

Influential Factors on Willingness to Pay for a Battery Electric Vehicle in Bangkok, Thailand

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Abstract

Electric vehicles (EVs) or battery electric vehicles (BEVs) are expected to be the future of the automotive industry. Since they offer benefits in terms of energy consumption, maintenance costs, and pollution emission, EVs have been promoted as an alternative choice to create a sustainable way of using vehicles and energy. An electric vehicle is defined as a vehicle that fully uses electricity as the power source. Thailand is at the beginning phase of EVs since only a few brands have introduced fully electric vehicles in Thailand. An assessment of the willingness to pay for this type of vehicle has not been conducted in Thailand yet. The objective of this research is to identify the influential factors that affect the willingness to pay for an electric vehicle. A questionnaire survey was developed and distributed randomly to 400 people in Bangkok and the metropolitan area. Multiple regression is employed to identify the variables affecting the amount of money people are willing to pay for an electric vehicle. Significant factors are average family income, number of cars in the family, age, etc. The findings indicate that on average people are willing to pay about 910,000 Baht for an EV car. Recommendations for policymakers and auto manufacturers are also discussed.

Keywords: Willingness to pay, electric vehicle, multiple regression, alternative energy.

1. Introduction

In recent years, electric vehicles (EVs) have become a hot issue in the automotive industry in many parts of the world. EVs are cars that are powered by an electric motor, using a battery as the power source. They are designated as battery electric vehicles (BEVs) (Brennan & Barder, 2016). In Asia, China is known as a fast-growing market for EVs (Yang, Zhang, Fu, Fan, & Ji, 2018). Many policies have been implemented to support the growth of EV markets, including tariffs and tax reduction (Lai, Liu, Sun, Zhang, & Xu, 2015; Steen, Schelven, Kotter, Twist, & Deventer, 2015; Yang et al., 2018). Cost significantly influences the buying decision of a vehicle. Our research evaluates the influential factors on willingness to pay (WTP) for a BEVs in Thailand. The measurement of WTP can be a supportive guideline for automotive firms and the Thai government to set up an acceptable total price for BEVs that can truly support the development of an EV market in Thailand. EVs dramatically generate change in the automobile industry through technologies and innovations (Brennan & Barder, 2016). Since 2000, the demand for vehicles has been increasing annually (Jeerapaet, 2012). Therefore, the demand for fossil fuel has also been increasing since it is a major and reliable energy source for vehicles. In consequence, the automobile became one of the major factors impacting global warming (JAMA Network, 2014). This has led people to seek cleaner energy supplies that do not pollute the environment and possess sustainability.

Electric cars can be a benefit for the local environment in terms of emissions and noise pollution (Klößner, Nayum, & Mehmetoglu, 2013). Moreover, BEVs can be used for future sustainable mobility (Pelegov & Pontes, 2018) as long as electric power is renewable energy. Nowadays, BEVs have become more popular in many major countries in the world as they promote the use of alternative energy. BEVs have a direct advantage in maintenance and running cost. BEVs are also instrumental in reducing the fossil fuel consumption that has caused major problems in the world (Brennan & Barder, 2016). EVs become more popular as the technology grows and is accepted by people as the norm. With EV technology improving, such as for instance, the increase in energy storage and a lower production cost, automakers have introduced newer generations of electric automobiles. According to James Ayre (2016), the EV market is increasing year by year. The growth rate in the European region, US, and Japan are 27%, 19%, 36%, respectively.

However, consumer acceptance of EV is still a crucial factor that contributes to the success of an EV (Ozaki & Sevastyanova, 2011). Consumers' willingness to pay for an electric vehicle is still in doubt and needs to be considered, especially within Thailand. According to the research of Diamond (2009), the primary barriers for adopting a new technology are the lack of knowledge, high initial costs, and low-risk tolerance. Though the cost of the technology is still high, the interest in EVs has increased in recent years. Its market share, however, remains small. As the price of gasoline increased, people tended to move toward EVs. People are thinking about both the pros and the cons of EVs, and changing their willingness to pay for EV cars.

2. Literature Review

Influential Factors in Buying Decision

Research indicates that demographic data, including age, gender, marital status, etc., significantly influence the WTP for any products and services (Samdin, 2008; Thanasuta & Metharom, 2015). Besides demographic data, the relevant literature focuses on the variables that affect the willingness to pay for an electric vehicle in Thailand. According to Bockarjovaab and Steg (2014), the most common barriers for the adoption of EVs are related to both monetary and non-monetary costs. Those costs are compared with the use of a conventional vehicle. Therefore, price plays an important role in a customer's perception and WTP for BEVs. Thirty percent of the buyer's concern when purchasing a new vehicle purchase is price related. However, the purchase price of an EV is dramatically higher than an internal combustion engine (ICE) vehicle in the same class, but EVs tend to have a lower running cost. Since EVs consume electricity, the cost of running a BEV is regarded as an advantage for this new type of vehicle.

Musti and Kockelman (2011) claim that the three most important attributes, which customers are concerned with when buying a new vehicle, are price, fuel economy, and reliability of the vehicle. Durability is a factor that is of concern (Jacobs, Laurenz, Keuchel, & Thiel, 2016). It is how the car can stay in good condition after a period of time. Since a BEV is a new type of vehicle, the customer may expect a similar rate of durability as that of an ICE car. The average usage time for a car is 8 years (Jacobs et al., 2016). To maintain an EV, changing the battery is costly when compared with conventional ICE maintenance. Infrastructure for supporting the use of a vehicle is also an important customer variable, especially in the EV market. The number of recharge locations within an area is directly related to the proportion of driving an EV (Caperello & Kurani, 2012). Therefore, charging infrastructure is a key contributor to the development of the EV market (Brown, Pyke, & Steenhof, 2010).

In their study, Krupa et al. (2014) found that 71.7 percent of the respondents have higher motivation to buy a plug-in hybrid electric vehicle (PHEV) when charging stations are frequently available on their travel routes. Nowadays, people are concerned about the environment (Cherian & Jacob, 2012). According to Brennan and Barder (2016), EVs can reduce the environmental impact when compared with ICE vehicles. The probability of buying an EV increases when the customer considers that the use of the EV can lead to a decrease in environmental impact (Bockarjovaab & Steg, 2014). Besides environmental issues, social-norms are an influential factor if an individual perceives that other members in their society are in favor of adoption (Cialdini & Trost, 1998). In contrast, the perception that very few people use EVs could have the opposite effect and decrease the likelihood of adoption. Low social desirability of EV use could serve as a potential barrier to the adoption of EVs (Smith et al., 2012). The knowledge and perspective of a customer are also an influence on the consumption and WTP of a product (Díaz, Pleite, Paz, & Garcia, 2012). A study by Zareie and Navimipour (2016) confirms that environmental knowledge has a direct relationship with customer behavior. Therefore, knowledge influences a customer's decision in many aspects.

Table 1 shows the influential factors that contribute to a buying decision for EVs. They can be classified into four main groups. The first is the vehicle itself: performance, durability, and range. Other related factors, such as entertainment functions and features, can also influence the buying decision of a vehicle. Price is one of the top priorities for any buying decision. It includes both the initial and the long-term spending for a vehicle (total ownership cost). External factors, in this case, are infrastructure, environmental issues, and social norms. The latter are individual factors that mostly depend on the individual customer who decided to buy a vehicle. All these criteria are thus employed in this study to develop a questionnaire for determining the influential factors for buying an EV.

Table 1: Influential Factors for Buying EVs (Cialdini & Trost, 1998; Bockarjovaab & Steg, 2014; Jacobs et al., 2016; Díaz et al., 2012; Zareie & Navimipour, 2016)

Group	Component
Vehicle-related factors	Performance, durability, range
Price-related factors	Price, cost, consumption
External factors	Infrastructure, environmental issues, social norms
Individual factors	Knowledge-based, customer perspective

Willingness to Pay (WTP)

Willingness to pay (WTP) is an important factor that depends on whether a person is satisfied with a specific product or service at a certain pricing level. A person's WTP is determined by personal perspective toward the worthiness of the product that the person will purchase (Rödiger, Plaßmann, & Hamm, 2016). This technique originally was employed to measure environmental values in terms of monetary value. It was then applied in many fields, including tariffs, alternative policies, and cost-benefit analysis to support the decision-making process (Rödiger et al., 2016) and support pricing strategy development (Anselmsson, Bondesson, & Johansson, 2014). The identification of the WTP can support the price that was set up for optimizing the profit by increasing the sales volume and adapting to the right price (Anselmsson et al., 2014).

In this digital era, information about products is easily accessed by customers. Consumers then think and re-think about the worthiness of a thing (whether it will fulfill their requirements or not). A consumer calculates the price, compared with its usage and cost of maintenance. In the case of an EV car, consumers will compare the usage and the price of an

EV car to a normal fuel car. They want to see how much they can save from making a different choice, both in the short term and the long term. Consumers carefully consider every factor they know in order to support their decision. Small variations of prices and the consumers' behavior can have some effects on revenues and profits, which impact an individual's willingness to pay. To conclude, the pricing theory here is based on customers' willingness to pay from their own standpoint of buying an asset.

3. Methodology

Method of Approach and Data Collection

To collect the primary and secondary data for this research, two research methods are employed. The first method is documentary research from literature surveys, journals, articles, previous research works, and case studies. The data are collected from published data on an online database. Articles, journals, and previous research are employed to measure the factors that influence the willingness to pay for a BEV. Then, an empirical survey is employed as the second method. A questionnaire survey is given randomly people who have income within the Bangkok area. Surveys are conducted both on paper and online.

Instruments or Materials

The instruments used for this study are survey questionnaires. The questionnaire is divided into three main sections.

- Section 1: Demographic Data – In the first section, personal information is asked for, such as the type of a personal-owned car, use of the personal car (distance per day), and any behavior toward buying a car. Demographic information is asked for, such as gender, income, marital status, family size, education level, and family income.
- Section 2: Influential Factors in Buying Decision – In this section, we ask the person about his/her behavior and attributes associated with buying a car, for example, horsepower, luxury, consumption rates, etc. The next questions are about testing the knowledge of EV cars, to observe how much they know about EV cars.
- Section 3: WTP for BEVs – In the last section, we ask and measure the willingness to pay for an EV car, how much they are willing to pay, or even if they are willing to buy an EV car. Lastly, people are asked to suggest an exact price for an EV car.

Figure 1 shows the conceptual model of this study. The independent variables are categorized into two groups and referred to as demographic data and influential factors for buying decision. The dependent variable is the WTP for an EV.

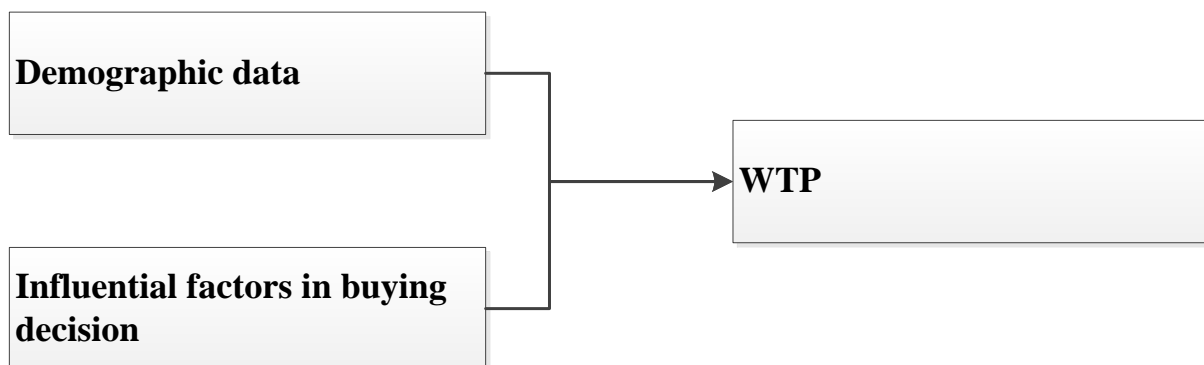


Figure 1: Proposed Conceptual Model of this Study

Population and Sample

To calculate the sample size for this research, the formula of Taro Yamane (1967) is employed with a confidence level of 95%. Yamane’s calculation formula is as follows:

Formula 1:

$$n = \frac{N}{1 + N e^2}$$

Where:

n = sample size

N = size of the population

e = error of 5%

In this case, N is the population of people living in Bangkok; 9,617,000 people (United Nations, 2018). Therefore, the appropriate sample size of this research is equal to 400 respondents. The questionnaires were randomly distributed to people who live in the Bangkok area via both online surveys and paper forms. Distribution took place in many areas of Bangkok, including public places, department stores, and the Motor Show 2018 Exhibition. The respondents were randomly asked to fill in the survey. In addition, an online form was distributed via a social media platform. The respondents were asked to fill in an online form if they preferred to do so (through a QR code). Then the questionnaires were returned and verified, to achieve 400 validated questionnaires. Variables that are significantly important to the decision and willingness to pay demonstrate the reasons for how people decide on buying an EV car.

Testing and Evaluating the Model

The Cronbach’s alpha method is used for the reliability test. It measure the reliability level of the collected data and is a common indicator for measuring the consistency and reliability of collected data. It is suitable for determining the reliability of multiple questions in a survey/questionnaire.

Formula 2:

$$\alpha = \frac{N \times \bar{c}}{\bar{v} + (N - 1) \times \bar{c}}$$

Where:

N = number of items

\bar{c} = average covariance between item-pairs

\bar{v} = average variance

In this project, we use Cronbach’s alpha on the pilot test to test the reliability of the gathered data. The testing, which uses a coefficient from 0 to 1, produced results as expected. The acceptable level of Cronbach’s alpha is at least 0.7 (Tavakol & Dennick, 2011).

Multiple Regression

Multiple regression is an extension of a simple linear regression. It is employed to predict the value of the dependent variable, outcome, target, or criterion variable based on the value of two or more other variables (Nathans, Oswald, & Nimon, 2012). In this project, multiple regression is used to see the actual price that people are willing to pay for their desired EV

car. We used questions to check the amount of money that people are repeatedly willing to spend. In this case, we calculate the actual price that those people who desire an EV car are willing to pay.

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \dots + \beta_nX_n$$

Data Validation

Observations must be independent of each other. It is convenient and suitable to use Durbin-Watson statistics to check variable independence. We use the SPSS program for multiple regression, enhanced by the Durbin-Watson results. The acceptable range of relatively normal statistical values is a value between 1.5 and 2.5. However, a study by Field (2009) shows that there is a definite cause for concern when the values are less than 1 or more than 3. Variance inflation factors (VIF) are employed to describe the multicollinearity in the regression analysis by estimating the inflated regression coefficients, compared with the predictor variables (Hast, Alimohammadisagvand, & Syri, 2015). If the value of the VIF = 1, the data have no correlation. If VIF is 1 < VIF < 5, the data have moderate correlation. Lastly, if VIF is more than 5 to 10, the data have high correlation (Minitab, 2019)

4. Result and Data Analysis

According to the findings of this study, two categories of independent variables are separated into 11 factors, as shown in Figure 2. Each of the factors has a different influence level on the WTP.

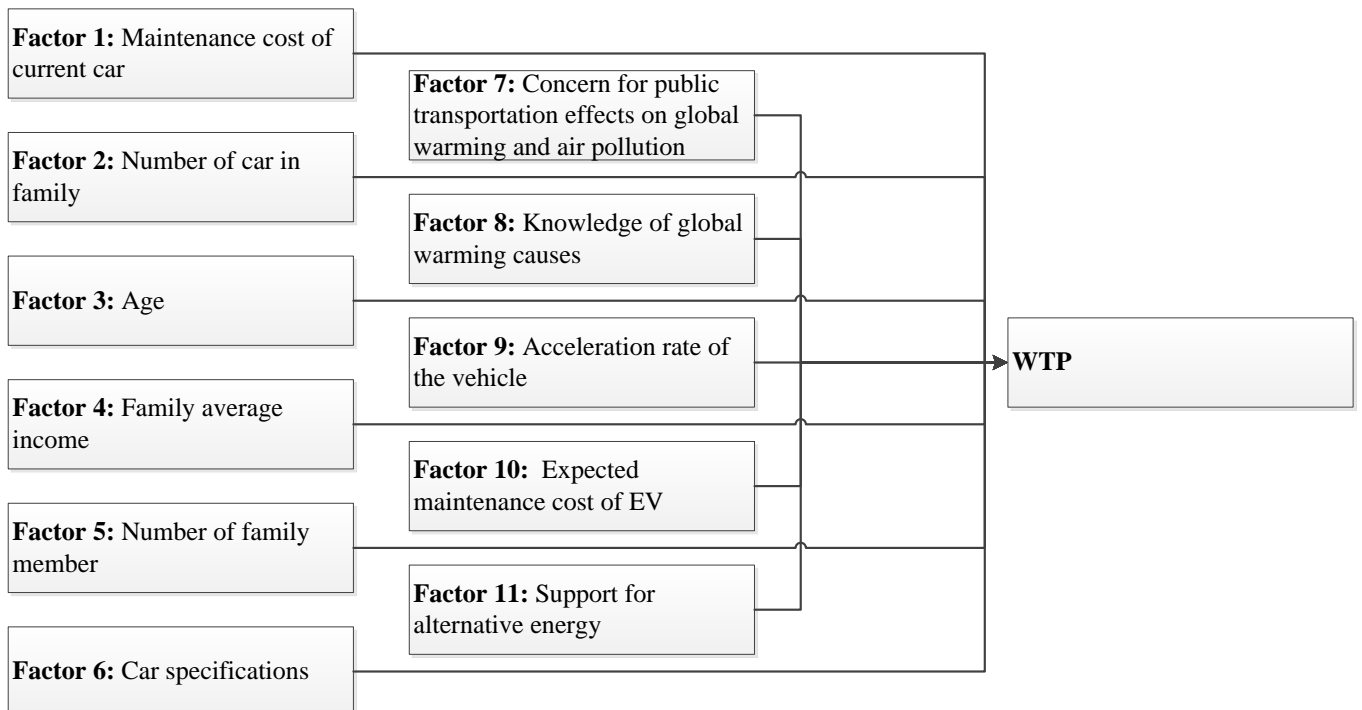


Figure 2: Framework of WTP for EV

Table 2: Description of Each Factor

Factor	Topic	Description
Factor 1	Maintenance cost of current car	The amount of money that a person spends on maintenance for his or her car in a year.
Factor 2	Number of cars in family	Number of cars in a family (living in the same household).
Factor 3	Age	Age of a respondent, measured in years.
Factor 4	Average family income	The average income of the entire family in the same household.
Factor 5	Number of family members	Number of people living in the same household.
Factor 6	Car specifications	Features and options of a car, excluding the performance and engine specification.
Factor 7	Concern for public transportation effects on global warming and air pollution	The respondents are asked to identify their levels of environmental concern for global warming and air pollution created by the public transport sector.
Factor 8	Knowledge of global warming causes	Questions that measure the knowledge of a respondent on global warming.
Factor 9	Acceleration rate of the vehicle	Acceleration is the rate of change of velocity of a vehicle with respect to time (maximum).
Factor 10	Expected maintenance cost of EV	How much money a person is expected to spend if they drive an EV.
Factor 11	Support for alternative energy	The perception of a person on the utilization of other alternative sources of energy (rather than fossil fuel).

Descriptive Results

According to the frequency table of demographic data as shown in Table 3, a total of 400 valid questionnaires were returned. The SPSS program was employed to analyze the data. Most of the respondents already have at least one car (81.8% of the respondents). Age ranges from less than 20 years old to 70 years old because this survey targeted people with the capability to buy a car. Most of the respondents have a bachelor's degree (56.87%) or higher than a bachelor's degree (29.71%). Moreover, the income level is quite high as 33.87% of the respondents have a salary of more than 50,000 Baht and 24.60% have a salary that ranges from 30,001 to 50,000 Baht. In addition, the family income of the respondents ranges from 50,001 to 100,000.

Table 3: Frequency table of demographic data

Variable	Category	Respondents(%)	Frequency
Car (Own)	Have	81.80%	256
	Do not have	18.20%	57
Gender	Male	61.30%	192
	Female	38.70%	121
Age	<=20	1.28%	4
	21-25	13.74%	43
	26-30	15.34%	48
	31-35	9.27%	29
	36-40	13.74%	43
	41-45	8.31%	26
	46-50	9.58%	30
	51-55	10.86%	34
	56-60	16.61%	52
	61-70	1.28%	4
Status	Single	48.56%	152
	Married	49.52%	155
	Etc.	1.92%	6
Education	Below Mathayom 6	2.24%	7
	Mathayom 6 or equivalent	6.07%	19
	Equivalent to Bachelor's Degree	5.11%	16
	Bachelor's Degree	56.87%	178
	Higher than Bachelor's Degree	29.71%	93
Salary	<15000	10.22%	32
	15001-20000	12.46%	39
	20001-25000	8.31%	26
	25001-30000	10.54%	33
	30001-50000	24.60%	77
	>50000	33.87%	106
Average family income	<50000	21.73%	68
	50001-100000	35.46%	111
	100001-150000	12.78%	40
	150001-200000	11.50%	36
	>200001	18.53%	58

Multiple Regression

The results of the multiple regression indicate that the buying decision of an EV is influenced by 11 factors, as shown in Table 4. Those 11 factors can be categorized into four groups, including the demographic group, cost related group, performance group, and environmental group. In the demographic group, age, family income, number of family members, and the number of cars in a family influence the buying decision of an EV. The higher the age and family income, the higher the probability of buying an EV. However, a small family tends to be interested in an EV more than a large family. A family with a higher number of cars has a higher probability of buying an EV. Cost is an important factor for buying an EV.

People do not want to spend a lot of money to maintain their car. Therefore, people that spend more money to maintain their current car have a higher probability of buying an EV. These people expect to spend less money on maintenance on the EV. Performance is another influential factor for making a buying decision on an EV. The acceleration, entertainment system, and safety functions strongly influence the customer, with a p-value of less than 0.05. The environmental group, including concern for public transportation effects on global warming and air pollution, strongly influences the customer decision to buy an EV, with a pvalue of less than 0.05. Therefore, customers expect that the EV can contribute to a sustainable environment when compared with the ICE car.

Table 4: Results of Multiple Regression

Multiple Regression Analysis	Unstandardize d Coefficients	Standardize d Coefficients	t	VIF
Constant	-301,788		-0.729	
Factor 1: Maintenance cost of current car	8.219	0.15	2.725 ***	1.058
Factor 2: Number of car in family	98,716.91	0.213	3.467 ***	1.317
Factor 3: Age	10,240.62	0.168	3.008 ***	1.087
Factor 4: Family average income	0.184	0.107	1.899*	1.113
Factor 5: Number of family member	-57,125.6	-0.11	-1.853*	1.232
Factor 6: Car specifications	114,691.4	0.157	1.973**	2.198
Factor 7: Concern for public transportation effects on global warming and air pollution	-131,278	-0.178	- 2.239**	2.193
Factor 8: Knowledge of global warming causes	154,192.7	0.11	2.002**	1.055
Factor 9: Acceleration rate of the vehicle	-109,787	-0.147	- 1.981**	1.921
Factor 10: Expected maintenance cost of EV	-82,645.5	-0.121	-1.947*	1.355
Factor 11: Support for alternative energy	192,918.4	0.255	3.119 ***	2.336
Cronbach's Alpha = 0.906		DW = 1.956		
Adjusted R-squared = 0.164		F =94.801***highly significant		
*p < 0.10 , **p < 0.05 , ***p < 0.01				

The negative standardized coefficients represent the negative impacts of the independent variables on the dependent variable. Factors 5, 7, 9, and 10 negatively influence the WTP of an EV. This implies that a small family has a higher chance of buying an EV. Moreover, people who are willing to buy an EV are not much concerned about the acceleration rate and the maintenance cost of an EV. Besides that, people who are concerned about the effects of public transportation on global warming and air pollution are less likely to pay for an EV. They may seek other ways of reducing the emissions from the transport sector.

They may, for instance, use the public transport that is available in Bangkok instead of using a private environmentally friendly car. In order to validate the results, VIF, Durbin-Watson, F-value, Adjusted R-Square, and Cronbach's alpha are used as indicators to measure the validity level of the results. The indicators have acceptable ranges as in the following.

- VIF: An acceptable value is below 5. The value of VIF that shows no correlation of the variable is 1. If the value is 1, this shows the independence among variables. According to our data, the VIF ranges from 1.055 to 2.336. This shows almost no dependency and correlation among variables.
- DW: Durbin-Watson (DW) values show the relativity of variables. DW values are from 0-4, and we obtained an excellent value that is near 2, 1.956. In this project, there is almost no autocorrelation among variables.
- F-value: The data has an F-value of 94.801 which is highly significant. This shows a highly linear relationship among the variables.
- Adjusted R-Square: We obtained an R-Square of 0.164. This number indicates that there are additional factors (not in the model) that can affect the willingness to pay for a person. Since a vehicle is an expensive durable good, purchasing a car is a big decision for any buyer. Many factors influence the buying decision process. However, some factors in this research are insignificant, so they are taken out of the model. The remaining significant factors can only explain about 16.4% of the variation in the dependent variable. In addition, some other factors are excluded in this study, for example, safety rating, charging time for a full charge, and a driving range of more than 100 kilometers per a fully change. Even though they are important features for EVs (Frost and Sullivan Consulting, 2019), they depend on existing technology. A respondent may not be able to control the performance or effectiveness of these features. The other infrastructure of an EV, including chargers and charging stations, are primary needs of EV adoption, so this research emphasizes other influential factors for WTP (mentioned earlier).
- Cronbach's alpha: 0.906 is considered reliable and is in the range of an excellent value. The results show that people are interested in purchasing an EV car when it can meet their expectations and requirements. The seven influential factors in this paper contribute to the WTP for an EV. People expect to pay about 910,000 baht for an EV, on average. However, people expect at least the same benefits for an EV, compared with a conventional ICE vehicle. Therefore, a small and impractical EV car may not be accepted by customers.

5. Discussion

The multiple regression for the WTP for an EV indicates that it is influenced by various factors. Out of 11 significant factors, 7 of them carry positive standardized coefficients (Factors 1, 2, 3, 4, 6, 8 and 11). 4 factors are highly significant and affect the willingness to pay (significance values are less than 0.01). They are Factors 1, 2, 3 and 11.

The most influential factor is Factor 11: "Support for alternative energy" with a standardized coefficient of 0.255. This indicates that people with one additional level of concern on the utilization of other alternative sources of energy (rather than fossil fuel) are willing to pay 192,918.2 Baht more for an EV.

Factor 2: "Number of cars in a family" is also a strong factor affecting the WTP with a standardized coefficient of 0.213. One additional car owned in a family leads to an increase in the WTP by almost 100,000 Baht. This implies that an EV may not be attractive to a person or a family with no car, compared to a family with at least one car.

Factor 3 and Factor 1 have the same influence on the dependent variable with standardized coefficients of 0.168 and 0.150, respectively. Observe that Factor 6: "Car specifications" refer to features and options of a car, excluding the performance and engine specifications. This factor is significant (significance level from 0.01 to 0.05) and carries a positive standardized coefficient of 0.157. One additional feature or option on an EV increases its WTP by 114,691.4 Baht. Furthermore, two other positive influence factors are Factor 4: "Average family income" and Factor 8: "Knowledge of global warming"; they have the same level of influence on the dependent variable with standardized coefficients of 0.107 and 0.110, respectively. The higher the income, the higher the possibility of buying and supporting an EV.

According to the survey results, people expect to pay 910,000 Baht for an EV, on average. Also, people that are interested and willing to pay for an EV are those who have a positive mindset to save the environment and are concerned about global warming. Hence, people who are interested and willing to pay for an EV are people who highly support the utilization of alternative energy, live in a family who enjoys a high income and have multiple vehicles, currently pay maintenance expenses on their vehicles, and have good knowledge about major environmental concerns, such as global warming. The older generation is likely to pay more on an EV, and the good features of EVs can certainly increase their WTP.

6. Implications and Conclusion

People are willing to pay for an EV car, regardless of the high value of the car. People focus more on cost related factors including consumption, battery life, and maintenance cost. Therefore, manufacturers should focus more on the services that support the running cost of a vehicle. A battery guarantee and low maintenance cost can motivate people to buy EVs. However, the specifications of a car are also important. No one expects less when they pay more. Therefore, EVs should provide at least the same value when compared with a conventional ICE car in the market. This is because people tend to purchase cars that are at least as large and powerful as those they are used to drive (Leif Jacob, 2015). Another interesting result is that an EV tends to be the second car for a family because of the limitations in range and size of the vehicle.

Moreover, EVs are a new type of vehicle that most customers have never experienced. To promote the use of EVs, the manufacturer, government, and private sectors need to create a friendly ecosystem and influential factors for supporting the development of the EV market. The government should improve the infrastructure, such as charging stations in public areas. People who are willing to pay for EV cars are attracted by the lower tax and first car policy. If the government can have a policy for new EV cars, then people will likely buy an EV car. The environment is one of the reasons that people want to buy an EV car. If any organizations can give knowledge about the benefits of EV cars, people will start switching to EV cars. However, knowledge does not need to be in detail, but enough for people to know about EV cars. The Thai government may reduce taxes for people who use EV cars, and they can get revenue back when batteries are sold. In conclusion, the government, car manufacturers, and private sectors need to work together to come up with a policy that is suitable for people to increase the WTP for EV cars. By using the results that have been collected, both the government and car manufacturers can prepare for upcoming EV cars in the future.

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