



**A STUDY OF THE IMPACT OF CONSUMER PERCEPTION ON
PURCHASE INTENTION OF NEW ENERGY VEHICLES**

MIAO ZHENZHENG

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**AN INDEPENDENT STUDY SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION
GRADUATE SCHOOL OF BUSINESS
SIAM UNIVERSITY**

2024



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This Independent Study has been Approved as a Partial Fulfillment of the
Requirements for the Degree of Master of Business Administration

Advisor..... *Chao Qiu*
(Assoc.Prof.Dr.Qiu Chao)

Date: *10* *2024*

.....
(Associate Professor *Dr. Jomphong Mongkhonvanit*)
Dean, Graduate School of Business

Date..... *3* *10* *2024*
Siam University, Bangkok, Thailand

Title: A Study of the Impact of Consumer Perception on Purchase intention of New Energy Vehicles
By: Miao Zhenzheng
Degree: Master of Business Administration
Major: International Business Management

Advisor:

Chu Qiu

.....
(Assoc.Prof.Dr.Qiu Chao)

..... 1 / 10 / 2024

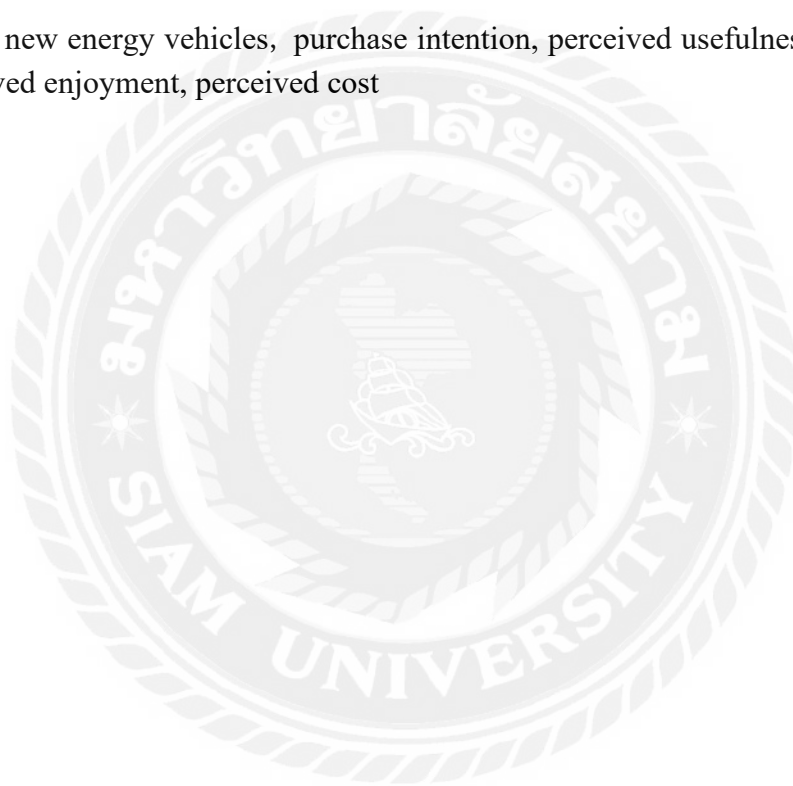
ABSTRACT

With the rapid development of China's economy, the material life of people in all aspects has been greatly improved. In contrast, the problems of energy consumption and environmental pollution have become more and more prominent. The development of society can not leave the consumption, and sustainable development can not leave the green consumption. The individual consumption habits and the ecological environment are closely linked. New energy vehicles, as a resource-saving and environmentally friendly emerging products, have the advantages of low energy consumption and light pollution, and are an important representative of green products. However, at present, it seems that the consumer market of new energy vehicles in China is not extremely active, and consumers' enthusiasm for purchasing new energy vehicles is not strong.

This study adopted the quantitative research method, based on Kim's Value-Based Adoption Model, which considers perceived usefulness and perceived enjoyment as two aspects of perceived gains, and perceived costs and perceived risks as two aspects of perceived losses, thereby influencing consumers' decision to purchase. Therefore, this study aimed to examine the impact of perceived usefulness, perceived enjoyment, perceived cost and perceive risk on consumers' intention to purchase new energy vehicles. Online questionnaires were used to collect data. A total of 560 questionnaires were distributed, and after excluding invalid questionnaires, a total of 514 valid questionnaires were obtained, with an effective recovery rate of 91.79%. The research conclusions obtained in this study are: 1.The establishment of hypothesis 1 indicates that consumers buy new energy vehicles not only to obtain internal emotional satisfaction, but also the functional benefits are very important, and the products that

satisfy the consumers' usage needs and improve their work efficiency can also attract a large number of consumers to buy them. 2. The establishment of hypothesis 2 indicates that the pleasurable feelings and emotional benefits brought by the new energy vehicles to the consumers can stimulate their purchase intention more than the functional utility satisfaction of the products. 3. The establishment of hypothesis 3 suggests that the perceived cost can directly or indirectly inhibit the purchase intention through the perceived value. 4. The establishment of hypothesis 4 does not hold, which means that consumers may not be fully aware of the potential risk of purchasing a new energy vehicle, and that they are more concerned about the actual cost of the vehicle than the risk of the future.

Keywords: new energy vehicles, purchase intention, perceived usefulness, perceived risk, perceived enjoyment, perceived cost



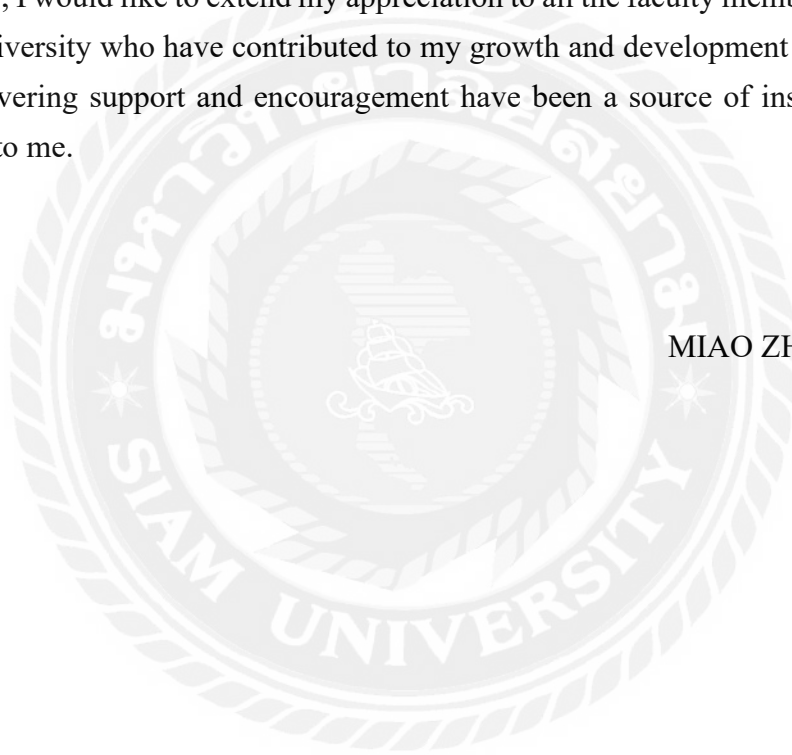
ACKNOWLEDGEMENT

I would like to express my deepest gratitude to my advisor, for his invaluable guidance, support, and encouragement throughout my independent study. His insightful comments and constructive criticism have significantly improved the quality of my work.

Additionally, I am grateful to Associate Professor Dr. Jomphong Mongkhonvanit, Dean, Graduate School of Business, for his support and encouragement throughout my studies. His dedication to the graduate program and commitment to excellence have inspired me to strive for academic excellence.

Finally, I would like to extend my appreciation to all the faculty members and staff of Siam University who have contributed to my growth and development as a student. Their unwavering support and encouragement have been a source of inspiration and motivation to me.

MIAO ZHENZHENG



DECLARATION

I, MIAO ZHENZHENG, hereby certify that the work embodied in this independent study entitled “A STUDY OF IMPACT OF CONSUMER PERCEPTION ON PURCHASE INTENTION OF NEW ENERGY VEHICLES” is result of original research and has not been submitted for a higher degree to any other university or institution.

MIAO ZHENZHENG

(MIAO ZHENZHENG)

Feb 20, 2024



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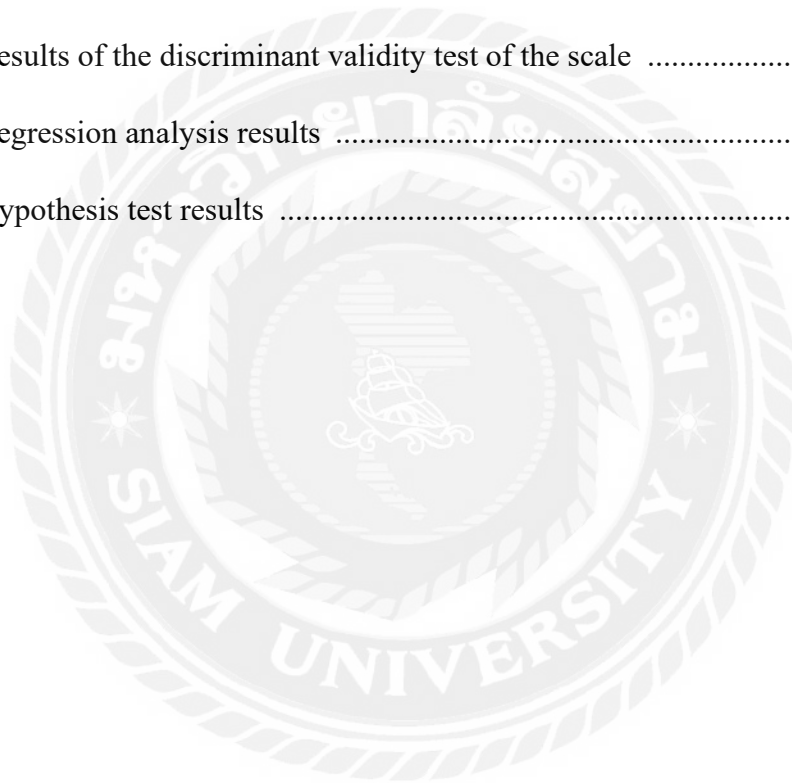
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Chapter 1 Introduction

1.1 Background of the Study

China's productivity level has experienced a qualitative leap, the national income level has been raised to a large extent, and people's consumption behavior has gradually increased from material consumption to the level of focusing on the quality of life. In this context, the environmental pollution brought about by the consumption process has become more and more prominent, and the over-exploitation of natural resources has led to serious damage to the environment, and a series of problems such as resource shortages and global warming have become more and more intense. According to statistics, by the end of 2023, China's dependence on foreign oil had reached 72.98%, up 0.53 percentage points from 72.45% in 2022. Among them, the amount of gasoline consumed by automobiles accounts for nearly 90% of the total oil consumption, and the increasing number of automobiles makes China's dependence on oil increasing, making China's energy pressure continue to increase. As the primary source of urban pollution, automobile exhaust fumes, air pollution, greenhouse effect, and respiratory diseases caused by the extensive use of private cars are also becoming more and more prominent.

Accelerating the development of new energy is an important initiative to realize the goal of carbon peak and carbon neutrality and to build a new development pattern. As a representative new energy industry, new energy vehicles are characterized by low energy consumption and light pollution, which are both energy-saving and environmentally friendly. As a representative new energy industry, it is characterized by low energy consumption and light pollution, which is both energy-saving and environmentally friendly. In the context of the continuous rise in international crude oil prices and the increasingly prominent energy crisis, vigorously promoting the new energy automobile industry is not only in line with the requirements of China to build an ecological civilization society, but also in line with the economic needs of consumers to save travel costs. Whether from the perspective of production and profitability, or contribute to the alleviation of environmental degradation, it is of far-reaching significance to promote the promotion of new energy vehicles in the market. After a long warm-up period, new energy vehicles have gradually entered the broad automotive market, effectively experiencing the test of consumers. The promotion of new energy vehicles in the market is a long and complicated process, in addition to relying on the promotion of manufacturers and government policy support, the most critical still depends on the consumer's intention to adopt new energy vehicles.

However, the actual promotion of new energy vehicles in the market is not very satisfactory, and consumers do not know much about new energy vehicles and are not enthusiastic about purchasing them. In view of this, in order to further expand the proportion of new energy vehicles in the automobile market, and to improve consumers' motivation and intention to buy, it is of great significance to clarify what the core needs of consumers for automobile products are, and how to stimulate consumers' intention to buy green products. Value acceptance theory shows that consumers buy new products is a complex value measurement behavior, through the purchase of the product to obtain the comprehensive evaluation of the benefits and costs to make the purchase decision. Different consumers have different degrees of concern for benefits and risks, and the only way to make a breakthrough in market expansion is to accurately grasp consumers' perceptions and give full play to the environmental qualities of green products. Perceived value theory suggests that perceived value can not only provide motivation for consumers, but also promote their behavior. Perceived value can have an impact on their way of thinking and behavioral patterns.

Therefore, from the perspective of consumer perception, this study combines the unique attributes and purchase scenarios of new energy vehicles, constructs a model of consumer purchase intention based on the value acceptance theory, breaks down the factors related to consumers' perceived gains and perceived loss to explore the relationship between them and their purchase intention, and investigates the effects of these factors on their intention to purchase new energy vehicles, so as to provide theoretical support for enterprises to carry out green marketing.

1.2 Problems of the Study

In the new energy vehicle market, consumers' intention to purchase is influenced by a variety of factors. Perceived usefulness relates to consumers' assessment of the performance and efficiency of new energy vehicles, which is directly related to their purchase decision. Enjoyment, on the other hand, relates to the level of comfort and driving pleasure provided by the vehicle, and these factors can enhance purchase intentions. Perceived cost includes not only the cost of purchasing the vehicle, but also long-term maintenance and operating costs, which consumers must weigh when considering the purchase of a new energy vehicle. Finally, perceived risks include technical reliability, safety, and future value retention, risk factors that may inhibit purchase intentions. The interaction of these factors constitutes a complex psychological process for consumers to purchase new energy vehicles, and understanding this process is critical to driving market acceptance of new energy

vehicles. Therefore, this study formulates the following research problems: 1. Is there an effect of perceived usefulness on consumers' intention to purchase new energy vehicles; 2. Is there an effect of perceived enjoyment on consumers' intention to purchase new energy vehicles; 3. Is there an effect of perceived costs on consumers' intention to purchase new energy vehicles; and 4. Is there an effect of perceived risk on consumers' intention to purchase new energy vehicles. Studying the way in which consumers' perceived usefulness, enjoyment, cost and risk affect their purchase intention for new energy vehicles can not only help manufacturers and policy makers to better meet the market demand, but also promote the healthy development of the new energy vehicle industry.

1.3 Objectives of the Study

The purpose of this study is to explore consumers' intention to purchase new energy vehicles and to analyze the effects of the following four aspects: perceived usefulness, perceived enjoyment, perceived cost, and perceived risk. The study objectives include:

1. To explore the effect of perceived usefulness on consumers' intention to purchase new energy vehicles.
2. To explore the effect of perceived enjoyment on consumers' intention to purchase new energy vehicles.
3. To explore the effect of perceived cost on consumers' intention to purchase new energy vehicles.
4. To explore the effect of perceived risk on consumers' intention to purchase new energy vehicles.

1.4 Scope of the Study

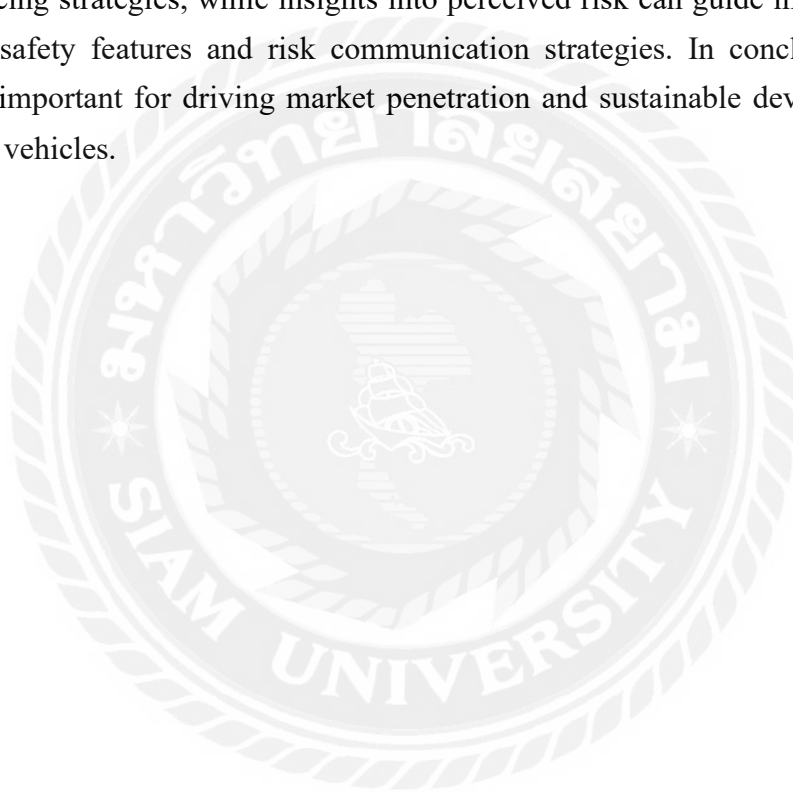
Based on the value acceptance model, this study investigated the role of different perceived factors on the purchase intention of new energy vehicles. The research subject of this study was the consumer group in China. The data were collected by distributing questionnaires.

1.5 Significance of the Study

In the new energy vehicle market, consumers' purchase intentions are influenced by a variety of factors, of which perceived usefulness, enjoyment, cost and risk are key factors. Theoretically, examining how these perceived factors affect purchase intentions can enrich theories of consumer behavior, especially in the context of emerging markets

and technology acceptance models. It can help to understand the psychological mechanisms involved in the consumer decision-making process and how these perceptions can be influenced through market strategies.

In a practical sense, understanding the impact of these factors on purchase intentions can help new energy vehicle manufacturers and policy makers design more effective marketing strategies and policy measures. For example, if perceived usefulness significantly increases purchase intentions, then manufacturers can emphasize the utility and functionality of their products. If perceived enjoyment is an important factor, then marketing campaigns could focus on the vehicle's enjoyment and interactive features. Understanding how perceived cost affects consumers can help develop pricing strategies, while insights into perceived risk can guide improvements in product safety features and risk communication strategies. In conclusion, these studies are important for driving market penetration and sustainable development of new energy vehicles.



Chapter 2 Literature Review

2.1 Introduction

Currently, research on the purchase of new energy vehicles primarily focuses on psychological factors. In the field of consumer behavior, there are few studies exploring the influencing mechanisms of consumer purchase behavior of new energy vehicles from the perspective of the Value Acceptance Theory. While there is abundant literature focusing on customer perceived value, there is a lack of research exploring perceived value from the dimensions of perceived gains and perceived loss.

2.2 New Energy Vehicles

"New Energy Vehicles" (NEVs) refers to automobiles that utilize clean energy to replace fossil fuels, including wind energy, geothermal energy, tidal energy, and hydropower. According to Liu Bowen (2010), New Energy Vehicles refer to vehicles that use new types of fuel rather than primitive fossil fuels, and have different relevant technologies in power driving compared to traditional fuel vehicles. Currently, existing types of New Energy Vehicles in the market include Battery Electric Vehicles (BEV), Hybrid Electric Vehicles (HEV), Plug-in Hybrid Electric Vehicles (REEV), Hydrogen Fuel Cell Vehicles (FCEV), Natural Gas Vehicles (GV), and Biofuel Vehicles (BFV).

Battery Electric Vehicles (BEV) rely entirely on rechargeable batteries as their power source. These vehicles emit minimal noise but are limited by the energy source of their batteries, resulting in limited driving range after charging due to battery capacity limitations. Additionally, they have long charging times, strong dependence on charging infrastructure, high investment costs for charging facilities, and are mainly suitable for urban commuting. Currently, China vigorously promotes BEVs, which not only qualify for green license plates and unrestricted driving policies but also enjoy exemptions from vehicle purchase taxes and national subsidies.

Hybrid Electric Vehicles (HEV) use an electric motor as an auxiliary power source for the engine, and can operate normally on the road with only fuel, similar to traditional fuel vehicles. In the initial phase, they rely on the electric motor to drive the vehicle, and after reaching a certain speed, both the engine and electric motor drive the vehicle together, effectively reducing fuel consumption. However, China currently lacks related subsidies and favorable policies for HEVs, which to some extent hinders the development of such New Energy Vehicles domestically.

Plug-in Hybrid Electric Vehicles (REEV) can be charged using charging stations or traditional fuel. Compared to HEVs, REEVs can benefit from New Energy Vehicle

policy incentives and, in terms of driving range, offer more enduring capabilities than BEVs. REEVs combine the advantages of both types of vehicles and are currently a popular type of New Energy Vehicle in the market.

Hydrogen Fuel Cell Vehicles (FCEV) use hydrogen as a fuel source. These vehicles achieve zero-pollution emissions by converting hydrogen into pure water, and have advantages such as no pollution, abundant reserves, strong endurance capabilities, and short hydrogen refueling times. Consequently, FCEVs are currently seen as the perfect choice for replacing traditional vehicles compared to other New Energy Vehicles.

Fuel Cell Electric Vehicles mainly include Natural Gas Vehicles and Biofuel Vehicles. Fuel cells convert chemical energy into electricity through chemical reactions to provide energy for Fuel Cell Electric Vehicles. Natural Gas Vehicles (GV) use methane (CH₄) as an energy source. Biofuel Vehicles (BFV) utilize crops fermentation or animal fat purification as fuel, such as ethanol vehicles.

Due to factors such as technology costs and popularity, the majority of the New Energy Vehicle market is currently occupied by hybrid vehicles and battery electric vehicles. Research indicates that while some consumers consider New Energy Vehicles as a good option for purchasing, others are influenced by various factors and cannot accept such emerging technologies in the short term, leading to differing opinions on whether to choose New Energy Vehicles. Currently, Chinese consumers' understanding of New Energy Vehicles mainly revolves around pure electric and hybrid vehicles. This paper focuses on New Energy Vehicles, covering all or part of vehicles that use new energy sources for power.

New Energy Vehicles (NEVs) refer to vehicles that use clean energy to replace fossil fuels, including wind energy, geothermal energy, tidal energy, and hydropower (Liu, 2010). Liu (2010) defines NEVs as vehicles that use new fuels instead of conventional fossil fuels and differ from traditional fuel vehicles in their related power drive technologies. The existing types of NEVs in the current market include Battery Electric Vehicles (BEVs), Hybrid Electric Vehicles (HEVs), Plug-in Hybrid Electric Vehicles (PHEVs), Hydrogen Fuel Cell Electric Vehicles (FCEVs), Natural Gas Vehicles (NGVs), and Biofuel Vehicles (BFVs).

BEVs rely entirely on batteries for power and emit minimal noise. However, their limited battery capacity affects their range after charging, and their charging time is relatively long, mainly suitable for urban commuting. Currently, China vigorously promotes BEVs, offering incentives such as green license plates, exemption from purchase taxes, and national subsidies.

HEVs use electric motors as auxiliary power for engines and can run solely on fuel without the need for charging, functioning similarly to traditional fuel vehicles. They reduce fuel consumption by relying on electric motors at low speeds and combining engine and electric motor power at higher speeds. However, the lack of subsidies and favorable policies for HEVs in China hinders their domestic development.

PHEVs can charge via charging stations or use traditional fuel. Compared to HEVs, they benefit from NEV policies, have longer range capabilities, and are thus popular in the current market.

FCEVs use hydrogen as fuel, emitting only water vapor as exhaust, thus offering zero-pollution emissions. With advantages like extended range and short refueling times, FCEVs are considered an ideal alternative to traditional vehicles.

Fuel cell electric vehicles mainly include NGVs and BFVs, which convert chemical energy into electrical energy to power the vehicle. NGVs use methane as fuel, while BFVs use fermented crops or purified animal fats as fuel.

Currently, HEVs and BEVs dominate the NEV market due to factors such as technological costs and popularity. While some consumers view NEVs positively, others are hesitant due to various factors, leading to differing opinions on NEV adoption. Chinese consumers primarily recognize BEVs and HEVs. This study focuses on NEVs, encompassing vehicles powered entirely or partially by new energy sources.

2.3 Perceived Value

As market competition intensifies and enterprises seek development and industry advantage, some companies, from the perspective of consumer perceived value theory, conduct research on transformation and upgrading directions, thereby attracting widespread attention from researchers. However, the definition of perceived value in the theoretical field is diverse, and scholars have different research perspectives, leading to inconsistent definitions of perceived value.

Zeithaml (1988) began research on perceived value early, defining it as the comprehensive evaluation made by consumers during the purchase process, weighing the perceived benefits and costs of products or services. Monroe (1991) proposed that customer perceived value refers to the technical, service, and social benefits a customer can obtain from a product or service, measured in monetary terms. Anderson et al. (1993) suggested that customer perceived value is the measurement between expected attributes and costs. Woodruff (1997) defined perceived value as consumers' perception and evaluation of the performance of goods and services attributes and functionalities under certain circumstances, reflecting the degree to which consumers' purchasing

motives are achieved. Dong Dahai (2003) believed that the evaluation made by consumers on the utility gained and the costs incurred from purchasing products or services constitutes consumer perceived value.

Different researchers have divided perceived value into different dimensions. Sheth (1991) initially divided perceived value into multiple dimensions, including cognitive value, functional value, situational value, social value, and emotional value. Sweeney & Soutar (1999) divided perceived value into quality value, price value, social value, and emotional value in the process of developing a perceived value scale, providing a comprehensive evaluation of durable goods. Bourdeau (2002) proposed that in addition to the above values, the Internet also provides learning value and enjoyment value. Dong (2003) studied dynamic customer value and divided customer value into several parts such as demand value, perceived value, and expected value based on the entire process of customer purchase behavior. Wang Yonggui et al. (2005) suggested that social value, emotional value, functional value, and perceived gains and losses are the four dimensions of customer perceived value. Yang Xiaoyan and Zhou Yijin (2006) creatively proposed the concept of green value as a new dimension of perceived value, different from "social identity value," and named it "green perceived value." Chen & Chang (2012) further suggested that green perceived value is the judgment of the value of green products based on consumers' concern for the natural environment and their assessment of the perceived gains and costs.

After summarizing various scholars' research on perceived value, it is found that many scholars adopt the concept that perceived value is a balance between perceived gains and perceived loss, and most scholars agree that perceived value is a subjective perception and evaluation of consumers. Therefore, even for the same products and services, the evaluation of their value may vary due to individuals' different perceptions. Thus, this study also adopts the definition of perceived value concept by most scholars, that is, the perceived value of new energy vehicles is the comprehensive evaluation made by consumers after weighing the costs and perceived benefits of purchasing new energy vehicles.

2.3.1 Perceived Benefit

In the theory of perceived value, perceived value can be regarded as the result of a comprehensive balance between individual perceived gains and perceived loss, with perceived gains representing the beneficial aspect of perceived value. In the study of perceived gains, scholars from different fields choose to divide consumers' perceived gains from products and services into utilitarian benefits and hedonic benefits (Ang, 2008). Utilitarian benefits generally represent functional or task-related gains, including

efficiency improvement, need fulfillment, and utility aspects of gains; in contrast, hedonic benefits manifest as emotional and subjective gains for individuals, including perceptual enjoyment, enjoyment, and novelty aspects of gains. Kim et al. (2007), in establishing the VAM model, also adopted this classification method, quantifying utilitarian benefits using perceived usefulness and hedonic benefits using perceived enjoyment. In the specific context of purchasing new energy vehicles, this study will continue to use the classification method in the VAM model, defining perceived usefulness as utilitarian benefits of purchasing new energy vehicles and perceived enjoyment as hedonic benefits.

(1) Perceived Usefulness

Perceived usefulness, as proposed in the TAM theory, indicates the extent to which users perceive that the use of a certain product or technology enhances their job performance. The more users subjectively recognize a new technological product or service, the more inclined they are to accept it (Davis, 1989). Perceived usefulness, as described in the VAM theory, refers to users' perceived benefits from meeting personal needs, including evaluation of the quality and superiority of products or services (Kim et al., 2007). The connotations of the two are basically the same. In this study, perceived usefulness refers to consumers' perception of utilitarian benefits obtained from purchasing and using green products, including gains in efficiency improvement and need fulfillment.

(2) Perceived Enjoyment

In the value acceptance model, enjoyment is a very important factor. Voss's research suggests that users' product consumption can be summarized into two categories: utilitarian consumption and hedonic consumption. Utilitarian consumption occurs when users purchase and use a product with precise goals in mind, which is task-oriented behavior; whereas hedonic consumption occurs without specific goals, but solely to obtain emotional satisfaction (Voss, et al., 2003). "Perceived enjoyment," also known as "perceived pleasure," refers to the intrinsic emotional benefits users obtain from the use of a technology or product, especially the internal and emotional enjoyment that can make individuals feel pleased. This intrinsic enjoyment varies with users' subjective perception, and its impact on users' technology acceptance can be even higher than usefulness (Kim et al., 2007).

2.3.2 Perceived Loss

In Kim's study of the VAM model, perceived loss factors are divided into technical factors and perceived cost. Various scholars adjust the basic framework of the VAM model by integrating different theories according to their research fields. All costs

involved in customer purchases are specific contents of perceived loss, including procurement costs, transportation costs, installation, maintenance, and risks of poor product performance. Yang et al. (2012), using the theory of perceived value and network externality theory, studied consumer adoption behavior of mobile internet, and categorized perceived loss into economic costs and non-economic costs. Economic costs refer to users' perception of actual expenditure of funds, while non-economic costs refer to users' perception of potential risks and losses other than spending money. Zhu et al. (2011) improved the value acceptance model and, in the study of user acceptance behavior of mobile payments, divided perceived loss into perceived cost and perceived risk.

(1) Perceived Cost

This study, based on the characteristics of new energy vehicles, analyzes the losses involved in consumers' purchase of new energy vehicles, mainly divided into actual monetary costs and non-monetary costs such as time and convenience costs. Therefore, based on the characteristics and attributes of purchasing new energy vehicles, this study divides perceived loss into perceived cost and perceived risk. Perceived cost refers to the monetary price actually paid by consumers. Perceived cost shows a negative correlation with perceived value, and is usually determined by the negative effects of costs that the product or service brings to consumers. The stronger the negative effects, the greater the negative impact on consumers' perceived value of the product.

(2) Perceived Risk

Perceived risk was first proposed by scholars at Harvard University, and Cunningham (1967) further elaborated on this definition, which gained unanimous recognition from experts and scholars. He proposed that any purchasing behavior of consumers cannot predict whether the results will bring pleasure, but is highly likely to result in dissatisfaction. Therefore, there is relative uncertainty in consumers' purchasing choices, and if individual behaviors fail to achieve the expected goals, perceived risk will arise at any time. Perceived risk corresponds to "technicality" and refers to the time costs, psychological costs, and convenience costs that the use of the product or service occupies for users, also known as users' "non-monetary expenses."

2.4 Purchase Intention

Purchase intention is a precursor to consumers' actual purchasing behavior, directly reflecting the likelihood of consumers' actual purchase behavior. Therefore, in the fields of consumer psychology and consumer behavior, scholars typically use purchase intention as the dependent variable for research, and extensive research by

scholars has led to the gradual maturity of the concept of purchase intention. From 1975 to 1980, Fishbein and Ajzen in a series of studies pointed out that purchase intention refers to the subjective inclination of consumers towards a certain product, which influences their purchasing behavior. Dodds (1991) defined purchase intention as the subjective probability of consumers purchasing a product after understanding its information, and stated that the stronger the purchase intention of consumers, the greater the probability of related consumption behavior occurring. Similarly, Han & Tian (2005) considered that the likelihood of consumers choosing to purchase a specific product or service represents their purchase intention. Mullet (1985) pointed out that consumers' purchase intention is the preference for a certain product or service formed under the joint influence of internal and external factors. Bagozzi (1989) believed that purchase intention refers to the effort consumers are willing to exert to purchase a certain product or service, which can be expressed as a utility function, and purchase intention plays a decisive role in purchasing behavior.

Therefore, in scholars' research on purchase intention, the level of consumers' purchase intention directly reflects the likelihood of purchasing behavior. In actual life, purchase intention is influenced by many factors. Feng (2006) divided the factors influencing consumers' purchase intention from three dimensions: consumer personal traits, product characteristics, and consumption environment. In research on the influence of consumer characteristics on purchase intention, demographic characteristics, consumption experience, education level, and other characteristics are important factors influencing purchase intention. For example, Román (2010) found that an increase in consumers' psychological aversion consciousness leads to a decrease in purchase intention. Hsu & Tsou (2011) found that in the process of online shopping, the more experienced consumers are, the higher their purchase intention. In the study of product characteristics, factors related to the utility of products, such as price, brand, packaging, and functions, are considered important factors influencing purchase intention. Consumers purchase a certain product to meet their own needs, so the characteristics of the product itself will influence consumers' purchase intention. The research results of Han Rui and Tian Zhilong (2005) show that consumers' purchase intention is influenced by the reference price. If the discount rate is too high, consumers' internal reference price will also increase, thereby reducing the perceived discount rate. Sang et al. (2005) found that the more product attributes consumers encounter in online shopping, the higher their purchase intention. In the study of consumption environment, store design, surrounding environment, and sales services will all influence purchase intention. For example, Sharma & Stafford (2000) found that in offline shopping

scenarios, the store location, product arrangement, and service mode of salespersons will affect consumers' purchase intention. Zhang (2020) research believed that factors such as the page style, visual design, background music, live videos, and usability of website shopping systems in online shopping will all influence consumers' purchase intention.

2.5 Technology Acceptance Model

Davis (1989) proposed the Technology Acceptance Model (TAM), which was first used to predict the behavior of actors in the adoption and use of information systems or information technology. The model includes two main factors, perceived usefulness and perceived ease of use, which can effectively predict consumer behavior. The TAM model suggests that perceived usefulness and perceived ease of use are two important factors that play a role in an individual's behavioral intention. Perceived usefulness refers to the extent to which a product or technology is helpful to the consumer in terms of increasing work efficiency or improving quality of life. Perceived ease of use refers to the consumer's judgment of the ease or complexity of using or manipulating a product or technology. Both are important factors that influence consumers' adoption and intention to use.

Once the TAM model was proposed, it has been widely used in research due to its high validity and ease of use, and has been improved to different degrees. Davis, after constructing the TAM model and then constantly adjusting and validating it in subsequent studies, removed the variable of behavioral attitude from the model and used perceived usefulness and perceived ease of use to directly analyze consumer behavioral intention which is the most important factor in the analysis of consumer behavioral intention. (Ajzen & Fishbein, 1980). The study showed that perceived usefulness had a significant effect on behavioral intention but not on behavioral attitude, and Davis removed the variable of behavioral attitude for the purpose of simplifying the model (Davis et al, 1989). The validity of the simplified model has been verified by research (Adams & Todd, 1992). In addition, depending on the research background, researchers in various fields have applied and expanded TAM to different degrees, and TAM model was firstly applied in the field of information technology, and gradually became one of the main theories in the field of e-commerce with the development of the Internet, and was supported by many theories, such as self-efficacy theory and expectancy theory. Many researchers have combined the diffusion of innovation theory (IDT) with the TAM model to further improve the explanatory power of the model.

2.6 Valued Based Adoption Model of Technology

Kim et al. (2007) argued that what consumers purchase is no longer just the product or service itself, but rather their perception and assessment of the value of the product or service, which are key determinants of consumer purchasing decisions. In the Value Acceptance Model (VAM), it is proposed that perceived value directly influences users' behavioral intentions to use mobile internet, with perceived value being influenced by both perceived gains and perceived losses. Perceived gains refer to users' perception of the benefits they will receive from using the product or service, while perceived losses refer to users' perception of the costs they will incur from using the product or service. According to the VAM, consumers will consider both the benefits and costs of the product or service, overall evaluating the value obtained from purchasing and using it, thus making the final decision on whether to use the product or service.

From the perspectives of functionality and enjoyment value, the VAM model divides perceived gains into two dimensions: perceived usefulness and perceived enjoyment. Kim et al. (2007) interpreted perceived usefulness by analogizing it with the concept of product quality, so it refers to users' perception and evaluation of the characteristics and advantages of the product or service. Perceived enjoyment refers to the emotional value to individuals, reflecting the satisfaction and pleasure users experience when using the product or service. Perceived losses consist of two aspects: technicality and perceived cost. Referring to the concepts of perceived ease of use, system reliability, efficiency, and connectivity, Kim et al. (2007) define technicality as all non-monetary costs incurred by users, while perceived cost refers to all monetary costs. These four factors can influence consumers' perceived value of new products and technologies to varying degrees, thereby affecting consumers' intention to use them.

2.7 Conceptual Framework

The study aims to explore consumers' intention to purchase new energy vehicles and to analyze the effects of the following four dimensions: perceived usefulness, perceived enjoyment, perceived cost and perceived risk.

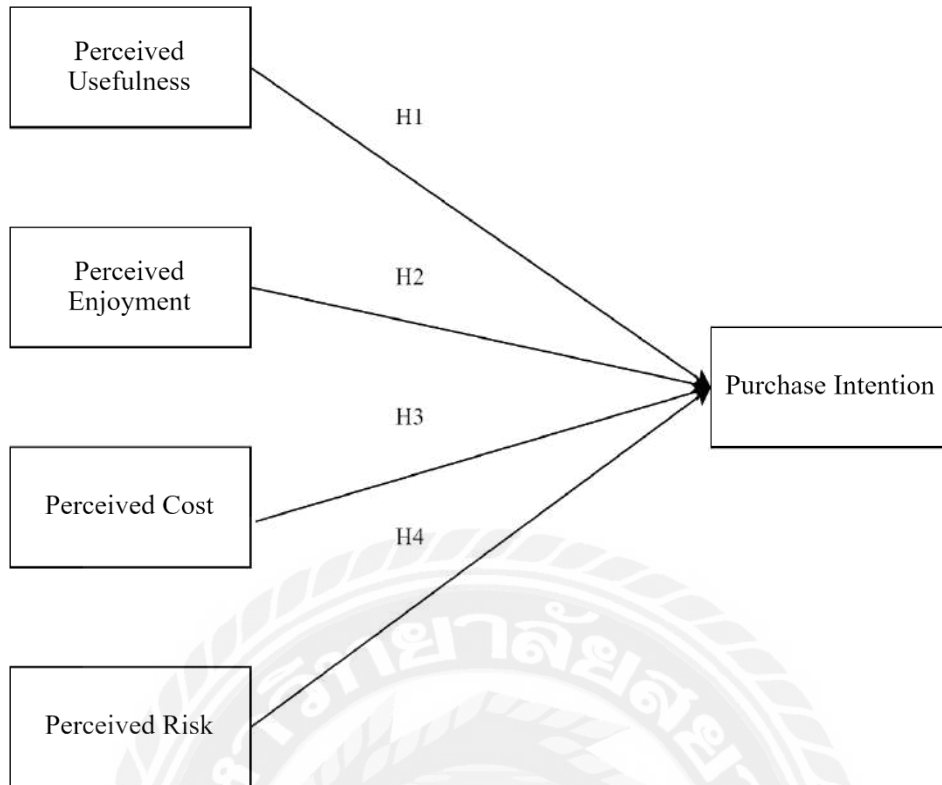


Figure 2.1 Conceptual Framework

Chapter 3 Research Methodology

3.1 Research Design

This study adopted the quantitative research method, based on Kim's Value-Based Adoption Model, which considers perceived usefulness and perceived enjoyment as two aspects of perceived gains, and perceived cost and perceived risk as two aspects of perceived losses, thereby influencing their decision on whether to purchase.

The survey of this study selected new energy vehicles as the research subject for several reasons. First, it allows respondents to develop a clearer and more accurate understanding of green products. Second, as a representative green product, new energy vehicles reduce exhaust emissions to a certain extent compared to traditional fuel vehicles, thus aiding in reducing air pollution and alleviating ecological pressures. Third, new energy vehicles are widely recognized among consumer groups, making consumers relatively familiar with them. Fourth, considering new energy vehicles as high-priced green products, consumers tend to exhibit more rational behavior in their purchasing decisions. Finally, a significant portion of the survey respondents are students, including young adults who have recently entered the workforce, and they have a strong need for vehicle purchases. Cars are precisely the green products they are considering. Therefore, this study chooses new energy vehicles as the subject of the questionnaire.

3.2 Questionnaire Design

The questionnaire consists of two main sections: demographic information and variable questions. The second section utilizes a Likert 5-point scale for measurement. The scales involved in this study are all adapted from mature scales that have been validated multiple times in existing literature. Taking into account the characteristics of new energy vehicles and considering the Chinese consumption context, modifications were made to some scales for design. The measurement items and sources of each scale are shown in Table 3.1 as follows.

Table 3.1 Measurement items

Variable	Question	Reference sources
Perceived Usefulness (PU)	Using a new energy vehicle will enhance my travel efficiency.	Davis (1989); He Weiyi &
	Using a new energy vehicle will improve our air quality.	He Rui (2015)

	Using a new energy vehicle can enhance my quality of life.	
Perceived Enjoyment (PE)	Using a new energy vehicle will bring me a feeling of pleasure.	Sweeney and Soutar (2001)
	Using a new energy vehicle will make me feel comfortable.	
	Using a new energy vehicle will make me appear fashionable and showcase my personality.	
	Using a new energy vehicle will help me establish a positive and healthy personal image.	
Perceived Cost (PC)	I feel that the purchase cost of a new energy vehicle is too high.	Wu and Wang (2005)
	I feel that the charging cost of a new energy vehicle is too high.	
	I feel that the maintenance and repair costs of a new energy vehicle are too high.	
Perceived Risk (PR)	I am worried that the cruising range of a new energy vehicle may not meet my travel needs.	Schultz et al. (2007)
	I am concerned that new energy vehicles may have immature technology, defects, or flaws.	
	I am worried about potential battery safety issues with new energy vehicles.	
	I am concerned about the imperfect infrastructure of charging facilities and stations for new energy vehicles.	
	I am worried that new energy vehicles may not be convenient in terms of maintenance and upkeep.	
Purchase Intention (PI)	I am willing to purchase a new energy vehicle.	Lauckhoff (2013); Gong Qun (2020)
	I am willing to recommend new energy vehicles to my relatives and friends.	
	The likelihood of choosing a new energy vehicle next time I purchase a car is high.	
	I would prioritize choosing to purchase a new energy vehicle over a traditional gasoline-powered vehicle.	

3.3 Hypothesis

H1: There is a positive correlation between perceived usefulness and purchase intention.

H2: There is a positive correlation between perceived enjoyment and purchase intention.

H3: There is a positive correlation between perceived cost and purchase intention.

H4: There is a positive correlation between perceived risk and purchase intention.

3.4 Sample and Data collection

In this study, a large-scale questionnaire survey was conducted with Chinese consumers. The questionnaires were distributed online. In total, 560 questionnaires were sent out, and after excluding invalid questionnaires, a total of 514 valid questionnaires were obtained, with an effective recovery rate of 91.79%.

3.5 Data Analysis

The Composite Reliability (CITC) is used to verify the overall correlation between each item and serves as a criterion alongside Cronbach's α coefficient for assessing the internal consistency of variables. If the CITC value is greater than 0.5, it indicates that the item should be retained; if it is less than 0.5, it suggests weak consistency with other items, and consideration will be given to removing it. If removing a measurement item increases Cronbach's α value rather than reducing it, it indicates potential issues with that item. Generally, α values below 0.6 are considered unreliable, values between 0.6 and 0.7 are marginally acceptable, values between 0.7 and 0.8 are acceptable, values between 0.8 and 0.9 indicate relatively high reliability, and values above 0.9 indicate very high reliability.

Factor analysis is used to explore the internal dependency among variables and validate whether various variables can be classified into the same common factor. Factor analysis utilizes observable variables to evaluate abstract factors, employing the concept of "dimensionality reduction" to classify variables into different categories or factors based on their basic structure and internal relationships.

The suitability of data for factor analysis is determined by evaluating the Kaiser-Meyer-Olkin (KMO) value and Bartlett's test of sphericity. The KMO value is judged as follows: a KMO value greater than 0.9 indicates extremely suitable data; between 0.8 and 0.9 is considered quite suitable; between 0.7 and 0.8 is suitable; between 0.6 and 0.7 is acceptable; and a KMO value less than 0.5 indicates that factor analysis of

the data may not be appropriate. Additionally, the significance level of Bartlett's test of sphericity should be less than 0.05.

Correlation analysis is used to test and analyze the data to verify the relationship between variables and their effects. Then regression analysis is used to test the hypothesized relationship and summarize the results of the hypothesis test.

3.6 Reliability and Validity Analysis of the Scale

Reliability is an important indicator used to determine the trustworthiness of a scale. To validate whether the measurement scales used in this study accurately reflect the study variables and to examine the accuracy and reliability of the measurement items, this study employs Cronbach's α coefficient to assess the reliability of the scales. The higher the Cronbach's α value, the greater the reliability of the measurement scale. Research by DeVellis (1991) indicates that Cronbach's α coefficients between 0.60 and 0.65 suggest poor reliability of the scale; coefficients between 0.65 and 0.70 suggest acceptable reliability; coefficients between 0.70 and 0.80 suggest good reliability; and coefficients between 0.80 and 0.90 suggest very good reliability.

The survey questionnaire for this study consists of several parts of scales. To investigate the relationships between variables, this study employed SPSS to conduct reliability testing on the measurement scales, ensuring that the questionnaire's measurement results were highly reliable, indicating good reliability and consistency of the measurement scales.

Table 3.2 Results of reliability analysis for each variable

Variable	Number of questions	Cronbach's α
Perceived usefulness	3	0.778
Perceived enjoyment	4	0.842
Perceived costs	3	0.896
Perceived risks	6	0.922
Purchase intention	4	0.855

From Table 3.2, it can be observed that the Cronbach's α values for the three items of the perceived usefulness scale are 0.778, indicating high reliability; for the four items of the perceived enjoyment scale, the Cronbach's α value is 0.842, indicating very high reliability; for the three items of the perceived cost scale, the Cronbach's α value is 0.896, indicating very high reliability; for the six items of the perceived risk scale, the Cronbach's α value is 0.922, indicating very high reliability; and for the four items of the purchase intention scale, the Cronbach's α value is 0.855, indicating very high reliability. It can be concluded that the Cronbach's α values for all variable scales are

greater than 0.7, indicating a high level of internal consistency among the measurement items. Therefore, the scales used in this study demonstrate relatively high reliability.

Validity is an important measure used to evaluate whether the measurement results of a scale have good effectiveness. It includes content validity, convergent validity, and discriminant validity.

The suitability of data for factor analysis was determined by assessing the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity. The evaluation criteria for the KMO measure are as follows: a KMO value greater than 0.9 indicates excellent suitability; between 0.8 and 0.9 indicates good suitability; between 0.7 and 0.8 indicates fair suitability; between 0.6 and 0.7 indicates mediocre suitability; and less than 0.5 suggests inadequacy for factor analysis. Additionally, the significance level for Bartlett's test of sphericity should be less than 0.05. The KMO values and Bartlett's test of sphericity results for the variables in this study are presented in Table 3.3.

Table 0.3 KMO and Bartlett's Test^a

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.923
Bartlett's Test of Sphericity	Approx. Chi-Square	4201.265
	df	561
	Sig.	0.000

From Table 3.3, it can be seen that the KMO value of the data in this study is 0.923 and the Bartlett's test of sphericity significance is less than 0.001, which satisfies the criteria and implies that the data is capable of exploratory factor analysis.

For convergent validity, this study employed principal component analysis and confirmatory factor analysis to assess the structural validity of the measurement scales by observing the Average Variance Extracted (AVE) and Composite Reliability (CR) values of each variable. For discriminant validity, if the correlation coefficients between each variable and other latent variables are smaller than the square root of its AVE, it indicates good discriminant validity. From Table 3.4, it can be observed that the AVE values of each variable are greater than 0.5, and the CR values are all greater than 0.8, indicating good convergent validity of the measurement scales used in this study. From Table 3.5, it can be seen that the square root of the AVE for each variable is greater than the correlation coefficients between itself and other variables, demonstrating good discriminant validity of the measurement scales in this study.

Table 3.4 Validated factor analysis for each variable

Variable	No.	Factor Loading (λ)	CR	AVE
	PU1	0.794	0.801	0.573

Perceived usefulness	PU2	0.739		
	PU3	0.736		
Perceived enjoyment	PE1	0.708	0.846	0.579
	PE2	0.711		
	PE3	0.801		
	PE4	0.818		
Perceived cost	PF1	0.856	0.897	0.743
	PF2	0.851		
	PF3	0.879		
Perceived risk	PR1	0.836	0.922	0.664
	PR2	0.808		
	PR3	0.832		
	PR4	0.845		
	PR5	0.780		
	PR6	0.786		
Purchase Intention	PI1	0.794	0.859	0.605
	PI2	0.795		
	PI3	0.739		
	PI4	0.781		

Table 3.5 Results of the discriminant validity test of the scale

	PU	PE	PF	PR	PI
PU	0.757				
PE	0.142***	0.761			
PF	-0.169***	-0.235***	0.862		
PR	-0.163***	-0.197***	0.341***	0.815	
PI	0.171***	0.226***	-0.288***	-0.245***	0.778

Note: Values on the diagonal are the square root of the AVE values for each variable, and below the diagonal are the Pearson correlation coefficients for each variable.

Chapter 4 Findings

4.1 Descriptive Statistical Analysis

The descriptive statistical analysis of the 514 valid samples selected is presented in Table 4.1.

Table 4.1 Descriptive statistical analysis of sample

Variable	Category	Sample Size	Proportion (%)
Gender	Male	246	47.9
	Female	268	52.1
Age	20 years and under	51	9.9
	21-30 years	175	34
	31-40 years	170	33.1
	41-50 years	99	19.3
	Above 51 years	19	3.7
Education Level	Junior high school and below	4	0.8
	High school or technical secondary school	26	5.1
	College	81	15.8
	Undergraduate	344	66.9
	Master's degree and above	59	11.5
Type of Jobs	Staff of government agencies, institutions and state-owned enterprises	174	33.9
	Private business owners or employees	203	39.5
	Self-employed	52	10.1
	Students	69	13.4
	Others	16	3.1
Average Monthly Income	Below 3,000 yuan	60	11.7
	3001-6000 yuan	125	24.3
	6001-10000 yuan	179	34.8
	10001-15000 yuan	96	18.7
	More than 15,000 yuan	54	10.5
Household Registration	City	385	74.9
	Village	129	25.1

Have you ever purchased a new energy vehicle?	Yes	250	48.6
	No	264	51.4
Number of cars owned	0	55	10.7
	1	401	78
	2	54	10.5
	More	4	0.8
Annual Mileage	Below 15000km	169	32.9
	15000-30000km	233	45.3
	30000-40000km	69	13.4
	More than 40,000km	43	8.4
Understanding of new energy vehicles	Never heard of it	3	0.6
	Only heard of	39	7.6
	Have some understanding	238	46.3
	Comparatively understanding	194	37.7
	Very knowledgeable	40	7.8

From the descriptive statistical analysis of the sample in Table 4.1, it can be seen that the number of female subjects in this survey is slightly higher than that of male subjects, accounting for 52.1% and 47.9%. The percentages of sample aged between 21-30 years old, 31-40 years old, and 41-50 years old are 34.0%, 33.1%, and 19.3% respectively. The number of sample with undergraduate education level is the largest, accounting for 66.9%. The percentage of employees in institutions, enterprises and institutions are 33.9% and 39.5% respectively. The sample with the average monthly income level of 3001-6000 yuan accounts for 24.3%, and the number of sample with 6001-10000 yuan accounts for 34.8%. The household registration in a city accounts for 74.9%. The number of respondents who have not purchased new energy vehicles is slightly higher than the number of respondents who have purchased, accounting for 51.4% and 48.6% respectively. The number of sample with 1 car is the largest, accounting for 78.0%. The percentages of sample with an annual mileage of 15000km or less and 15000-30000 km are 32.9% and 45.3% respectively. The percentages of sample with some understanding and comparative understanding of new energy vehicles are 46.3% and 37.7% respectively.

4.2 Correlation Analysis

Correlation analysis is commonly employed to depict the non-deterministic relationships between variables. By examining the interdependence among variables

and uncovering their mutual dependencies within complex relationships, correlation analysis lays the groundwork for further analysis. To validate the existence of correlations between variables, this study utilized a two-tailed test. The degree of correlation is typically represented using the Pearson correlation coefficient, a statistical indicator of the linear relationship between variables. The closer the absolute value of the coefficient is to 1, the tighter the correlation between variables; conversely, the closer it is to 0, the weaker the correlation.

Table 4.2 Results of the discriminant validity test of the scale

	PU	PE	PF	PR	PI
PU	1				
PE	0.448**	1			
PF	-0.313**	-0.377**	1		
PR	-0.434**	-0.462**	0.466**	1	
PI	0.0.526**	0.608**	-0.446**	-0.567**	1

Note: * means $p < 0.05$; ** means $p < 0.01$

The results of the correlation analysis for the measurement scales are shown in Table 4.2: Perceived usefulness ($r=0.526$, $p < 0.01$) and perceived enjoyment ($r=0.608$, $p < 0.01$) exhibit significant positive correlations with purchase intention. Conversely, perceived cost ($r=-0.446$, $p < 0.01$) and perceived risk ($r=-0.567$, $p < 0.01$) demonstrate significant negative correlations with purchase intention.

4.3 Regression Analysis

The impact relationships between perceived usefulness, perceived enjoyment, perceived cost, perceived risk, and purchase intention were analyzed using linear regression. The analysis aimed to test whether there were significant causal relationships between the variables, thereby verifying hypotheses H1, H2, H3, and H4. Table 4.3 presents the results of the regression analysis for perceived usefulness, perceived enjoyment, perceived cost, perceived risk, and purchase intention.

Table 4.3 Regression analysis results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	1.472	0.305		4.823	0.000		
Perceived Usefulness	0.228	0.040	0.199	5.658	0.000	0.716	1.396

Perceived Enjoyment	0.288	0.037	0.287	7.686	0.000	0.635	1.576
Perceived Cost	-0.042	0.021	-0.072	-1.988	0.047	0.675	1.481
Perceived Risk	-0.066	0.036	-0.089	-1.836	0.067	0.381	2.627
R	0.742a						
R ²	0.550						
F	124.265					Sig.	0.000b

From Table 4.3, it can be observed that the coefficient of determination R^2 is 0.550, the F value is 124.265, and the significance is 0.000, indicating that the regression relationships between perceived usefulness, perceived enjoyment, perceived cost, perceived risk, and purchase intention are significant, and the model's fitted regression line is meaningful. Additionally, all the VIF values are less than 5, indicating the absence of multicollinearity among the variables.

Furthermore, the t-values for perceived usefulness and perceived enjoyment are 5.658 and 7.686, respectively, with both sig. values less than 0.05. The regression coefficients are positive, indicating that perceived usefulness and perceived enjoyment have a significant positive effect on purchase intention, thus validating hypotheses H1 and H2. The t-value for perceived cost is -1.988, with a sig. value less than 0.05, and the regression coefficient is negative, suggesting a significant negative relationship between perceived cost and purchase intention, thus validating hypothesis H3. The t-value for perceived risk is -1.836, with a sig. value of 0.067, which is greater than 0.05, indicating that there is no significant negative correlation between perceived risk and purchase intention, thus hypothesis H4 is not supported.

The results of the tests are shown in Table 4.4:

Table 4.4 Hypothesis tests results

Hypothesis No.	Hypothetical content	Result
H1	There is a positive correlation between perceived usefulness and purchase intention.	Established
H2	There is a positive correlation between perceived enjoyment and purchase intention.	Established
H3	There is a positive correlation between perceived cost and purchase intention.	Established
H4	There is a positive correlation between perceived risk and purchase intention.	Not established



Chapter 5 Conclusion and Recommendation

5.1 Conclusion

In this study, perceived benefit is divided into perceived usefulness and perceived enjoyment, representing utilitarian and hedonic benefits, respectively. The results of the analysis show that both perceived usefulness and perceived enjoyment significantly influence consumers' purchase intention when choosing new energy vehicles. This indicates that both utilitarian and hedonic benefits directly stimulate consumers' purchase intention.

1. Perceived usefulness plays a significant positive role in stimulating purchase intention. Consumers buy new energy vehicles not only for emotional satisfaction but also for functional benefits. Products that meet consumers' usage needs and improve work efficiency can attract a large number of consumers to purchase.

2. Perceived enjoyment has a larger path coefficient on purchase intentions compared to perceived usefulness, indicating that the emotional benefits and pleasure derived from new energy vehicles are more influential than the functional utility in stimulating purchase intention. Therefore, for manufacturers and sales companies of new energy vehicles to attract consumers, it is crucial to enhance consumers' perceived hedonic benefits of new energy vehicles. Promoting the green attributes and environmental benefits of new energy vehicles can evoke consumers' feelings of pleasure and pride in using them, thereby promoting their purchase behavior.

Perceived loss can negatively impact consumers' purchase intention, even leading to refusal to purchase. In this study, perceived loss is divided into perceived cost and perceived risk, including monetary and non-monetary expenditures. The results show:

1. Perceived cost is significantly negatively correlated with purchase intention. This means that perceived cost directly or indirectly inhibits purchase intention, either directly or indirectly through perceived value. Therefore, to reduce consumers' resistance to purchasing new energy vehicles, manufacturers and sales companies need to reduce consumers' perceived cost of purchasing new energy vehicles. This will make consumers of different economic conditions willing to buy new energy vehicles rather than relatively cheaper traditional products.

2. Perceived risk in this study does not significantly influence purchase intention. This suggests that consumers may not be fully aware of the potential risk associated with purchasing new energy vehicles. Alternatively, the potential risk associated with purchasing and using new energy vehicles, such as the immature and unstable production technology, are not the main reasons influencing consumers' purchase

decisions. Compared to future potential risks, the actual costs incurred are what consumers are more concerned about. Therefore, if companies want to encourage consumers to purchase new energy vehicles, they still need to make efforts to reduce the price and usage costs of new energy vehicles.

Building upon the conclusions drawn from this study, the following recommendations are proposed from the perspective of enterprises to enhance consumer perceived benefits, reduce perceived loss, and thereby increase consumer perceived value and purchase intention towards green products:

1. Upgrade the core technology of new energy vehicles, strengthen product quality, and enhance consumer perceived usefulness while reducing perceived risk. Quality is the cornerstone of enterprise survival. To attract consumers, it is essential to ensure the quality of new energy vehicles. Survey research has shown that consumers' concerns about using new energy vehicles mainly include technical safety and battery life. Since the introduction of new energy vehicles into the Chinese market, their battery life has been a primary concern for consumers. Some consumers have expressed concerns that the battery capacity of new energy vehicles is insufficient to meet daily travel needs and that the limited battery storage capacity hinders long-distance travel requirements. Therefore, for new energy vehicle manufacturers, it is crucial not only to rely on the guiding effect of government policies but also to strive to enhance the industry's innovation driving force. Only by focusing on upgrading core technology, continuously improving the quality and performance of new energy vehicles, enhancing battery life, and optimizing the user experience of charging equipment, can consumer doubts be eliminated, perceived usefulness be enhanced, and perceived risks be reduced.

2. Establish a sound after-sales service system to reduce perceived risk and cost. One reason consumers hesitate to purchase new energy vehicles is due to concerns about inadequate after-sales service. Compared to traditional automobiles, the market share of new energy vehicles is small, and the sales network is not dense. Limited service points, inefficient service, and concerns about whether products can be timely maintained and repaired worry consumers. Therefore, enterprises should focus on improving after-sales service, setting up comprehensive after-sales service points, conducting regular customer visits, enhancing consumer after-sales experience, and reducing perceived risks. At the same time, professional training should be provided to customer service personnel to improve consumer satisfaction and enhance the perceived enjoyment of consumers.

3. Improve the secondary market of new energy vehicles to reduce perceived risk. Consumer purchases of new energy vehicles involve a psychological process of

weighing benefits and costs. Even if consumers perceive many benefits and returns from purchasing new energy vehicles, considering the inconveniences that may arise during maintenance and recycling processes could ultimately deter them. The maintenance costs of new energy vehicles and the secondary market have always been decisive factors affecting consumer purchasing intentions. Consumers are concerned about the high maintenance and repair costs of new energy vehicles and the imperfect secondary market, which may result in high post-purchase expenses. Enterprises should ensure the quality of new energy vehicles, reduce maintenance and repair costs, and provide consumers with more affordable and convenient services. Simultaneously, it is crucial to improve the secondary market for new energy vehicles, standardize the technology and standards of residual value assessment, reduce consumers' perceived risks, and thereby increase purchase intentions.

4. Intensify environmental protection publicity, conduct targeted marketing, meet diverse consumer needs, and enhance perceived value. Green purchasing aligns with society's sustainable development plan and is gradually becoming the mainstream consumption mode. With the improvement of consumers' environmental awareness, they are more willing to choose green and environmentally friendly lifestyles and consumption habits, leading to increased acceptance of new energy vehicles. Therefore, relevant enterprises should enhance environmental protection knowledge dissemination and advertising efforts, evoke consumers' emotional resonance with environmental issues, and enhance their sense of environmental responsibility. Setting up environmental ambassadors, creating a nationwide atmosphere of environmental protection, and actively guiding consumers to participate in environmental practices are essential. Furthermore, designing different marketing methods according to consumer diverse needs, clearly positioning the market, and conducting targeted marketing efforts will increase consumer satisfaction and perceived value.

5.2 Recommendation for future study

This study explores the factors influencing consumers' intention to purchase new energy vehicles from the perspective of consumer perception and proposes relevant guiding strategies to enhance consumer purchase intentions. However, there are limitations in this research, and future in-depth studies are expected. The specific shortcomings and prospects are as follows:

1. This study lacks consideration of different product categories. In the process of designing and distributing questionnaires, only the perspective of consumers of new energy vehicles was considered, which is relatively narrow. Different product

categories may have different effects on consumer perception factors, which in turn may affect their intention to purchase new energy vehicles differently. Subsequent research can explore the boundary conditions of the formation of intention to purchase new energy vehicles related to product categories, investigate whether different product categories have different characteristics that may moderate the relationship between certain variables, and clarify the mechanism of intention to purchase new energy vehicles under different product categories.

2. In terms of research content, there are many factors influencing consumer car purchase decisions, not only perception-related factors but also external situational factors, internal moral factors, etc., are worth considering. The selected variables in this study may not represent all factors influencing consumer purchase intentions, so there may be shortcomings in the selection of influencing factors. Considering the characteristics of new energy vehicles and the widespread issue of low trust in green products in the market, future research can add variables such as green trust, green certification, etc., to enrich the research content.

3. In terms of data collection, the coverage of data samples is limited. The sample range and size of the survey respondents may affect the research results. Further research can expand the sample range and size, surveying consumers from different occupations and regions to enhance the representativeness of the sample. Combining the influence of demographic characteristics such as occupation and region with psychological factors for analysis, studying the purchase psychology mechanisms of different groups, will make the research more targeted.

Overall, future research should address these limitations to provide a more comprehensive understanding of the factors influencing consumers' intention to purchase new energy vehicles and to offer more effective strategies for promoting the adoption of green products.

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Appendix

Dear Madam/Mr:

Greetings!

Thank you for taking time out of your busy schedule to participate in this survey! The questionnaire will take you about 15 minutes, so please fill it out according to the actual situation. This survey is anonymous, for academic research only, and the results are absolutely confidential. You only need to tick the relevant options according to your actual situation. Except for special requirements, choose one option for each question. If you have any questions about the questionnaire, please do not hesitate to contact us. In order to ensure the validity of the questionnaire, please fill in the whole questionnaire.

1. Personal Information

01 Gender: Male Female

02 My Age: 20 years old and below 21-30 years old 31-40 years old 41-50 years old 51 years old and above

03 Education Level: Elementary school and below High school or vocational school College Bachelor's degree Master's degree and above

04 Occupation: Government, public institution, or state-owned enterprise employee Private enterprise owner or employee Self-employed Student Other

05 Average Monthly Income Level: Below 3000 yuan 3001-6000 yuan 6001-10000 yuan 10001-15000 yuan Above 15000 yuan

06 Registered Residence: Urban Rural

07 Have you purchased a new energy vehicle before? Yes No

08 Number of cars owned: 0 cars 1 car 2 cars More

09 Annual Mileage: Below 15000km 15000-30000km 30000-40000km Above 40000km

10 Level of Understanding of New Energy Vehicles: Never heard of it Only heard of it Some understanding Moderate understanding Very familiar

2. Variable issues

Serial Number	Topic	Strongly disagree 1	Disagreed 2	Uncertain 3	Agree 4	Totally agree 5
1	Using a new energy vehicle will enhance my travel efficiency.					
2	Using a new energy vehicle will improve our air quality.					
3	Using a new energy vehicle can enhance my quality of life.					
4	Using a new energy vehicle will bring me a feeling of pleasure.					
5	Using a new energy vehicle will make me feel comfortable.					
6	Using a new energy vehicle will make me appear fashionable and showcase my personality.					
7	Using a new energy vehicle will help me establish a positive and healthy personal image.					

8	I feel that the purchase cost of a new energy vehicle is too high.					
9	I feel that the charging cost of a new energy vehicle is too high.					
10	I feel that the maintenance and repair costs of a new energy vehicle are too high.					
11	I am worried that the cruising range of a new energy vehicle may not meet my travel needs.					
12	I am concerned that new energy vehicles may have immature technology, defects, or flaws.					
13	I am worried about potential battery safety issues with new energy vehicles.					
14	I am concerned about the imperfect infrastructure of charging facilities and stations for new energy vehicles.					

15	I am worried that new energy vehicles may not be convenient in terms of maintenance and upkeep.					
16	I am concerned about the imperfect market for the resale of used new energy vehicles and batteries.					
17	I am willing to purchase a new energy vehicle.					
18	I am willing to recommend new energy vehicles to my relatives and friends.					
19	The likelihood of choosing a new energy vehicle next time I purchase a car is high.					
20	I would prioritize choosing to purchase a new energy vehicle over a traditional gasoline-powered vehicle.					