



# The effects of green product knowledge, perceived price and government policy on green purchase intention in buying hybrid motor vehicles

Lia Suprihartini<sup>1</sup>, Dedi Herdiansyah<sup>2</sup>, Meizi Fahrizal<sup>3</sup>

<sup>1,2,3</sup>Polytechnic Negeri Pontianak, Pontianak, Indonesia

## ARTICLE INFO

### Article history:

Received Oct 25, 2022

Revised Nov 16, 2022

Accepted Nov 29, 2022

### Keywords:

Green Product  
Knowledge  
Perceived Price  
Government Policy  
Green Purchase Intention

## ABSTRACT

The background of this research is to explore more deeply environmentally friendly motorcycle products with the Hybrid type, seek information about how the public as consumers understand environmentally friendly motorized vehicle products, find out how their perception of the price of environmentally friendly products is, and find out how the government has given efforts to encourage the public in the purchase and use of environmentally friendly motorcycles. Of course, before entering the stage of a battery-based or 100% electric vehicle, you should first step into the hybrid vehicle phase while preparing for the use of an electric motor in its entirety or a pure manner. The data analysis methodology used by the researchers is a qualitative method using the SPSS Version 22 program involving 100 respondents. Sampling was carried out by researchers using the Accidental Sampling technique. The results showed that the Green Product Knowledge variable significantly affected the Green Purchase Intention variable. In contrast, the Perceived Price variable had no significant effect on the Green Purchase Intention variable. Then, the Government Policy variable also significantly affects the Green Purchase Intention variable. Finally, the Green Product Knowledge, Perceived Price, and Government Policy variables were found to have a simultaneous effect on the Green Purchase Intention variable.

This is an open access article under the [CC BY-NC](https://creativecommons.org/licenses/by-nc/4.0/) license.



## Corresponding Author:

Lia Suprihartini,  
Administrasi Bisnis,  
Polytechnic Negeri Pontianak,  
Jl. Ahmad Yani, Pontianak, 78124, pontianak  
Email: [liasuprihartini@umrah.ac.id](mailto:liasuprihartini@umrah.ac.id)

## INTRODUCTION

Motorcycle users in Indonesia are currently increasing in number. Every year, there is a substantial increase in the purchase and demand for motorcycles. However, employing fossil fuels as fuel is undoubtedly one of the causes of the decline in public health and damage to the surrounding environment. This issue is increasingly prevalent today as we know it as the issue of global warming. According to research from experts, the term global warming has a very close relationship with the use of transportation that uses fossil fuels (Welsby, D., Price, J., Pye, S., 2021). As a result of the

environmental damage that has arisen as a result of these transportation activities has sparked the emergence of a movement to present and develop a transportation system that is more environmentally friendly, which we know as a sustainable transportation system (Gołda, I. J., Gołębiowski, P., Izdebski, M., Kłodawski, M., Jachimowski, R., & Szczepański, 2017). Along with the strengthening of the issue of global warming, this problem requires the automotive industry to be able to present environmentally friendly vehicles for the improvement of the world in the future (Wellings, J., Greenwood, D., & Coles, 2021). This step is realized by introducing the Euro standard and using Hybrid Technology (Liu, H., Fu, H., Sun, L., Lee, C., & Yeatman, 2021), a combination of Conventional Vehicle Engines with Electric Technology, as well as motorized electric cars with the hope of reducing the effects of lousy exhaust emissions of motorized vehicles in Indonesia (Sinaga, S., 2020).

According to the survey results by a research service, Populix, until January 2022, roughly 29% of respondents plan to buy an electric motorcycle. In addition, 31% of respondents intend to buy an electric car in the next five years. This survey was conducted from 3-9 January 2022 to 1,002 Indonesian citizens consisting of 523 men and 479 women, with an age range of 18 to 55 years.

Environmental issues are the main reasons that encourage respondents to buy and use electric vehicles. As many as 77% of respondents are interested in using electric vehicles because they are environmentally friendly, and 40% of respondents want to purchase electric vehicles to achieve zero carbon emissions for the environment. Furthermore, as many as 36% of respondents chose electric vehicles because of the increase in fuel prices, and 31% of respondents reasoned that electric vehicles save maintenance costs. Furthermore, 29% of respondents want to use an electric vehicle because the battery is durable and long-lasting. In addition, 22% of respondents argue that electric vehicles make travel costs more efficient, 17% of respondents want to use an electric vehicle charging station, and 13% of other respondents argue that they want to participate trend that is booming in society. The majority of respondents also believe that electric vehicles will be more environmentally friendly, become the vehicles of the future, and can reduce the demand for fuel oil (<https://databoks.katadata.co.id/>, 2022).

The hybrid vehicle is included in the category of green or environmentally friendly products. Consumers who care and know about environmental issues generally buy environmentally friendly products (Laroche et al., 2001). Green knowledge is a term for issues that occur in the environment and the right solution to prevent destructive impacts that will occur on the environment (Zsóka, Szerényi, Széchy, & Kocsis, 2013). With an awareness of Green Products and education provided to the public, it is hoped that it will increase public confidence in these products. The existence of more knowledge and the information they obtain in product attributes, functions and utilities will undoubtedly lead to increased confidence for the public in assessing these environmentally friendly products and, of course, affect their purchase intention.

In addition, price is also one of the main determinants for the community as a consumer in deciding to purchase a product. Meanwhile, Price Perception is consumers' perception when they see prices as high, low or fair (Udo-Imeh, 2015). The price of hybrid-type motorcycles is currently more expensive when compared to conventional motorcycles. The high price is indeed correlated to the emission of fewer emissions and by use of electric power, which is friendly to the environment and human health. Understanding the higher prices but providing incredible benefits, not only to the utility of these goods but also to environmental health.

In 2019 the government again issued Presidential Regulation No. 55 of 2019 regarding the acceleration of the Battery-Based Electric Motorized Vehicle (KBL) program for two-wheeled, three-wheeled and four-wheeled or more vehicles. The provision of incentives included in the regulation has not specifically explained the target of providing incentives. Therefore, the need for stages before entering the Electric-Based Vehicle industry (Mali, B., Shrestha, A., Chapagain, A., Bishwokarma, R., Kumar, P., & Gonzalez-Longatt, 2022), namely with the rules regarding the use of Hybrid motors (Pindoriya, R. M., Rajpurohit, B. S., Kumar, R., & Srivastava, 2018). Gradually there

is a change in the use of oil (fossil) energy which is then converted into electrical energy where both can work alternately.

People's purchase intention appears as the behaviour of consumers who want to buy products based on their experience and desire for a product. A positive attitude towards green brands (environmentally friendly) will affect purchase intentions for environmentally friendly products (Green Purchase) (Chen, Y. S., & Chang, 2012). Consumers concerned about environmental problems will solve problems by changing their consumption patterns (Rehman, Z. U., & Dost, n.d.).

Several researchers have studied a lot about green product knowledge. For example, research by Nobel Prize winner Kristian Tripanoyo Tampubolon, shows that the relationship between green product knowledge directly and significantly affects purchase intention (Tampubolon, 2021). In contrast, Agung Wiranto Setyabudi and Tania Adialita showed that green product knowledge did not affect green purchase intention without being mediated by a green trust (Wiranto, A., & Adialita, 2020). Moreover, Mega Widya Denanda, researched the Influence of Green Car Policy on Environmental Political Perspectives and Consumer Awareness of Environmentally Friendly Quality, while The Toyota Trademark LCGC Case Study in South Semarang shows the lack of sustained action between the government, the private sector, and the community (Denanda, 2019); Research by Lendy Aulina and Elevita Yuliati shows that knowledge of green brands has a positive effect on attitudes towards green brands, and finally, attitudes towards green brands have a positive effect on consumers' intentions to buy green products (Aulina & Yuliati, 2017).

## RESEARCH METHOD

The researchers utilized quantitative research methods to obtain primary data for the study. The population in this study is motorcycle users in Pontianak, with a sample of 100 respondents. The data in this study were obtained directly from filling out a questionnaire given to respondents in the form of closed questions which the respondent would then answer. The data obtained were then analyzed using the most effective technique to obtain primary data directly from the research subject. This study will examine the effect of the independent variable on the dependent variable using SPSS version 22 (Nasution, 2016).

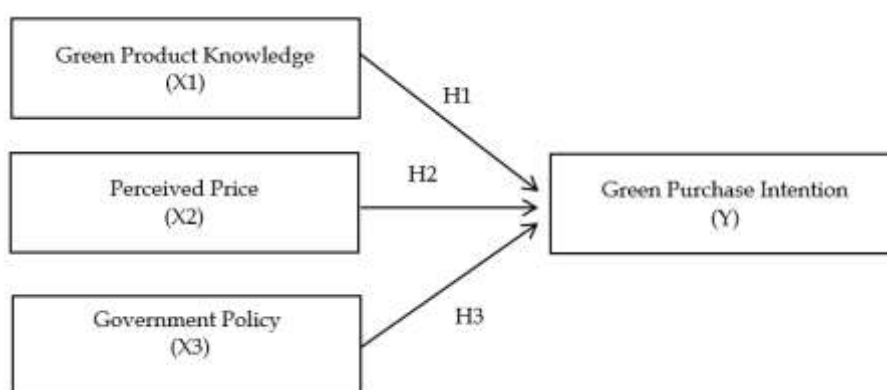


Figure 1. The hypothesis of this research

Notes:

H1 : There is a positive effect of Green Product Knowledge towards Green Purchase Intention

H2 : There is a positive effect of Perceived Price towards Green Purchase Intention

H3 : There is a positive effect of Government Policy towards Green Purchase Intention

## RESULTS AND DISCUSSIONS

The results of this study involved 100 respondents who live in Pontianak and apprehend the importance of environmentally friendly products (Green Products), in this case, Hybrid Type Motor vehicles (Laroche, M., Bergeron, J., & Barbaro-Forleo, 2001). Regarding gender, 46 male and 54 female respondents participated in the survey voluntarily.

**Table 1.** The description of the respondents

NO	Age Range	Frequency	Percentage (%)
1	18 - 25 years old	8	8 %
2	26 - 41 years old	57	57 %
3	42 - 57 years old	34	34 %
4	58 - 76 years old	1	1 %
	Total	100	100%

From the table above, it can be perceived that respondents with an age range of 18-25 years are 8%, 26-41 years are 57%, 42-57 years are 34%, and the remaining 1% is for the age range 58-76 years. Therefore, the majority of respondents are in the age range of 26 - 41 years, which is 57%.

Furthermore, in terms of educational background, the researchers found that as many as 11 respondents with a last education in High School or Vocational High School, eight respondents have obtained a Diploma degree, 40 respondents with a last education of Bachelor's, 40 respondents have Master degree, and one respondent with the last education of Doctoral. This shows that the majority of respondents in the research carried out have the latest education, namely a Bachelor's and Master, with a percentage of 40%.

### Struktural Model Testing/Hypothesis testing

#### *R-Square value*

**Table 2.** The coefficient of determination analysis

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.802 <sup>a</sup>	.644	.633	1.69011

a. Predictors: (Constant), Kebijakan Pemerintah, Perceived Price, Green Product Knowledge

The table above indicates that the number R is the correlation coefficient between the variables of Green Product Knowledge, Perceived Price, and Government Policy with Green Purchase Intention with a value of 0.802. This means that the relationship between Green Product Knowledge, Perceived Price, and Government Policy with an increase in Green Purchase Intention is strong (significant) of 80.2%. Adjusted R2 in this study is worth 0.633. This number shows that the 63.3% increase in Green Purchase Intention is influenced by Green Product Knowledge, Perceived Price, and Government Policy. In comparison, the remaining 36.7% is influenced or explained by other factors not included in the study.

**Table 3.** The results of multiple linear regression model formation

Coefficients <sup>a</sup>					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-5.065	1.553		-3.261	.002
Green Product Knowledge	.557	.116	.385	4.804	.000
Perceived Price	.019	.078	.017	.239	.812

Government Policy	.279	.048	.491	5.861	.000
a. Dependent Variable: Green Purchase Intention					
Source: The processed output data of SPSS Version 24					

From the table above, the results of hypothesis testing are as follows:

**Hypothesis 1: The Green Product Knowledge variable partially has a significant effect on the Green Purchase Intention variable.**

Green Product Knowledge variable with a value of sig. 0.000, and the  $t_{\text{count}}$  value is 4,804, which means the sig value is smaller than the 0.05 significance level. Furthermore, based on the comparison of the  $t_{\text{count}}$  with the  $t_{\text{table}}$ , it is found that the  $t_{\text{count}}$  is greater than the  $t_{\text{table}}$  ( $4,804 > 1,984$ ). Thus, the researchers conclude that H1 is accepted and H0 is rejected, which means that the Green Product Knowledge variable partially has a significant influence on the Green Purchase Intention variable.

**Hypothesis 2: The Perceived Price variable partially does not have a significant effect on the Green Purchase Intention variable**

The result indicates that Perceived Price variable with a value of sig is 0.812, and the  $t_{\text{count}}$  value is 0.239, which means the value of sig is greater than the significance level of 0.05. Furthermore, based on the comparison of the  $t_{\text{count}}$  with the  $t_{\text{table}}$ , it is found that the  $t_{\text{count}}$  is smaller than the  $t_{\text{table}}$  ( $0.239 < 1.984$ ). So it can be concluded that H0 is accepted and H1 is rejected, which means that the Perceived Price Variable partially does not significantly affect the Green Purchase Intention variable.

**Hypothesis 3 : Government Policy Variables partially have a significant effect on the Green Purchase Intention variable.**

The result depicts information regarding the Government Policy Variable with a value of sig is 0.000, and the  $t_{\text{count}}$  value is 5.861, which means the sig value is slighter than the 0.05 significance level. Moreover, based on the comparison of the  $t_{\text{count}}$  with the  $t_{\text{table}}$ , it is found that the  $t_{\text{count}}$  is more remarkable than the  $t_{\text{table}}$  ( $5,861 > 1,984$ ). So it can be concluded that H1 is accepted and H0 is rejected, which means that the Government Policy Variable partially significantly influences the Green Purchase Intention variable.

## Discussion

### The Effect of Green Product Knowledge on Green Purchase Intention

The results of the hypothesis that has been described previously show that Green Product Knowledge has a significant effect on the Green Purchase Intention variable with a sig value. 0.000, and the  $t_{\text{count}}$  value is 4.804, which means that the sig value is smaller than the 0.05 significance level. Furthermore, comparing the  $t_{\text{count}}$  with the  $t_{\text{table}}$ , it is found that the  $t_{\text{count}}$  is more remarkable than the  $t_{\text{table}}$  ( $4,804 > 1,984$ ), and Hypothesis 1 is accepted, meaning that Green Product Knowledge is proven to affect Green Purchase Intention. This study strengthens the results of research conducted by Nobel Kristian TP (2021), which states that green product knowledge has a direct and significant influence on buying interest.

### The Effect of Perceived Price on Green Purchase Intention

Furthermore, the results of the hypothesis also show that Perceived Price has no significant effect on the Green Purchase Intention variable with a sig value of 0.812 and a  $t_{\text{count}}$  value of 0.239. These results indicate that the sig value is greater than the 0.05 significance level. Likewise, based on comparing the  $t_{\text{count}}$  with the  $t_{\text{table}}$ , it is found that the  $t_{\text{count}}$  is smaller than the  $t_{\text{table}}$  ( $0.239 < 1.984$ ) and Hypothesis 2 is rejected, meaning that Perceived Price is proven not to affect Green Purchase Intention. The results of this study refute the results of research conducted by Agung

Wiranto Setyabudi Tania Adelita (2020), where Perceived Price has a positive and strengthening effect on Green Purchase Intention.

### The Effect of Government Policy on Green Purchase Intention

In terms of government policy, the results of the hypothesis show that it has a significant effect on the Green Purchase Intention variable because the sig value is 0.000 and the t-count value is 5.861, which means the sig value is smaller than the 0.05 significance level. Based on the comparison of the t-count with the t-table, it is found that the t-count is greater than the t-table ( $5,861 > 1,984$ ), and Hypothesis 3 is accepted, meaning that government policy is proven to affect Green Purchase Intention. The results of this study strengthen the research conducted by Mega Widya Denanda (2019), showing the lack of continuous action between the government, the private sector, and the community regarding the use of LCGC vehicles. Hence, it is necessary to strengthen government policies on implementing LCGC vehicles

## CONCLUSION

Partially, the Green Product Knowledge variable significantly affects the Green Purchase Intention variable, Partially, the Perceived Price variable has no substantial influence on the Green Purchase Intention variable, Partially, the Government Policy variable notably impacts the Green Purchase Intention variable and Partially, the variables of Green Product Knowledge, Perceived Price, and Government Policy simultaneously influence the Green Purchase Intention variable.

## References

- Aulina, L., & Yuliati, E. (2017). The Effects of Green Brand Positioning, Green Brand Knowledge, and Attitude towards Green Brand on Green Products Purchase Intention, *36(Icbmr)*, 548-557. <https://doi.org/10.2991/icbmr-17.2017.50>
- Chen, Y. S., & Chang, C. H. (2012). Enhance green purchase intentions: The roles of green perceived value, green perceived risk, and green trust. *Management Decision*.
- Denanda, M. W. (2019). Analisis pengaruh kebijakan Low Cost Green Car TERHADAP Perspektif Politik Lingkungan Dan Kesadaran Konsumen Dalam Mutu Ramah Lingkungan: Studi Kasus Lcgc Merek Dagang Toyota Di Semarang Selatan. *Journal of Politic and Government Studies*, *8(04)*, 371-380., 1-10.
- Gołda, I. J., Gołębiowski, P., Izdebski, M., Kłodawski, M., Jachimowski, R., & Szczepański, E. (2017). The evaluation of the sustainable transport system development with the scenario analyses procedure. *Journal of Vibroengineering*, *19(7)*, 5627-5638. <https://databoks.katadata.co.id/>. (2022). banyak-orang-ingin-beli-kendaraan-listrik-karena-isu-lingkungan.
- Laroche, M., Bergeron, J., & Barbaro-Forleo, G. (2001). Targeting consumers who are willing to pay more for environmentally friendly products. *Journal of Consumer Marketing*, *Vol. 18*, N.
- Liu, H., Fu, H., Sun, L., Lee, C., & Yeatman, E. M. (2021). Hybrid energy harvesting technology: From materials, structural design, system integration to applications. *Renewable and Sustainable Energy Reviews*, *137*, 110473.
- Mali, B., Shrestha, A., Chapagain, A., Bishwokarma, R., Kumar, P., & Gonzalez-Longatt, F. (2022). Challenges in the penetration of electric vehicles in developing countries with a focus on Nepal. *Renewable Energy Focus*, *40*, 1-12.
- Nasution, H. F. (2016). Instrumen penelitian dan urgensinya dalam penelitian kuantitatif. *Al-Masharif: Jurnal Ilmu Ekonomi Dan Keislaman*, *4(1)*, 59-75.
- Pindoriya, R. M., Rajpurohit, B. S., Kumar, R., & Srivastava, K. N. (2018). Comparative analysis of permanent magnet motors and switched reluctance motors capabilities for electric and hybrid electric vehicles. In *In 2018 IEEMA Engineer Infinite Conference (eTechNxt)* (pp. 1-5). IEEE.
- Rehman, Z. U., & Dost, M. K. (n.d.). Conceptualizing green purchase intention in emerging markets: An empirical analysis on Pakistan. In *In The 2013 WEI International Academic Conference Proceedings (Vol. 1, pp. 101-102)*.
- Sinaga.S. (2020). Analisis Kebutuhan Energi Motor Listrik Pada Mobil Hybrid Urban KMHE 2018. *Jurnal Teknik Mesin Mercu Buana*, *9(3)*, 180-189.

- Tampubolon, N. K. T. (2021). *Analisis Hubungan Green Product Knowledge, Green Awareness dan Green Lifestyle dengan Minat Beli Produk Ramah Lingkungan (Kasus: Mahasiswa Universitas Sumatera Utara)*.
- Udo-Imeh, P. T. (2015). Influence of Personality on the Buying Behaviour of Undergraduate Students in Universities in Cross River State, Nigeria. *International Journal of Marketing Studies*, 7(4), 64–77. <https://doi.org/10.5539/ijms.v7n4p64>
- Wellings, J., Greenwood, D., & Coles, S. R. (2021). Understanding the Future Impacts of Electric Vehicles – An Analysis of Multiple Factors That Influence the Market. *Vehicles*, 3(4), 851–871.
- Welsby, D., Price, J., Pye, S., & E. (2021). Unextractable fossil fuels in a 1.5 C world. *Nature*, 597(7875), 230–234.
- Wiranto, A., & Adialita, T. (2020). Pengaruh Green Product Knowledge, Green Trust dan Perceived Price terhadap Green Purchase Intention Konsumen AMDK Merek Aqua dengan Botol 100% Recycled. *Jurnal Administrasi Bisnis*, 16(2), 174–184.
- Zsóka, Á., Szerényi, Z. M., Széchy, A., & Kocsis, T. (2013). Greening due to environmental education? Environmental knowledge, attitudes, consumer behavior and everyday pro-environmental activities of Hungarian high school and university students. *Journal of Cleaner Production*, 48, 126–138. <https://doi.org/10.1016/j.jclepro.2012.11.030>