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Assessing Consumers' Behavioral Intention and Willingness to Pay for Electric Vehicles: An Evidence from China

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Abstract: In an endeavor to reduce the severe environmental impacts of pollution and energy consumption, the Chinese government is strongly encouraging the use of electric vehicles. However, there is a paucity of research examining how much young Chinese buyers are prepared to spend on electric vehicles. In order to address this research gap, the current study expands on previously identified variables that affect consumer intentions. In addition, we expand the scientific basis of the theory of planned behavior by introducing three new variables: performance expectancy (PE), information overload (IO), and perceived risk (PR). The study analyzed survey responses from 498 young Chinese consumers and employed structural equation modeling to evaluate the formulated hypotheses. The results indicate that behavioral intention (BI) is positively and significantly influenced by perceived environmental knowledge and PE, but negatively impacted by IO. Additionally, subjective norms are found to be significantly and positively related to BI. The study also reveals that PR is strongly and favorably connected with BI. Moreover, willingness to pay (WTP) for electric vehicles has a positive relationship with BI. Overall, the research contributes to our understanding of ethical purchasing practices and provides essential research directions for both academicians and practitioners.

Keywords: environmental sustainability, information overloaded, willingness to pay for electric vehicles, China

1. Introduction

Relying heavily on conventional fuels not only imposes a burden on the national economy but also contributes to a range of environmental issues, such as global warming, carbon emissions, and erratic weather patterns [1]. Additionally, the excessive use of conventional fuels depletes natural resources [2–4]. Thus, there is a pressing need to establish a new energy structure that incorporates alternative fuel sources [5, 6]. Such an approach would not only help to reduce the cost of oil imports but also alleviate climate-related problems [7]. In the last ten years, the electric vehicle (EV) market has grown quickly due to legislative initiatives and technical developments [8]. The purchase of EVs has grown by 60% yearly on average over the last four years [9], with 90% of all purchases occurring in Asia, the European Union, and the US. There are currently over 8 million EVs on the road worldwide, including car passengers, as well as medium and heavy automobiles. More than half of these vehicles are from China [10]. Despite this growth, EVs still only comprise a small percentage (2.6%) of the global car market, making it challenging to quickly energize the transportation sector. Furthermore, China's usage of fuel and petroleum rose by 256.56 million tons between 2012 and 2020 [11].

The high cost of EVs, coupled with a lack of charging infrastructure and lengthy charging times, has hindered consumer adoption of EVs [12]. To promote the acceptance of EVs, the Chinese government has implemented various fiscal and non-fiscal policies. In fiscal policies, free public parking and toll allowances are examples of non-monetary regulations. Refunds on decisions, tax reductions, creating incentives, and energy price discounts are examples of non-monetary regulations [13]. However, despite these efforts, the private sector has seen poor sales of EVs, and the government remains committed to promoting their success. Consumer preference is the element that matters the most in the commercial sphere, highlighting the need for comprehensive research to identify the primary components affecting customers' acceptance of electric cars.

The view of customers toward ecologically responsible goods has been examined in numerous studies [14, 15]; however, not much inquiry has been done on green vehicles. In spite of showing the highest possible level of environmental knowledge, customers in developing nations typically have lower levels of environmental awareness, highlighting the need for further research in this region. Despite awareness of regional environmental problems, they lack an understanding of sustainable consumption practices [16]. This research aims to address

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the knowledge deficit in this area by analyzing the behavioral inclinations of customers towards EVs in developing countries. As the desire for environmentally sustainable automobiles increases, it is crucial to understand young consumers' attitudes toward these products when developing marketing strategies. This study explores the relationships between environmental knowledge (ENK), performance expectancy (PE), information overload (IO), subjective norms (SN), perceived risk (PR), behavioral intentions (BIs), and WTP for transformed automobiles.

The current investigation has three major inputs. First of all, the present study fills a void in the scientific community by thoroughly examining every component that may influence Chinese customers' BI toward electric cars. In the authors' opinion, this is the initial investigation to evaluate BI and WTP for electric automobiles in China, a nation that is currently experiencing serious environmental problems as a result of recent growth in both economy and population, necessitating research into the adoption of electric automobiles. Second, the research adds three novel variables (PE, IO, and PR) to the theory of planned behavior (TPB) that may affect customers' BI and WTP for EVs. For this purpose, we drew on previous research studies and theoretical frameworks, including the Technology Acceptance Model, the Unified Theory of Acceptance and Use of Technology, and Norm Activation Theory to inform our selection of these dimensions [17]. Finally, the study makes a unique extension of earlier research results. For instance, awareness of sustainability concerns is essential to the acceptance of electrified cars. Similarly, opinions on the advantages of electrified vehicles are a key element of TPB's theory paradigm.

2. Theoretical Foundation and Hypotheses Formulation

2.1. Perceived environmental knowledge

A person's perception of ecosystems and how human behavior affects them is called perceived ENK [18]. Consumers who hold this concept are knowledgeable about environmental issues and how to address them [19]. Today, information and knowledge play a crucial role in the decision-making process of consumers. As a result of ENK's reputation, consumers are more inclined to buy ecologically responsible products [20]. In order to increase consumer approval of eco-friendly goods, governmental authorities and businesses must engage in eco-friendly marketing [21].

It is possible to promote eco-friendly products and encourage consumers to modify their lifestyles using effective marketing strategies [22]. The acquisition of information and knowledge by consumers about a product determines their perception of its uniqueness and the evidence supporting their purchase decisions [23]. As a result, ENK has the potential to significantly impact consumer BI [24]. As a result of the research that Boo and Park [24] conducted, they have been able to gain a greater understanding of the impact that perceived ENK, awareness, and attention have on consumer actions. We offer the foregoing hypothesis based on our previous conversation.

H1: Perceived ENK is positively associated with BI.

2.2. Performance expectancy

Boo and Park [24] suggest that people's expectations, which refer to their perceived probabilities of the various results of engaging in a particular behavior, can influence their behavior as a result of their belief in the technology. When a system is seen as usable, it is directly affected by the assumption that technology will assist individuals in completing their jobs, and previous beliefs influence this perception [25]. PE may include factors such as energy efficiency, reductions in expenses, dependability, accessibility, style, and propulsion, especially for electric cars [26]. For EVs, PE might involve users' expectations of the ability of EVs to provide backup electricity. Several studies have found that buyers are more motivated by the reduction in service charges than by the reduction in electricity costs. It is important to assess the business implications (BI) of new technology, such as whether an EV will outperform conventional vehicles [27]. Additionally, the literature suggests that PE has a substantial effect on the adoption of innovative technologies [28]. Previous studies have also found that PE influenced consumers' intentions to adopt cloud technology in Pakistan [29] and had a favorable effect on Chinese customers' plans to share electric cars [30]. On the basis of these explanations, we put forth the subsequent hypothesis.

H_2: PE is positively associated with BI.

2.3. Information overloaded

The impact of IO has been studied across various fields for several years. The construct of IO works on a simple principle: when decision-makers are inundated with too much information, their capacity to process it is exceeded, resulting in suboptimal decisions. Studies in conventional retail contexts have ensured that the quantity of knowledge seekers receive plays a critical role in their purchasing behavior [31].

The TPB posits that BI is an indicator of true behavior. In earlier studies, the reliability and purity of plans declined up to a certain point as the amount of information increased [32]. It is more crucial to provide customers with sufficient knowledge rather than an excessive amount of alternative information to make informed decisions. When an excess of information is processed, it can lead to IO problems that become more severe [33]. In many cases, consumers' emotional states such as trust and contentment can lessen the impact of too much information on them [34]. Some studies, however, have discovered that IO has no obvious effect on buyers' decisions, but increases in the quantity of information can negatively affect preference accuracy if material quality is consistent [35]. We suggest the subsequent hypothesis in light of the aforementioned justifications.

H_3: IO is negatively associated with BI.

2.4. Subjective norms

To summarize, the SN pertains to how individuals perceive their purchase behavior towards EVs based on the opinions of their significant others [18]. It measures the extent to which normative beliefs are held and the motivation to comply with them [36]. SN involves an individual's perception of how their social network views their behavior [37] and the intuitive strain to engage in a specific action. Past research has shown that the greater the pressure from significant others, the more likely an individual is to perform a behavior [38]. Adnan et al. [39] and Xu et al. [40] found that SN positively influences BI. Furthermore, greater societal pressure makes it more probable for individuals to act in a particular manner when it is necessary to do so [41, 42]. The TPB was backed by numerous investigations, stating that SN favorably affects the desire to conduct in a specific manner [43]. In light of the foregoing justification, we offer the underlying hypothesis.

H_4: SN is positively associated with BI.

2.5. Perceived risk

The concept of PR has been extensively researched in psychology and is defined in many different ways. According to Chang and Hsiao [44], PR is a customer's expectation of unfavorable outcomes from buying a particular commodity. It should be emphasized that PR is a complex notion that includes variables related to the economy, functionality, human relationships, emotions, behavior, opportune opportunities, and time.

PR has been shown to have an impact on consumers' purchasing decisions [45]. Prior investigations have indicated that PR has a negative influence on Buyers' perceptions and plans toward utilizing novel goods and services [46]. In the case of innovative and revolutionary technologies like EVs, PR has been recognized as a major obstacle to adoption [47]. Li et al. [48] found that safety concerns were a major factor hindering consumers' EV adoption. One critical factor that may contribute to PR is risk perception, which can lead to negative attitudes and reduced adoption intentions toward EVs. Consumers who perceive EVs as risky are more likely to question their ability to bring about any advantages, increase journey effectiveness, or lower travel expenditures. As a result, we suggest the underlying hypothesis.

H_5: PR is negatively associated with BI.

2.6. Behavioral intentions

BI in EVs refers to an individual's planned or intended behavior regarding the adoption or usage of EVs [49]. BI is shaped by an individual's attitude towards EVs, their perceived social norms, and their perceived control over the adoption or usage of EVs. BI is a key construct in the TPB, which proposes that intentions are the most important predictor of behavior. Previous studies have demonstrated that customers are willing to pay a premium for items they view as more secure or of greater quality [18]. However, this study distinguishes between WTP and purchase intentions as separate constructs, despite some studies considering WTP as part of PI. The two constructs are not interchangeable, as PI only measures the intention to purchase a product or service, without necessarily indicating the WTP has a higher cost than variants [50]. WTP, on the other hand, is seen as a measure of loyalty, which decreases as the premium price increases [51]. Thus, consumers may have a reduced purchase intention when the cost increase, regardless of their WTP, becomes too high. This is known as the premium-price effect [52]. Therefore, this study treats WTP as an independent construct from PI and points at a subsequent hypothesis (refer to Figure 1).

H_6: BI is positively associated with WTP for EVs.

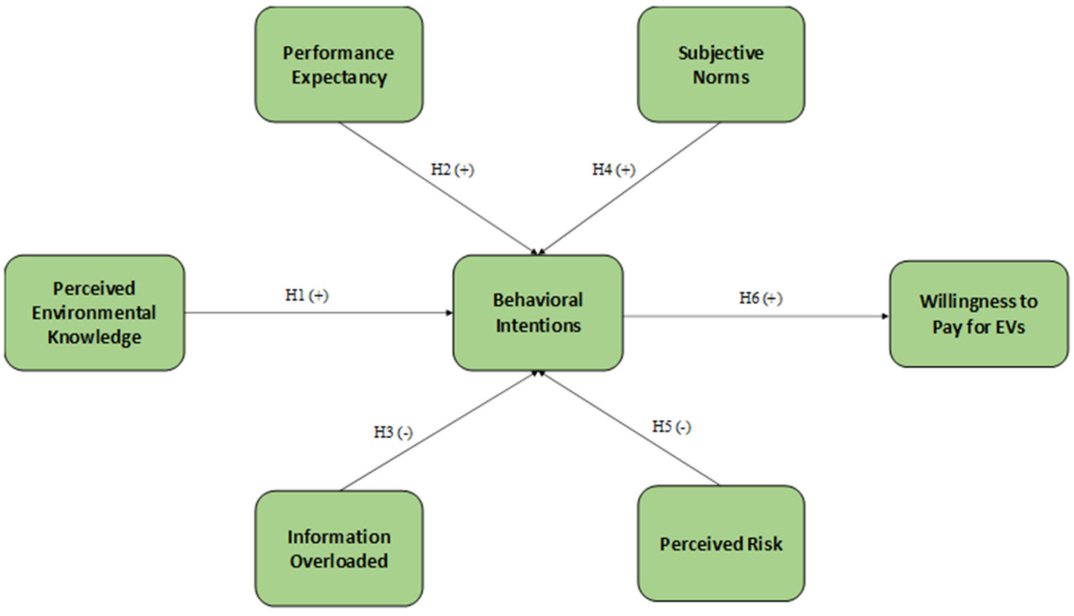
3. Method

3.1. Data and sample

It is important to note that Beijing was selected as the study region primarily due to the fact that it was the first city in China to launch EVs, as well as its long-standing position as one of the best-selling cities in the country. Besides, Beijing exhibits the country's distinctive economic characteristics with high population density and a range of challenges in the transportation sector compared to other cities and regions of the country. Besides, Beijing is among one of the seven cities, where the government has implemented vehicle purchase restriction policies, and only a certain number of vehicle licenses are issued by lottery or auction approach each month, specifying the urgency to conduct a comprehensive study to examine consumers' WTP for EVs in the city. The survey was conducted between July and August 2022 using both online and offline questionnaires. We used "Wenjuanxing," the most well-known internet poll tool in China to carry out the study.

We selected young consumers (below 30 years old) for questionnaire survey, as young consumers are more interested in EVs due to several reasons, including (i) environmental concerns, (ii) technological advancement, (iii) lower cost of ownership, and (iv) social status. For instance, younger generations tend to be more environmentally conscious and aware of the impact that traditional gas-powered vehicles have on the environment. They may view EVs

Figure 1
Conceptual framework



as a more sustainable and eco-friendly option. Younger generations tend to be more tech-savvy and are attracted to the advanced features and technology that come with EVs. EVs offer features like regenerative braking, smartphone integration, and advanced infotainment systems that appeal to younger consumers. EVs can have lower maintenance costs and lower fuel costs compared to gas-powered vehicles. Younger consumers may be more interested in the long-term cost savings that come with owning an EV. EVs are often seen as a symbol of status and environmental consciousness, which may appeal to younger consumers who place a high value on social status and being environmentally responsible. Overall, the combination of environmental awareness, technological advancements, cost savings, and social status make EVs an attractive option for younger consumers. In light of these arguments, we selected consumers (below 30 years old).

A response score of 75.4% was achieved with 350 participants receiving offers, 264 of whom replied online. We received 210 legitimate replies, for a valid response rate of 79.5%, after 52 questionnaires were removed for having the same answers or flawed logic. The research employed a combination of online and offline approaches to gathering information. The offline survey was conducted at the Spring Huimin Auto exhibition, the Wudaokou business area in the Haidian area, and the 5th Beijing International Auto Show, all of which are significant automobile exhibitions in Beijing that attract prospective automobile owners. The survey was disseminated at these places by three college students using convenience sampling, and 350 survey papers were collected. 288 legitimate replies were received, yielding an accuracy rate of 82.2%, after the elimination of 62 surveys with the same answers to the majority of the questions or with logical mistakes. A total of 498 legitimate responses were obtained after combining both the online and offline survey findings, as shown in Table 1.

Table 1
Sample characteristics

Constructs	Size	%
Gender		
Male	318	63.9
Female	180	36.1
Age		
18–22	98	19.7
23–27	150	30.1
28–30	250	50.2
Education		
Higher School or below	10	2.0
Intermediate	52	10.4
Bachelors	240	48.2
Masters	152	30.5
PhD or above	44	8.8
No of cars owned by the household		
0	40	8.0
1	261	52.4
> 2	197	39.6
Household monthly income (CNY)		
< 50,000	17	3.4
50,001–100,000	234	47.0
100,001–150,000	149	29.9
150,001 >	98	19.7

3.2. Measures

The survey questionnaire was developed by customizing it to the context and building upon previous studies. The questionnaire items were evaluated using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). ENK was evaluated based on five items adopted from Tanwir and Hamzah's [53] study. An example of an item is "I have a good understanding of environmental issues." The six items for perceived ease of use (PE) were adopted from Abbasi et al.'s [54] study, with an example item being "I can learn to use EVs as a new technology more efficiently." The four items for IO were assessed using Cheng et al.'s [33] approach, with an example item being "I felt overwhelmed by the amount of information about EVs." To measure SN, we adopted three items from Huang and Ge's [11] study, with an example item being. "If individuals surrounding me use electric automobiles, I am more apt to purchase one." The four items for PR were adopted from Jain et al.'s [55] study, with an example item being "I am concerned about whether EVs will perform as well as traditional gasoline vehicles." To evaluate BI, we used four items from Chen and Yan's [56] study, with an example item being "If necessary, I will use a fully automated EV in my daily life or work." Finally, four items were used to assess WTP for EVs, adapted from Irfan and Ahmad's [8] study. An example item is "I would purchase an EV if it was within my budget."

4. Results

4.1. Measurement model validation

The discriminant validity of the data was assessed by the square root of the average variance extracted (AVE). The results are reported in Table 2. Since AVE's square root effect is greater than its association with other variables, the findings confirm discriminant validity. A different way to evaluate discriminating validity is to measure the significance of AVE and maximum shared variance (MSV) across all factors. Discriminant validity is achieved if AVE is greater than MSV [57]. According to the estimators for discriminant validity, the average square root of AVE is greater than its association with other variables [58]. Additionally, Table 3 shows that all structures have composite reliability (CR) values above 0.70, spanning from 0.850 to 0.912 [59]. A convergent validity test was performed based on AVE and item loadings to explore the possible link between these items [60]. The

Table 2
Discriminant validity

Constructs	1	2	3	4	5	6	7
1. Behavioral intention	**0.860**						
2. Information overloaded	0.729	**0.776**					
3. Perceived environmental knowledge	0.836	0.750	**0.835**				
4. Perceived risk	0.756	0.592	0.672	**0.882**			
5. Performance expectancy	0.714	0.774	0.795	0.612	**0.807**		
6. Social norms	0.725	0.748	0.687	0.704	0.659	**0.842**	
7. Willingness to pay	0.643	0.675	0.732	0.694	0.746	0.629	**0.758**

Note: The bold values are the square root of AVE.

outcomes show every variable's AVE value is above 0.5, proving that it meets the standard and has a variation of at least 50%.

4.2. Reliability analysis

The Cronbach-alpha method was used to examine the authenticity of each notion. The results show that all categories' Cronbach values were higher than the suggested cutoff point of 0.70 [61], confirming the accuracy of the data. In order to evaluate the coherence of all key components, a CR computation was carried out. The study's findings, which are presented in Table 3, show that the CR values are higher than the threshold of 0.70 [62].

4.3. Multicollinearity

We used a regression analysis to find Tolerance and variance inflation factor (VIF) numbers to detect any multicollinearity issues. According to Field [63], the VIF number should range from 0 to 3. The results in Table 3 demonstrate that every variable's VIF and Tolerance values are within the suggested span, demonstrating that this model has no multicollinearity problems [64].

4.4. Predictive power of the model (Q^2)

The Stone and Geisser test was employed to find the prediction ability of hierarchical framework with SmartPLS. A conceptual model is considered more successful if its Q2 number is higher than zero (>0) [65]. As a result, the route model's endogenous variables all have Q2 values higher than zero, supporting its validity (refer to Table 4).

4.5. Structural model and hypothesis outcomes

We conducted tests not only to examine the relationships between our hypothesis and the proposed model but also to ensure the authenticity and dependability of our measurements. The *R*2 value revealed to be 0.766, indicating a substantial clarification as it meets the recommended threshold of 0.35 [66]. Additionally, to assess the model connections, the covariance-based regression analysis and SEM method were used, and the findings revealed that the linearity among all connections is highly significant based on the *f*-value. Additionally, we conducted different external assessments to confirm whether our data correspond to the suggested basic framework, such as chi-square = 625.125,

Table 3
Loading and VIF of the indicators

Constructs	Items	Loadings	VIF	α	CR	AVE
Perceived environmental knowledge				0.825	0.912	0.645
	PEK1	0.829	2.276			
	PEK2	0.881	2.999			
	PEK3	0.874	2.811			
	PEK4	0.803	2.022			
	PEK5	0.783	1.953			
Performance expectancy				0.812	0.965	0.612
	PE1	0.741	1.706			
	PE2	0.843	2.645			
	PE3	0.867	3.345			
	PE4	0.798	2.328			
	PE5	0.777	2.073			
	PE6	0.810	2.287			
Information overloaded				0.733	0.836	0.665
	IO1	0.724	1.614			
	IO2	0.789	1.778			
	IO3	0.814	2.028			
	IO4	0.776	1.776			
Subjective norms				0.755	0.815	0.745
	SN1	0.888	2.696			
	SN2	0.825	2.360			
	SN3	0.811	1.384			
Perceived risk				0.845	0.901	0.711
	PR1	0.910	2.675			
	PR2	0.830	1.739			
	PR3	0.902	2.617			
Behavioral intentions				0.896	0.985	0.766
	BI1	0.917	3.721			
	BI2	0.826	1.861			
	BI3	0.843	2.249			
	BI4	0.853	2.569			
Willingness to pay				0.755	0.800	0.599
	WTP1	0.834	1.517			
	WTP2	0.705	1.330			
	WTP3	0.781	1.529			
	WTP4	0.703	1.513			

Table 4
Blindfolding statistics for the general model

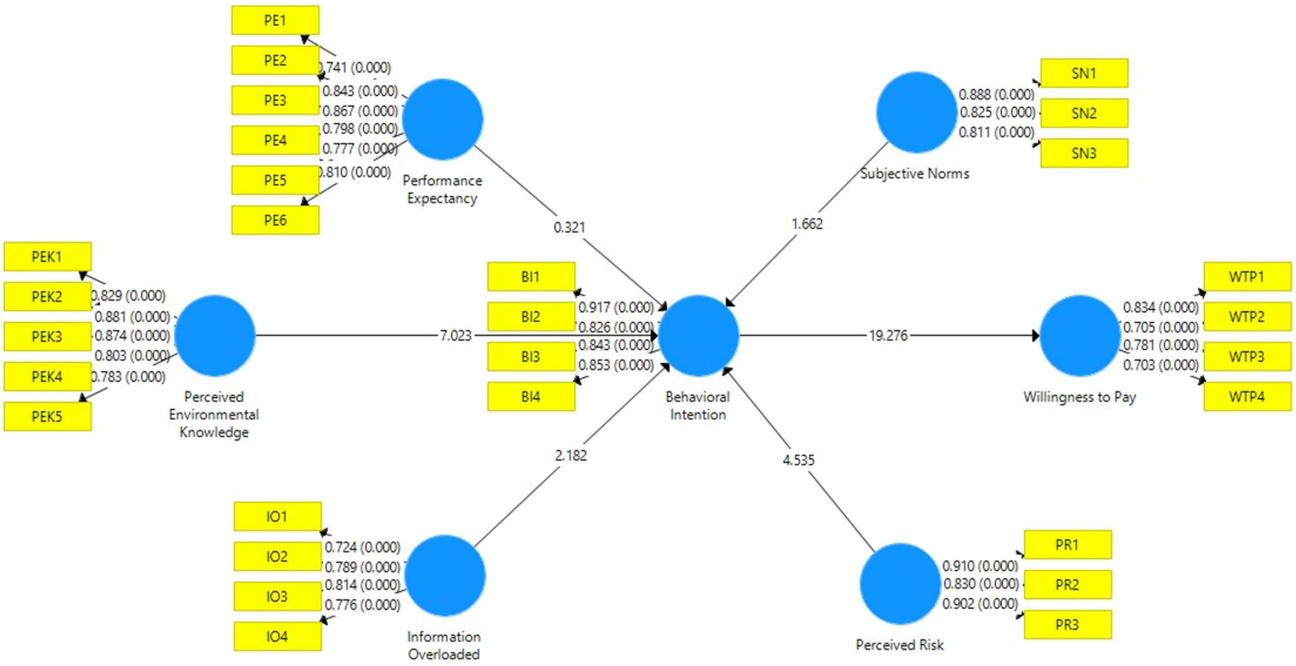
Construct	SSO	SSE	Q^2 (= 1–SSE/SSO)
Behavioral intention	800	612.121	0.235
Information overloaded	800	612.12	0.235
Perceived environmental knowledge	800	545.18	0.319
Perceived risk	1000	856.125	0.144
Performance expectancy	800	754.112	0.057
Subjective norms	1000	658.253	0.342
Willingness to pay	1000	745.111	0.255

Table 5
Hypotheses results

	Hypotheses	Beta	S.D	*t*-values	*p*-values	Decision
H1	Perceived environmental knowledge -> Behavioral intention	0.425	0.074	5.743	0.000***	Accepted
H2	Performance expectancy -> Behavioral intention	0.065	0.328	0.198	0.013*	Accepted
H3	Information overloaded -> Behavioral intention	−0.111	−0.056	1.968	0.020**	Accepted
H4	Subjective norms -> Behavioral intention	0.256	0.154	1.658	0.008**	Accepted
H5	Perceived risk -> Behavioral intention	−0.245	−0.071	3.444	0.001***	Accepted
H6	Behavioral intention -> Willingness to pay	0.612	0.037	16.399	0.000***	Accepted

Note: *,**,*** = $p < 0.1$, $p < 0.05$, $p < 0.01$ respectively.

Figure 2
Hypotheses results



NFI = 0.912, and SRMR = 0.056, which provide clear evidence that our data fits the structural model [67].

Table 5 and Figure 2 present an analysis that reveals a significantly favorable effect of perceived ENK on BI (H1–β = 0.425, $p < 0.01$), which supports H1. Additionally, the results confirm the positive connection between PE and BI (H2–β = 0.065; $p < 0.001$), supporting H2. Furthermore, the study finds that IO has a negative linkage with BI (H3–β = −0.111; $p < 0.001$). The outcomes also indicate that SN has a positive relation with BI (H4–β = 0.256; $p < 0.001$), supporting H4. The analysis reveals that PR is adversely connected with BI (H5–β = −0.245; $p < 0.001$). Finally, the results suggest that BI is positively connected with WTP for EVs (H6–β = 0.612; $p < 0.001$).

5. Discussion

The purpose of this project was to examine the determinants that impact the BI of EVs among individuals in Beijing, China. The results

generally support He et al.'s [68] findings that residents in Beijing, China, are deeply interested in and dedicated to environmental conservation. The primary aim of this study was to scrutinize and evaluate the motivators of customers' BI to gain better insights into their WTP for EVs. This research utilized user ENK, PE, IO, SN, and PR as markers to determine the customer BI for EVs in Beijing, China.

According to the study, all components had a favorable effect on customer BI and WTP for electrified automobiles. The initial finding indicated that the perception of ENK substantially affected consumer attitudes toward EVs. According to previous research, consumers who have knowledge about electric cars tend to display positive behavior toward them. Furthermore, as suggested by the TPB model, ENK plays a crucial role in predicting environmental behavior. The research's outcomes are consistent with earlier research that emphasized the validity of ENK as an indicator of customer BI [69].

Our study's outcomes reveal that there exists a positive relationship between SN and EV BI. Research by Rahman et al. [70] has stated that customers' BI is heavily affected by SN. However, previous studies have indicated that SN has minimal influence on either BI or genuine behavior [38, 70–72]. Moreover, we discovered that IO is linked adversely to the BI of EVs. This result aligns with the findings of Cheng et al. [33]. Therefore, improving the quality of EV-related information could reduce overload issues. As a consequence, depending on the circumstance, both the quantity and quality of EV-related skills affect how much knowledge customers have access to.

The outcomes also showed that SN has a significant effect on BI. According to an earlier study, a person is more inclined to participate in an activity if they experience external pressure [39]. Our results show that SN positively affects BI, which is in line with the research carried out by Adnan et al. [40] and Xu et al. [41]. Additionally, the results suggest that PR has a negative impact on BI. Wang et al. [46] suggest that PR may affect consumers' purchasing decisions. Safety concerns are one of the factors contributing to consumer reluctance to purchase EVs [49]. PR is a critical factor that may dissuade individuals from accepting and using EVs. In addition, customers who view EV adoption and use as hazardous are more likely to have negative views toward these cars and have reduced plans for their adoption. To conclude, our study's results indicate a strong relationship between BI and WTP for EVs. Determining purchasing intentions is necessary for estimating the WTP for a product or service. However, it is crucial to understand that a person's desire to buy a product does not always translate into a WTP higher cost over other alternatives [51]. In our study, participants offered a greater WTP for ecologically responsible goods and exhibited matching buying behavior during bidding. Notably, respondents with high BI expressed a WTP of 40% more than their actual payment.

5.1. Theoretical implications

The study provides theoretical implications that contribute to the existing literature on sustainable consumption and enhances the TPB. Firstly, the study presents a theoretical framework that encompasses consumers' BI and WTP and emphasizes the significance of characteristics for electrified cars. The research focuses particularly on ENK and attitudes toward BI of EVs. In order to encourage the acquisition of environmentally friendly goods, sustainable growth aims to foster a favorable perception of these products [18, 72]. Additionally, this mental model stands out because it was created and tested in an established economy like China. We also discovered that PR has a crucial function in comprehending green consumer practices. Prior studies suggest that when the environment is damaged and its condition deteriorates, people may feel a sense of risk, resulting in a resolute commitment on a personal level to environmental issues. Furthermore, studies conducted across nations have suggested that environmental risk perceptions could shape behaviors and attitudes.

5.2. Practical implications

According to our research results, it may be essential to propose some significant guidelines and suggestions to stimulate the intention of purchasing EVs and facilitate China's development. Firstly, Chinese agencies and businesses should prioritize the improvement of fast-charging infrastructure and ensure electric automobile security. This study will have a considerable influence on consumers' information and opinions regarding EVs, potentially motivating potential buyers to make a purchase.

To conclude, policymakers could consider providing more information about the advantages and disadvantages of EVs to facilitate the transition to the next stage of evolution. By understanding their handling techniques and the benefits EVs can offer, individuals may be more inclined to purchase them without the need for incentives. However, as more people shift to EVs, the effectiveness of financial policies may decrease. Therefore, it may be more beneficial to focus on modifying behavior instead of providing incentives to all. Ultimately, closing the gap between intrinsic motivations to buy EVs and their cost could be achieved through increased awareness and education.

5.3. Limitations and future recommendations

The recommendation is for governments and companies to collaborate in raising consumer awareness about EVs. This can be achieved by spreading information about EVs and highlighting their potential to contribute to environmental sustainability and cost-effectiveness. Public education about EVs can be expanded via events and experience websites. Public service announcements, such as TV ads and expert forums, may also be effective in enhancing consumers' comprehension of important policy decisions.

Furthermore, it is crucial to establish and reinforce financial incentive policies to stimulate consumers' electric car purchases. Despite the fact that EVs are in the early stage of deployment, they require substantial government assistance in order to become a commodity in some trading platforms. It could be advantageous for the authorities to replace the current 1% sales tax with a five-year tax amnesty program for electric cars. Additionally, the cost of energy at recharge stations needs to be reduced. The performance of EVs should be boosted with rewards rather than financial support. To encourage non-EV owners to purchase EVs, incentives can be offered.

Ethical Statement

This study does not contain any studies with human or animal subjects performed by the author.

Conflicts of Interest

Muhammad Irfan is the Editor-in-Chief for *Journal of Comprehensive Business Administration Research*, and was not involved in the editorial review or the decision to publish this article. The author declares that he has no conflicts of interest to this work.

Data Availability Statement

The data that support this work are available upon reasonable request to the corresponding author.

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