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Gen-Z Purchase Intentions Towards Electric Vehicles

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Abstract: Gen-Z, the group born between 1997-2012, has emerged as a significant market force. As this generation begins to build their careers and gain purchasing power, Gen-Z has become a crucial focus for researchers and marketers today. Their purchasing behavior differs from previous generations. Growing up with easy access to the internet and digital technology, this generation tends to spend more time online and is highly influenced by digital marketing efforts. This research aims to examine Gen-Z's purchase intentions toward electric vehicles (EVs) in the Jakarta, Bogor, Depok, Tangerang, and Bekasi (Jabodetabek) areas, mediated by the Theory of Planned Behavior (TPB). Data was collected from 335 Gen-Z respondents using Structural Equation Modeling (SEM) with AMOS. This study found that although individuals have a high level of environmental awareness, their attitudes do not always translate into actual green purchasing decisions. The research findings can help EV marketing managers develop appropriate strategies for targeting Gen-Z.

Keyword: Gen-Z, Electric Vehicles, Purchase Intention

INTRODUCTION

As the world strives to reduce greenhouse gas emissions from various sectors, electric vehicles have emerged as a promising solution from the transportation sector (Gabbar et al., 2021). As is known, the transportation sector is a significant contributor to carbon emissions with a magnitude of about 20% of total global carbon dioxide emissions (Kassem et al., 2020). One of the main advantages of electric vehicles is their potential to significantly reduce carbon emissions (Speth & Funke, 2021). Conventional vehicles with internal combustion engines rely heavily on fossil fuels, which release harmful pollutants into the atmosphere. Electric vehicles that use electric power, on the other hand, do not release pollutants. If the electricity used comes from renewable sources, such as solar, wind, and hydropower, the impact on reducing carbon dioxide emissions will be more significant. Studies have shown that electric vehicles can reduce carbon dioxide emissions by 30-50% and increase fuel efficiency by 40-60% compared to their conventional counterparts (Asadi et al., 2021).

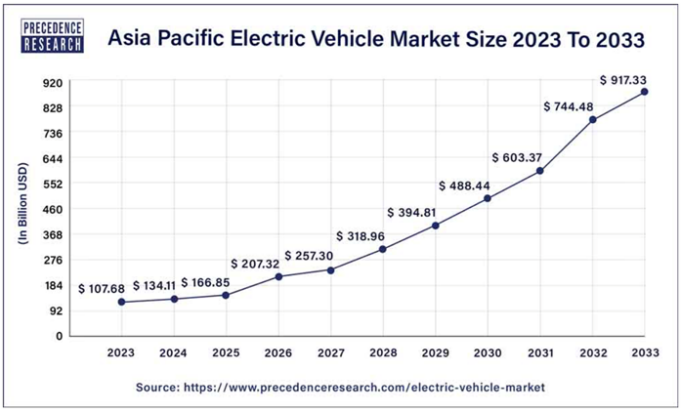


Figure 1. the Asia Pacific region is projected to be the world's largest electric vehicle market, with very high growth potential in the coming decade. This opens up great opportunities for EV companies, battery manufacturers and related infrastructure providers in the Asia Pacific region (Precedence Reserach, 2024).

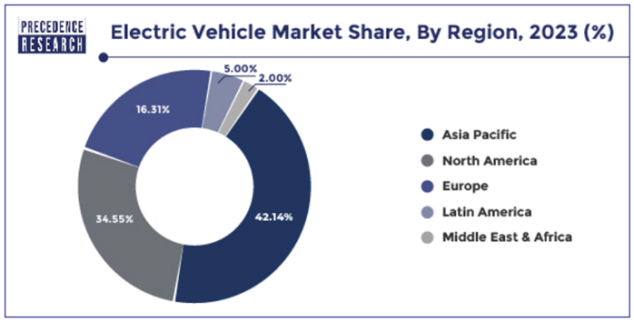


Figure 2. highly developed EV market in Asia Pacific and Europe, Asia Pacific has the largest market share (42.14%), indicating that the region is leading the electric vehicle industry. This can be due to: high population and urbanization, rapid adoption of Technology, strong government support, especially in countries such as China and India (Precedence Reserach, 2024).

Although the trend of EV adoption is increasing, the phenomenon of EV adoption rate is still low. The number of electric vehicle sales in the United States in 2023 was recorded at only 2.4 million in the USA (Josh Howarth, 2023). This figure is relatively lower compared to some developing countries in the Asia-Pacific region (see Figure 2) one of the key factors contributing to this gap is the cost of electric vehicles. In many Asia-Pacific countries, governments have implemented financial incentives and subsidies to make electric vehicles more affordable for consumers. In contrast, the high upfront cost of electric vehicles in the United States has been a significant barrier to wider adoption (Broadbent et al., 2018).

In addition, the availability of charging infrastructure is another important factor. Many Asia-Pacific countries have made significant investments in building a comprehensive network of charging stations. This makes it easier for consumers to decide to adopt an electric vehicle (X. Zhang et al., 2014) (Broadbent et al., 2018). Governments in the Asia-Pacific region are indeed more proactive in promoting the adoption of electric vehicles through various policy measures. While in the United States, the charging infrastructure is less well developed. The widespread unavailability of these facilities, however, is a major hurdle for potential buyers of electric vehicles (Broadbent et al., 2018) (X. Zhang et al., 2014). The increase in adoption of electric vehicles in the United States that has occurred in recent years is due to factors such as decreased battery costs, increased vehicle range, and increased consumer awareness (X. Zhang et al., 2014).

The Asia Pacific Electric Vehicle Market size is valued at USD 107.68 billion in 2023 and is expected to reach approximately USD 917.33 billion by 2033. This figure is predicted to grow at a CAGR of 23.82% from 2024 to 2033. Geographically, the Asia Pacific region

dominates the EV market in 2023 and is anticipated to have the highest CAGR of all geographies during the forecast period (Precedence Reserach, 2024). The Indonesian government has set an ambitious target to reach 2 million electric vehicles by 2025 (Ministry of energy and Mineral Resources, 2024). This Target is to support the desire to reduce emissions of 31.89% without conditions and 43.20% with conditions, which are set under the Paris Agreement. The Indonesian government has also set a target of Net Zero Emissions (NZE) in 2060 (ASEAN Climate Change and Energy Project, 2024). However, compared to Asiap Pasifik figures, the adoption rate of electric vehicles in Indonesia is still low, only about 0.1% of the total motor vehicles in the country (Harsito et al., 2021).

Based on data from the Indonesian automotive industry association (GAIKINDO), total sales of electric cars nationwide reached 23,045 units in January-August 2024 (GAIKINDO, 2024). The obstacles faced by Indonesia include the relatively expensive price of electric vehicles and the lack of adequate charging infrastructure (Gandhi & Hidayat, 2022) (Krismadinata et al., 2022). Until 2024, the State Electricity company (PLN) recorded a new supply of 1,117 units of SPKLU and 1,839 units of SPBKLU for electric vehicles in Indonesia and this should be in line with the above target (PT. PLN (Persero), 2024). In addition, Indonesia still relies on fossil fuel power plants, which can affect the environmental impact of the use of electric vehicles (Harsito et al., 2021)). Efforts to increase the adoption of electric vehicles in Indonesia, such as purchase subsidies and the development of charging infrastructure, are still being made by the government.

Gen-Z, A group born between 1997 and 2012, has emerged as a significant force in the consumer market. As this generation begins to build their careers and increase their purchasing power, understanding their consumption patterns and preferences has become an important focus for researchers and marketers (Mitić & Vehapi, 2021). Existing studies say that Gen-Z shows different buying behavior compared to previous generations. This generation, who grew up with easy internet access and digital technology, tends to spend more time online and is heavily influenced by digital marketing efforts (Ayu Alfyya Fathinasari et al., 2023).

This generation grew up in an age of easily accessible information, so their considerations in purchasing products are often tied to specific issues, such as the environment (Mardius et al., 2023) & Gen-Z are interested in following the trend of purchasing environmentally friendly products, which can have a significant impact on consumption and purchasing patterns in Indonesia. A key challenge for Indonesia is how to meet its growing energy needs while reducing its environmental impact and encouraging the adoption of electric vehicles among Gen-Z (Mardius et al., 2023). EV adoption has become a critical component in global efforts to mitigate climate change and reduce reliance on fossil fuels. However, research on the specific factors that influence EV purchase intentions among the younger Gen-Z demographic is still limited including factors that influence the decision to buy an electric car is not yet understood as a whole such as psychological, social, economic and technological factors (Hardman et al., 2016) (Yang et al., 2020a) (Rezvani et al., 2015).

Previous research has revealed that green purchasing attitudes play a full mediating role in the influence of environmental knowledge on the purchase intention of electric vehicles (EVs) (Mohd Suki, 2016) (Astuti et al., 2022). The subjective norm is a non-significant mediator of the impact between government support and EV purchase intention (Boo & Tan, 2024).

With increasing concern for environmental sustainability, electric cars (EVs) have emerged as a promising solution for reducing carbon emissions from the transportation sector (Yang et al., 2020b). One of the key factors of the previous study was perceived behavioral control (perceived behavioral control) which refers to the individual's perception of the ease or difficulty of performing certain behaviors (Tu & Yang, 2019). Several studies have explored the relationship between perceived behavioral control and EV purchase intention, with varying results. Another study found that perceived behavioral control, along with other factors such

as environmental knowledge, significantly influenced consumers ' purchase intentions to adopt EVs (Rezvani et al., 2015). Similarly, a study by (Yang et al., 2020b) showed that perceived behavioral control, as part of Planned behavior theory, is a significant predictor of EV purchase intent.

On the other hand, a study found that although perceived behavioral control is a significant factor and has a stronger influence on purchase intention (Yang et al., 2020b). Overall, the existing literature suggests that perceived behavioral control is an important factor in shaping EV purchase intention. Policymakers and industry stakeholders should consider strategies to increase consumer control over the resources and information needed to purchase EVs, such as improving infrastructure and providing financial incentives.

This paper aims to examine Gen-Z purchasing intentions for electric cars (EV) in the Jakarta, Bogor, Depok, Tangerang and Bekasi (Jabodetabek) regions mediated by Planned behavior theory. The number of respondents in this study obtained 349 respondents, with appropriate criteria as many as 335 respondentsThis paper aims to examine Gen-Z purchasing intentions for electric cars (EV) in the Jakarta, Bogor, Depok, Tangerang and Bekasi (Jabodetabek) regions mediated by Planned behavior theory. The number of respondents in this study obtained 349 respondents, with appropriate criteria as many as 335 respondents. The questions in this study focm.

METHOD

Data collection was done by distributing questionnaires to Gen-Z in Jabodetabek. A total of 356 data entered, but valid only data from 335 respondents loading factor value based on the sample used is 0.35 based on a sample size of 250 respondents. This study used structural equation modeling tool AMOS to analyze the data. Reliability and validity tests are used and then assess measurements and structural models. Mediation analysis was carried out to identify the role of latent construction, then reliability and validation tests were carried out, then structural measurements and models were assessed. Mediation analysis was performed to identify the role of latent constructs.

RESULTS AND DISCUSSION

To get a clear picture, this study will use thirteen (13) hypotheses to answer the above questions. The thirteen (13) hypotheses are:

H1 : Environment Knowledge (EK) has a positive impact on Green Purchase Attitude (GPA) which reflects that the higher an individual's knowledge of the environment, the better their attitude towards purchasing green products.

H2 : Charging facilities (CA) have a positive impact on Green Purchase Attitude (GPA). The accessibility of charging facilities improves consumer attitudes towards the purchase of environmentally friendly products, especially electric vehicles.

H3 : Government Support (GS) has a positive impact on subjective norms (SN). Support from governments reinforces social norms that influence individual decisions to buy green products.

H4 : Price Perception (PP) has a positive impact on Perceived Behavioral Control (PBC). Perceived affordability increases an individual's perception of their ability to purchase environmentally friendly products.

H5 : Subjective Norm (SN) has a positive impact on the purchase Intention (PI). Social pressure or group norms encourage the intention to buy green products.

H6 : Green Purchasing Attitude (GPK) has a positive impact on purchase intention (PI). A positive attitude towards green purchases strengthens the consumer's intention to buy green products. The subjective norm (SN) has a positive effect on the purchase intention (PI). Stronger subjective norms increase the likelihood of individuals having purchase intentions.

H7 : Subjective Norm (SN) has a positive impact on purchase intention (PI). Stronger subjective norms increase the likelihood of individuals having purchase intentions.

H8 : Perceived Behavioral Control (PBC) has a positive impact on purchase intention (PI). When individuals feel they can afford green products, the intention to buy increases.

H9 : Green Purchasing Attitude (GPA) mediates the relationship between environmental knowledge (EK) and purchase intention (PI) where higher environmental knowledge encourages a positive attitude which ultimately increases purchase intention.

H10 : Green Purchasing Attitude (GPA) mediates the relationship between charging availability (CA) and purchase intent (PI). The availability of charging facilities reinforces the positive attitude that leads to purchase intentions.

H11 : The Subjective Norm (SN) mediates the relationship between government support (GS) and purchase intention (PI). Government support influences subjective norms which in turn increases purchase intention.

H12 : Perceived Behavioral Control mediates the relationship between price perception (PP) and purchase intention (PI). Positive price perception reinforces behavioral control which ultimately increases purchase intention.

H13 : Perceived Behavioral Control mediates the relationship between Relative Advantage (AR) and Purchase Intention (PI). Where the relative superiority of a product increases the control of the behavior that leads to the purchase intention.

Theory of sustainable behavior (TPB)

Planned hazard theory (TPB) is the idea of hazard control being exercised—some easy or hard we think that a hazard will occur. When one thing cannot be solved or generates little effort, wiser people develop positive values and maintain them, such as choosing green products or adopting sustainable practices (Ajzen, 1991). Real hazard theory has been developed experimentally in various studies, especially in the domain of pro-environmental hazards (Fang et al., 2017) (Ajzen, 1991). By incorporating additional variables into the model, the results of risk theory analysis will be more comprehensive (Ajzen, 2011).

The theory of planned danger turning into reality, which is supported by evidence, subjective norms and existing Hazard controls, is the main predictor of actual danger. (Ajzen, 1991). Research has shown that researching other variations beyond the core construction on TPB can further enhance our understanding of pro-environmental hazards. For example, studies have found that norm-determining factors, which take into account an individual's perception of social pressure to engage in a particular hazard, can affect performance in understanding the environment. In addition, TPB can be compared to establishing control guidelines, which establish the ability of defined individuals to carry out certain responsibilities (Ajzen, 1991).

Environmental Knowledge

As the youngest and most tech-savvy generation, Gen-Z has emerged as a unique and diverse consumer segment. This generation is imaged by their intelligent consumer generation, strong preference for new technologies, and ethical awareness of environmental sustainability (Besc Ltescu, 2019a) (Dabija et al.)., 2020). Recent studies have addressed the level of risk that society faces to a sustainable environment (Song et al.)., 2020). In addition, Gen-Z communities are more sensitive to top-priority companies, even if it costs them more, as an effort to contribute to environmental protection (Dabija et al., 2020)

Charging Availability

Recent research has identified several key parameters that can be important considerations for making an electric vehicle, including drive power, drive power range, drive power duration, and drive power location (Yang et al., 2020a) (Rezvani et al., 2015).

Knowledge of electric vehicles, the risks they pose, and finances also play an important role in their purchasing decisions (Yang et al., 2020a). To promote widespread adoption of EVs, it is necessary to focus on achieving this goal. To increase public awareness, improve power support infrastructure ,and increase public awareness and education about the benefits of electric vehicles, can help improve public knowledge to make these sustainable vehicles (Yang et al., 2020a) (Broadbent et al., 2018).

Government Support

This is done to reduce the risks posed. The government is the main authority in promoting EV (K. Zhang et al., 2018). Several studies have proven the importance of government policies, such as subsidies, tax exemptions, and infrastructure development, in supporting the rapid growth of the EV market (K. Zhang et al., 2018). Research has proven that knowledge of EVs, the risks they pose, and the environmental impacts posed by government is a key source of information for understanding EVs (Yang et al., 2020a). This study aims to find out the relationship between parents and adopted children, for example, to find out the impact of these adoptions and the specific target groups they affect, not yet well studied (Yang et al., 2020a).

Price Perception

Although electric vehicles provide significant environmental benefits, high EV purchase prices are a major obstacle to consumer adoption (Rezvani et al., 2015) (Bohnsack et al., 2014). Several studies have consistently proven that high adoption of EVs over traditional vehicle prices is a meaningful router for many consumers. Nonetheless, the way EVs operate could be more appropriate in the long run (Boulanger et al., 2011).

Relative Advantages

Previous studies have investigated the relationship between relative advantages when adopting EVs. The relative advantages that EV has become the basis of research to understand EV (Ramachandaramurthy et al., 2022) (Liao et al., 2017) (Rezvani et al., 2015). Research has found that the Gen-Z consensus is more centered on by factors of computer literacy, peer and Social Research, and social media identity when making purchasing decisions. This suggests that the relative relationship of electric vehicles may be very closely tied to" technological unity " and established social status among these demographics (Kahawandala et al., 2020). The relative superiority of electric vehicles for Gen-Z is a complex and multifaceted issue. While the nature of those who understand technology and the environment can make them more receptive to the benefits of EV. Other factors such as price, infrastructure, and family changes may pose challenges for wider adoption (Kahawandala et al., 2020) (Băltescu, 2019b).

Green Buying Attitude

With increasing awareness and concern for environmental issues, consumers are becoming aware of their development impacts. Previous research has explored the relationship between Gen-Z consumers of green products and their propensity to make electric vehicles. The literacy that exists today is understood as the knowledge of Gen-Z, who are more aware of the environment and look towards sustainable consumption, more sensitively looking at environmentally friendly products such as EV (Palomo-domí, 2023) (Yang et al., 2020a). To get deeper information, the factors that affect the price of Gen-Z to make electric vehicles focus on a certain distance they are included in environmentally friendly products. And insights into factors affecting motor vehicle adoption and Gen-Z sustainable consumption risks (Yang et al., 2020a). The findings suggest that there is consensus is an important factor in establishing their intention to make electric vehicles (Yang et al., 2020a).

Subjective Norms

As the world moves toward more sustainable transportation options, understanding the factors that affect the price of buying an electric vehicle is critical. Several studies have found the significance of subjective norms in establishing consumer risk, especially in the context of green and sustainable products (Pop et al., 2020) (Yang et al., 2020a). Literature is part of the subjective norm, which prevails on the social pressure created from significant others to do something specific, can change greatly on the individual to make EV (Yang et al., 2020a). This is particularly relevant for Gen-Z populations, who are often more attuned to social change and environmental issues when making decisions. This study will discuss, how subjective norms affect the behavior of adopting EV among Gen-Z communities. Taking into account these changes in subjective norms in the population, entrepreneurs and businesses can develop effective strategies to encourage EV adoption and contribute to a more sustainable future (Yang et al., 2020a) (Pop et al., 2020) (Bertrandias & Elgaied-Gambier, 2014).

Perceived Behavioral Control

Gen-Z is known as an intelligent consumer who knows what they want and how to achieve it (Bă specifically, age can affect self-performance, making Gen-Z intelligence uncertain and unsure when making decisions (Kung, 2023). In the case of electric vehicle repairs, the hazard control carried out is an important factor in providing added value. In 2019, this study aims to determine the relationship between Gen-Z and Gen-Z in new technologies (Kahawandala et al., 2019b) (Kahawandala et al., 2019b)., 2020) (if, 2023).

Methodology

This paper uses a simplified version of the conceptual framework to understand the TPB used (See Figure 3). The Data collected in this study used self-collected questionnaires. The questionnaire consists of two parts: Part A and Part B. These sections discuss demographic information and people's response to global procurement issues, followed by companies related to charging availability (their location being used more for power procurement facilities), their governments on government support, respondents ' price perceptions of EVs, relative superiority, environmentally friendly purchasing attitudes, subjective norms, perceived perceptions of behavioral control with EV purchase intention.

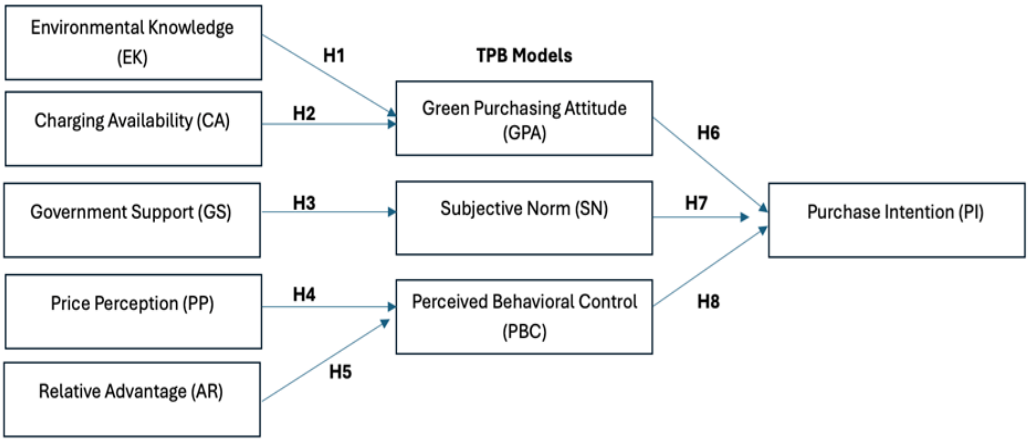


Figure 3. Authors own creation

Data Analysis And Results

Table 1. Demographic Characteristics Of Respondents

Demographic Attributes	%	Demographic Attributes	%
Gender		*Pekerjaan*	
Female	57,9%	Aparatur Sipil Negara (ASN)	22,4%

Male	42,1%	Karyawan Swasta	29,4%
		Wirausaha	33,8%
Age		Mahasiswa	14,4%
<17 years	0%	Ibu Rumah Tangga	0%
17-21	44%		
22-27	56%	*Pendapatan*	
		≤ Rp 5 juta	9,1%
Pendidikan		Rp 5,1 juta - Rp 10 juta	11,2%
SMA dan Sederajat	2,1%	Rp 10,1 juta - Rp 15 juta	3,5%
Diploma I - Diploma III	2,6%	Rp 15,1 juta - Rp 20 juta	48,5%
Sarjana (S1)	68,2%	> Rp 20 juta	27,6%
Pasca Sarjana (S2)	26,8%		
Program Doktor (S3)	0%		

Measurement Model

Measurement models are essential in this study to develop and validate sustainable consumerism. Validity and reliability testing was conducted to test the validity and consistency of the respondents ' answers in measuring a variable (Hair et al., 2020). Validity Analysis tool used through the loading factor and for reliability is Cronbach's Alpha Coefficient. The results of the validity and reliability test showed that for a loading factor > 0.35 and Cronbach's Alpha Coefficient obtained > 0.60 then all statements in the questionnaire proved to be valid or reliable.

Table 2. Testing The Validity And Reliability Of Variables

Variabel	Pengujian Validitas		Pengujian Relibilitas	
	Factor loading	Simpulan	Cronbach Alpha	Simpulan
Environmental Knowledge				
EK1	0.904	Valid	0.933	Reliable
EK2	0.878	Valid		
EK3	0.853	Valid		
EK4	0.885	Valid		
EK5	0.919	Valid		
Charging Availability				
CA1	0.872	Valid	0.875	Reliable
CA2	0.797	Valid		
CA3	0.858	Valid		
CA4	0.888	Valid		
Government Support				
GS1	0.910	Valid	0.875	Reliable
GS2	0.875	Valid		
GS3	0.898	Valid		
Price Perception				
PP1	0.834	Valid	0.896	Reliable
PP2	0.869	Valid		
PP3	0.787	Valid		
PP4	0.859	Valid		
PP5	0.857	Valid		
Relative Advantage				
AR1	0.897	Valid	0.925	Reliable
AR2	0.853	Valid		
AR3	0.869	Valid		
AR4	0.879	Valid		

AR5	0.885	Valid		
Green Purchasing Attitude				
GPA1	0.890	Valid	0.925	Reliable
GPA2	0.878	Valid		
GPA3	0.857	Valid		
GPA4	0.883	Valid		
GPA5	0.877	Valid		
Subjective Norm				
SN1	0.894	Valid	0.929	Reliable
SN2	0.882	Valid		
SN3	0.859	Valid		
SN4	0.892	Valid		
SN5	0.884	Valid		
Perceived Behaviour Control				
PBC1	0.895	Valid	0.922	Reliable
PBC2	0.863	Valid		
PBC3	0.868	Valid		
PBC4	0.872	Valid		
PBC5	0.868	Valid		
Purchase Intention				
PI1	0.892	Valid	0.914	Reliable
PI2	0.832	Valid		
PI3	0.848	Valid		
PI4	0.857	Valid		
PI5	0.896	Valid		

Structural Model

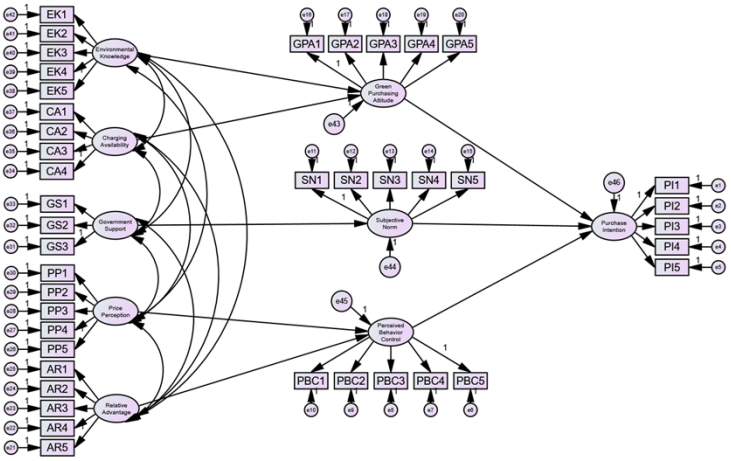
The processing results for fit model testing are shown in table 3. Information from the table shows that of 8 fit model testing criteria, there are 5 criteria to produce Fit Model conclusions, namely RMSEA , IFI , TLI, CFI and CMIN/DF , one (1) criterion to produce marginal conclusions, namely NFI, two (2) criteria to produce poor fit conclusions, namely p-value Chi-Square and GFI because they have not met the specified fit requirements so that research hypothesis testing can be carried out and declared fit.

Table 3. Model Suitability Testing Indicators

Types Measurement	Measurement	Decision Model Fit	Result Processed	Decision
Absolute fit measures	*Chi-square*	low Chi Square	2313,586	
	p-value Chi-Square	≥ 0,05	0,000	Poor Fit
	GFI	≥ 0,90	0,738	Poor Fit
	RMSEA	≤ 0,10	0,075	Model fit
	NFI	≥ 0,90	0,872	Marginal fit
	IFI	≥ 0,90	0,913	Model fit
	TLI	≥ 0,90	0,906	Model fit
	CFI	≥ 0,90	0,912	Model fit
Parsimonius fit meassure	CMIN/DF	Between 1 to 5	2,888	Model fit

Source(s): (Hair et al., 2020)

Model fit testing is a test that must be carried out as a prerequisite before the research hypothesis is tested with the SEM AMOS model. The following testing process with SEM AMOS is shown in Figure 3.



Results And Discussion

In summary, this study aims to examine the relationship between 8 constructions and 5 mediations towards purchase intention EV. The results of data processing showed most of the hypothesis of direct influence, supported. Environmental knowledge, relative advantage, and the mediating effect of green purchasing attitude. When mediated by the theory of planned behavior, the results showed that some variables were not shown to have a positive relationship such as charging availability mediated by green purchasing attitude and relative advantage mediated by perceived behavior control while for other mediations the results were significant.

The results of this study are not in line with research conducted by (Boo & Tan, 2024) where environmental knowledge variables have been shown to have a significant positive effect on green purchasing attitude. The study found a significant relationship between the variables, except the relationship with environmental knowledge. This is consistent with the argument (Joshi & Rahman, 2015) which states, although generally an increase in environmental knowledge will lead to a more positive attitude towards green purchasing attitude, some studies have found that this relationship is not as easy as it seems. Individuals who have a high level of environmental awareness, their attitudes do not always translate into actual green purchasing decisions (Joshi & Rahman, 2015). This phenomenon, known as the "attitude-behavior gap," suggests there are other factors influencing consumer behavior beyond environmental knowledge.

Joshi & Rahman (2015) have also examined the relationship between relative advantage, which opens up the fact that consumers with a high level of environmental awareness may not always buy environmentally friendly products, if they do not feel a clear advantage over traditional options. This inconsistency between attitudes and behavior has led to calls for a more comprehensive investigation of the factors that influence green buying decisions.

In a review (Joshi & Rahman, 2015) highlighted the need for a better understanding of the various factors that can influence green purchasing attitude. They note that although there are empirical studies on the various dimensions of green consumption, comprehensive review studies on attitude-behavior inconsistency in this context are few.

One aspect of TPB that has been the subject of debate is the relationship between Relative Advantage and Perceived behavioral Control. Relative Advantage, which refers to the degree to which an innovation is perceived to be better than the idea it replaces, has been

theorized to positively influence perceived behavioral control. However, some studies suggest that this relationship may not always be true (Gungaphul & Devi Heeroo, 2022) (Uddin & Khan, 2018).

The relationship between green purchasing attitude and purchase intention has become a very interesting topic in the field of sustainable consumer behavior. While some studies have found a positive correlation between these two variables (Hoang Yen & Hoang, 2023). Others report a lack of significant influence of green purchasing attitudes on purchase intentions (Joshi & Rahman, 2015). The discrepancy in the findings of this study requires a closer examination of the underlying factors that may contribute to this phenomenon. One of the key factors that have been identified as a potential influence on the relationship between Green buying attitudes and buying intentions is consumer concern and knowledge of the environment (Joshi & Rahman, 2015). According to the TPB, individuals ' attitudes toward a behavior, such as buying green, are influenced by their beliefs and perceptions about the consequences of that behavior. Consumers who have a strong sense of environmental concern and a better understanding of the benefits of green products are more likely to develop a positive attitude toward green purchases.

However, the relationship between attitudes and intentions is not always easy, as other factors, such as product attributes, price, and convenience, can also play an important role in shaping consumer purchasing decisions. (Hoang Yen & Hoang, 2023) consumers may have a positive attitude towards eco-friendly products, but if they find them too expensive or inconvenient to buy, they may be less likely to follow through on their intention to buy.

In general, the respondents have sufficient knowledge about electric cars, and there are 340 or 96% of respondents out of 14 (4%) who have knowledge about electric vehicles. Since research has determined perceived behavioral control to be the most impactful variable followed by green purchasing attitude, policymakers can focus on this area to promote EV adoption in the Greater Jakarta area. Theoretically, perceived behavioral control has more to do with the consumers themselves about whether they think it is difficult or easy to perform a behavior. In the context of EV adoption, marketing managers can devise appropriate marketing strategies to market EVs to Gen-Z.

In addition, most respondents are well aware of environmental issues and strong price perceptions. So, marketing managers can put more emphasis on EV promotion in areas such as EV technology, functions, features, and benefits, as well as long-term cost savings. This idea is further supported by the fact that 42.9% of the 146 respondents stated that they agreed and 36.5% of the 124 respondents strongly agreed that environmentally friendly cars would reduce air pollution. Consumers understand the reliability of EVs in protecting the environment and agree that it is a valuable decision to corroborate EV buying intentions (Gao et al., 2021). This study mentions that consumers tend to protect the environment by changing their behavior to be pro-environment because of environmental anxiety. Therefore, marketing managers should identify their mix of green marketing strategies taking into account the substantiality of their green market segment and the Differentiability of greenness (Ginsberg & Bloom, 2004). Green consumers play an important role in influencing their circle or group of friends and family to buy EVs to support environmental protection. For better effect, marketing managers can hire social influencers and celebrities who have significant influence in bringing out the trend of EV riding among their followers. It may be able to promote subjective norms in which individuals will behave in a certain way or carry out behaviors when they are under social pressure exerted by society. It becomes a motivation for them to act in the same way as the majority.

CONCLUSION

This paper successfully identifies latent constructs that play a role in the decision-making process to buy an EV. With detailed analysis of path diagrams and structural equation

modeling using SEM AMOS, it helps to understand Gen-Z Behavioral Decision Making and important measurements in understanding Gen-Z choices in EV buying intentions.

The use of high fuel combustion vehicles and the manufacturing process of vehicles emit various gases harmful to the environment. This has led to deterioration in living areas and severely affected human health, which can be seen in conjunction with SDG 13 which is about climate action. The SDGs are global Goals adopted by the United Nations in 2015 as a global call to action to tackle poverty, protect the planet, and ensure all people enjoy peace and prosperity by 2030. To achieve the expected results, everyone must work together by balancing social, economic and environmental sustainability (UNDP, 2022). In accordance with the United Nations Development Program (UNDP), every country is experiencing the effects of drastic climate change due to high greenhouse gas emissions. The climate system has long been affected by global Warming that brings irreversible consequences if no action is taken. Therefore, this paper highlights the goal of achieving economic growth and sustainable development through the reduction of the ecological footprint. In this context, is to reduce carbon emissions and consider changing direction towards EV (Charabi et al., 2020). Countries that strongly promote and sell EVs can support other regions that have the potential to allow EV penetration into their markets. With more advanced technology, the goal will be achievable if all countries are willing to join forces for a better environment (Purvis et al., 2019).

As highlighted by (Venciute et al., 2023), deeper cause-related marketing is urgently needed to close the gap between green consumption attitudes and behaviors (Fan et al., 2022). Based on the results, we recommend that manufacturers should work to reduce consumer mileage anxiety towards EVs such as by including larger battery packs when building cars or providing separate backup batteries in the vehicle. In addition, the range and efficiency of EVs are inseparable, manufacturers can encourage innovation in EVs by collaborating or seeking partnerships with more expertise from other countries so that the exchange of technological knowledge can take place in Greater Jakarta. (Shan et al., 2024) suggest that we should have flexible energy management strategies for green vehicles to maintain power reliability and promote low-carbon transportation (Abdelrahman et al., 2023). Thus, we recommend that manufacturers can increase the range of EVs by increasing the energy density of batteries, through the use or adoption of lithium-sulfur or lithium-ion batteries (Onat et al., 2014). Not only about the battery but the charging infrastructure should also be improved to make EVs more convenient to use. In energy management strategies, especially in urban areas, we will explore energy management between high-rise residential buildings and hydrogen vehicles (Liu et al., 2021). Manufacturers may also seek investment from governments, policymakers, or shareholders to increase the number of charging stations and to develop faster charging technologies or exchange stations (Wang et al., 2020) or smart energy management systems for EVs (Huang & Xue, 2023).

By utilizing the nature of the subjective norm, sellers must understand that buyers will be very concerned about other people's perceptions and views of them in order to pressure buyers into certain buying behaviors. As sellers, they can produce effective ads or hire famous people who are widely recognized by locals including Internet celebrities. Most of the time, social values and special beliefs in Indonesia always make consumers pay more attention to fame and recognition, so that marketing managers can create the conception that driving an EV can attract the attention of others. As highlighted by (Safari et al., 2018). Marketing managers must develop a love of green brands. They have to come out with different sales strategies to address Gen-Z groups, including environmentalists or green advocates, early adopters, cost-conscious consumers, urbanites who have non-identical cultures and opinions towards new products. To accelerate the purchase of EVs, the government can launch more incentives through the national budget. The most effective way is that the government can provide incentives to attract original equipment manufacturers to assemble their EVs locally, which in turn can incentivize them to sell domestically. On the other hand, policy makers can collaborate

with local bank industries in offering bridge loans at exclusive interest rates to foreign manufacturers to entice them to set up their assembly plants in Indonesia. Fortunately, this approach is now under the recently announced GoI budget where a full tax exemption for EV charging equipment manufacturers is offered (Marwiyah & Rengganis, 2021).

Lastly, the government should optimize charging infrastructure for EVs by launching a strategic framework for EV infrastructure development and planning across Indonesia. The Energy Transition Roadmap of the Republic of Indonesia provides a better framework for Indonesia to achieve low carbon and remain competitive in the low carbon energy economy (National Energy Council of the Republic of Indonesia, 2022). Public charging stations should be built as soon as possible to accommodate the increase in the number of EVs sold. This implementation can further increase the use and demand for EVs as well as attract investors to expand charging points throughout the country (National Energy Council of the Republic of Indonesia, 2022). Therefore, the government should strengthen the policy regarding the cost of charging, unlike the price of gasoline. Nonetheless, future studies will explore other control variables to corroborate the mediation/moderation role of planned behavior theory, looking deeper into the consistent relationship between environmental knowledge and green buying attitudes (Joshi & Rahman, 2015) where this study has found that this relationship is not as easy as it seems. Consumers with a high level of environmental awareness may not always buy environmentally friendly products if they do not feel a clear advantage over traditional options (Joshi & Rahman, 2015) of course, this also needs to be done more specific research.

The study found a significant relationship between the variables, except the relationship between environmental knowledge. This is consistent with the argument (Joshi & Rahman, 2015) stating the relationship between environmental knowledge and green purchasing attitudes which has become a very interesting topic in the field of Consumer Behavior Research. Although it is generally assumed that increased environmental knowledge will lead to a more positive attitude towards green purchases, some studies have found that this relationship is not as easy as it seems. Although individuals have a high level of environmental awareness, their attitudes do not always translate into actual green purchasing decisions (Joshi & Rahman, 2015). This phenomenon, known as the "attitude-behavior gap," suggests that there may be other factors influencing consumer behavior beyond environmental knowledge. The relationship between Green buying attitudes and buying intentions has become a very interesting topic in the field of sustainable consumer behavior. While some studies have found a positive correlation between these two variables (Hoang Yen & Hoang, 2023). Others report a lack of significant influence of green purchasing attitudes on purchase intentions (Joshi & Rahman, 2015). The discrepancy in the findings of this study requires a closer examination of the underlying factors that may contribute to this phenomenon.

REFERENCES

Abdelrahman, M., Liu, G., Fan, C., Zhang, Z., Ali, A., Li, H., Azam, A., Cao, H., & Mohamed, A. A. (2023). Energy regenerative shock absorber based on a slotted link conversion mechanism for application in the electrical bus to power the low wattages devices. *Applied Energy*, *347*, 121409. https://doi.org/10.1016/J.APENERGY.2023.121409

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Ajzen, I. (2011). The theory of planned behaviour: Reactions and reflections. In *Psychology and Health* (Vol. 26, Issue 9, pp. 1113–1127). https://doi.org/10.1080/08870446.2011.613995

Asadi, S., Nilashi, M., Samad, S., Abdullah, R., Mahmoud, M., Alkinani, M. H., & Yadegaridehkordi, E. (2021). Factors impacting consumers' intention toward adoption of electric vehicles in Malaysia. *Journal of Cleaner Production*, *282*, 124474. https://doi.org/10.1016/J.JCLEPRO.2020.124474

ASEAN Climate Change and Energy Project. (2024, February). *Indonesia - ASEAN Climate Change and Energy Project (ACCEPT)*. https://accept.aseanenergy.org/country/indonesia/

Astuti, S. P., Rakhmawati, Y. D., Rizqiana, Z. D., & Kusumawardhani, R. (2022). Customer Guilt and its Relation to Purchase Intention of Green Products: A Study to University 'Green' Activist Students. *Jurnal Organisasi Dan Manajemen*, *18*(2). https://doi.org/10.33830/jom.v18i2.3008.2022

Ayu Alfyya Fathinasari, Purnomo, H., & Poniran Yudho Leksono. (2023). Analsis of the Study of Digital Marketing Potential on Product Purchase Decisions in Generation Z. *Open Access Indonesia Journal of Social Sciences*, *6*(5), 1075–1082. https://doi.org/10.37275/oaijss.v6i5.174

Băltescu, C. A. (2019a). Elements of Tourism Consumer Behaviour of Generation Z. *SERIES V - ECONOMIC SCIENCES*, *12(61)*(1), 63–68. https://doi.org/10.31926/but.es.2019.12.61.1.9

Băltescu, C. A. (2019b). Elements of Tourism Consumer Behaviour of Generation Z. *SERIES V - ECONOMIC SCIENCES*, *12(61)*(1), 63–68. https://doi.org/10.31926/but.es.2019.12.61.1.9

Bertrandias, L., & Elgaaied-Gambier, L. (2014). Others' environmental concern as a social determinant of green buying. *Journal of Consumer Marketing*, *31*(6–7), 417–429. https://doi.org/10.1108/JCM-05-2014-0966

Bohnsack, R., Pinkse, J., & Kolk, A. (2014). Business models for sustainable technologies: Exploring business model evolution in the case of electric vehicles. *Research Policy*, *43*(2), 284–300. https://doi.org/10.1016/j.respol.2013.10.014

Boo, S. Y., & Tan, C. (2024). Electric vehicles purchase intention: the role of mediators using an extended TPB model. *Journal of Contemporary Marketing Science*, *7*(2), 158–183. https://doi.org/10.1108/jcmars-11-2023-0042

Boulanger, A., Chu, A., Maxx, S., & Waltz, D. (2011). *Vehicle Electrification : Status and Issues*. https://www.worldteamnow.org/resources/0177-SIP-2010-PIEEE.R1.pdf

Broadbent, G. H., Drozdzewski, D., & Metternicht, G. (2018). Electric vehicle adoption: An analysis of best practice and pitfalls for policy making from experiences of Europe and the US. *Geography Compass*, *12*(2). https://doi.org/10.1111/gec3.12358

Charabi, Y., Al Nasiri, N., Al Awadhi, T., Choudri, B. S., & Al Bimani, A. (2020). GHG emissions from the transport sector in Oman: Trends and potential decarbonization pathways. *Energy Strategy Reviews*, *32*, 100548. https://doi.org/10.1016/J.ESR.2020.100548

Dabija, D. C., Bejan, B. M., & Pușcaș, C. (2020). A Qualitative Approach to the Sustainable Orientation of Generation Z in Retail: The Case of Romania. *Journal of Risk and Financial Management*, *13*(7). https://doi.org/10.3390/jrfm13070152

Dewan Energi Nasional Republik Indonesia. (2022). *Peta Jalan Transisi Energi Nasional Untuk Mencapai Target NDC 2030 Menuju NZE 2060 Atau lebih Cepat*.

Fan, X., Deng, N., Qian, Y., & Dong, X. (2022). Factors Affecting the Effectiveness of Cause-Related Marketing: A Meta-Analysis. *Journal of Business Ethics*, *175*(2), 339–360. https://doi.org/10.1007/S10551-020-04639-6/METRICS

Fang, W. T., Ng, E., Wang, C. M., & Hsu, M. L. (2017). Normative beliefs, attitudes, and social norms: People reduce waste as an index of social relationships when spending leisure time. *Sustainability (Switzerland)*, *9*(10). https://doi.org/10.3390/su9101696

Gabbar, H. A., Elsayed, Y., Siddique, A. B., Elshora, A., & Adeleke, A. (2021). Design of Fast Charging Station with Energy Management for eBuses. *Vehicles*, *3*(4), 807–820. https://doi.org/10.3390/vehicles3040048

GAIKINDO. (2024, November). *Penjualan Mobil Listrik Nasional Naik, Segmennya Mencapai Empat Persen – GAIKINDO*. https://www.gaikindo.or.id/penjualan-mobil-listrik-nasional-naik-segmennya-mencapai-empat-persen/

Gandhi, P., & Hidayat, A. (2022). *STRUK HEMAT LISTRIK SEBAGAI INOVASI EFISIENSI KONSUMSI LISTRIK MENGGUNAKAN PENDEKATAN ILMU PERILAKU EKONOMI ELECTRICITY SAVING RECEIPT AS ELECTRICITY CONSUMPTION EFFICIENCY INNOVATION USING BEHAVIORAL ECONOMIC SCIENCE APPROACH*. *4*(1), 363–372.

Gao, J., Zhao, J., Wang, J., & Wang, J. (2021). The influence mechanism of environmental anxiety on pro-environmental behaviour: The role of self-discrepancy. *International Journal of Consumer Studies*, *45*(1), 54–64. https://doi.org/10.1111/IJCS.12604

Ginsberg, J. M., & Bloom, P. N. (2004). *Choosing the Right Green Marketing Strategy*. www.sloanreview.mit.edu

Gungaphul, M., & Devi Heeroo, S. (2022). GREEN BUYING BEHAVIOR AMONG MAURITIAN CONSUMERS: EXTENDING THE TPB MODEL. *PEOPLE: International Journal of Social Sciences*, *7*(3), 189–207. https://doi.org/10.20319/pijss.2022.73.189207

Hair, J. F., Page, M., & Brunsveld, N. (2020). *Essentials of Business Research Methods; Fourth Edition*.

Hardman, S., Shiu, E., & Steinberger-Wilckens, R. (2016). Comparing high-end and low-end early adopters of battery electric vehicles. *Transportation Research Part A: Policy and Practice*, *88*, 40–57. https://doi.org/10.1016/j.tra.2016.03.010

Harsito, C., Satiya Permana, A. N., & Sihta, F. (2021). Energy Efficiency Calculation and Air Handling Unit Design Based on Cooling Load Capacity at MASTEK Mosque. *IOP Conference Series: Earth and Environmental Science*, *746*(1). https://doi.org/10.1088/1755-1315/746/1/012032

Hoang Yen, N. T., & Hoang, D. P. (2023). The formation of attitudes and intention towards green purchase: An analysis of internal and external mechanisms. *Cogent Business and Management*, *10*(1). https://doi.org/10.1080/23311975.2023.2192844

UNDP. (2022). https://www.undp.org/

Josh Howarth. (2023, November 23). *How Many Electric Vehicles Are in the United States? (2024)*. https://explodingtopics.com/blog/electric-vehicles-stats

Joshi, Y., & Rahman, Z. (2015). Factors Affecting Green Purchase Behaviour and Future Research Directions. *International Strategic Management Review*, *3*(1–2), 128–143. https://doi.org/10.1016/j.ism.2015.04.001

Kahawandala, N., Peter, S., & Niwunhella, H. (2020). Profiling purchasing behavior of Generation Z. *Proceedings - International Research Conference on Smart Computing and Systems Engineering, SCSE 2020*, 155–160. https://doi.org/10.1109/SCSE49731.2020.9313038

Kassem, R., Sayed, K., Kassem, A., & Mostafa, R. (2020). Power optimisation scheme of induction motor using FLC for electric vehicle. *IET Electrical Systems in Transportation*, *10*(3), 275–284. https://doi.org/10.1049/iet-est.2019.0151

Kementerian ESDM. (2024, May 22). *Kementerian ESDM RI - Media Center - Arsip Berita - Ini Target Pemerintah untuk Populasi Kendaraan Listrik di Tahun 2030*. https://www.esdm.go.id/id/media-center/arsip-berita/ini-target-pemerintah-untuk-populasi-kendaraan-listrik-di-tahun-2030

Krismadinata, K., Asnil, A., Husnaini, I., Andayono, T., Yandra, M., & Lapisa, R. (2022). Nagari Mandiri Energi dengan Pembangkit Listrik Tenaga Mikro Hidro. *Suluah Bendang: Jurnal Ilmiah Pengabdian Kepada Masyarakat*, *22*(3), 658. https://doi.org/10.24036/sb.03430

Kung, W. (2023). Using the PESTEL Analysis to Determine the Effectiveness of New Digital Media Strategies. *Advances in Economics, Management and Political Sciences*, *5*(1), 19–25. https://doi.org/10.54254/2754-1169/5/20220054

Liao, F., Molin, E., & van Wee, B. (2017). Consumer preferences for electric vehicles: a literature review. *Transport Reviews*, *37*(3), 252–275. https://doi.org/10.1080/01441647.2016.1230794

Liu, J., Cao, S., Chen, X., Yang, H., & Peng, J. (2021). Energy planning of renewable applications in high-rise residential buildings integrating battery and hydrogen vehicle storage. *Applied Energy*, *281*, 116038. https://doi.org/10.1016/J.APENERGY.2020.116038

Mardius, P. R., Sulastri, S., Shihab, M. S., & Yuliani, Y. (2023). Eco-label, kepedulian lingkungan, dan perilaku pembelian hijau: Sebuah sudut pandang Generasi Z tentang semen ramah lingkungan. *Jurnal Manajemen Maranatha*, *22*(2), 193–202. https://doi.org/10.28932/jmm.v22i2.6363

Marwiyah, S., & Rengganis, V. M. (2021). *Policy Formulation on Accelerating the Development of Electric Motor Vehicles*.

Mitić, S., & Vehapi, S. (2021). Food choice motives of generation Z in Serbia. *Ekonomika Poljoprivrede*, *68*(1), 127–140. https://doi.org/10.5937/ekopolj2101127m

Mohd Suki, N. (2016). Green product purchase intention: impact of green brands, attitude, and knowledge. *British Food Journal*, *118*(12), 2893–2910. https://doi.org/10.1108/BFJ-06-2016-0295

Onat, N. C., Kucukvar, M., & Tatari, O. (2014). Towards life cycle sustainability assessment of alternative passenger vehicles. *Sustainability (Switzerland)*, *6*(12), 9305–9342. https://doi.org/10.3390/su6129305

Palomo-Domínguez, I., Elías-Zambrano, R., & Álvarez-Rodríguez, V. (2023). Gen Z's Motivations towards Sustainable Fashion and Eco-Friendly Brand Attributes: The Case of Vinted. *Sustainability (Switzerland)*, *15*(11). https://doi.org/10.3390/su15118753

Pop, R. A., Saplacan, Z., & Alt, M. A. (2020). Social media goes green-the impact of social media on green cosmetics purchase motivation and intention. *Information (Switzerland)*, *11*(9). https://doi.org/10.3390/INFO11090447

Precedence Reserach. (2024, February). *Electric Vehicle Market Size, Share, Trends, Growth, Report By 2033*. https://www.precedenceresearch.com/electric-vehicle-market

PT. PLN (Persero). (2024, February 8). *Kembali Hadir di IIMS 2024, PLN Usung Support System Kendaraan Listrik di Indonesia - PT PLN (Persero)*. https://web.pln.co.id/cms/media/siaran-pers/2024/02/kembali-hadir-di-iims-2024-pln-usung-support-system-kendaraan-listrik-di-indonesia/

Purvis, B., Mao, Y., & Robinson, D. (2019). Three pillars of sustainability: in search of conceptual origins. *Sustainability Science*, *14*(3), 681–695. https://doi.org/10.1007/S11625-018-0627-5

Ramachandaramurthy, V. K., Member, S., Muhammad Ajmal, A., Kasinathan, P., Miao Tan, K., & Ying Yong, J. (2022). *Social Acceptance and Preference of EV Users: A Review*. https://doi.org/10.1109/ACCESS.2017.Doi

Rezvani, Z., Jansson, J., & Bodin, J. (2015). Advances in consumer electric vehicle adoption research: A review and research agenda. *Transportation Research Part D: Transport and Environment*, *34*, 122–136. https://doi.org/10.1016/j.trd.2014.10.010

Safari, A., Salehzadeh, R., Panahi, R., & Abolghasemian, S. (2018). Multiple pathways linking environmental knowledge and awareness to employees' green behavior. *Corporate Governance (Bingley)*, *18*(1), 81–103. https://doi.org/10.1108/CG-08-2016-0168/FULL/XML

Shan, H., Zhao, K., & Liu, Y. (2024). ESG performance and the persistence of green innovation: empirical evidence from Chinese manufacturing enterprises. *Multinational Business Review*. https://doi.org/10.1108/MBR-04-2024-0060

Song, Y., Qin, Z., & Qin, Z. (2020). Green Marketing to Gen Z Consumers in China: Examining the Mediating Factors of an Eco-Label–Informed Purchase. *SAGE Open*, *10*(4). https://doi.org/10.1177/2158244020963573

Speth, D., & Funke, S. Á. (2021). Comparing options to electrify heavy-duty vehicles: Findings of german pilot projects. *World Electric Vehicle Journal*, *12*(2). https://doi.org/10.3390/wevj12020067

Huang, & Xue. (2023, March 1). *SREM: Smart renewable energy management scheme with distributed learning and EV network | Enhanced Reader*.

Tu, J. C., & Yang, C. (2019). Key factors influencing consumers' purchase of electric vehicles. *Sustainability (Switzerland)*, *11*(14). https://doi.org/10.3390/su11143863

Uddin, S. M. F., & Khan, M. N. (2018). Young Consumer's Green Purchasing Behavior: Opportunities for Green Marketing. *Journal of Global Marketing*, *31*(4), 270–281. https://doi.org/10.1080/08911762.2017.1407982

Venciute, D., Kazukauskaite, M., Correia, R. F., Kuslys, M., & Vaiciukynas, E. (2023). The effect of cause-related marketing on the green consumption attitude–behaviour gap in the cosmetics industry. *Journal of Contemporary Marketing Science*, *6*(1), 22–45. https://doi.org/10.1108/jcmars-08-2022-0019

Wang, R., Li, X., Xu, C., & Li, F. (2020). Study on location decision framework of electric vehicle battery swapping station: Using a hybrid MCDM method. *Sustainable Cities and Society*, *61*, 102149. https://doi.org/10.1016/J.SCS.2020.102149

Yang, C., Tu, J. C., & Jiang, Q. (2020a). The influential factors of consumers- sustainable consumption: A case on electric vehicles in China. *Sustainability (Switzerland)*, *12*(8). https://doi.org/10.3390/SU12083496

Yang, C., Tu, J. C., & Jiang, Q. (2020b). The influential factors of consumers- sustainable consumption: A case on electric vehicles in China. *Sustainability (Switzerland)*, *12*(8). https://doi.org/10.3390/SU12083496

Zhang, K., Guo, H., Yao, G., Li, C., Zhang, Y., & Wang, W. (2018). Modeling acceptance of electric vehicle sharing based on theory of planned behavior. *Sustainability (Switzerland)*, *10*(12). https://doi.org/10.3390/su10124686

Zhang, X., Xie, J., Rao, R., & Liang, Y. (2014). Policy incentives for the adoption of electric vehicles across countries. *Sustainability (Switzerland)*, *6*(11), 8056–8078. https://doi.org/10.3390/su6118056