

FACTORS INFLUENCING GENERATION Y CONSUMERS' MOTIVATION TO BUY ELECTRIC CARS

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ABSTRACT

Abstract—The purpose of this research is to study marketing factors, government policy factors and environmental awareness factors affecting the motivation to buy electric cars of Generation Y people in Bangkok and its vicinity. The sample used in the research was the consumers of Generation Y in Bangkok and its vicinity, totaling 300 people, using a questionnaire as a data collection tool. Statistics used in data analysis were frequency, percentage, mean, standard deviation, and multiple regression analysis. The results of the analysis showed that the sample group had opinions on marketing factors, government policy factors and environmental awareness factors that affect motivation to buy electric cars were all at high level. In addition, the hypothesis testing by using multiple regression analysis were found that the marketing factors in term of products, prices, distribution channels, as well as government policy factors and environmental awareness factors affected the motivation to buy electric cars of Generation Y consumers in Bangkok and its vicinity at statistical significance level of .01. While marketing mix factor in term of marketing promotion did not affect the motivation to buy electric cars of consumers in Generation Y in Bangkok and its vicinity.

Keywords— Electric cars, Generation Y, Motivation to buy

INTRODUCTION

The automobile industry has been a key driver of Thailand's economy for a long time. which plays an important part in investment, creating added value, employment and technological development, etc., as well as generate a large amount of income for Thailand over the past 60 years. However, it is well known that the direction and trend of the automobile industry is in a transition period from cars powered by Internal Combustion Engine (ICE) to Electric Vehicles (EV) which this transition will have a wide-ranging impact both against the automobile industry itself and related industries. Report of the International Energy Agency states that global sales of electric vehicles, including PHEVs and BEVs, doubled in 2021 from 2020 to 6.6 million units, with 53 percent of global sales (about 3.4 million units) in China, comes with the European market (33 percent) and the US market (11 percent). In 2021, electric vehicle sales accounted for 8.6 percent of global vehicle sales. This is a significant increase from 0.9 percent in 2016, with around 16 million electric vehicles currently in use worldwide. Accelerating global demand for EVs has led to the development of the EV market ecosystem. It consists of 5 areas: the production of cars and important parts such as batteries, electric motors, etc., charging utilities, electricity generation, regulations and consumer demand (Wankanit, 2021).

The coming trend of electric cars around the world tends to grow rapidly, whether in China, European countries and the United States which will inevitably affect the automobile industry in Thailand. But it seems that the acceptance of electric cars in Thailand is lagging behind many other countries. Krungsri Research (2021) conducted a consumer survey to study needs, obstacles and behaviors in using electric vehicles, as well as to find ways to adapt to industry players in the future. According to the survey, people who use electric cars make purchase decisions because they are cheaper, better for the environment and advanced technology. While the number of charging stations that are still not covered short driving distance per charge, long charging time, and the price of electric cars that are still higher than ICE cars is a major obstacle to accepting electric cars in Thailand.

In addition, more than 80 percent of respondents plan to buy a car in the next five years, and BEVs are the vehicles that consumers are most interested in. The demand for electric cars will begin to occur in 2022-23. During this period, the demand is concentrated in electric vehicles with medium to high price ranges. Demand for electric vehicles will then accelerate from 2024 onward, and the preferred characteristics of electric vehicles will shift down to smaller, cheaper vehicles. Both the desired characteristics of cars and target customers tend to change over time. Consumers view electric vehicles as a new product, thus reducing brand loyalty. Coupled with higher

competition and changes in the automotive industry, industry players and related parties must quickly find ways to adapt and find new channels in the automotive industry, such as adjusting product and service models, finding target customers, finding a new business model and collaborating with other players inside and outside the industry, which will help to stay competitive.

Therefore, Thailand, as one of the world's major production bases for automobiles and parts, should learn to defend and adapt to this inevitable challenge. Not only major multinational automakers, but also smaller parts and component manufacturers will be directly affected as well. If Thailand does not speed up technology development or lack of adaptation to keep up with the trend of the electric vehicle industry. It is possible that Thailand may not be able to keep pace with its competitors and may lose its long-established competitiveness. However, electric vehicle technology is expected to grow very rapidly in the near future. Due to the rapid decline in production costs from advances in research and development, especially the cost of battery production. It will narrow the price difference between ICE vehicles and EVs, making them more accessible to consumers.

Due to the continuous growth of electric cars globally, including in Thailand, the researcher is interested in factors affecting the purchase intention of Generation Y, both females and males, in order to provide guidelines for entrepreneurs to develop, change and create sustainability for the automotive industry (National Statistical Office, 2018). The purpose of this research is to study marketing factors, government policy factors and environmental awareness factors affecting the motivation to buy electric cars of Generation Y people in Bangkok and its vicinity. The results of this research will reveal the factors affecting Thai people's purchase of electric cars in order to determine guidelines for developing and promoting the use of electric cars in the future. Including related agencies can use the research results to determine guidelines for promoting and increasing the use of electric cars in the future.

LITERATURE REVIEWS

To create satisfaction for consumers, it is necessary to take in account the behavior and needs of consumers. A group of marketing tools that an organization uses to fulfill its target market objectives and is a controllable marketing variable. which the company uses together to meet the satisfaction of target groups or as a common tool to achieve the communication objectives of the organization. Kotler & Armstrong (2017) stated that the marketing mix can be divided into 4 groups, known as the "4 Ps", which are Product, Price, Distribution and Promotion. The marketing mix is a controllable marketing tool. The business integrates these tools to meet the needs and satisfy the target customers in order to influence the demand for the company's products. The marketing mix consists of the following tools (Kotler & Armstrong, 2017).

From past research, attitudes towards electric cars in many countries have been studied, such as the attitude of European motorists towards electric cars (Pasaoglu et al., 2012), and the continued success of electric cars in Norway (Haugneland et al., 2016) are quantitative studies concerning the attitude and success of electric vehicles. However, a qualitative study of factors affecting the decision to buy an electric car, there are still not many and mostly quantitative research to find the relationship of factors affecting the decision to buy electric cars. In recent years, past research on electric vehicles and related to business administration has started to be studied in large numbers in Thailand. The study of Wankanit (2020) studied factors affecting the decision to purchase electric cars of the generation Y by using in-depth interviews from a total of 30 persons divided into males and females aged between 23-39 years old (Generation Y), 15 people each. From the research results, it was found that factors affecting generation Y's decision to buy electric cars can be divided into 2 main factors: (1) Factors related to electric cars which consists of another 4 sub-factors, namely the cost of use factor, qualification of electric vehicles factors, environmental factors and safety of electric cars factors. (2) Factors related to car users which consists of 2 sub-factors, namely user confidence factors and the factors of vehicle use and personal driving style. The study of Garanad (2019) studied the factors that affecting the intention to purchase of electric vehicle of consumer in Nonthaburi. The objective is to study the factors of marketing mix that affect consumers' decision to buy electric cars and to study attitude factors affecting consumers' decision to buy electric cars, surveyed by 400 consumers in Nonthaburi Province. The results of the study showed that the marketing mix factors of price and marketing promotion affect the decision to buy electric cars of consumers and behavioral attitude factors affect the decision to buy electric cars of consumers.

In addition, the study of Mongkonsoponrat (2021) studied on factors affection motivation a decision making in purchasing electric vehicle in Bangkok and Metropolitan area, with the objective of studying the motivation for purchasing electric vehicles of the people in Bangkok and its vicinity classified according to factors of demography and to study the factors of buying electric cars that affected the motivation to buy electric cars of the people in Bangkok and its vicinity. The study was conducted from a sample of 400 people. The results showed that the demographic independent variables classified by occupation affecting the motivation to buy electric cars of people in Bangkok and its vicinity. The result of the multiple regression analysis found that there were 5 dependent variables, namely factors in choosing to buy electric cars, electric vehicle technology, environmental awareness, optimum distance and charging, the value of the price, and government policy that affected the motivation to buy electric cars of people in Bangkok and its vicinity. Including the study of Chinaronmangkron (2020) studied the factors affecting the buying process and decision-making for electric vehicles (EV). The purpose of the research is to study innovation adoption, integrated marketing communications and product associations influenced on the decision-making process. The study used a questionnaire to collect data from 180 consumers who own electric passenger cars (EV) in Bangkok. The study found that adoption of innovation affected the buying process and decision-making on EVs, such as information search, evaluation of alternatives, purchasing decisions, and post-purchasing behavior. Integrated marketing communication affected the buying process and decision-making in terms of EVs, including information search and evaluation of alternatives (Techarattanased, 2022). As well as product associations affected the buying process and decision-making on EVs, including problem recognition, information search, evaluation of alternatives, purchasing decisions, and post-purchasing behavior.

METHODS

The population in this research is people living in Bangkok in the Generation Y group, aged between 22-39 years and wishing to use an electric car who he researcher was unable to know the exact number of the population. Therefore, a sample size method was used by Yamane (1973) to find the sample size table with a research error of 5%. The sample size was 400 people and the sampling performed using a convenient sampling method.

The tools used for data collection in this quantitative research were questionnaires with closed-ended and open-ended questions. It consists of questions divided into Part 1, a general information questionnaire. of respondents and information about gender, age, income, and usage behavior. Part 2, questions about marketing mix factors, is a 5-level Likert's Scale, which a measurement of data is the interval scale. Part 3: Questions about purchasing decisions, is a 5-level Likert's Scale, which a measurement of data is the interval scale. The researcher used a questionnaire created for the study and testing for validity and reliability of the questionnaire. The results showed that each question must have an IOC greater than 0.60 to be considered valid. This research questionnaire had a concordance index between the questions and content equal to 0.99 and none of the questions had a concordance score less than 0.60. The reliability test of questionnaire, the researcher brought the created questionnaire to try out of 30 sets with a group of samples with similar qualifications to the sample to be studied. The calculated alpha coefficient was 0.816, then the questionnaire was used to collect the actual data (Cronbach, 1990). The statistics used in the data analysis are descriptive statistics such as frequency, percentage, mean and standard deviation, and inferential statistics was used to test research hypotheses by using Independent Sample t-Test, One-Way ANOVA, and Multiple Regression Analysis.

RESULTS

The results showed that most of the samples were males aged 30-39 years old with a bachelor's degree, income more than 50,000 baht per month. Most of them use cars less than 31-50 kilometers per day and there is a demand for electric cars with a distance per charge per run of 301-400 kilometers per time and have a selling price in the range 1,000,000-2,000,000 baht.

The marketing mix factor in the product aspect found that the sample group gave importance to the product at a high level with a total mean of 3.89 (S.D.=0.51). The safety standards were most important, followed by sufficiency charging stations covering all areas, a modern aesthetic electric vehicle design, complete security system, complete with all internal facilities, good performance and comfortable driving, and finally to focus on

electric car brands, respectively. The sample group emphasized on the price aspect at a high level with a total mean of 3.74 (S.D.= 0.48). Considering individually, the price of electric cars cheaper than gasoline-powered cars was the most important, followed by priced appropriately with performance, price of spare parts and values proper maintenance, proper price of an electric car comparable to gasoline-powered car, and finally focus on the right second-hand resale price. On the place aspect, the sample focused on distribution channels was moderate level with a total mean of 3.20 (S.D.= 0.61). The sample group focused on having service centers covering all areas, variety of distribution channels and convenient distribution channels for traveling to access products and services. The sample emphasized on the promotion aspect at a high level with a total mean of 3.80 (S.D.= 0.45). Considering individually, it was found that advertising and public relations about products were emphasized on the social media such as Facebook, Instagram, etc. was the most important, followed by marketing promotions, such as special discounts or special conditions for installment loans for electric cars, and giving importance to having test drive activities, and pays attention to having knowledgeable and skilled salespeople to serve.

Factors affecting people's motivation to buy electric cars in Bangkok and its vicinity. Environmental awareness was in the high level. The topic with the highest average level of opinions from respondents was wanting to participate in energy and environmental conservation. In addition, factors of regarding government policy affecting people's motivation to buy electric cars in Bangkok and its vicinity, the overall average level was in the high level. The topic with the highest average level of opinions from respondents was that the government should promote the production of electric cars in the country.

The results of the analysis of 5 independent variables which consisted of 3 marketing mix factors in the aspect of product, price, and place, including government policy factors and environmental awareness factors affected the motivation to buy electric cars of Generation Y consumers in Bangkok and its vicinity at statistical significance level of .05, with predictive power or variable can explain the variance of purchasing decisions of electric vehicles 51.26%. While marketing mix factor in term of marketing promotion did not affect the motivation to buy electric cars of consumers in Generation Y in Bangkok and its vicinity. The results found that marketing mix factors on the marketing promotion aspect had no effect on the decision to buy electric cars of consumers in Generation Y (Sig.=0.174). While marketing mix factors on the product aspect had a great effect on the decision to buy electric cars of consumers the most which has a regression coefficient equal to 0.389 (Sig.=0.00), followed by price aspect has a regression coefficient equal to 0.245 (Sig.=0.021), and place aspect has a regression coefficient equal to 0.187 (Sig.=0.041). Moreover, government policy factor has a regression coefficient equal to 0.195 (Sig.=0.035), and environmental awareness factor has a regression coefficient equal to 0.204 (Sig.=0.039).

CONCLUSION AND FUTURE WORK

Conclusion and discussion

The results of the research can be concluded that the personal factors affecting the decision to buy electric cars of consumers Generation Y, most of them are male, aged 30-39 years old, have a bachelor's degree, earn more than 50,000 baht per month, use cars 10-20 kilometers per day, demand for sedan electric cars with a distance per charge per run of 500-600 kilometers per time, and have a selling price in the range 1,000,000-2,000,000 baht, which corresponds to the research of Garanad (2019). It is probably because Generation Y tends to want to buy cars. Most of them will take in account the quality of the product, reasonable price compared to petrol cars and have channels to facilitate access to services, which are essentially more than advertising, salesperson's publicity and promotion.

In terms of the marketing mix that affects decision making buying an electric car, it was found that consumers pay more attention to the marketing mix of products, prices and distribution channels, which are in line with Kotler's S-R Theory (Kotler, 2003) show that Generation Y consumers take product depth into account. Which electric cars can be considered as a new innovation that has caused interest in the change of product features with more driving quality. As for price factors and distribution channels that attract Generation Y consumers, it must be reasonably priced and must have direct exposure to traffic and multiple distribution channels. Buying products of consumers is mostly from attracting by studying the behavior of consumers who study themselves and compare factors before making a purchase decision rather than using personal feelings. The research results are consistent with the work of Krupa et al. (2014), which studied research on an analysis of consumer survey results for plug-

in hybrid electric vehicles reveals that consumers have two major concerns: the cost of battery replacement, maintenance, and other battery-related concerns affecting the choice of electric cars.

The environmental awareness factor affects Generation Y consumers' motivation to buy electric cars, which is in line with the hypothesis. This is due to concerns about environmental changes, such as the effects of air pollution, environmental pollution, global warming, etc. The research results are consistent with the work of Daziano & Bolduc (2013), which studied research on collaborating environmental agreements and standards towards the use of environmentally friendly technologies. Moreover, government policy factors affected the motivation to buy electric cars of consumers of Generation Y, which is consistent with the research hypothesis. This is because the government should have measures to support electric charging stations to promote domestic production as well as tax exemption for businesses producing electric cars. The findings are in line with the study of Mongkonsoponrat (2021), found that government policies have a positive effect on electric vehicle demand. Since the electric car industry is a new industry, the government needs to help with promoting people to use electric cars.

Recommendations and future work

Recommendations obtained for applying the research results were that entrepreneurs should pay attention to the marketing mix in terms of product innovation that can be used instead of vehicles that use fuel with better quality, safety and environmental considerations. The price should be cheaper than petrol cars which should be appropriate in terms of performance to price including reasonable maintenance costs. As for marketing promotion, entrepreneurs should pay attention to advertising and public relations through the Internet and social media completely. The public relations should regularly update interesting news to support the interest of consumers who follow news continuously. In addition, car dealers should allow consumers to have the opportunity to test drive electric cars, including having experts to educate consumers about electric cars correctly to be used as information to make purchasing decisions.

In future research, researchers should study other factors affecting the purchase of electric cars and studies from other generations of consumers in order to be able to explain the results of the study to be more clearly suitable for each group of consumers. As well as researcher should study satisfaction factors, brand loyalty factor or the word-of-mouth factor of consumers who use electric cars to maintain this group of customers permanently and contribute to the dissemination. This will stimulate the intention to buy and use more electric cars among consumers who have never used them in the future.

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