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Consumer purchase intention of electric vehicles in China: The roles of perception and personality

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Abstract

Electric vehicles (EVs) have been developed rapidly with the strong support of governments in recent years, but the market share of EVs is still small in China and the vast majority of Chinese consumers hesitate to adopt them. Thus, for the successful development of EVs, this paper proposes a personality-perception-intention framework to explore consumers' EV adoption behavior. The research model is empirically tested with data collected from 369 participants in China. Results indicate that the EV purchase intention can be explained 57.1% variance by consumer perception and personality. Two types of personality, such as personal innovativeness and environmental concern, significantly affect EV purchase intention directly. They are also significantly mediated by two kinds of perceptions (i.e. positive and negative utilities). The findings give a deeper understanding of EV adoption behavior, and provide recommendations for policymakers and manufacturers on promoting EVs.

Keywords: Electric vehicles; Personality; Perception; Purchase intention

1. Introduction

Electric vehicles (EVs) emerging as an eco-friendly innovation, are expected to be a sustainable solution for the global challenges of energy scarcity and environment pollution. Governments across the world have proposed a variety of policy mechanisms and invested billions of dollars to support EV development (Du and Ouyang, 2017). For example, the Chinese government provides purchase subsidy (Lu et al., 2017) and an exemption from acquisition tax and the excise tax based on engine displacement and price (Mock and Yang, 2014) to facilitate and promote consumer adoption of EVs. Moreover, the Chinese government invested 10 billion RMB in 2009 and announced to invest 100 billion RMB over the next decade from 2011 toward the advancement of EV technology and market uptake of EVs.

However, EVs still account for a tiny fraction of the total vehicles sold in China. For example, sales of total vehicles were 28,878,900 in 2017. The market share of EVs was barely 2.7%, with an increment of 0.9% over the previous year. Mass adoption of EVs has a long way to go. There is a paradox: the Chinese government believes that the EV represents the trend of future development for its advantages of energy-conservation and low-emission, but most of Chinese consumers are in a state of wait-and-see. To solve this paradox, our study tries to explore the determinants of consumer EV adoption behavior.

Extant research on EV adoption has identified that consumer perceptions and individual characteristics play an important role in EV acceptance. However, the existing studies

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