Sustaining Consumer Trust and Continuance Intention by Institutional Mechanisms: An Empirical Survey of DiDi in China

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This work was supported in part by the National Philosophy and Social Sciences Foundation of China under Grant 20XSH020, in part by Shanghai Sailing Program under Grant 21YF1431100, and in part by the Ph.D. Initiative grant funded by Jinggangshan University under Grant JRB2102.”

ABSTRACT Sharing economy (SE) platforms have become increasingly popular. However, some platform enterprises have engaged in problematic behavior, such as collecting and using personal information in serious violation of the relevant laws and regulations, making improving existing institutional mechanisms an urgent matter. This study develops a conceptual model based on institution-based trust to examine the effect of SE institutional mechanisms on consumer trust in sharing platforms and continuance intention toward the SE in China. In addition, this study investigates the moderating role of gender in the path relationship between the second-order construct “perceived effectiveness of sharing economy institutional mechanisms” (PESEIM) and consumer trust. SPSS23.0 and SmartPLS3.0 were used to empirically test the data collected from DiDi users in China. The results of the analysis indicate that PESEIM has significant positive impacts on consumer trust, which in turn enhances consumers’ continuance intention to use the DiDi platform, and that consumer trust can also mitigate perceived risk while promoting continuance intention. Importance-Performance Map Analysis (IPMA) results show that government regulation and privacy assurance are critical factors for sustaining continuance intention toward ride-sharing platforms. Furthermore, the results of multigroup analysis show that PESEIM has a stronger impact on male users than female consumers in building consumer trust.

INDEX TERMS Sharing economy, institutional mechanisms, consumer trust, continuance intention, gender, IPMA

I. INTRODUCTION

In recent years, large numbers of sharing economy (SE) platforms have emerged and gradually become a popular trend. However, many problems in the operation and management of SE platform enterprises have also been exposed, such as price discrimination; abuse of market position; illegal data collection and abuse; problems with data security and ethical handling of data; and even violent incidents such as attacks on passengers/drivers, theft, and rape. On July 2, 2021, the Chinese government ordered the DiDi platform to remove its app from app stores for collecting and using personal information in serious violation of the relevant laws and regulations. When this news broke, it focused attention on the domestic sharing platforms’ institutional defects and the loopholes in government supervision mechanisms. Clearly, the development of the SE model has entered a turning point, and restructuring and adjustment are now needed. The sharing platforms’ structures and mechanisms and the government’s regulatory measures need to be continuously improved.

Most existing SE platforms have not yet established adequate institutional mechanisms to protect the legitimate rights of consumers. With the rapid penetration and wide popularization of the SE model, consumer privacy and personal information security have become hot topics. In the process of development, platform enterprises will collect increasing amounts of users’ personal information, including not only the user’s ID card number, mobile phone number, bank card account number, address, and other private personal information but also a large amount of dynamic
transaction data. Once this data, reflecting users’ private information, is leaked or improperly used by the platform, users’ rights and even personal and property safety will be threatened. How to effectively protect personal information on these platforms has become an issue of great concern.

Moreover, both the SE service providers and consumers on sharing platforms are strangers to each other, and it is difficult to bridge the trust gap between them. Interpersonal trust between the supplier and the consumer depends to a great extent on the interaction between the two parties or on information such as comments and word of mouth formed by the interaction. As some scholars have noted, one of the most important factors in the SE is consumers’ trust in SE platforms and consumers’ trust in unfamiliar goods or service providers [1]. The practical needs of SE development also present further requirements for trust building. If trust between consumers and the SE platforms cannot be established, the development of SE platform enterprises will be short-lived. Therefore, how to build consumer trust has become a key issue for the sustainable development of SE platforms [2].

At present, although some SE platforms have established reputation-rating evaluation mechanisms and feedback mechanisms, there are problems such as false evaluations and malicious evaluations that arouse consumers’ doubts about the authenticity of data on sharing platforms and concerns about their own safety, thereby decreasing the level of consumer trust and increasing the perceived risks of using the SE platforms. In the emerging field of ride-sharing services in China, where laws and regulations are not perfect, ride-sharing platforms need to establish effective institutional mechanisms in order to create a trustworthy environment for sharing transactions [3].

Previous research on e-commerce has examined the antecedents of trust from an institutional theoretical perspective [4]–[7]. For example, Lu et al. (2016) examined the effects of institutional mechanisms on trust and transaction intention in the online marketplace. The empirical results demonstrated that four marketplace-driven mechanisms—namely, feedback mechanisms, escrow services, information security, and dispute resolution—engendered customers’ trust in the marketplace [7]. Furthermore, trust was empirically validated as a significant antecedent of customers’ transaction intention and subsequent behaviors [4], [6], [7].

Despite prior research on e-commerce providing a theoretical foundation for understanding institution-based trust in online transactions, the existing research may not capture the significant factors that are conducive to building consumer trust in the SE context [2]. As most of the transactions tend to be one-off transactions between private individuals who are merely matched through an intermediary sharing platform, it is rather different and more complex to build and sustain trust in the SE. To take DiDi as an example: consumers order a DiDi car online, but they mostly have contact with DiDi drivers in the offline world, which may potentially give rise to monetary or physical harm in the sharing transactions. Thus, regulatory regimes that functions well in the traditional marketplace may be outmoded or less effective when applied to SE platforms, leading to the emergence of legal gray areas in the SE [2], [8], [9]. Instead, the institutional mechanisms implemented by the third-party platforms may play a more significant role in building consumers’ trust and sustaining their continuance intention toward sharing transactions [10]. The existing SE studies reveal that platform-based (micro-level) institutional mechanisms contribute to the formation of institution-based trust [2], [3], [11], but they rarely examine the role of regulation-based (macro-level) institutional mechanisms in building institution-based trust. Furthermore, to the best of our knowledge, there is little empirical research investigating consumer trust on sharing platforms from an integrated perspective of macro-level and local-level institutional mechanisms, thus prompting our attempt to further understand consumer trust-building mechanisms in this emerging new research context. Therefore, more empirical studies to examine the specific trust-building mechanisms in the emerging context of SE from an institutional theoretical perspective are called for [3], [11].

Moreover, previous studies usually consider consumers as a unified sample group, meaning that few of them have examined the moderating role of individual characteristics in the trust building process in the SE context. In the SE context, males and females behave differently regarding attitude formation toward and usage of sharing services (e.g., [12]–[14]) or collaborative consumption [15], [16], and most previous studies (e.g., [17]) concluded that females are unlikely to want to participate in car-sharing schemes. Several previous studies have examined the moderating role of gender in the trust-building process in the context of mobile commerce and social commerce transactions [18]–[21]. Institution-based trust-building mechanisms may play a more significant role for males than for females, as prior studies have revealed that males attach more importance to instrumental goals (e.g., [22]). However, in the ride-sharing context, little empirical evidence is provided to investigate the moderating role of gender in the trust-building process. Women’s use of car-sharing services is constrained by fear for their personal security, but having access to a trusted platform might reduce women’s feelings of fear and insecurity and increase their use of car-sharing services [17]. More empirical studies examining the differences in institution-based trust between male and female consumers of car-sharing platforms in China are called for. Such research would help...
sharing platform enterprises to better formulate and implement market segmentation strategies and differentiated marketing strategies [3], thus expanding sharing platforms’ existing user base and realizing their sustainable development.

Considering the complexity of customer protection issues and the lack of sufficient research on institution-based trust in the SE context in China, this study aims to address the following research questions:

**RQ1.** Which institutional mechanisms have significant benefits in terms of building consumers’ trust in the SE platform and sustaining their continuance intention toward the sharing economy?

**RQ2.** Which institutional mechanisms are important in sustaining consumers’ continuance intention toward SE?

**RQ3.** Are there gender differences in trust-building mechanisms?

Taking previous studies as a foundation [3], [4], [7], we propose a new set of institutional structures integrating the following two types of institutional mechanisms to investigate how consumer trust in sharing platforms is formed and how it takes effect in the SE context: platform-based mechanisms at the micro level [2], [23], including feedback mechanisms, verification and authentication mechanisms, privacy assurance, and dispute resolution, which have a direct impact on trust on sharing platforms, and regulatory mechanisms at the macro level, including government regulation and industry self-regulation [6], [24]–[26], which constitute the external institutional and regulatory environment and may also have a direct impact on consumer trust in sharing platforms. A formative second-order construct, termed “perceived effectiveness of sharing economy institutional mechanisms” (PESEIM) [3], is then proposed to account for the overall effects of the institutional context on consumer trust in SE platforms.

This study makes several potential contributions to the current literature. First, although the importance of institution-based trust has been examined in the SE literature (e.g., [3]), it has rarely been studied in the context of ride-sharing services in China. This study complements the existing trust-related literature by extending the perspective of institution-based trust to the emerging research context of ride-sharing services in China. Second, this study proposes a new set of SE institutional mechanisms based on previous studies (e.g., [3], [7]) by combining micro-level platform-based mechanisms and macro-level regulatory mechanisms, thus complementing each other nicely. Third, although continuance intention has been examined in the ride-sharing context (e.g., [2]), the existing research has rarely taken the direct effect of SE institutional mechanisms into account [2]. This study provides a clear overview of six SE institutional mechanisms that influence continuance intention regarding the use of ride-sharing platforms, enhanced by employing Importance-Performance Map Analysis (IPMA) [27]. Thus, the present study adds a new understanding of how to sustain consumers’ continuance intention by using the IPMA method. Finally, as a complement to prior studies that have provided increasing evidence that females and males differ in how they make trust-related decisions [18], [19], this study examines the moderating role of gender in the impact of PESEIM on consumer trust in the emerging context. It calls more attention to the gender differences in trust-building mechanisms in the SE context.

**II. THEORETICAL FOUNDATION AND LITERATURE REVIEW**

**A. THE SHARING ECONOMY AND RIDE-SHARING SERVICES**

As a new global economic paradigm, the SE is normally defined using terms such as “collaborative consumption,” “access-based consumption,” and the “peer-to-peer economy” [28]–[31]. A recent study by Gerwe and Silva [28] pointed out that the SE is characterized by peer-to-peer transactions, temporary access, underused assets, and transactions via an intermediary digital platform. On some sharing platforms like DiDi and Airbnb, peer service providers of underutilized assets are registered, who coexist with other service providers assigned by the sharing platforms [31], [32].

In the mobility sector, ride-sharing services have witnessed fast growth in recent years due to the advantages of lower prices, ease of use, and flexible operations [33], [34]. For example, DiDi Chuxing (“DiDi”) is the world’s leading transportation platform and the largest ride-sharing platform in China, offering a full range of app-based transportation options for 550 million users and over 31 million drivers. As of March 31, 2021, DiDi is operating in more than 4,000 cities globally, with average daily orders of 41 million [35]. The ride-sharing service is generally initiated by a passenger, and the online ride-sharing platform matches the passenger with an available driver who has registered with the platform. If the online matching succeeds, the driver takes the passenger offline and the passenger pays the driver online at the destination [36]. This not only makes the ride-sharing platform environment more complicated, expanding the possibility of the passengers’ exposure to traditional risks such as property loss and personal safety, but also leads to many new potential risks such as financial loss and privacy disclosure [37]. Therefore, ride-sharing platforms cannot win the trust of passengers or attract them to use them unless they offer sound institutional mechanisms to protect passengers [11]. Thus, passengers’ trust in sharing platforms (i.e., institution-based trust) is critical to sustaining continuance intention toward ride-sharing platforms [36].

Similar to previous studies [28], [33], this study aims to investigate only users of hitching and ride-sharing services on ride-sharing platforms—as opposed to taxi services—because the cars are provided by peers, possibly other consumers (i.e., prosumers), using their underutilized human or physical assets [38]. This sampling method...
enables us to grasp the core concept of the SE. In addition, this type of sharing service and peer-to-peer transaction is suitable for our study, as consumers are exposed to higher perceived risks and threats due to poor platform mechanisms and loose government regulation; for example, the ride-sharing platform does not check drivers’ backgrounds or criminal records. Compared with traditional marketplaces in the e-commerce context, ride-sharing platforms do not work within a clear and developed legal environment created by the government. Thus, both the platform-specific institutional mechanisms and regulatory mechanisms need to be considered in regulating the behaviors of ride-sharing service providers and guaranteeing the effectiveness of sharing transactions [2]. In this context, institution-based trust plays a crucial role in sustaining consumers’ continuance intention toward ride-sharing platforms. Thus, this study focuses on institution-based trust in ride-sharing platforms.

In sum, we argue that the antecedents of institution-based trust or trust-building mechanisms in the SE have not yet been studied extensively [2], [3], [11], [28], [32], [39], with fewer studies having examined consumers’ continuance intention regarding the use of ride-sharing services [29], [33], [40].

B. INSTITUTION-BASED TRUST IN THE SHARING ECONOMY

As argued by Zucker [41], there are three central modes of trust production: characteristic-based trust, institution-based trust, and process-based trust. Characteristic-based trust refers to the way in which similar social characteristics (such as race and nationality) help build personal relationships between the parties to a transaction. Institution-based trust refers to the establishment of trust between the parties to a transaction through formal social security mechanisms, such as the legal system and professional operation mechanisms. Process-based trust refers to trust built on the basis of past trust experience and past experience [41].

Following Zucker, many previous studies have confirmed the importance of institution-based trust; for example, Bachmann [42] pointed out that the primary problem in trust research was clarifying the role of the institutional environment in the transaction relationship. Möllering [43] argued that institutions are the basis for building trust between two parties in a transaction because they can ensure that both parties—who have no prior experience of transactions with each other—are able to realize their common desires. Similarly, the importance of institution-based trust has also been recognized in the field of electronic commerce; for example, McKnight et al. [44] emphasized that institution-based trust could promote the attainment of the desired transaction outcome when there was no previous interaction between the two parties in the context of e-commerce; Pavlou and Gefen [4] pointed out that institution-based trust does not apply to online marketplaces, where buyers mainly trade with unfamiliar sellers. Therefore, institution-based trust serves as a prerequisite in e-commerce and online transaction situations.

With the popularity of the platform-based SE, we argue that more attention should be paid to institution-based trust in the emerging context of the SE, in which the sharing platform acts as the endorsing institution for service exchanges between consumers and service providers who may have had no previous interactions. Institution-based trust also plays an important role in the SE context [2], [45], because, in most cases, the sharing of transactions between consumers and unknown service providers is completed by relying on the platform mechanisms. In this sense, it can be expected that a trusted platform will adopt the necessary measures to create a reliable and safe exchange environment, so as to minimize consumers’ worries and concerns about any potential illegal behaviors of service providers [46], such as privacy breaches or even infringements of personal property or safety, thus leading to continuous intention [7]. The SE platforms (e.g., the DiDi ride-sharing platform) have invested in institutional structures to facilitate transactions between the demand side and the supply side by striving to enhance trust and mitigate risk from their platforms. From the consumer perspective, another type of trust (i.e., trust in service providers) has been examined in prior literature [47], but trust in sharing platforms—the most important institutions for sharing transactions—has been less explored.

Applying the trust transferece logic [48] to the SE context, consumer trust can transfer from the sharing platforms to the service providers. By participating in a trustworthy sharing platform, service providers send a positive signal to consumers, notifying that they will abide by all the rules and regulations set by the sharing platform and perform for the benefits of the consumers who are using the sharing services on the sharing platform. Therefore, trust in sharing platforms is a foundation for trust in service providers, as well as trust in the community of service providers in collectivity. The extant literature has demonstrated that trust in sharing platforms positively improves the level of interpersonal trust [49] and enhances continuance intention with respect to using SE services [2], [3], [50]. This study, based on these studies, extends the understanding of a special kind of institution-based trust, i.e., consumer trust in sharing platforms, by uncovering its institutional antecedents and impacts on continuance intention toward the SE. By referring to previous studies (e.g., [3], [51]), this study defines consumer trust in sharing platforms as the consumer’s subjective beliefs that the sharing platform will be in a competent, reliable and honest way to make and execute fair rules, procedures, and outcomes in its sharing platform, and when necessary, will provide consumers with the right of recourse, in response to a service provider’s opportunistic behavior [3], [4].
C. INSTITUTIONAL MECHANISMS IN THE SHARING ECONOMY

Institutional mechanisms are established in the SE to ensure that the appropriate conditions are present for transactions to occur. Zucker [41] noted that platform mechanisms have been institutionalized to ensure that all transactions in the complex context of modern society will be carried out as promised. To enhance buyers’ online trust and mitigate their risk concerns in online transactions, online platforms and marketplaces have established various institutional mechanisms [3], [4], [7]. Institutional mechanisms have been explored at two different levels in previous studies: (1) at the micro level, where institutional mechanisms are examined in a specific context, such as online marketplaces, or platforms [3], [6], [7]; and (2) at the macro level, where institutional mechanisms are independent of any specific context. Institutional mechanisms at the micro level are also called platform-specific institutional mechanisms; these represent the extent to which these mechanisms provide assurances to online customers for their transactions within a specific online marketplace. Online marketplaces such as Taobao and JD.com have also established a set of platform-specific mechanisms to create a safeguarded and cooperative online exchange environment, including feedback mechanisms, privacy protection, escrow services, online credit card guarantees, and dispute resolution [3], [4], [7]. Some of the mechanisms established in traditional e-commerce, such as feedback mechanisms, privacy protection, and dispute resolution, may also be suitable for the SE [52] and have been adopted by most sharing platforms. Driver certification, discussed by Shao and Yin [2], is a new platform-specific institutional mechanism that is specific to the context of ride-sharing services. These platform-specific institutional mechanisms, which operate at the micro level [6], not only enhance buyers’ trust in the community of online sellers [4] but are also helpful to build the trust in the specific platform or marketplace [35], [56]. These platform-specific institutional mechanisms are then regarded as significant strategic resources and important features of online platforms [3]. The macro-level institutional mechanisms are, in fact, regulatory mechanisms under which institution-based trust is built and operates. The regulatory mechanisms are institutionalized to guarantee that all transactions will take place as promised, which is helpful for building consumer trust at the general level and reducing contextual uncertainties [3].

Although platform-specific institutional mechanisms are the primary antecedents of institution-based trust, government regulation, one kind of macro-level institutional mechanism, cannot be precluded for the following reasons [53]: First, sharing platform operators don’t have sufficient capacity to perform uniform platform governance. For example, ride-sharing platforms lack sufficient information when conducting background checks on drivers, including criminal or traffic violation records. Moreover, platforms cannot themselves prevent crimes without the timely assistance of the police. Second, platform operators also lack sufficient incentives to impose strict internal regulations. If the procedures for screening drivers’ backgrounds are too complex and strict, drivers may switch to other platforms with less rigorous regulations. Compared with traditional industries, there are still a lot of “blank spaces” in the regulation of the SE. Cohen and Zehngebot [54] argued that many sharing platforms currently operate in a gray area, which creates uncertainty for sharing participants and third parties, as well as regulatory difficulties for governments in aspects such as insurance, tax, employment, and civil rights. Some problems facing the SE can be solved not only through government regulation but also through self-regulation by existing non-governmental stakeholders. Self-regulation does not mean deregulation or no regulation. Rather, it is to re-allocate regulatory responsibility to parties other than the government [55]. To protect consumers against safety and security lapses in the SE context, many industry associations are established in the SE sector. Black [56] classified industry self-regulation into voluntary self-regulation, coerced self-regulation, sanctioned self-regulation, and mandated self-regulation. Although the existing research has explored the impacts of regulatory mechanisms on platform and consumer attitudes [57], [58], we know very little about how regulatory mechanisms help to form trust in sharing platforms and affect continuance intention.

Most previous studies examined platform-specific institutional mechanisms and macro-level (general) institutional mechanisms separately. However, the transactional relationship in the SE context is constrained by both the platform-specific (the micro level) institutional mechanisms and the regulatory institutional mechanisms (the macro level) [3]. The formation of institution-based trust and its impact on consumers’ continuance intention are then determined by institutional mechanisms at both the micro-level and macro-level. Considering the difference between SE platforms and traditional online marketplaces, this study integrates the platform-specific mechanisms, adapted from [23], and regulatory mechanisms that include government regulation and industry self-regulation, adapted from [59], in the research framework. By treating the regulatory mechanisms as subdimensions of SE institutional mechanisms, the new proposed set of institutional mechanisms includes: (a) feedback mechanisms, (b) verification and authentication mechanisms, (c) privacy assurance, (d) dispute resolution, (e) government regulation, and (f) industry self-regulation. Although not an exhaustive list, these factors are regarded as highly popular institutional mechanisms safeguarding sharing transactions on sharing platforms.

Feedback mechanisms, also known as reputation mechanisms, can be used to accumulate and disseminate
information about the service provider’s past transaction behavior and performance, such as consumer comments, opinions, ratings, and suggestions about DiDi drivers. Feedback mechanisms have been empirically validated as being one of the determinants of consumers’ decision-making behavior [60] and can reduce opportunistic behaviors by trading counterparties and improve the trust of consumers in the online trading market [61]. In the SE environment, when consumers perceive that the sharing platform provides an effective feedback mechanism for promoting the smooth progress of sharing transactions, the consumers will believe that the sharing platform is capable of providing a safe and assured trading environment and thus build a higher level of trust in the SE. Accordingly, the perceived effectiveness of feedback mechanisms is defined as the degree to which consumers believe that an online sharing platform’s feedback mechanism can offer information about service providers.

Verification and authentication mechanisms refer to the systems through which sharing platforms authenticate and certify service providers who want to join the platform (for example, private car owners who register as DiDi drivers). The information to be accredited and authenticated includes criminal records, bank accounts, credit ratings, and the qualifications or abilities of the service providers [2], [3]. Verification and authentication mechanisms are important for SE because sharing interactions are often completed face to face in the SE context [49], meaning that service providers who fail to pass the verification and authentication procedures might pose a threat to clients. The positive impact of the perceived effectiveness of verification and authentication on the formation of trust has been validated in prior SE literature [62]. Accordingly, the perceived effectiveness of verification and authentication can be defined as the extent to which consumers believe that a sharing platform can provide reliable information about the performance capability of the service providers. Prior studies stated that the review and authentication process is considered to be an important element in a good reputation establishment process [63].

Privacy assurance mechanisms are defined as systems that directly or indirectly provide consumers with assurances and guarantees that their private information will be protected and kept private by sharing platforms. Privacy assurance plays a fundamental role in lowering privacy concerns and building trust and adds value by protecting customers’ right to privacy [64]. Prior research (e.g., [65]) has reported that privacy assurance mechanisms are among the most important website features for creating a trusted online environment. Applying this logic to the SE context, the more effective the privacy assurance mechanism of a sharing platform is, the higher the level of trust of consumers in the sharing platform will be. This is also supported by previous studies on the SE; for example, Wang et al. [24] empirically proved that the perceived effectiveness of the privacy policy has a significant positive impact on trust toward Airbnb. Accordingly, the perceived effectiveness of privacy assurance mechanisms is defined as the degree to which a consumer believes that a sharing platform can protect their privacy information from the risk of improper or illegal use.

Dispute resolution mechanisms are processes for handling disputes between consumers and service providers by means of negotiation, mediation, arbitration, and automated settlement. In recent years, China’s SE has been on the rise, with rapid development momentum. Sharing platforms such as DiDi and Xiaozhu have mushroomed. However, due to the imperfect regulatory mechanisms for the sharing business model, there have been many disputes over the rights and interests of consumers among consumers, service providers, and sharing platforms. The dispute resolution mechanism of a sharing platform is intended to resolve the various disputes that may arise in the process of sharing transactions. Trust in the platform can be enhanced by using an effective dispute resolution mechanism [7]. Accordingly, the perceived effectiveness of dispute resolution mechanisms is defined as the extent to which consumers believe that the dispute resolution services of a sharing platform can handle disputes with or complaints against service providers in the way they expect.

Government regulation is a common approach that relies on the judicial and legislative branches of a government to protect consumers [59]. As innovative SE services become increasingly popular, it is vital that governments fully recognize the impacts of these changes relative to their regulatory regimes and proactively consider the implementation of regulations for service providers and consumers of the SE [66]. Under government regulation, consumers or service providers can give up personal control and instead allow legislation to exercise proxy control (on their behalf) to protect them in terms of safety, privacy, and other conflicts with the sharing platforms. Therefore, we argue that through government regulation, consumers’ rights and interests can be effectively protected in the SE context, thereby enhancing consumer trust in the platforms. Accordingly, the perceived effectiveness of government regulation is defined as the degree to which consumers believe that the government will tighten regulation of the development of the SE and sharing platforms.

Industry self-regulation is a common approach that mainly adopts industry codes of conduct and industry associations as a means of regulating the SE. Government officials face challenges in addressing sharing market failures, such as information asymmetry, negative externalities, and consumer protection from unfair business practices [66]. These challenges signal the need to incorporate third-party intervention (i.e., industry self-regulation) to ensure sound market order. In practice, industry self-regulation provides trustworthiness to service providers and consumers through membership of associations. An example of an industry self-regulator is
China’s Professional Committee on Shared Accommodation, which has established guidelines for accommodation services providers to protect consumers’ privacy and personal information and launch accommodation service standards and norms. A lot of industry regulations have been established to ensure that consumers are protected against security lapses in the SE context [67].

The combination of these six institutional mechanisms is expected to serve the overall purpose of providing institutional guarantees for sharing transactions. Following prior literature [3], [6], this study adopts the perceived effectiveness of SE institutional mechanisms (PESEIM) as a manifestation of institutional mechanisms in the SE context. PESEIM is defined as the degree to which consumers believe that sharing economy institutional mechanisms are effective in building consumers’ trust in sharing platforms and protecting them against potential risks and illegal conduct in the SE context [3]. PESEIM is conceptualized as a reflective-formative second-order construct (see Figure 1) that captures consumers’ perceptions of both platform-specific mechanisms and regulatory mechanisms. PESEIM cannot only alleviate the platform-specific risks arising from misconduct by the sharing platform [3] but also mitigate the risks due to improper or even illegal activities that platform-specific institutional mechanisms do not address completely. Therefore, PESEIM is hypothesized to directly affect institution-based trust, i.e., trust in sharing platforms, which, in turn, alleviates perceived risks and sustains consumers’ continuance intention toward the SE.

This article has been accepted for publication in a future issue of this journal, but has not been fully edited. Content may change prior to final publication. Citation information: DOI 10.1109/ACCESS.2021.3130890, IEEE Access

III. CONCEPTUAL MODEL AND HYPOTHESIS DEVELOPMENT

A. CONCEPTUAL MODEL

Based on existing research on trust and institutional mechanisms (e.g., [3], [7], [23]), this study develops a conceptual model (see Figure 2) to explain how PESEIM affects consumers’ trust in sharing platforms, which, in turn, affects perceived risks and continuance intention toward the SE. In order to examine whether there are gender differences with regard to the relative impacts of PESEIM on trust in the sharing platform, the conceptual model also incorporates gender as a moderator. The following section explains each hypothesis in detail.

B. HYPOTHESIS DEVELOPMENT

1) PESEIM AND CONSUMER TRUST IN SHARING PLATFORMS

The SE is a platform-based business model in which sharing platforms such as DiDi and Airbnb establish platform mechanisms to enable peer-to-peer service exchanges between consumers and service providers [3]. In the SE context, consumer trust in the sharing platform, which is a kind of institution-based trust, is built and operates under the local (platform) environment and the macro (regulatory) environment [3], [6]. That is, consumer trust in a sharing platform can be established through optimal platform mechanisms and formal social structures such as government regulation, legitimacy, and industry self-regulation [68]. Because the interests of sharing platforms do not always satisfy consumers’ requirements, there is an urgent need for some governmental involvement or oversight [55]. Therefore, we argue that SE institutional mechanisms, including feedback mechanisms, verification and authentication mechanisms, privacy assurance, dispute resolution, government regulation, and industry self-regulation, are important determinants for consumer trust building, jointly forming the overall institutional context and providing a rational basis for sharing transactions between consumers and service providers. Prior research on e-commerce empirically proved that the perceived effectiveness of platform-based institutional mechanisms enhances buyers’ trust in online marketplaces (e.g., [7]). A recent study also demonstrated that the perceived effectiveness of platform institutional structures is a key antecedent of trust in platforms in the SE context [3]. Following the same logic, if consumers perceive the SE institutional mechanisms to be effective in facilitating and protecting service exchanges, they will believe that both the platform-specific mechanisms and regulatory mechanisms are in an appropriate and secure manner for the continuing usage of sharing services. More specifically, when PESEIM is at high level, the institutional guarantee environment of the SE is sound and stable at both the micro level and the macro level, under which consumers will be likely to assume that the sharing platform will operate in compliance with the laws, regulations, and rules and act on behalf of consumers’ interests. Therefore, we propose the following hypothesis:

**Hypothesis H1.** PESEIM is positively associated with consumer trust.

2) CONSUMER TRUST, PERCEIVED RISKS, AND CONTINUANCE INTENTION TOWARD THE SHARING ECONOMY

Perceived risk is considered to be the most important factor influencing consumers’ behavioral decisions in mobile commerce [69]. If consumers perceive a product or service to be highly risky, their trust in the product or service will decrease. For this reason, prior studies argued that trust is a key factor in reducing consumers’ perceived risk. Many studies in marketing have explored the relationship between
perceived risk and consumer trust empirically; for example, Chin et al. [69] found that consumers’ trust in mobile payments has a significant negative impact on perceived risk; Odusanya et al. [70] found that consumers’ trust in electronic retail platforms has a significant negative influence on perceived risks; and Bugshan et al. [71] demonstrated that higher levels of trust in social commerce platforms will decrease the perceived privacy risk of using the platform. Following such a notion, if consumers consider an SE platform to be trustworthy, their decision to use the SE platform will persist despite the perceived risks. Although consumers are exposed to multiple risks during participating in SE activities, their level of perceived risk can be alleviated by higher trust in sharing platforms. Building consumer trust in a sharing platform is a valuable means for mitigating risks and uncertainties in the field of SE-driven businesses [72]. This view has been validated by many previous studies in the field of the SE; for instance, Lee et al. [73] found that trust in a sharing platform has a significant negative impact on perceived risks. Shao et al. [2] proved that trust in the DiDi platform is negatively associated with customers’ perceived risk. Therefore, we propose the following hypothesis:

**Hypothesis H2.** Consumer trust in a sharing platform is negatively associated with its perceived risks.

As consumers’ rights and interests are generally less protected in the context of online transactions, trust plays an important role in consumers’ continued participation by reducing perceived worries and uncertainties [33]. Trust in a platform can influence consumer repurchase intention because previous satisfying consumption experiences by consumers on the platform provide a reliable evaluation evidence for building consumer trust, thereby positively affecting consumers’ continuance intention [6]. The impact of consumer trust on attitudes or behavioral intention has been investigated in many previous studies in the field of marketing (e.g., [74], [75]). For example, Kim et al. [76] proved that trust in a platform was a significant determinant of consumer purchase intention. Prior studies in the SE context have argued that trust in sharing platforms should be more relevant to consumers, as consumers are likely to suffer from serious physical risks when using sharing services [32].

Several studies in the SE context have investigated the relationship between consumer trust and continuance intention (e.g., [29], [33], [77]).

In DiDi’s ride-sharing platform, most of the transactions are usually one-off transactions between a DiDi driver and a consumer who are not familiar with each other [2] and thus involve a great deal of uncertainty and risk during rides [32]. Thus, consumers prefer to rely on the ride-sharing platform to make transaction decisions. If a consumer has developed a higher trust belief in the ride-sharing platform, they will be confident that the platform and regulatory organizations will have established sound and effective mechanisms to protect them from potential harms (e.g., physical harm from their DiDi drivers) and will be more prone to continue using the platform over time. The positive effect of consumer trust on continuance intention has also been validated in the context of Chinese ride-sharing platforms [2]. Therefore, we propose the following hypothesis:

**Hypothesis H3.** Consumer trust in a sharing platform is positively associated with continuance intention.

Consumers are exposed to a variety of risks, such as physical risk, privacy risk, financial risk, and performance risk, when participating in SE activities [37], [78]. For example, in the DiDi ride-sharing platform, consumers not only establish connection with the drivers online but also have contact with them in the offline world; thus, such platforms involve greater risks and uncertainties, such as the privacy risk of leaking personal information for a ride or the time risk due to not picking up on time [33]. As a series of malicious incidents and privacy infringement issues have been reported in the ride-sharing sector, physical and privacy risks are critical for sustaining continuance intention [29]. Security risks are another factor that may prevent users from participating in the SE [29]. If consumers believe that using the DiDi ride-sharing platform is unsafe and that security risks may be encountered, they will give up on using the DiDi ride-sharing service in the long term. The existing literature has examined the direct impact of perceived risk on continuance intention. For example, Yi et al. [37] empirically found that privacy risk
and financial risk negatively affect the SE usage intention. Malazizi et al. [79] empirically found that multi-dimensional perceived risks have significant negative impacts on consumers’ continuance intention. Shao et al. [2] found that continuance intention to use the DiDi ride-sharing service is negatively affected by perceived risk. Therefore, we propose the following hypothesis:

Hypothesis H4. Perceived risk is negatively associated with consumers’ continuance intention.

3) THE MODERATING ROLE OF GENDER
Because males and females have different need structures and need expectations, they differ in their behavioral decisions. Therefore, gender is widely used to test differences in individual behavioral decision-making. Gender has been proved to have influences on consumers’ intention or behaviors such as acceptance of new technologies or services. For instance, Shao et al. [12] demonstrated that there exist significant gender difference in the impact of service quality on users’ continuance intention. Prior literature on the SE has also examined gender differences. For example, compared with male consumers, female consumers mostly intend to book an Airbnb room owned by a female (vs. a male) [14].

According to social role theory, female consumers are friendly, generous, and sentimental, and they expect their relational and expressive needs to be met. Male consumers, by contrast, are independent, confident, and purposeful [80], and they are more motivated by rational and instrumental needs. Female consumers are likely to have greater anxiety about privacy and safety risks but show less concern for the institutional environment [19]. Thus, prior research has argued that male consumers pay more attention to institutional mechanisms and the institutional environment [19], whereas females care more about interpersonal relationships and social interactions [80]. Due to existence of these differences, males and females might think differently with regard to different trust-building mechanisms. Gender differences in the trust-building process have been examined in previous studies. For example, Sun et al. [19] empirically found that the impact of the effectiveness of regulation on trust in the context of social media was stronger for male consumers than for female consumers. In the context of collaborative consumption, gender differences have been investigated in various sectors, such as travel [15], [81], tourism [82], consumption of luxury products [83], and bicycle-sharing [12]. Gender differences were also validated in the influencing factors of collaborative consumption intention, such as trust [15], and sustainability motives [84]. Applying such a notion to the ride-sharing context, the beliefs in PESEIM would be more positive for males than for females; that is, male consumers are more concerned about the effectiveness of SE institutional mechanisms than female consumers. Therefore, we propose the following hypothesis:

Hypothesis H5. The impact of PESEIM on consumer trust is stronger for male consumers than for female consumers.

IV. RESEARCH METHODOLOGY

A. MEASUREMENTS
Each construct in the conceptual model has at least two measurement items, totaling 31 measurement items. All measurement items of variables in the model were adapted from measurement items in prior literature (see Table 1) and changed to fit the DiDi car-sharing context for expression accuracy. All items were measured on standard Likert-type scales anchored at 1 = “strongly disagree,” 5 = “strongly agree,” and 3 = “neither agree nor disagree.”

Prior to the formal questionnaire survey, this study conducted a pre-test and then purified the initial measurement scale based on the pre-test results to form a formal survey questionnaire. The main content of the pre-test questionnaire was the same as that of the formal survey questionnaire, and 5-point Likert scales were adopted. The pre-test questionnaire also included basic information about the consumers who participated in the survey, such as their usage frequency of the platform, age, gender, education level, city, occupation, and other demographic variables. There were mainly two types of respondents who participated in the pre-test. One category included respondents who received the electronic questionnaire through instant messaging tools such as WeChat and QQ; the other category was college students who had used the DiDi platform. A total of 202 questionnaires were distributed in this pre-test, and finally, 125 valid questionnaires were collected.

| TABLE 1. SOURCES OF CONSTRUCT MEASUREMENT |
|------------------------------------------|
| Variable | Code Item | Sources |
|----------|-----------|---------|
| Perceived effectiveness of feedback mechanism | FED1-FED3 | Lu et al. [7] |
| Perceived effectiveness of verification and authentication mechanism | VAM1-VAM3 | Shao et al. [2] |
| Perceived effectiveness of privacy assurance mechanism | PRM1-PRM3 | Kim et al. [85] |
| Perceived effectiveness of dispute resolution mechanism | DS1-DS3 | Lu et al. [7] |
| Perceived effectiveness of government regulation | GM1-GM3 | Xu et al. [25] |
| Perceived effectiveness of industry self-regulation | IM1-IM3 | Xu et al. [25] |
| Consumer trust in the sharing platform | TRUST1-TRUST3 | Lu et al. [3] |
| Perceived risk | RISK1-RISK6 | Yang et al. [40] |
| Continuance intention | CS1-CS4 | Lu et al. [3] |

We first performed exploratory factor analysis (EFA) on the pre-test data using SPSS 23.0. Statistical analysis of the data showed that the Kaiser–Meyer–Olkin’s value in this study was 0.90 (p < 0.001), which was higher than the threshold of 0.50, indicating that the sample data obtained in this study is suitable for EFA. The results of the EFA (see Table 2) showed that the factor load values of all measurement items are greater than 0.50, and there is no cross-load. The preliminary exploratory analysis results showed that the scale in this study has good convergence validity and discriminant validity. Therefore, we developed
the final version of the measurement scales (see Appendix A).

| Variable | Type | No. | Percentage (%) |
|----------|------|-----|----------------|
| Gender   | Male | 148 | 44.18          |
|          | Female | 187 | 55.82          |
|          | Under 20 years | 13 | 3.88          |
|          | 20–29 years | 130 | 38.81        |
|          | 30–39 years | 125 | 37.31        |
|          | 40–49 years | 53 | 15.82        |
|          | More than 50 years | 14 | 4.18        |
|          | High school or below | 30 | 8.96        |
|          | Undergraduates | 39 | 11.64        |
|          | Junior college degree | 41 | 12.24        |
|          | Bachelor’s degree | 180 | 53.73       |
|          | Master’s degree | 45 | 13.43        |
|          | First-tier city | 159 | 47.46        |
|          | Second-tier city | 83 | 24.78        |
|          | Third-tier city | 60 | 17.91        |
|          | Others | 33 | 9.85        |
|          | Students | 64 | 19.10        |
|          | Civil servants | 21 | 6.27        |
|          | Employees in enterprises | 200 | 59.70 |
|          | Freelancers | 27 | 8.06        |
|          | Other occupation | 23 | 6.87        |
|          | 1–5 times | 88 | 26.27        |
|          | 6–10 times | 79 | 23.58        |
|          | More than 20 times | 88 | 26.27        |

| Variable | Type | No. | Percentage (%) |
|----------|------|-----|----------------|
| Risk1 | -0.168 | 0.792 | -0.031 | -0.145 | -0.103 | -0.043 | 0.040 | 0.028 | 0.166 |
| Risk2 | -0.214 | 0.831 | 0.018 | -0.042 | -0.129 | -0.041 | -0.023 | 0.021 | 0.028 |
| Risk3 | -0.251 | 0.794 | -0.018 | 0.023 | 0.022 | -0.076 | 0.009 | 0.058 | 0.002 |
| Risk4 | -0.114 | 0.731 | -0.064 | 0.032 | -0.135 | -0.276 | -0.032 | 0.291 | 0.084 |
| Risk5 | -0.067 | 0.760 | -0.079 | 0.025 | -0.102 | -0.209 | -0.010 | 0.278 | 0.049 |
| Risk6 | -0.178 | 0.698 | 0.055 | -0.080 | -0.165 | -0.246 | 0.050 | 0.316 | 0.171 |

**C. COMMON METHODS VARIANCE AND MULTICOLLINEARITY**

In order to minimize the problem of common-method variance (CMV) as much as possible, the order of the measurement items of the variables involved was disorganized and distributed in different modules when designing the questionnaire items. In order to test whether there was a serious CMV problem, the study adopted the following two methods: classical Harman single factor test [86] and latent correlation analysis. First, we checked if the first principal component accounts for over 50% upon unrotated factor analysis of all measurement items in SPSS. The results showed that 31.04% of the variance was explained by the principal component factor, far below the critical cutoff value of 50%. Next, as presented in Table 5, no extremely high correlation values (r > 0.90) were found across all the constructs being investigated. The two analyses, thus, confirmed that the threat of CMV is within the acceptable range.

In order to check for multicollinearity issues, the variance inflation factor (VIF) was calculated. The values of all latent variables in the model range between 1.039 and 2.001, which are below the threshold of 3, suggesting the absence of multicollinearity [87].
TABLE 4. RELIABILITY AND VALIDITY ANALYSIS RESULTS

| Variable                      | Items   | Loading | Cronbach’s α | AVE   | CR     |
|-------------------------------|---------|---------|--------------|-------|--------|
| Perceived Effectiveness       | RAM1    | 0.813   | 0.776        | 0.69  | 0.87   |
| Review and Authentication     | RAM2    | 0.825   |              |       |        |
| Perceived                     | RAM3    | 0.854   |              |       |        |
| Perceived Effectiveness       | PRM1    | 0.889   |              |       |        |
| Privacy                       | PRM2    | 0.889   |              |       |        |
| Dispute Resolution            | PRM3    | 0.895   |              |       |        |
| Effectiveness of Feedback     | DS1     | 0.866   | 0.906        | 0.833 | 0.937  |
| Perceived Effectiveness       | DS2     | 0.909   |              |       |        |
| Mechanisms                    | DS3     | 0.960   |              |       |        |
| Government Regulation         | FED1    | 0.936   |              |       |        |
| Perceived Effectiveness       | FED2    | 0.928   |              |       |        |
| Consumer Trust in the Sharing Platform | TRUST1 | 0.851   | 0.846        | 0.764 | 0.907  |
| Consumer Trust                | TRUST2  | 0.884   |              |       |        |
| Perceived Risk                | TRUST3  | 0.887   |              |       |        |
| RISK1                         | TRUST2  | 0.884   |              |       |        |
| RISK2                         | TRUST3  | 0.887   |              |       |        |
| RISK3                         | TRUST3  | 0.887   |              |       |        |
| RISK4                         | CS1     | 0.839   |              |       |        |
| RISK5                         | CS2     | 0.839   |              |       |        |
| RISK6                         | CS3     | 0.831   |              |       |        |
| Continuance Intention         | CS4     | 0.838   |              |       |        |

The validity of the second-order formative construct—PEISIM—was evaluated using the following two approaches: the significance of the indicator weights and the indicator multicollinearity [22]. First, the results confirmed that all the weights of the formative indicators are statistically significant. Second, the variance inflation factors (VIFs) of all six first-order formative variables are smaller than 3 (see Figure 3), indicating that no collinearity issue exists in the second-order construct model [87]. Furthermore, the SRMR value is equal to 0.044, smaller than the threshold value of 0.10, confirming that the second-order construct model has good fitness. In summary, these results for both reflective and formative constructs together offer strong support for the reliability and validity of our measurement.

B. STRUCTURAL MODEL

SmartPLS 3.0 was used to conduct an analysis of the structural model by setting the bootstrapping subsample to 1,000 and a significance level of 0.05. In this study, the R² values were first reported. As shown in Figure 4, the R² values for consumer trust in the sharing platform, perceived risk, and continuance intention are 0.341, 0.266, and 0.640, respectively, all exceeding the 10% benchmark recommended by Falk and Miller [90], which demonstrates the good predictive power of the structural model.

As shown in Figure A in the Appendix, all six subdimensions of the PEISIM, including perceived effectiveness of feedback mechanisms (β = 0.304 and p < 0.001), perceived effectiveness of review and authentication (β = 0.346 and p < 0.001), perceived effectiveness of privacy assurance (β = 0.344 and p < 0.001), perceived effectiveness of dispute resolution (β = 0.297 and p < 0.001), perceived effectiveness of government regulation (β = 0.297 and p < 0.001), and perceived effectiveness of industry self-regulation (β = 0.570 and p < 0.001), have a significant impact on their higher-order construct. The results then confirm our action of conceptualizing PEISIM as a formative second-order construct. Considering the impacts of the control variables on continuance intention, PEISIM was found to contribute significantly and positively to consumer trust in
sharing platforms (β = 0.584 and p < 0.001). Hence, H1 is supported. Consumer trust in sharing platforms is found to have a significant negative impact on perceived risk (β = -0.515 and p < 0.001) and a significant positive impact on continuance intention (β = 0.770 and p < 0.001); thus, H2 and H3 are also supported. However, contrary to our expectations, the impact of perceived risk on continuance intention is insignificant (β = -0.023, p > 0.05), and thus H4 is not supported. Apart from usage frequency, the other control variables had insignificant effects on continuance intention. Table 6 summarizes the test results of the hypothesized paths.

**TABLE 5. INTER-CONSTRUCT CORRELATIONS**

|                  | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    |
|------------------|------|------|------|------|------|------|------|------|------|
| Continuance Intention | 1.000 |      |      |      |      |      |      |      |      |
| Perceived Effectiveness of Dispute Resolution | 0.134 | 1.000 |      |      |      |      |      |      |      |
| Perceived Effectiveness of Feedback Mechanism | 0.069 | -0.038 | 1.000 |      |      |      |      |      |      |
| Perceived Effectiveness of Government Regulation | 0.481 | 0.083 | -0.04 | 0.869 | 1.000 |      |      |      |      |
| Perceived Effectiveness of Industry Self-regulation | 0.089 | -0.028 | -0.007 | -0.103 | 0.977 | 1.000 |      |      |      |
| Perceived Effectiveness of Privacy Assurance | 0.584 | 0.029 | 0.027 | 0.493 | 0.083 | 0.891 | 1.000 |      |      |
| Perceived Effectiveness of Review and Authentication | 0.414 | 0.032 | 0.02 | 0.293 | 0.038 | 0.429 | 0.831 | 1.000 |      |
| Perceived Risk | -0.421 | -0.059 | 0.006 | -0.395 | -0.083 | -0.535 | -0.671 | 0.826 |      |
| Consumer Trust in the Sharing Platform | 0.789 | -0.035 | 0.092 | 0.555 | 0.032 | 0.689 | 0.423 | -0.515 | 0.874 |

**TABLE 6. RESULTS OF MAIN HYPOTHESIZED PATHS**

| Hypothesis | Path coefficient | T value | Result |
|------------|------------------|---------|--------|
| H1         | 0.584***         | 13.002  | Supported |
| H2         | -0.515***        | 10.007  | Supported |
| H3         | 0.770***         | 23.573  | Supported |
| H4         | -0.023           | 0.628   | Rejected |

**C. THE MODERATING ROLE OF GENDER**

Next, we conducted a multigroup PLS analysis following Keil et al. [91] to examine the moderating role of gender. The multigroup PLS test results (Figure 4 and Table 7) showed that the impact of perceived effectiveness of institutional mechanisms on consumer trust was significantly stronger for male consumers than for female consumers (β_{females} = 0.492, β_{males} = 0.685, t_{pooled} = 33.003), thus supporting hypothesis H5.

In addition, the impact of consumer trust on perceived risk was significantly stronger for female consumers than for male consumers (β_{females} = -0.523, β_{males} = -0.517, t_{pooled} = 2.583), showing that compared with male consumers, female consumers’ risk perception can be more easily mitigated by consumer trust. With respect to the impacts of consumer trust and perceived risk on continuance intention, consumer trust has a stronger impact on continuance intention for male consumers than for female consumers (β_{females} = 0.736, β_{males} = 0.825, t_{pooled} = 18.936). This is inconsistent with prior literature in the social media context (e.g., [19]), and one possible reason is as follows: in previous

**FIGURE 4. Multigroup analysis results**

**TABLE 7. Multigroup ANALYSIS RESULTS**

| Path | Males (N=148) | Females (N=187) | Δβ | I_{pooled} |
|------|---------------|-----------------|----|-----------|
| H5: Perceived effectiveness of institutional mechanisms → consumer trust Consumer trust → perceived risk Consumer trust → continuance intention Perceived risk → continuance intention | 0.685*** | 0.492*** | 0.193 | 33.003*** |
| | -0.517*** | -0.524*** | 0.007 | 2.583*** |
| | 0.825*** | 0.736*** | 0.089 | 18.936*** |
| | 0.02 | -0.055 | 0.075 | 39.022*** |

Notes: *p < 0.05 **p < 0.01 ***p < 0.001
studies, consumer trust mainly refers to consumers’ trust in online sellers, which is a kind of interpersonal trust, whereas consumer trust in this study refers to trust in the sharing platform, which is a kind of institution-based trust; in terms of institution-based trust, male consumers have higher demands than female consumers [80]. Although perceived risk has insignificant effects on continuance intention for both male consumers and female consumers, the path coefficient is stronger for female consumers than for male users ($\beta_{\text{females}} = -0.055$, $\beta_{\text{males}} = 0.02$, $t_{\text{poold}} = 39.022$).

**D. IMPORTANCE-PERFORMANCE MAP ANALYSIS**

To identify the key factors that can sustain consumers’ continuance intention in the SE context, Importance-Performance Map Analysis (IPMA) [27] was used. More specifically, this study identifies the SE institutional mechanisms that consumers perceive as important and whose performance is necessary to improve in the SE sector. In the IPMA coordinate system, the horizontal axis (x-axis) represents the total effects (importance dimension), that is, the effects of each latent variable on continuance intention; the vertical axis (y-axis) represents the real performance of each latent variable’s influence on continuance intention, that is, the factor scores of each latent variable.

Table 8 shows the direct, indirect, and total effects (the importance dimension) together with the performance values (re-scaled between 0 and 100) of the constructs. These values were used to create a graphical representation of the IPM (see Figure 5). As shown in Figure 6, consumer trust in sharing platforms has the strongest effect on continuance intention; among the SE institutional mechanisms, privacy assurance mechanisms have the strongest effect on continuance intention, followed by government regulation, review and authentication mechanisms, feedback mechanisms, industry self-regulation, and dispute resolution mechanisms. Moreover, the two-dimensional IPMA model is further divided into four quadrants by drawing a vertical line (the mean importance value) and a horizontal line (the mean performance value). Quadrant II involves critical factors with both high importance and high performance. Government regulation and privacy assurance mechanisms fall within Quadrant II, indicating that these two mechanisms play a decisive role in sustaining consumers’ continuance intention toward sharing platforms. Ride-sharing platform operators should strive to cultivate and maintain the advantages of these institutional mechanisms for the sustainable development of ride-sharing platforms. In terms of privacy issues, the Chinese government has taken concrete measures to fight against privacy risks in the SE context, and ride-sharing platforms have also optimized their privacy assurance and security protection mechanisms, which has effectively enhanced consumers’ intention to use ride-sharing platforms like DiDi. Quadrant III involves factors with low importance and low performance. Dispute resolution mechanisms and review and authentication mechanisms fall within Quadrant III, where the status quo can be maintained. However, once these mechanisms fall within Quadrant I, ride-sharing platforms must take immediate action to improve them. Quadrant IV involves factors with low importance but high performance, which are overly emphasized by organizations. Feedback mechanisms and industry self-regulation fall within Quadrant IV due to their effects on the importance of continuance intention falling below the mean value but their actual performance being above the mean value, indicating that ride-sharing platforms have achieved good performance for their investments and efforts in these two institutional mechanisms. Thus, rather than continuing to focus on feedback mechanisms and industry self-regulation, ride-sharing platforms should allocate more resources to increase the performance of other mechanisms, such as dispute resolution and review and authentication mechanisms.

**TABLE 8. DIRECT, INDIRECT, AND TOTAL EFFECTS OF IMPORTANCE-PERFORMANCE CONSTRUCT VALUES**

| Predecessor Construct | Direct Effect on CSI | Indirect Effect on CSI | Total Effect on CSI/Importance | Performance |
|-----------------------|----------------------|------------------------|-------------------------------|-------------|
| DS                    | -0.023               | -0.023                 | 38.067                        |             |
| FED                   | 0.054                | 0.054                  | 60.639                        |             |
| GM                    | -0.222               | 0.222                  | 68.889                        |             |
| IM                    | -0.012               | 0.012                  | 79.526                        |             |
| PRM                   | 0.388                | 0.388                  | 59.794                        |             |
| RAM                   | 0.102                | 0.102                  | 54.343                        |             |
| RISK                  | -0.02                | -0.02                  | 43.172                        |             |
| TRUST                 | 0.778                | 0.789                  | 68.832                        |             |
| AVERAGE               | 0.1905               | 0.1905                 | 59.15775                      |             |

**V. CONCLUSION AND DISCUSSION**

**A. CONCLUSION**

This study has several major findings. First, in addition to platform-based institutional mechanisms [3], [7], this study suggests that regulatory mechanisms can also be an important source of institution-based trust [53]. Both platform-based institutional mechanisms and regulatory mechanisms constitute the proposed formative second-order construct, PESEIM, which captures the nature of the effectiveness of the overall institutional structures. The perceived effectiveness of each mechanism (i.e., feedback
mechanisms, review and authentication mechanisms, privacy assurance, dispute resolution, government regulation, and industry self-regulation) contributes significantly to the formation of consumer trust in sharing platforms through PESEIM. This study uncovers that these platform-based mechanisms and regulatory mechanisms jointly constitute institution-based trust in the SE [3], [7], [66]. In addition, the results uncover that although all contribute significantly, these six institutional mechanisms do not contribute equally to the overall institutional structures in the SE context; the perceived effectiveness of industry self-regulation has the strongest impact, followed by the perceived effectiveness of review and authentication, the perceived effectiveness of privacy assurance, the perceived effectiveness of feedback mechanisms, the perceived effectiveness of government regulation, and the perceived effectiveness of dispute resolution.

Second, the results indicate that consumer trust in sharing platforms has a significant positive effect on continuance intention, even allowing for the effects of the controlling variables, thus confirming the important role of institution-based trust in sustaining consumers’ continuance intention toward the SE. This finding complements prior studies that claimed that institution-based trust is important for e-commerce activities [3], [7] but also extends this perspective on institution-based trust to the new context of ride-sharing services [2], [3]. However, the impact of perceived risk on continuance intention is insignificant, which is contrary to the conclusion of most previous studies (e.g., [33]) in the e-commerce context, although there are a few studies that reach the same conclusion. This contrary result may be attributed to the following reasons: First, as the development of China’s SE has now entered a turning point, consumers have also perceived the great convenience and benefits brought by the SE [53]. According to the theory of reasoned action and privacy calculus theory, consumers will weigh the risks they face against the perceived benefits of the SE. When they find that the perceived benefits far outweigh the privacy risks, some consumers will still “take risks” and sustain their intention to use sharing services. Second, due to the emergence of some significant negative events, there is a stronger demand from the public to tighten regulation of the development of the SE, and relevant government departments at various levels have made strong regulation of the SE and sharing platforms a top priority and taken various regulatory measures in terms of administration, laws, and technologies [66], which further strengthens consumers’ confidence in the implementation of policies related to the protection of consumer rights and interests by government authorities and sharing platform enterprises, thereby effectively alleviating the negative impacts of privacy, security, and other potential risk issues on consumers’ continuance intention. Finally, compared with developed countries, China’s SE is still at the lower levels, and consumers’ awareness of the potential risks is relatively low [92]. However, once their awareness of privacy protection improves or they suffer from privacy infringement, they will lose confidence in SE platforms and even the entire SE business model, and then refuse to use the sharing platforms again [53]. Therefore, despite the insignificant relationship between perceived risk and continuance intention, sharing platform enterprises still need to increase their investment in information security and protection technology to reduce consumers’ perceived risk and anxiety, so as to sustain their intention to use SE platforms.

Third, there is a huge gender difference in the effects of perceived effectiveness of sharing economy institutional mechanisms (PESEIM) on consumer trust in the sharing platform, showing that male consumers show more concerns for rational needs and the institutional mechanisms of SE, which is in line with prior studies [19] that demonstrated significant gender differences in trust-building mechanisms. Specifically, the positive impact of the PESEIM on consumer trust in sharing platforms is stronger for male consumers than for female consumers. In addition, the positive impact of consumer trust on continuance intention is higher for male consumers than for female consumers, and the negative impact of consumer trust on perceived risk is higher for female consumers than for male consumers. There are significant gender differences in the antecedents and consequences of consumer trust. The conclusion of this study further clarifies the differentiated mechanism in the impacts of institutional structures on consumers’ trust in sharing platforms [3].

Fourth, by using the IPMA method [27], this study identifies the primary assurance mechanism that needs further improvement to sustain continuance intention toward ride-sharing platforms. The government regulation mechanism is found to have achieved the highest importance and performance levels. Feedback mechanisms and industry self-regulation fall within the possible overkill quadrant and could be maintained with less investment and resource support. The dispute resolution and review and authentication mechanisms are in the opportunity quadrant, which requires special attention from the sharing platform operators. Platform operators should adjust the resource allocation in a timely manner in case of any change in the performance distribution of platform indicators.

B. THEORETICAL IMPLICATIONS
The research findings of this study contribute to the extant literature in the following aspects:

First, this study investigates and validates the important role of consumer trust in sharing platforms (i.e., institution-based trust) in ride-sharing transactions in the SE context. Although the importance of institution-based trust has been confirmed in the SE literature (e.g., [3]), it has rarely been studied in the context of ride-sharing in China. This study complements the existing studies by extending this
perspective on institution-based trust to the emerging research context of China’s ride-sharing services.

Second, based on prior literature (e.g., [3], [7]), this study proposes a new set of institutional mechanisms that are relevant to the SE context by integrating micro-level platform-based mechanisms and macro-level regulatory mechanisms, including feedback mechanisms, review and authentication mechanisms, privacy assurance, dispute resolution, government regulation, and industry self-regulation. All six mechanisms significantly contribute to the second-order construct “perceived effectiveness of sharing economy institutional mechanisms.” Four platform-based mechanisms or market-driven mechanisms have been empirically validated as important strategic resources that lead to competitive advantage [3], [6], [7]. However, when sharing market practices lead to market failures, for example, due to asymmetric information, regulation may serve as a corrective mechanism [55]. On the one hand, the government could play three roles, i.e., “protector,” “coordinator,” and “regulator,” in regulating the development of the SE. The three roles demonstrate the bottom line that governments shoulder the responsibilities for regulating the SE sector to protect consumers’ rights and also regulating improper or even illegal actions of SE platforms to protect consumers’ interests [92]. On the other hand, industry self-regulation or collaborative approaches should be adopted to regulate the common features of SE platforms by shared products or services. Thus, this study makes contribution to the SE literature [2], [3], [49] by proposing that government regulation and industry self-regulation are integral parts of SE institutional mechanisms.

Third, although prior literature has examined continuance intention in the ride-sharing context (e.g., [2]), the direct impact of SE institutional mechanisms on continuance intention has rarely been taken into account [2]. This study has provided a clear overview of SE institutional mechanisms that influence continuance intention to use ride-sharing platforms, enhanced by employing the IPMA. The present study adds a new understanding of how to sustain consumers’ continuance intention by using the IPMA method. Our study confirms that privacy assurance and government regulation are important institutional mechanisms that have stronger effects in sustaining continuance intention. The IPMA results also confirm that consumers’ trust in sharing platforms plays a critical role in sustaining continuance intention. Therefore, this study complements the existing research [93] by using IPMA to illustrate which factors are most relevant and provides guidance for prioritizing managerial activities that are highly relevant to future intentions to use ride-sharing platforms.

C. PRACTICAL IMPLICATIONS

Our research findings also provide several practical implications for government and sharing platforms. First, the authorities responsible for sharing platforms need to adjust regulatory strategies in a timely manner to guide the SE and sharing platforms toward compliance and standardized operations. On the one hand, the government needs to take a proactive network governance regulation strategy to regulate the SE and promote interaction and negotiation among stakeholders such as sharing platforms, service providers, and consumers through guidance, encouragement, coordination, and design, so as to enhance the level of trust between each party. On the other hand, the government should guide sharing platform enterprises to use modern technologies such as blockchain technology and other mechanisms to build a standardized development system for the SE with credit as the core.

Second, the government should firmly grasp the development concept of “consumer safety first”; strengthen data sharing with platform enterprises; and establish and improve an emergency response mechanism and risk prevention and mitigation mechanism in conjunction with the sharing platforms, so as to achieve multi-subject collaborative governance in the SE. The empirical results of this study demonstrate that consumers have a multi-directional perception of potential risks, including potential risks and hidden dangers regarding personal safety, privacy, and finance, as well as many loopholes in laws, regulations, and policies. Therefore, in the process of regulating the SE, government departments should strictly formulate regulatory laws or industry regulations to standardize the operation and management mechanisms of sharing platforms.

Third, the government should speed up the promulgation of industry service standards and norms, promote the development of industry self-regulation and standardization systems, and realize a regular and long-term regulatory mechanism that integrates government regulation with industry self-regulation. In addition, as the SE is different from the traditional economy, the existing traditional regulatory methods cannot fully meet its regulatory needs. Therefore, on the one hand, the government should innovate regulatory methods, adopt a responsive regulatory strategy, introduce incremental, experimental, and flexible regulatory methods, and seek a dynamic balance between encouraging innovation and reasonable regulation. On the other hand, attention should be paid to coordinating the implicit conflict between government regulation and industry self-regulation, exploring the interaction between the two kinds of regulatory mechanisms in order to reveal the possible internal connection mechanism between the two kinds of regulation and realize the seamless connection and efficient combination of the two kinds of regulation.

Fourth, the SE platforms should establish and optimize the management systems and institutional mechanisms of the sharing platforms, build a safe, trustworthy, and reliable online trading environment, and enhance the trust and confidence of consumers, so as to better boost the SE to
play a role as a “new force” driving China’s economic growth. More importantly, platform operators need to innovate platform and industry self-regulation mechanisms under the government regulatory framework and strive to build a standardized, orderly, healthy, and sustainable platform operation environment. Furthermore, this study shows that consumer personality traits can be used as a segmentation variable. Therefore, platform operators can implement effective market segmentation and develop differentiated operational strategies and marketing strategies based on customer characteristics and consumption data to maximize their attention to the personalized needs of consumers. For example, platform operators can regularly analyze sample data of actual consumer behaviors and explore the personality characteristics of consumers to formulate targeted and differentiated operational strategies and marketing strategies. For male consumers, sharing platform operators can advocate the features and achievements of institutional mechanisms; for female consumers, platform operators can emphasize their outstanding efforts in security and risk prevention measures such as personal information and privacy protection policies.

D. LIMITATIONS AND FUTURE DIRECTIONS
Although this study provides some theoretical and practical implications, it still has some limitations. First, the survey data was collected from consumers who had used the DiDi car-sharing services. Although most of the hypotheses in the theoretical model were supported and verified by sample data, further verification of whether the research findings of this study can be generalized among consumer samples of sharing platforms in other sectors is still needed. Second, this study only investigated the moderating role of gender in the path between the perceived effectiveness of sharing economy institutional mechanisms and consumer trust in the sharing platform. Future research can integrate demographic characteristics such as consumers’ education level, age, and residential cities as moderators. Third, this study investigates sharing economy institutional mechanisms which integrates platform-specific institutional mechanisms and external regulatory mechanisms as antecedents of consumer trust in China. Future studies can examine the impacts of other factors (trust propensity, previous risk-suffering experience, etc.) on consumer trust and continuance intention. Finally, future studies can also divide consumer trust and perceived risk into several dimensions or replace continuance intention with sustainable sharing behavior to examine the impacts of institutional mechanisms.

Head and shoulders shots of authors that appear at the end of our papers.
APPENDIX

![Structural analysis results](image-url)

Notes: *p < 0.05 **p < 0.01 ***p < 0.001

**Figure A. Structural analysis results**
TABLE A. LIST OF MEASUREMENT ITEMS

| Constructs                                      | items  | Questionnaire items                                                                                           |
|------------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------|
| Perceived effectiveness of the feedback mechanism | FED1   | I think the DiDi platform’s feedback mechanism can provide accurate information about the reputation of the DiDi drivers |
|                                                 | FED2   | Through the DiDi platform’s feedback mechanism, there is a lot of useful feedback about the DiDi drivers’ transaction history |
|                                                 | FED3   | I believe the DiDi platform’s feedback mechanism is reliable and trustworthy                                 |
|                                                 | VAM1   | When a DiDi driver registers to join the DiDi Platform, I believe the platform will carefully check and screen the driver’s identity information |
|                                                 | VAM2   | Assessing the capabilities and qualifications of DiDi drivers is an important part of the platform’s screening process |
|                                                 | VAM3   | I believe the DiDi platform has made great efforts to verify and evaluate the capabilities and qualifications of drivers |
| Perceived effectiveness of the privacy assurance mechanism | PRM1   | The DiDi platform’s privacy assurance mechanism makes me feel it is safe to send sensitive and private information on the platform |
|                                                 | PRM2   | The DiDi platform’s privacy assurance mechanism makes me feel that my sensitive and private information is very safe on the platform |
|                                                 | PRM3   | In general, the DiDi platform’s privacy assurance mechanism allows me to store my sensitive personal information and private information on the platform with confidence |
| Perceived effectiveness of the dispute resolution mechanism | DS1    | If the service attitude of DiDi drivers is poor, the dispute resolution mechanism of the platform can guarantee my interests |
|                                                 | DS2    | I believe that the dispute resolution mechanism of the DiDi platform is effective                             |
|                                                 | DS3    | The Chinese government has issued relevant laws and regulations to protect consumers’ personal rights and security |
| Perceived effectiveness of government regulation | GM1    | and privacy information under the SE model                                                                     |
|                                                 | GM2    | The Chinese government has taken sufficient measures to ensure consumers’ rights and privacy under the SE model |
|                                                 | GM3    | The Chinese government strictly refers to international laws to protect consumers’ personal rights and privacy in the SE environment |
| Perceived effectiveness of industry self-regulation | IM1    | The trust and safety mechanisms of ride-hailing platforms, represented by DiDi, can effectively protect the rights and interests of consumers and the security of data privacy |
|                                                 | IM2    | The privacy policies of ride-hailing platforms, represented by DiDi, have passed professional certification and received the corresponding privacy seals |
|                                                 | IM3    | Industry associations affiliated with ride-hailing platforms have taken adequate measures to protect consumers’ personal rights and safety |
| Consumer trust | TRUST1 | The DiDi platform has always impressed me by its commitment to consumers                                        |
|                                                 | TRUST2 | The DiDi platform provides a robust and safe environment where I can safely use shared services                  |
|                                                 | TRUST3 | Overall, DiDi’s platform is trustworthy                                                                        |
| Perceived risk | RISK1  | When registering for and using the DiDi platform, I believe that my personal information will be used by the platform or others without consent, and there is a risk of personal privacy leakage |
|                                                 | RISK2  | After I use the DiDi platform, cyber hackers (or other criminals) will steal my private personal information and spread it illegally |
|                                                 | RISK3  | In general, there are potential privacy risks when using car-sharing services through the DiDi platform         |
|                                                 | RISK4  | When paying for car-sharing services online through DiDi, mobile payment accounts (WeChat, Alipay, etc.) and passwords are likely to be stolen by criminals |
|                                                 | RISK5  | Using mobile payments through the DiDi platform exposes the payment account to the risk of potential financial losses |
|                                                 | RISK6  | There is a potential risk of losing your valuables or money while using DiDi                                      |
| Continuation intention | CSII   | All things considered, I will often choose the DiDi platform to book car-sharing services in the future         |
|                                                 | CSII   | I am sure I will use the DiDi platform to book car-sharing services in the future                                |
|                                                 | CSIII  | I am sure I will increase the frequency of using the DiDi platform if possible                                 |
|                                                 | CSIV   | I might recommend DiDi platform to my family or friends                                                      |

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