

# The Influencing Factors of New Energy Vehicles Affecting Sichuan Consumers' Purchase Intention Based on TPB Theory

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**Abstract:** New energy vehicles have been recognized as a sustainable alternative to lower gasoline consumption and emissions in the transportation sector. To cope with the green environment policy, a spectrum of government policies has been introduced to inspire the production and penetration of new energy vehicles (NEVs). Meanwhile, some perceived values face current trends to meet consumers' purchase demand and the NEV industry's growth. This means understanding the current and upcoming market and customer attitude, how to formulate NEV image, and consumers' purchasing NEV behavior in response to customer purchase intention based on influencing factors of perceived behavioral control and subjective norm. The three research objectives are; to analyze the concept and characteristics of new energy vehicle purchase intention, to explore the influencing factors of perceived behavioral control and subjective norm relating to purchase intention, and to suggest the improvement of the production and sales strategy of NEV based on the market trends.

**Keywords:** New Energy Vehicles; Customers' Purchase Intention; TPB Theory

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## 1. Introduction

In the context of the era of sustainable development, the expansion of the road network can hardly keep up with the increasing number of vehicles on the road, which is inevitably accompanied by environmental problems. New energy vehicles are an entry-level solution for private transportation companies to reduce their carbon footprint without sacrificing driving behavior. By modifying the theory of planned behavior (TPB), this study used psychological factors to identify significant predictors of NEV purchase intention. This study takes users who purchase new energy vehicles as the research object, adopts quantitative research methods, and is based on the theory of planned behavior (TPB) model. Influence mechanism of the influence of car purchase intention. Through research and analysis, discover the advantages and disadvantages of new energy vehicles and future development trends, and suggest feasible suggestions.

## 2. Theoretical Basis

### 2.1 Theoretical Significance and Value

From a theoretical point of view, most current academic research focuses on the purchase intention, motivation, and behavior of ordinary fuel vehicle consumers. It mentions a model classified by users' preference for car brands but does not conduct further detailed research. Most literature is based on TAM, TPB, and other models to research purchase intention and behavior in selecting research models. This paper takes the consumers of new energy vehicles as the research object, combines the theory of planned behavior, the theory of perceived behavior control, and the theory of supervisory norms, and explores whether there is a mutual influence between consumers' purchase of new energy vehicles from multiple dimensions and multivariable in terms of the theoretical value. Based on the classic literature at home and abroad, this study takes the theory of planned behavior (TPB) as the perspective to analyze the influencing factors of the purchase intention of new energy vehicle consumers and build a model that can fully reveal the internal mechanism of the purchase intention of new energy vehicle consumers.

## **2.2 Practical meaning and value**

In terms of practical significance, although the rise of new energy vehicles is relatively late, the development is very rapid. Compared with fuel vehicles, new energy vehicles can be more environmentally friendly and sustainable, and at the same time, they can be more personalized to meet most consumers' needs. New energy vehicles are currently the most popular type of vehicles, with relatively strong representation and research value; the research on the purchase intention of new energy vehicles will be of great significance to how car manufacturers attract consumers and retain customers, and enhance their competitiveness of the industry in absolute value. This study clarifies the influencing factors that promote or inhibit the purchase intention of new energy vehicle consumers so that the existing new energy vehicle enterprise operators can better meet the market demand and provide theoretical support for product development and marketing strategies.

## **3. Understanding the Influencing Factors of New Energy Vehicles Affecting Sichuan Consumers' Purchase Intention Based on TPB Theory**

### **3.1 Planned Behavior Theory (TPB)**

Ajzen. (1991)<sup>[1]</sup> proposed that authorities can continue influencing combinations of variables to lead to desired intentions and behaviors. The formation of TPB has three essential elements: behavioral belief, normative beliefs, and unshakable beliefs - each of these elements contain three similar aspects of the model: attitudes toward behavior, subjective norms, and perceived behavioral control. Personal values highly influence these three beliefs; According to TPB, the intent is regarded as the immediate antecedent of behavior, indicating that an individual is prepared/willing to engage in a specific behavior. Intention refers to an individual's willingness to buy a new energy vehicle, related to attitudes toward behavior, subjective norms, perceived behavior control, perceived value, etc.

### **3.2 Rational Action Theory**

Chen; & Liu. (2002)<sup>[2]</sup> pointed out that increased perceived behavioral control refers to a person's ability to meet the demands of performing a given task. Ajzen (1991) argues that performing a task depends on human abilities and is also affected by financial capabilities, opportunities, skills, and resources. Among these prerequisites for purchasing a new energy vehicle (i.e., high financial investment, self-image, social risks), potential buyers need to meet various requirements for purchasing a new energy vehicle. For example, uncompetitive prices of green products drive away potential buyers with lower disposable incomes.

### **3.3 Value-Belief-Norm Theory (VBN)**

Hong; et al. (2013)<sup>[3]</sup> proposed three different but related factors, namely: one, fundamental values, and two. Belief in a particular behavior. A personal code of ethics guides personal behavior; people with different values influence their behavior. Among the values held by various individuals, values such as social altruism, biosphere, and egoism are closely related to the individual's tendency toward environmental protection behavior. There is a positive relationship between social altruism and the biosphere and environmentally friendly behavior. The egoistic value is the opposite of the first two values and is negatively related to green consumer behavior. Individuals with self-centered values consider perceived benefits and required costs before adopting green products. For self-value-oriented people, if the benefits outweigh the costs of adopting green products, they will adopt green behaviors.

## **4. The Conceptual Framework for the Research Study**

### **4.1 New Energy Vehicle**

The concept of a new energy vehicle is a newly formed vehicle powered by electricity rather than fuel power. The benefit of new energy vehicles is causing less environmental emissions, which helps improve our future climate change issues.

## **5. The Influencing Factors of New Energy Vehicles Affecting Sichuan Consumers' Purchase Intention Based on TPB Theory**

Ma: et al. (2018)<sup>[4]</sup> studied subjective norms that reflect a person's perceived social pressure to perform certain behaviors. If consumers believe that those who are essential to them rate the functionality of NEVs positively, individuals will be more inclined to purchase NEVs to meet this expectation. People who have a positive attitude towards a product exert an influence on the perspectives of others towards that product. In other words, consumers are often influenced by the consumption patterns of their friends, family members, colleagues, opinion leaders, and neighbors. Perceived behavioral control refers to the total amount of power an individual perceives over executive behavior. Therefore, those who feel they have complete control over the behavior will be more willing to engage.

## **6. Conclusion**

What consumers buy is not the product itself but the benefits consumers want from the product. Without experience with a new product, individuals perceive a product's quality and value based on cues such as price, company reputation, or country of origin. Automakers should pay more attention to the personal benefits of adopting new energy vehicles. Therefore, in addition to rational appeals (financial and environmental benefits) and practical messages (e.g., quietness and spaciousness) dominating promotional messages, this element prefers emotional appeals (e.g., mood) that are more persuasive to the recipient of the message to cultivate positive evaluations of new energy vehicles. In addition, future marketing elements of NEVs should appeal to emotion by evoking personal engagement by portraying environmental issues relevant to the public to a greater extent. Therefore, personalized marketing messages should be designed for these market segments to increase the penetration rate of new energy vehicles.

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