

Unpacking determinants of new energy vehicles purchase intention from the perspective of Cognitive mediation model

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Abstract. Given that conventional fuel vehicles wreak havoc on the environment, the Central Committee of the CPC and The State Council of the PRC has proposed the "dual carbon" goal throughout China, the promotion of new energy vehicles (NEVs) is imminent. Based on the cognitive mediation model, this study aims to take a closer look at the influence of motivations, attention to traditional media, attention to new media, interpersonal communication, information elaboration, and factual knowledge on people's NEVs purchase intention. Our findings showed that motivations were found to be associated with attention to media. Also, attention to traditional media, attention to new media, interpersonal communication, and information elaboration were found to be positively associated with NEVs purchase intention. However, factual knowledge is insignificantly predictive of NEVs purchase intention. Theoretical and practical implications were discussed.

Keywords: New energy vehicles; Media attention; Interpersonal communication; Information elaboration; Factual knowledge; Purchase intention.

1. Introduction

Nowadays, many cities in the world are suffering from the problem of car dependence, and people's daily travel is overly dependent on cars, which is currently considered a serious and growing international problem (Lewis et al., 2019). Meanwhile, vehicle emissions contribute substantially to carbon monoxide (CO), carbon dioxide (CO₂), nitrogen oxides (NO_x), particulate matter (PM), hydrogen carbon (HC) and volatile organic compounds (VOCs) (Ližbetin et al., 2018; Sawyer et al., 2010; Tóth-Nagy et al., 2006;), which all have serious threats to our environment and health. To balance the need for cars with the emissions reduction, some studies found that compared with traditional fuel vehicles, new energy vehicles (NEVs) have shown great capability in reducing air pollutant emissions (Shi et al., 2017).

In China, the world's largest developing country and carbon emitter, vehicle transportation sector is an important source of air pollution. To help mitigate transport emissions, China has proposed the "dual carbon" goal of achieving carbon peaking in 2030 and carbon neutrality in 2060, using technological innovation to complete the world's highest drop in carbon emission in the shortest time (Xinhua News Agency, 2021). The new energy vehicle industry plays an extremely important role in this vision.

According to The Ministry of Public Security of the People's Republic of China (MPS, 2022), in 2021, the number of NEVs in China has reached 7.84 million, showing a growing trend. However, China's NEV ownership only accounted for 2.60% of the car ownership in 2021, and this is already a year-on-year increase, which means that NEVs have not been favored and popularized (The Ministry of Public Security of the People's Republic of China, MPS, 2022).

In the notion that one of the functions of mass communication is surveillance (Laswell, 1948), people have a desire to learn something, like emerging science and technology, from the news, which is a basic need to monitor their surrounding environment. Previous research has demonstrated that people's perceptions of emerging science and technology, such as geothermal energy, nanotechnology, biotechnology and health technologies, can be greatly influenced by media (Listerman, 2010; Reveilhac et al., 2022; Romanach et al., 2015; Yang et al., 2017). It is reasonable to infer that the media will also have an impact on people's cognition and even purchase intention of new energy vehicles. Therefore, this study explores the influence of communication on people's new energy vehicles purchase intention.

The Cognitive Mediation Model (CMM, Eveland, 2001) posits that people's various motivations influence their knowledge development through attention to information and information elaborative processing. To explore the impact of communication, we use this theoretical model to understand potential factors that may affect consumers' purchase intention of NEVs, such as attention to media, interpersonal communication, information elaboration and their factual knowledge related to NEVs. Investigating possible factors that may affect people's awareness of new energy vehicles and their willingness to buy can help media and marketing personnels formulate more comprehensive and effective communication strategies.

2. The Cognitive Mediation Model

The CMM was proposed by Eveland (2001, 2002) to understand how people learn from media. In this model, people's motivation to use media affects attention to media and information elaboration, which in turn affects knowledge acquisition eventually (Eveland et al., 2003). Recently, many scholars have extended the CMM and used it to explain problems in different fields, such as the breast cancer (Lee et al., 2013), H1N1 Pandemic (Ho et al., 2013), and nanotechnology (Yang, 2017).

2.1 Motivation

Motivation is the internal reason that drives people to engage in various activities. Similarly, media use motivation leads to attention to media. Surveillance of the environment is one of the three functions of mass communication (Laswell, 1948). People monitor, understand, grasp and adapt to changes in the internal and external environment in a timely manner through the media, showing a desire to learn from the media. Therefore, people will pay more attention to the media, motivated by surveillance of the environment (Eveland et al., 2003).

The pursuit of social utility also leads to attention to media. Social utility motivation is about individuals obtaining useful information and news which aids their social interaction with other individuals (Wohn et al., 2019). People may pay attention to news for information that can be used in a conversation and enhance personal social connection (Shim et al., 2015). Hence, we propose a hypothesis:

H1a: Motivation will be positively associated with attention to traditional media.

H1b: Motivation will be positively associated with attention to new media.

2.2 Attention to media

Under normal circumstances, mass communication is considered the most effective way to disseminate information (Carelli et al., 2007), especially in contexts related to purchase intentions of environment-friendly products (Trivedi et al., 2018). According to CMM, attention to media attention can help improve people's knowledge through information processing, causing considerable knowledge acquisition (Eveland et al., 2003).

Traditional media are generally more serious and professional, showing a strong concern for environmental issues. It is found that people prefer traditional media such as broadcast news and newspapers due to the belief that traditional media is more credible than social media (Austin et al., 2012). People are likely to deepen their understanding on the harm conventional fuel vehicles can do to environment when those media reports vehicular emissions, in this context, can bring serious impacts on air quality (Sharma et al., 2010), which is also consistent with agenda setting theory (McCombs et al., 1972). This may lead them to realize that the large number of vehicles is causing the poor air quality and to choose other modes of travel or greener vehicles. TV, radio, newspapers have all been shown to influence people's purchase intention (Hollanders & Vliegenthart, 2011; Khuong et al., 2015; Wadsworth et al., 2018). The pro-environmental attitudes caused by media attention to traditional media will encourage people to buy NEVs. In the process of using the media, the coverage of environmental issues positively influences ecological concern, inward and outward environmental attitude (Trivedi et al., 2018). Besides attitudes, the use of news media can also

positively influence pro-environmental behavior (Holbert et al., 2003). Better attitudes towards environment result into increased intention to purchase environment-friendly products (Trivedi et al., 2018). To be more specific, people holding pro-environmental values are more likely to buy a hybrid car, one kind of new energy vehicles, independently of macroeconomic scenarios or incentives such as green taxation (Tsouros & Polydoropoulou 2017).

Compared with the passive consumption model of traditional media, it is more important for new media users to participate in a more active construction, creation and sharing when paying attention to the media (Tamplin et al., 2018), giving new media an edge in marketing communications. Marketing communications is the ideal channel for consumers to learn product information and take purchasing action. For example, advertising is one of forms of marketing communication. The use of advertising is cheaper and occasionally more effective than technological innovations (Hyard, 2013). The impact of green advertising on consumers' intention to buy green products is positive (Chang et al., 2015). Also, social media is often more trusted than traditional media as a channel for brand information (Mangold & Faulds, 2009). The enjoyment of social media has made it an important tool to support purchasing decisions (Di Pietro & Pantano, 2012). Viral marketing, which can only be done through new media, can make potential consumers have a positive attitude towards a product through some driving forces (Shareef et al., 2018). Therefore, new media is able to promote the sales of NEVs through media marketing activities of NEVs.

In conclusion, as media diversifies, people will give media attention to NEV in different media outlets. Many scholars have examined learning from newspaper, radio, television and computer indicating that the effect of receiving information from different media may vary (Eveland et al., 2001; Ladwig et al., 2012; Yang et al., 2017). We divide the media into traditional media and new media to examine the impact on the purchase intention of NEVs. We posit the following hypotheses:

H2a: Attention to traditional media will be positively associated with NEVs purchase intention.

H2b: Attention to new media will be positively associated with NEVs purchase intention.

2.3 Reflective integration

Reflective integration is the incorporation of new information into individuals' existing cognitive framework for better understanding of the subjects (Yang et al., 2017). Reflective integration includes interpersonal communication and information elaboration (Kosicki & McLeod, 1990).

2.4 Interpersonal communication

Interpersonal communication refers to the exchange of information between individuals, and it is also a new information communication system formed by the interconnection of two individual systems. Opinion leaders are generally considered to be individuals who have the greatest influence on the recognition or adoption of others in the dissemination of products and technologies in social networks (Cho et al., 2012). Opinion leaders play an important role in interpersonal communication. According to the theory of two-step flow of communication, the influence from the mass media first reaches the opinion leaders, who then communicate what they read and hear to the people they influence. An opinion leader is an attractive person with outstanding mental, physical, and social characteristics and reliable knowledge in a specific field (Lazarsfeld et al., 1944). Because of their authority and charisma based on extensive knowledge in a certain field, they have a significant impact on the purchasing intentions and decisions of those around them. In addition to face-to-face communication, opinion leaders can be used to promote the experiential and functional value of products and services over different online forums (Lin et al., 2018), meaning that their referrals may considerably increase the NEVs purchase intention.

People tend to turn to their social circles for advice and information when making purchasing decisions, the response of which would influence their purchase intention. In the process of interacting with their social circles, the word of mouth of the product or brand will be formed subtly, which influences several respects of buying, such as consumers' purchase intention and the possibility to buy. Meanwhile, the word of mouth has a positive direct impact on purchase intention specifically

in automobile industry (Jalilvand et al., 2012). It's reasonable to believe that word of mouth formed through interpersonal communication also has a positive impact on the willingness to purchase NEVs.

What's more, previous research has demonstrated that interpersonal communication can facilitate the purchase of NEVs. A study on electric vehicles purchase intentions conducted in China showed that the peer group opinion has a positive effect on consumer behavior (Zhang et al., 2011). In the aspect of purchasing alternatively fueled vehicles, positive effect of interpersonal discussion is also found (Axsen & Kurani, 2011). In a study on electric vehicle purchase intentions in Shenzhen China, the results showed electric vehicle purchase intentions of consumers will be increased based on a friend's opinion or a family member's opinion. (Wang et al., 2017). Therefore, we proposed the following hypothesis:

H3a: Interpersonal communication will be positively associated with NEVs purchase intention.

2.5 Information elaboration

Elaboration means connecting new knowledge with the existing knowledge, including prior knowledge and personal experience, which is stored in memory (Eveland, 2001). High elaboration and low elaboration lead to different changes in consumer attitudes (Bilancini et al., 2018). People with a higher level of information processing are more likely to not only evaluate and think about the savings they can gain in the distant future but are also likely to evaluate gains they may experience in the near future than lower outcome-elaborators (Tangari et al., 2015). They are also more likely to make sustainable choices (Tangari et al., 2015). When people generate elaboration when encountering news related to NEVs, they will deepen their understanding of NEVs. Given that NEVs can contribute to air pollution reduction and achievement of carbon neutrality targets (Su et al., 2021), the more elaboration is generated, the more likely they are to buy NEVs. A higher level of information elaboration makes people clear about the long-term and sustainable benefits that NEVs can bring, and information elaboration itself will make them inclined to these kinds of choices, eventually increasing NEVs purchase intentions.

In addition, due to the relatively mature development of traditional fuel vehicles, the existing framework will hinder people's cognition of new energy vehicles. A positive framework dominated by traditional fuel vehicles is not conducive to the promotion of NEVs. However, a laboratory experiment found that elaboration, which encourages people to consider their decisions in greater depth, has the debiasing effect to eliminate the framing effect (Cheng et al., 2014). This way, when people connect what they see in the media about NEVs with previous thoughts and personal experiences, they are more likely to make more rational decisions. Thereby, we predict that:

H3b: Information elaboration will be positively associated with NEVs purchase intention.

2.6 Factual knowledge

The CMM did not explore the possible impact of knowledge on people's behavior (Eveland, 2003). Scholars indicated that factual knowledge is key to motivating people to learn about and eventually adopt innovation (Rogers et al., 2014). Especially for electric vehicles, the knowledge of technology and experience is one of the important determinants of purchase intention (Carley et al., 2013). On the contrary, the initial cost of technology and lack of technical knowledge can hinder people from adopting new technologies (Diamond, 2009). Since NEVs have not been as widely popularized as traditional fuel vehicles for the time being, there are still uncertainties in terms of policy, structure, and performance. The greater the lack of knowledge, the stronger the uncertainties. Uncertainty like this reduces the benefits that consumers can expect and their NEVs purchase intention (Jaffe et al., 2005).

However, access to knowledge detrimental to NEVs may also lead to decreased purchase intentions. A study conducted in China, reported that knowledge of vehicle performance barriers such as battery life, battery cost and recharging time were top concerns for purchasing electric vehicles (She et al., 2017). Perceived barriers stemming from such kind of knowledge cause an impeditive effect on NEVs adoption (Krishnan et al., 2021).

Therefore, whether factual knowledge can successfully increase NEVs purchase intention remains unclear. Thus, this study focuses on this issue and proposes the following question:

RQ1: How factual knowledge will be associated with NEVs purchase intention.

3. Methods

3.1 Sampling

We conducted an online survey in April 2022 among people in China through a questionnaire collection platform, Credamo. Taking into account economic factors, we selected a random sample of people over the age of 18 and ensured that they voluntarily participated in this survey. After the first round of questionnaire collection, we manually eliminated unqualified questionnaires and conducted a second round of supplementary collection.

A total of 500 participants met the criteria and participated in the survey which collected information about sociodemographics, motivations for using the media, attention to media (traditional media and new media), interpersonal communication, information elaboration, sensation-seeking, factual knowledge about new energy vehicles and NEVs purchase intention.

3.2 Measurement

Demographic variables were used as control variables, including age ($M = 30.9$, $SD = 6.85$), gender (1 = male, 2 = female; 56.8% female), and NEVs ownership (1=own, 2=do not own; 32.0% own). Education ranged from 1 (elementary school and below) to 7 (Doctorate) (“Elementary school and below” = 0, “Junior high school” = 0.6%, “High school” = 2.6%, “Junior college” = 12.2%, “Undergraduate” = 69.2%, “Master” = 13.2%, “Doctorate” = 2.2%). Monthly household income ranged from 1 (RMB 1,000 and below) to 8 (above RMB 20,000) (“RMB 1,000 and below” = 0.6%, “RMB 1,001~RMB 3000” = 10.4%, “RMB 3,001~RMB 5000” = 11.8%, “RMB 5,001~RMB 7000” = 15.0%, “RMB 7,001~RMB 10,000” = 29.6%, “RMB 10,001~RMB 15,000” = 15.6%, “RMB 15,001~RMB 20,000” = 9.8%, “above RMB 20,000” = 7.2%).

4. Independent variables

4.1 Motivation

Motivation was measured with four items drawn from Eveland et al. (2000) and Wohn and Ahmadi (2019). Respondents were asked to indicate on a 5-point scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree): (a) “I use media to give me more facts to back up my opinions,” (b) “I use medias because it helps me make up my mind about things,” (c) “I use medias to stay informed about my surroundings,” and (d) “I use medias because it helps me understand the main events of the day.” (e) “I use medias to have something to talk about. (f) “I use medias to be knowledgeable in conversations,” (g) “I use medias to find subject matter to discuss with other people,” (h) “I use medias to make new connections with people.” The eight items were averaged to create a composite index for motivation ($M = 4.22$, $SD = 0.42$, Cronbach’s $\alpha = 0.71$).

4.2 Attention to traditional media

To obtain a measure of the level of attention paid to NEVs news on traditional media, respondents were asked on a 5-point scale (1 = ‘no attention at all,’ 5 = ‘very close attention’): how much attention do you pay to the information stories when you use traditional media, like newspaper, radio and TV: (a) “Information related to vehicles”, (b) “Information related to environmental protection”, (c) “Information related to new energy vehicles”, (d) “Information about technical advancement in new energy vehicles”, (e) “Information about the impact of new energy vehicles on society and life.” The five items were averaged to create a composite index for attention to traditional media ($M = 3.98$, SD

= 0.72, Cronbach's $\alpha = 0.85$). Attention to traditional media had good internal reliability. All the items are adopted from Ho (2012).

4.3 Attention to new media

To obtain a measure of the level of attention paid to NEVs news on new media, respondents were asked on a 5-point scale (1 = 'No Attention at All,' 5 = 'Very Close Attention'): how much attention do you pay to the information stories when you use new media, like Weibo and Tiktok: (a) "Information related to vehicles" (b) "Information related to environmental protection", (c) "Information related to new energy vehicles" (d) "Information about technical advancement in new energy vehicles", (e) "Information about the impact of new energy vehicles on society and life." The five items were averaged to create a composite index for attention to new media ($M = 4.18$, $SD = 0.59$, Cronbach's $\alpha = 0.78$). Attention to new media also had good internal reliability. All the items are adopted from Ho (2012).

4.4 Interpersonal communication

To measure the degree of interpersonal communication, respondents were asked on a 5-point scale how frequently they discuss news related to NEVs (1 = 'Least Frequent,' 5 = 'Most Frequent') with family members, friends, colleagues or school fellow, and automobile salesman, adapted from Ho et al. (2013). Responses were averaged to form a scale, with higher scores indicating higher levels of interpersonal discussion ($M = 3.68$, $SD = 0.79$, Cronbach's $\alpha = 0.68$).

4.5 Information elaboration

Information elaboration was measured with a series of questions that serve to explore respondents' elaborative processing regarding news related to NEV. Respondents were asked to rate on a 5-point scale (1 = 'Strongly Disagree,' 5 = 'Strongly Agree'), the extent to which they agree with the following statements: (a) "I often find myself thinking about what I've seen about new energy vehicles on media," (b) "I often tie what I see on media about new energy vehicles to ideas I've had before," (c) "I often try to relate what I learnt from the media on new energy vehicles my own personal experiences," (d) "I often think about how what I see about new energy vehicles on media relates to other things I know." The four items were averaged to form a composite scale ($M = 3.93$, $SD = 0.68$, Cronbach's $\alpha = 0.75$). All the questions were adapted from Eveland et al. (2003).

4.6 Factual knowledge

Six items of knowledge about new energy vehicles from the China Association of Automobile Manufacturers (2022) were used to assess factual knowledge. The items include: (a) "Pure electric vehicles have longer battery life than traditional vehicles," (b) "Buying new energy vehicles can generally enjoy government preferential policies," (c) "The number of new energy vehicles in China ranks second in the world, second only to the United States," (d) "The promotion of new energy vehicles is not helpful to achieve the goal of reducing greenhouse gas emissions," (e) "All new energy vehicles do not have internal combustion engines because they do not use traditional fuels," (f) "Tesla, BYD, and Lexus are common new energy vehicle brands," with a good mix of easy and tough statements. Respondents were asked to choose either one of the following options for each statement: '1 = False,' '2 = Don't Know,' '3 = True.' The responses were recoded into '1 = incorrect' and '2 = correct.' Respondents who indicated 'Don't Know' were recoded as incorrect. <http://www.caam.org.cn/>

5. Dependent variables

5.1 Purchase intention

This was measured using a 5-point Likert scale (1 = ‘Strongly Disagree’ and 5 = ‘Strongly Agree’). Respondents have to answer how much they agree with the following statements adapted from a study conducted by Ding et al. (2022): (a) “I want to buy a new energy vehicle in the future,” (b) “It will be important for me to buy new energy vehicles,” (c) “I would like to recommend new energy vehicles to people around me.” The three items were averaged to create a scale, with higher values indicating a higher likelihood that the respondent will buy NEVs (M = 4.24, SD = 0.56, Cronbach’s $\alpha = 0.62$).

5.2 Analytical approach

Hierarchical ordinary least squares (OLS) regression analysis was applied to examine the relationships between the independent variables and the dependent variables (NEVs purchase intention). This regression model incorporates the variables in the assumed causal order: demographics was in the first block as control variables, followed by motivation, attention to media (traditional media and new media), interpersonal communication and information elaboration, and a multiplication term were included in the final regression block: the interaction between sensation-seeking and factual knowledge.

5.3 Results

Table 1 shows the Pearson correlation coefficients between variables.

Table 1. Pearson correlation coefficients between variables

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|----------------------------------|---------|---------|---------|---------|---------|---------|---------|
| 1 Motivation | 1 | .502*** | .528*** | .637*** | .546*** | .219*** | .619*** |
| 2 Attention to traditional media | .502*** | 1 | .655*** | .603*** | .622*** | .073 | .546*** |
| 3 Attention to new media | .528*** | .655*** | 1 | .713*** | .679*** | .217*** | .645*** |
| 4 Information elaboration | .637*** | .603*** | .713*** | 1 | .711*** | .178*** | .687*** |
| 5 Interpersonal communication | .546*** | .622*** | .679*** | .711*** | 1 | .181*** | .649*** |
| 6 Factual knowledge | .219*** | .073 | .217*** | .178*** | .181*** | 1 | .133** |
| 7 Purchase intention | .619*** | .546*** | .645*** | .687*** | .649*** | .133** | 1 |

Note. N = 500; *p < 0.05, **p < 0.01, ***p < 0.001.

With regard to the control variables, people who have owned a new energy vehicle ($\beta = 0.22$, $p < 0.01$) indicated higher NEV purchase intention than those who have not owned a new energy vehicle. Also, income ($\beta = 0.07$, $p < 0.001$) was positively associated with the NEVs purchase intention. The demographic block accounted for 0.10% of the variance in the model.

Results showed that motivation was positively associated with the attention to traditional media ($r = 0.50$, $p < 0.001$) and the attention to new media ($r = 0.52$, $p < 0.001$). Hence, H1a and H1b were supported.

At the zero-order level, attention to media in terms of attention to traditional media and attention to new media was positively correlated with the NEVs purchase intention. After being entered into the regression model, attention to traditional media ($\beta = 0.08$, $p < 0.05$) and attention to new media ($\beta = 0.37$, $p < 0.001$) were significant. Hence, H2a and H2b were supported. The attention to media block accounted for 0.13% of the variance in the model.

It is clear from the results that information elaboration ($\beta = 0.18$, $p < 0.001$) was significantly associated with NEVs purchase intention. Hence, H3a was supported. When it comes to interpersonal communication ($\beta = 0.16$, $p < 0.001$), it had significant association with the NEVs purchase intention. Hence, H3b not supported. The interpersonal communication and elaboration block accounted for 0.05% of the variance in the model.

Table 2. shows the hierarchical OLS regression analysis for factors predicting NEVs purchase intention.

Table 2. Hierarchical OLS Regression Analysis for NEVs Purchase Intention

| | Zero-Order | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
|---------------------------------|------------|---------|---------|---------|---------|---------|
| Block 1: demographic variables | | | | | | |
| Age | 0.12** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sex | -0.04 | 0.02 | -0.03 | 0.00 | 0.01 | 0.00 |
| Education | 0.04 | -0.04 | -0.02 | -0.03 | 0.00 | 0.00 |
| Income | 0.26*** | 0.07*** | 0.00 | -0.02 | -0.04** | -0.03** |
| Job | 0.09 | 0.00*** | 0.02 | 0.00 | 0.01 | 0.01 |
| NEV ownership | 0.25*** | 0.22 | 0.17*** | 0.11*** | 0.09* | 0.09* |
| Incremental R ² (%) | | 0.10 | | | | |
| Block 2: motivation | | | | | | |
| Motivation | 0.62*** | - | 0.78*** | 0.49*** | 0.33*** | 0.33*** |
| Incremental R ² (%) | | | 0.32 | | | |
| Block 3: media attention | | | | | | |
| Attention to traditional media | 0.55*** | - | - | 0.08* | 0.03 | 0.02 |
| Attention to new media | 0.65*** | - | - | 0.37*** | 0.20*** | 0.20*** |
| Incremental R ² (%) | | | | 0.13 | | |
| Block 4: reflective integration | | | | | | |
| Interpersonal communication | 0.69*** | - | - | - | 0.16*** | 0.16*** |
| Information elaboration | 0.65*** | - | - | - | 0.18*** | 0.18*** |
| Incremental R ² (%) | | | | | 0.05 | |
| Block 5: knowledge | | | | | | |
| Factual knowledge | 0.13** | - | - | - | - | -0.09 |
| Incremental R ² (%) | | | | | | 0.00 |

Note. N = 500; Cell entries for all models are final standardized regression coefficients for all blocks; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

On the other hand, factual knowledge showed no significant association with the NEVs purchase intention. Thus, H4 was not supported. The factual knowledge block accounted for 0.001% of the variance in the model.

In sum, all factors explained 0.59% of the total variance in the NEVs purchase intention.

5.4 Discussion

Since traditional fuel vehicles will bring a lot of pollutant emissions (Ližbetin et al., 2018; Sawyer et al., 2010; Tóth-Nagy et al., 2006;), imposing threat to both our environment and health, it is very urgent to promote NEVs to replace traditional fuel vehicles. Because of mass communication 's enormous power in disseminating information (Carelli et al., 2007), it is of great value study on the influence of communication on NEVs purchase intention.

In this study, we first hypothesized that motivation was positively associated with attention to traditional media as well as attention to new media, and the two hypotheses were supported, providing further support to previous studies (Eveland et al., 2003; Shim et al., 2015). When people's learning needs develop to a certain level, the needs become motivations, like surveillance and social utility, which prompts them to pay attention to the media. Also, it is worth noting that motivation has a stronger positive effect on new media than on traditional media. This is because traditional media has been strongly impacted by new media, and people are more inclined to use new media. According to a report by Maddux (2007): About one-third of users who read online e-news lost interest in traditional media, with TV viewing rates down 35 percent, radio listening rates down 25 percent, and newspaper purchases down 18 percent.

Attention to traditional media and attention to new media were both found to be positively associated with NEVs purchase intention. This result showed that people will increase their

understanding of NEV-related content, such as environmental protection, through media attention, thereby increasing their NEVs purchase intention. Similarly, compared with traditional media, attention to new media can better increase people's purchasing intention. This may be due to people now focusing mainly on online marketing channels and ignoring offline marketing channels (Li & Kannan, 2014). This leads people to pay too much attention to information from new media channels. But in fact, online and offline synergies produce the best results (Danaher & Dagger, 2013).

Interpersonal communication was found to be positively associated with NEVs purchase intention, consistent with the results of previous studies (Axsen & Kurani, 2011; Habich-Sobiegalla et al., 2018; Jalilvand et al., 2012; Zhang et al., 2011). People's NEV purchase intention will be influenced by society and technology inspiration and perceptions of social symbolic status when doing interpersonal communication (He et al., 2018).

Results also showed that there was a positive relationship between information elaboration and risk NEVs purchase intention. In today's dynamic, complex, and content-rich digital age, careful information processing is critical to overcoming challenges (Jensen, 2011). Only through careful thought can one make more sustainable choices (Tangari et al., 2015) and break down the long-established framework in favor of conventional fuel vehicles (Cheng et al., 2014). Overall, the above two findings suggest that the reflective integration can considerably increase NEVs purchase intention. Evidently, being actively engaged in news information processing and being informed about NEVs plays a pertinent role in driving individuals to engage in buying NEVs.

Contrary to our expectations, factual knowledge about NEVs has no significant relationship with NEVs purchase intention. This may be because after a period of development and various propaganda, people have obtained a lot of basic factual knowledge about new energy vehicles from the media. Continuing to improve basic knowledge is no longer enough to stimulate or inhibit people's willingness to purchase NEVs. Compared to factual knowledge, people's attitude, perceived behavioural control and various norms, like social norms, moral norms, and personal norms, have a more significant effect on NEVs purchase intention (Asadi et al., 2021; Mohamed et al., 2018; Semeijn et al., 2019; Shalender & Sharma, 2021; Zhang & Zhou, 2020). Whether from this study or previous studies, it seems that people's good self-perception through adopting NEVs can influence purchase intention better than pure factual knowledge.

5.5 Theoretical and practical implications

We can draw several theoretical and practical implications from this study. First, this study introduces CMM into the context of NEVs for application and extends original CMM to the link of purchase intention. In the part of attention to media, the importance of differentiating new media and traditional media was found. Compared with traditional media, new media has a more obvious effect on the NEVs purchase intention. Also, relying on the supplement of knowledge is ineffective in increasing NEVs purchase intention.

One practical implication that the media and NEV companies are suggested to carry out certain publicity activities for regular customers. Such activities can activate the role of interpersonal communication and let regular customers actively talk about NEVs with people around them, like their family members and close friends, so as to improve people's purchase intention. This is consistent with the theory of two-step flow of communication (Katz, 1957). Companies can also hold NEVs exhibitions and seminars with the permission and support of relevant government departments. On these occasions, new energy vehicle sellers can interact with people and provide necessary information. Such interactive processes, such as accompanying the test drive and group discussions, help to improve the level of information processing, which positively influences NEVs purchase intention.

Besides, since knowledge has no significant effect on purchase intention, the media should avoid outputting factual knowledge to people, and instead adopt the way of emotional communication. The media should demonstrate the urgency of the current situation of the environment and the changes and happiness brought about by the use of NEVs through vivid and interesting stories or actual cases

that are close to life. People will be infected and stimulated by emotions, thereby increasing their NEVs purchase intention.

In conclusion, the findings of this study have important implications for understanding the influencing factors of NEVs purchase intention. This can help media practitioners that the new energy vehicle industry and policy makers take reasonable measures through various platforms to increase the willingness to buy NEVs.

5.6 Limitations and directions for future research

There are still some deficiencies in this study that need to be addressed. First, the data in this study are cross-sectional data collected at one time. So, in fact it measured correlation rather than causation. we stated that independent variables such as attention to traditional media, attention to traditional media, interpersonal communication, information elaboration, and factual knowledge. However, it may be the reverse – where it is NEVs purchase intention predicting each of these independent variables. Future research could conduct secondary or even multiple data collections to explore causal relationships.

The measurement of knowledge in this study we used is only an immature preliminary exploration for the time being, and needs to be further refined for complete dimension and representativeness. The items were adapted from news and information on the CAAM website. In addition, these items do not precisely target consumers' NEVs purchase intentions. Therefore, our measurement of new energy vehicle knowledge is only a preliminary attempt. Future research should develop more accurate and effective NEVs knowledge measurement.

This study did not take into account marketing, distribution, after-sales and government policy, while they have been shown to have an impact on the willingness to purchase NEVs (Jain et al., 2022; Krishnan et al., 2021; Shakeel, 2022). Future research should take these variables into account.

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