021 State Budget shows that the level of subsidies provided by the government reaches 175.4 trillion rupiah with a total of 110.5 trillion rupiah in energy subsidies and 64.8 trillion rupiahs in non-energy subsidies. The distribution of energy subsidies is divided into two, namely fuel subsidies which reached 56.9 trillion rupiahs and electricity subsidies reaching 53.6 trillion rupiahs. The allocation of funds for fuel subsidies is the highest in the annual budget of the State Budget. This is very burdensome for the state due to the increase in the State Budget allocation for fuel subsidies [3].

Apart from being considered too burdensome for the state budget, issues related to the environment are also a special concern that the government needs to pay attention to. The increasing number of vehicles, transportation, and the development of the economy in the industrial sector have led to higher demand for fuel oil [4]. Judging from the type of fuel, Premium subsidized fuel is included in the type of fuel that has a fairly low octane (RON 88). As a result, exhaust gases can increase pollutants and increase the greenhouse effect [5]. The report from The Ministry of Environment and Forestry states that the energy sector has an impact of 34% on greenhouse gas pollution emissions. When viewed through the use of fuel, the transportation sector from the use of Premium fuel provided 157,771 emissions in 2019 and is included in one of the sectors that contribute quite a lot of emissions [6].

There needs to be an appropriate allocation of fuel so that the achievement of objectives can be fully said to be effective. The Presidential Regulation No. 117 of 2021 which is considered more effective in supporting the fuel reform program. The Presidential Regulation also considers that subsidized Premium fuel is no longer effective in terms of distribution and distribution. There is a need for a pattern of shifting the use of subsidized fuel to non-subsidized fuel which is considered to be more appropriate in accordance with the target of Indonesia's fuel subsidy reform policy [7]. This is based on the government's commitment to immediately distribute fuels that are considered more effective, namely Pertalite and Pertamax. Figure 2 shows the comparison of premium, pertalite and pertamax fuel consumption.
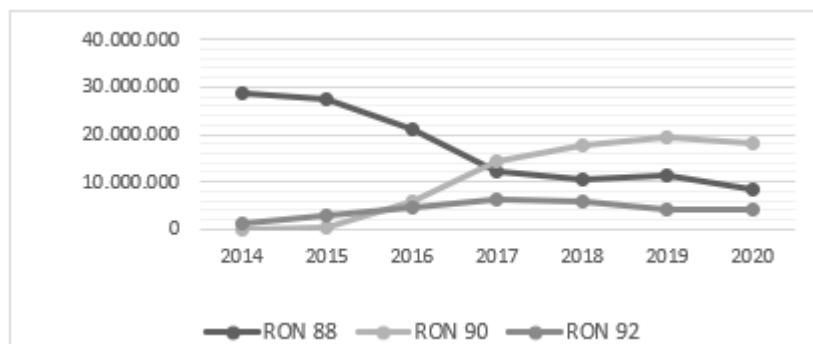

Fig. 2. Comparison of Premium, Pertalite and Pertamax Fuel Consumption (Kilo Liters)

The data shows that there has been a significant decrease in the consumption of subsidized Premium fuel, which in 2016 totaled only 21.03 million kilo liters. However, in the following year, there was a drastic decrease 42%. The decline will continue until 2020, the level of consumption on RON 88 will only reach 8.00 million kilo liters. On the other hand, Pertalite RON 90 type of fuel has increased significantly every year. The highest consumption growth rate was in 2019 with a total of 19.41 million kilo liters. Meanwhile, Pertamax RON 92 fuel is relatively stable every year and consumption levels in 2020 will reach 4.05 million kilo liters [8].

Through Presidential Regulation Number 117 of 2021, the government aims to reduce the use of premium fuel and is committed to distributing higher quality fuel. The shift of Premium fuel products to Pertalite and Pertamax has an impact on changes in people's preferences regarding

the daily use of fuel. KEMENKO PKM explained the results of a survey conducted by the Program for International Student Assessment (PISA) and found that the quality of Indonesia's education which was still weak from a low literacy level would be an inhibiting factor in the transition of Pertalite and Pertamax fuel products [9].

In the implementation of the Premium fuel reform policy in Indonesia, there are many pros and cons in society. This is because people's habit of using fuel must be replaced with Pertalite and Pertamax fuel. Some groups of people feel that this will have a negative impact on decreasing their purchasing power. But on the other hand, some people feel that it is important to implement it with the aim of improving the quality of Indonesian fuel and reducing the level of vehicle pollution. According to Khairunnisa, M & Lilies (2020), several groups of people will be willing to spend more to consume fuel that is more environmentally friendly and support the reform policy program set by the government. In terms of price, Pertalite and Pertamax fuel commodities are considered to have a more expensive price, namely Rp. 7650, - and Rp. 9000, - per liter. However, in terms of quality, the use of Pertalite and Pertamax fuels is expected to have a major impact on vehicle engines, reduce greenhouse gas emissions and pollution, as well as ease state finances [10].

1.2 Problem statement

Based on Presidential Regulation No. 117 In 2021, Indonesia continues to be committed to moving fuel reform policies in the community. The program is a reduction and shift in the use of Premium fuel by the government for all provinces, including the island of Java. The level of realization that is decreasing from the quota target that has been set is evidence of the ongoing reform policies in society. In fact, Premium fuel types are given compensation and price incentives so that the selling price is set below the economic price. The fuel reform policy program in Indonesia raises pros and cons in the community. The low level of public awareness and literacy of the environment is an inhibiting factor in the shift to the use of fuel that is more environmentally friendly. This has resulted in a change in people's preferences for the consumption of commonly used fuels. There needs to be a further review regarding the factors that influence the shift in the use of Premium fuel in the community. Based on these problems, the formulation of the problem in this study is "The Determining Factors of Consumer Behavior to Substitute RON-88 (Premium) Fuel Consumption to Pertalite and Pertamax Fuel".

2 Theory review

2.1 Public policy theory

The use of the word policy or some people use the term policy to have the same meaning as policy. The use of policies can represent the behavior of an actor, for example a group, government agency or so on. Reporting from a popular scientific dictionary, the term policy comes from the word wise, which means clever in the use of reason, intellectual. Looking at a policy can be as a plan to implement the will based in the form of laws, government regulations, judicial decisions, executive orders or presidential decrees with full consideration [11]. The form of the process that includes the stages of implementing, evaluating and there is a direction of action or what is being done is the definition of public policy.

2.2 Subsidy

Reducing the price level or achieving an increase in output is the objective of an economic subsidy. According to Todaro, M & Smith (2014), subsidies are a form of assistance program in terms of the financial budget that is taken into account in one of the coverage sectors of the country's economy. Subsidies are the provision of assistance to consumers or producers so that goods and services are managed at a relatively lower price level with the aim of increasing people's purchasing power. Subsidies are included in the category (government transfer payments) which are a tool of government policy for redistribution and stabilization of the country's economy [12].

The application of subsidies is also to protect against shocks with the aim of price stability of an item on the market. The impact of an increase in the price of these goods will create an economic surplus (producer surplus). On the other hand, the government is able to suppress these prices by allocating price subsidies to producers in the hope that prices do not increase and the level of surplus received by producers does not decrease. Consumers will benefit from the stability of the price of the goods consumed. With the price subsidy policy launched by the government, it will create consumer surplus profits [13].

2.3 Benefits and impact of fuel subsidy implementation

The policy for distributing subsidized assistance is related to goods, services or a product with the aim of increasing the amount of output and increasing the allocated resources at a more affordable price level for these goods or products. So basically, the implementation of subsidized assistance, especially the fuel subsidy set by the government, can provide various benefits to the community, both from the consumer and producer side. The benefits include, firstly being able to improve the quality of the economy; second, encouraging people with low incomes in terms of meeting economic needs such as fuel; third, anticipate and prevent the occurrence of bankruptcies for business actors or businesses [14].

In addition to these benefits, the implementation of subsidies also often has a negative impact on the community's economy. Rivani explains that there are several impacts in the implementation of the fuel subsidy provided by the government [15]. First, the ineffective allocation of resources from the subsidy program. From this, consumers only pay for the product they enjoy at a lower price than the market price. As a result, consumers become more consumptive and create less frugal behavior. Second, it causes distortion in society. This indicates a lack of transparency and an inappropriate targeting direction (not enjoyed by the rightful class of society). Third, subsidies are considered to disrupt the market balance by consuming large economic costs and stopping business competition, especially losses from the private sector.

3 Methodology

Sources of data used in this study is primary data. Primary data was obtained by conducting a survey of vehicle fuel users in West Java, Central Java and East Java. Researchers also use statistical data sourced from; Badan Pusat Statistik (BPS), Bappenas, BPH Migas, Ministry of Energy and Mineral Resources, PT Pertamina and other sources deemed valid to support research analysis. This sampling technique takes a sample that meets the requirements or sample requirements from a certain population that is the easiest to reach or obtain. In addition, the

Snowing Ball technique was also used in this study because of the difficulty of obtaining information on the population of prospective respondents, namely taking a sample of 100 respondents and then testing the data [25]. The object of this research is people who use fuel oil for vehicles with the individual category as the head of the household or able to explain their expenditure for fuel consumption.

3.1 Logistics regression

Solving a classification problem on the parametric method can use the logistic regression method. Logistic regression is a method that is described through the relationship of the dependent variable (response variable) with the independent variable (predictor variable) with categorical, continuous or even a combination of both. This is a calculation used to describe the state and condition of the mean of Y (response) to X (predictor) data. According to Tinungki the equation in the logit model is as follows [16].

$$P_i = \frac{\exp{(\beta_0 + \beta'x)}}{1 + \exp{(\beta_0 + \beta'x)}}$$ (1)

Where::
P   = Probability
exp = Exponent
β_0 = Constant
β' = $\beta_1, \beta_2,\dots,\beta_n$
X   = $x_1, x_2,\dots,x_n$
n   = number of parameters

In detail, the logit regression method is a method of nonlinear regression that explains the equation of the dependent variable which has categorical properties. According to Gujarati the use of the logit method is very appropriate for classifying data [17]. To obtain the equations of the logit regression, the equation derivatives from the estimated categorical probabilities are used. The probability equations are:

$$Ln = \frac{P}{1 - P} = \beta_0 + \beta_1 X$$ (2)

The equation above can be simplified so as to produce the following equation.

$$Ln = \frac{P}{1 - P} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots \beta_n X_n$$ (3)

3.2 Probit regression

In addition to the logit regression method, a regression analysis that can also describe the relationship between the dependent variable and the independent variable is probit regression.

(4)

The dependent variable (response variable) can be represented by Y with a dichotomous (binary) measurement scale, and the independent variable (predictor variable) can be denoted by X whose measuring scale is dichotomous, polychotomous or continuous.

$$P_i = \frac{\exp{(Z)}}{1 + \exp{(Z)}}$$

Where:
P   = Probability
exp = Exponent
Z   = dependent variable with nominal scale

According to Tinungki the function used in probit regression is the calculation of the normal distribution (cumulative normal function [ϕ]) [16]. The following is the probability of probit regression.

$$Ln = \frac{P}{1 - P} = Z \tag{5}$$

Where Φ is the cumulative function of the standard normal distribution. The probit equation can also be like

$$P = \Phi(Z); Z = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_n X_n \tag{6}$$

3.3 Research model formulation

Based on this explanation, to review the factors that influence the shift in the use of Premium fuel in the community, the dependent variable is the shift in fuel use where the variable is transformed into a dummy variable with Premium fuel which means people have not switched and Pertalite and Pertamax fuel which means people have switched. In addition, to review the factors that encourage people to substitution from Premium fuel to Pertalite and Pertamax, it is analyzed using logit regression with the independent variables being gender, education level, net income in a month, distance from home in kilometers, number of vehicles, and perceptions. to green energy. Therefore, the logit model is obtained for the following:

$Substitution_i = \beta 0 + \beta 1 GENDER_i + \beta 2 EDUC_i + \beta 3\ INCOME + \beta 4 DISTANCE_i + \beta 5 NUMBER_i +$
$\qquad \beta 6 GREEN_i + e_i$ (7)

Dimana:
$Substitution_i$ = Switching the use of Premium fuel to Pertalite or Pertamax
                           (*dummy variable where* 0 = Premium; 1 = Pertalite & Pertamax)
$Gender_i$ = Respondent's gender
$Educ_i$ = The respondent's last education level

Income$_i$ = Average income of respondents in a month

Distance$_i$ = Distance from home in kilometers

Number$_i$ = The number of vehicles owned

Green$_i$ = Alternative energy or green energy

e$_i$ = Error term

β_0 = Intercept

β_n = Slope (n= 1, 2, ...)

The description of the research data used is shown in Table 1.

Tabel 1. Respondent Profile Description

Variable Name	Description	Freq	Category
Consumption Shift (*Substitution*)	Premium fuel	13	0 = Premium fuel
	Pertalite Pertamax fuel	87	1 = Pertalite dan Pertamax fuel
	Elementary School	12	0 = Elementary School
	Junior High School	22	1 = Junior High School
Level *Education*	Senior High School	59	2 = Senior High School
	Diploma	2	3 = Diploma
	Bachelor/Master's degree	5	4 = Bachelor/Master's degree
Distance to the refueling (*Distance*)	Far	38	0 = Far (>=3 km)
	Near	62	1 = Near (<3 km)
	Rp. 0 - 1 million	10	1 = Rp. 0 - 1 million
Income Level (*Income*)	Rp. 1 million - 3 million	56	2 = Rp. 1 million - 3 million
	Rp. 3 million- 5 million	25	3 = Rp. 3 million- 5 million
	Rp. > 5 million	9	4 = Rp. > 5 million
Gender	Male	79	0 = Male
	Female	21	1 = Female
Number of Vehicles (*Number*)	4 Wheel Vehicle	77	
	2 Wheeled Vehicles	16	per Unit
	Other	7	
Green Energy Perspective (*Green*)	Not support	63	0 = Disagree
	Support	37	1 = Agree

Source: Survey Results (Data processed)

4 Results and discussions

In this study, the analysis used to see the effectiveness of the Premium fuel subsidy program policy on the community uses the logistic regression method, which is to compare logit regression and probit regression. The comparison aims to review the factors that affect the effectiveness of the program and obtain the best estimation results by comparing the two analytical methods. This is because the logit and probit analysis methods have similarities because their development comes from the logit model, namely probability units. Therefore, it is necessary to decide which analytical method is the best used in this study.

Simultaneous Fit Test (Chi-Square Test) needs to be used to review the probability values of the two analytical models whose purpose is to find out whether there is sufficient evidence that

the independent variable used has an influence on the dependent variable. Table 2 shows the partial test of the two analyzes.

Table 2. Simultaneous Fit Test (Chi-Square Test)

	Chi-square	Prob > chi2
Logit	16.50	0.001
Probit	19.55	0.000

From the two probit logit regression models tested, the value of each Chi-square is obtained, where the probability value is < with a significance level of 5%. This indicates that there is sufficient evidence to state that there is at least one independent variable that statistically influences the dependent variable of the two models formed. Furthermore, it is necessary to test the model to get the best estimate of the two models.

4.1 Model fit test

From the comparison results of the previous logit probit regression model, it is necessary to select the best model to determine which model provides the best estimated answer from the two models obtained. There are several tests needed to determine the best model from the two estimates obtained.

Table 3. Best Model Selection

	Goodness of Fit (Wald)	R-square (Mc Fadden)	AIC	Deviance (df=93)
Logit	16.499	0.390	61.114	47.114
Probit	19.552	0.375	62.313	48.313

In determining the estimation of the best model selection, 4 test factors can be used to select the best equation model. In testing the Goodness of Fit value on the Wald test, it was found that the smallest Chi-square value had the best parameters. The table shows that the logit value is smaller than the probit value, which is 16,499. which indicates the best Goodness of Fit calculation is in the logit regression model. Furthermore, with the calculation of R2 McFadden the largest R-square value is the best value and is in the logit model again. Similar to the Wald test, the AIC calculation also considers the smallest value in the logit model with a value of 61.114. And finally, with the results of the deviance review, the selection of the best model is in the logit model because the logit deviance value is smaller than the logit value (47.114 < 48.313). From a review of a series of model tests, it can be decided that the best model used in this study is the logit regression model analysis with a series of reviews that have been carried out.

4.2 Robust repair and best model

From the test results, the logit analysis model has data that is outlier but free from multicollinearity testing. Logit regression analysis needs to add robustness to overcome deviations in the data model obtained. To produce the best interpretation of the logit regression model, the Odd Ratio value is used as the coefficient on the variables obtained. In addition, the variables that are classified as categories need to be described so that the variables are more detailed. Table 4 shows the results of the logit regression with the robust function as follows.

Table 4. Repair Test

Variabel	Coefisien	Prob (Sig)
EDUC	1,106	0,843
DISTANCE	0,518	0,428
INCOME	0,542	0,089*
GENDER	0,081	0,005***
NUMBER	0,406	0,096*
GREEN	0,102	0,041**
Constant	-7.228	

Information: *= significant on *** p<.01, ** p<.05, * p<.1

Robust analysis aims to overcome heteroscedasticity due to outlier data and also to improve model error standards so that the level of data significance is better. In addition, the purpose of being robust is so that the conclusions drawn are not biased and can improve the logit model used. Based on the results of the Logit Regression estimation, there are four variables that have a significant effect, namely income level (INCOME), gender respondend (GENDER), number of vehicles (NUMBER), and perception of the green economy (GREEN). Meanwhile, the variables of education level (EDUC) and distance to gas station (DISTANCE) have no significant effect.

The Goodness of Fit test aims to see the accuracy of the data or predict the level of accuracy of the data predicate in the model [18]. Table 5 shows the value of the data accuracy level as follows.

Table 5. Correctly Classified

Logistic model for Correctly Classified

Classified	True		Total
	D	**~D**	
+	84	5	89
-	3	8	11
Total	87	13	100
Correctly classified			**92.00%**

Of the 100 respondents observed, it was found that, 84 respondents are predicted to be people who consume fuel at an efficient level, namely consuming non-subsidized fuel (Pertalite and Pertamax). Meanwhile, 8 respondents are predicted to consume fuel at an inefficient or subsidized (Premium) level. From the results obtained, the level of Goodness of Fit or the level of accuracy of the data obtained from the model is 92.00% accurate, which means the level of accuracy is high enough to be able to prove the transition pattern of Premium fuel consumption.

Based on the results obtained in Table 3 it can be interpreted that there are four variables in the model that have a significant effect, namely income (income), gender (gender), number of vehicles (number), and green energy (green), while there are two variables that does not have a significant effect, namely the level of education (educ) and distance (distance). The variables that are influencing factors on the transition pattern of Premium consumption.

4.2.1 Gender

Gender is included in the social aspect which is predicted to have a positive influence on individual behavior to switch to using Premium fuel to Pertalite and Pertamax fuel. It can be seen from the coefficient value of the GENDER variable of 0.081, which means that the probability or possibility of the gender of female respondents having an effect of 0.081 times higher for consuming non-subsidized fuel (Pertalite and Pertamax) than male respondents (ceteris paribus). Respondents who switched from using Premium fuel to Pertalite and Pertamax fuel were also considered to have supported the fuel reform policy implemented in Indonesia. The test results are supported by Trotta explaining that gender has a significant influence on the efficiency of energy use where female respondents tend to buy more efficient energy than men [19]. Women are considered to seek more information related to energy efficient levels that will be used as consideration and have higher environmental awareness than men.

4.2.2 Education

From the results of the logit regression test obtained, the variable level of education is considered not to have a significant effect, but has a positive value to the shift in fuel use. It can be seen from the coefficient value of the EDUC variable of 1.106, which means that the probability or possibility of respondents who have a higher level of education (educated) will have a 1.106 times higher chance than respondents with lower education to consume non-subsidized fuel Pertalite or Pertamax (ceteris paribus).

The education level variable was also used in several similar studies. According to Mcculloch, N et al and Swain & Mishra literate household heads will choose fuels that are easily affordable to use [20]. This shows that the level of education is not so influential, especially when fuel is not easily available [21]. Respondents with neither high nor low education have the same position, and there is even a tendency for individuals with a high level of education to also feel the use of subsidized fuel. In addition, the level of education has not been able to describe the individual knowing information related to the fuel used. Although the individual has a higher educational status, this does not necessarily mean that the understanding of the use of fuel is directly proportional [20]. In addition, the findings of research by Trotta succeeded in explaining that individuals with an education level tend to maintain their income and are only able to increase energy efficiency [19].

4.2.3 Income level

Based on the results of the logit regression test, respondents' income has a positive influence on individual behavior to switch from using Premium fuel to Pertalite and Pertamax. It can be seen from the INCOME variable coefficient value of 0.542, which means that the probability or possibility of respondents having a higher income level is 0.542 times more likely to consume Pertalite or Pertamax fuel compared to respondents with a low income level (ceteris paribus). These results show that the higher the income earned by the individual, the more effective the use of fuel will be. High-income groups usually only use high-quality fuel such as Pertamax for their vehicles. In addition, individuals with high incomes tend to have a high level of environmental awareness [19]. The use of fuel with high octane will maintain the quality of their vehicles better with lower exhaust gases. In addition, individuals with high incomes will also be willing to pay intensively higher prices to obtain high quality fuel [22].

4.2.4 Perspective on green energy (environment)

Based on the results of the logit regression test obtained, the community's perspective on green energy has a positive influence on individual behavior to switch to using Premium fuel to Pertalite and Pertamax fuel. It can be seen from the coefficient value of the GREEN variable of 0.102, which means that the probability or possibility of respondents agreeing or supporting green energy (environment) on fuel has an influence of 0.102 times higher than respondents who disagree with green energy on fuel reform policies in Indonesia. (ceteris paribus). The use of pro-environmental behavior variables and energy-saving and energy efficient behavior can be used to support the green variable in the results of the tests carried out [19]. There is a positive relationship with environmental care behavior to support the Premium fuel policy reform program. The more people care about the quality of the environment, the use of Premium subsidized fuel will decrease and people will use fuel that is more environmentally friendly. In addition, there is a commitment from the government as stated in Presidential Regulation No. 117 of 2021, namely a commitment to reduce the amount of carbon emissions and support for PT Pertamina through the "Langit Biru Program". Reported in the 2020 Sustainability Report, PT Pertamina (Persero) [23] continues to put forward a policy program for reducing greenhouse gas emissions. Through the "Langit Biru Program", PT Pertamina continues to encourage the public to be able to use fuel with a higher octane level.

4.2.5 The number of vehicles

Based on the results of the logit regression test, the number of vehicles has a positive influence on individual behavior to switch to using Premium fuel to Pertalite and Pertamax. It can be seen from the coefficient value of the NUMBER variable of 0.406, which means that the probability or possibility that respondents who have more vehicles will have a 0.406 times higher chance than respondents with fewer vehicles to consume Pertalite or Pertamax non-subsidized fuel (ceteris paribus). These results are supported by research conducted by Indriani which explains that an increase in the number of vehicle units will increase fuel consumption better [24]. Individuals who own four-wheeled vehicles (cars) are certain to have two-wheeled vehicles (motorcycles), in which awareness to maintain the quality of vehicle engines [10] is a top priority. This is usually found in individuals with high income categories. As for low income individuals, usually only have one or a few vehicles and tend not to pay attention to the quality of the vehicle so that the use of the selected fuel is not effective.

4.2.6 Distance to gas station

Based on the results of the logit regression test obtained, the distance of the respondent's house to refueling has a positive influence on individual behavior to switch to using Premium fuel to Pertalite and Pertamax. It can be seen from the DISTANCE variable coefficient value of 0.518, which means that the probability or possibility of the distance traveled by the respondent increases by 1 time, it will increase the opportunity to consume Pertalite or Pertamax non-subsidized fuel (ceteris paribus). From the test results, the distance variable is considered not to significantly affect the behavior of individuals to switch from using Premium fuel to Pertalite and Pertamax fuel. This is due to distribution limitations where the amount of Premium fuel in several refueling units is difficult to obtain. For fuel types Pertalite and Pertamax, both for long distance (gas stations) and for short distances through retailers or stalls, they tend to provide non-subsidized fuel. So, the distance variable is considered not to have such a big influence on the fuel reform policy.

5 Conclusions

The results showed that the best model chosen was the logit regression analysis model. The results of the analysis show that the factors that have a positive and significant effect on the pattern of switching fuel consumption are gender, income level, number of vehicle units and green energy perception. This variable is the main reason people use Pertalite and Pertamax non-subsidized fuel. In addition, education level and distance to gas stations have no significant effect on the transition pattern of Premium use in fuel reform policies in Indonesia. If want to increase the transition pattern from Premium fuel to Pertalite or Pertamax, then have to pay attention to these variables.

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