

THE ROLE OF SUMBAWA COMMUNITY'S BUYING INTEREST IN ELECTRIC VEHICLES VIEW FROM PERCEIVED USEFULNESS, PERCEIVED EASE OF USE AND GREEN LIFE STYLE

Agus Santoso¹, Hartini²

Fakultas Ekonomi dan Bisnis, University Technology Sumbawa^{1,2}

Email: agus.santoso@uts.ac.id¹, hartini@uts.ac.id²

Abstract

Developments in technology and increasing environmental issues have encouraged the creation of electric vehicles as a solution in society. Even so, the level of acceptance of electric vehicles, especially in Indonesia, is still in the low category. This study aims to examine the determinants that play an important role in the interest in buying electric vehicles for the people of Sumbawa towards electric vehicles through the aspects of perceived Usefulness, Perceived Ease of Use, and green lifestyle. The target population in this study is the entire Sumbawa community. Through purposive sampling, 100 respondents were obtained. Empirical data was collected online through the Google form platform, and then analyzed through the SEM approach with SmartPLS. The research findings confirm that what influences the interest in buying electric vehicles are perceptions of Usefulness, perceptions of Ease of Use and Green Lifestyle. This study is expected to make a positive contribution to the literature related to people's behavior towards technological developments, especially in Sumbawa.

Keyword: *Perceive Usefulness, Perceive Ease Of Use, Green Life Style, Interest Buying*

INTRODUCTION

The current population of electric motorbikes has reached approximately 10,300 which are already circulating in the community, but with Presidential Regulation 55 of 2019 concerning the Acceleration of the Battery-Based Electric Motorized Vehicle Program, the government hopes that there will be an increase in the use of electric vehicles in society. It can be seen that initially there were 5 APM but now it has reached 22 APM for electric motorbikes and 1500 for electric car users. (Biro Komunikasi dan Informasi Publik, 2021). With an increase in electric vehicle users in Indonesia, it shows that people's interest in electric vehicles is experiencing rapid development, especially accompanied by a government program to convert used vehicles into electric vehicles. The existence of electric vehicles will reduce the impact of air pollution, traffic jams, traffic accidents and noise so as to create an Indonesia that is clean from high CO₂.



Figure 1. development target of electric vehicles in Indonesia

Source: Indonesia baik.id

Based on Figure 1, it explains that the increase in targets to be achieved by the Indonesian government in implementing electric vehicles to achieve an environmentally friendly energy transition in Indonesia, which is one of the government's commitments to achieve a net zero emission target in 2060. The targets set government in 2026 as many as 5,179 units. Meanwhile, based on data from the G20 Indonesia Communication Team, Sunday (13/11/2022), the realization of the supply of new electric cars was 465 units. As for electric motorbikes, only 1,229 units have been realized, or only 0.84 percent of the target to be achieved in the next 4 years. Meanwhile, the target set for 2026 is 145,808 units. This shows that the level of use of electric transportation in developing countries, especially Indonesia, still shows a very minimal number. Considering that the existence of electric vehicles can participate in environmental protection. This is in accordance with research conducted by Frost & Sullivan, entitled "The Future of Electrified Vehicles in Southeast Asia" released in "Nissan FUTURES - Electrification and Beyond", a virtual gathering of industry, government and media leaders. In this study, 44% of Indonesian respondents thought that electric vehicles were cool and trendy - the highest in their region - and 58% believed that maintenance costs for electric vehicles were cheaper than conventional cars. Thus, it is very important to study more deeply about consumer acceptance and interest in electric vehicles in Sumbawa through the Modified Technology Acceptance Model (TAM) approach.

TAM has become one of the most influential models of technology acceptance, with two main factors influencing individual intentions to use new technologies, namely Perceived Ease of Use (PEoU) and Perceived Usefulness (PU) (Charness, 2016). Perceived benefit is the extent to which a person believes that using a technology will improve his performance (Ghozali 2016). Ease (ease) means without difficulty or does not require great effort when using this technology. Thus the perception of the ease of use of this technology refers to the individual's belief that the information technology system used does not require great effort during operation.

RESEARCH METHOD

This research was conducted through a quantitative approach using Sumbawa as the research location. The target population in this study is all Sumbawa people who are familiar with the development of electric vehicles in Indonesia. Through purposive sampling, a total of 100 research respondents was obtained. Empirical data is collected online via Google Form. The questionnaire link was then distributed online via social media platforms. The collected data was then analyzed through the Structural Equation Modeling (SEM) approach with the SmartPLS program. SEM-PLS is used in this study because it can predict and explain latent variables from testing on theory, it can determine the effect of various variables on an object simultaneously with at least one dependent variable and one independent variable. Structural Equation Modeling Partial Least Square (SEM - PLS) is a statistical analysis to evaluate models consisting of linear relationships between variables which are usually variables that cannot be observed directly. There are 2 evaluation models, namely: Evaluation of the Measurement Model (Outer Model) which 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 (Saputra, 2018).

Evaluation of the Structural Model (Inner 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 (R^2), Path Coefficient, T-Statistics, Predictive Relevance (Q^2), and F-square (Mardiana & Ahmad Faqih, 2019).

RESULTS and DISCUSSION

Measurement Model Test

At this stage it is carried out to test the construct validity and reliability of each indicator. This study used a questionnaire to collect research data. To determine the level of validity and reliability of the questionnaire, the researchers used the Smart PLS software. The Loading Factor value is said to

be high if the component or indicator correlates more than 0.7 with the construct you want to measure. The loading factor values can be seen in table 1 below:

Table 1. Loading Factor Result

Perceived Usefulness		Perceived Ease Of Use		Green Life Style		Purchase Intentions	
PU1	0.882	PEO1	0.994	G1	0.837	MB1	0.872
PU2	0.888	PEO2	0.959	G2	0.856	MB2	0.856
PU3	0.909	PEO3	0.927	G3	0.729	MB3	0.868
PU4	0.898	PEO4	0.976	G4	0.787	MB4	0.881
				G5	0.763	MB5	0.869
				G6	0.778	MB6	0.799
				G7	0.833	MB7	0.831
				G8	0.849	MB8	0.873
				G9	0.864		
				G10	0.818		
				G11	0.745		
				G12	0.738		

Source: spss result 2023

Reliability states the extent to which results or measurements can be trusted or relied on and provide measurement results that tend to be consistent after repeated measurements. To measure the level of reliability of variables used Cronbach Alpha and Composite Reliability coefficients. Sarwono and Narimawati (2015: 18) state that a latent variable can be said to have good reliability if the composite reliability value is greater than 0.7 and the Cronbach's alpha value is greater than 0.7. The results of the reliability test are in Table 2:

Table 2. Reliability Result

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Green Life Style	0.952	0.955	0.642
Perceived Ease of Use	0.889	0.923	0.750
Perceived Usefulness	0.916	0.941	0.800
Purchahse Intention	0.954	0.960	0.727

Source: spss result 2023

Based on table 2 which is the result of the Reliability test, it can be said that the Average Variance Extracted (AVE) for each variable, namely Green Life Style, Perceived Ease of Use and Perceived Usefulness and Purchase Intention, has a construct > 0.50 which indicates that all constructs are reliable. Thus it can be stated that each variable has high discriminant validity. Meanwhile, the composite reliability value in table 2 shows a construct value > 0.70 . These results show that each variable has met the composite reliability so that it can be concluded that all variables have a high level of reliability. Furthermore, in the table above, the cronbach's alpha for each variable shows a construct value > 0.70 , thus these results indicate that each research variable has met the requirements for the Cronbach's alpha value, so it can be concluded that all variables have a high level of reliability. So it can be concluded that the indicators used in this study have high discriminant validity in compiling their respective variables.

Test the structural model

Evaluation of the structural model (inner model) is carried out to ensure that the structural model built is robust and accurate. Based on the data processing that has been done using the SmartPLS 3.0 program, the R Square value is obtained as follows :

Table 3. Koefisien Determinasi Result

	R Square	R Square Adjusted
Purchahse Intention	0.607	0.595

Source : spss result 2023

Based on table 3, it shows that the R Square value for the word of mouth variable is 0.638. This acquisition explains that the percentage of word of mouth is 63.8%. This means that the variables perceived Ease of Use, Perceived Usefulness, and Green Life Style affect purchase intention by 63.8% and the remaining 36.2% are influenced by other variables. Based on Table 4, the f-square value of the Perceived Ease of Use variable on Purchase Interest is stated to be moderate because the value is 0.042. In the green life style variable on Purchase Intention, the f-square value of 0.438 is stated to have a large influence. And the variable Perceived usefulness on buying interest has a small effect because it has a value of 0.002. The value of each of these variables is stated to be good and substantive to endogenous variables (Sarwono, 2015).

Table 4. Koefisien Determinasi Result

Hubungan	Nilai F-Square
Green Life Style	0.438
Perceived Ease of Use	0.042
Perceived Usefulness	0.002

Source : spss result 2023

After assessing the inner model, the next thing is to evaluate the relationship between latent constructs as hypothesized in this study. Hypothesis testing in this study was carried out by looking at the T-Statistics and P-Values. The hypothesis is declared accepted if the T-Statistics value is > 1.66 and the P-Values are < 0.05 . The following are the results of Path Coefficients:

Table 5. Hipotesis Result

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Green Life Style -> Purcahse Intention	0.723	0.726	0.147	4.927	0.000
Perceived Ease of Use -> Purcahse Intention	0.152	0.147	0.078	1.942	0.026
Perceived Usefulness -> Purcahse Intention	-0.045	-0.037	0.144	0.311	0.378

Source : spss result 2023

Based on the results of the analysis and testing of the hypothesis on the people of Sumbawa, it can be concluded that the results of the hypothesis test, the effect of green life style on purchase intention obtained a regression coefficient of 0.723 and a t-count of 4.927 with a significance of 0.000. So it can be concluded that Green life style has a positive and significant effect on the interest in buying electric vehicles by the people of Sumbawa. This shows that the higher the public knows that electric vehicles can protect the environment, the higher the interest in purchasing these electric vehicles by the people of Sumbawa. This is supported by factors that influence lifestyle, namely activities, interests and opinions (Rumbiati and Heriyana, 2020). Thus the green life style of the people of Sumbawa can use electric vehicles to support the daily activities of the community. The findings in this study support the results of Navallagun et al. (2020), Rusyani et al. (2021), Kirmani & Khan (2016) dan Putri & Rahmawan (2022), pramesti et al. (2022).

Based on the results of the test using PLS, it is known that the effect of perceived benefits on purchase intention is that the regression coefficient is -0.045 and the t-count is 0.311 with a significance of 0.378. So it can be concluded that the perception of benefits has no significant effect on the interest in buying electric vehicles by the people of Sumbawa. This shows that the better the perception of benefits, the higher the interest in buying electric vehicles by the people of Sumbawa.

Based on the results of hypothesis testing, the effect of perceived ease of use on purchase intention was obtained by a regression coefficient of 0.060 and a t-count of 3.727 with a significance of 0.000. So it can be concluded that perceptions of ease of use have a positive and significant effect on the interest in buying electric vehicles by the people of Sumbawa. This shows that the better the perceived ease of use of electric vehicles, the higher the interest in buying electric vehicles by the people of Sumbawa. This finding is in accordance with research conducted by Gunawan et al (2021), Nadia et al (2021), .

CONCLUSION

This research succeeded in proving that perceived usefulness is not able to play a role in influencing people's buying interest in electric vehicles. These results indicate that the more benefits or uses felt by consumers associated with electric vehicles, the less they are able to increase their buying interest. The findings of this study also demonstrate that perceived ease of use successfully explains consumer buying interest in electric vehicles. This indicates that the ease of use of electric vehicles felt by the people of Sumbawa is able to increase their buying interest. This study explains that the level of green life style of the Sumbawa people has a significant effect on the interest in buying electric vehicles. These results indicate that the higher the level of awareness of the people of Sumbawa related to green life style, the higher their buying interest in electric vehicles. This research is expected to contribute to the literature, especially related to people's behavior towards technological developments. For electric vehicle developers, this is expected to provide practical implications as input related to the factors that influence the public's interest in buying electric vehicles.

REFERENCES

- Charness, N., & Boot, W. R. (2016). Technology, gaming, and social networking. In *Handbook of the Psychology of Aging* (pp. 389-407). Academic Press.
- Faradila, R. S. N., & Soesanto, H. (2016). Analisis Pengaruh Persepsi Kemudahan Penggunaan dan Persepsi Manfaat terhadap Minat Beli dengan Kepercayaan Sebagai Variabel Intervening (Studi pada Pengunjung Toko Online berrybenka.com di Kalangan Mahasiswa Universitas Diponegoro). *Diponegoro Journal of Management*, 5(3), 239-250.
- Frost & Sullivan. (2020). *The Future of Electrified Vehicles in Southeast Asia. Nissan FUTURES - Electrification and Beyond*.
- Ghozali. (2016). *Aplikasi Analisis Multivariate Dengan Program IBM SPSS*. Semarang: Badan Penerbit Universitas Diponegoro.
- J.F Hair, G.T.M Hult, C.M Ringle, and M. S. (2017). *Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Kedua Ed. California: Sage Publication.
- Manajemen, J. (2015). *Penelitian Bisnis dan Manajemen Menggunakan Partial Least Squares (PLS) dengan smartPLS 3.0*.
- Kirmani, M. D., & Khan, M. N. (2016). Environmental concern to attitude towards green products: Evidences from India. *Serbian Journal of Management*, 11(2), 159–179. <https://doi.org/10.5937/sjm11-9241>.
- Mardiana, N., & Ahmad Faqih. (2019). Model Sem-Pls Terbaik Untuk Evaluasi Pembelajaran Matematika Diskrit Dengan Lms. *Ilmu Matematika Dan Terapan*, 13.
- Marliana, R. R. (2019). Partial Least Square-Structural Equation Modeling Pada Hubungan Antara Tingkat Kepuasan Mahasiswa Dan Kualitas Google Classroom Berdasarkan Metode Webqual 4.0. *Jurnal Matematika, Statistika Dan Komputasi*, 16(2), 174. <https://doi.org/10.20956/jmsk.v16i2.7851>.
- Nadia, F., Sudiadi, S., & Hartati, E. (2021). Analisis Pengaruh Kepercayaan, Persepsi Manfaat, Dan Persepsi Kemudahan Penggunaan Terhadap Minat Beli Pada Aplikasi Tokopedia Berbasis Mobile Menggunakan Metode Technology Acceptance Model (TAM). *Jurnal Teknologi Sistem Informasi*, 2(1), 126-136.
- Navalagund, N., Mahantshetti, S., & Nulkar, G. (2020). Factors Influencing Purchase Intention Towards E-Vehicles Among The Potential Indian Consumers - A Study on Karnataka Region. *Journal of the Social Sciences*, 23(02), 551–563. <https://doi.org/10.13140/RG.2.2.28103.11686>

- Nuryakin, C., Riyanto, Riyadi, S. A., Damayati, A., Pratama, A. P., & Gerald Massie, N. W. (2019). Socioeconomic Impacts and Consumer Preferences Analysis of Electrified Vehicle in Indonesia. ICEVT 2019 - Proceeding: 6th International Conference on Electric Vehicular Technology 2019, 80–87. <https://doi.org/10.1109/ICEVT48285.2019.8993989>.
- Rumbiati dan Heriyana. (2020). Pengaruh Gaya Hidup dan Kemudahan Terhadap Minat Beli Mahasiswa dalam Berbelanja Online. Jurnal Aplikasi Manajemen Dan Bianis, 1(1), 57–65.
- Rusyani, E., Lavuri, R., & Gunardi, A. (2021). Purchasing eco-sustainable products: Interrelationship between environmental knowledge, environmental concern, green attitude, and perceived behavior. Sustainability (Switzerland), 13(9). <https://doi.org/10.3390/su13094601>.
- Saputra, A. R. (2018). Pengaruh Kompensasi Dan Komitmen Organisasional Terhadap Kinerja Karyawan Dimediasi Motivasi Kerja: Studi Kasus Di Hotel Merah Group Magetan, Jawa Timur, Indonesia. Universitas Islam Indonesia.
- Sarwono, J., dan Narimawati, U. (2015). Membuat Skripsi, Tesis dan Disertasi dengan Partial Least Square SEM (PLS-SEM). Yogyakarta: Penerbit ANDI.
- Sayyida, S., & Alwiyah, A. (2018). Perkembangan Structural Equation Modeling (Sem) Dan Aplikasinya Dalam Bidang Ekonomi. PERFORMANCE: Jurnal Bisnis & Akuntansi, 8(1), 10–26. <https://doi.org/10.24929/feb.v8i1.465>.
- Siswanto, D. J., Tegor, T., Haqiqi, F., Yusmalina, Y., & Susanto, A. (2022). Human Resources Management in The Country's Border Region Faces Industry 4.0 and The Covid-19 Pandemic. Al-Tanzim: Jurnal Manajemen Pendidikan Islam, 6(1), 228-242.
- Tegor, Johannes, Jaya, R. I. K., Thasimmim, S. N. (2023). Skill, Transformational Leadership, And Competitiveness: Relationships In A Love Triangle. Al-Tanzim: Jurnal Manajemen Pendidikan Islam, 7(2), 422-434.
- Tegor and Umar, Husein. (2017). Compensation analysis in relationship moderation between transformational leadership style and work environment on the employee performance. Russian Journal of Agricultural and Socio-Economic Sciences, 71(11).
- Tegor., Susanto, Alpino., Togatorop, Veterson., Sulivyo, Lod., Siswanto, Dwi Joko. (2020). Metodologi Penelitian Kualitatif dan Kuantitatif. Yogyakarta: Penerbit Lakeisha.
- Tegor., Siswanto, Dwi Joko., & Siagian, Mauli. (2020). Manajemen Sumber Daya Manusia. Yogyakarta: Deepublish.
- Tegor, T., Yusmalina, Y., & Haqiqi, F. (2021). PENERAPAN STANDAR AKUNTANSI DAN KUALITAS APARATUR TERHADAP LAPORAN KEUANGAN PEMERINTAH DAERAH (Studi Kasus pada Dinas Pekerjaan Umum dan Penataan Ruang Kabupaten Karimun). JURNAL CAFETARIA, 2(1), 13-24.
- Xie, W., Huang, X., Xu, X., & Chan, D. Y. C. (2020). Usage Intention of the Internet of Vehicles: A Study Based on the Technology Acceptance Model. ACM International Conference Proceeding Series, (1), 118–123. <https://doi.org/10.1145/3409929.3416795>.
- Yusuf, Maulana. (2022). Pengaruh Promosi, Gaya Hidup, dan Persepsi Risiko terhadap Niat Beli Motor Listrik menggunakan Metode SEM –PLS. G-Tech : Jurnal Teknologi Terapan, 6(2), 241-248.