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## Factors influencing purchase intention toward “BYD-Build Your Dream” Electronic Vehicles of office workers in Bangkok.

Jutamas Joysa <sup>1</sup>, Seongdok Kim <sup>2</sup>

### Abstract

**Propose:** This research studied factors influencing purchase intention toward “BYD-Build Your Dream” Electronic Vehicles of office workers in Bangkok to analyze significant factors that BYD need to focus on Thailand market segment. This study aims to examine factors influencing purchase intention toward “BYD” Electronic Vehicles of office workers in Bangkok to be the guideline for BYD company in order to achieve selling target and maintain the highest market share in electric vehicles market in Thailand. The theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB) and Theory of PEST analysis were applied to find the preliminary significant factors towards BYD purchase intention. **Research design, data and methodology:** Researcher applied Convenience Sampling Method and Snowball Sampling Method in this study. This study was quantitative research which applied Cronbach’s Alpha, Descriptive Analysis, Correlation Analysis, and Multiple Linear Regression to analyze the level of influencing of independent variables (Attitude, Subjective Norm, Environmental Concern, Government Policy, Charging Infrastructure) to dependent variable (Purchase Intention). The questionnaire has been distributed to people who work in organizations located in Bangkok and are interested in purchasing electronic vehicles in the future and received valid answers from 400 respondents. **Results:** The result of this study can be summarized that government policy positively impacts charging infrastructure and charging infrastructure also positively impacts purchase intention towards “BYD” Electronic Vehicle. Not only charging infrastructure factors, but the result also indicated that attitude, subjective norm are the factors which showed positively impact towards “BYD” Electronic Vehicle purchase intention. On the other hand, environmental concern and government policy have no significant towards “BYD” Electronic Vehicle. **Conclusion:** The result of this study can highlight the significantly key point that BYD should consider if BYD would like to maintain the status of Thailand market leading. Moreover, BYD can extend the result of this study to applied with the company strategy, marketing strategy, and stakeholder strategy for increasing BYD competitive advantage. **Keywords :** BYD, Electric Vehicle, Attitude, Subjective Norm, Environmental Concern, Government Policy, Charging Infrastructure, Purchase Intention

**JEL Classification Code:** M10, M30, Q56

### 1. Introduction

The adoption of EVs is expected to lead to a significant reduction in global pollution in the coming years. As more and more EVs are on the road, People in the world can expect to get a cleaner and healthier environment (*Environmental Benefits of EVs, 2022*). Electric vehicles (EVs) offer several sustainability advantages compared to traditional internal combustion

engine (ICE) vehicles (*Electric Vehicles and the Environment, 2023*). The adoption of electric vehicles (EVs) has been steadily increasing worldwide, driven by



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several key trends and factors (International Energy Agency, 2023)<sup>6</sup>

EVs sales are increasing rapidly and expected to account for a significant share of the global vehicle market in the coming years. According to the International Energy Agency (IEA), global EV sales reached 6.6 million in 2022, up from 2.5 million in 2020. This represents a growth rate of over 100%. The IEA forecasts that global EV sales will reach 14 million at the end of 2023, 20 million in 2025 and 50 million in 2030. By 2030, EVs are expected to account for 30% of all new vehicle sales globally (IEA, 2023).

BYD or Build Your Dream, which was founded in February 1995, is a high-tech business dedicated to using technological advancements to improve people's lives. After more than 27 years of rapid expansion, BYD has created over 30 industrial parks on six continents and played an important role in industries such as electronics, automobiles, renewable energy, and rail transit (*About BYD / BYD TH*, n.d.). BYD provides full zero-emission new energy solutions with a focus on energy acquisition, storage, and application. Its turnover surpasses CNY 200 billion and it is listed on both the Hong Kong and Shenzhen stock exchanges (*About BYD / BYD TH*, n.d.). BYD made an enormous impact in Thailand in September 2022 when it obtained an agreement to establish its first production hub in Southeast Asia ("China's BYD Signs Land Deal to Build First EV Plant in Thailand," 2022).

According to best-selling EV in Thailand 2022 information, Ora Good Cat, Chinese BEV, acquired best-selling EV with approximately 4,000 units sold, the second is MG EP approximately 2,393 and the third is

MG ZS EV 805 units (Archawametheekun, 2023). On the other hand, the first six months of 2023 Thailand best-selling EV, BYD is coming to be the new EV market leader with selling volume approximately 11,171 units, follow by Neta approximately 5,955 units and Tesla approximately 5,095 units (Revealing the top 10 EV car sales in the first half of the year, BYD leads with 11,000 units., 2023)

## 2. Research Objective

Regarding to Thailand selling EV in 2022 and first half of 2023 information, the market leader of EV producer has been rapidly changed and rather uncertainly because electric vehicle trend is still in early stages in Thailand. Therefore, there is an opportunity for new manufacturers to gain share in the market. This information can be assumed that Thailand's EV market will be fast expanding in coming year.

The objective of this study is to examine factors influencing purchase intention toward "BYD" Electronic Vehicles of office workers in Bangkok to be the guideline for BYD company in order to achieve selling target and maintain the highest market share in electric vehicles market in Thailand.

## 2. Theoretical Framework

The purpose of this study is to analyst factors influencing purchase intention toward "BYD" Electronic Vehicles of office workers in Bangkok. Regarding to previous study, researcher found three theories that have significant importance to determine variables of this study including Theory of Reasoned Action (Fishbein and Ajzen, 1975) which developed by Martin Fishbein and Icek Ajzen in 1967, provides

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valuable insights into human behavior and the factors that influence human decisions and behavioral intentions. TRA hypothesizes that Attitudes and subjective norms influence behavioral intention, with attitudes being based on behavioral beliefs and subjective norms being based on normative beliefs (Tu & Yang, 2019; Malik & Yadav, 2020; Dutta & Hwang, 2021; Shakeel, 2022), Theory of Planned Behavior (TPB) developed by Icek Ajzen in 1985 that is designed to help understand and predict human behavior, especially in the context of decision-making and behavioral intentions (Park et al., 2018; Dutta & Hwang, 2021; Hasan, 2021; Mohammadreza, 2021), Theory of PEST analysis which is a strategic management tool used to analyze and evaluate the external macro-environmental factors that can affect an organization's performance and decision-making. PEST stands for Political, Economic, Social, and Technological factors (Francis Aguilar, 1967; Vasileva, 2018).

According to TRA and TPB, these two theories mentioned that Attitude and Subjective Norm influence behavioral intention. Therefore, these factors are chosen as independent variables for this study. Moreover, theory of PEST analysis stated importance of political, economic, social and technological factors on organization's performance. This study matches Political as a government policy, Social as an environmental consciousness, and Technological factors as charging infrastructure. These factors suit to be included as independent variables. In addition, the researcher reviewed ample research articles that supported relationship between chosen independent variables and dependent variable as discussed in the next section.

## 2.1. Attitude

Attitude, in the context of social psychology and research, refers to a relatively enduring and evaluative disposition or mental state that influences an individual's feelings, thoughts, and behaviors toward a particular object, person, group, issue, or situation. Attitudes can be positive, negative, or neutral, and they

encompass a range of emotions and cognitive elements that shape our responses and actions (Svenningsson et al., 2021). Previous research has defined the main three components of human experience which led to personal attitude including affection, cognition, and behavior (Breckler, 1984). According to previous studied of Tu & Yang (2019), Dutta and Hwang (2021), Shakeel (2022) and Yeğın and Ikram's (2022), the results of these studies demonstrate that attitude has significant influence on purchase intention of human.

## 2.2. Subjective Norm

The subjective norm refers to an individual's perception of the social pressure or influence from significant others, such as family, friends, colleagues, or society, regarding whether they should engage in a particular behavior or follow a specific course of action (Yeğın & Ikram, 2022). Regarding to previous study indicated that subjective norm is influenced from perceived pressure to take the action or decision by observing from the surrounding society environment (Rhodes et al., 2002). Relate to TPB theory, various previous studies such as Tu and Yang (2019), Dutta and Hwang, (2021), Hasan (2021), Shakeel (2022) found that subjective norm is the important variable that affects purchase intention behavior.

## 2.3. Environmental Concern

Environmental concern is a complex construct that encompasses a range of attitudes, emotions, and beliefs about the environment. Environmental concern can be defined as the degree to which an individual is worried or concerned about the environment and its problems, and the willingness to take action to protect the environment (Fransson & Gärling, 1999). Regarding previous studies about electric vehicle purchase intention including Malik and Yadav (2020), Brinkmann and Bhatiasevi (2021), Jayasingh, S., Giriya, T., & Arunkumar, S. (2021), Lee, J., Baig, F., Talpur, M. A. H., & Shaikh, S. (2021), Yeğın and Ikram (2022), the researchers found that the result of these previous



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studies show that environmental concern has significant influence toward electric vehicles purchase intention.

## 2.4. Government Policy

Government policy is a course of action or inaction chosen by a government in order to achieve a specific goal. Policies can be created at any level of government, including local, state, and federal. Government policies are often developed in response to public problems or concerns and implemented through a variety of mechanisms, including laws, regulations, programs, and incentives (Public Policy – Atlas of Public Management, 2013). Brinkmann and Bhatiasevi (2021), Dutta and Hwang (2021), Pailwar (2022), Shakeel (2022) studied about factors influencing electric vehicles purchase intention and found that government policy is the one factor that significant influence toward electric vehicles purchase intention.

## 2.5. Charging Infrastructure

Charging infrastructure of electric vehicles (EVs) and sustainable transportation, refers to the network of physical installations and components that enable the charging of electric vehicles. It includes charging stations, power supply equipment, connectors, and related technologies that facilitate the transfer of electrical energy from the grid to the EV's battery. Charging infrastructure is a critical component of the electric vehicle ecosystem, as it directly impacts the adoption and usability of electric vehicles (Ali & Naushad, 2022). The result of previous studies from Bai and Tan (2021), Jayasingh, S., Girija, T., & Arunkumar, S. (2021), Kim, S., Choi, J., Yi, Y., & Kim, H. (2022), Pailwar (2022) implied that charging infrastructure is the important factor that influence purchase intention of consumers.

## 2.6. Purchase Intention

Purchase Intention refers to consumer behavior which is an individual's expressed willingness or plan to buy a particular product or service in the future. It is a crucial concept in understanding consumer decision-

making processes and predicting future sales. Regarding the Theory of reasoned action (TRA) indicated that Purchase intention is influenced by a variety of factors, including attitudes, Subjective norm, Perceived behavioral control (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). While attitude belongs to the assessment of products, intention refers to an individual's drive or determination with regards to their willingness to engage in a specific behavior (Shahbaz Shabbir et al., 2009).

## 3. Literature Review

Several studies in many countries have found that attitudes have a significant influence on Electric Vehicles (EVs) purchase intention. Previous studied of Yeğın and Ikram's (2022) research about "Consumers' Electric Vehicle Purchase Intentions in Turkey" indicated that attitude has a significant impact on Electric Vehicle Purchase Intentions. The result of this study highlighted in the part of positive attitude toward functional efficiency, price, performance of Electric Vehicle (Yeğın & Ikram, 2022). The study "Consumers Purchase Intentions of Green Electric Vehicles in Taiwan", Dutta & Hwang (2021) found that attitude has significant affect toward Electric Vehicles (EVs) purchase intention. The main factor that inspires the positive attitude is mass media in Taiwan (Dutta & Hwang, 2021). In addition, researcher found other previous studied which are also support this relationship including Park, E., Lim, J., and Cho, Y. (2018), Tu and Yang (2019), Malik and Yadav, (2020), Jayasingh, Girija, & Arunkumar (2021), and Shakeel, (2022).

**Hypothesis 1 (H1):** There is significant influence of attitude on purchase intention toward "BYD" Electronic Vehicles of office workers in Bangkok.

A number of studies have found that subjective norms have a significant influence on purchase intention. Regarding Dutta and Hwang (2021)'s study





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also mentions to subjective norm which referred the TRA that Subjective norm has the directly influence to the increasing of good intention for Electric Vehicles adoption (Dutta & Hwang, 2021). Moreover, the result of Tu and Yang (2019) studied also support the relationship between Subjective Norm and Purchase Intention. The result of this study shows that the opinions of the external subjective norm such as the opinion of experts, the opinion of society are more motivate consumer purchase intention. The evidence of Hasan, 2021, Malik & Yadav, 2020, and Jayasingh & Girija & Arunkumar (2021) studies result also determined the positive value of relationship between Subjective Norm and Purchase Intention.

**Hypothesis 2 (H2):** There is significant influence of subjective norm on purchase intention toward “BYD” Electronic Vehicles of office workers in Bangkok.

The study of Indian environmental concern toward green vehicle purchase intention implied that Indian consumers realize about environmental problems and support the green vehicle such as Electric Vehicle (EV) adoption (Malik & Yadav, 2020). Another of Indian student's Electric Car Purchase Intention study result have agree with Malik & Yadav, 2020 that environmental concern of Indian people influence EV purchase intention (Pailwar, 2022). These two previous studies aligned with the study about “Public Intentions to Purchase Electric Vehicles in Pakistan” that examine the influence of environmental concern toward Electric Vehicle (EV) purchase intention. Pakistan takes seriously concern about environmental awareness and be voluntary to preserve the environment by using sustainable transportation (Lee et al., 2021). Researcher have discovered more others study that have the same result to support the more strongest of this relationship consist of Dutta & Hwang (2021), Hasan (2021), Brinkmann & Bhatiasevi (2021), and Jayasingh & Girija & Arunkumar (2021). These studies result confirmed

that Environmental Concern have significant influence toward EV Purchase Intention.

**Hypothesis 3 (H3):** There is significant influence of environmental concern on purchase intention toward “BYD” Electronic Vehicles of office workers in Bangkok.

The study of “Purchase Intention for Electric Vehicles Among Young Adults in Thailand” implied that Thai government supports the purchase of EVs can play important role to conduct policies to support automotive sector and EV consumers for example reducing excise taxes for EVs that are produced in the country (KPMG, 2018). The automotive sector is heavily influenced by environmental and infrastructure politics (Kissinger, 2017). By lowering excise taxes on EVs made in Thailand, for instance, the Thai government supports the purchase of EVs (Brinkmann & Bhatiasevi, 2021).

**Hypothesis 4 (H4):** There is significant influence of government policy on purchase intention toward “BYD” Electronic Vehicles of office workers in Bangkok.

Charging infrastructure has a substantial influence on Electric Vehicle (EV) purchase intention. The availability, accessibility, and convenience of charging options play a pivotal role in shaping consumers' decisions to embrace EVs (Pailwar, 2022). The significant problem that Metais, M.O., & Jouini, O.a, & Perez, Y.a, & Berrada, J.b and Suomalainen, E.b (2022)'s study indicated that one of the most significant barriers to EV adoption is “range anxiety.” This term describes the fear that an EV's battery will run out before reaching a charging station. Limited charging infrastructure exacerbates this anxiety, dissuading potential buyers who worry about getting stranded without access to charging (Metais et al., 2022). The study of Dutta & Hwang (2021) and Jayasingh & Girija & Arunkumar (2021) show that Charging Infrastructure also influences Perceived behavioral control related to TPB Theory which is the theory leading to purchase

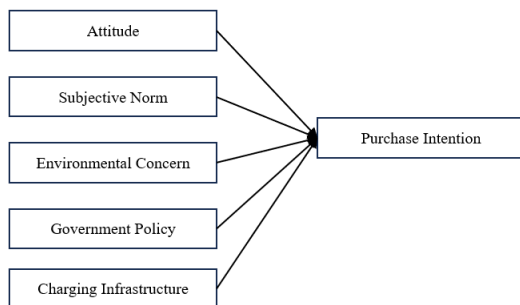


intention (Dutta & Hwang, 2021; Jayasingh et al., 2021). The result of previous study about “Public Intentions to Purchase Electric Vehicles in Pakistan” support the relationship between charging Infrastructure and Purchase Intention. The result of this study examines that the purchase intention might be reduced when consumers are not confident in charging infrastructure (Lee et al., 2021). The study about influencing factors of EV purchase intention in China also concur that the convenience of charging facilities has positive impact Electric Vehicle (EV) purchase intention (Bai & Tan, 2021; Hasan, 2021; Malik & Yadav, 2020).

**Hypothesis 5 (H5):** There is significant influence of charging infrastructure on purchase intention toward “BYD” Electronic Vehicles of office workers in Bangkok.

#### 4. Research Framework

The conceptual framework was presented in Figure 1, which is developed based on previous study and theoretical literatures. There are five independent variables including attitude, subjective norm, environmental concern, government policy and charging infrastructure.



**Figure 1:** Conceptual Framework

#### 5. Research Methods

This study is conducted using primary and secondary data collection methods. Regarding the primary data collection method, the researcher acquired raw information directly from original sources which came from target respondents. This research's secondary data collection process is mainly based on literature review (TPB, TRA, PEST) and previous journal articles as discussed in Section from 2.1 to 3.

This study utilized survey which is used to quickly gain general details about the population of interest to help prepare for a more focused, in-depth study using cross sectional data. Several quantitative analyses are used including Reliability Analysis, Descriptive Statistic Analysis, and Multiple Linear Regression to achieve research objective. The first section is about screening question which are ‘Do you have any intention to purchase “BYD” electric vehicle in the future?’ and ‘Are you currently working in an organization located in Bangkok city?’ in order to screen qualified respondents based on research scope. Secondly, demographic information includes gender, age, education level, income, price of the car in order to describe general characteristics of the respondents. The third section includes scale items measuring all five independent variables and one dependent variable. .

**Table 1:** Operationalization of Variables

Variables	Item No.	Measurement Items	Measurement Scale	Sources
Attitude (AT)	AT 1	I believe that electric vehicles would be helpful to the environment in the long term.	Interval Scale (Likert 1-5)	Dutta and Hwang, (2021)
	AT 2	I believe that I will be satisfied if I use environmental-friendly vehicle.	Interval Scale (Likert 1-5)	By researcher



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Variables	Item No.	Measurement Items	Measurement Scale	Sources
	AT 3	I believe that driving an electric would reduce my cost in the long term.	Interval Scale (Likert 1-5)	By researcher
	AT 4	I believe that "BYD" electric vehicles will become more popular than other internal combustion engine brand in the future.	Interval Scale (Likert 1-5)	By researcher
	AT 5	I believe that people will react positively when they see an "BYD" electric vehicle on the road.	Interval Scale (Likert 1-5)	Malik and Yadav, (2020)
Subjective Norm (SN)	SN 1	Close people around me encourage me to buy "BYD" electric vehicle.	Interval Scale (Likert 1-5)	By researcher
	SN 2	Close people around me encourage me to use environmentally friendly electric vehicle instead of an internal combustion engine vehicle.	Interval Scale (Likert 1-5)	Han, (2015)
	SN 3	I always talking with my close	Interval Scale (Likert 1-5)	Jorgensen, (2015)

Variables	Item No.	Measurement Items	Measurement Scale	Sources
		people about news of "Testa" electric vehicle.		
	SN 4	People around me are considering buying "BYD" electric vehicle as a next vehicle.	Interval Scale (Likert 1-5)	Hasan, (2021)
	SN 5	People around me who already own "BYD" electric vehicle and recommend me to buy an "BYD"	Interval Scale (Likert 1-5)	By researcher
Environmental Concern (EC)	EC 1	To protect the environment, people should change their behavior to reduce climate change effect.	Interval Scale (Likert 1-5)	Kim et al, (2018)
	EC 2	I concern that climate change will affect my health and my family health in the long term.	Interval Scale (Likert 1-5)	By researcher
	EC 3	I believe that the environmental problems will become a serious	Interval Scale (Likert 1-5)	Wang et al, (2016)



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Variables	Item No.	Measurement Items	Measurement Scale	Sources
		problem in the near future.		
	EC 4	I think internal combustion engine vehicle using is the one factor to increasing of air pollution in the country.	Interval Scale (Likert 1-5)	Pailwar, (2022)
	EC 5	I prefer to purchase sustainability and eco-friendly product.	Interval Scale (Likert 1-5)	Pailwar, (2022)
Government Policy (GP)	GP 1	I believe that government's incentive policy such as tax incentives on buying electric vehicle can increase EV consumption volume in the country.	I believe that government's incentive policy such as tax incentives on buying electric vehicle can increase EV consumption volume in the country.	Dutta and Hwang, (2021)
	GP 2	I believe that government's financial incentive policy such as loan interest rate of buying electric vehicle increases can increase EV consumption	I believe that government's financial incentive policy such as loan interest rate of buying electric vehicle increases can increase EV	Dutta and Hwang, (2021)

Variables	Item No.	Measurement Items	Measurement Scale	Sources
		volume in the country.	consumption volume in the country.	
	GP 3	I think the government incentive about research and development in EV technologies will develop EV manufacturing in Thailand.	I think the government incentive about research and development in EV technologies will develop EV manufacturing in Thailand.	By researcher
	GP 4	I believe that the government incentive about EV infrastructure such as charging area will increase more consumer confident about EV.	I believe that the government incentive about EV infrastructure such as charging area will increase more consumer confident about EV.	By researcher
	GP 5	I can decide to purchase an electric vehicle instead of internal combustion engine vehicle easier if I get incentive benefit from government.	I can decide to purchase an electric vehicle instead of internal combustion engine vehicle easier if I get incentive benefit from government.	By researcher





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Variables	Item No.	Measurement Items	Measurement Scale	Sources
Charging Infrastructure (CI)	CI1	I think that the wide range of EV charging stations can influence consumers buying EVs.	Interval Scale (Likert 1-5)	By researcher
	CI2	The number and coverage of EV charging stations is the main factor that I concern about EV purchasing.	Interval Scale (Likert 1-5)	By researcher
	CI3	Currently, I can accept the charging speed of EV technology.	Interval Scale (Likert 1-5)	Pailwar, (2022)
	CI4	I think that EV charging at home is important, and I can accept the cost of home charging installation.	Interval Scale (Likert 1-5)	By researcher
	CI5	I prefer the charging facility at my working place and community mall.	Interval Scale (Likert 1-5)	Dutta and Hwang, (2021)
Purchase Intention (PI)	PI1	I prefer to purchase an electric vehicle in the near future.	Interval Scale (Likert 1-5)	By researcher
	PI2	I will recommend people around me to purchase "BYD"	Interval Scale (Likert 1-5)	By researcher

Variables	Item No.	Measurement Items	Measurement Scale	Sources
		electric vehicles instead of conventional vehicles.		
	PI3	I think that "BYD" are more attractive than other electric vehicles brand.	Interval Scale (Likert 1-5)	By researcher
	PI4	I'm interested about campaign or promotion of "BYD".	Interval Scale (Likert 1-5)	Jayasingh et al., (2021)
	PI5	I perceived that the price of "BYD" is appropriate for the quality.	Interval Scale (Likert 1-5)	By researcher

The researcher employed non-probability sampling methods which are convenience sampling method and snowball sampling. Because of the limited time available for data collection, researchers aspire to use a non-probability sampling method. According to Krejcie and Morgan (1970) table, the minimum sample size is 384 for 1 million population. The sample size of this study has 400 people who work in organizations located in Bangkok, based on the number of employees in Bangkok 5,642,757 people (Population Number Classified by Labor Status and Gender by Province, 2022., 2565) exceeding minimum sample size of 384. The method biases to increase the response rate, social desirability bias, and common method bias were not dealt which are limitation of the current study.

The pilot test result from 30 respondents uses Cronbach's Alpha methodology to evaluate the five independent variables which are attitude, subjective



norm, environmental concern, government policy, and charging infrastructure. The results determined that Cronbach's Alpha scale of attitude is 0.672, scale of subjective norm is 0.731, scale of environmental concern is 0.714, scale of government policy is 0.851, and scale of charging infrastructure is 0.705. The evaluation of a dependent variable which is purchase intention is 0.818. The overall result of construct's internal consistency shows that the research's questionnaire has reliability to be accepted regarding a general accepted rule is that  $\alpha$  of 0.6-0.7 indicates an acceptable level of reliability, and 0.8 or greater a very good level. (Hulin, Netemeyer, & Cudeck, 2001).

**Table 2:** n = 30

Variables	Cronbach's Alpha	Number of Item
<b>Dependent Variable</b>		
Purchase Intention	0.818	5
<b>Independent Variables</b>		
Attitude	0.672	5
Subjective Norm	0.731	5
Environmental Concern	0.714	5
Governance Policy	0.851	5
Charging Infrastructure	0.705	5

The survey questionnaire data were collected 400 people who are working in organizations located in Bangkok. The questionnaires were distributed via google form.

## 6. Result and Discussion

### 6.1. Descriptive Analysis of Demographic Data

According to the questionnaire that the researcher has distributed to target respondents who are working with an organization located in Bangkok and interested in the electronic vehicle adoption. Questionnaires were

conducted by 444 respondents which participated 111% of sample size, 44 invalid respondents eliminated. Therefore, 400 valid respondents 90.91% of sample size are used for data analysis.

The number of total respondents 400 respondents including Male 35.5% of all respondents, Female 64.5% all respondents. The larger age range of target respondents is 20 - 30 years old from 246 respondents or 61.5% of all respondents. From survey, highest education level of 306 target respondents calculated to 76.5 % of 400 respondents is bachelor's degree. The majority of 400 target respondents separate to respondents who have income between 50,001 - 80,000 THB calculated to 37.0%, followed respondents who have income between 20,001 - 50,000 THB 28.5% of all target respondents, respondents who have income between 80,001 - 100,000 THB 12.0% of all target respondents, 11.3% of all target respondents have income lower than 20,000 THB, 11.3% of all target respondents have income more than 100,000 THB. According to the survey, the majority of respondents with 241 respondents or 60.3% of all target respondents looking for a car price between 600,000 - 1,000,000 THB, the second of respondents with 131 respondents or 32.8% looking for car price between 1,000,001 - 1,500,000 THB, 6.9% of respondents looking for car price more than 1,500,000 THB.

**Table 2:** Show the frequency distribution and percentage of demographic information from sample size 400 respondents as follow:

Demographic Factors	Frequency	Percent
<b>Gender</b>		
Male	142	35.5 %
Female	258	64.5 %
<b>Total</b>	<b>400</b>	<b>100%</b>
<b>Age</b>		
20 - 30 years old	246	61.5 %
31 - 40 years old	131	32.8 %
41 - 50 years old	20	5.0 %
Over 50 years old	3	0.8 %
<b>Total</b>	<b>400</b>	<b>100%</b>
<b>Highest Education Level</b>		

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Demographic Factors	Frequency	Percent
Lower than bachelor's degree	23	5.8 %
Bachelor's degree	306	76.5 %
Master's degree	70	17.5 %
Higher than master's degree	1	0.3 %
<b>Total</b>	<b>400</b>	<b>100%</b>
<b>Income</b>		
Lower than 20000 Baht	11.3 %	11.3 %
20,001 - 50,000 Baht	28.5 %	28.5 %
50,001 - 80,000 Baht	37.0 %	37.0 %
80,001 - 100,000 Baht	12.0 %	12.0 %
More than 100,000 Baht	11.3 %	11.3 %
<b>Total</b>	<b>400</b>	<b>100%</b>
<b>Price of the car that target respondent looking for.</b>		
600,000 - 1,000,000 Baht	241	60.3 %
1,000,001 - 1,500,000 Baht	131	32.8 %
1,500,001 - 2,000,000 Baht	22	5.5 %
More than 2,000,000 Baht	6	1.5 %
<b>Total</b>	<b>400</b>	<b>100%</b>

## 6.2. Descriptive Analysis of Demographic Data

The results among 400 respondents have highest mean of attitude is "I believe that I will be satisfied if I use environmental-friendly vehicle." which is 4.35. conversely, the lowest mean is "I believe that "BYD" electric vehicles will become more popular than other internal combustion engine brand in the future." which is 3.85. The highest standard deviation of attitude is "I believe that "BYD" electric vehicles will become more popular than other internal combustion engine brand in the future." which is 0.798. The lowest is "I believe that I will be satisfied if I use environmental-friendly vehicle." which equals 0.662.

The highest mean of subjective norm is "Close people around me encourage me to use environmentally friendly electric vehicle instead of an internal combustion engine vehicle." which equals 4.00. However, the lowest mean is "I always talking with my close people about news of "BYD" electric vehicle.", and "People around me are considering buying "BYD"

electric vehicle as a next vehicle." which equals 3.33. The highest standard deviation of subjective norm is "People around me who already own "BYD" electric vehicle and recommend me to buy an "BYD":." which is 0.987. Inversely, the lowest is "Close people around me encourage me to buy "BYD" electric vehicle." which is 0.789.

The highest mean of environmental concern is "I believe that the environmental problems will become a serious problem in the near future." which equals 4.62. However, the lowest mean is "I prefer to purchase sustainability and eco-friendly product." which is 4.05. The highest standard deviation of environmental concern is "I prefer to purchase sustainability and eco-friendly product." which is 0.746. Inversely, the lowest is "I believe that the environmental problems will become a serious problem in the near future." which is 0.577.

The highest mean of government policy is "I believe that the environmental problems will become a serious problem in the near future." which equals 4.62. However, the lowest mean is "I prefer to purchase sustainability and eco-friendly product." which is 4.05. According to the standard deviation, the highest is "I prefer to purchase sustainability and eco-friendly products." which is 0.746. Inversely, the lowest is "I believe that environmental problems will become a serious problem in the near future." which is 0.577.

The highest mean of charging infrastructure is "I believe that I will make the decision to buy EV easier if Thailand has more widely range of EV charging stations." which equals 4.47. However, the lowest mean is "I believe that I will make the decision to buy EV easier if charging technical of EV has more speed than currently." which is 4.14. According to the standard deviation, the highest is "I believe that I will make the decision to buy EV easier if charging technical of EV has more speed than currently." which is 0.874. Inversely, the lowest is "I believe that I will make the



decision to buy EV easier if Thailand has more widely range of EV charging stations.” which is 0.625.

### 6.3. Hypothesis Testing Result

The analysis result by multiple linear regression which find significant influence of Attitude, Subjective Norm, Environmental Concern, Government Policy, Charging Infrastructure on purchase toward “BYD” Electronic Vehicles of office workers in Bangkok. Regarding all hypotheses, attitude (H1), subjective norm (H2), charging infrastructure (H5) analysis result present the significant level or called P-value from this study is less than 0.001, according to the P-value should be less than 0.05. Therefore, the result can be implied that null hypothesis of these 3 hypotheses was rejected. On the other hand, environmental concern (H3) and government policy (H4) analysis results show that the significant level or called P-value from this study are 0.306, and 0.292 as sequence. P-value of these 2 hypotheses become more than 0.05. Therefore, the result can be implied that null hypothesis could not be rejected.

The result of standardize coefficient result indicates that purchase intention toward “BYD” will be increased 32.39% if attitude increases 1 unit as referred in  $\beta$  result equal to 0.3239, purchase intention toward “BYD” will be increased 43.51% if subjective norm increases 1 unit as referred in  $\beta$  result equal to 0.4351, and purchase intention toward “BYD” will be increased 15.70% if charging infrastructure increases 1 unit as referred in  $\beta$  result equal to 0.1570. Furthermore, the regression analysis result indicated that this model has variance 58.2% at 95% of confident level as described with R-square from analysis has 0.582 and this model was significant with P-value less than 0.05.

In summary, the result of this study can be summarized that there is a significant influence of attitude (H1), subjective norm (H2), charging infrastructure (H5) on purchase intention toward “BYD”

Electronic Vehicles of office workers in Bangkok but there is no significant influence of environmental concern (H3) and government policy (H4) on purchase intention toward “BYD” Electronic Vehicles of office workers in Bangkok. In addition, the result from the value of variance inflation factor (VIF) this multicollinearity is 2.10 for H1, 1.53 for H2, 1.76 for H3, 2.05 for H4, and 1.88 for H5. These 3 VIF are less than 5, indicated that no issue occurred in multicollinearity.

**Table 3:** Indicate the result of Multiple Linear Regression Analysis Summary for Hypotheses 1, 2, 3, 4 and 5

Variables	B	SE B	$\beta$	p	VIF
Attitude	0.3884	0.0566	0.3239	< .001	2.10
Subjective Norm	0.4308	0.0400	0.4351	< .001	1.53
Environmental Concern	-0.0568	0.0553	-0.0443	0.306	1.76
Government Policy	0.0560	0.0531	0.0492	0.292	2.05
Charging Infrastructure	0.1856	0.0528	0.1570	< .001	1.88

*Noted:*  $R^2 = 0.582$ ,  $Adjusted R^2 = 0.577$ ,  $*p < 0.05$ .  
*Dependent Variable = Purchase Intention*

### 6.4. Discussion

The analysis result of this study indicated that subjective norm is the strongest driver which significantly influenced “BYD” Electronic Vehicle purchase intention. The significant value of relationship between subjective norm and purchase intention is less than 0.001 ( $P < 0.001$ ) which met the criteria that significant value must less than 0.05. In addition, the standardized coefficient ( $\beta$ ) of subjective norm factor towards “BYD” Electronic Vehicle purchase intention is 0.435 which is the highest score among other factors. It means purchase intention will be increased 43.5% if subjective norm increase 1 unit. The result of this study agreed with Dutta & Hwang, (2021) which study



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Consumers Purchase Intentions toward Green Electric Vehicles of Taiwanese found that subjective norm is the factor that has positively influenced purchase intention of Electric Vehicle with significant value less than 0.001. The result of Tu & Yang, (2019) presented the significance of subjective norm factors that impact to purchase intention. The result of study found that subjective norm has positive influence on behavioral intentions which determine that the ability of consumers to access the resources needed to purchase electric vehicles has the strongest influence on their behavioral intention.

The relation between Attitude and “BYD” Electronic Vehicle purchase intention is the second strongest relationship in this study. The result of the study supported previous research findings. Yeğın and Ikram (2022) indicated that attitude has a positive and significant effect on Electric Vehicle Purchase with significant value lower than 0.001. To conform with this study, the previous study of Park et al., (2018) also indicated that three factors can motivate driver’s intention to use Electric Vehicle including satisfaction, usefulness, and attitude which has the significant value between attitude and intention lower than 0.001.

The last factor that influences “BYD” Electronic Vehicle purchase intention is Charging Infrastructure. The analysis result determined that Charging Infrastructure is the factor that impact on “BYD” Electronic Vehicle purchase intention as the third level of significant from all variables in this study. The result of previous study about Indian EV purchasing intention has conformity result of this research. The previous result showed that Indian target respondent prefer Charging Convenience to motivate their Electric Vehicle purchasing intention with the significant value lower than 0.05 (Pailwar, 2022). In addition, the study about Electric Vehicle purchase intention of target respondent in Suwon City, Korea presented that Charging Infrastructure and service can directly contribute to making the decision to purchase an electric vehicle of Suwon people with significant value lower than 0.001 (Kim et al., 2022).

In summary, the result of this study that aligned with previous studies proving that Attitude, Subjective Norm, and Charging Infrastructure significantly influenced “BYD” Electronic Vehicle purchase intention.

On the other hand, the result of these two factors found that Environmental Concern and Government Policy have no significance on “BYD” Electronic Vehicle purchase intention. The finding of this study does not correspond with previous studies which found that Environmental Concern and Government Policy have positive significant on electric purchase intention (Malik & Yadav, 2020, Brinkmann & Bhatiasevi, 2021, Jayasingh et al., 2021, Lee et al., 2021, Yeğın & Ikram, 2022, Dutta & Hwang, 2021, Pailwar, 2022, Shakeel, 2022). According to the study result which against previous studies of secondary data, the researcher analyzed that the environmental safety trend is the normalized behavior of people in the world nowadays but it’s not the main factor that motivates consumer purchase intention in some countries that have different standards of living. Moreover, Subsidization from government policy may not be sustainable. Therefore, Electric Vehicle purchase intention may depend on other important factors than Environmental Concern and Government Policy.

## 7. Conclusion and Recommendations

The electric vehicle (EV) market in Thailand is still in early stages, presenting a unique set of challenges and opportunities. BYD has set its sights on this budding market in Thailand and has official entered in Thailand market since August 2022 (Princewill, 2022). The recommendation that research would like to suggest BYD to succeed in the early stages of Thailand’s EV market which is aligned with the study result consist of three focus areas including localization focus to build positive customer experiences, customer-centric approach to build the trust and loyalty, and technological innovation to explore the new





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opportunity and come over competitors in the market, strategic of partnerships to improve market condition.

Regarding the study result, the subjective norm and attitude are the highest factors that influence “BYD” Electronic Vehicles purchase intention. To conduct positive perspective from subjective norm, BYD can focus more on product localization. This entails customizing products and services to align with the specific preferences and needs of the Thai consumers. Local production facilities must be established to reduce costs, enhance community engagement, and ensure a seamless experience for the Thai customer. Furthermore, BYD should focus on local material sourcing and workforce employment to contribute positively to the Thai economy while solidifying its reputation as a responsible corporate entity. This recommendation reinforces BYD’s project about established EV plant in Thailand (“China’s BYD Signs Land Deal to Build First EV Plant in Thailand,” 2022). Moreover, customer-centric is the significant strategy to conduct the subjective norm and increase the good attitude toward BYD brand. A good experience of after-sales service, competitive warranties, and complimentary ownership experience should be important keys of BYD’s approach. BYD can provide better customer experience including comprehensive warranty package, the convenience of access service centers, timely and efficient maintenance services. In addition, to come over competitors in the market, BYD should continue to develop their technology and innovation to explore opportunities including the new usable and attractive function, energy storage solutions, faster charger technology.

Lastly recommendation about charging infrastructure, BYD can use the strategic partnerships with local businesses, government agencies, and influential stakeholders to improve the charging infrastructure in Thailand and come over market conditions. For example, investment with Thai company who involved with EV charging infrastructure to develop EV charging station in Thailand to coverage in all areas.

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