

Analysis of Purchase Intentions for Electric Vehicles by Promotion, Price and Green Lifestyle by The Community of Sumbawa

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Abstract— *This study aims to analyze the influence of the Sumbawa people's purchase intentions for electric vehicles based on Promotions, prices and green lifestyle. This study applies a quantitative approach to a population of Sumbawa people who know about electric cars. Because the total population is unknown, the number of samples will be calculated using Paul Leedy's formula so that the results will total 100 respondents. The sampling technique of this research is purposive Sampling and analysis techniques in research using Partial Least Square with the SmartPLS application. Based on the results of the study, it shows that promotions have an effect on purchase intentions of electric cars by the people of Sumbawa, prices have an influence on purchase intentions of electric vehicles by the people of Sumbawa, green lifestyle has an impact on Purchase intentions of an electric vehicle by the people of Sumbawa.*

Indexed Terms— *Green Life Style, Purchase Intention, Promotion, Price*

I. INTRODUCTION

The growth of transportation worldwide is very rapid, including in Indonesia. Transportation is a goods carrier, and people have many types, including planes, ships, motorbikes, and cars. Based on data Korlantas polri.go.id total transportation in Indonesia 150,786,747 units. From these data, motorcycles are the vehicle most widely used by Indonesians, with a total of 123,377,429 users. Then in second place were private cars, with 20,099,273 units, buses, with 213,239 units, freight cars, with 5,645,375 units, and special vehicles, with 85,150 units.

The large population of transportation hurts the environment, especially air pollution; this makes many

countries make policy the use of electric vehicles electric vehicle. Indonesia is one of the countries doing this, which can be seen from the emergence of Presidential Regulation Number 55 of 2019 concerning the Acceleration of the Battery-Based Electric Motorized Vehicle Program (*Battery Electric Vehicle/BEV*) for Road Transportation. Currently, many companies have started selling electric vehicles (EVs). With the easing of rules for electric cars, such as reduced vehicle tax and exemption from odd-even rules, it is no wonder people are starting to try and switch to using electric vehicles. Ministry Communication has a target to achieve 2 million electric vehicle users in the year 2025. The following is the growth and sales of electric cars in Indonesia.

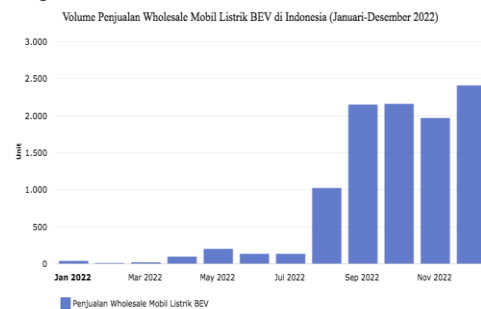


Figure 1. Effects of selecting different switching under dynamic condition

Based on the image of car sales volume, electricity in Indonesia in 2022 will increase from April to December 2022. This indicates that Indonesia is ready to produce or use electric cars. However, before Indonesia enters the stage of pure battery vehicles or 100% electric vehicles, it is best to enter the vehicle stage *hybrid* in the opinion of Johnny Darmawan as Deputy Chairman of Kadin, including those who think so. He considered that Indonesia needed more time to achieve 100% electric vehicle infrastructure and other aspects. The reason is that many problems still must be resolved first. Compared to hybrid vehicles, the

price of electric vehicles in Indonesia is still too expensive, some still use fossil fuels, and some are electric. The problem of charging speed and electric vehicle battery technology is still under development. Another battery issue is environmental. After about ten years of use, used batteries need to be replaced. Johnny assesses that the battery recycling ecosystem needs to be better developed.

This is in line with the opinion of Moeldoko as the Presidential Chief of Staff, based on the results of a survey by the Solidiance management consultant in 2018, the results stated that purchase intentions for electric cars were still low, and he explained the reasons why Indonesian people have low purchase intentions for electric cars, including places for charging electric vehicles are still rare, limited cruising range, expensive electric car prices. So, there is a need for research that discusses the interest in purchasing electric vehicles.

Purchase intentions are related to consumer plans to buy a particular product and how many product units are needed in a certain period (Kotler, 2016). This is related to one's interests and self-pleasing. Purchase intentions are attitudes of liking shown by the tendency to buy goods according to interests and pleasures.

The public needs to widely know a product that brings new technology regarding brand, features and benefits offered, so promotion is needed. Promotion is one-factor motivating people to know about a product. According to Kotler and Armstrong (2016: 77), promotion is an activity aimed at communicating the product's value and encouraging customers to buy the product. Products are still foreign in society must be supported with the proper promotion so that the audience can know the product and purchase intention. One of the promotions is by following the environmentally friendly trend promoted by the government. This is by research conducted by Irawan (2020) and Ariyanto & Rahmawan (2020).

Environmentally friendly campaigns are introduced in every promotion or activity in society, which is expected to become a lifestyle for people in Indonesia. Lorenzen (2012) stated that a green lifestyle is a lifestyle that involves careful consideration of the

adverse effects of one's daily activities on the environment. Using electric-based vehicles is an indicator of a green lifestyle in society. The results of research by Tampubolon (2021), and Putri & Rahmawan (2022), and Putri (2021)

Electric vehicles are a new thing for the majority of Indonesian people. Electric vehicles that are sold provide many features with new technologies, including fast charging, autonomous mode and others. Adopt new features and technologies expected to be attractive to potential customers. Electric vehicles are relatively more expensive than gas-fueled vehicles. This is inseparable from the features offered. Price is one of the considerations for consumers to be interested in a product. According to Kotler and Armstrong (2016), price is the amount of money charged for a product or service or the amount of value exchanged by consumers for the benefits of having or using the product or service. Supported by research results of Ariyanto & Rahmawan (2021). Based on this background, the researcher conducted a study entitled Analysis Of Purchase Intentions For Electric Vehicles By Viewing Promotion, Price And Green Lifestyle By The Community Of Sumbawa

II. THEORETICAL REVIEW

- *Green life style*

Green life style can be seen from the behavior that pays special attention to environmental sustainability in daily activities. According to Scannell in Gea et al., (2016), the actions used to minimize environmental damage and improve environmental conditions are to behave in an environmentally friendly manner. According to Bechtel (2002) environmentally friendly indicators consist of: a. recycling/reuse b. environmentally friendly consumption c. energy conservation d. transportation.

- *Price*

Price according to Kotler and Armstrong (2016) is the amount of money charged for a product or service, or the amount of value exchanged by consumers for the benefits of having or using the product or service. The price offered must be in accordance with the benefits received by consumers. According to Kotler and Armstrong (2016) price indicators are as follows:

- a) Prices are affordable by the purchasing power of consumers.
- b) Conformity between price and quality.
- c) Prices are competitive with other similar products

- *Promotion*

All promotional activities are carried out through communication using a combination of promotional tools called the promotion mix. According to Kotler and Armstrong (2016), states that the promotion mix consists of: 1. Advertising (Advertising) 2. Sales Promotion 3. Public Relations and Publicity 4. Personal Selling (Personal Sales) 5. Direct Marketing.

- *Buying Interest*

According to Kotler (2016) consumer buying interest arises after an alternative evaluation process and in the evaluation process. A series of evaluations of the information obtained by consumers becomes the basis for interest in products and services. According to Ferdinand (2014), buying interest can be identified through indicators as following: a. Transactional interest b. Refrential interest c. Preferential interest d. Ask explorative

III. RESEARCH METHODE

This research was conducted in the city of Sumbawa by applying quantitative methods. The number of samples in this study used Paul Leedy's formula and obtained a sample of 100 respondents. The research sample was taken using non-probability sampling, which does not provide equal opportunities for specific populations to become research samples (Sugiyono, 2014). Are samples selected by applying the purposive sampling technique *with the criteria of the Sumbawa community who have seen advertisements for electric vehicles.* This study uses a scale measurement scale Likert using the following four levels: strongly agree, agree, disagree, and strongly disagree. This research was carried out to prove the influence of one variable on another variable. Data collection using a questionnaire, and research data was processed using SmartPLS

IV. RESULT AND DISCUSSION

- *Outer Model Testing*

This evaluation aims to prove that the measurement model is valid and reliable. In evaluating this measurement model there are three evaluations, namely Convergent Validity by looking at the expected loading factor value > 0.7 , Discriminate Validity by looking at the cross loading value > 0.7 and Internal Consistency seen from the composite Reliability value must be > 0.7 . It can be seen from the Cronbach Alpha coefficient.

- *Convergent Validity*

Validity measurement can be seen in table 1 which shows the loading factor and AVE values. Give this the result of a correlation between the indicator and its construct that shows the value of outer loading > 0.70 . (Ghozaly,2019). It tests the validity of reflective indicators using the correlation between item scores and construct scores. It can be seen from Table 1 that the loading factor gives the value above the recommended one is > 0.7 so that the indicators used in this study are valid and have met convergent validity.

Table 1 Result Loading Factors

	Green Lifestyle	Price	Promotion	Purchase intentions		
G1	0.95	H 0.99	P 0.85	MB1	0.839	
	0	1 4	1 5			
G2	0.95	H 0.95	P 0.91	MB2	0.824	
	6	2 9	2 1			
G3	0.94	H 0.92	P 0.85	MB3	0.875	
	9	3 7	3 3			
G4	0.93	H 0.97	P 0.94	MB4	0.849	
	2	4 6	4 3			
G5	0.97	H 0.92	P 0.90	MB5	0.813	
	7	5 7	5 7			
G6	0.93	H 0.94	P 0.83	MB6	0.804	
	6	6 4	6 3			
G7	0.97	H 0.97	P 0.90	MB7	0.726	
	8	7 9	7 6			
G8	0.97	H 0.96	Q 0.90	MB8	0.816	
	1	8 1	8 0			
G9	0.94			MB9	0.719	
	8					

G10	0.87 7
G11	0.96 2
G12	0.85 7

• *Composite reliability*

Composite reliability is used to test the value reliability variable indicator. Composite result value reliability can be considered reliable if it is < 0.7 . The reliability test can be strengthened by Cronbach Alpha, where the variable value must show a result of > 0.7

Table 2 Cronbach's Alpha dan Composite Reliability

	Cronbach's Alpha	Composite Reliability
Green LifeStyle	0.988	0.989
Price	0.987	0.989
Purchase intentions	0.934	0.944
Promotion	0.962	0.968

In Table 2, it can be seen that the composite reliability value for all research variables shows a value of above > 0.7 . So all research variables can be said to be reliable. The reliability test is also strengthened by the value of Cronbach's Alpha, where the research variable must show a value of > 0.7 . As can be found in Table 2 studies above, Cronbach's Alpha value on each variable has a value > 0.7 . It can be concluded that the value of each variable meets Cronbach's Alpha.

• Inner model Testing

Evaluation of the structural model aims to predict the relationship between latent variables based on substantive theory using R-square for endogenous constructs and t-statistical values from path coefficient testing. In this evaluation there are several indicators that need attention, namely: Coefficient of Determination (R²) and F-square.

• R-square

R-square is a goodness fit model test in which the test is a test used for the dependent variable or dependent variable (Astuti et al., 2021). The higher the R-square

value, the better the value of the proposed model. The criteria for the R-square value are, the R-square value of 0.75 means the model is robust, the value of 0.50 means the model is moderate, and the value of 0.25 means the model is weak. (Juliandi, 2018). The adjusted R-square value above can be concluded that it has a "strong" value category from several criteria for the R-square value.

Table 3 Coefficient Determinant Result

	R Square	R Square Adjusted
Purchase intentions	0.540	0.525

In the study can be seen that all the variables involved in the model can explain the dependent variable under study, namely the Purchase Intentions variable of 0.540 or 54%, so it can be said that the Green LifeStyle variable, price and promotion affect the Purchase Intentions variable by 54% and the remaining 46 % influenced by variables outside of this study.

• Uji F-square

The F square test is used to see how much influence the variables have. The F square test has several categories; the f square value of 0.02 is interpreted as a small effect, the f square value of 0.15 is interpreted as a moderate influence, and the f square value of 0.35 has a significant influence. (Furadantin, 2018).

Table 4 F-Square Test Result

	Purchase intentions
Green LifeStyle	0.171
Price	0.047
Promotion	0.198

This study shows that the F square value has a green variable value lifestyle and has a moderate effect on Purchase intentions equal to 0.171. The price variable has a negligible effect on purchase intentions of 0.047. Furthermore, the promotion variable moderately affects purchase intentions, equal to 0.198.

• Hypothesis testing

To see if a hypothesis is accepted or rejected, among others, by considering the value of significance between contract, t-statistics, and p-values. The rules

of thumb used in the study were t-statistics >1.96 with a significance level of the p-value of 0.05 (5%) and a positive beta coefficient. The test value of this research hypothesis can be shown in Table 5.

Table 5 Path Coefficient Result

	Original Sample (O)	T Statistics	P Values
Green LifeStyle -> Purchase intentions	0.350	2.826	0.005
Price -> Purchase intentions	0.172	2.152	0.032
Promotion -> Purchase intentions	0.369	3.094	0.002

From the research table above, it can be seen that the values of the path coefficients test are as follows:

The X1 variable, namely the influence of green lifestyle on Purchase intentions, has an original sample value of 0.350, which means that the relationship between variables has a positive or directional value for the T-statistics value of 2.826 > 1.96. Also, the P-Value value has a value of 0.0051 < 0.05, which can be concluded that variable X1, namely green lifestyle, has a positive and significant effect on purchase intentions. From the results of statistical tests that the green lifestyle variable influences the purchase intentions of electric vehicles, this cannot be separated from the increasing public awareness of global warming. The Lowy Institute survey strengthens it; in 2021 there are 36% of Indonesian respondents considered global warming a serious problem. This figure shows an increase in public awareness compared to the 2011 survey of 31%. Public awareness of the environment that can be applied in their lives will form a green lifestyle. A green lifestyle can encourage people to buy electric vehicles, which is reinforced by Putri & Rahmawan's research (2022) that a green lifestyle influences electric car purchase intentions. Oleh, because of that, the government and automotive manufacturers must be able to encourage more people who are aware of the environment; the aim is to accelerate the electric vehicle market.

In variable X2, namely the effect of price on purchase intentions, it has an original sample value of 0.172, which means that the relationship between variables has a positive or directional value. The T-statistics value has a value of 2.156 > 1.96, and also the P-Value value has a value of 0.032 < 0.05 which can be concluded that the X2 variable, namely price, has a positive and significant effect on purchase intentions. Price is the most decisive variable for selling products, and this is because electric vehicles are synonymous with high prices. The cause of the high cost of electric vehicles is that the technology used is still relatively new and still being developed. The Indonesian government encourages people to buy electric vehicles by issuing various policies through subsidies so that the price of electric vehicles is low. According to Immawati's research results (2018), prices influence purchase intentions. The form of price reduction includes the purchase of an electric motorbike which receives subsidies in the form of a price discount of 7 million rupiahs. As for cars, the Indonesian government subsidizes 26 million rupiahs. Policy another is the annual tax cut for electric vehicles. The long-term strategy of the Indonesian government's industrialization is attracting many investors to build electric vehicle component factories. Starting from assembling and building local industries to battery components, this cannot be separated from Indonesia as a nickel-producing country that can be used as raw material for making batteries. One of the provinces currently developing the electric vehicle industry is the province of West Nusa Tenggara, which assists and supports the local electric vehicle industry. The output of this program is the creation of the NgebUTS electric bicycle from the Sumbawa University of Technology, the Fi-Bike from the Bima district, and many more. Policy by the central and provincial governments course, it is excellent to encourage people to buy electric vehicles at lower prices for having high local content.

In variable X3, namely the influence of promotion on purchase intentions, it has an original sample value of 0.369, which means that the relationship between variables has a positive and directional value. T-Score Statistics on the influence of lifestyle to Purchase intentions has a value of 3.094 > 1.96, and the P-Value value has a value of 0.002 < 0.05 which can be concluded that variable X3, namely promotion, has a

positive and significant effect on Purchase intentions. Marketing penetration is a must for electric vehicle manufacturers to attract consumer interest. Promotional activities can be carried out through television advertisements, social media marketing, and automotive events. This year, 2023, there will be the Periklindo Electric Vehicle Show (PEVS) event, which is the largest electric-based vehicle exhibition in Indonesia, with the hope that this event can introduce a wide variety of electric vehicles to the public. Another goal of the event is to push industrial growth to become world-class. Events, vehicle demonstrations, to test drives can be a good strategies for manufacturers so that people can feel the experience of driving with electric vehicles, and the goal is to get people's interest—purchase intention vehicle electricity. Promotion can encourage people to be interested in buying electric vehicles. This is reinforced by Yusuf's research (2022), Promotion influences purchase intentions. Hence, with massive and varied promotions, electric vehicle manufacturers can educate the public that electric vehicles represent environmentally friendly future transportation.

CONCLUSION

The conclusions of this study found that Green lifestyle has a positive and significant effect on the purchase intentions of electric vehicle consumers by the Sumbawa people in the sense that a green lifestyle plays a role in influencing the purchase intentions of electric vehicles by the Sumbawa people. Prices have a positive and significant effect on the purchase intentions of electric vehicle consumers by the Sumbawa people in the sense that prices play an important role in influencing the purchase intentions of electric vehicles by the Sumbawa people. Variable Promotion has a positive and significant effect on the purchase intentions of electric vehicle consumers in the Sumbawa people in the sense that promotion plays an essential role in influencing the purchase intentions of electric vehicles by the Sumbawa people.

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