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Xiaobei Liang

Jingjing Li

Zhen Xu

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The Impact of Perceived Risk on Customers' Intention to Use -- An Empirical Analysis of DiDi Car-Sharing Services

(Full Paper)

Xiaobei Liang, Tongji University, China, liangxiaobei@tongji.edu.cn

Jingjing Li, Tongji University, China, lijingjing18@tongji.edu.cn

Zhen Xu*, Tongji University, China, xuzhen2017@tongji.edu.cn

ABSTRACT

With the development of internet and modern technologies, sharing economy grows quickly and attracts more attention. Sharing platforms have more uncertainty and perceived risk, which influences the customers' intention to use. In this paper, we take DiDi, a ridesharing platform in China as a case to study. We take the perspective of customers and investigate the implications of perceived risk and trust on customers' intention to use. We conceptualized perceived risk as a multi dimension construct and differentiate trust on DiDi and trust on drivers. The study employs survey data (n = 365) and structural equation modeling (SEM). Our results provide empirical evidence for the relationship between perceived risk, trust and customers' intention to use. This research has both significant theoretical and practical implications. It applies the theory of perceived risk and trust in Chinses situation. In practice, the ridesharing platform need to pay more attention to the security of customers, thus more speculation and control on drivers are expected.

Keywords: perceived risk, trust, sharing economy.

*Corresponding author

INTRODUCTION

In recent years, the consumption habits of customers in China have changed a lot. With the development of modern technology and information system, a new culture of sharing has been more and more popular especially among young people. The Chinese government also state to support and introduce the development of sharing economy. Nowadays, sharing economy is present in various industries like hospitality and ride sharing industry. In this paper, we focus on the ride sharing platform DiDi, which is the most widely used platform in China.

DiDi is the world's leading mobile transportation platform. The company offers a full range of app-based transportation options for 550 million users, including Taxi, Express, Premier, Luxe, Hitch, Bus, Minibus, Designated Driving, Enterprise Solutions, Bike Sharing, E-bike Sharing, Car Sharing and food delivery. There are 30 million daily rides in DiDi, allowing over millions of drivers on the DiDi platform to find flexible work and income opportunities. In this paper we specially pay attention to one of its service -- DiDi Hitch. Using smart route-matching algorithms, DiDi Hitch share mobility among car owners and passengers on the same route, thereby boosting the vehicle utilization rate and decreasing energy consumption.

As several studies have showed, the key to long-term success for a company is to build consumer trust, but consumer trust is negatively influenced by perceived risk. As a result, it is vital to evaluate the risk factors affecting trust in online consuming. In sharing economy, most transactions are based online, but when it comes to providing service, the service provider still need to interact with customers offline, which means higher risk than traditional P2P e-commerce platform. Besides potential financial loss, the customers may even confront potential security risk. The sensational news that an airline stewardess being murdered by a DiDi driver in China caused panic in the society. Consequently, the perceived risk for customers may be higher than before, and in the end, it may change their intention to use, which is a valuable issue to study.

As shown in the existing literature, perceived risk and trust are main drivers of customers' intention to use in the background of sharing economy (Mittendorf, 2017a). So how does increasing perceived risk influence the customers' intention to use? How does it influence customers' trust? The main purpose of this study is to examine the impact of perceived risk on customers' intention to use. To answer this research question, we introduce trust as a mediating variable, dividing it into trust on the platform and trust on the service provider.

This paper has been organized in the following order: the second section reviews the theoretical background and the third part develops the hypothesis and research model. Section four explains the research methodology. Then the data are analyzed and the results are discussed in section five. Finally, section six presents the conclusions and suggestions for future research.

THEORETICAL BACKGROUND

In this section, the literature is reviewed from four perspectives. In the first part, sharing economy is reviewed. In the second and third part, perceived risk and trust are reviewed respectively. Then the forth part reviewed the relationship between perceived risk and trust.

Sharing economy

Based on the current literature, there is no specific definition of sharing economy yet, but it can be regarded as an umbrella term including access-based consumption, collaborative consumption, commercial sharing systems and so on, all of which share a common feature: making underutilized assets available to a large online community (Hawlitschek, Teubner, & Gimpel, 2016). Nowadays, people no longer focus on product ownership but emphasize on the product usage. In sharing economy, the access to product may be limited, but this innovative concept also reduces the transaction cost because it saves the cost of ownership (Hawapi, Sulaiman, Abdul Kohar, & Talib, 2017). In this paper, we assign DiDi to the sharing economy as we regard sharing as the intention to provide temporary access to private goods and services without transferring ownership. In this regard, we are in line with researchers such as Hall and Royles (2018) and Mittendorf (2017a).

As an online sharing platform, DiDi uses location-based services in order to connect drivers and potential customers with each other over a smart phone application. Compared with other sharing economy platforms like Airbnb, DiDi's customers are not able to evaluate specific details about their service counterpart before ordering a transportation service. When customers request a ride, the app sends the request to nearby drivers to pick them up at the pickup location, the driver can choose whether to take the order or not. It is impossible to evaluate an available driver in advance, nor is it possible for customers to order a specific driver, which significantly increases the uncertainty. As a result, the perceived risk is higher than normal sharing platforms (Mittendorf, 2017a).

Perceived risk

The original concept of perceived risk is extending out from psychology by Bauer in 1960. According to Bauer, there is risk for consumers' behavior in that their purchasing actions will lead to consequences which cannot be anticipated with anything approximating certainty, and some of which at least are likely to be unpleasant. According to this concept, the consumer's choices are divided into risk-increasing or risk decreasing behavior. Consumers try to reduce perceived risk by searching for information which enables them to gain more confidence and avoid uncertainty (R.A.Bauer, 1960).

The definition of perceived risk is varied. In the field of e-commerce, perceived risk refers to the customer's thought and belief in the likelihood of having an adverse outcome and consequence in online and electronic trading (Kim, Ferrin, & Rao, 2008). Perceived risk has been regarded as one of the most core motivators in consumer behavior. The relationship between perceived risk and user's intentions has long been verified by the Theory of Reasoned Action (TRA). Research stated that high degrees of perceived risk increase negative expectations, which creates an unfavorable attitude that ultimately results in a negative influence on transaction intentions (Paul A Pavlou & Gefen, 2004).

In e-commerce, because there is no face to face communication, consumers cannot examine products before their purchase, so uncertainty is more salient and perceived risk attracts more attention than traditional commerce (Chiu, Wang, Fang, & Huang, 2013). The increasing information asymmetry between buyers and sellers also increases the perceived risk of buyers and reduces their buying intentions (Verhagen, Meents, & Tan, 2006).

In a theory known as perceived risk theory (PRT), researchers have considered perceived risk as a combination of several facets. Facet, also called as type or dimension in research literature. Bauer initially proposed perceived risk, but not involved specific types. Jacoby and Kaplan (1972) identified five types of perceived product risks, which are financial risk, performance risk, social risk, physical risk, and psychological risk. Under the new Internet environment, scholars also adjusted the model according to the development of technology, economy and society, more and more dimensions are identified. For example, Jarvenpaa and Todd (1996) firstly proposed privacy risk as a dimension of perceived risk in online shopping. Through the researches by far, it can be concluded that there is no agreement on the dimensions of perceived risk, researches on perceived risk divide it into different dimensions according to different situations. However, not all dimensions of perceived risk were found to have significant effects on consumer's behavior (Lim, 2004). So, there is a need to examine the effect of different dimensions of perceived risk on consumer's behavior in sharing economy.

Trust

In uncertain situations, when consumers have to make a decision, trust comes into play as a solution for specific problems of risk. Trust is regarded as one of the most significant factors for the success of e-commerce, as a result, many studies have been conducted on trust across various disciplines such as anthropology, psychology, social psychology and sociology. As a research object, trust is conceptualized and defined in many different ways according to different disciplines. In this paper, we define trust as "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party (Mayer, Davis, &

Schoorman, 1995). There were many researchers who conducted studies on trust. Many of the original researches on trust come from psychologists and sociologists, trying to assess the building and implications of trust in interpersonal and inter organizational relationships (Kurdjokova *et al.*, 2013).

Previous research has shown that trust is a complexity-reduction mechanism, which is significant to initiate and retain interpersonal and commercial relationships (Mcknight & Chervany, 2001). Trust is noted for being particularly influential in online environment, such as in e-commerce industry, where products are sold and purchased on platforms with unknown counterparts (Paul & Gefen, 2004).

Studies on the implications of trust in the sharing economy, however, is lack, particularly the ride sharing industry (Mittendorf, 2017b). DiDi combines special attributes together, such as one-time shared rides on short notice between private individuals, the usage of a mobile application, transparency of GPS location, interactions with strangers. As a result, trust plays an imperative role and have extensive implications in this industry (Chen, Zhang, & Xu, 2009). Overall, the results of researches in the sharing economy for different industries seem to be inconsistent. Hence, there is an upcoming need to continue research on trust in sharing economy.

Generally, trust can be divided to trust on the intermediary and trust on service provider. Trust on the intermediary, hereinafter referred to as trust on DiDi, means consumers' confidence that DiDi will behave in a favorable way, which makes users comfortable to use the app and helps them to overcome perceptions of risk and insecurity. Trust on service provider, hereinafter referred to as trust on drivers, means consumers' willingness to rely on favorable future actions of drivers to overcome perceptions of risk and insecurity. By separating trust on DiDi from trust on drivers we can further assess the influence of the respective trust construct on the customers' intention to use, which is more relevant in practice (Mittendorf, 2017b).

Perceived risk and trust

There is no agreement on the relationship between perceived risk and trust based on the existing literature. Although closely related, it is still unknown how they are related. To put it in another way, it is unclear whether risk is an antecedent to trust, or is an outcome of trust. Various researchers found empirical evidence of the negative relationship between perceived risk and online trust (Pappas, 2016; Zhang, Tang, Lu, & Dong, 2014). A quantity of researches have proved empirically that trust has a negative effect on perceived risk. For example, Paul A. Pavlou (2003) found that with the consumers' trust increase, the perceived risk is reduced. Cheung and Lee (2000) regarded trust as an antecedent of perceived risk, and their model shows that in online purchase, customers' trust in internet vendors is negatively related with their perceived risk. Some researches proposed that perceived risk is the antecedent of trust and the relationship is non-recursive (Mitchell, 1999). Some researchers, however, proved that perceived risk could be a vital predictor of trust. If the risk is expected to outweigh the perceived benefit, trust will not present. As is stated by Olivero and Lunt (2004), the perception of a high level of risk may reduce the level of trust in the online transaction. In this study, we are in line with the last point of view and propose that perceived risk has a significant negative effect on trust.

HYPOTHESIS DEVELOPMENT AND RESEARCH MODEL

In this study, we propose a modified research model which allows us to analyze the impact of perceived risk and trust on the customers' intention to use in sharing economy. Our constructs and items are adopted from previous literature and slightly modified to represent the sharing economy platform in our case - DiDi.

Perceived risk

In this paper, we choose five facets of perceived risk, each facet is defined both generally and in the field of sharing economy, and the importance of each dimension in sharing economy is also pointed out. As is discussed in the literature review, existing researches support that perceived risk are likely to negatively related with consumers' trust.

Financial risk

It refers to the likelihood of financial loss in addition to the product or service maintenance costs as the result of purchasing (Khedmatgozar & Shahnazi, 2017). In sharing economy, consumers may worry that they will be overcharged for a ride, or that their financial information will fall into wrong hands.

Generally speaking, DiDi is cheaper than traditional taxi, and customers can track the journey to see if drivers go off the planned route. Customers can have an idea of how much it will cost before departure, which is an important factor before making a decision. However, some customers may concern that the end price of the journey may differ from the suggested price that is offered by the app before the journey (Hall & Royles, 2018). Some news in China shows that some drivers of DiDi use certain app to make the end price higher than the initial price, which decreases customers' trust for drivers. Thus, we proposed that perceived financial risk has a negative relationship with customers' trust.

H1a: *Perceived financial risk has a negative relationship with trust on DiDi.*

H1b: *Perceived financial risk has a negative relationship with trust on drivers.*

Security risk:

It generally refers to hazards to the health or appearance of consumers and physical exhaustion and mental capacity devoted to the purchase (Hall & Royles, 2018). It is similar to the perceived physical risk, which can be defined as the possibility that products are harmful to individuals' health (Lim, 2004).

In our case, consumers may worry that the driver has not been properly vetted by the company, and is a bad driver. Some drivers may be irresponsible and break traffic rules, some even check their cellphone while driving. Unlike taxi drivers, who take driving as their main job, DiDi drivers only do this as their part-time job so they are not as professional and well trained as taxi drivers. In addition to this, female consumers in particular may concern that the driver will sexually harass them or physically assault them. After the breaking news of an airline stewardess being murdered by the DiDi driver, the perceived security become more salient. Especially for DiDi Hitch, in which the route is relatively long, the possibility of crime can be higher. Based on these phenomena, we propose that:

H2a: *Perceived security risk has a negative relationship with trust on DiDi.*

H2b: *Perceived security risk has a negative relationship with trust on drivers.*

Performance risk:

It is defined as the consumer's perception that the product or service may fail to meet their requirements (Jarvenpaa & Todd, 1996). To put it in another way, it refers to the possibility of bad performance of the product or service in way that cannot satisfy the claimed benefits or facilities (Khedmatgozar & Shahnazi, 2017). In our case, consumers may be concerned that the car will experience mechanical problems or a complete breakdown in the way to destination. Some people may perceive DiDi as having a higher level of performance quality because it is a big corporate company rather than as small local business (Hall & Royles, 2018). However, most of DiDi Hitch drivers are non-professional drivers and they are likely to be unfamiliar with certain road or places. Although all the drivers have driving license, some of them may break the traffic rules, which increase the risk (Hall & Royles, 2018). Because most of drivers are not trained professionally, the perceived performance risk may be higher. Consequently, we propose:

H3a: *Perceived performance risk has a negative relationship with trust on DiDi.*

H3b: *Perceived performance risk has a negative relationship with trust on drivers.*

Social risk:

This dimension of perceived risk is related to the likelihood of losing the position of an institution in a social group as the result of using a product or service that seems to be stupid (Khedmatgozar & Shahnazi, 2017). As for the potential social risks of using DiDi, consumers may worry that their peers and neighbors will negatively judge them for using the service. Generally, DiDi is considered as innovative and trendy, some people think that using this kind of service will have a positive effect on their social status (Hall & Royles, 2018). But for DiDi Hitch, customers may need to take more time if there are more than one customer in a car and their destination is differed. Compared to drive your own car, using DiDi Hitch may be a problem for those who care about their position and image in other people's mind. Thus, we propose:

H4a: *Perceived social risk has a negative relationship with trust on DiDi.*

H4b: *Perceived social risk has a negative relationship with trust on drivers.*

Psychological risk

Psychological risk is the possibility that individuals suffer mental stress because of their purchasing behavior (Jacoby & Kaplan, 1972). For example, while using DiDi, the customers may be anxious about being in the same cab with someone they don't like. Some drivers like to communicate with customers while some customers do not like to talk with other people. Besides, in DiDi Hitch, the counterparts who share the service together will also increase the perceived psychological risk because you can never anticipate who you will share the journey with. With the worry about the drivers and counterparts, the trust of customers may decrease. Hence, we propose:

H5a: *Perceived psychological risk has a negative relationship with trust on DiDi.*

H5b: *Perceived psychological risk has a negative relationship with trust on drivers.*

Trust

In terms of trust on the platform and the drivers, Hong and Cho (2011) argue that platform trust is the only driver of user intentions in an intermediary framework. Mittendorf (2016) found that platform trust and customer trust have a significant positive effect on the user's intention to accept a booking request on Airbnb. Kim et al. (2008) had shown direct relationship between trust and

intention to use.

Mittendorf (2017b) had found that trust in Uber positively influences the customers' intentions. Therefore, we expect that increases in trust will directly and positively affect users' intentions in the sharing economy. In other words, we assume that the user's intention to use rises with increased degrees of trust (Chen et al., 2009). In addition, if customers trust the platform, they are more likely to trust the service provider in the platform, thus we expect that trust on collective consumption platform will influence the trust on drivers. Based on the earlier arguments, we propose:

H6: Trust on DiDi has a positive relationship with customer's intention to use.

H7: Trust on drivers has a positive relationship with customer's intention to use.

H8: Trust on DiDi has a positive relationship with trust on drivers.

Based on the literature and discussion, we proposed the research model as shown in figure 1.

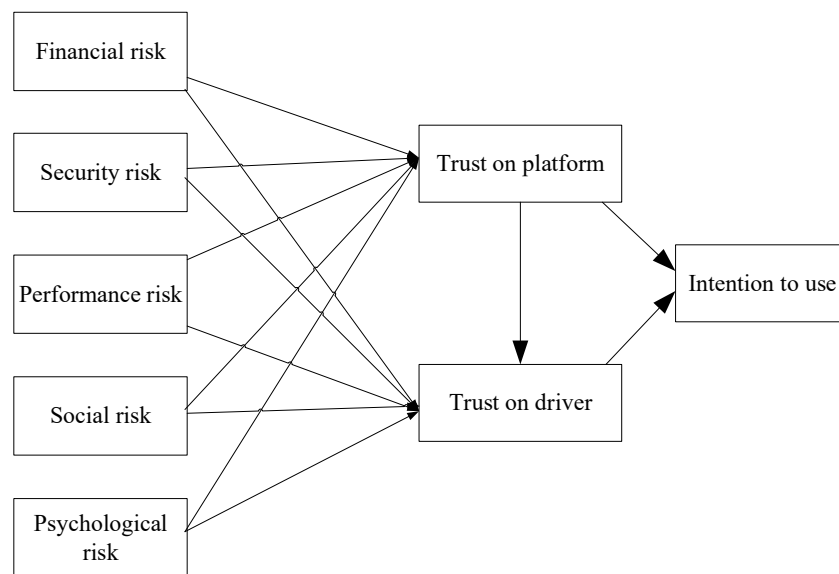


Figure 1: The model of the study

RESEARCH METHODOLOGY

Based on the related literates (Ert, Fleischer, & Magen, 2016), we designed a questionnaire. Firstly, we collected all the items about perceived risks, trust and consumer behavior in previous literature. Then, we adjusted some items according to our situation. At last, we got our final questionnaire, in which there are 15 measurement items listed for part 1 used to measure five different dimensions of perceived risk, and the other 6 items for part 2 used to measure trust, and 3 items for part 3 to measure customers' intention to use. A five-point Likert scale was used to measure the respondents' view ranging from "strongly disagree" to "strongly agree" to measure these items. The questionnaire measuring each construct and their references are showed in the following table 1.

Table 1: The questionnaire.

| Construct | Code | Item | Reference |
|----------------------------|------|--|------------------------------------|
| Perceived financial risk | FI1 | I would be concerned that the payment method may not be safe. | Hong (2015) |
| | FI2 | I would be concerned that the price of this product may be too high. | |
| | FI3 | I would be concerned that I may suffer from monetary loss due to the seller's fraudulent acts. | |
| Perceived security risk | SE1 | I might get physically hurt during the journey. | Malazizi, Alipour, and Olya (2018) |
| | SE2 | I could be subject to a crime during the journey. | |
| | SE3 | I may have a car accident during the journey. | |
| Perceived performance risk | PE1 | There is high likelihood that the car I want will not be available when I want it. | Hawapi et al. (2017) |
| | PE2 | There is high likelihood that the car I want will not arrive on time. | |
| | PE3 | I cannot examine the quality of DiDi car. | |
| Perceived social risk | SO1 | By sharing a car, my peers will regard me as a stingy person. | Hawapi et al. (2017) |
| | SO2 | My friends would approve of the sharing option. | |
| | SO3 | My family would approve of the sharing option. | |

| | | | |
|------------------------------|------|--|------------------------|
| Perceived psychological risk | PS1 | I feel anxious about accommodating an undesirable driver. | Malazizi et al. (2018) |
| | PS2 | I feel pressure because of potential losses in payment. | |
| | PS3 | I feel anxious about socio-cultural conflicts with drivers. | |
| Trust on the platform | Ptr1 | I feel that DiDi is trustworthy. | Mittendorf (2017b) |
| | Ptr2 | I feel DiDi is reliable. | |
| | Ptr3 | Even if not monitored, I would trust DiDi to do the right job. | |
| Trust on the driver | Dtr1 | I trust the drivers using DiDi. | Mittendorf (2017b) |
| | Dtr2 | I believe that the drivers on DiDi are trustworthy. | |
| | Dtr3 | Even if not monitored, I would trust drivers on DiDi. | |
| customers' intention to use | In1 | All things I considered, I expect to continue collaborative consumption often in the future. | Hawapi et al. (2017) |
| | In2 | Compared to other means, I like collaborative consumption more. | |
| | In3 | Compared to other means, I am inclined to choose collaborative consumption. | |

To ensure content validity of the questionnaire, it was piloted with 10 participants. Also, in order to reduce the rate of non-response, introduction letter at the top of the questionnaire was used. The main survey was conducted in July 2018. There are 365 respondents for the main survey, while 19 of them are incomplete. Overall there are 364 valid answers collected. Table2 provides the profile of the respondents.

Table 2: The respondents' profile.

| Attribute | Value | Frequency | Percentage |
|----------------|----------------|-----------|------------|
| Gender | Male | 133 | 38.44 |
| | Female | 213 | 61.56 |
| Age groups | Twenties | 259 | 74.86 |
| | Thirties | 51 | 14.74 |
| | Forties | 36 | 10.40 |
| | Below RMB 2000 | 236 | 68.21 |
| Monthly income | RMB 2000-5000 | 96 | 27.75 |
| | Above RMB 5000 | 14 | 4.05 |

RESULT AND DISCUSSION

Measurement model testing

To examine the reliability of the constructs, SPSS 19.0 was used to evaluate internal consistency, which refers to what extent can the scale items provide consistent results. Cronbach's alpha coefficient was used to test the internal consistency. If Cronbach's alpha is 0.7 or higher for each construct, the reliability is suggested good (Nunnally, 1978). As shown in table 3, the lowest α coefficient is 0.785 for social risk, which exceed 0.7. Other coefficients all exceed 0.8, which represents sufficient reliability of measurements and good internal consistency among the scale items.

Table 3: Reliability of the measurement model.

| Scale | Number of items | Cronbach's α |
|--------------------|-----------------|---------------------|
| Financial risk | 3 | 0.815 |
| Security risk | 3 | 0.943 |
| Performance risk | 3 | 0.840 |
| Social risk | 3 | 0.785 |
| Psychological risk | 3 | 0.862 |
| Trust on platform | 3 | 0.911 |
| Trust on driver | 3 | 0.922 |
| Intention to use | 3 | 0.886 |

Table 4: Correlation matrix.

| Variables | PS | SO | PE | SE | FI | Dtr | Ptr | In |
|--------------------|-------|----|----|----|----|-----|-----|----|
| Psychological risk | 1.000 | | | | | | | |

| Variables | PS | SO | PE | SE | FI | Dtr | Ptr | In |
|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Social risk | .063 | 1.000 | | | | | | |
| Performance risk | .349 | .135 | 1.000 | | | | | |
| Security risk | .460 | .192 | .496 | 1.000 | | | | |
| Financial risk | .595 | .134 | .557 | .545 | 1.000 | | | |
| Trust on driver | -.336 | -.274 | -.297 | -.401 | -.291 | 1.000 | | |
| Trust on platform | -.219 | -.323 | -.313 | -.329 | -.220 | .213 | 1.000 | |
| Intention to use | -.150 | -.199 | -.196 | -.215 | -.146 | .211 | .555 | 1.000 |

To examine the validity of the constructs, Amos 20.0 was used to conduct a confirmatory factorial analysis (CFA). We tested the validity for three types: convergent validity, discriminant validity, and nomological validity, which represent whether we measure indicators as what we designed to measure. The results show that the construct validity of all types are significant and sufficient. For convergent validity, as shown in table 5, the lowest value of the standardized factor loading is 0.714(>0.7), the lowest value of the average variance extracted (AVE) is 0.551(>0.5), and the lowest value of the composite reliability is 0.786(>0.7), demonstrating sufficient convergent validity. For discriminant validity, as shown in table 4 and table 5, the lowest AVE value is 0.551, which is higher than the square of the highest inter-correlation coefficient (0.354), representing good discriminant validity. For nomological validity, as shown in table 4, all dimensions of risk are presented negative relationships with trust on platform and trust on driver, and trust is presented positive relationships with intention to use, as posited in the hypotheses.

Table 5: Confirmatory factor analysis of the measurement model.

| Latent variables | Item variable | Factor loadings | Standardized factor loadings | AVE | Composite reliability |
|--------------------|---------------|-----------------|------------------------------|------|-----------------------|
| Financial risk | FI1 | 1.000 | .811 | .608 | .823 |
| | FI2 | .901 | .797 | | |
| | FI3 | .973 | .729 | | |
| Security risk | SE1 | 1.000 | .880 | .849 | .944 |
| | SE2 | 1.140 | .950 | | |
| | SE3 | 1.100 | .932 | | |
| Performance risk | PE1 | 1.000 | .768 | .641 | .842 |
| | PE2 | 1.070 | .803 | | |
| | PE3 | 1.094 | .829 | | |
| Social risk | SO1 | 1.000 | .714 | .551 | .786 |
| | SO2 | .992 | .740 | | |
| | SO3 | 1.006 | .771 | | |
| Psychological risk | PS1 | 1.000 | .833 | .678 | .863 |
| | PS2 | 1.052 | .855 | | |
| | PS3 | .897 | .780 | | |
| Trust on platform | Ptr1 | 1.000 | .866 | .784 | .916 |
| | Ptr2 | 1.188 | .961 | | |
| | Ptr3 | 1.008 | .825 | | |
| Trust on driver | Dtr1 | 1.000 | .890 | .798 | .922 |
| | Dtr2 | 1.095 | .925 | | |
| | Dtr3 | 1.033 | .864 | | |
| Intention to use | In1 | 1.000 | .776 | .728 | .889 |
| | In2 | 1.214 | .887 | | |
| | In3 | 1.216 | .891 | | |

Hypothesis Testing

Our research tests the hypothesis by structural equation modeling (SEM). As shown in table 6, the goodness of model fit is quite satisfactory ($\chi^2/df = 1.54$, IFI = 0.979, PNFI = 0.781, RMSEA = 0.04). Then, as shown in table 7 and figure 2, the result of the hypothesis testing reveals that the effect of trust on driver on intention to use, the effects of financial risk and psychological risk on trust on platform, and the effects of financial risk, performance risk and social risk on trust on driver are not significant. Thus, H1a, H5a, H1b, H3b, H4b and H7 are not supported. Besides, security risk has a significant and negative effect on trust on platform ($\beta = -$

0.171, $p < 0.05$) and trust on driver ($\beta = -0.109$, $p < 0.05$), thus supporting H2a and H2b. In addition, performance risk ($\beta = -0.245$, $p < 0.01$) and social risk ($\beta = -0.331$, $p < 0.001$) have significant and negative effects on trust on platform, thus supporting H3a and H4a. Moreover, psychological risk has a significant and negative effect on trust on driver ($\beta = -0.145$, $p < 0.05$), thus supporting H5b. Furthermore, trust on platform has a significant and positive effect on intention to use ($\beta = 0.615$, $p < 0.001$), providing support for H6. Finally, trust on platform has a significant and positive effect on trust on driver ($\beta = 0.736$, $p < 0.001$), thus supporting H8.

Table 6: Goodness of fit test result.

| Category | Measure | Value | Acceptable values | Source |
|-------------------------|--------------|-------|-------------------|---|
| Absolute fit indices | $\chi^2/d.f$ | 1.54 | 5 or below | Hair, Black, Babin, and Anderson (2010) |
| | GFI | .924 | 0.90 or above | Hair et al. (2010) |
| | RMSEA | .04 | 0.08 or below | Browne and Cudeck (1993) |
| | SRMR | .045 | 0.08 or below | Hu and Bentler (1999) |
| Incremental fit indices | NFI | .941 | 0.90 or above | Bentler and Bonett (1980) |
| | RFI | .929 | 0.90 or above | Hu and Bentler (1999) |
| | IFI | .979 | 0.90 or above | Bentler and Bonett (1980) |
| | TLI | .974 | 0.90 or above | Hu and Bentler (1999) |
| | CFI | .978 | 0.90 or above | Hair et al. (2010) |
| Parsimony fit indices | PNFI | .781 | 0.50 or above | Bentler and Bonett (1980) |

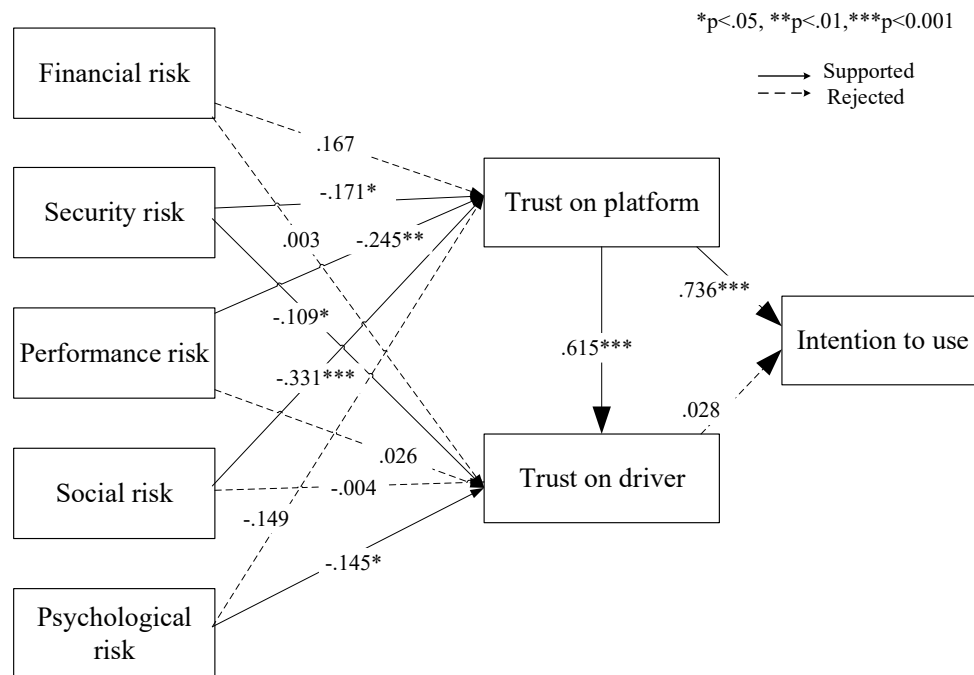


Figure 2: Path coefficients for the tested hypotheses

Table 7: Summary of hypothesis test result.

| Hypothesis | Path | Standardized coefficient | C.R.(t-value) | Significant at | Result |
|------------|--|--------------------------|---------------|----------------|-----------|
| H1a | Financial risk → Trust on platform | .167 | 1.403 | - | Rejected |
| H2a | Security risk → Trust on platform | -.171 | -2.424 | .05 | Supported |
| H3a | Performance risk → Trust on platform | -.245 | -2.835 | .01 | Supported |
| H4a | Social risk → Trust on platform | -.331 | -5.337 | .001 | Supported |
| H5a | Psychological risk → Trust on platform | -.149 | -1.713 | - | Rejected |
| H1b | Financial risk → Trust on driver | .003 | .032 | - | Rejected |
| H2b | Security risk → Trust on driver | -.109 | -2.145 | .05 | Supported |

| | | | | | |
|-----|--------------------------------------|-------|--------|------|-----------|
| H3b | Performance risk → Trust on driver | .026 | .421 | - | Rejected |
| H4b | Social risk → Trust on driver | -.004 | -.097 | - | Rejected |
| H5b | Psychological risk → Trust on driver | -.145 | -2.295 | .05 | Supported |
| H6 | Trust on platform → Intention to use | .615 | 6.565 | .001 | Supported |
| H7 | Trust on driver → Intention to use | .028 | .314 | - | Rejected |
| H8 | Trust on platform → Trust on driver | .736 | 13.949 | .001 | Supported |

Discussion

First of all, our findings indicate that perceived security risk, performance risk and social risk are significantly negatively related to trust on platform, while security risk and psychological risk are significantly negatively related to trust on driver. As is discussed in the literature review, the concern of security is an important factor for online trust or offline trust. Our results verify that people with high perceived security risk are not likely to trust the sharing platform and the offline service provider. To the contrary, our results show financial risk has no significant relationship with neither online nor offline trust, which means financial risk isn't the main cause of trust reduction. In addition, the last three dimensions of perceived risk present different relationships with trust on platform and trust on driver. On the one hand, perceived performance risk and social risk have significant and negative effects on trust on platform, while no significant effects on trust on driver. Therefore, people may be more likely to blame the platform not the driver for not being able to use cars in time or having objections from friends and family. On the other hand, perceived psychological risk has significant and negative effects on trust on driver, while no significant effect on trust on platform. Hence, the concern of psychological risk is more likely to be related to the service provider, not the platform. People always worry whether they will be satisfied or not in the trip with the driver, and our results show that it is not decided by the platform most of the time. Further, trust on platform has a significant and positive effect on customers' intention to use, which means that people who has high trust on platform is willing to use the sharing car in the future. However, trust on driver doesn't show significant effect on intention to use, supporting that the choice of shared travel is more based on the trust of sharing platforms than on the trust of service providers. Finally, trust on platform is positively related to trust on driver, suggesting that a consumer perceiving high trust on platform is more likely trust offline service providers.

CONCLUSIONS AND SUGGESTIONS

Implications

In this study, we mainly center on different types of perceived risk, trust and customers' intention to use. We constructed a research model with a series of constructs and conducted an empirical analysis. The findings of this study have important theoretical and practical implications. First, it contributes to the implication of perceived risk theory and trust in Chinese situation, with DiDi as the research object. Second, some dimensions of perceived risk are proved to be more important than the overall perceived risk as a research component in sharing economy, which can help other researchers understand the most important area of perceived risk. Third, there is scarce research that regard perceived risk as the antecedent of trust, and this study adds more support to this field.

In addition, this study also has important practical implications for sharing economy. First, our results show that financial security is not that important while using DiDi, which indicates that the existing mechanism of charging is satisfactory. The second practical implication is that security risk plays a vital role while using DiDi, especially after some malignant event, customers pay more attention to their security, thus more speculation and control on drivers are expected to decrease the perceived security risk of customers. Finally, platform trust is essential for customers' intention to use, so it is important for sharing company to build a good image of the platform to increase customers' trust on the platform.

Limitations and suggestions for future research

This study still has some limitations. First, we conducted the empirical study with the sample most from college students, which is not representative of the actual customers group of DiDi. As a result, the findings are limited. Secondly, there are many antecedents of trust that may influence the outcome like disposition to trust, familiarity and so on. They can be regarded as precondition of trust in our sharing economy setup, it is better to have them controlled. Finally, we didn't differentiate customers' continued intention to use and initial intention to use, which still have some differences and would influence the results.

For future research, more controlled variables can be added to the research. In addition to this, customers' continued intention to use and initial intention to use can be separated to see whether there will be a different result.

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