

## Article

# Exploring the User Adoption Mechanism of Green Transportation Services in the Context of the Electricity–Carbon Market Synergy

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**Abstract:** Promoting green transportation development in the context of electric–carbon market synergy can help promote sustainable transport and tackle climate change. The sharing economy has given rise to innovative and successful business models in recent years. To occupy current and potential markets, many enterprises that participate in sharing economy activities have engaged in a fiercely competitive environment. It is an important way for enterprises to generate profits and improve competitiveness by encouraging consumers' continuous consumption or stimulating repurchase intentions. This study investigates the effects of consumer satisfaction on consumer repurchase intention (CRI) and how such effects are moderated by the consumer's risk perception and sustainability awareness in the case of ride-sharing services, which are viewed as a mode of green transportation service. The results of a survey of 358 Chinese consumers who have used ride-sharing services suggest that transaction-based and experience-based satisfaction have positive and significant effects on the CRI of ride-sharing services. Moreover, the results indicate that consumer risk perception negatively moderates the relationships between satisfaction and CRI, while consumer sustainability awareness plays different roles depending on the type of satisfaction (transaction-based versus experience-based). Finally, implications and suggestions for future studies are discussed.

**Keywords:** electricity–carbon market; sharing economy; consumer satisfaction; risk perception; sustainability awareness; consumer repurchase intention (CRI)



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## 1. Introduction

In recent years, the global community has become increasingly aware of the urgent need to address climate change and reduce carbon emissions [1]. As a result, there has been a growing emphasis on developing innovative solutions in the transportation sector that can contribute to a more sustainable future [2,3]. One such solution is the electricity–carbon market synergy, which helps to promote the adoption of green transportation services [4]. By aligning the electricity and carbon markets, this synergy creates a favourable environment for the widespread adoption of green transportation services. Understanding the user adoption mechanism of green transportation services within the context of the electricity–carbon market synergy is of paramount importance. It allows policymakers, researchers, and service providers to gain insights into the factors that influence individuals' decisions to embrace these sustainable transportation options. Exploring the underlying mechanisms that drive user adoption helps in developing effective strategies to expedite the transition towards greener and more sustainable transportation systems.

Moreover, the rapid development of information and communication technology (ICT), especially the Internet, has exerted a fundamental impact on individuals' consumption structure, behaviour, and patterns and has given rise to various new economic models and forms [5,6]. The sharing economy is one of the most active “new” economic forms and

innovative business models. In 2011, it was named “one of the top ten innovative concepts to change the world” by the New York Times Magazine [7]. According to Pricewaterhouse Coopers (PwC), the global total revenue of the sharing industry, including daily travel, product sharing, and others, reached USD 15 billion in 2015 and is expected to grow to USD 335 billion by 2025 [6]. The survey indicated that the number of people participating in the sharing economy in the United States had exceeded 80 million in 2014 [8], and the scale of ride-sharing services in North America alone reached USD 3.3 billion in 2016. In China, the number of people participating in the sharing economy has exceeded 700 million, the number of service providers has exceeded 70 million, and the trading volume was about USD 709 billion in 2018. As a business model, the active sharing economy platforms in current marketplaces can be divided into two categories: the first is the consumer-to-consumer (C2C) or peer-to-peer (P2P) model, which includes Airbnb, Didi Chuxing, Uber, Lyft, and TaskRabbit, among others [8,9]; the second is the business-to-consumer (B2C) model, which includes Zipcar, hellobike, Car2Go, and Spinlister [10]. The sharing economy, which is also sometimes known as collaborative consumption, has been booming in the practice of modern enterprises from its beginning. In the future, with the growth of economic aggregates, the appearance of new consumption demand, the upgrade of ICT, and the transformation of consumption structure, the sharing economy may well demonstrate a trend of rapid growth.

The success of the sharing economy in recent market practice has attracted the attention of many policymakers, managers, and scholars [9,11,12]. Related research on this new economic force has focused mainly on the conceptualization of the sharing economy, individual motivation to participate, and its influencing factors, and these studies have revealed some interesting results [13]. However, no consensus has been reached in the current literature concerning its concept or connotation. Researchers have defined it from various perspectives, giving it names such as collaborative consumption [14], access-based consumption, liquid consumption [15], commercial sharing systems [10], and sharing economies [16]. Botsman and Rogers [14] defined the sharing economy or collaborative consumption as an “economic model based on the sharing, exchange, transaction, or leasing of products and services to achieve the usage rights”. Collaborative consumption is to coordinate the acquisition or distribution of resources, including leasing, lending, exchanging, and bartering, to obtain certain remuneration or other forms of compensation. Moreover, collaborative consumption was described as being in the “middle zone” between traditional sharing and market exchange, which has both attributes. The Sharing Research Centre of the China National Information Centre defined the sharing economy as “the sum of economic activities that integrate massive and decentralized resources to meet diversified needs by using ICT based on the internet platform and taking the sharing of usage rights to use as the main feature”. Based on our review of the mainstream literature, despite the disputes in the conceptualization of the sharing economy, current research has reached a consensus concerning two central aspects: one is that the sharing economy takes the Internet and other ICTs as the means of resource acquisition and distribution; the other is that sharing of usage rights instead of ownership is the main form of the sharing economy [14,17]. Thus, based on previous studies, in this paper, the sharing economy is defined as organisations or individuals with idle assets and resources utilising modern ICT, transferring the short-term usage rights of assets and resources through the sharing market in order to obtain remuneration or other forms of compensation. As a tangible manifestation of the sharing economy, shared mobility has become the latest transport trend in recent years, especially in metropolitan areas where shared mobility services are growing at an alarming rate. The first form of shared transportation is car-sharing, especially after witnessing a mini-revolution in the transport sector with the launch of shared mobility services such as Vélib, Autolib, Zipcar, Car2Go, and others, which are playing an increasingly important role in sustainable urban transportation planning and control [8].

Consumer participation has played a crucial role in the development of sharing economy enterprises and has also drawn the attention of scholars. Based on the existing literature, the motivation for consumer participation in the sharing economy could be classified as either economic motivation [6,8,17], social motivation [18,19], environmental motivation [18], or some combination thereof. In terms of economic motivation, most surveyed studies suggest that the main purpose of consumer participation in the sharing economy is to obtain additional revenue through sharing idle resources or to meet their consumption at a lower cost [17]. However, there is no present consensus on social or environmental motivation. For instance, the empirical research conducted by Guttentag et al. [19] shows that the expectation of communication with landlords or local people is an important factor for tourists to choose Airbnb, while Bucher, Fieseler, and Lutz [17] point out that social motivation has no significant role in promoting consumer participation in the sharing economy. Lawson, Gleim, Perren, and Hwang [6] found that the groups with the highest degree of participation in the sharing economy are generally concerned with environmental protection, while some scholars argued that consumers with environmental awareness may not necessarily participate in the sharing economy [5]. In addition, the existing research proposes trust [8], familiarity [20], and risk perception [10,21] as influencing factors of consumer participation in the sharing economy.

However, compared with the vigorous growth of sharing economy enterprises in the marketplace, current theoretical and empirical research remains far behind [22]. Specifically, the relevant theoretical research is still in its infancy, and empirical studies are urgently needed to support this phenomenon in real time. In practice, the level of consumer stickiness on the trading platform plays an important role in the development and growth of sharing economy enterprises [23]. Many studies indicate that the consumer repurchase intention (CRI) of products or services provided by internet platforms is a direct and reliable indicator of consumer stickiness and consumer participation [24,25]. Therefore, investigating the factors and psychological intervention paths that affect CRI has great theoretical and practical significance. However, few studies have tapped into the CRI towards sharing economy services, and the vast majority of existing research is limited to adoption intention [17,26,27]. Therefore, this paper aims to contribute to sharing the economic literature in this regard. Based on marketing theory [28], the research constructs an empirical model to examine the relationship between consumer satisfaction and their CRI towards ride-sharing services, as well as the moderating effects of risk perception and sustainability awareness. As the world's largest carbon emitter and energy consumer, the development of sustainable consumption and production (SCP) and the success of China's low-carbon transition will have a huge impact on global sustainability [3]. Accordingly, over the past five years, China has also experienced the rapid rise of the app-based sharing economy, particularly in the urban mobility sector, a phenomenon that has significantly changed travel behaviour and reconfigured urban infrastructure. For instance, Didi Chuxing, a mobile application that enables you to book a reservation on your mobile phone to use or share a ride at a future point in time based on the sharing economy, had 580 million users as of 2021, making it the world's largest travel service platform. The case of China thus provides an interesting platform for exploring the rapidly changing relationship between sustainable consumption and production in the sharing economy among developing and transitioning countries. On this basis, it is appropriate and relevant to the context of the sharing economy that the Chinese case and specific companies have been chosen for empirical analysis in this paper.

There are three main points of research contribution. Firstly, based on marketing theory, this paper constructs a model framework to examine the relationship between consumer satisfaction and their CRI towards ride-sharing services, as well as the moderating effects of risk perception and sustainability awareness. Secondly, while previous studies have focused on a single indicator of consumer satisfaction, this paper further refines the specific types of satisfaction and verifies the positive effects of transaction-based satisfaction and experience-based satisfaction on CRI towards ride-sharing services. Third, this paper synthesises the concepts of the sharing economy given in the existing literature and by

authoritative institutions and innovatively and accurately proposes a generalisation of the sharing economy. Finally, little research has tapped into consumer repurchase intention towards sharing economy services, and the vast majority of existing research is limited to adoption intention. Therefore, this paper adds to the research gap and gives meaningful policy recommendations and insights.

The remainder of this paper is arranged as follows: Section 2 expounds the theoretical background and hypotheses. Section 3 discusses the research methodology of our paper, including sample and data collection and the measurement of constructs. Section 4 presents the data analysis and results. Section 5 is a discussion of these results. Section 6 concludes the results and illustrates the possible implications and limitations of the research.

## 2. Theoretical Background and Hypotheses

The concept of consumer satisfaction and CRI, which originates from the marketing literature, is very important in modern marketing [29,30]. Cardozo [31] first proposed the concept of consumer satisfaction and introduced it into the field of marketing, and then the concept of CRI was subsumed [29]. The existing research generally purports that, whether for offline entities or online platforms, consumer satisfaction and CRI towards their products or services would largely affect the development and growth of an enterprise [24,32]. For internet-based or e-commerce companies (for example, eBay and Taobao), consumer satisfaction and CRI would directly affect consumer stickiness to internet platforms or smartphone applications [24], then directly or indirectly affect the financial performance and development potential of the enterprise [33]. Although the sharing economy is an innovative business model with the main characteristics of sharing usage rights and reciprocity, the innate character of providing products or services to consumers based on an internet platform has not changed [8,10]. Therefore, previous studies on consumer satisfaction and CRI, especially in consideration of online transactions, present a theoretical reference for this study.

However, as a new innovative business model, the sharing economy has its characteristics in comparison with traditional online or offline transactions [34]. Therefore, the definitions of consumer satisfaction and CRI are different [8], and the relationship between them needs to be analysed and verified under the specific conditions of the sharing economy. Additionally, the current research on the sharing economy rarely involves consumer satisfaction and CRI, but the research on the factors that affect consumer participation [10] provides a good theoretical basis for determining the key moderating variables for consumer satisfaction and CRI in this study. It is noteworthy that the theoretical deduction and empirical analysis of this paper were carried out in the context of Chinese companies and consumers and focused on the field of ride-sharing services. Ride-sharing services such as car sharing, which has one of the most frequent rates of interaction with consumers, have developed rapidly in China [35]. In this context, selecting ride-sharing services as the subject of research into the sharing economy was deemed both reasonable and representative. Furthermore, based on the analysis of previous studies on the sharing economy [5,36,37], the paper also examined the moderating effects of risk perception and sustainability awareness.

### 2.1. Consumer Satisfaction and Repurchase Intention

According to the definition of Jones and Sasser, CRI refers to the intensity of desire for consumers to purchase the products or services from the same enterprise again, and the decision-making process is based on physiological and psychological experiences from previous consumption. Oliver [38] defined it as the attitude of consumers towards the performance of products or services; that is, when the consumer's demand for a certain product or service increases, the level of willingness to choose the original supplier increases. The CRI is composed of two key elements. One is the consumer's subjective and objective perception of their experience; the other is their future purchasing intentions [8]. Therefore, the specific connotation of CRI in this study can be stated as follows: when a consumer has

a travel demand, their CRI is the degree to which they are prepared to continue selecting the ride-sharing services they have previously used.

Since strengthening CRI is an effective way to improve consumer stickiness, it is an important way for enterprises to obtain profits and improve competitiveness by encouraging continuous consumption [39]. An extensive review of the literature indicates that consumer satisfaction is an important factor affecting after-purchase attitudes and CRI [40,41]. Providing satisfactory services could arouse consumers' desire to make repeat purchases and is also the basic element of business success and the source of sustained competitive advantage [8,39,40].

Currently, most definitions of consumer satisfaction are based on the expectation-confirmation theory [42]. Consumer satisfaction reflects the psychological state of the consumer while purchasing or using certain products or services. It often derives from the comparison between the consumer's subjective perception of certain products or services and their expectations before consumption [31]. The specific connotation of consumer satisfaction in this study is that the overall evaluation is formed by the comparison between the expectations and actual service perceptions of the ride-sharing service provider. Generally, scholars believe that consumer satisfaction has a positive impact on CRI [10,39,43]. Several studies have divided satisfaction into transaction-based satisfaction (where consumers evaluate each specific transaction) and experience-based satisfaction (the cumulative based on overall consumption or the consumer's entire experience with a given brand) [44,45]. Transaction-based satisfaction is usually associated with the specific link between each transaction or purchase, while experience-based satisfaction is more associated with overall product or service consumption [46]. In the case of ride-sharing services, a complete trip includes multiple links such as placing an online order, arriving at the origin of travel, a waiting period, getting into a vehicle, payment for the order, and so on. Each link in this chain of discrete service parts may have an impact on the overall satisfaction of using the ride-sharing service. Therefore, it is reasonable and meaningful to investigate the role of transaction-based and experience-based satisfaction in predicting CRI towards ride-sharing services. Given this analysis, the subsequent hypothesis is postulated:

**Hypothesis 1.** *Transaction-based satisfaction has a positive effect on CRI towards ride-sharing services;*

**Hypothesis 2.** *Experience-based satisfaction has a positive effect on CRI towards ride-sharing services.*

## 2.2. Risk Perception and Repurchase Intention

Risk perception is a consumer's subjective judgement based on previous experience and often serves as the basis for their consumption attitudes and decision-making [47]. In essence, risk comes from uncertainty, and individual behaviour in realistic environments is often affected by multi-level internal and external uncertainties [39,48]. The implied risk perception in this study is the degree of perception of a consumer's risks (such as security, privacy, and financial risks) when they participate in sharing economy activities. Previous studies have shown that risk perception is an important factor affecting consumer participation in economic activity [49]. Wang et al. [50] indicate that risk perception directly or indirectly affects consumer decision-making processes; for innovative products or services, consumer risk perception tends to weaken their willingness to use them [51]. In a market-oriented economy, since consumers have 'money votes', they tend to be risk-averse [52].

When consumers participate in the sharing economy, they may face a series of uncertain risks. Because the sharing economy is based on ICT, the short-term usage rights of products or services transferred among different strangers for compensation bring some degree of risk to consumers who choose to participate [6]. For instance, a perceived risk of scarcity, which means that a consumer needs to use a certain product or service but cannot

find the corresponding one, would have a negative impact on consumer participation in the sharing economy [10,49,53]. In fact, studies by Kim, Ferrin, and Rao [49] and Hong [54] all indicate that risk perception might hinder consumer participation in sharing economy activities or network services. The study by Mao and Lyu [55] about consumer repurchase behaviour for Airbnb found that risk perception indirectly weakens CRI through attitudes. Based on previous analysis, risk perception may play a negative role in the relationship between consumer satisfaction and CRI. Therefore, combined with the specific research situation of this paper, the following is hypothesised:

**Hypothesis 3.** *Risk perception negatively moderates the relations between (a) transaction-based and (b) experience-based satisfaction and CRI towards ride-sharing services.*

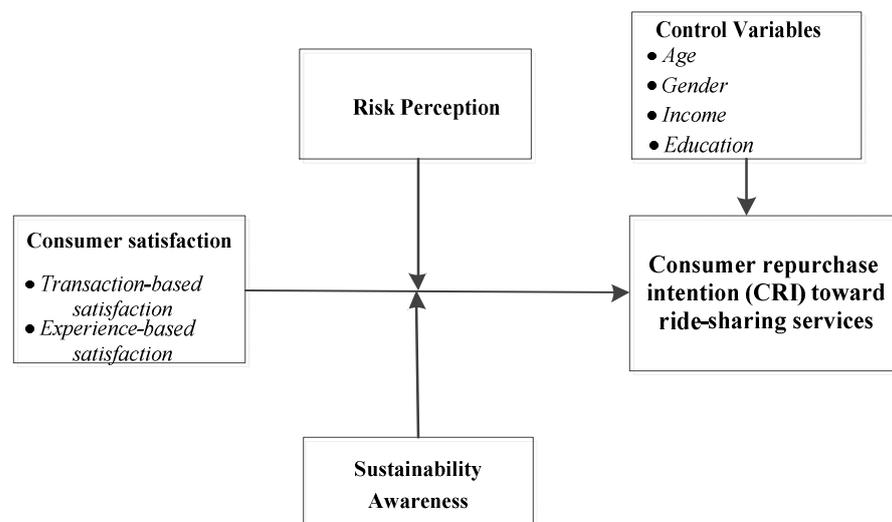
### 2.3. Sustainability Awareness and Repurchase Intention

Sustainability awareness refers to the behavioural tendency towards sustainable consumption in daily life, such as the conservation of resources, green and low-carbon consumption, or adoption of environmental protection when faced with a limited supply of resources and increasingly severe environmental pollution problems [56]. This behavioural tendency is usually associated with ideology and norms, and it is conceptualised as an intrinsic motivation [5]. Several studies have indicated that sustainability awareness is an important factor influencing consumption behaviour [50,57] and have found that consumers with higher sustainability awareness are more likely to take measures to reduce high-carbon consumption and protect the environment [12,58]. Some studies have empirically confirmed the impact of sustainability awareness on the purchasing behaviour of green products or services. Kahn [59] indicates that, compared with non-environmentalists, environmentalists are more inclined to purchase green products and decrease their high energy consumption. Wang et al. [50] found that consumers with higher environmental concerns are more likely to purchase low-carbon vehicles since they regard the purchase as a means to protect the environment.

The sharing economy is a type of sustainable business model that can effectively utilise idle resources and reduce resource waste [5,6]. Saving resources and protecting the environment are important driving factors for consumers to participate in the sharing economy [9,14]. Compared with traditional consumption modes, the sharing economy could be beneficial to environmental protection by attracting many consumers' active participation [17,57]. There are two different views on the research concerning the sharing economy; these views involve explaining the role of sustainability awareness or environmental concerns in predicting the rate of participation intention. The first view is that sustainability awareness can strengthen the willingness of consumers to participate in the sharing economy. Lawson, Gleim, Perren, and Hwang [6] indicate that the group with the highest degree of participation in the sharing economy generally pays more attention to environmental protection. Based on the survey of sharing activities, Edbring, Lehner, and Mont [60] found that the environment is an important driving factor for consumers to participate in the sharing economy. The other view is that sustainability awareness has no significant impact on consumer participation intentions. Based on the survey of Ecomodo, only 32% of users join Ecomodo because of their principles of environmental protection. In addition, some scholars have also found that consumers with sustainability awareness may not participate in the sharing economy [18]. According to the interview results of Barness and Mattsson [61], consumers rarely consider environmental protection when participating in the sharing economy. Given these results, this study will further explore the role of sustainability awareness in the relationship between consumer satisfaction and CRI towards ride-sharing services. Based on the above analysis, the following is hypothesised:

**Hypothesis 4.** *Sustainability awareness positively moderates the relations between (a) transaction-based and (b) experience-based satisfaction and CRI towards ride-sharing services.*

The research hypotheses are schematically depicted in Figure 1.



**Figure 1.** The conceptual research framework. Source: the elaboration of the authors.

### 3. Research Methodology

#### 3.1. Sample and Data Collection

In this study, the data were collected through online questionnaires. The theoretical hypotheses were analysed and verified based on an analysis of these data. The time span of data collection was from January to March 2019. Moreover, the respondents were required to have experience with the ride-sharing services of Didi Chuxing. Currently, Didi Chuxing is the largest C2C ride-sharing service platform in China. Thus, selecting its consumers as a representative sample for this study was deemed beneficial. We used the street intercept survey method, selecting outdoor locations with high pedestrian traffic, randomly stopping passengers using Didi Chuxing, and conducting the online questionnaire survey on the spot. To make it easier to analyse the data, we used an electronic questionnaire introduced by the Questionnaire Star platform, which is widely used in questionnaires, exams, or polls. The questionnaire was sent to respondents using one-to-one communication via WeChat to ensure timeliness, usefulness, and accuracy. Before the survey, the authors clarified the purpose of the survey: to eliminate interference from potential psychological concerns. The respondents, who voluntarily and actively participated in the survey, were required to complete the questionnaire within the given time. Furthermore, to improve participation, a random amount of cash (RMB 5–99) was awarded to respondents through a WeChat red envelope, which is a digital form of monetary gift commonly used in China.

The study conducts a pre-survey to evaluate the validity of the questionnaire, sends 60 questionnaires to respondents, and collects 55 valid questionnaires. The test of scale indicated that reliability and validity are good, and thus the questionnaire is available. Moreover, the questionnaire is modified and enhanced based on the issues identified in the pre-survey and the suggestions provided by respondents. In the formal survey, contact was made with 700 respondents, all of whom had experience using Didi Chuxing. There are 425 respondents willing to participate in our survey, and 358 valid questionnaires were collected. The effective response rate of the survey is 51.1% (358/700). In addition, we test the potential non-response bias of the sample. The difference between the early and late respondents was compared by a *t*-test. The results of the *t*-test showed that no significant response differences were found. Therefore, there is no concern about the problem of non-response bias in this study.

### 3.2. Measures and Questionnaire Development

Five variables needed to be measured in our study. First, transaction-based satisfaction and experience-based satisfaction were adapted from the works of Marinković et al. [45], Sahagun and Vasquez-Parraga [46], Möhlmann [8], and Liang, Choi, and Joppe [62]. Each variable was specifically measured through the examination of four different parameters. Second, the measurement of risk perception was adapted from Pavlou [63], Kim, Ferrin, and Rao [49], and Hong [54]. Similarly, four measurement items were used to measure it. Third, the measurement of sustainability awareness was adapted from the works of Tussyadiah [57], Lawson, Gleim, Perren, and Hwang [6], and Hamari, Sjöklint, and Ukkonen [5], and the paper also used four items to measure it. Finally, CRI was adapted from Lamberton and Rose [10], Möhlmann [8], and Liang, Choi, and Joppe [62], and the variable was measured by three items. All items are measured using a Likert five-point scale from ‘strongly disagree’ to ‘strongly agree’ and can be found in Table 1.

**Table 1.** Constructs and measurement items.

Constructs	Measurement Items	Sources
Transaction-based satisfaction (TBS)	TBS1. I was satisfied with the recent transaction process with the Didi Chuxing platform. TBS2. I am satisfied with the mechanism of Didi Chuxing. TBS3. When I used Didi Chuxing to travel, the driver was polite to me. TBS4. When I used Didi Chuxing to travel, the driver provided professional services to me.	Marinković et al. (2012) [45]; Sahagun and Vasquez-Parraga (2014) [46]; Liang, Choi, and Joppe (2018) [62]
Experience-based satisfaction (EBS)	EBS1. Overall, I am pleased with my experience using Didi Chuxing to travel. EBS2. My experience with Didi Chuxing is pleasurable. EBS3. The last use of Didi Chuxing fulfilled my expectations. EBS4. My choice to use Didi Chuxing to travel was a wise one.	Möhlmann (2015) [8]; Liang, Choi, and Joppe (2018) [62]
Risk perception (RP)	RP1. When I use Didi Chuxing to travel, the security system designed by the Didi Chuxing platform makes me feel safe. RP2. When I used Didi Chuxing to travel, I did not have to worry about waiting too long for service. RP3. When I used Didi Chuxing to travel, I was concerned that the platform might sell my personal information to others without my permission. RP4. I feel secure about the electronic payment system of the Didi Chuxing platform.	Pavlou (2003) [63]; Kim, Ferrin, and Rao (2008) [49]; Hong (2017) [54]
Sustainability awareness (SA)	SA1. Ride-sharing services such as Didi Chuxing are a sustainable mode of travel. SA2. Ride-sharing services help reduce environmental pollution. SA3. Ride-sharing services such as Didi Chuxing are environmentally friendly. SA4. Ride-sharing services such as Didi Chuxing to travel will be beneficial to save energy.	Tussyadiah (2015) [57]; Hamari, Sjöklint, and Ukkonen (2016) [5]; Lawson, Gleim, Perren, and Hwang (2016) [6]
Consumer repurchase intention (CRI)	CRI1. I am likely to choose ride-sharing services such as Didi Chuxing to travel or a similar sharing option the next time. CRI2. In the future, I would prefer a ride-sharing service option like Didi Chuxing for my car. CRI3. In the future, I would likely choose a ride-sharing service option like Didi Chuxing instead of my car.	Lamberton and Rose (2012) [10]; Möhlmann (2015) [8]; Liang, Choi, and Joppe (2018) [62]

Source: the elaboration of the authors.

In addition, previous studies have pointed out that the characteristics of demographic variables may have an important impact on consumer participation in the sharing economy.

Hence, four additional control variables were considered: gender, age, education level, and income level. Table 2 shows the sample demographic characteristics.

**Table 2.** Sample demographic (N = 358).

Demographic Variables	Frequency	Percentage (%)
Gender		
Male	208	58.1
Female	150	41.9
Age		
Under 20	14	3.9
21–30	176	49.2
31–40	122	34.1
41–50	34	9.5
51 or above	12	3.4
Education level		
Senior high school or below	4	1.1
Upper secondary	12	3.4
Bachelor’s degree or sub-degree	158	44.1
Master’s degree or above	184	51.4
Annual income (RMB)		
Below 30,000	110	30.7
30,001–50,000	52	14.5
50,001–80,000	64	17.9
Above 80,000	132	36.9

Source: the elaboration of the authors.

For this study, there was a need to translate the original English items into Chinese and then perform a back translation, which is often employed to ensure the effectiveness and accuracy of cross-cultural research. Even a slight change in item formulation may have exhibited a substantial impact on the respondent’s response to the question [64]. To mitigate semantic ambiguity and obscurity during the English-to-Chinese translation process, we hired a professional translator to ensure linguistic accuracy in our questionnaire. Finally, we translated the Chinese questionnaire into English, trying our best to avoid any semantic deviation.

#### 4. Data Analysis and Results

The following data analysis in this section was conducted using two steps. First, the reliability and validity of the construct were tested. The results of the test determined whether the data sample was suitable for regression analysis. Second, the hierarchical regression analysis was conducted to test the theoretical hypothesis model and the relationship among the constructs (Figure 1). In this study, the SPSS 19.0 software package was used for statistical analysis.

The common method bias, which reflects the artificial covariance between predictor and criterion variables, can affect the authenticity of data analysis results [64]. In this study, the Harman one-factor test was used to identify common method bias. The test results found that all the measurements could be divided into five factors with eigenvalues greater than 1.0 and could explain 72.75% of the total variance. Moreover, the first factor could only explain 32.46% of the variance, which is less than the benchmark value of 50% [65]. Therefore, the common method bias had no obvious influence on our data analysis.

##### 4.1. Measurement Reliability and Validity

The method of confirmatory factor analysis (CFA) was applied to evaluate the reliability, unidimensionality, convergent, and discriminant validity of all constructs in the measurement model. The results of the CFA revealed a good fit between the measurement model and the data set. All fitness indexes met the evaluation criteria, such as the ratio

of Chi-square to degree of freedom ( $\chi^2/df = 2.415$ ) being less than the threshold value of 3.0 [64]; the values of the normed fit index (NFI = 0.91), comparative fit index (CFI = 0.945), Tucker–Lewis index (TLI = 0.933), incremental fit index (IFI = 0.945), and Goodness-of-fit index (GFI = 0.92) were all greater than the benchmark value of 0.9. In addition, the root mean square error of approximation (RMSEA = 0.063) and standard root mean square residual (SRMR = 0.0528), which measure the badness-of-fit, were all less than 0.08 [66].

Cronbach’s alpha value and composite reliability are generally used to measure reliability. As shown in Table 3, Cronbach’s alpha values for all constructs ranged from 0.78 to 0.9, which is greater than the benchmark value of 0.70 [67]. Similarly, the composite reliability values of all constructs ranged from 0.84 to 0.93, which are also above 0.7. Therefore, the reliability of our measurement model was found to be good. Construct validity refers to the degree to which a measurement tool can measure the required characteristics, and it is divided into convergent and discriminant validity [50]. The average variance extracted (AVE) was often adopted to evaluate convergent validity. As shown in Table 3, the AVE values of all constructs range from 0.64 to 0.79, which are higher than the threshold of 0.5 and indicate good convergent validity [67]. Meanwhile, Table 3 also shows that the standardised factor loadings of all items were significantly loaded on constructs ( $p < 0.001$ ). Furthermore, the loading values are all above the benchmark value of 0.7, which also supports convergent validity [64]. Last, the study evaluated discriminant validity by comparing the square roots of the AVE and coefficient values of correlations between constructs. As shown in Tables 3 and 4, the square roots of the AVE values were all above the correlations between constructs, indicating that the discriminant validity was good. Hence, based on these analyses, the reliability, convergent, and discriminant validity of the measurement model were adequate and acceptable.

**Table 3.** Confirmatory factor analysis results for the measurement model.

Constructs	Items	Factor Loading	Cronbach’s Alpha Value	Composite Reliability	AVE
TBS	TBS1	0.78 ***	0.86	0.90	0.70
	TBS2	0.86 ***			
	TBS3	0.84 ***			
	TBS4	0.86 ***			
EBS	EBS1	0.81 ***	0.82	0.88	0.65
	EBS2	0.80 ***			
	EBS3	0.82 ***			
	EBS4	0.79 ***			
RP	RP1	0.80 ***	0.78	0.84	0.64
	RP2	0.85 ***			
	RP3	0.74 ***			
SA	SA1	0.85 ***	0.90	0.93	0.77
	SA2	0.88 ***			
	SA3	0.90 ***			
	SA4	0.87 ***			
CRI	CRI1	0.91 ***	0.86	0.92	0.79
	CRI2	0.90 ***			
	CRI3	0.86 ***			

Note: (1) AVE is the average variance extracted; (2) \*\*\*  $p < 0.001$ . Source: the elaboration of the authors.

Moreover, the statistical analysis of the five constructs is also illustrated in Table 4. In general, the mean of the construct reflects the respondents’ perception level of the construct studied (see Figure 1). As shown in Table 4, the respondents showed the highest level of experience-based satisfaction (mean = 3.7), followed by sustainability awareness (mean = 3.60), transaction-based satisfaction (mean = 3.50), and repurchase intention (mean = 3.35). The level of risk perception was relatively lower, falling below the median of the scale (three).

**Table 4.** Means, standard deviations (SD), and correlations (N = 358).

Construct	Mean	SD	TBS	EBS	RP	SA	RI
TBS	3.50	0.73	<b>0.84</b>				
EBS	3.71	0.60	0.47 **	<b>0.81</b>			
RP	2.81	0.66	−0.10 *	−0.18 **	<b>0.80</b>		
SA	3.60	0.72	0.38 **	0.40 **	−0.04	<b>0.88</b>	
CRI	3.35	0.80	0.41 **	0.43 **	−0.10 *	0.14 *	<b>0.89</b>

Note: (1) The square roots of AVE values are the bold elements; (2) \*  $p < 0.05$ , \*\*  $p < 0.01$ .

#### 4.2. Hypothesis Testing and Result Analysis

It should be noted that the multicollinearity test was carried out before the structural analysis. As shown in Table 5, the variance inflation factors (VIF) of all constructs were less than the benchmark value of 10 [64], which indicates that multicollinearity exhibited no significant threat to the following regression analysis. Moreover, Aguinis [68] indicated that the independent and moderator variables are mean-centered to mitigate the possibility of multicollinearity, even though it is not a pervasive problem in this study. To test the theoretical hypotheses constructed in Section 2, a hierarchical moderated regression analysis was conducted. Based on the analysis method suggested by Wang, Li, and Zhao [64], the following specific analysis examined four regression models separately. Moreover, the demographic variables of gender, age, education, and income were selected as control variables in the regression analysis. The results of hierarchical moderated regression are illustrated in Table 5.

**Table 5.** Hierarchical regression analysis results.

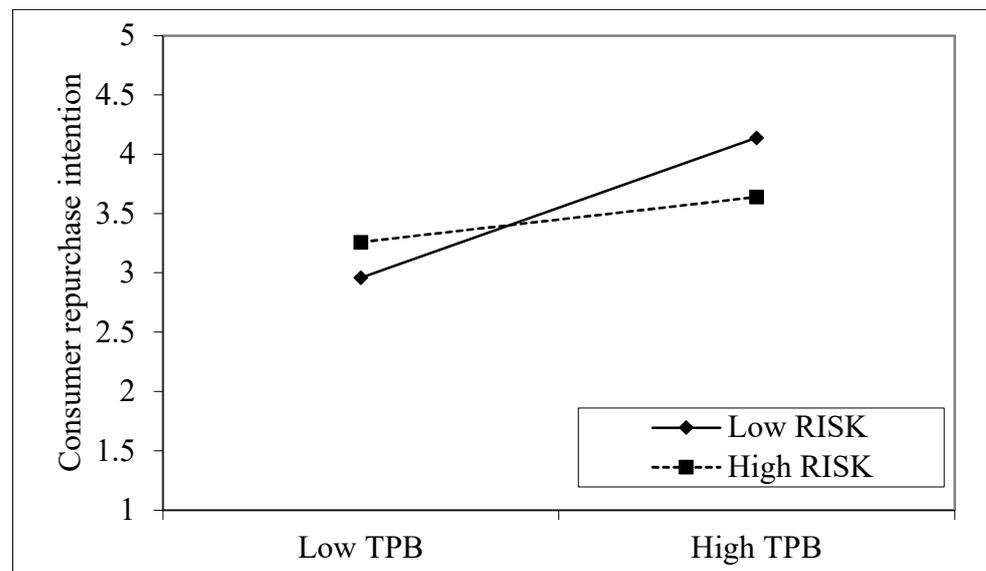
	Dependent Variable: Consumer Repurchase Intention (CRI)				VIF
	Model 1	Model 2	Model 3	Model 4	
<b>Control variables</b>					
Gender	−0.038	−0.0032	−0.005	−0.003	1.172
Age	−0.031	−0.016	−0.024	−0.009	1.442
Education	−0.070	−0.074	−0.048	−0.057	1.416
Income	0.027	0.019	0.037	0.033	1.627
<b>Independent variables</b>					
TBS	0.272 ***	0.273 ***	0.339 ***	0.339 ***	1.500
EBS	0.293 ***	0.251 ***	0.315 **	0.269 **	1.588
<b>Moderator variables</b>					
RP		−0.017		0.080	1.120
SA			−0.074	−0.018	1.449
<b>Interacting effects</b>					
TBS*RP		−0.144 **		−0.158 **	1.137
EBS*RP		−0.152 **		−0.134 **	1.184
TBS*SA			0.104 **	0.107 *	2.165
EBS*SA			−0.019	−0.042	2.176
$R^2$	0.242	0.291	0.264	0.312	
Adjust $R^2$	0.229	0.273	0.245	0.288	
F-value	18.656 ***	15.860 ***	13.898 ***	13.028 ***	

Notes: \*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$ .

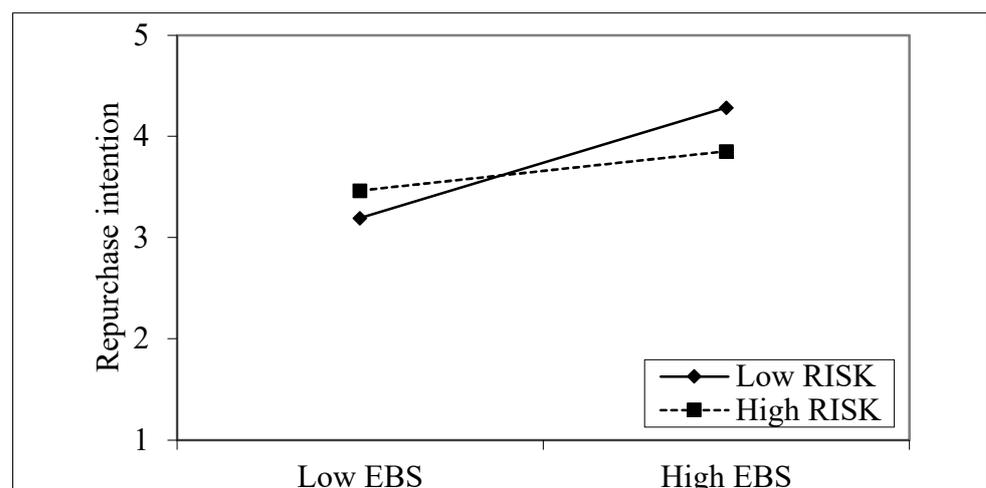
As shown in Table 5, Model 1 was first used to examine the relationship between consumer satisfaction and CRI towards ride-sharing services. The results from Model 1 show that transaction-based satisfaction ( $\beta = 0.272$ ,  $p < 0.001$ ) and experience-based satisfaction ( $\beta = 0.293$ ,  $p < 0.001$ ) both had significant positive effects on CRI, lending support to hypotheses 1 and 2. Additionally, by comparing the regression coefficients of transaction-based satisfaction and experience-based satisfaction, the strength effect of

experience-based satisfaction on CRI was found to be larger than that of transaction-based satisfaction. In Model 2, the interaction term between consumer satisfaction and risk perception was included.

Using Model 2, the moderating effect of risk perception was investigated. The results show that the interaction terms were significant and negative for both transaction-based satisfaction ( $\beta = -0.144, p < 0.001$ ) and experience-based satisfaction ( $\beta = -0.152, p < 0.001$ ). Specifically, the results indicate that risk perception negatively and significantly moderated the effects of transaction-based and experience-based satisfaction on CRI. When consumer satisfaction remains at a certain level, a consumer with a high level of risk perception about using ride-sharing services will use fewer of such services. Figures 2 and 3 depict the significant moderating effects, supporting hypothesis 3. In Model 3, the interaction term between consumer satisfaction and sustainability awareness was included.



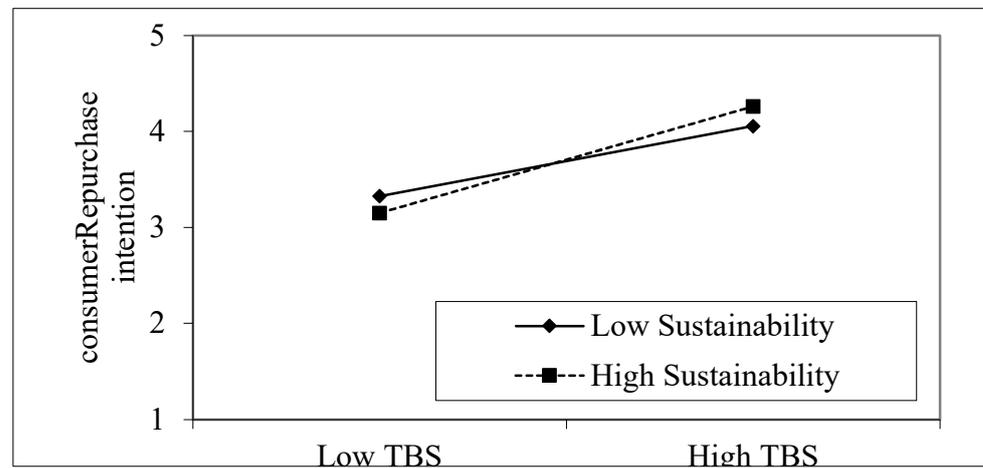
**Figure 2.** The moderating effect of risk perception on the relationship between consumer transaction-based satisfaction and CRI towards ride-sharing services. Source: the elaboration of the authors.



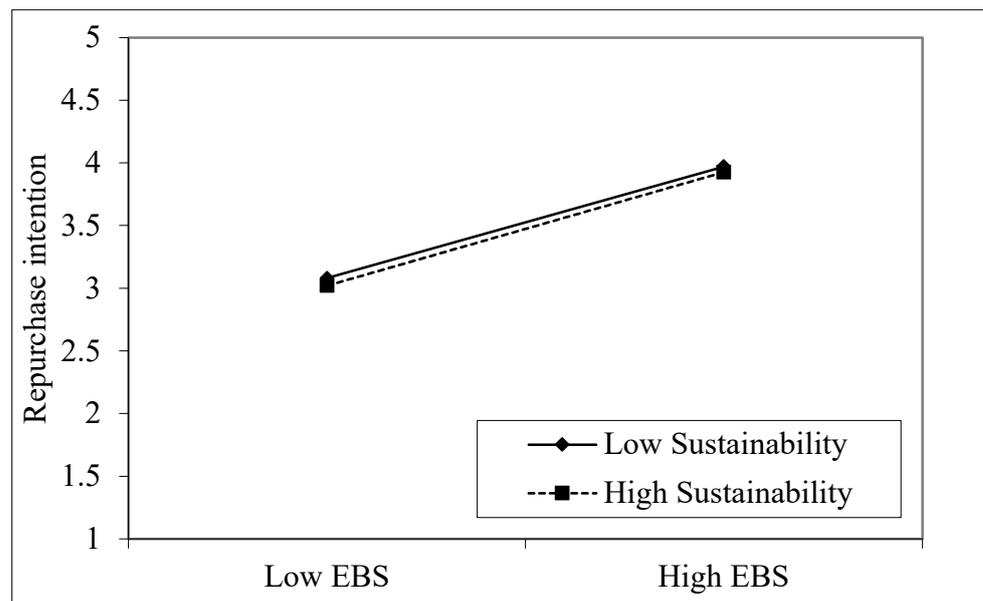
**Figure 3.** The moderating effect of risk perception on the relationship between experience-based satisfaction and CRI towards ride-sharing services. Source: the elaboration of the authors.

Using Model 3, the research investigated the moderating effect of sustainability awareness. The results show that the interaction term was significant and positive for transaction-based satisfaction ( $\beta = 0.104, p < 0.001$ ) but was not significant for experience-based satis-

faction. Specifically, sustainability awareness only positively and significantly moderated the effects of transaction-based satisfaction on CRI. Therefore, the hypothesis was only partially supported; namely, H3a was supported, but H3b was not. Based on previous studies discussed in Section 2.3 and the scope of our specific research parameters, this interesting finding appears to have a reasonable explanation, which will be discussed in Section 5. The corresponding interaction plots are illustrated in Figures 4 and 5.



**Figure 4.** The moderating effect of sustainability awareness on the relationship between transaction-based satisfaction and CRI towards ride-sharing services. Source: the elaboration of the authors.



**Figure 5.** The moderating effect of sustainability awareness on the relationship between experience-based satisfaction and CRI towards ride-sharing services. Source: the elaboration of the authors.

Model 4 can be viewed as a full model that examines all variables and interaction terms. The results show that the significant effects of consumer satisfaction and interaction terms illustrated in the previous three models remain unchanged. Furthermore, the signs of the estimated coefficients also remain unchanged. To some degree, the stability of the results reflects the robustness of our findings.

## 5. Discussion

The success of the sharing economy in practice raises the urgent need for theoretical research, which would be beneficial to explain the economic phenomena and provide a

reference point for decision-making [69–71]. This research, based on a sample of 358 Chinese consumers, focused on ride-sharing services in China and investigated the effects of consumer satisfaction on CRI. The data analysis results confirmed the proposition that consumer satisfaction positively and significantly affects CRI towards ride-sharing services. This finding is consistent with previous research, as the existing literature has also found a direct or indirect positive correlation between consumer satisfaction and repurchase intention across diverse industry backgrounds [72–74]. Based on the context of electricity–carbon market synergy, this paper explores the significant factors influencing consumer repurchase intention of green transport services in China under the sharing economy. Moreover, the impact of experience-based satisfaction on CRI was observed to be relatively greater than that of transaction-based satisfaction. This also validates the conclusion that, in the context of shared economy services, social and emotional values are considered to be more important than technological and economic values as far as customers' willingness to repurchase is concerned [71]. Based on cognitive psychology [69], it could be explained that the repurchase decision-making process of using ride-sharing services first relies on the previous overall experience and then considers the previous experience of specific transaction details. In other words, as long as consumers' overall impressions of products or services are good, they will still choose to consume them, even if there are some small negative influencing factors such as minor defects or inconveniences.

Furthermore, this paper investigated the moderating effects of risk perception and sustainability awareness on the relationships between consumer satisfaction and CRI. The data analysis results indicated that risk perception negatively and significantly moderates the effects of transaction-based and experience-based satisfaction on CRI. The moderating role of perceived risk in the field of green consumption has been widely studied, and its inherent characteristics tend to negatively affect green consumption adoption intentions or behaviours, as confirmed by this study [75–78]. In reality, the risk factors are indeed an obvious obstacle to participating in sharing economy activities. In recent years, the occurrence of some risky events, such as serious safety incidents involving Didi hitch-riding services, can directly or indirectly contribute to verifying our findings [35]. Meanwhile, the findings suggest that the result of the moderating effect of sustainability awareness is equally interesting. Sustainability awareness positively and significantly moderates the effect of transaction-based satisfaction on CRI. Similarly, Demir et al. [79] found that environmental awareness directly and positively influenced consumers' intention to visit green hotels, and Rustam et al. [80] found that environmental awareness significantly and positively moderated the association between environmental disclosure and customers' willingness to engage in eco-responsible consumption activities. However, for the relationships between experience-based satisfaction and CRI, the moderating effect is not significant. One possible interpretation of this finding can be illustrated as follows.

Ride-sharing services are just one of the ways to solve consumers' travel demand. When consumers have a subsequent demand for travel, especially a relatively strong demand, the previous cumulative experience will have an important influence on the travel mode choice. As mentioned above, experience-based satisfaction is often associated with cumulative experience. Therefore, a lack of knowledge about the connection between using ride-sharing services and environmental protection may cause the role of sustainability awareness in moderating the relationships between experience-based satisfaction and repurchase intention to lose some significance. Moreover, when consumers have relatively strong demand, they rarely consider environmental protection when making their travel mode choices. However, transaction-based satisfaction is usually associated with the specific link between each transaction. When consumers evaluate each specific transaction of ride-sharing services separately, they may consider whether the adoption of ride-sharing services is a means to practice sustainable consumption or not, and the answer is usually yes. Hence, sustainability awareness positively moderates the relationships between transaction-based and CRI-based ride-sharing services, which is not surprising.

## 6. Conclusions, Implications, and Limitations

The business success of the sharing economy, in practice, has recently attracted extensive attention from practitioners, policymakers, and theoretical researchers. The sharing economy effectively contributes to sustainable development through efficient use of resources and cost savings. As discussed, the CRI towards sharing economy activities plays an important role in the development and growth of sharing economy enterprises. Moreover, CRI benefits by enhancing consumer stickiness and promoting the sustainability of green consumption rather than one time consumption. This study investigates the effects of consumer satisfaction on CRI towards ride-sharing services and then examines the moderating effects of risk perception and sustainability awareness between them. The results indicate that consumer transaction-based satisfaction and experience-based satisfaction have positive and significant effects on CRI towards ride-sharing services. Additionally, the perception of risk tends to weaken these effects, while sustainability awareness only strengthens the relationship between transaction-based satisfaction and CRI. Several significant implications for these services can be drawn from the results of our research, and policy recommendations with meaningful implications can be given.

First, the data analysis results indicate that consumers with higher levels of perceived satisfaction are more likely to use ride-sharing services again. Therefore, to enhance overall satisfaction (experience-based satisfaction), various measures should be implemented by enterprises to improve the service quality of different service links (where associated with transaction-based satisfaction) in the whole process of using ride-sharing services. For example, these improvements could include reducing consumer wait times through the improvement and optimisation of vehicle scheduling, training drivers to improve service awareness and quality, or simplifying transaction procedures to improve ease of use. Second, enterprises should take measures to ensure consumer safety. It is noted that safety not only refers to security but also includes the security of consumer financial and personal information. Currently, enterprises such as Didi Chuxing have performed a better job in relation to protecting personal safety. However, there is a large room for these companies to improve measures for information security. Third, many consumers merely regard ride-sharing services as a cost-effective and convenient way to travel and do not realise the connection between ride-sharing services and environmental protection or sustainable consumption. In the future, ride-share companies could more aggressively market these benefits and values through slogans, handbooks, smartphone applications, or other means of publicity. By emphasising the positive environmental impact of ride-sharing and educating users about sustainable practices, companies have the opportunity to raise awareness and encourage a shift towards more eco-friendly transportation choices among consumers.

Although the research found some interesting and meaningful conclusions, there are still some limitations to this study. For instance, our findings are mainly based on data collected from users of the Didi Chuxing platform in China, which may restrict the generalisability of our conclusions. Future studies would benefit from the collection of similar data from more service providers or industries. In addition, although purchasing intention to a large extent can represent actual behaviour, there still exists a certain gap between the two. In the future, further research can be conducted to delve into adoption behaviours.

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## References

1. Huo, W.; Qi, J.; Yang, T.; Liu, J.; Liu, M.; Zhou, Z. Effects of China's pilot low-carbon city policy on carbon emission reduction: A quasi-natural experiment based on satellite data. *Technol. Forecast. Soc. Change* **2022**, *175*, 121422. [\[CrossRef\]](#)
2. Awan, A.; Alnour, M.; Jahanger, A.; Onwe, J.C. Do technological innovation and urbanization mitigate carbon dioxide emissions from the transport sector? *Technol. Soc.* **2022**, *71*, 102128. [\[CrossRef\]](#)
3. De Rosa, M.; Bianco, V.; Barth, H.; Pereira da Silva, P.; Vargas Salgado, C.; Pallonetto, F. Technologies and Strategies to Support Energy Transition in Urban Building and Transportation Sectors. *Energies* **2023**, *16*, 4317. [\[CrossRef\]](#)
4. Li, Y.; Feng, T.T.; Liu, L.L.; Zhang, M.X. How do the electricity market and carbon market interact and achieve integrated development?—A bibliometric-based review. *Energy* **2023**, *265*, 126308. [\[CrossRef\]](#)
5. Hamari, J.; Sjöklint, M.; Ukkonen, A. The sharing economy: Why people participate in collaborative consumption. *J. Assoc. Inf. Sci. Technol.* **2016**, *67*, 2047–2059. [\[CrossRef\]](#)
6. Lawson, S.J.; Gleim, M.R.; Perren, R.; Hwang, J. Freedom from ownership: An exploration of access-based consumption. *J. Bus. Res.* **2016**, *69*, 2615–2623. [\[CrossRef\]](#)
7. Wu, X.; Zhi, Q. Impact of shared economy on urban sustainability: From the perspective of social, economic, and environmental sustainability. *Energy Procedia* **2016**, *104*, 191–196. [\[CrossRef\]](#)
8. Möhlmann, M. Collaborative consumption: Determinants of satisfaction and the likelihood of using a sharing economy option again. *J. Consum. Behav.* **2015**, *14*, 193–207. [\[CrossRef\]](#)
9. Zervas, G.; Proserpio, D.; Byers, J.W. The rise of the sharing economy: Estimating the impact of Airbnb on the hotel industry. *J. Mark. Res.* **2017**, *54*, 687–705. [\[CrossRef\]](#)
10. Lambertson, C.P.; Rose, R.L. When is ours better than mine? A framework for understanding and altering participation in commercial sharing systems. *J. Mark.* **2012**, *76*, 109–125. [\[CrossRef\]](#)
11. Sundararajan, A. From Zipcar to the sharing economy. *Harv. Bus. Rev.* **2013**, *1*, 1–2.
12. Martin, C.J. The sharing economy: A pathway to sustainability or a nightmarish form of neoliberal capitalism? *Ecol. Econ.* **2016**, *121*, 149–159. [\[CrossRef\]](#)
13. Cheng, M. Sharing economy: A review and agenda for future research. *Int. J. Hosp. Manag.* **2016**, *57*, 60–70. [\[CrossRef\]](#)
14. Botsman, R.; Rogers, R. What's mine is yours. In *The Rise of Collaborative Consumption*; Tantor Audio: Old Saybrook, CT, USA, 2010; Volume 1.
15. Bardhi, F.; Eckhardt, G.M. Access-based consumption: The case of car sharing. *J. Consum. Res.* **2012**, *39*, 881–898. [\[CrossRef\]](#)
16. Weber, T.A. Intermediation in a sharing economy: Insurance, moral hazard, and rent extraction. *J. Manag. Inf. Syst.* **2014**, *31*, 35–71. [\[CrossRef\]](#)
17. Bucher, E.; Fieseler, C.; Lutz, C. What's mine is yours (for a nominal fee)—Exploring the spectrum of utilitarian to altruistic motives for Internet-mediated sharing. *Comput. Hum. Behav.* **2016**, *62*, 316–326. [\[CrossRef\]](#)
18. Tussyadiah, I.P. Factors of satisfaction and intention to use peer-to-peer accommodation. *Int. J. Hosp. Manag.* **2016**, *55*, 70–80. [\[CrossRef\]](#)
19. Guttentag, D.; Smith, S.; Potwarka, L.; Havitz, M. Why tourists choose Airbnb: A motivation-based segmentation study. *J. Travel Res.* **2018**, *57*, 342–359. [\[CrossRef\]](#)
20. Ert, E.; Fleischer, A.; Magen, N. Trust and reputation in the sharing economy: The role of personal photos in Airbnb. *Tour. Manag.* **2016**, *55*, 62–73. [\[CrossRef\]](#)
21. Richard, B.; Cleveland, S. The future of hotel chains: Branded marketplaces driven by the sharing economy. *J. Vacat. Mark.* **2016**, *22*, 239–248. [\[CrossRef\]](#)
22. Heinrichs, H. Sharing economy: A potential new pathway to sustainability. *GAIA-Ecol. Perspect. Sci. Soc.* **2013**, *22*, 228–231. [\[CrossRef\]](#)
23. Chen, Y.H.; Wu, J.J.; Chung, Y.S. Cultural impact on trust: A comparison of virtual communities in China, Hong Kong, and Taiwan. *J. Glob. Inf. Technol. Manag.* **2008**, *11*, 28–48. [\[CrossRef\]](#)
24. Khalifa, M.; Limayem, M.; Liu, V. Online customer stickiness: A longitudinal study. *J. Glob. Inf. Manag. (JGIM)* **2002**, *10*, 1–14. [\[CrossRef\]](#)
25. Wang, W.T.; Wang, Y.S.; Liu, E.R. The stickiness intention of group-buying websites: The integration of the commitment–trust theory and e-commerce success model. *Inf. Manag.* **2016**, *53*, 625–642. [\[CrossRef\]](#)
26. Muriithi, P.; Horner, D.; Pemberton, L. Factors contributing to adoption and use of information and communication technologies within research collaborations in Kenya. *Inf. Technol. Dev.* **2016**, *22* (Suppl. S1), 84–100. [\[CrossRef\]](#)
27. Roos, D.; Hahn, R. Does shared consumption affect consumers' values, attitudes, and norms? A panel study. *J. Bus. Res.* **2017**, *77*, 113–123. [\[CrossRef\]](#)
28. Day, G.S.; Wensley, R. Marketing theory with a strategic orientation. *J. Mark.* **1983**, *47*, 79–89. [\[CrossRef\]](#)
29. Goodman, J.A.; Malech, A.R. *Handbook of Modern Marketing*; McGraw-Hill: New York, NY, USA, 1986.

30. Chan, T.S.; Cui, G.; Cui, G. Consumer attitudes toward marketing in a transitional economy: A replication and extension. *J. Consum. Mark.* **2004**, *21*, 10–26. [[CrossRef](#)]
31. Cardozo, R.N. An experimental study of customer effort, expectation, and satisfaction. *J. Mark. Res.* **1965**, *2*, 244–249. [[CrossRef](#)]
32. Anuwichanont, J.; Mechinda, P.; Serirat, S.; Lertwannawit, A.; Popajit, N. Environmental sustainability in the Thai hotel industry. *Int. Bus. Econ. Res. J. (IBER)* **2011**, *10*, 91–100. [[CrossRef](#)]
33. Ho, C.T.B.; Wu, D.D. Online banking performance evaluation using data envelopment analysis and principal component analysis. *Comput. Oper. Res.* **2009**, *36*, 1835–1842.
34. Jiang, B.; Tian, L. Collaborative consumption: Strategic and economic implications of product sharing. *Manag. Sci.* **2016**, *64*, 1171–1188. [[CrossRef](#)]
35. Wang, H.; Gu, G.; An, S.; Zhou, G. Understanding online consumer stickiness in e-commerce environment: A relationship formation model. *Int. J. u- e-Serv. Sci. Technol.* **2014**, *7*, 151–162. [[CrossRef](#)]
36. Kathan, W.; Matzler, K.; Veider, V. The sharing economy: Your business model’s friend or foe? *Bus. Horiz.* **2016**, *59*, 663–672. [[CrossRef](#)]
37. Mourad, A.; Puchinger, J.; Chu, C. A survey of models and algorithms for optimizing shared mobility. *Transp. Res. Part B Methodol.* **2019**, *123*, 323–346. [[CrossRef](#)]
38. Oliver, R.L. Whence customer loyalty. *J. Mark.* **1999**, *63*, 33–44. [[CrossRef](#)]
39. Benoit, S.; Baker, T.L.; Bolton, R.N.; Gruber, T.; Kandampully, J. A triadic framework for collaborative consumption (CC): Motives, activities and resources & capabilities of actors. *J. Bus. Res.* **2017**, *79*, 219–227.
40. Peterson, R.; Wilson, W. Measuring customer satisfaction: Fact and artifact. *J. Acad. Mark. Sci.* **1992**, *20*, 61–71. [[CrossRef](#)]
41. Raimondo, M.A.; Miceli, G.; Costabile, M. How Relationship Age Moderates Loyalty Formation: The Increasing Effect of Relational Equity on Customer Loyalty. *J. Serv. Res.* **2008**, *11*, 142–160. [[CrossRef](#)]
42. Bhattacherjee, A. Understanding information systems continuance: An expectation-confirmation model. *MIS Q.* **2001**, *25*, 351–370. [[CrossRef](#)]
43. Hosany, S.; Prayag, G. Patterns of tourists’ emotional responses, satisfaction, and intention to recommend. *J. Bus. Res.* **2013**, *66*, 730–737. [[CrossRef](#)]
44. Johnson, M.D.; Fornell, C. A framework for comparing customer satisfaction across individuals and product categories. *J. Econ. Psychol.* **1991**, *12*, 267–286. [[CrossRef](#)]
45. Marinković, V.; Vladimir, S.; Obradović, S.; Šapić, S. Understanding antecedents of customer satisfaction and word-of-mouth communication: Evidence from hypermarket chains. *Afr. J. Bus. Manag.* **2012**, *6*, 8515–8524. [[CrossRef](#)]
46. Sahagun, M.A.; Vasquez-Parraga, A.Z. Can fast-food consumers be loyal customers, if so how? Theory, method and findings. *J. Retail. Consum. Serv.* **2014**, *21*, 168–174. [[CrossRef](#)]
47. Roselius, T. Consumer rankings of risk reduction methods. *J. Mark.* **1971**, *35*, 56–61. [[CrossRef](#)]
48. Brown, K.C.; Harlow, W.V.; Tinic, S.M. Risk aversion, uncertain information, and market efficiency. *J. Financ. Econ.* **1988**, *22*, 355–385. [[CrossRef](#)]
49. Kim, D.J.; Ferrin, D.L.; Rao, H.R. A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. *Decis. Support Syst.* **2008**, *44*, 544–564. [[CrossRef](#)]
50. Wang, S.; Li, J.; Zhao, D. Institutional pressures and environmental management practices: The moderating effects of environmental commitment and resource availability. *Bus. Strategy Environ.* **2018**, *27*, 52–69. [[CrossRef](#)]
51. Burgess, M.; King, N.; Harris, M.; Lewis, E. Electric vehicle drivers’ reported interactions with the public: Driving stereotype change? *Transp. Res. Part F Traffic Psychol. Behav.* **2013**, *17*, 33–44. [[CrossRef](#)]
52. Habib, M.M.; Stracca, L. Getting beyond carry trade: What makes a safe haven currency? *J. Int. Econ.* **2012**, *87*, 50–64. [[CrossRef](#)]
53. Philip, H.E.; Ozanne, L.K.; Ballantine, P.W. Examining temporary disposition and acquisition in peer-to-peer renting. *J. Mark. Manag.* **2015**, *31*, 1310–1332. [[CrossRef](#)]
54. Hong, S.J. *Assessing Economic Value of Reducing Perceived Risk in the Sharing Economy: The Case of Ride-Sharing Services*; AIS Electronic Library: Ann Arbor, MI, USA, 2017.
55. Mao, Z.; Lyu, J. Why travelers use Airbnb again? An integrative approach to understanding travelers’ repurchase intention. *Int. J. Contemp. Hosp. Manag.* **2017**, *29*, 2464–2482. [[CrossRef](#)]
56. Bamberg, S. How does environmental concern influence specific environmentally related behaviors? A new answer to an old question. *J. Environ. Psychol.* **2003**, *23*, 21–32. [[CrossRef](#)]
57. Tussyadiah, I.P. An exploratory study on drivers and deterrents of collaborative consumption in travel. In Proceedings of the International Conference on Information and Communication Technologies in Tourism, Lugano, Switzerland, 3–6 February 2015; Springer International Publishing: Berlin/Heidelberg, Germany, 2015; pp. 817–830.
58. Rezvani, Z.; Jansson, J.; Bodin, J. Advances in consumer electric vehicle adoption research: A review and research agenda. *Transp. Res. Part D Transp. Environ.* **2015**, *34*, 122–136. [[CrossRef](#)]
59. Kahn, M.E. Do greens drive Hummers or hybrids? Environmental ideology as a determinant of consumer choice. *J. Environ. Econ. Manag.* **2007**, *54*, 129–145. [[CrossRef](#)]
60. Edbring, E.G.; Lehner, M.; Mont, O. Exploring consumer attitudes to alternative models of consumption: Motivations and barriers. *J. Clean. Prod.* **2016**, *123*, 5–15. [[CrossRef](#)]

61. Barnes, S.J.; Mattsson, J. Understanding current and future issues in collaborative consumption: A four-stage Delphi study. *Technol. Forecast. Soc. Change* **2016**, *104*, 200–211. [[CrossRef](#)]
62. Liang, L.J.; Choi, H.C.; Joppe, M. Understanding repurchase intention of Airbnb consumers: Perceived authenticity, electronic word-of-mouth, and price sensitivity. *J. Travel Tour. Mark.* **2018**, *35*, 73–89. [[CrossRef](#)]
63. Pavlou, P.A. Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. *Int. J. Electron. Commer.* **2003**, *7*, 101–134.
64. Wang, S.; Li, J.; Song, J.; Li, Y.; Sherk, M. Institutional pressures and product modularity: Do supply chain coordination and functional coordination matter? *Int. J. Prod. Res.* **2018**, *56*, 6644–6657. [[CrossRef](#)]
65. Harman, H.H. *Modern Factor Analysis*; University of Chicago Press: Chicago, IL, USA, 1976.
66. Anderson, J.C.; Gerbing, D.W. Structural equation modeling in practice: A review and recommended two-step approach. *Psychol. Bull.* **1988**, *103*, 411. [[CrossRef](#)]
67. Fornell, C.; Larcker, D.F. Evaluating structural equation models with unobservable variables and measurement error. *J. Mark. Res.* **1981**, *18*, 39–50. [[CrossRef](#)]
68. Aguinis, H. Statistical power with moderated multiple regression in management research. *J. Manag.* **1995**, *21*, 1141–1158. [[CrossRef](#)]
69. Frör, O. Bounded rationality in contingent valuation: Empirical evidence using cognitive psychology. *Ecol. Econ.* **2008**, *68*, 570–581. [[CrossRef](#)]
70. National Information Center. China's Sharing Economy Development Report. 2023. Available online: <http://www.sic.gov.cn/News/79/8860.htm> (accessed on 23 February 2023).
71. Zhang, T.C.; Gu, H.; Jahromi, M.F. What makes the sharing economy successful? An empirical examination of competitive customer value propositions. *Comput. Hum. Behav.* **2019**, *95*, 275–283. [[CrossRef](#)]
72. Hellier, P.K.; Geursen, G.M.; Carr, R.A.; Rickard, J.A. Customer repurchase intention: A general structural equation model. *Eur. J. Mark.* **2003**, *37*, 1762–1800. [[CrossRef](#)]
73. Park, I.; Bhatnagar, A.; Rao, H.R. Assurance seals, on-line customer satisfaction, and repurchase intention. *Int. J. Electron. Commer.* **2010**, *2010*, 11–34. [[CrossRef](#)]
74. Elbeltagi, I.; Agag, G. E-retailing ethics and its impact on customer satisfaction and repurchase intention: A cultural and commitment-trust theory perspective. *Internet Res.* **2016**, *26*, 288–310. [[CrossRef](#)]
75. Chen, Y.S.; Chang, C.H. Greenwash and green trust: The mediation effects of green consumer confusion and green perceived risk. *J. Bus. Ethics* **2013**, *114*, 489–500. [[CrossRef](#)]
76. Delistavrou, A.; Tilikidou, I.; Papaioannou, E. Climate change risk perception and intentions to buy consumer packaged goods with chemicals containing recycled CO<sub>2</sub>. *J. Clean. Prod.* **2023**, *382*, 135215. [[CrossRef](#)]
77. Chen, Y.S.; Chang, C.H. Enhance green purchase intentions: The roles of green perceived value, green perceived risk, and green trust. *Manag. Decis.* **2012**, *50*, 502–520. [[CrossRef](#)]
78. Butkowski, O.K.; Pakseresht, A.; Lagerkvist, C.J.; Bröring, S. Debunking the myth of general consumer rejection of green genetic engineering: Empirical evidence from Germany. *Int. J. Consum. Stud.* **2017**, *41*, 723–734. [[CrossRef](#)]
79. Demir, M.; Rjoub, H.; Yesiltas, M. Environmental awareness and guests' intention to visit green hotels: The mediation role of consumption values. *PLoS ONE* **2021**, *16*, e0248815. [[CrossRef](#)] [[PubMed](#)]
80. Rustam, A.; Wang, Y.; Zameer, H. Environmental awareness, firm sustainability exposure and green consumption behaviors. *J. Clean. Prod.* **2020**, *268*, 122016. [[CrossRef](#)]

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