

# ANTECEDENTS OF PURCHASE INTENTION ON ELECTRIC VEHICLES: INVESTIGATING THE MEDIATING ROLE OF BRAND EXPERIENCE

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## ABSTRACT

One of the long-term problems facing the world's people today is the problem of climate change, where the air temperature in the world is increasing over time. One of the main causes is in the transportation sector. For this reason, Indonesia has made a long-term plan to replace fossil fuel transportation units with electric vehicle (EVE). But, due to EVE are still relatively new, many people are hesitant to switch to EVE. For this reason, ongoing studies are needed that encourage people to be interested in using EVE. The research aims to apply and extend the relationship between UTAUT, environmental concern, and price on purchase intention, which is mediated by brand experience among Indonesian customer. The novelty of this research is adds brand experience as a mediation, due to Indonesian consumers are attached with their experience with brand. Limited research solely evaluated the link between Technology System Benefit and purchase intention, with no discussion of the combination with brand experience. An online survey was conducted among 265 respondents in Indonesia, with the respondent target are people who already own vehicles and are interested in the in EVE. A partial least squares structural equation model (PLS-SEM) is used to analyze the influential relationship, and the results are that performance expectancy, environmental concern, effort expectancy, and price appear to have a significant relationship, but facilitating conditions do not have a significant effect on purchase intention mediated by brand experience. The results of this research are quite unique and show that consumers care about the technology, convinient, environment and price associates with brands, but do not really care about the infrastructure of EVE associates with brands. Consumers want to feel comfortable from within, therefore rather than focusing on the support infrastructure a company provides for an EVE, they will prioritize environmental factor, EVE technology, and pricing when acquiring EVE.

**KEYWORDS:** brand experience, UTAUT, purchase intention, facilitating condition, Electronic Vehicle (EVE), environment, transportation.

## 1. INTRODUCTION

Current global issues are environmental problems and climate change which are increasingly critically important. Global warming is projected to reach 1.5°C in the next few decades (The United Nations, 2019), and the transportation sector is a significant contributor to this. The transportation sector is responsible for contributing 23% of CO<sub>2</sub> emissions through fuel contamination. The sustainable use of fossil fuels has led to a steady increase in the concentration of CO<sub>2</sub> in the atmosphere to 400.26 ppm in 2015 (Suprobowati *et al.*, 2021). Many cities are facing energy consumption problems and air pollution caused by the increasing number of vehicles, especially cars (Manutworakit and Choocharukul, 2022). Jakarta, as the capital of Indonesia, contributes 11% of Indonesia's total Greenhouse Gas (GHG) emissions in the transport sector and has the worst air pollution in South East Asia. Referring to the Asia Development Bank report in 2022, vehicle emissions are responsible for 32%–57% of Jakarta's air pollution (Asia Development Bank, 2022). Thus, developing countries are currently developing new renewable energy to overcome this problem. In recent years, new energy has gradually entered our lives and has been widely used in several ways, and one of the main ones is electric-based vehicles (Guo *et al.*, 2023). Or we called it Electric Vehicle (EVE).

Referring to Asian Development Bank in 2019, EVE can reduce GHG emissions by 20-40% compared to fossil-powered vehicles, significantly reduce local pollutants, and reduce fossil fuel imports (Asia Development Bank, 2022). Sales of EVE have increased drastically, in part due to government policy support (Barkenbus, 2020). In 2019, EVE's global sales reached a sales record of 2.1 million, surpassing the previous year's record. However, even though sales of EVE have increased significantly, they are still very limited and not evenly distributed in

various countries. For example, electric cars are growing in developed countries, including Norway (55.93%), Iceland (22.6%), the Netherlands (15.14%), and Sweden (11.43%). However, the penetration rate of EVE is only around 7% worldwide (Barkenbus, 2020).

By 2050, it is anticipated that sales of passenger fleets would have doubled, with China and other developing countries experiencing the most rapid growth. The Electricity Mobility Program of the United Nations Environment was established to aid in the creation and conversion of fossil fuel cars to electric ones (UN Environment Programme, 2009). A 30% electric car sales goal has been set for India and Pakistan by 2030. As many as one million EVE, or over half of all EVE sales worldwide, may be running in China by 2023, up from only 2.7% in 2017. Sales are increased to 9% in 2021 and 14% in 2023 (IEA.Org - Global EV Outlook, 2023).

In Indonesia, President Joko Widodo hopes to make Indonesia one of the centers of the global EVE industry. To accelerate this process, the government is trying to develop the nickel industry, which will then be processed into lithium batteries, which are the main components of EVE (Suprobawati *et al.*, 2021). In addition, the regulation on nickel exports in the Minister of Trade Regulation Number 1 of 2017 concerning Exports of Refined Mineral Products is tightened if nickel with a nickel content of less than 1.7% is no longer exported in December 2019 (Suprobawati *et al.*, 2021). According to Gaikindo data, 10,327 battery-based electric cars were sold wholesale in the domestic market in Indonesia alone in 2022, which is the largest number this year; Wuling Air Electric Long Range, which sold 6,859 units, and the Hyundai Ioniq 5, which sold 1,517 units, had the best sales (Katadata.co.id - Indonesia Market Electric Vehicle, 2023). Even though EVE sales are rising globally and EVE benefits are numerous, they are insufficient to outpace conventional vehicles. The cost of EVE, which remains expensive, and the lack of subsidies are some of the causes (Sun *et al.*, 2019).

This study aims to investigate people's purchasing behavior toward EVE in countries still in the early stages of vehicle development because more research is required on the factors that can motivate people in developing countries to desire EVE (Guo *et al.*, 2023). In the study of Jaeyoung Lee *et al.* (2021), the factors that influence the desire of people in developing countries to use EVE will be studied. With the UTAUT method, Lee *et al.* (2021) explore the relationship between UTAUT and behavior intention and add a combination of environmental concerns as a moderator variable (Hoang *et al.*, 2022; Lee *et al.*, 2021), with the result that performance expectancy, environmental concern, and effort expectancy have a significant effect on behavioral intention, but, behavioral intention is not significantly influenced by social influence and facilitating conditions. Whereas research by Hoang *et al.* (2022) combines technology system benefits with personal norms and personal innovativeness and their relationship with purchase intention and purchase behavior (Hoang *et al.*, 2022). In another interesting study, Lily-Shui and Lien Chen (2012) conducted research on the relationship between UTAUT and brand experience and brand equity but did not analyze the relationship with purchase intention.

Specifically, in Indonesia, countries with high levels of consumption, brands greatly influence people to purchase, Indonesians pay great attention to brand image and also the influence of brands in their social life. So as the novelty of this research, it is necessary to incorporate the brand experience of the Indonesian community as a mediation factor between UTAUT as an independent variable to purchase intention and purchase behavior as a dependent variable.

To uncover brand experience characteristics that affect purchase intentions and how purchase intentions affect purchase behavior when purchasing EVE, this study suggests a hypothetical model, what impact do environmental concerns, performance expectations, effort expectations, facilitation conditions, and price value have on brand experience toward purchase intention and purchase behavior?

## 2. LITERATURE REVIEW

This section discusses technology system benefits, brand experience, technology system benefits to brand experience, brand experience to purchase intention, and purchase intention to purchase behavior.

### 2.1. Background of Technology System Benefit (UTAUT) Model

As a basis for directing research on the user acceptability side, the UTAUT model is frequently utilized as a conclusive model to evaluate what is previously known (Venkatesh *et al.*, 2003). The Theory of Reasoned Action (TRA), the Technology Acceptance Model (TAM), the Theory of Planned Behavior (TPB), the Motivational Model (MM), the Combined TAM-TPB Model, the Model of Personal Computer Utilization (MPCU), the Diffusion of Innovations (DOI), and Social Cognitive Theory (SCT) are eight existing theories of behavior that were combined to create the UTAUT - Unified Theory of Acceptance and Use of Technology (Ajzen, 1991; Davis, 1985; Venkatesh *et al.*, 2003). In this concept, performance expectancy (PE), effort expectancy (EE), facilitating

conditions (FC), and social influence (SI) are the four primary components of behavioral intention (Manutworakit and Choocharukul, 2022). Environmental concern is included as an independent variable in this study to figure out how human concern for the environment influences people's intentions for purchasing EVE and influences purchase behavior. (Lashari *et al.*, 2021). The model can be used to examine how well new technological forms of transportation are received by the general population (Wolf and Seebauer, 2014). Examples include electric bicycles, automated road transportation systems, and electric car sharing. One of the additional variables created for individual acceptance and use setting was put into price value (Turner, 2003). Eco-friendly EVE declarations and environmental action plans can support one another to assist boost EV purchase intentions (Adnan *et al.*, 2018).

To study the factors influencing the adoption of technology, UTAUT has been widely employed in research with varying degrees of success (Naranjo-Zolotov *et al.*, 2019). In areas like e-government services (Alharbi *et al.*, 2017), where three to four UTAUT models have a significant impact on intention to use, and e-learning (Oh and Yoon, 2014), where performance expectancy, effort expectancy, social influence, perceived credibility, and suitability for technology transfer have been found to have a significant impact on consumers' desire to use technology (Goodhue and Thompson, 1995).

The UTAUT model has four antecedent constructs: Regardless of the type of environment, whether it be mandated or optional, the idea of performance expectancy (Venkatesh *et al.*, 2003), including user-perceived advantages, has been regarded as the most effective tool for describing intentions to use a system (Luo *et al.*, 2010). The concept of effort expected refers to how easily related users anticipate utilizing the system. The degree to which individuals or users perceive that the setup and technical infrastructure enable their use is intended to be a facilitating condition (Venkatesh *et al.*, 2003). As a complement to this study, environmental concern is the level of a community's understanding and readiness to engage in environmental issues. (Lee *et al.*, 2021). The price value is often cited by researchers and the as one of the elements that influence purchasing decisions. Whereas many consumers demand affordable high-quality EVE (Manutworakit and Choocharukul, 2022).

## **2.2. Brand Experience**

The term "brand experience" refers to one that influences how consumers make purchasing decisions. This term describes consumers' first impressions of a brand, whether they see an advertisement or use a product. (Shui-Lien Chen, 2012). Estimate for 2020, 60% of consumers prefer to appraise brands based on their contacts with them rather than through their ads (eMarketer, 2020). According to a PwC study, 65% of consumers rate a brand's quality primarily on personal experience rather than brilliant advertising (eMarketer, 2020). From the customer experience itself, many well-known companies, such as Hyundai or Toyota in the automotive industry (Huang, 2017), create favorable images in the minds of their consumers. For instance, when a consumer walks into a Hyundai or Toyota store, they are immediately met with exceptional customer service. But it doesn't stop there; they continuously create beautiful products. Or Apple products, even when customers perform product unboxing, they are incredibly delighted to see Apple items that are flawless in the product box (Mostafa and Kasamani, 2021). As a result, customers had a great shopping experience and ultimately remained loyal to good brand products, even though they were more expensive than competing products (Feisal H, 2015).

The term "customer experience" was first used by Holbrook and Hirschman, who noted that many consumers place a premium on the advantages of the goods or services they use that can be felt and seen. Customers think that a product's viability must be communicated vocally and that they must be able to perform multiple sensory tasks at once, such as those involved in viewing movies, dining out, and playing tennis (Holbrook and Hirschman, 1982). Customers are currently seeking benefits other than the sensory stimulation they receive, yet this can make the experience memorable for them in the long run (Zarantonello and Schmitt, 2010). Brands can be perceived (stimulated) at many different points depending on the customer's involvement. There are four parts to this stimulus: the intellectual, the habitual, the sensory, and the emotive. This element illustrates how customers connect with a brand through their senses, such as model, taste, fragrance, look, and so on. It may also address the psychological aspects of the activities that customers conduct after encountering a certain brand. (Sohaib *et al.*, 2023).

## **2.3. Technology System Benefits, Brand Experience, and Purchase Intention**

Technology System Benefits from the UTAUT Model Framework provide a useful tool for managers needing to assess the likelihood of success for new technology introduction (Venkatesh *et al.*, 2003) such as EVE. While brand experience is a mediating element between UTAUT and purchase intention, some studies indicate that a brand's customer experience that is impacted by good product attributes will increase the customer's desire to buy. (Shui-Lien Chen, 2012).

### **2.3.1. Performance Expectancy, Brand Experience, and Purchase Intention**

The degree to which an individual believes that adopting the system will help him or her achieve advances in work performance is described as performance expectation (Venkatesh *et al.*, 2003), productivity, and results in successful operations. EVE provides several advantages, including lower energy use and air pollution. And good brand experience induces feelings and sentiments (Vogel *et al.*, 2008). If consumers find a product with a certain brand with a system that can make it easier for them, even though they have liked the brand for a long time and will influence consumers to buy the product, then the opportunity for a new technology with a certain brand can be easily liked by consumers. The general points above, lead us to make the following hypothesis:

*Hypothesis 1: Performance expectancy positively influences the purchase intention of EVE by mediating brand experience*

### **2.3.2. Facilitating Condition, Brand Experience, and Purchase Intention**

Facilitating Condition is defined as the degree to which an individual believed that an organizational and technical infrastructure exists to support the use of the system (Venkatesh *et al.*, 2003). Because EVE is a new technology in Indonesia, one of the factors people consider when purchasing an EVE is the ability to charge the vehicle's battery. In 2022, there are 670 charging stations in Jakarta out of 6,889 EVE units, but in non-urban areas such as Yogyakarta, there are only 6 charging units (Asia Development Bank, 2022), which is insufficient. As a result, facilitating conditions are becoming increasingly crucial in shaping customer preferences and intention to purchase. Thus, this study infers the following hypothesis:

*Hypothesis 2: Facilitating conditions positively influences the purchase intention of EVE by mediating brand experience*

### **2.3.3. Price Value, Brand Experience, and Purchase Intention**

Price value is defined as the utility gained from service by lowering its perceived short-and long-term expenses. (Ranaweera and Karjaluoto, 2017). With the cost of creating a better brand experience often being disproportionately high, the question arises if such investment can increase the potential for consumers to pay higher prices (Dwivedi *et al.*, 2018). Thus, based that point, leads us to the following hypothesis:

*Hypothesis 3: Price value significantly influences purchase intention the of EVE by mediating brand experience*

### **2.3.4. Effort Expectancy, Brand Experience, and Purchase Intention**

The degree of convenience associated with the usage of a certain technology impacts the desire to use that technology, which is characterized as effort expectation. (Venkatesh *et al.*, 2003). The concept of effort expectancy refers to an online shop's perception that using the right online shopping system will help them promote an impression of convenience in their first personal contact with a potential consumer (Shui-Lien Chen, 2012). This study can conclude that the easier it is to get product information, such as simply book lessons on how to operate or charge electric automobile information, the more likely it is that the consumer will have a better brand experience. Thus, we could propose a hypothesis:

*Hypothesis 4: Effort expectancy significantly influences the purchase intention of EVE by mediating brand experience*

### **2.3.5. Environment Concerns, Brand Experience, and Purchase Intention**

With increasing global issues, environmental concerns have become more significant in purchasing decisions. Global warming from CO2 emissions produced by cars is impacting the purchasing decisions of car consumers (Idham Md *et al.*, 2014). Thus, buyers recognize and recall that a brand is environmentally friendly. Increasing awareness amongst customers of environmental threats caused by electronic products has pushed companies to incorporate eco-friendly attributes in their products to fulfill consumers' green expectations (Doszhanov and Ahmad, 2015). This study infers the following hypothesis:

*Hypothesis 5: Environment concern significantly influences the purchase intention of EVE by mediation brand experience*

## **2.4. Brand Experience and Purchase Intention**

Purchase intention refers to "the possibility that consumers will plan or be willing to purchase a certain product or service in the future" (Ming-Yi Wu, 2006). Zarantelo & Schmitt shows the association between brand attitudes

and purchase intentions is higher for holistic consumers who are interested in all types of experiences (sensory, emotional, intellectual, and behavioral) and weaker for utilitarian customers who are not interested in experiences (Zarantonello and Schmitt, 2010). Therefore, we proposed the following hypothesis,

**Hypothesis 6: Brand experience significantly influences the purchase intention of EVE**

## 2.5. Environmental Concern and Purchase Intention

Consumers today are concerned about the environment, which leads them to consider making environmentally friendly products an option, not only affecting the brand but also directly influencing their choice. Thus, we proposed the following hypothesis:

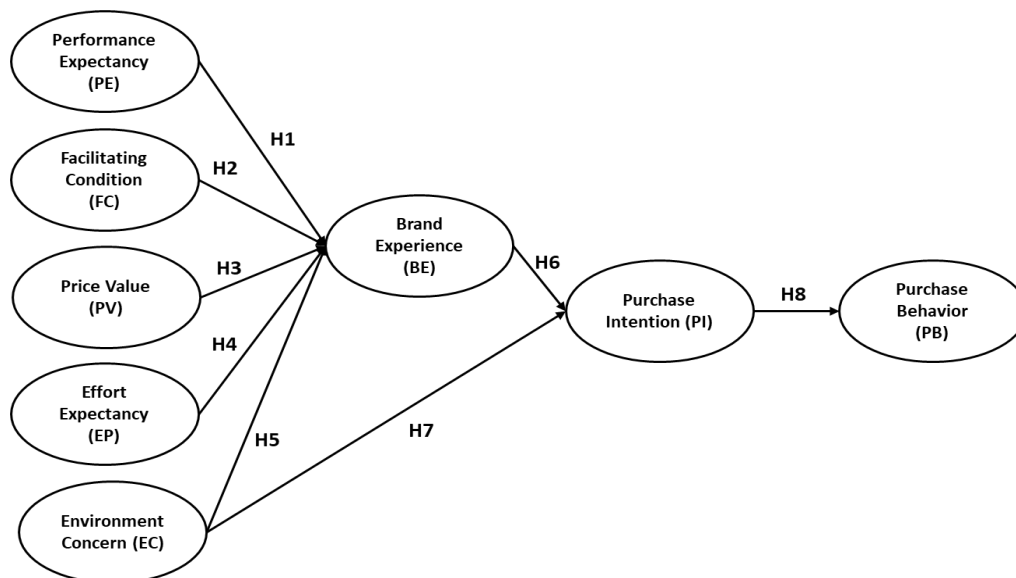
**Hypothesis 7: Environmental concern positively influences the purchase intention of EVE**

## 2.6. Purchase Intention and Purchase Behavior

Perceived attitudes and use behavior determine actual actions (Taylor and Todd, 1995). Purchase intention is a major determinant of use behavior (Manutworakit and Choocharukul, 2022). We proposed the following hypothesis:

**Hypothesis 8: Purchase intention positively influences the purchase behavior of EVE**

From the above discussion and previous research, it is clear that the components from UTAUT may have an effect on brand experience, but previous research is unclear whether UTAUT affects brand experience, which will also affect purchase intention and purchase behavior, and that is what we will test in this research, thus the conceptual framework is presented in figure 1:



**Figure 1: Conceptual Framework**

## 3. METHOD

### 4.1. Research Design

To understand EVE purchase decisions, researchers can adopt a qualitative or quantitative approach. However, the quantitative approach was more appropriate for this study because it allows the researchers to validate the relationships between variables and generalize the results to a large population (Hoang *et al.*, 2022). Indonesian drivers who have their own vehicles were chosen as a target for this study as they could provide answers based on their experiences and knowledge about the products. Since EVE in Indonesia is newly introduced, the survey questions belong to their previous experience with conventional cars as well as their expectations for EVE. The survey also adapts to the Indonesian society model, since it should contain consumer concerns about the environment and pricing, as Indonesians prioritize price over quality and other factors, so the survey is more accurate target based on demographics and culture.



According to the 10-time rule, the minimum sample size is equal to 10 times the maximum number of arrows leading to a particular construct which results in  $n = 50$  (Hair *et al.*, 2017). In this study, use 25 criteria of questions were asked of responders, such that the sample size necessary is 10 times the criteria. The authors got 280 respondents for this study, with 15 of them are did not represent the requirements for first-stage respondent criteria, yielding 265 respondents who were ready for data processing. This amount already fulfills the sample respondents' minimal criterion, allowing the research to proceed.

## 4.2. Data Collection

### 4.2.1. Respondent's detail

The questionnaire was divided into two phases, the first phase referred to the Jaeyoung Lee et al. 2021 study (Lee *et al.*, 2021) used to collect respondent data related to demographics, such as gender, age, educational level, income, employment, and the question regarding the ownership of the vehicle and interesting people about the EVE.

**Table 1: Respondent's detail**

Categories	Frequency	Percentage
Gender:		
Male	148	55.8%
Female	117	44.2%
Age:		
18-28	27	10.2%
29-39	137	51.7%
40-50	76	28.7%
51-60	22	8.3%
> 60	3	1.1%
Education:		
Sr. Highschool	8	3.0%
Bachelor's degree	221	83.4%
Master's / Ph.D degree	36	13.6%
Income (Rp per month):		
5 million - 15 million	41	15.5%
15,1 million - 25 million	112	42.3%
25,1 million - 45 million	98	37.0%
> 45 million	14	5.3%
Vehicle Brand Favorite:		
Toyota	76	28.7%
Honda	68	25.7%
Hyundai	52	19.6%
Mercedez	24	9.1%
Nissan	15	5.7%
Tesla	16	6.0%
Others	14	5.3%
How long have you been interesting in electric vehicle?		
6 mo	66	39.8%
1 yrs	97	45.1%
2 yrs	65	8.0%
> 2 yrs	37	7.1%

Male responses were 55.8% bigger than female responders (44.2%). Even though men and women have equal access to motor vehicles in Indonesia, respondents' interest in automotive is still dominated by men. The average age of respondents was 29-39 years old, with 51.7% earning between 15 and 25 million rupees. This shows that respondents who own their vehicle and have an interest in EVE are of productive adult age with a middle income. This will be the topic of debate at the end of the study. The average interest of respondents in electric cars was over the past year, given that EVE was booming in Indonesia at the end of 2021, and the most selected brands were Toyota and Honda, as the two motor vehicle manufacturers were the most massive in marketing in Indonesia.

#### 4.2.2. Questionnaire's detail

The second phase of the questionnaire contained the question to measure the latent construct (Lee *et al.*, 2021), including performance expectancy, effort expectancy, facilitation condition, environmental concern, purchase intention, and purchase behavior to purchase EVE. Measurement items were adopted from previous research including Jaeyoung Lee et al 2021 (Lee *et al.*, 2021), Hoang et al 2022 (Hoang *et al.*, 2022), Zhou et al 2021 (Zhou *et al.*, 2021), Manutworatit P 2022 (Manutworakit and Choocharukul, 2022) and Brakus. J 2009 (Jo ~ Sko Brakus *et al.*, 2009). The measurement range used a 6-point Likert scale ranging from totally disagree (1) to strongly agree (6) was used to measure these items. The Indonesian version of the questionnaire was presented in Jakarta, the Capital city of Indonesia using the local version and then translated into English version, aiming to avoid misunderstandings and accelerate respondents understanding of the contents of the questionnaire.

**Table 2: Questionnaires Detail**

Code	Construct	Ref
<b>Performance Expectancy (PE)</b>		
PE1	I believe that using an EVE can improve my quality of life and effectiveness.	(Lee <i>et al.</i> , 2021)
PE2	It also seems convenient if I use an EVE for transportation	(Hoang <i>et al.</i> , 2022)
PE3	It seems that by using an electric car, I can save more each month	(Hoang <i>et al.</i> , 2022)
<b>Facilitating Condition (FC)</b>		
FC1	The infrastructure of the charging station and the EVE service center must be available in the environment where I live and work.	(Hoang <i>et al.</i> , 2022)
FC2	There should be an adequate care workshop for EVE in my area.	(Hoang <i>et al.</i> , 2022)
FC3	It's crucial to have a parking spot with an EVE charging station.	(Hoang <i>et al.</i> , 2022)
<b>Environmental Concern (EC)</b>		
EC1	I am concerned about the pollution levels in the city where I live	(Lee <i>et al.</i> , 2021)
EC2	Conventional vehicle emission is one of the main contributors to air pollution and urban pollution.	(Lee <i>et al.</i> , 2021)
EC3	I have a moral obligation to use low-emission modes of transport for a better environment	(Lee <i>et al.</i> , 2021)
EC4	I want a better environment for my children's generation	(Lee <i>et al.</i> , 2021)
<b>Price Value (PV)</b>		
PV1	The cost of an electric car is an essential consideration in my purchase decision.	(Manutworakit, 2022)
PV2	EVE should have a reasonable price.	(Manutworakit, 2022)
<b>Effort Expectancy (EE)</b>		
EE1	I believe EVE should be easier to drive than conventional vehicles	(Hoang <i>et al.</i> , 2022)
EE2	Charging an electric car should be easy.	(Hoang <i>et al.</i> , 2022)
EE3	In my opinion, EVE technology should be more user-friendly, and easily understood by the user	(Hoang <i>et al.</i> , 2022)
<b>Brand Experience (PV)</b>		
BE1	The visual of a specific vehicle's brand has a strong character and influence on me.	(Brakus et al., 2009)
BE2	A specific vehicle's brand attracts me sensitively (model, technology, performance, interior, spare part, scent, etc)	(Brakus et al., 2009)
BE3	I have an emotional affinity to the vehicle's brand (feeling, empathy, history, etc)	(Brakus et al., 2009)
BE4	For me, a specific vehicle's brand provided a tangible sensation. (comfort and safety for myself with excellent after-sales service)	(Brakus et al., 2009)
BE5	I made a lot of considerations and thoughts when determining the specific vehicle brand I would buy.	(Brakus et al., 2009)
BE6	A specific vehicle brand made me curious to be able to use that vehicle.	(Brakus et al., 2009)
<b>Purchase Intention (PI)</b>		
PI1	I have the intention to buy EVE shortly	(Zhou <i>et al.</i> , 2021)
PI2	If I have a chance, I intend to purchase an EVE.	(Zhou <i>et al.</i> , 2021)

**Purchase Behaviour (PI)**

PB1 I believe that purchasing an EVE will make my life easier. (Hoang *et al.*, 2022)

PB2 When selecting a vehicle, the EVE will be my priority. (Hoang *et al.*, 2022)

**4.3. Data Analysis Method**

Partial Least Squares Structural Equation Modeling (PLS-SEM) is a multivariate statistical study that measures the effect of variables concurrently for the purposes of prediction, exploration, and construction of structural models (Hair *et al.*, 2019). PLS was used to examine the acquired data since it is appropriate for complicated models with latent variables (Hoang *et al.*, 2022). It is a useful statistical technique for validating complicated associations with a limited sample size while making no assumptions about data distribution (Hair *et al.*, 2017). This data was measured using SmartPLS software with four stages. First, the characteristic of the samples was analyzed based on data demographic (Hoang *et al.*, 2022). Then, the measuring model was examined to confirm its validity and reliability before we assessed it to ensure the relationship between variables and mediating variables and finally verified.

**4.4. Research Result**

This measurement model uses a reflective measuring model related to performance expectancy, effort expectancy, facilitating condition, environmental concern, price value, brand experience, purchase intention, and purchase behavior as variables. Referring to Hair *et al.* 2019, reflective measurement consists of Outer Loading Factor  $\geq 0.7$ , Composite Reliability (CR)  $\geq 0.7$ , Cronbach's Alpha  $\geq 0.7$ , and AVE  $\geq 0.5$  (Hair *et al.*, 2019). Discriminatory validity testing with Fornell and Lacker or HTMT  $< 0.9$  (Henseler *et al.*, 2015a). Results are shown in Table 3 below:

**Table 3: Validity and Reliability Measurement Result**

Variable	Item	Outer loadings	Cronbach's alpha	Composite Reliability	AVE
Performance Expectancy	PE1	0.819	0.803	0.884	0.718
	PE2	0.884			
	PE3	0.836			
Facilitating Condition	FC1	0.853	0.856	0.912	0.776
	FC2	0.908			
	FC3	0.881			
Environmental Concern	EC1	0.861	0.845	0.885	0.659
	EC2	0.871			
	EC3	0.789			
	EC4	0.777			
Price Value	PV1	0.949	0.841	0.925	0.860
	PV2	0.906			
Brand Experience	BE1	0.830	0.880	0.908	0.623
	BE2	0.834			
	BE3	0.756			
	BE4	0.765			
	BE5	0.788			
	BE6	0.759			
Effort Expectancy	EE1	0.813	0.862	0.916	0.785
	EE2	0.921			
	EE3	0.919			
Purchase Intention	PI1	0.924	0.811	0.913	0.840
	PI2	0.909			
Purchase Behavior	PB1	0.924	0.759	0.891	0.803
	PB2	0.868			

Based on the results in the measurement findings shown in Table 3 above. Eight variables are measured by each valid item where the Outer Loading value is between 0.756 – 0.949 indicating that all items are strongly correlated in describing each variable. Cronbach's Alpha and Composite Reliability test results stated valid with each variable value above 0.7, which means the above measurements have met the criteria for accuracy, precision, and



reliable consistency (Hair *et al.*, 2019). The next step in the reflective measurement model assessment examines the convergent validity of each concept measure. Convergent validity is the extent to which the items construct converges to explain the variance of its elements. The average variance extracted (AVE) for all items on each construct is the statistic used to assess a concept's convergent validity (Hair *et al.*, 2019). From the data above, it can be seen that the AVE values for all variables are above 0.5, indicating that all measurement items are declared reliable and meet the minimum requirements of convergent validity.

To evaluate discriminant validity, which is how different a construct is experimentally from other constructs in the structural model (Hair *et al.*, 2019). Henseler *et al.* 2015 proposed using heterotrait-monotrait (HTMT) as explained by Joseph Hair. 2019. HTMT is considered more sensitive and accurate in detecting discriminatory validity. This test measures to what extent the structures in the model are interrelated or have a significant linear relationship. Discriminant validity problems are present when HTMT values are high (Henseler *et al.*, 2015b).

**Table 4: HTMT Result**

	BE	EE	EC	FC	PE	PV	PB	PI
<b>BE</b>								
<b>EE</b>	0.708							
<b>EC</b>	0.526	0.533						
<b>FC</b>	0.536	0.662	0.469					
<b>PE</b>	0.759	0.717	0.563	0.540				
<b>PV</b>	0.617	0.693	0.342	0.564	0.644			
<b>PB</b>	0.428	0.441	0.411	0.315	0.749	0.343		
<b>PI</b>	0.644	0.683	0.575	0.533	0.550	0.521	0.717	

All HTMT results are below the minimum threshold requirement, or below 0.9. This demonstrates that the relationships between variables are distinct in theory, accepting heterogeneity, and empirically proven. So the results of the discriminant validity test meet the requirements. The following test is to evaluate the collinearity of the formative indicators using variance inflation factor (VIF). VIF values of 5 or above suggest serious collinearity difficulties among formative assessed concept indicators. Ideally, the VIF values should be close to 3 or lower (Hair *et al.*, 2019).

*Table 5: Multicollinearity Test VIF's Result*

<b>Variables</b>	<b>VIF</b>
Brand Experience -> Purchase Intention	1.288
Effort Expectancy -> Brand Experience	2.164
Environmental Concern -> Brand Experience	1.411
Environmental Concern -> Purchase Intention	1.288
Facilitating Condition -> Brand Experience	1.621
Performance Expectancy -> Brand Experience	1.871
Price Value -> Brand Experience	1.759
Purchase Intention -> Purchase Behavior	1.000

All VIF results indicate a value below 5, even below 3. This means that there is no colinearity relationship between the variables, so the data is declared to pass the test.

#### 4.4.1. Structural Model Assessment

Figure 2: Structural Model Assessment Result

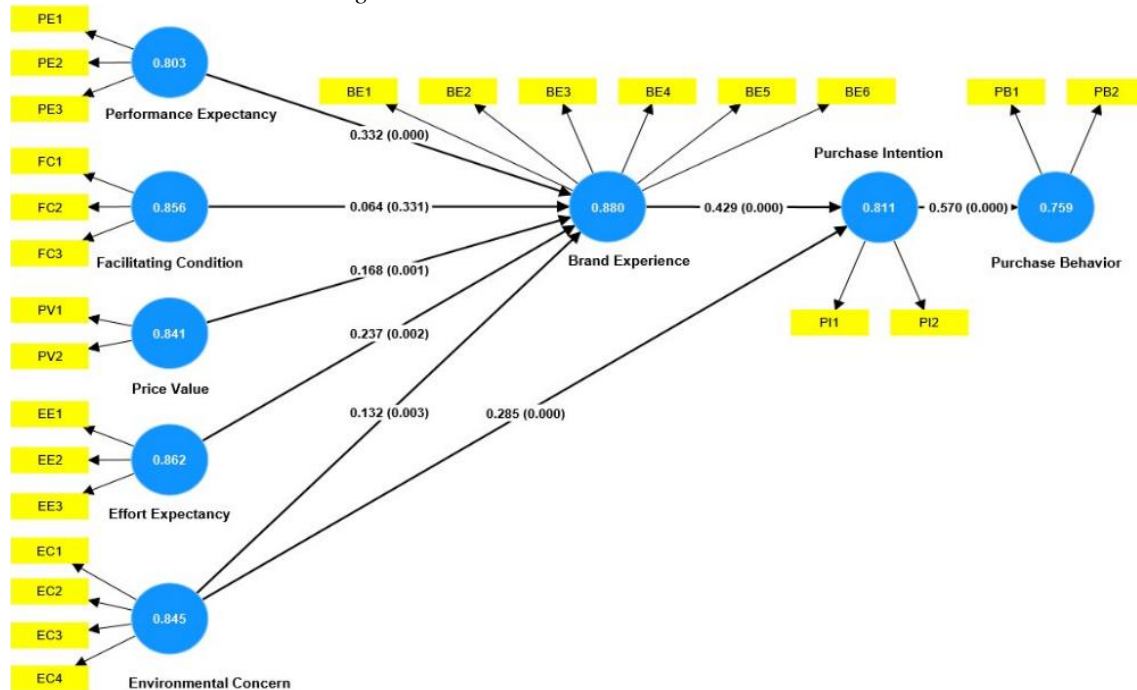


Table 6: Bootstrapping Test for Indirect Relationship

Variables	Path Coefficient	P values	Result
H1 PE -> BE -> PI	0.14	0.00	Supported
H2 FC -> BE -> PI	0.03	0.35	Not Supported
H3 EC -> BE -> PI	0.06	0.01	Supported
H4 PV -> BE -> PI	0.07	0.00	Supported
H5 EE -> BE -> PI	0.10	0.00	Supported

Results in Figure 2 and Table 6 on the bootstrapping test indirect relationship show a significant relationship between brand experience in mediating performance expectancy with purchase intention ( $\beta=0.14$ ,  $p < 0.001$ ), value  $\beta=0.14$  also as the strongest path coefficient value among all results so that H1 is accepted. Tests also showed that brand experience had a significant and positive influence in mediating the relationship between environmental concern and purchase intention ( $\beta=0.06$ ,  $p < 0.05$ ), resulting in H3 being accepted. The path coefficient and p-value values for H4 also show a positive and significant relationship between price value and purchase intention mediated by brand experience ( $\beta = 0.07$ ,  $p < 0.05$ ) so H4 is accepted. The supported results were generated by H5 which showed a positive and significant relationship between effort expectancy and purchase intention mediated by brand experience ( $\beta = 0.10$ ,  $p < 0.001$ ). The difference is shown in H2 when facilitating conditions insignificant influence on the purchase intention mediated by brand experience, with the p-value showing a figure of 0,35 ( $\beta=0.03$ ,  $p > 0.05$ ), so H2 is rejected.

Table 7: Bootstrapping Test for Direct Relationship

Variables	Path Coefficient	P values	Result
BE -> PI	0.43	0.00	Supported
EC -> PI	0.29	0.00	Supported
PI -> PB	0.57	0.00	Supported

The results of Table 7 above show a positive and significant relationship between brand experience and purchase intention ( $\beta=0.43$ ,  $p < 0.001$ ), environmental concerns significantly influence purchase intention ( $\beta=0.29$ ,  $p < 0.001$ ), and purchase intention significantly influences purchase behavior ( $\beta=0.57$ ,  $p < 0.001$ ). Where the p-

value shows a number below 0,001, which means these three relationships are very significantly influential. Thus H6, H7, and H8 are accepted.

## 5. CONCLUSION

### 5.1. Result Discussion

On the results of the data validity test calculation, the item on the independent variable measured on PLS-SEM yielded the highest Loading Factor value on the items PV1, and PV2, with the values of 0.949 and 0.906, and also EE2 and EE3 with the values of 0,921 and 0,919 meaning any change in price value and effort expectancy will be reflected most strongly on the PV1, PV2, EE2, and EE3 questionnaires. Items PV1 and PV2 explain consumer awareness of the price of EVE. The price is considered when choosing EVE, and the cost of EVE must be affordable. In developing countries such as Indonesia, where most people still belong to the middle-income level, prices are important to pay attention to. Effort expectancy on items EE2 and EE3 explained the ease of charging EVE and also the desire of the respondents that EVE should be easy to understand and user-friendly. This reflects that many in Indonesian society are not too familiar with EVE, especially since these EVE only existed two or three years ago in Indonesia. Respondents expect an easy effort to drive this EVE. If this technology is difficult to learn and understand, then EVE will be difficult to develop in Indonesia.

The Cronbach's alpha feasibility test results in consistent, reliable data with a range between 0,803 – 0,862 on the independent variable, the variable that is the focus of the measurement. The result is well above the minimum threshold of 0,7 meaning performance expectancy, facilitating condition, effort expectancy, environmental concern, and price value should be considered. Brand experience also generates strong reliability data, which means respondents pay close attention to brands when they relate to vehicles.

The study yielded positive results on the correlation between performance expectancy and purchase intention with brand experience as mediation, with a value  $\beta = 0,14$  which is the highest path coefficient value of all measurement variables, and with a p-value  $< 0,001$  then respondents have a high interest in performance expectation and brand experience, they saw that a brand must be able to provide comfort and improve quality of life. And with certain brands, respondents believe they can save more money in their life if they use an EVE from a brand in which they already have confidence and trust.

Respondents generated expected outcomes on environmental issues where brand experience mediated significantly and positively correlated the relationship between environmental concern and purchase intention. They care about providing a better environment for their offspring and hope that the brand of vehicles they like will do the same. Similar outcomes were obtained when H4 was tested, which was related to price value having a significant influence on the intention to purchase that is mediated by brand experience, with the p-value = 0,003 indicating that the influence of significance of price value is very strong, the public evaluates a brand not only based on its quality or brand name but also on its price, where respondents expect brands they like to apply reasonable prices and are still affordable. Significant influence also happens on the effort expectation relationship, where respondents anticipate the brand they like to apply technology that is easy to comprehend and learn, with a combination of user-friendly and good brand names, the public's intention to purchase and then re-purchase or make EVE the first choice is a future expectation.

The unexpected results were shown in the H2 test, where facilitation conditions insignificant impact on the purchase intention mediated by brand experience. This is in line with a study by Lily Shui-Lie Che that facilitation conditions have no significant impact on brand experience (Shui-Lien Chen, 2012). Also, similar finding results were found in Jaeyoung Lee's study (Lee *et al.*, 2021). There are two feasible approaches based on the findings of interviews with respondents who choose to disagree with enabling conditions since respondents prefer to prioritize their personal comfort over the product. Respondents' perceptions of their EVE brands are more focused on tools, technology, simplicity, and convenience of driving, as well as the price of the EVE itself; respondents have not regarded amenities beyond the physical EVE as an appealing item for them to purchase. The second reason is that respondents are still unfamiliar with EVE; therefore, they are unconcerned about support services outside of the vehicle itself.

### 5.2. Implication and Limitation

Based on the research findings, this study can be used in management implications, i.e. the management of EVE manufacturing is expected to reflect the pattern of consumer / potential consumers in terms of performance expectancy, effort expectancy, and price value, particularly considering the lack of familiarity with EVE in Indonesia. As a primary objective, manufacturers are required to optimize the comfort and convenience of the use of EVE; consumers or prospective consumers desire technology that requires less effort to use. Even major vehicle

manufacturers' brands should provide free training to purchasers for the first 1-3 months so that they feel convenience and confidence. This may increase the amount of effort expected, increasing customer purchase interest.

Price should be the next priority in the marketing strategy pattern since it has a high load factor value and a high number of significance. This implies that when a consumer compares a conventional to an EVE or one vehicle brand to another, the price will be a reference point. Marketing may maximize the pricing strategy by comparing monthly or annual costs and mentioning how much percentage of expenditure can be reduced by applying electric charging instead of oil fuel consumption.

Following that, the manufacturers are able to optimize the support facilities that customers were not seeing as a purchase intention element. Vehicle companies that dominate the market should view these factors as opportunities, as increased brand promotion through advertising, endorsement, or quick testimony via the YouTube channel may be a valuable marketing strategy.

The study includes limitations, such as not addressing brand image and government influence through government policies connected to moving from conventional vehicles to EVE. Brand image can be explored deeper because it is one of the marketing strategies in promoting EVE, while government intervention indirectly causes conventional vehicle manufacturers to switch to EVE, and possibly if the government makes policies related to subsidies and also benefits for consumers (tax cuts, etc.). It is likely the Indonesian people's purchase intention toward EVE will rise much more drastically.

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