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How Innovative Characteristics Influence Consumers’ Intention to Purchase Electric Vehicle: A Moderating Role of Lifestyle

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Abstract: Electric vehicles have been identified as a viable option for optimization of the energy structure to foster energy conservation and a reduction in emissions, as well as to promote the development of a sustainable economy. Recently, China announced that the financial subsidies for electric vehicles will be gradually withdrawn, and many incentive policies will be revised, indicating that the electric vehicle market has transformed from a policy-driven to a market-driven structure. Therefore, we study the elements affecting consumers’ purchase intention in the early stage of electric vehicle availability to provide a theoretical reference that can be used in China to continue to stimulate market diffusion of electric vehicles based on the innovation diffusion theory and planned behavior theory. The current study explains the associations among the innovation characteristics, perceived risk, and purchase intention in relation to electric vehicles and details the moderating effect of lifestyle on fashion consciousness, environmental consciousness, and price consciousness. This paper investigates 529 potential consumers in Beijing, Shanghai, and other places, and AMOS and SPSS were used to perform quantitative analyses. The results show that innovation characteristics exert an obvious effect on purchase intention based on the mediating variable of perceived risk. Fashion consciousness significantly moderates the relationship between relative advantage and perceived risk, and environmental consciousness has a significant influence on the relationship between technology compatibility and perceived risk. Price consciousness plays the smallest role in this process. In practice, the findings suggest that practitioners can promote electric vehicle consumer purchase intention by using psychological activation techniques to improve the attitude and educational interest in relation to this product. It is also suggested that, as part of the strategy, government services should be improved.

Keywords: innovation characteristics; perceived risk; fashion consciousness; environmental consciousness; price consciousness; consumer purchase intention; sustainable economy

1. Introduction

Accelerating the development of the electric vehicle industry is a vital approach to enhance the energy structure, foster energy conservation and emissions reduction, and promote the development of a sustainable economy [1]. Traditional electric vehicles pollute the environment and consume a lot of energy, which is an issue that needs to be addressed urgently [2]. Electric vehicles (EVs) have the potential to promote energy conservation and a reduction in emissions [3,4] and are more ecofriendly for urban areas than traditional alternatives [5]. Many problems can be solved by conserving energy through the development of EVs [6]. Such development will shape the trends in the world’s emerging electric vehicle market and offer an opportunity for China’s electric vehicle industry to transform and upgrade its industrial structure [1,7]. Recently, the number of electric vehicles in China has increased significantly due to the increase in the Chinese economy and the constant enhancement of people’s living standards [8]. Since 2009, China
has been the largest vehicle producer and sales market worldwide, giving it important roles in energy saving and environmental protection. The private vehicle population has increased by 360%, from 45 million in 2009 to 207 million in 2018 [7]. China has supported the development of electric vehicles since the Eighth Five Year Plan period, and it began to implement promotion work in 2009. By the end of 2021, China had produced 7.84 million electric vehicles for the private sector [9].

Four policy tools—financial subsidies, purchase tax relief, unrestricted purchase, and government and public agency procurement—have exerted positive functions on the promotion of electric vehicles in China [10–12]. However, recently, China announced that the financial subsidies for new electric vehicles will be gradually withdrawn, and many incentive policies will be revised, which means that China’s electric vehicle market has begun to shift from a policy-driven to a market-driven structure [13]. Therefore, studying the purchase intention of the first batch of consumers of electric vehicles will provide a valuable reference that can be used in China to continue the stimulation of the market diffusion of electric vehicles [14]. A previous survey showed that consumers’ attitudes toward policies represent an important external driving factor that affects purchase intention [15–17]. The cancellation of purchase subsidies will generate a sharp reduction in the efficiency of electric vehicles [18,19]. Subsequently, the role of policies in developing the electric vehicle industry will be gradually weakened, and development drivers will need to be found [20]. Most consumers are still showing a wait-and-see attitude, and electric vehicles are still in the early stage of innovation diffusion. It is very important to study consumers’ purchase intention and determine the factors influencing the purchase of electric vehicles to foster the diffusion of the electric vehicle market [21].

Previous literature and theories on consumer behavior predictions did not distinguish between types of innovative products, such as purchase intention related to smart phones and purchase intention related to electric vehicles, even though the influencing factors can be very different between products [22]. Smart phones have new functions that did not exist in non-smart phones, but the basic principles and supporting facilities have not changed significantly. On the other hand, electric vehicles represent a brand-new product that is completely different from the traditional fuel vehicle [18,23]. Due to the brand-new technical concepts and key technologies, the supporting settings also need to be rebuilt. For consumers, it is the first time that they will buy and consume such a product. It is a brand-new experience, and the price is more expensive for ordinary families than buying a traditional vehicle, while the risk of consumption failure is obvious [19,24]. At the same time, due to the long service lives of vehicles, only factors related to the initial purchase are generally involved at this stage [18]. Therefore, determining how to stimulate and guide consumers to purchase this product in batches for the first time is the focus of electric vehicles in the early stage of market diffusion [25]. In addition, on the surface, consumers’ purchase behaviors in relation to electric vehicles are determined by product attributes; however, it is also a process that requires some psychological needs of consumers to be met [26].

The social contagion theory holds that the social environment in which individuals live will affect their attitudes and behaviors. Ye Nan proposed the idea that green cognition significantly affects green consumption behavior [21]. With an improvement in the economic level, Chinese consumers’ consciousness of green consumption has gradually increased. However, will this change promote the market diffusion of electric vehicles? Previous studies have shown that lifestyle is an important and dominant factor affecting consumer behavior [27,28]. This paper introduces lifestyle as a variable and investigates whether the different lifestyles of consumers impact the adoption of electric vehicles. Will the improvement of consumers’ green consciousness contribute to the market diffusion of electric vehicles? Based on market diffusion data from electric vehicles in China, and based on the innovation diffusion theory and planned behavior theory, this work explores the internal influencing mechanism related to consumers’ purchase intention and discusses how
lifestyle has a moderating effect on consumers’ decision to purchase innovative products. Thus, it can be used as a theoretical reference for the market diffusion of electric vehicles.

This study is presented as follows. Section 2 introduces the research context, followed by a set of research hypotheses. Section 3 depicts the research method detailing the design of experiments and the data collection procedure. Section 4 summarizes our findings related to tests of the research hypotheses. The final section presents the study’s leading contributions, as well as illustrating the critical implications and recommendations for future study.

2. Literature Review and Hypotheses Development

The innovation diffusion theory proposes that the diffusion of innovation in the social system will be affected by innovation characteristics, time, communication channels, and social structure [27]. Firstly, from the perspective of innovative characteristics, different from traditional fuel vehicles, electric vehicles have the following key characteristics that may affect the choice of marketing strategy [6]. The first is the change in the dynamic system. The changes to this core technology and the resulting problems, such as reduced mileage and limited battery life, will affect consumers’ purchase decisions [29,30]. At the same time, electric vehicles are energy saving and environmentally friendly rather than customer oriented, and the price and use cost are greater than those of traditional fuel vehicles, which will also greatly affect consumers’ purchase intention [31,32]. Zhang Wei pointed out that product features are the focus of pure electric vehicle consumers, and consumers’ feelings of satisfaction and dissatisfaction focus on product features and service features, respectively [33]. Li Zhi et al. pointed out that purchase behavior related to electric vehicles is more rational, and consumers place more emphasis on the quality, performance, service, and comfort of electric vehicles [34]. Therefore, consumers’ attitudes and cognition toward the innovative characteristics of electric vehicles determine consumers’ purchase intention [35,36].

Secondly, the supporting facilities for electric vehicles are under construction. Restriction of the consumption environment will lead to a situation where the social value of electric vehicles has improved, and the user value has reduced, but the consumption risk has greatly increased, which will influence the purchase intention of consumers [37,38]. In a study of the purchase intention related to GTTT (green-oriented trajectory-transformed hi-technology) products and TUT (trajectory-untransformed hi-technology) products, Xiao Hailin et al. proposed that attitudes toward the products themselves and the lifestyles of consumers are the main factors influencing consumers to buy innovative products for the first time [39]. The theory of planned behavior holds that attitude, subjective norms, and perceived behavior control are important elements that affect consumers’ purchase intention [40]. Electric vehicles are high-tech products with significant changes to their core technology that act as substitutes for traditional fuel vehicles, but they are still brand-new products for consumers to buy, consume, and experience for the first time [41]. Although their energy-saving and environmental protection characteristics attract attention, their ease of use and practicability are still important factors that affect consumers’ purchase intention, because consumers are required to have strong risk tolerance [39]. Therefore, consumers’ perceived behavior control will also affect purchase intention related to electric vehicles.

The consumption habits of Chinese consumers will also affect the market diffusion of electric vehicles [42]. The lifestyles of consumers also represent a vital element that affects the purchase of electric vehicles [28]. Plummer proposed that the study of lifestyle can help enterprises understand consumers [43]. Gutman found that lifestyle and demographic variables impact consumption behavior [44]. Solomon further concluded that lifestyle is “the way one spends time and money” [45]. On the surface, consumer behavior is determined by product attributes, but in fact, it is the process of satisfying some psychological needs of consumers [46–48]. It is affected by many factors, such as consumers’ personal spatial environment, and there are also great differences in the purchase decisions of different
consumers for the same commodity [13]. The social contagion theory holds that the social environment in which individuals live will affect their attitudes and behaviors.

To sum up, the purposes of this study were to investigate whether (1) the innovative characteristics of electric vehicles affect consumers’ purchase intention; (2) the innovative characteristics of electric vehicles affect consumers’ purchase intention through the intermediary role of risk perception; and (3) whether the different lifestyles of consumers mediate the impact of innovation characteristics on consumers’ risk perception, thereby affecting consumers’ purchase intention (see Figure 1).

Figure 1. Study construction model.

2.1. Innovation Characteristics and Consumers’ Purchase Intention

The diffusion of innovations theory, also known as “Rogers’ Theory,” was proposed in 1962 [27]. Rogers’ theory illustrates how novel technologies and concepts are carried forward and adopted over time. In his opinion, four factors influence the adoption of novel technologies: the technology itself, the communication means (such as the instruments used by marketers to contact consumers and vice versa), time, and the social system [27]. Additionally, innovation diffusion theory stresses that “innovation characteristics help to interpret the innovation adoption rate, such as the Relative advantage, compatibility, complexity, testability, and observation ability of the innovation” [22]. Similarly, Moore and Benbasat introduced novel variables to the innovation diffusion theory to form the innovation cognitive characteristic theory and pointed out seven factors that can speed up innovation diffusion [49]. For this study, relative advantage, technical compatibility, and technical complexity were found to be the three most important innovation characteristics [27]. According to this theory, relative advantage refers to the advantage of the innovation over the item it replaces, and technical compatibility refers to the extent of coexistence between the innovation and the users’ current values, former experience, and expected needs. Technical complexity refers to how difficult it is for expected adopters to understand and apply an innovation. The complexity of innovation is related to the expected buyer’s own experiences: the more complex the innovation is, the more difficult it is for the expected buyer to understand and accept the innovation [27,50].

A great deal of practical research on innovation diffusion has shown that the relative advantage of an innovation is conducive to its diffusion. Hence, the degree to which an innovation or new technology shows superiority over the product it replaces is represented...
by the relative advantage. Generally, to be purchased by early adopters, new technologies must have a relative advantage [22], and the stronger the compatibility of the innovation, the more readily it is accepted by expected buyers [51]. Ghasri proposed that consumers' perceptions of the innovative characteristics of electric vehicles are reflected by three aspects: vehicle design, environmental influence, and security [52]. Bennett also pointed out that, since the transformation of innovation achievements is an input–output process, and high income is the ultimate goal pursued by each innovation subject, more innovative technological achievements that can meet the income needs of the diffusion audience spread more easily [53,54]. In conclusion, this paper puts forward Hypothesis 1 (H1). Innovation characteristics significantly affect consumers’ purchase intention.

**Hypothesis 1a (H1a).** Relative advantages positively affect consumers’ purchase intention.

**Hypothesis 1b (H1b).** Technology compatibility positively affects consumers’ purchase intention.

**Hypothesis 1c (H1c).** Technology complexity negatively affects consumers’ purchase intention.

### 2.2. The Role of Perceived Risk and Consumers’ Purchase Intention

According to Dunn et al. [55], perceived risk indicates consumers’ expected negative outcomes from buying particular products or services. The risk types perceived by consumers vary depending on the product’s attributes [56]. Consumers’ perceptions of the risks associated with EVs can be grouped into five categories: performance risks, physical risks, financial risks, time risks, and psychological risks. The probability of the purchased product failing to perform the functions as anticipated is the performance risk [56]. There are performance differences between EVs and traditional gasoline vehicles, as they are innovative green vehicles [57]. The probability of the purchased product inducing personal injury is referred to as the physical risk [58]. EVs, as a product of emerging technology, are related to backward technology. Kim et al. pointed out that the economic benefits related to operating and the charging risk are the main driving force and obstacle related to the diffusion of electric vehicles [59]. Time risk refers to the probability of a purchase causing a loss of time when buying or retaining a certain product [58]. With existing technologies, consumers may face a time loss problem when using EVs due to factors including the long battery recharge time [60]. Thus, the increased availability of public charging has improved the adoption rate of electric vehicles [61]. Psychological risk refers to the probability of there being a degree of inconsistency between the product and its self-image [58].

Wang shanyong pointed out that consumers’ lack of knowledge regarding electric vehicles is associated with high-risk cognition, which affects the adoption of electric vehicles [62]. Influenced by face consciousness, China’s consumers favor conventional gasoline vehicles, which are considered a symbol of identity, social status, and self-image [43,49]. Perceived risk may influence the decision-making process of consumers [58]. Research has shown the negative impacts of perceived risk on consumers’ attitudes and intentions regarding the adoption of innovative products or services [58,63]. The main barrier to consumers’ adoption of innovative technology is the perceived risk [63]. This is also true for EVs, which are considered a disruptive and innovative technology [64]. Li et al. [65] suggested that consumers’ refusal of EVs is partly due to their risk concerns. However, for potential consumers, innovation means uncertainty, and innovation characteristics are the root cause of consumers’ perceived risk. Accordingly, we developed Hypothesis 2 (H2): innovation characteristics significantly affect consumers’ risk perception.

**Hypothesis 2a (H2a).** Relative advantages negatively affect consumers’ risk perception.

**Hypothesis 2b (H2b).** Technology compatibility negatively affects consumers’ risk perception.

**Hypothesis 2c (H2c).** Technological complexity positively affects consumers’ risk perception.
2.3. The Mediation Effect of Consumers’ Perceived Risk on Consumers’ Purchase Intention

Perceived risk may be a major inhibiting factor related to the acceptance of EVs. As long as consumers perceive there to be risks in the adoption and use of EVs, they may have a negative attitude toward these products and a decreased adoption intention. Simultaneously, studies have revealed the positive role of perceived risk in the determination of perceived usefulness [56,58]. If consumers perceive there to be risks related to the use of EVs, they will question EVs’ utility in improving travel efficiency and reducing commuting costs. As a consequence, they will be inclined to doubt EVs’ usefulness and believe that EVs are not of much help. In summary, the uncertainty attached to innovation characteristics is the root cause of consumers’ perceived risk, and perceived risk further affects consumers’ purchase intention. Zhu Qiang and Luo Changli also pointed out the intermediary role of consumers’ perceived risk [66,67]. The following hypotheses were proposed on this basis.

Hypothesis 3 (H3). Consumers’ risk perception has negative effects on consumers’ purchase intention.

Hypothesis 4 (H4). Consumer risk perception mediates the relationship between innovation characteristics and consumer purchase intention.

2.4. The Moderating Role of Consumers’ Lifestyle on Innovation Characteristics and Consumers’ Perceived Risk

Another important factor related to innovation diffusion is that social systems, such as social structure, social norms, cultural values, and beliefs, are closely related to new things [38,44]. The structure of the social system in which innovation occurs promotes or hinders the diffusion of innovation in the system [27]. Venkatesh et al. constructed a unified theoretical model of technology acceptance and use. It points out the important role of social impact on the purchase of technology [68]. Lifestyle is an activity and behavior characteristic formed by the interaction between individuals and certain social conditions [69]. Habich sobiegala pointed out that the purchase intention of Chinese consumers is influenced by the attitudes of people around them [5]. Therefore, it is an important personal factor affecting consumers’ purchasing behavior. Different lifestyles will lead consumers to different purchase decisions [68,70]. The study found that consumers are highly sensitive to the electric vehicle price. Breetz pointed out that price is a key factor that affects the purchase of electric vehicles [71]. Huang Youlin found that Chinese consumers are very sensitive to the purchase price and purchase subsidies related to electric vehicles [72,73]. Zarazua’s research results concerning the market diffusion of electric vehicles in five Nordic countries also supports this statement [74]. Additionally, a significant amount of research suggests that the impact of environmental pollution on the diffusion of the electric vehicle market cannot be ignored [75–78]. He Xiuhong pointed out that personal innovation and environmental concerns directly affect the purchase intention related to electric vehicles [72].

Accordingly, this study used lifestyle as a variable to measure how the living environment affects the purchase intention of consumers. In a study of the information lifestyle, koshksaray et al. [79] divided lifestyle into seven dimensions, including demand driven, internally driven, and socially driven. Sheng Guanghua and Gao Jian divided lifestyle into four dimensions from the perspective of innovation: fashion consciousness, price consciousness, leadership consciousness, and development consciousness [80]. Chen Wenpei divided consumer lifestyle into fashion consciousness, leadership consciousness, and price consciousness [81]. Similarly, Xiao Linhai divided lifestyle into fashion consciousness and individually oriented consciousness [44]. Zarazua considered the price of electric vehicle as a major determinant affecting these mainstream consumers [74]. To sum up, given that electric vehicles have brand-new core technologies, energy conservation, and environmental protection but are expensive, they come with consumption risks. These products are vigorously promoted by the government. This study divided lifestyle into three types: fashion consciousness, environmental consciousness, and price conscious-
Sustainability refers to consumers’ expectation of highlighting fashion labels through their consumption preferences [69]. Environmental consciousness means that consumers have a high level of green cognition, and they integrate this cognition into their consumption behavior. During the purchase decision-making process, they will focus more on the product’s energy-saving and environmental protection functions [79]. Price consciousness means that price is the first priority in a consumer’s purchase decision [70]. Lifestyle represents the comprehensive result of a person affected by all aspects of society and is also reflected in decision making related to personal consumption [81]. Combined with the characteristics of electric vehicles, this study developed:

Hypothesis 5 (H5). Lifestyle regulates the relationship between innovation characteristics and perceived risk.

Hypothesis 6 (H6). Fashion consciousness has a moderating effect on innovation characteristics and risk perception.

Hypothesis 7 (H7). Environmental consciousness has a moderating effect on innovation characteristics and risk perception.

Hypothesis 8 (H8). Price consciousness has a moderating effect on innovation characteristics and consumer risk perception.

Based on the viewpoints analyzed above, a conceptual model was proposed, as shown in Figure 2, to explore how innovation characteristics and lifestyle affect consumers’ purchase intention.

Figure 2. Study construction model.

3. Data Collection and Empirical Approach
3.1. Research Design

This study used consumers’ purchase intention of electric vehicles as the study object for the data collection. The stratified (purposive) sampling method was used. The current
study used a stratified (purposive) sampling method, in which stratification was performed in order to obtain a sample that was a true representative of the population, and the purposive method allowed us to choose respondents based on predetermined wisdom that was supplemented by expert opinions in this field [78]. The survey area was mainly Beijing and Shanghai, because these two cities were the first to introduce electric vehicles, and their sales have always been in leading positions. The formal survey was conducted from June to August 2020. A total of 708 questionnaires were distributed, and 643 were recollected, including 529 valid questionnaires (completed without obvious contradictions and taking about 300 s). The corresponding effective recovery rate was 74.71%. The individuals involved covered multiple occupations and age groups. Considering that the outcome variable of this study was consumers’ purchase intention, there was a requirement to use adults and groups with consumption ability. Thus, the population under the age of 25, those with an occupation of student, and those with a bachelor’s degree were excluded when collecting data.

3.2. The Demographics of the Respondents

The statistical results (Table 1) show that the proportion of male respondents (54.25%) was slightly higher than that of female respondents (45.75%). Respondents were mostly aged 26–45 years old, of which the 26–30-year-old and 31–35-year-old age groups accounted for the highest proportions (27.03% and 27.22%, respectively) of respondents, and the 36–40-year-old age group accounted for 15.31% of respondents. The education level was high, and the number of people with a bachelor’s degree or above accounted for 88.28% of respondents, including 70.70% with a bachelor’s degree and 17.58% with a graduate degree. Employees of a company were the main research objects, accounting for 68.05% of respondents. The monthly family income of respondents was mostly above RMB 9000. In total, 26.84% of respondents had a monthly income of below RMB 9000, 36.48% had a monthly income of RMB 9001–18,000, 24.01% had a monthly income of RMB 18,001–27,000, and 12.67% had a monthly income of above RMB 27,000.

| Dimensions       | Category                          | Frequency | Percentage |
|------------------|-----------------------------------|-----------|------------|
| Gender           | Male                              | 287       | 54.25%     |
|                  | Female                            | 242       | 45.75%     |
| Age              | Under 25 years                    | 58        | 10.96%     |
|                  | 26–30 years                       | 143       | 27.03%     |
|                  | 31–35 years                       | 144       | 27.22%     |
|                  | 36–40 years                       | 81        | 15.31%     |
|                  | 41–45 years                       | 49        | 9.26%      |
|                  | 45–50 years                       | 23        | 4.36%      |
|                  | Over 50 years                     | 31        | 5.86%      |
| Education        | Below high school                 | 15        | 2.84%      |
|                  | High school or technical secondary school | 47       | 8.88%     |
|                  | Undergraduate college             | 374       | 70.70%     |
|                  | Graduate student                  | 93        | 17.58%     |
| Occupation       | Government civil servants         | 19        | 3.59%      |
|                  | Doctors/teachers/legal workers/researchers | 84 | 15.88% |
|                  | Student                           | 5         | 1.95%      |
|                  | Clerk                             | 360       | 68.05%     |
|                  | Other                             | 60        | 11.34%     |
| Family monthly income (RMB) | Below 9000 yuan | 142       | 26.84%     |
|                  | 9001–18,000 yuan                  | 193       | 36.48%     |
|                  | 18,001–27,000 yuan                | 127       | 24.01%     |
|                  | More than 27,000 yuan             | 67        | 12.67%     |
| Total            |                                   | 529       | 100%       |

3.3. Measurement Scale Used in the Study

The measurement of all constructs designed in this paper (Table 2) was conducted with the Likert 7-point scoring method, and six constructs were used: relative advantage,
technology compatibility, technology complexity, perceived risk, lifestyle, and consumer purchase intention.

To ensure the reliability and validity of the measurement tools, all constructs were measured with a maturity scale that was reviewed by experts in relevant fields. Some respondents were invited to participate in a pre-survey, and the final revised version was used for the formal questionnaire survey. The innovation characteristics were characterized by the perceived attributes of innovation. We referred to Dahl and Hoeffler and Radford and Bloch’s scales on perceived product innovation [82,83], and considering the extensive evaluation of electric vehicles by consumers, the measurement scale was modified in the three dimensions of relative advantage, technical compatibility, and technical complexity to form a total of 10 items. Consumers’ purchase intention refers to the scale developed by Dodds and Grewal [84], and the scale was modified to include the characteristics of electric vehicles, forming a total of four items. Perceived risk was based on Murray and Schlatter’s perception of perceived risk combined with the scale [85] developed by Tarsey and Peter [86], as well as the characteristics of electric vehicles. Five items were selected to measure consumers’ perceived risk level. Lifestyle was measured with reference to the research scales used by Kucukemirolu [3], Wang Haizhong [27], and Chen Wenpei [81].

Table 2. Constructs and measurement.

| Constructs                  | Measurement Items                                                                 | Sources                      |
|-----------------------------|-----------------------------------------------------------------------------------|------------------------------|
| Relative Advantage          | RA1 The government’s preferential policies for electric vehicles have strengthened my willingness to buy cars | Dahl and Hoeffler [82]; Radford and Bloch [83]; |
|                             | RA2 Using electric vehicle can greatly improve my travel efficiency               |                              |
|                             | RA3 The use of new electric vehicle shows my fashion/fashion                       |                              |
| Technology Compatibility    | TC1 It is very convenient for me to use electric vehicle (supporting facilities)   |                              |
| Technology Complexity       | TC2 In terms of driving technology, electric vehicle is no different from traditional fuel vehicles |                              |
|                             | TC3 Using new electric vehicle is the development trend in the future            |                              |
| Perceived Risk              | PR1 The safety and reliability of electric vehicle may not be good enough         | Murray and Schlatter [85]; Tarsey and Peter [86]; |
|                             | PR2 Electric vehicle may not be able to meet my travel needs                      |                              |
|                             | PR3 Buying electric vehicle may make me spend more money                          |                              |
| Fashion Consciousness       | FC1 I spend a lot of time talking with my friends about new products and brands   | Kucukemirolu [3]; Wang haizhong [27]; Chen wenpei [81]; |
|                             | FC2 When friends buy new products, they always ask for my advice                 |                              |
|                             | FC3 I know the latest products better than others                                |                              |
| Environmental Consciousness | EC1 I am willing to spend more money on green and energy-saving products          |                              |
|                             | EC2 Compared with price and brand, I pay more attention to the environmental protection of the product itself |                              |
|                             | EC3 The use of new electric vehicle is effective in protecting the environment    |                              |
| Price Consciousness         | PC1 Choosing affordable products is my consistent shopping philosophy             |                              |
|                             | PC2 I tend to pay attention to price information for a long time before buying important items |                              |
|                             | PC3 Even if I buy small things in convenience stores, I will carefully ask and check the price |                              |
Table 2. Cont.

| Constructs                  | Measurement Items                                                                 | Sources                                    |
|-----------------------------|-----------------------------------------------------------------------------------|--------------------------------------------|
| Consumer Purchase Intention|                                                                                   |                                            |
| CPI1                        | I am interested in electric vehicles and have been paying attention to them recently | Dodds and Grewal [84]                      |
| CPI2                        | If there is a suitable model, I will consider buying it                           |                                            |
| CPI3                        | I would like to recommend people I know to buy electric vehicle                    |                                            |
| CPI4                        | I support the purchase of electric vehicle                                         |                                            |

3.4. Common Method Variance

This paper used the Harman single factor test to examine homologous deviation in data. In spss22.0, an exploratory factor analysis (EFA) was performed on all items contained in every scale. The above results show that three factors with eigenvalues above 1 were studied. The eigenvalue of the first factor was 2.335, explaining 29.188% of the total variance for the variable; the total cumulative variance contribution rate was 61.187%; and the variance of the greatest common factor was less than 30% (29.188%). This shows that no single factor explained most of the variation, and there was no serious homologous deviation in the sample data [87]. The current study used the variance inflation factor (VIF) value to investigate the common SEM-AMOS technique bias for all four components short of the common process basement and pathological collinearity, and the result was below the threshold value (3.3) [88].

3.5. Control Variables

A dummy control variable was used in this study to consider alternative explanations for the relationships predicted by the model. Drawing on the research methods of Li Chuang [27,89], this study used four demographic variables as control variables: age, education level, occupation, and monthly family income.

4. Results

4.1. Measurement Model

The research used SPSS and AMOS Graphics 24.0 for the analysis and measurement of the model. The hierarchical linear regression analysis is used for the confirmatory factor analysis for the structural model [90]. The data used were taken from the questionnaire. The data effectiveness needed to be tested. Firstly, this study selected factor loading and Cronbach’s $\alpha$ as the reliability test indices for each item and then each construct. The $\alpha$ coefficient was greater than 0.8, suggesting the scale has high internal consistency and good reliability (Table 3). The average validity extracted (AVE) value for the variables was >0.50 (as shown in Tables 4 and 5). The CR values for all variables were greater than 0.6, indicating good aggregation (see Table 5) [91].

Table 3. Reliability analysis results.

| Index               | Innovative Characteristics | Perceived Risk | Purchase Intention | Lifestyle |
|---------------------|----------------------------|----------------|--------------------|-----------|
| Cronbach’s $\alpha$| 0.865                      | 0.868          | 0.858              | 0.885     |

In terms of each variable’s discriminant validity, the AVE values for all major variables were above 0.5 (see Table 3). There was a significant correlation between variables. Most of the absolute correlation values were about 0.3 (Table 6). Mainly low correlations were shown, indicating that there was no serious multicollinearity in the variables and that there was good discriminant validity [92].
Table 4. Reliability of the construct items.

| Construct                        | Measurement Variables                                                                 | Items | FL | A | CR | AVE | VIF |
|----------------------------------|------------------------------------------------------------------------------------------|-------|----|---|----|-----|-----|
| Innovation Characteristics       | Relative Advantage: The degree to which an innovation is considered superior to the replaced idea | RA1   | 0.781 |     | 0.814 | 0.886 | 0.618 | 1.452 |
|                                  |                                                                                         | RA2   | 0.779 |     | 0.784 | 0.778 | 0.553 | 1.127 |
|                                  |                                                                                         | RA3   | 0.788 |     | -0.307 ** | 0.156 ** | -0.312 ** | 1.127 |
|                                  | Technology Compatibility: The consistency of an innovation with the values, past experience, and needs of potential users | TC1   | 0.704 |     | 0.779 | 0.760 | 0.513 | 1.122 |
|                                  |                                                                                         | TC2   | 0.731 |     | 0.784 | 0.778 | 0.553 | 1.127 |
|                                  |                                                                                         | TC3   | 0.708 |     | 0.784 | 0.778 | 0.553 | 1.127 |
|                                  | Technology Complexity: The level of difficulty related to using or understanding an innovation | TC1’  | 0.776 |     | 0.779 | 0.760 | 0.513 | 1.122 |
|                                  |                                                                                         | TC2’  | 0.778 |     | 0.784 | 0.778 | 0.553 | 1.127 |
| Perceived Risk                   | The uncertainty implied in the purchase decision that makes consumers unhappy             | PR1   | 0.733 |     | 0.809 | 0.869 | 0.570 | 1.168 |
|                                  |                                                                                         | PR2   | 0.724 |     | 0.809 | 0.869 | 0.570 | 1.168 |
|                                  |                                                                                         | PR3   | 0.748 |     | 0.809 | 0.869 | 0.570 | 1.168 |
| Lifestyle                        | Fashion Consciousness: Strong fashion cognition                                           | FC1   | 0.733 |     | 0.811 | 0.841 | 0.570 | 1.640 |
|                                  |                                                                                         | FC2   | 0.742 |     | 0.811 | 0.841 | 0.570 | 1.640 |
|                                  |                                                                                         | FC3   | 0.749 |     | 0.811 | 0.841 | 0.570 | 1.640 |
|                                  | Environmental Consciousness: Strong green cognition                                        | EC1   | 0.769 |     | 0.921 | 0.901 | 0.603 | 1.651 |
|                                  |                                                                                         | EC2   | 0.802 |     | 0.921 | 0.901 | 0.603 | 1.651 |
|                                  |                                                                                         | EC3   | 0.770 |     | 0.921 | 0.901 | 0.603 | 1.651 |
|                                  | Price Consciousness: Pays more attention to price                                          | PC1   | 0.806 |     | 0.895 | 0.860 | 0.592 | 1.099 |
|                                  |                                                                                         | PC2   | 0.804 |     | 0.895 | 0.860 | 0.592 | 1.099 |
|                                  |                                                                                         | PC3   | 0.825 |     | 0.895 | 0.860 | 0.592 | 1.099 |
| Consumer Purchase Intention      | The probability of consumers making a purchase                                             | CPI1  | 0.730 |     | 0.729 | 0.861 | 0.610 | 1.895 |
|                                  |                                                                                         | CPI2  | 0.749 |     | 0.729 | 0.861 | 0.610 | 1.895 |
|                                  |                                                                                         | CPI3  | 0.743 |     | 0.729 | 0.861 | 0.610 | 1.895 |
|                                  |                                                                                         | CPI4  | 0.707 |     | 0.729 | 0.861 | 0.610 | 1.895 |

Table 5. Aggregate validity test results.

| Variable                        | CR (>0.60) | AVE (>0.50) |
|---------------------------------|------------|-------------|
| Innovation Characteristics      | 0.638      | 0.512       |
| Perceived Risk                  | 0.869      | 0.575       |
| Lifestyle                       | 0.867      | 0.592       |
| Purchase Intention              | 0.923      | 0.755       |

Table 6. Test of discriminant validity.

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|----------|---|---|---|---|---|---|---|---|
| 1        | 1 |   |   |   |   |   |   |   |
| 2        | 0.266 ** | 1 |   |   |   |   |   |   |
| 3        | 0.265 ** | 0.156 ** | 1 |   |   |   |   |   |
| 4        | −0.307 ** | −0.193 ** | 0.122 ** | 1 |   |   |   |   |
| 5        | 0.307 ** | 0.222 ** | −0.056 * | −0.312 ** | 1 |   |   |   |
| 6        | 0.339 ** | 0.105 * | 0.088 * | −0.085 * | 0.193 ** | 1 |   |   |
| 7        | 0.331 ** | 0.059 * | 0.130 ** | −0.048 * | 0.219 ** | 0.602 ** | 1 |   |
| 8        | 0.183 ** | −0.064 | 0.051 * | 0.055 * | 0.027 * | 0.214 ** | 0.227 ** | 1 |

Note: * p < 0.05, ** p < 0.01.

Assessment of the Goodness-of-Fit

The study used the amos24.0 confirmatory factor analysis (CFA) to assess the sample data. Before testing the research hypothesis, the fit indices of the model were examined to guarantee their consistency with the sample data. As a result, the final values of the
proposed model indices confirmed that the accepted fit, CMID/DF, should be greater than 2.50. However, RMR, GFI AGFI, CFI, NFI, RFI, and IFI needed to be greater than 0.90 as well, and RMSEA needed to be less than 0.08. The verification of the indices provided data for further analysis, and the results of the statistical indices are displayed in Table 7 [93,94].

Table 7. Model fitness tested by scale confirmatory factor analysis.

| Variable                  | CMID/DF | RMR | GFI   | AGFI | RMSEA | CFI   | NFI   | RFI   | IFI   |
|---------------------------|---------|-----|-------|------|-------|-------|-------|-------|-------|
| Innovation Characteristics | 2.610   | 0.035 | 0.987 | 0.982 | 0.042 | 0.993 | 0.984 | 0.973 | 0.995 |
| Perceived Risk            | 2.887   | 0.047 | 0.966 | 0.942 | 0.060 | 0.975 | 0.963 | 0.947 | 0.975 |
| Lifestyle                 | 2.684   | 0.049 | 0.951 | 0.927 | 0.056 | 0.969 | 0.952 | 0.938 | 0.969 |
| Purchase Intention        | 1.077   | 0.025 | 0.999 | 0.990 | 0.012 | 0.999 | 0.999 | 0.997 | 0.999 |
| Reference Value           | Between 1–3 | <0.05 | >0.90 | >0.90 | <0.08 | >0.90 | >0.90 | >0.90 | >0.90 |

4.2. Structural Model Analysis

In this paper, the hierarchical regression method was used to test H1–H6 to avoid the multicollinearity problem. Since “consumer perceived risk” is a reverse item, the data were processed forward. The data were processed centrally before the analysis.

As for the test of intermediary effect, this paper adopted the step-by-step test method. This was to test whether the independent variable had a significant impact on the dependent variable, and to test whether the independent variable had a significant impact on the intermediary variable, as well as to test whether the intermediary variable also had a significant impact on the dependent variable. Finally, after controlling the mediating variable, test the influence of the independent variable on the dependent variable. If it was significant, it indicated some mediating effects. If it was not significant, then it was not all mediating effects.

4.2.1. Innovative Characteristics—Relative Advantage and Purchase Intention

Table 8 lists the analysis results related to the innovation characteristics and purchase intention, giving a total of seven models. Model 1 is a basic model that only includes control variables, such as age, education level, occupation, and annual family income. The adjusted R² is 0.009, suggesting that Model 1 can explain 0.9% of the variation in the dependent variables. This is performed because the addition of independent variables usually increases the model’s reliability. Similarly, R-squared (R²) is also a measure that represents the proportion of the variance explained by an independent variable or variables in a regression model for a dependent variable. The VIF of each variable is less than 1.195, and the DW is 1.924, indicating that Model 1 does not have any problems related to multicollinearity and sequencing. The above results can be further verified by studies performed with the research methods developed by Li Chuang [89].

In the data analysis of this paper, the value of R-squared is relatively low. This is partly because in the field of social sciences, especially in the field of consumer behavior, human behavior is affected by many factors, so the calculation results of the model will be disturbed by many factors. Second, the diffusion of electric vehicles is still in its early stage, which is also a reason for the low R-squared.

The test results for the intermediary effect of perceived risk are shown in Models 2–4 presented in Table 8. Model 2 introduces the independent variable relative advantage on the basis of Model 1. The analysis results show the significant positive impact of relative advantage on purchase intention (β = −0.314, p < 0.001), and H1a is supported [49]. In Model 3, the relative advantage and perceived risk are significantly negatively correlated (β = −0.299, p < 0.001), and H2a is also supported. In Model 4, perceived risk and purchase intention are significantly negatively correlated (β = −0.246, p < 0.001), suggesting the existence of an intermediary effect of perceived risk, and H4 is supported [61]. From the regression results of Models 2–4, it can be seen that perceived risk has an intermediary effect between relative advantage and purchase intention, and is thus classified as a partial
intermediary effect. The above findings can be further verified by studies on the relative advantage and consumer purchase intention related to the development of a sustainable economy [65].

Table 8. Mediating and regulating effects of perceived risk and lifestyle on the relative advantage and purchase intention.

| Variable                                      | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 |
|-----------------------------------------------|---------|---------|---------|---------|---------|---------|---------|
|                                               | Y       | Y       | M       | Y       | M       | M       | M       |
| Age                                           | −0.046  | −0.024  | 0.124   | 0.007   | 0.122   | 0.121   | 0.113   |
| Education                                     | 0.048   | 0.088   | 0.020   | 0.093   | 0.018   | 0.014   | 0.031   |
| Occupation                                    | 0.084   | 0.089   | 0.038   | 0.099   | 0.028   | 0.030   | 0.038   |
| Annual family income                          | 0.004   | −0.003  | −0.090  | −0.025  | −0.094  | −0.098  | −0.090  |
| Relative advantage                            | 0.314***| −0.299***| 0.240***| −0.316***| −0.318***| −0.316***|         |
| Perceived risk                                | −0.246***|         |         |         |         |         |         |
| Fashion consciousness                         |         |         |         |         |         | 0.059   |         |
| Relative advantage * fashion consciousness    |         |         |         |         |         |         | 0.124** |
| Environmental consciousness                  | 0.092   |         |         |         |         |         |         |
| Relative advantage * environmental consciousness| 0.067  |         |         |         |         |         |         |
| Price consciousness                          |         |         |         |         |         |         | 0.120** |
| Relative advantage * price                    | 0.095   |         |         |         |         |         |         |
| R²                                           | 0.009   | 0.106   | 0.117   | 0.159   | 0.133   | 0.130   | 0.137   |
| Adjusted R²                                   | 0.001   | 0.097   | 0.108   | 0.150   | 0.121   | 0.119   | 0.125   |
| F value                                       | 1.149   | 12.349  | 13.804  | 16.470  | 11.415  | 11.170  | 11.810  |

Note: * p < 0.05, ** p < 0.01, *** p < 0.001.

Models 5–7 in Table 8 test the regulatory effects of fashion consciousness, environmental consciousness, and price consciousness, respectively. The test results for Model 3 and Model 5 show an increase in the effect of the relative advantage on perceived risk from −0.299 to −0.316, which shows that, under the regulation of fashion consciousness, the negative impact of relative advantage on perceived risk increases; that is, under the condition of strong consumer fashion consciousness, there is a continuous enhancement of the relative advantage of electric vehicles [63]. The perceived risk of consumers decreases at a faster rate. According to Model 5, the regulatory effect interaction item “relative advantage * fashion consciousness” shows a significant positive regulatory effect on relative advantage and perceived risk (β = 0.124, p < 0.01). Hence, lifestyle also supports the study and enhances consumers’ purchase intention from the perspective of promoting a sustainable economy. H6a is supported by the current study.

As indicated by the test results, for Model 3 and Model 6, the effect of the relative advantage of EVs on perceived risk increases from −0.299 to −0.318, which shows that under the regulation of environmental consciousness, the negative impact of the relative advantage of EVs on perceived risk is greater. This indicates that a strong level of consumer environmental consciousness promotes the continuous enhancement of the relative advantage of electric vehicles, because the perceived risk of consumers decreases at a faster rate. According to Model 6, the interaction item “relative advantage * environmental consciousness” has a significant positive regulatory effect on the relative advantage and perceived risk (β = 0.092, p < 0.05). H7a is supported by the current study. The results of the current study are also in line with those of a previous study [79].

In the test results for Model 3 and Model 7, the effect of the relative advantage of EVs on perceived risk increases from −0.299 to −0.316, which shows that the negative impact of relative advantage on perceived risk increases under the regulation of price consciousness; that is, under the condition of strong consumer price consciousness, there is continuous enhancement of the relative advantage of electric vehicles. Consumers’ perceived risk decreases at a faster rate. Model 7 shows significant positive interactive regulatory effect of “relative advantage * price consciousness” on relative advantage and perceived risk (β = 0.095, p < 0.05). Hence, H8a is also supported by the current study. The results can be verified by the literature [81] and pave the way for future studies on the development of a sustainable lifestyle for common people.
4.2.2. Mediation Effects of Perceived Risk and Purchase Intention

Firstly, the test results concerning the mediation effect of perceived risk are presented in Models 2–4 in Table 9. Model 2 introduces the independent variable innovation characteristic technology compatibility on the basis of Model 1. In Table 9, the adjusted R-squared is 0.048, always less than R-squared 0.057, but the difference is usually very small unless the current study is attempting to estimate too many coefficients from a small sample with too much noise. Then, the analysis results show that technology compatibility has a significant positive effect on purchase intention ($\beta = 0.223$, $p < 0.001$). Hence, H1b is supported by the study. In Model 3, technology compatibility has a significant negative effect on perceived risk ($\beta = -0.178$, $p < 0.001$), so H2b is also supported by the current study. In Model 4, perceived risk is significantly negatively related to purchase intention ($\beta = -0.288$, $p < 0.001$), indicating that the mediation effect of perceived risk exists, and H4 is supported. From the regression results of Models 2–4, it can be seen that perceived risk has a mediating effect between technology compatibility and purchase intention, indicating a partial mediation relationship. This is similar to the mediation relationship shown in a study by Baron and Kenny [95].

Table 9. Mediating and regulating effects of perceived risk and lifestyle on technology compatibility and purchase intention.

| Variable | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 |
|----------|---------|---------|---------|---------|---------|---------|---------|
| Age      | −0.046  | −0.017  | 0.122   | 0.018   | 0.120   | 0.116   | 0.119 **|
| Education| 0.048   | 0.053   | 0.054   | 0.069   | 0.054   | 0.043   | 0.062   |
| Occupation| 0.084   | 0.090   | 0.039   | 0.101   | 0.036   | 0.039   | 0.040   |
| Annual family income | 0.004 | 0.005 | −0.097 | −0.023 | −0.083 | −0.090 | −0.096 *|
| Technical compatibility | 0.223 *** | −0.178 *** | −0.171 *** | −0.186 *** | −0.188 *** | −0.187 *** |
| Perceived risk | −0.288 *** | −0.047 | 0.101 * |       |       |       |       |
| Fashion consciousness | −0.047 |       |       |       |       |       |       |
| Technical compatibility * fashion consciousness | 0.032 |       |       |       |       |       |       |
| Environmental consciousness |       | −0.037 |       |       |       |       |       |
| Technical compatibility * environmental consciousness |       | 0.109 * |       |       |       |       |       |
| Price consciousness |       |       |       |       |       |       |       |
| Technical compatibility * price consciousness |       |       |       |       |       |       |       |
| R$^2$      | 0.001   | 0.048   | 0.051   | 0.126   | 0.060   | 0.059   | 0.059   |
| Adjusted R$^2$ | 1.149 | 6.375   | 6.675   | 13.631  | 5.804   | 5.747   | 5.739   |
| F value   |         |         |         |         |         |         |         |

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Models 5–7 in Table 9 tested the regulatory effects of fashion consciousness, environmental consciousness, and price consciousness, respectively. For Model 3 and Model 5, the effect of technology compatibility on perceived risk increases from −0.178 to −0.186, which shows that under the regulation of fashion consciousness, the negative impact of technology compatibility on perceived risk increases; that is, under the condition of strong consumer fashion consciousness, there is continuous enhancement of electric vehicle technology compatibility. The perceived risk of consumers decreases at a faster rate. Based on Model 5, the interaction item “technology compatibility * fashion consciousness” has a significant positive regulatory effect on technology compatibility and perceived risk ($\beta = 0.101$, $p < 0.05$). Hence, H6b is supported by the current study, as well as the literature, drawing on the technology perspective to promote the development of an ecofriendly environment to sustain the lifestyles of human beings [69,74].

The test results for Model 3 and Model 6 show an increase in the effect of technology compatibility on perceived risk from −0.178 to −0.188, which shows that under regulation by environmental consciousness, the negative impact of technology compatibility on perceived risk increases [46]; that is, under the state of strong consumer environmental consciousness, technology compatibility in electric vehicles is constantly enhanced [81]. The perceived risk of consumers decreases at a faster rate. Model 6 reveals the significant
positive regulatory effect of “technology compatibility * environmental consciousness” on technology compatibility and perceived risk \((\beta = 0.109, p < 0.05)\). Thus, H7b is supported by the present study. The results of the current study also support past work in this area [72,74].

The test results for Model 3 and Model 7 show an increase in the effect of technology compatibility on perceived risk from \(-0.178\) to \(-0.187\), which shows that the negative impact of technology compatibility on perceived risk increases under the regulation of price consciousness; that is, the technology compatibility of electric vehicles is constantly enhanced when consumer price consciousness is high. Consumers’ perceived risk decreases at a faster rate. Model 7 shows that the interaction item “technology compatibility * price consciousness” has a significant positive regulatory effect on technology compatibility and perceived risk. \((\beta = 0.100, p < 0.05)\). Thus, H8b is also supported by the current study.

### 4.2.3. Innovation Characteristics—Technological Complexity and Purchase Intention

The test results for the intermediary effect of perceived risk are shown in Models 2–4 in Table 10 and show the results of adjusted R-squared are always less than R-squared of all values, as explained in Table 10, respectively, but the difference is usually very small unless the current study is attempting to estimate these results. Model 2 introduces the independent variable innovation characteristic technology complexity on the basis of Model 1. The analysis results show that technology complexity negatively affects purchase intention \((\beta = -0.057, p < 0.05)\), so H1c is supported by the current study. In Model 3, technology complexity is significantly positively related to perceived risk \((\beta = 0.118, p < 0.05)\). Hence, H2c is also supported. In Model 4, perceived risk has a significant positive correlation with purchase intention \((\beta = -0.317, p < 0.001)\), indicating that a mediation effect of perceived risk exists, and in this way, H4 is supported by this study. From the regression results of Models 2–4, it can be seen that perceived risk has a mediating effect between technical complexity and purchase intention, which can be described as a partial intermediary effect [95]. The above results can be further verified by the literature concerning technical complexity and consumer purchase intention in relation to sustainable innovation and sustainable development [65].

### Table 10. Mediating and regulating effects of perceived risk and lifestyle on technical complexity and purchase intention.

| Variable                        | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 |
|---------------------------------|---------|---------|---------|---------|---------|---------|---------|
|                                 | Y Y M   | M Y M   | M M     | M M     | M M     | M M     | M M     |
| Age                             | -0.046  | -0.045  | 0.142   | 0.000   | 0.139   | 0.131 ** | 0.135   |
| Education                       | 0.048   | 0.045   | 0.066   | 0.065   | 0.071   | 0.069   | 0.077   |
| Occupation                      | 0.084   | 0.087   | 0.037   | 0.099   | 0.039   | 0.040   | 0.038   |
| Annual family income            | 0.004   | 0.004   | -0.096 *| -0.027  | -0.085  | -0.091 *| -0.099  |
| Technical complexity            | -0.057 *| 0.118 *  | -0.020  | 0.100 *  | 0.105 *  | 0.107 *  |         |
| Perceived risk                  | -0.317 ***| -0.083  |         |         |         |         |         |
| Fashion consciousness           |         |         |         |         |         |         |         |
| Technical complexity * fashion consciousness |         |         |         |         |         |         | 0.137 **|
| Environmental consciousness    |         |         | -0.040  |         |         |         |         |
| Technical complexity * environmental consciousness |         |         |         |         |         | 0.107 *  |         |
| Price consciousness            |         |         |         |         |         |         | 0.046   |
| Technical complexity * price consciousness |         |         |         |         |         |         | 0.094 *  |
| \(R^2\)                        | 0.009   | 0.012   | 0.043   | 0.108   | 0.067   | 0.056   | 0.053   |
| Adjusted \(R^2\)               | 0.001   | 0.002   | 0.033   | 0.098   | 0.054   | 0.043   | 0.041   |
| F value                         | 1.149   | 1.263   | 4.652   | 10.523  | 5.334   | 4.379   | 4.196   |

Note: * \(p < 0.05\), ** \(p < 0.01\), *** \(p < 0.001\).

Models 5–7 in Table 10 show the moderating effects of fashion consciousness, environmental consciousness, and price consciousness, respectively. The test results for Model 3 and Model 5 indicate a significant decrease in the effect of technological complexity on perceived risk from 0.118 to 0.100, indicating that when moderated by fashion conscious-
ness, the positive impact of technological complexity on perceived risk increases; that is, when consumer price consciousness is high, the level of technological complexity in electric vehicles grows [74,75]. The perceived risk of consumers increases at a faster rate. It can be seen from Model 5 that the interactive item “technical complexity * fashion consciousness” has a significant positive moderating effect on the technical complexity and perceived risk ($\beta = 0.137$, $p < 0.05$). Hence, H6c is supported by the current study, as well as by the related literature.

The test results for Model 3 and Model 6 indicate a significant decrease in the effect of technological complexity on the perceived risk from 0.118 to 0.105, indicating that under the regulation of environmental consciousness, the positive impact of technological complexity on perceived risk increases; that is, when consumer environmental consciousness is high, the level of technological complexity in electric vehicles grows. The perceived risk of consumers increases at a faster rate. According to Model 6, the interaction item “technical complexity * environmental consciousness” has a significant positive moderation effect on the technical complexity and perceived risk ($\beta = 0.107$, $p < 0.05$). Thus, H7c is supported by the study.

The test results for Model 3 and Model 7 suggest a decrease in the effect of technological complexity on perceived risk from 0.118 to 0.107, which shows that the positive impact of technological complexity on perceived risk increases under the regulation of price consciousness; that is, when the level of consumer price consciousness is high, there is continuous enhancement of the technological complexity of electric vehicles. The perceived risk of consumers increases at a faster rate. From Model 7, it can be seen that the interactive item “technology complexity * price consciousness” has a significant positive moderation effect on the technology complexity and perceived risk ($\beta = 0.094$, $p < 0.05$). Hence, H8c is accepted and fully supported by the literature considering the benefits of electric vehicles on the achievement of a sustainable economy [50,52].

The test results for the above models are summarized in Table 11, and all assumptions proposed by the research are supported.

| Serial Number | Hypothesis | Verification Results |
|---------------|------------|----------------------|
| 1             | H1a        | Relative advantages positively affect consumers’ purchase intention | Support |
| 2             | H1b        | Technology compatibility positively affects consumers’ purchase intention | Support |
| 3             | H1c        | Technological complexity negatively affects consumers’ purchase intention | Support |
| 4             | H2a        | Relative advantage negatively affects consumers’ risk perception | Support |
| 5             | H2b        | Technology compatibility negatively affects consumers’ risk perception | Support |
| 6             | H2c        | Technological complexity positively affects consumers’ risk perception | Support |
| 7             | H3         | Perceived risk negatively affects consumers’ purchase intention | Support |
| 8             | H4         | The promotion effect of innovation characteristics on consumers’ purchase intention is mediated by perceived risk | Support |
Table 11. Cont.

| Serial Number | Hypothesis                                                                 | Verification Results |
|---------------|---------------------------------------------------------------------------|----------------------|
| 9             | H5 Lifestyle significantly regulates the relationship between innovation characteristics and perceived risk | Support              |
| 10            | H6a Fashion consciousness positively regulates the relationship between relative advantage and risk perception | Support              |
| 11            | H6b Fashion consciousness positively regulates the relationship between relative advantage and risk perception | Support              |
| 12            | H6c Fashion consciousness positively regulates the relationship between technology compatibility and risk perception | Support              |
| 13            | H7a Environmental consciousness positively regulates the relationship between technological complexity and risk perception | Support              |
| 14            | H7b Environmental consciousness positively regulates the relationship between relative advantage and risk perception | Support              |
| 15            | H7c Environmental consciousness positively regulates the relationship between technology compatibility and risk perception | Support              |
| 16            | H8a Price consciousness positively regulates the relationship between relative advantage and risk perception | Support              |
| 17            | H8b Price consciousness positively regulates the relationship between technology compatibility and risk perception | Support              |
| 18            | H8c Price consciousness positively regulates the relationship between technological complexity and risk perception | Support              |

5. Discussion

This study investigated the effect of the moderator variable consumer lifestyle at the individual level and studied how innovation characteristics influence purchase intention. The following conclusions were drawn.

5.1. Innovative Characteristics Significantly Affect Purchase Intention

From the regression results, it can be observed that the variable relative advantage exerts the greatest positive influence on purchase intention (maximum regression coefficient 0.314), followed by technical compatibility. Technical complexity was shown to have a negative impact on purchase intention, but the degree was relatively weak. It can be seen that, first of all, if an innovation is to replace the original product, its relative advantage is particularly important; that is, consumers need to be able to clearly see the advantages of the innovative product compared with the original product [27]. The greater the relative advantage, the stronger the consumers’ willingness to buy it. Secondly, on the premise that the relative advantage is recognized by consumers, technical compatibility is an important factor considered by consumers. For example, the availability of charging facilities and charging time required for electric vehicles are the key issues affecting consumers’ purchasing decisions. At the same time, the conversion cost of innovative products also affects consumers’ purchase intention [50]. Finally, from the perspective of the product use process, the technical principles of innovative products, such as electric vehicles, are not important to many consumers. In the survey, many drivers said that there is no difference in driving
operation between the two types of vehicles. Drivers who can drive traditional fuel vehicles will certainly be able to drive electric vehicles [26,54]. The technical principles of the two, such as the three-electricity principle, do not affect the driving operation. Therefore, the impact of technological complexity on consumers’ purchase intention was found to be the weakest.

5.2. Perceived Risk, as a Mediating Variable, Significantly Affects the Relationship between Innovation Characteristics and Purchase Intention

From the regression results, it can be seen that the innovation characteristics significantly affect the perceived risk (absolute regression coefficients are \(-0.299\), \(-0.178\), and \(0.118\), respectively). Perceived risk significantly negatively affects purchase intention (the sum of absolute regression coefficients is \(-0.851\)), and the mediating effect of perceived risk is significant. This may assist researchers when dealing with the complexity that arises from innovation characteristics in terms of social, ecological, and economic value creation, given that previous research indicates that companies oriented toward sustainable consumer purchase intention for electric vehicles require sustainability [58].

5.3. Consumer Lifestyle Has a Significant Positive Regulatory Effect on the Relationship between Innovation Characteristics and Consumer Perceived Risk

It can be seen from Models 5–7 in Tables 8–10 that lifestyle has a positive moderation effect on the relationship between innovation characteristics and perceived risk. First of all, when consumers buy innovative products, both functional needs and psychological needs affect purchase decisions. This is especially true for consumers with strong fashion consciousness. The pursuit of novelty through innovative products and the early purchase and use of innovative products are important psychological factors that attract consumers with strong fashion consciousness, according to a previous study [72] on the development of sustainable value. Driven by this psychological factor, the perceived risk brought by relative advantage, technology compatibility, and technology complexity is greatly reduced, which increases consumers’ purchase intention [61] and the green value of consumers. It can also be seen from the regression results that fashion consciousness exerts a significant positive regulatory function on the correlation between innovation characteristics and perceived risk (the absolute regression coefficients are 0.124, 0.101, and 0.137). Secondly, strong environmental consciousness will also promote consumers to buy innovative products. With the advantages of energy conservation and environmental protection, electric vehicles have entered the automotive field and have received strong support from governments [81]. The concept of advocating for green consumption and reducing carbon emissions is the preference of customers with high environmental consciousness who wish to enhance the sustainability of the environment through the development of a sustainable economy [18]. Therefore, having strong environmental consciousness will reduce the impact of innovation characteristics on perceived risk. Finally, consumers with strong price consciousness will evaluate the characteristics of innovative products from the perspective of cost performance to judge whether they can bear the risks brought by innovation uncertainty. These customers tend to choose products with a low price and high performance. Thus, price consciousness exerts a positive moderation effect on the correlation between innovation characteristics and perceived risk [61,69].

6. Implications

6.1. Theoretical Implications

The new core technology involved in electric vehicles and the original design intention of this product of environmental protection rather than customer orientation make the market diffusion of electric vehicles fundamentally different from that of other innovative products [39]. By adopting the theories of innovation diffusion and planned behavior, this study investigated how a brand-new technological product diffuses in the field of private consumer goods. The research conclusions can be used to enrich the development of user adoption theory.
Lifestyle is an individual characteristic formed under the comprehensive influences of the social environment and personal characteristics and values. It reflects the consumption concept and drives consumption behavior [13]. The influence of consumer characteristics on behavior, especially on the consumption habits of Chinese consumers, has been the focus of consumer behavior studies, for example, to determine the kinds of consumers who will choose to purchase new electric vehicles initially. Studying the consumption decisions of the first batch of consumers can provide a theoretical reference for the market diffusion of electric vehicles. Studying the regulatory effect of consumer lifestyle on the purchase process can be used to deeply analyze the internal motivations of the first batch of consumers in terms of their purchase intention and can provide a prediction basis for the diffusion of the electric vehicle market. It can also provide practical experience that may enrich consumer behavior theory.

6.2. Practical Implications

This study divided the innovation characteristics of electric vehicles into the relative advantages (including promotion policies), technical compatibility, and technical complexity and explored the impacts of different dimensions on the purchase intention of electric vehicle consumers. It can act as a theoretical reference for design improvement and publicity strategy selection for electric vehicles.

We investigated the effects of consumers’ different lifestyles on purchase intention related to electric vehicles. It was found that fashion consciousness generates the greatest regulatory effect on purchase intention related to electric vehicles, followed by environmental consciousness, while price consciousness was found to have the least impact. This shows that the first batch of electric vehicle consumers placed more emphasis on the sense of fashion brought by the purchase and driving of electric vehicles. These individuals share this experience with the people around them and consider that the purchase and use of electric vehicles will greatly enhance their fashion label and enhance their degree of leadership (especially the influence on the consumption behavior of the people around them). Electric vehicle marketers can make full use of this conclusion by developing the trend of green fashion in relation to electric vehicles, accurately segmenting potential consumers, and carrying out targeted publicity and promotion campaigns to promote the initial diffusion of electric vehicles.

The conclusions of this study can be used to provide strategic guidance when choosing an electric vehicle market diffusion strategy, including guidance on the purchase decisions related to different types of innovative products and different kinds of consumers in different diffusion periods. For innovative products, such as electric vehicles, which involve green fashion and new core technologies, the “high-end and high-price” marketing strategy should be adopted in the early stage of market diffusion. On one hand, “high-end” indicates product value, which can attract consumers who are fashion conscious and environmentally conscious. On the other hand, this study found that price consciousness has the least impact on consumers’ purchase intention, so “high price” will not deter consumers but will attract the attention of more innovative consumers, who often have strong risk tolerance. These individuals are potential consumers in the early phase of the diffusion of electric vehicle market.

7. Conclusions, Limitations, and Future Research

Taking the market diffusion data for electric vehicles as an example, this study investigated the elements influencing consumers’ purchase intention based on the innovation diffusion theory, introduced consumers’ lifestyle as a moderating variable, and discussed how lifestyle affects consumers’ decision to purchase innovative products. This study divided consumers’ lifestyles into three dimensions—fashion consciousness, environmental consciousness, and price consciousness—and tried to explore the regulatory effect of lifestyle on innovation characteristics and consumers’ purchase intention. The research conclusions confirm that innovation characteristics significantly affect purchase intention.
and perceived risk. Additionally, the effect of consumer lifestyle on innovation diffusion was discussed. In previous studies, consumers’ lifestyle has been used as an independent variable to study the impact of lifestyle on purchase intention. The authors of this study believe that lifestyle is an individual trait formed under the comprehensive influences of the social environment, individual personality, and values. It exerts a moderating function on consumers’ purchase decision making and moderates the relationship between innovation characteristics and consumers’ perceived risk. Therefore, by adopting the innovation diffusion theory, this work established a comprehensive analysis framework, including innovation characteristics, consumers’ lifestyle, perceived risk, and purchase intention and studied the internal mechanisms of the relationship between innovation uncertainty and consumers’ purchase intention in relation to the development of a sustainable economy.

Secondly, the results of the current research prove that lifestyle is a vital dominant factor influencing consumer behavior, but whether there are differences in the impacts of various dimensions of lifestyle on consumers’ purchase intention remains to be confirmed. This study concluded that this difference exists, and this is mainly reflected by (1) the relationship between relative advantage and perceived risk, where fashion consciousness plays the strongest regulatory role, price consciousness takes second place, and environmental consciousness has the weakest effect, indicating that (2) in the relationship between technology compatibility and perceived risk, environmental consciousness plays the strongest moderating role in the development of an ecofriendly environment, followed by fashion consciousness and price consciousness; (3) in the relationship between technology complexity and perceived risk, fashion consciousness plays the strongest regulatory role, followed by environmental consciousness, while price consciousness has the weakest effect.

This study had some limitations. First, the discussion on consumers’ lifestyles was not deep enough. The existing literature shows that the impact of lifestyle on purchase intention differs depending on the type of product. This study classified electric vehicles as green innovative products, so it drew lessons from the dimension classification of the existing literature. Second, when discussing the impacts of various dimensions of lifestyle on consumers’ purchase intention, this paper only considered a single electric vehicle type as a sample for the empirical analysis, so the conclusion is not rigorous enough. Third, due to the large research scope and strong subjectivity of this paper, sampling from only Beijing and Shanghai cannot rigorously explain the diffusion of electric vehicles in China. Therefore, in future research, the sample size will be further expanded with the help of big data technology and official data of relevant departments to ensure the reliability of research results. The shortcomings of the above research will be addressed in future research.

Author Contributions: Conceptualization, R.X. and L.A.; methodology, R.X.; software, N.Y.; validation, R.X. and N.Y.; formal analysis, R.X. and N.Y.; investigation, R.X.; data curation, R.X.; writing—original draft preparation, R.X.; writing—review and editing, R.X. All authors have read and agreed to the published version of the manuscript.

Funding: This paper is supported by the scientific research project of Xi’an Jiaotong University City College (202002Y02).

Institutional Review Board Statement: All procedures followed in this research were in accordance with the ethical standards of the responsible committee on human experimentation (Northwest University, Xi’an 710127, China).

Informed Consent Statement: Written informed consent was obtained from all participants to be included in the study.

Data Availability Statement: The quantitative data used to support the findings of this study are included within the article.

Conflicts of Interest: The authors declare no conflict of interest.
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