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Generation Y and the Shift to Electric Vehicles in Indonesia: Exploring Key Drivers and Barriers

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Abstract

Purpose: Compared With other Asian countries, the usage rate of electric vehicles in Indonesia remains slow owing to a lack of public interest. This paper explores some significant factors that affect the interest of electric vehicles for Gen Y EV products, including environmental concerns and individual consequences.

Research Methodology: We extend the previous study by adding other variables, including individual and environmental consequences. Data from 446 respondents were collected through a judgmental sampling procedure and analyzed using partial least squares structural equation Modeling.

Results: The results showed that attitudes towards the five dimensions of the UTAUT-2 model significantly influenced intention to purchase. However, attitude did not mediate the relationship between habit and purchase intention. On the other hand, attitude mediation vastly influences not only the association between individual consequences and purchase intention, but also that between environmental concerns and purchase intention. On the other hand, subjective norms also have a positive influence on purchase intention, while perceived risk is not considered to affect the purchasing decisions of Generation Y.

Conclusions: This study found that Generation Y's purchase intention toward electric vehicles in Indonesia is significantly influenced by favorable attitudes formed through factors such as performance expectancy, ease of use, price value, personal benefits, and environmental concern. Social influence and perceived behavioral control also play important roles, while perceived risk was found to be insignificant in affecting purchasing decisions.

Limitations: This research is limited to the perspective of Generation Y in Indonesia and may not reflect the behavioral intentions of other generational cohorts or regions.

Contributions: These conclusions contribute to the growing body of knowledge on sustainable mobility by integrating UTAUT-2 and TPB frameworks to identify critical behavioral determinants among Generation Y. The insights provide valuable implications for electric vehicle manufacturers, marketers, and policymakers to craft more targeted, effective strategies aimed at increasing EV adoption.

Keywords: *Electric Car, Environmental Concern, Generation Y, Individual Consequences, Perceived Risk, Purchase Intention, Theory Planned of Behaviour, UTAUT2.*

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1. Introduction

Indonesia is the fourth most populous country, with 279.04 million people inhabiting it as of 2024. As big as it is, this population correlates with the rise of motorized vehicles, which has serious

consequences against the environment. Based on data from the National Police Traffic Corps, in 2024, the accumulation of motorized vehicles operating in Indonesia reached more than 160 million, with private cars numbered at 19,906,353 units, motorbikes reaching 134,181,607 motorbikes, and other types of vehicles. This large number of vehicles adds to environmental issues, such as air pollution.

Owing to this vehicular surge, Indonesia was considered the country with the worst air quality in Southeast Asia in 2023. The leading city, South Tangerang, had an annual PM 2.5 concentration of 71.7 µg/m³. Greenpeace.org; IQair 2023. Research conducted by Sudarti and Sa'diah, 2022, showed that living near a highway will lead to health problems, such as respiratory distress, headache, skin irritation, and many others. This is due to exposure to harmful substances from vehicle emissions, particularly CO, SO2, and particulate matter.

The Indonesian government actively promotes the use of electric vehicles to reduce pollution. Moreover, the Minister of Maritime Affairs and Fisheries, Luhut Binsar Pandjaitan, increased it, saying that transitioning to an electric vehicle is intrinsic to emission reduction, and the public needs to participate in it further to accelerate it. As reported by Detiknews (2023), the Institute for Essential Services Reform (IESR) supports the decarbonization of the transport sector and indicates that carbon emission reduction is effectively attained.

Electric vehicles operate using electric power, whereas conventional vehicles rely on internal combustion engines. Indonesia is still lagging in terms of EV adoption compared with other countries. According to McKinsey, only 0.1% of Indonesians have adopted EVs, which is lower than Thailand (0.7 %) and Malaysia (0.3 %) (Nurullah et al., 2024).

A survey conducted by Ndoh and Umbugadu (2024) found that 61% of Indonesians were not interested in using electric vehicles because the price was too high and public charging stations were not easy to access. Other reasons, according to the IESR survey presented by Afnan, Wijaya, Kartono, and Wibowo (2024), are higher price issues (62 %), range limitation (52 %), battery replacement (46.6 %), and time taken for charging (32.4 %).

This research focuses on Indonesian Generation Y (millennials), who represent a large population, technological literacy, and social responsibility. Generation Y, born between 1980 and 2000, numbered around 69.38 million with a total proportion of 25.87% of the whole population (BPS, 2021). Studies indicate that, in the future, electric vehicles will mostly be adopted by millennials in the future.

Millennials are also targeted as one of the market segments that automakers are interested in capturing. Companies such as Honda Indonesia and the Great Wall Motor Company are building electric vehicles for millennials as potential buyers (Chen & Shun, 2023). The transition toward electric vehicles among this generation would be important for the future of Indonesia's green transport.

This study investigates the factors that influence Generation Y people’s interest in buying electric cars in Indonesia. This research is a follow-up to previous studies conducted by Gunawan et al. (2022) and Jain, Bhaskar, and Jain (2022) using the UTAUT-2 and TPB theoretical models. Previous studies have examined the factors contributing to the adoption of electric vehicles. This research is a follow-up of the said studies where the UTAUT-2 and TPB models shall be applied to understand the attitudes of Generation Y toward the adoption of electric vehicles in Indonesia. The results provide insights for car manufacturers to tailor their strategies and for the government to refine policies that promote the use of electric vehicles.

2. Literature Review

2.1 Theory of Planned Behaviour (TPB) and Purchase Intention

Ajzen (1991), TPB behavioral intention refers to being determined by three components: attitude, an individual's favorable or unfavorable evaluation of the behavior; subjective norm, which refers to the social pressure perceived to perform a certain behavior; and perceived behavioral control, relating to the ease with which the behavior will be performed versus the difficulty in doing it. Indeed, several

studies have found that the TPB and its extensions have a positive influence on the intention to purchase HEVs in China. For instance, S. Wang, Fan, Zhao, Yang, and Fu (2016),. Correspondingly, Shalender and Sharma (2021) presented the positive effect of TPB on the intention to buy electric cars in India. In this study, TPB is used to develop an understanding of the electric car purchase intention of Generation Y in Indonesia.

Hypotheses:
H9: Attitude has a significant influence on Generation Y's intention to purchase an electric car in Indonesia.
H10: The subjective norms have a meaningful effect on Generation Y purchase intentions.
H11: Perceived behavioral control has a significant impact on the purchase intention of Generation Y.

2.2 Integration of UTAUT-2 & TPB

Yuen, Huyen, Wang, and Qi (2020) proposed a conceptual framework that predicts tourists' adoption of SAVs by integrating two well-established models, UTAUT-2 and TPB. These frameworks offer different lenses for understanding tourists' innovation adoption of vehicle technology, with a particular focus on the social factors that concern tourists in using such technologies. For example, Yuen et al. (2020) stated that UTAUT-2 has specific efficiency in the analysis of behaviors related to the adoption of new technologies, such as SAVs, by including key variables: performance expectations, values, habits, and hedonic motivations. The TPB, however, is based on attitudes, subjective norms, and perceived behavioral control to evaluate the intent of adoption. Taken together, pathological factors allow for a more inclusive and systematic prediction of user behavior concerning the adoption of new technology.

UTAUT-2 and TPB contribute a fresh view of the behavioral patterns of user adoption. This study uniquely contributes by integrating theoretical perspectives into a better insight into the factors that influence SAV adoption. This was followed by a study by Gunawan et al. (2022). in that the staff iunderlievthe adoption of EVs hicle adoption in Indonesia. Therefore, the integrated UTAUT-2 and TPB framework proposed by Yuen et al. (2020). in 2020 is being used in the study of assessing purchase intention and adoption of electric car by Generation Y in Indonesia, which gives the basis for the following hypothesis:
H1–H6: Attitude and perceived behavioral control mediation significantly impact Generation Y's expectations, hedonic motivation, habits, and facilitating conditions on purchase intention for electric cars.

2.3 Individual Consequences and Purchase Intention

Roche, Mourato, Fischedick, Pietzner, and Viebahn (2010) identified individual consequences, including comfort and product size, as key factors influencing purchase intentions. Afroz, Masud, Akhtar, Islam, and Duasa (2015) also tested the mediating role of attitude in the relationship between individual consequences and purchase intention in electric vehicles.

Hypothesis:
H7: Attitude mediation significantly impacts individual consequences and Generation Y's purchase intention.

2.4 Perceived Risk and Purchase Intention

Perceived risk refers to the uncertainty and possible negative consequences of a purchase (Jacoby, Olson, & Haddock, 1971). Jain et al. (2022) found that perceived risk influenced EV adoption in India, making it an important factor to consider for Indonesian consumers.

Hypothesis:
H12: Perceived risk has a significant impact on Generation Y's purchase intention for electric cars.
Environmental Concern and Purchase Intention

Stern (1992) identified different value orientations related to environmental concern, ranging from the new environmental paradigm (NEP) to self-interest-driven concern. X.-W. Wang, Cao, and Zhang (2021) studied the relationship between environmental concerns and EV purchase intention, emphasizing the mediating role of attitude.

Hypotheses:
H8: Attitude mediation significantly impacts environmental concerns and Generation Y's purchase intentions.
H13: Environmental concern directly impacts Generation Y's purchase intention.

3. Research Methodology

This study targeted the population of Generation Y in Indonesia. The method used in this research is purposive sampling, as this type of sampling is based on respondent selection according to certain criteria that correspond to the objective of research, namely Indonesian Generation Y aged 24-44 years old. The data collection method used in this research uses questionnaires and is cross-sectional, based on the time dimension of the research.

This questionnaire was prepared using Google Forms and has been spread online through various social media platforms, such as Line, WhatsApp, TikTok, Instagram, Twitter, and Telegram. The respondents were invited to answer the questionnaire, and from their responses, the researcher gathered and analyzed the data.

To measure the variables, a Likert scale was used; the scale values ranged from 1 = strongly disagree, 2 = disagree, 3 = somewhat agree, 4 = agree, and 5 = strongly agree, as identified by Cooper and Schindler (2013).

Descriptive and inferential statistical methods were used in this analysis. The SEM-PLS technique was conducted with the help of SmartPLS 3.2.9.

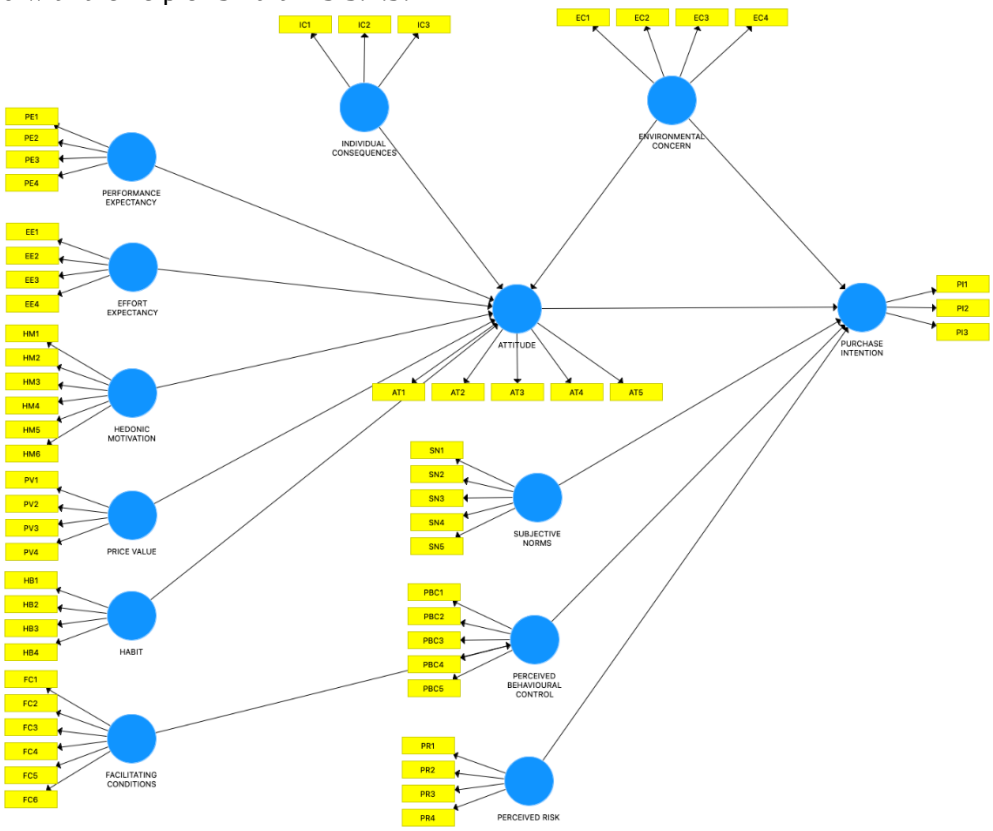

Figure 1. Research Framework
Source: Processed by the author (2024)

4. Result and Discussion

A total of 446 respondents were obtained through the distribution of Google Forms, and all responses met the criteria for the study. The majority of the respondents were male (61.5 %). The most dominant age range was between 24-30 years, which is 48.2% of the respondents). Surabaya dominated the city of origin, accounting for 23% of respondents. Moreover, 79.6% expressed an interest in purchasing an electric car.

Table 1 summarizes the results of all validity and reliability tests performed on the study variables, which included performance expectancy, effort expectancy, hedonic motivation, price value, habit, facilitating conditions, individual consequences, environmental concern, attitude, subjective norms, perceived behavioral control, perceived risk, and purchase intention. The test used factor loadings as the tool for the validity test with a cutoff threshold value of 0.70, and composite reliability was used as an indicator of the reliability test with a cutoff threshold value greater than 0.60, as stated by Hair, Hult, Ringle, and Sarstedt (2014).

As the composite reliability was above 0.60 and the AVE was greater than 0.5, although not all the indicators had factor loadings above 0.7, no elimination of the indicators was needed. After deleting 15 out of 57 indicators due to low factor loadings, the final model retained 42 indicators. Figure 2:.

Table 1. Validity and Reliability

Variabel	**Item**	***Loading Factor***	***Composite Reliability***	***AVE***
Performance Expectancy	PE1	0,669 (Valid)	0,814 (Valid)	0,523
	PE2	0,766 (Valid)		
	PE3	0,739 (Valid)		
	PE4	0,715 (Valid)		
Effort Expectancy	EE1	0,708 (Valid)	0,835 (Valid)	0,558
	EE2	0,760 (Valid)		
	EE3	0,778 (Valid)		
	EE4	0,741 (Valid)		
Hedonic Motivation	HM2	0,796 (Valid)	0,809 (Valid)	0,586
	HM3	0,786 (Valid)		
	HM6	0,712 (Valid)		
Price Value	PV2	0,834 (Valid)	0,827 (Valid)	0,615
	PV3	0,760 (Valid)		
	PV4	0,755 (Valid)		
Habit	HB2	0,657 (Valid)	0,815 (Valid)	0,603
	HB3	0,677 (Valid)		

	HB4	0,959 (Valid)		
	FC3	0,844 (Valid)		
Facilitating Conditions	FC5	0,776 (Valid)	0,855 (Valid)	0,664
	FC6	0,823 (Valid)		
	AT2	0,727 (Valid)		
	AT3	0,758 (Valid)		
Attitude	AT4	0,746 (Valid)	0,817 (Valid)	0,528
	AT5	0,671 (Valid)		
	PBC1	0,728 (Valid)		
Perceived Behavioural Control	PBC2	0,748 (Valid)	0,799 (Valid)	0,570
	PBC3	0,788 (Valid)		
	SN1	0,751 (Valid)		
	SN2	0,728 (Valid)		
Subjective Norms	SN3	0,695 (Valid)	0,812 (Valid)	0,519
	SN5	0,709 (Valid)		
	EC1	0,761 (Valid)		
	EC2	0,772 (Valid)		
Environmental Concern	EC3	0,758 (Valid)	0,837 (Valid)	0,563
	EC4	0,709 (Valid)		
	IC1	0,700 (Valid)		
Individual Consequences	IC2	0,725 (Valid)	0,781 (Valid)	0,543
	IC3	0,784 (Valid)		
Perceived Risk	PR1	1,000 (Valid)	1,000 (Valid)	1,000
	PI1	0,757 (Valid)		
Purchase Intention	PI2	0,765 (Valid)	0,812 (Valid)	0,590
	PI3	0,782 (Valid)		

Source: Processed primary data, 2024.

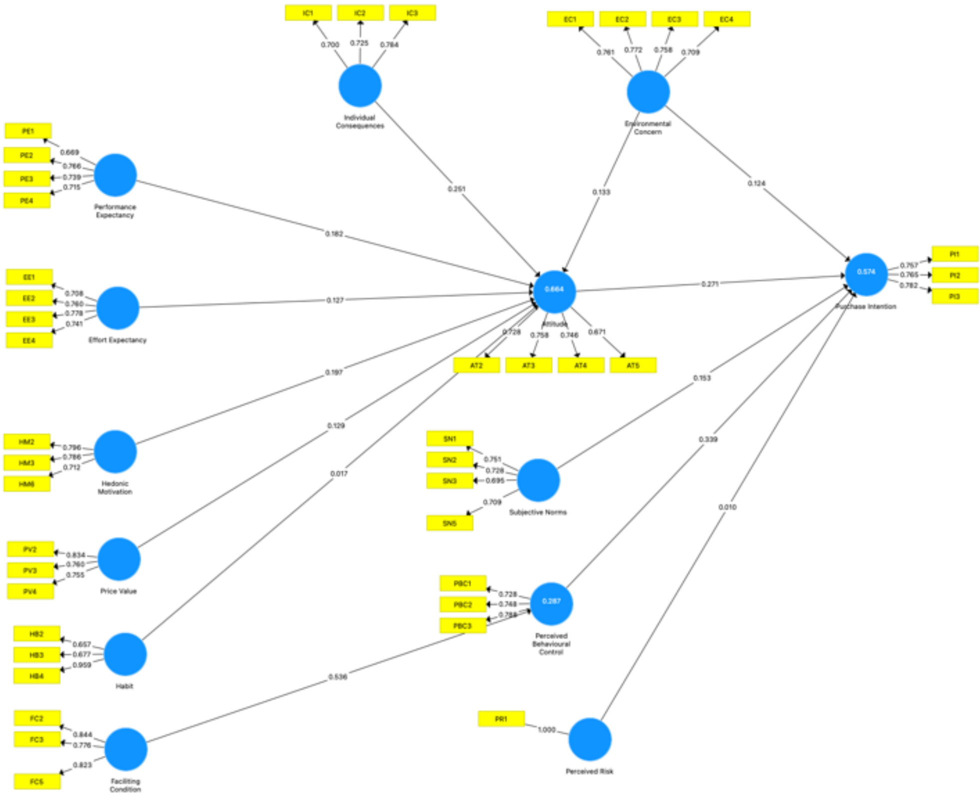

Figure 2. After Elimination
Source: Processed by the author, 2024

Table 2. *Discriminant Validity Root AVE*

	AT	EE	EC	FC	HB	HM	IC	PBC	PE	PR	PV	PI	SN
AT	**0,726**												
EE	0,553	**0,747**											
EC	0,641	0,393	**0,750**										
FC	0,509	0,517	0,371	**0,815**									
HB	-0,166	-0,176	-0,183	-0,060	**0,776**								

HM	0,670	0,470	0,555	0,338	-0,146	**0,766**							
IC	0,710	0,454	0,704	0,393	-0,165	0,621	**0,737**						
PBC	0,632	0,580	0,626	0,536	-0,251	0,503	0,600	**0,755**					
PE	0,196	0,120	0,282	0,152	0,152	0,180	0,153	0,146	**1,000**				
PR	0,690	0,515	0,635	0,389	-0,231	0,652	0,671	0,572	0,119	**0,723**			
PV	0,588	0,596	0,460	0,526	-0,191	0,521	0,516	0,612	0,073	0,509	**0,784**		
PI	0,668	0,581	0,600	0,467	-0,225	0,529	0,622	0,671	0,187	0,580	0,587	**0,768**	
SN	0,660	0,490	0,569	0,390	-0,096	0,670	0,615	0,537	0,253	0,580	0,567	0,587	**0,721**

Source: Processed primary data (2024)

Tabel 3. *Cross Loading*

	AT	EE	EC	FC	HB	HM	IC	PBC	PR	PE	PV	PI	SN
AT2	**0,728**	0,448	0,398	0,284	-0,156	0,519	0,508	0,448	0,123	0,490	0,424	0,482	0,506
AT3	**0,758**	0,439	0,513	0,404	-0,097	0,521	0,572	0,467	0,178	0,524	0,426	0,490	0,539
AT4	**0,746**	0,402	0,475	0,412	-0,126	0,511	0,518	0,500	0,125	0,545	0,472	0,505	0,512

AT5	**0,671**	0,312	0,477	0,380	-0,104	0,387	0,461	0,419	0,142	0,442	0,381	0,463	0,348
EC1	0,467	0,295	**0,761**	0,249	-0,114	0,410	0,524	0,482	0,324	0,495	0,345	0,508	0,436
EC2	0,549	0,333	**0,772**	0,296	-0,203	0,445	0,593	0,471	0,129	0,538	0,394	0,470	0,502
EC3	0,495	0,279	**0,758**	0,314	-0,095	0,474	0,555	0,498	0,208	0,469	0,348	0,447	0,414
EC4	0,394	0,270	**0,709**	0,251	-0,134	0,320	0,420	0,423	0,187	0,385	0,279	0,359	0,338
EE1	0,416	**0,708**	0,382	0,380	-0,094	0,366	0,369	0,462	0,207	0,407	0,422	0,448	0,381
EE2	0,413	**0,760**	0,208	0,402	-0,176	0,350	0,343	0,422	0,071	0,365	0,471	0,439	0,411
EE3	0,424	**0,778**	0,316	0,367	-0,127	0,363	0,345	0,432	0,077	0,371	0,440	0,436	0,354
EE4	0,400	**0,741**	0,267	0,396	-0,128	0,324	0,296	0,415	0,000	0,396	0,447	0,414	0,317
FC2	0,431	0,418	0,366	**0,844**	-0,063	0,330	0,353	0,459	0,129	0,341	0,466	0,394	0,353
FC3	0,407	0,422	0,270	**0,776**	-0,087	0,259	0,317	0,413	0,157	0,333	0,402	0,417	0,301
FC5	0,407	0,424	0,267	**0,823**	0,003	0,235	0,290	0,437	0,088	0,277	0,415	0,332	0,298
HB2	-0,053	-0,170	-0,033	-0,018	**0,657**	-0,077	-0,057	-0,164	0,194	-0,135	-0,189	-0,145	-0,049
HB3	-0,047	-0,126	-0,046	0,018	**0,677**	0,005	-0,059	-0,117	0,221	-0,062	-0,082	-0,187	0,041
HB4	-0,191	-0,152	-0,219	-0,078	**0,959**	-0,170	-0,185	-0,254	0,091	-0,250	-0,177	-0,207	-0,122
HM2	0,585	0,397	0,532	0,308	-0,148	**0,796**	0,561	0,441	0,100	0,578	0,458	0,493	0,552
HM3	0,516	0,329	0,411	0,217	-0,111	**0,786**	0,469	0,352	0,159	0,495	0,371	0,372	0,489
HM6	0,417	0,351	0,299	0,247	-0,063	**0,712**	0,374	0,355	0,168	0,403	0,357	0,331	0,497
IC1	0,471	0,356	0,481	0,284	-0,088	0,426	**0,700**	0,469	0,181	0,456	0,367	0,451	0,454
IC2	0,531	0,319	0,501	0,301	-0,148	0,511	**0,725**	0,416	0,046	0,520	0,391	0,432	0,507
IC3	0,563	0,332	0,570	0,287	-0,125	0,438	**0,784**	0,447	0,120	0,504	0,384	0,491	0,405
PBC1	0,479	0,339	0,593	0,374	-0,144	0,399	0,503	**0,728**	0,268	0,451	0,418	0,520	0,403
PBC2	0,460	0,502	0,380	0,416	-0,212	0,374	0,401	**0,748**	0,043	0,426	0,506	0,510	0,408
PBC3	0,491	0,468	0,446	0,423	-0,212	0,365	0,454	**0,788**	0,023	0,419	0,460	0,489	0,404
PE1	0,416	0,336	0,355	0,266	-0,150	0,361	0,410	0,369	0,146	**0,669**	0,299	0,390	0,406
PE2	0,564	0,342	0,590	0,292	-0,171	0,549	0,571	0,488	0,085	**0,766**	0,414	0,435	0,429
PE3	0,526	0,422	0,467	0,277	-0,243	0,466	0,496	0,469	0,032	**0,739**	0,415	0,464	0,436
PE4	0,475	0,392	0,394	0,292	-0,098	0,491	0,446	0,312	0,099	**0,715**	0,330	0,385	0,409
PI1	0,495	0,484	0,427	0,426	-0,178	0,415	0,436	0,528	0,223	0,468	0,476	**0,757**	0,474
PI2	0,533	0,457	0,485	0,304	-0,233	0,438	0,501	0,534	0,038	0,457	0,469	**0,765**	0,435
PI3	0,510	0,396	0,469	0,346	-0,103	0,364	0,495	0,483	0,173	0,411	0,407	**0,782**	0,443
PR1	0,196	0,120	0,282	0,152	0,152	0,180	0,153	0,146	**1,000**	0,119	0,073	0,187	0,253
PV2	0,489	0,480	0,375	0,446	-0,192	0,392	0,389	0,512	0,045	0,397	**0,834**	0,487	0,455
PV3	0,434	0,464	0,289	0,430	-0,104	0,449	0,344	0,435	0,070	0,350	**0,760**	0,388	0,429
PV4	0,457	0,458	0,414	0,361	-0,148	0,389	0,481	0,490	0,057	0,450	**0,755**	0,501	0,451
SN1	0,453	0,328	0,444	0,287	-0,088	0,477	0,426	0,427	0,234	0,414	0,388	0,439	**0,751**
SN2	0,486	0,410	0,394	0,319	-0,173	0,531	0,468	0,405	0,214	0,430	0,405	0,396	**0,728**
SN3	0,504	0,391	0,383	0,334	0,003	0,467	0,428	0,373	0,139	0,435	0,439	0,460	**0,695**

SN5	0,455	0,278	0,420	0,173	-0,026	0,458	0,454	0,339	0,143	0,389	0,399	0,388	**0,709**

Source: Processed primary data, 2024.

Discriminant validity was assessed based on the Fornell and Larcker criteria and the outer loadings. Table 2 highlights the values of the root AVE, while Table 3 shows that each variable is more highly correlated with itself (in bold) than with any other variable. This means that discriminant validity has been reached, and items measure their intended variable well, different from others in the model.

Table 4. Hypothesis Test

	Path Coeficient (β)	**P-Value**	**Conclusion**
PE -> AT -> PI	0,049	0,018	H1 Supported
EE -> AT -> PI	0,034	0,043	H2 Supported
HM -> AT -> PI	0,053	0,004	H3 Supported
PV -> AT -> PI	0,035	0,037	H4 Supported
HB -> AT -> PI	0,005	0,599	H5 Not Supported
FC -> PBC -> PI	0,181	0,000	H6 Supported
IC -> AT -> PI	0,068	0,008	H7 Supported
EC -> AT -> IT	0,036	0,047	H8 Supported
AT -> PI	0,271	0,000	H9 Supported
SN -> PI	0,153	0,013	H10 Supported
PBC -> PI	0,339	0,000	H11 Supported
EC -> PI	0,124	0,022	H13 Supported
PR -> PI	0,010	0,770	H12 Not Supported

Source: Processed primary data, 2024.

4.1 Discussion

Table 4 presents the model and SEM-PLS results of the direct influence test of the independent variable on the dependent variable.

From the hypothesis 1 testing results, it can be concluded that the mediation of attitude positively influences the relationship between performance expectancy and purchase intention. This is important for Generation Y in Indonesia, who are attracted to the cost efficiency of EVs compared with conventional gasoline cars, with a belief that EVs help reduce daily expenses and harm the environment. In support of this, Gunawan et al. (2022) added that EVs save costs and increase productivity.

Hypothesis 2 testing results are based on the result that attitude positively mediates the effect of effort expectancy on purchase intention, which means Gen Y finds that EVs are easy to use. This adds to a more positive attitude and increases the purchase intention. This has been supported by Gunawan et al. (2022), in terms of stating that EVs are perceived to be easy to learn and adopt.

In line with this, hedonic motivation significantly affects purchase intention with attitude as a mediator, based on Hypothesis Testing 3. For Generation Y, EVs are perceived as luxury vehicles that describe high social status and justify spending more. The positive feelings of using EVs are necessary in making a purchase decision, as Gunawan et al. (2022) obtained.

The results of Hypothesis 4 testing show that attitude can positively mediate the relationship between price value and purchase intention. Although EVs are highly priced, Generation Y justifies the price in terms of technological features, which boosts purchase intention. This follows from the discovery of Gunawan et al. (2022) that the perceived price-quality balance has an impact on the adoption of EVs.

Based on the results of testing Hypothesis 5, unlike all other factors, attitude does not act as a mediator between habit and purchase intention. Past habits related to using conventional cars do not have a pronounced effect on Generation Y, which is in line with the findings of Gunawan et al. (2022).

Hypothesis testing showed that facilitating conditions and purchase intention were positively mediated by perceived behavioral control. In other words, under the circumstances where Generation Y perceives that the necessary supporting conditions were provided by the government and manufacturers, the respondents felt confident in buying EVs, which led to increasing purchase intention. This result supports the findings of Gunawan et al. (2022).

From the results of Hypothesis 7 testing, it can be said that attitude mediates the relationship between individual consequences and purchase intention. It is noted that Gen Y is aware of the environmental benefits of EVs, which have a positive impact on their attitude and, hence, their intention to purchase. However, this is contrary to Afroz, Rahman, Masud, Akhtar, and Duasa (2015), who showed no such effect in Malaysia.

Hypothesis 8 tested attitude, which significantly mediated the relationship between environmental concern and purchase intention. The members of Generation Y are worried about the environment, and they think that EVs reduce pollution. Similarly, X.-W. Wang et al. (2021) obtained results showing how important environmental concern is in EV adoption in China.

The attitude would have a direct, positive, and significant effect on purchase intention from Hypothesis 9 testing. In this regard, it is mantled to state that Generation Y supports the transition to EVs and is motivated to take this step because of various factors: performance, ease of use, and environmental concerns. This finding supports the findings of Afroz, Masud, et al. (2015) and X.-W. Wang et al. (2021).

Based on the results of testing Hypothesis 10, subjective norms are found to significantly influence purchase intention, which means that suggestions by friends and family may imply a strong influence on buying decisions by Generation Y. This may be consistent with Afroz, Rahman, et al. (2015) and Gunawan et al. (2022), but contradicts the findings reported by X.-W. Wang et al. (2021) in China.

The test results of Hypothesis 11 show that perceived behavioral control has a positive influence on purchase intention. The feeling of financial capability can induce Generation Y to be more disposed toward purchasing EV. Additionally, AfrozAfroz, Masud, et al. (2015), (Gunawan et al., 2022) an&Huang and Ge (2019).

Based on the test results of Hypothesis 12, perceived risk does not have any significant effect on purchase intention. This indicates that Generation Y representatives were not influenced by the potential risks of EVs use. The finding is in line with Jain et al. (2022) but contradicted by Featherman, Jia, Califf, and Hajli (2021) who found a negative impact of perceived risk on the use of an EV.

Testing Hypothesis 13 reveals that environmental concern significantly and positively influences purchase intention. Members of Generation Y feel a sense of responsibility to compensate for environmental problems, and this concern fuels the intention to adopt EVs. These findings support those of X.-W. Wang et al. (2021) and Jain et al. (2022).

5. Conclusions

This research analyzed the factors that affect Generation Y's intention to purchase electric vehicles in Indonesia by drawing from 13 variables underpinning UTAUT-2 theory, the theory of planned behavior, and other additional reference variables. As seen through the PLS analysis, a favorable attitude toward electric vehicles, shaped by performance expectancy, ease of use, price value, personal benefits, and environmental concern, is important for enhancing purchase intention. While attitude significantly mediates the influence of these factors on purchase intention, perceived risk does not have a significant effect on purchasing decisions. Other important determinants include social influence and perceived behavioral control.

To promote the use of electric vehicles among Generation Y, practical means of education and promotional activities are necessary. Both manufacturers and government bodies must make them

aware of the benefits of electric vehicles concerning energy efficiency and pollution reduction, and more importantly, for usability in day-to-day life. Marketing should highlight technological innovations and environmental advantages that shape favorable attitudes on the part of Generation Y. Second, effort expectancy is moderated when user experience is boiled down to simple tutorials and ease of use. Since the initial cost of buying a car is very high, the perceived value needs to be developed using long-term savings, attractive financing options, and government incentives. The installation of charging infrastructure at strategic locations is also a source of customer confidence and allows higher rates of adoption.

As environmental benefits are critically important in shaping attitudes and purchase intentions, marketing campaigns should communicate that electric vehicles will contribute to preserving the environment. Social influence can be brought in by social influencers, testimonials, or recommendations from social circles to increase adoption rates. Because of the low impact of perceived risk on purchase intention, consumers' concerns regarding safety and performance should be tackled directly with extended warranties, free trials, and strong after-sales support.

Limitations and Future Study

This research is limited to the perspective of Generation Y in Indonesia and may not reflect the behavioral intentions of other generational cohorts or regions. Future studies should expand the demographic scope and consider longitudinal approaches to assess changes in behavior over time and after policy interventions or technological advancements.

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