



Contents lists available at ScienceDirect

Australasian Marketing Journal

journal homepage: www.elsevier.com/locate/ausmj

Predicting purchase intention of electric vehicles in Hong Kong

Mark Ng*, Monica Law, Serene Zhang

Department of Business Administration, Hong Kong Shue Yan University, Braemar Hill, North Point, Hong Kong

ARTICLE INFO

Article history:

Received 16 May 2018
Accepted 22 May 2018
Available online xxx

Keywords:

Environmental concern
Trust in electric vehicles
Perceived value
Responsive efficacy
Self-expressive benefits
Willingness to pay

ABSTRACT

What makes consumers adopt energy-sustainable innovations? Drawing from psychological research on environmental behaviors, we propose a model integrating attitudinal factors, normative factors and self-control to explain the purchase of electric vehicles (EVs) by consumers. Specifically, we utilized structural equation modeling to develop a model to identify relationships between perceived values, green attitudes, normative factors, and self-expressive benefits and purchase intention of EVs. An empirical study was carried out to test the conceptual framework and 11 hypotheses were developed based on literature. The model was tested with survey data from 205 Hong Kong respondents from the automobile community. SEM analyses confirmed that perceived value, trust in EV, responsive efficacy, and willingness to pay had significant and positive influence on purchase intention of EVs. This study offers insights into the development of marketing program for EV in Hong Kong. The findings will help EV manufacturers to facilitate EV purchases. Future research opportunities are discussed.

© 2018 Australian and New Zealand Marketing Academy. Published by Elsevier Ltd. All rights reserved.

1. Introduction

Growing concerns for environment problems at seemingly all levels of society have led to a considerable increase in the number of green products. Electric vehicles (EVs) have been developed since the early twentieth century. They were phased out the market by gasoline-powered vehicles due to their high cost, battery problems and poor performance (Bradley and Frank, 2009; Høyer, 2008; Jorgensen, 2008). After years of continued improvement of battery technology, EVs became more cost effective and attractive for drivers who are concerned with environmental problems (Scown et al., 2013). Many major vehicle manufacturers are developing EVs or hybrid EVs. In recent years, auto manufacturers, government agencies, and organizations worldwide are pursuing advanced vehicle technologies to reduce petroleum consumption. The number of battery EVs in use globally increased 10 times from 0.11 million in 2012 to 1.2 million in 2016¹. For example, Tesla delivers about 25,000 vehicles worldwide in the first quarter 2017.

Although there has been strong growth in the demand for EVs, EVs currently represent just a small proportion of the total new car market in many countries. A substantial reduction of energy consumption in transportation requires more consumers to adopt EVs. Many countries have adopted a set of economic incentives to facilitate consumer adoption (Peters et al., 2008). The number of

electric private cars registered in Hong Kong increased from 300 in 2013 to more than 10,000 in 2017². As in other countries, the growing demand for EVs in Hong Kong has been triggered by government incentives. For examples, the Hong Kong government offers first registration tax concessions for EVs. The Transportation Department has type-approved 70 EV models from eight countries, which can have up to US\$12,500 in first registration tax waived. Different measures attracted 46% of new car buyers to purchase EVs in the first quarter of 2017. This paper examines the key determinants of Hong Kong people's buying intentions toward EVs.

Increasing the understanding of green consumer behavior is important for environmental and business reasons. The literature on green product marketing is incomplete in some areas, and this research has both scholarly and practical significance. From a theoretical perspective, Ellen et al. (1991) proposed that personal values such as environmental concern are the key motivators of environmentally conscious behaviors. This view was supported by Gallagher and Muehlegger's (2011) study of consumer adoption of hybrid EVs. Nonetheless, many studies have argued that the key determinants of EV purchases are their market prices and relative driving costs (Diamond, 2009; Lieven et al., 2011). According to this view, many governments' policies have supported the rapid development of EVs in form of subsidies, tax exemptions, or other incentives, and the building of relevant infrastructure such as charging stations.

* Corresponding author.

E-mail addresses: chng@hksyu.edu (M. Ng), cclaw@hksyu.edu (M. Law).

¹ <https://www.statista.com/statistics/270603/worldwide-number-of-hybrid-and-electric-vehicles-since-2009/>.

² Transportation Department, Hong Kong: http://www.td.gov.hk/en/transport_in_hong_kong/transport_figures/monthly_traffic_and_transport_digest/index.html.

<https://doi.org/10.1016/j.ausmj.2018.05.015>

1441-3582/© 2018 Australian and New Zealand Marketing Academy. Published by Elsevier Ltd. All rights reserved.

We support the view that multiple factors determine consumer adoption of EVs (Nayum et al., 2016; Ozaki and Sevastyanova, 2011). As consumers are unlikely to compromise on traditional product attributes when buying green products, we should examine which factors determine their willingness to pay a premium for EVs. Specifically, we examine how a combination of economical and psychological factors affects consumers' willingness to pay, focusing on purchase intention to bridge this research gap. We would like to contribute to the field by proposing a framework for EV adoption and that of other green technologies to help companies increase consumers' green purchase intentions for their products.

Despite the rapid growth of EV technology, there is still limited empirical evidence on consumer adoptions of EV in the current market situation. In 2016, more than 500,000 EVs and hybrid cars were sold in China, compared to 222,200 newly registered EVs and hybrids in Europe and 157, 130 in the United States (Perkowski, 2017). China is leading the way in embracing EV technology. However, most of previous studies have focused on Western countries, and the research studies on green consumer behaviors and EV adoption in Asian countries are still limited (Lee, 2014). This study could provide useful insights on how to develop effective branding and marketing communications strategies to enhance consumers' adoption of EVs in Hong Kong and China.

2. Theoretical framework

This paper examines the key factors determining purchasing intention of EVs. Researchers have adopted different theoretical perspectives with which to predict environmental behaviors, including the theory of planned behaviors and the norm-activation model (Bamberg and Möser, 2007). Past research has suggested that attitudinal factors, normative factors and perceived behavioral control are key determinants of purchase intention of EVs. Lai et al. (2015) also reviewed different factors influencing the adoption of alternative fuel vehicles in Macau, which included economic factors such as purchase price (Chiu and Tzeng, 1999), tax credits (Diamond, 2009), and gasoline prices (Ziegler, 2012); psychological factors such as environmental concern, perceived effectiveness of EV and normative factors such as subjective norms (Nayum et al., 2016). In this study, we would examine how these factors determine purchase intention of EV in Hong Kong. Specifically, the effects of consumers' green attitudes will be examined in this study, including environmental concerns, green trust in EVs, normative factor including personal norms, and perceived control including willingness to pay and perceived value of EVs (Lai et al., 2015). To supplement the previous studies, the effects of two psychological factors on EV purchases are investigated in this study: self-expressive benefits and responsive efficacy.

2.1. Willingness to pay more

Perceived behavioral control refers to the perceived difficulty of performing a behavior (Ajzen, 2005). If consumers consider the price of a pro-environmental product to be too high, they will tend to purchase traditional products instead (Joergens, 2006). Price is traditionally a key attribute on which purchasing decisions are based (Mai and Hoffmann, 2012). Green products are generally perceived as being more expensive than conventional goods (Aslihan and Karakaya, 2014). The higher prices of green products are one of the major barriers to consumers purchasing green products. However, the price itself does not play a significant role in purchasing green products, as long as consumers are willing to accept the higher prices (Tanner and Wöfling Kast, 2003).

As the EV market of Hong Kong and China is still at an early stage of development, consumers have to pay a higher purchase price and higher maintenance costs for EV. Thus, the government

policy to support consumers' adoption of EVs (Helveston et al., 2015; Sang and Bekhet, 2015) and their willingness to pay a premium price for EVs (Oreg and Katz-Gerro, 2006; Tanner and Wöfling Kast, 2003) are strong determinants on their purchase intention of EVs. Some studies have confirmed this positive relationship in the purchase of EV (Egbue et al., 2017). Thieme et al. (2015) also found that environmental involvement and willingness to pay a premium for green products mediate the relationship between environmental concern and sustainable behaviors. Thus, we hypothesize that

H1. Consumers' willingness to pay is positively related to their purchase intention of EVs.

2.2. Perceived value

Perceived value of the product was identified as a key factor in consumers' purchasing decision process (Dodds and Monroe, 1985). Consumer will evaluate the cost and benefits subjectively when they are buying a product. They are more likely to purchase a product if they perceived that they can acquire more benefits from that product (Swait and Sweeney, 2000). Functional value has significant impacts on purchases of consumer products (Sweeney and Soutar, 2001).

Many studies on EVs have focused on the benefits and problems of adopting EVs (Eggers and Eggers, 2011). Delang and Cheng (2012) argued that the major barriers to EVs being implemented in Hong Kong are the attitudes, perceptions and mindsets of people toward EVs. They conducted a survey showing that Hong Kong people agree with the environmental benefits offered by EV but their intention to adopt EVs was restricted by the high costs of purchasing and maintaining EVs. In a recent study in China, researchers found that although consumers may be willing to pay a premium for the goods, the amount of that premium was not high (Zhao et al., 2018). In other words, EVs must match up on different product attributes against traditional fuel-based vehicles to attract consumers. Thus, the following hypotheses are proposed:

H2a. Consumers' perceived value of EVs is positively related to their willingness to pay a premium for buying EVs.

H2b. Consumers' perceived value of EVs is positively related to their intention to buy EVs.

2.3. Environmental concern

Environmental concern refers to consumers' emotional reactions such as worry, dislikes, and compassions toward environmental problems (Milfont and Gouveia, 2006; Yeung, 2004). Many studies have examined the effects of environmental concern on the choice of green products such as renewable energy (Bang et al., 2000), and organic food (Hoffmann and Schlicht, 2013). People with more environmental knowledge and concern tend to have positive attitudes toward environmental products (Karatu and Mat, 2014). Some studies have suggested that people in China expressed a clear sense of environmental responsibility and a sense of urgency to protect the environment (Wong, 2003). Their concern with environmental problems has stimulated their interests in buying EVs and other green technology (Thyroff and Kilbourne, 2017).

Consumers with higher environmental concerns are less sensitive to the price of EVs (Tanner and Wöfling Kast, 2003) and are more willing to pay a premium for the green benefits received (Hansla et al., 2008). As in the case of some organic products, consumers are willing to pay a higher price to obtain the product (Loureiro et al., 2002). Thus, the following hypotheses are proposed:

Download English Version:

<https://daneshyari.com/en/article/11027572>

Download Persian Version:

<https://daneshyari.com/article/11027572>

[Daneshyari.com](https://daneshyari.com)