

# Investigating Antecedents and Development of Trust in Ridesharing Platform: A Case from China

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## Abstract

*Trust is playing an important role in the sharing economy-driven business. However, little research has been conducted measuring trust as a dynamic process in the sharing economy era. This research is a preliminary exploration investigating trust antecedents and the dynamic development of clients' trust in ridesharing platforms. We used 102 two-stage interviews collected from clients of a major Chinese ridesharing platform. Then we conducted a qualitative content analysis and proposed a theoretical model based on literature and data analysis. We found that antecedents of trust in two stages are different. Personality-based beliefs and cognition-based beliefs are the main antecedents of initial trust, while knowledge-based beliefs, institution-based beliefs, and calculus-based beliefs are the main antecedents of ongoing trust. These findings could help us understand how trust evolves over time and enable us to explore several viewpoints on ridesharing platforms.*

## 1. Introduction

Information and communication technology (ICT) has enabled the rise of collaborative consumption, which is also called as “sharing economy”. With the popularity of ICT, online sharing marketplaces are growing at a rapid rate, especially in travel and tourism services [1]. In recent years, a new type of sharing economy-driven business model, which is known as ridesharing, has emerged. Ridesharing is mainly associated with transportation services [2]. In a ridesharing trading process, people seek low-cost transportation services. Ridesharing clients have direct interaction and communication with the service providers via mobile phone. From this interaction, the ridesharing platform matches a suitable driver for the client and brings strangers together. To complete the trading process, trust plays a significant role and helps

communication. Since trading with strangers involves information asymmetry, many factors influence trust and the trust intention among traders [3]. As a result, we intend to have a deeper understanding of clients' trust towards the ridesharing platform in this study.

Previous studies have found that trust antecedents vary in different types of business models and many factors have been proved to influence trust [4] [5]. Studies about trust antecedents based on the new business model, ridesharing, are limited, and they have not defined the evolving process of trust over time [6]. Nevertheless, trust building is a dynamic process and trust will be influenced by many factors as time goes by. In addition, unlike the traditional vender-client relationship, the primary vender in our research is information technology (IT). Thus, we will also incorporate some perceived technological attributes of the ICT as some factors to understand trust development. Therefore, we tend to have a deeper understanding of clients' trust toward online ridesharing platforms and the evolving processes in ridesharing. We attempt to answer the following questions in this paper:

Research question 1: What factors lead to the clients' trust in ridesharing platforms in initial stage and ongoing stage?

Research question 2: How does trust develop from initial stage to ongoing stage?

In detail, we conducted a qualitative method in this study. For the first research question, we referred to previous studies to find the overall antecedents of trust. Then we made a comparison of initial trust antecedents and ongoing trust antecedents, followed by identifying specific trust antecedents for the two stages. For the second research question, we tent to refer to the literature and made a combination of technology acceptance model (TAM) and rational choice theory (RCT) to investigate the dynamic process of trust development from initial stage to ongoing stage.

The overall structure of the paper is five parts. In the first part, the paper gives a brief overview of the relationship between ridesharing and trust. In the

second part, we put forward the literature and theoretical background, attaching importance to theory-oriented perspectives of online trust in ridesharing. Part three introduces our research method and the data we collected. Part four presents our research model and hypotheses. In the last part, we conclude the paper with a summary of the research and its contribution.

## 2. Literature review

Trust determines buyer-seller relationships, especially in many establishing or early-stage partnerships and plays a critical role in long-term relationships [7]. Instead of remaining fixed, trust develops from an initial stage to an ongoing stage in a dynamic process. In this section, we present the relevant background literature for our research.

### 2.1. Trust antecedents

According to previous studies, trust is “a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another” [8]. Trust is related to many cognitive and behavioral intention subfactors. As for the antecedents of trust, researchers have identified several trust antecedents and corresponding types of trust: knowledge-based trust [9], institution-based trust, calculative-based trust, cognition-based trust, and personality-based trust [10].

Knowledge-based trust derives from familiarity with the e-vendor [11] [12]. Familiarity with the e-vendor may reduce social uncertainty and increase the trust relationship. In traditional e-commerce situations, familiarity corresponds to how well the clients comprehend the procedures of the platform, including when and how to enter user information and how to place an order. Trust may develop over time with the accumulation of trust-relevant knowledge resulting from experience with the other party. Accordingly, the accumulated trust-relevant knowledge and successful experience lead to higher knowledge-based trust in ridesharing platforms. In this research, a client’s familiarity with an e-vendor is considered as well as a client’s familiarity with the ridesharing platform.

Institution-based trust derives from clients’ sense of security from safety nets, guarantees, or other structures in the trading context, including situational normality and structural assurance [13]. Situation normality assures people that everything in the transaction process is based on a normal situation and everything is as it ought to be. Structural assurance means that if a transaction is based on a series of safety

nets, such as legal recourse or guarantees, clients may attain a high level of trust in the trading process. As institution-based trust proposes, the trust relationship will be increased as a result of a normal and typical situation or safety nets [14].

According to calculative-based trust, trust is derived from an economic analysis of ongoing relationships, the higher cost of crime means less criminality and more trustworthiness [15]. Based on this assumption, people are rational and calculative; they act in their best self-interest and seek maximum personal utility. In these circumstances, rational clients believe that platforms have nothing to gain by breaking their trust relationship.

Cognition-based trust is mainly concentrated on trust building through first impressions rather than personal interactions. In the absence of first-hand information, many clients may assess a person’s trustworthiness by observation. In this context, trust may be over-inflated.

Personality-based trust refers to the tendency to trust or not to trust others. It is based on the belief that others are reliable before any experience or trading has happened [16], which is important for inexperienced online consumers [17]. Later, as people have more interaction with each other, their trustworthiness will be more influenced by the interaction itself and the trust propensity will be less important in the building of trust.

In this study, we focus on these factors as antecedents of initial trust and ongoing trust.

### 2.2. Distinction between initial trust and ongoing trust

Trust is not a steady state during the whole trading process; however, it is perceived as a dynamic process and plays an important role in long-term relationships [18]. The dynamic nature of trust accounts for the distinction between initial trust and ongoing trust [19].

At the initial stage of exposure to new business models, clients have no prior interaction or first-hand experience with the platform or online e-vendor. Trust is mostly built on first impressions and a client’s own personality. We posit that initial trust involves the willingness to trust others without prior knowledge. As a result, personality-based trust and cognition-based trust are the two primary characteristics in the initial stage, which is considered as initial trust in our research.

However, unlike initial trust, ongoing trust is usually modified according to experience or interaction with others. Thus, ongoing trust in our study results from observing actual interactions and is a positive



## Figure 1. Indicative word cloud of transcripts

As is shown in table 1, we conducted several steps in the open coding process [26]. In the first step, we selected all the important content in our interviews and divided the original source into different stories about different trust antecedents. Then we simplified the original statement and came up with a special definition for every statement and labeled them with '(ax)'. We reclassify the specific appearance and developed a conceptualization from the definition and

labeled the new classification with '(Ax)'. Next, we developed every conceptualization into a more rigorous description which covers several similar definitions, which are composed of several trust antecedents that impact clients' trust on the ridesharing platform. Then we labeled each category of trust antecedent with '(AAx)' [27]. After the initial coding process, we summarized the factors that influenced clients' trust in the ridesharing platform and developed a rigorous description on each type of trust.

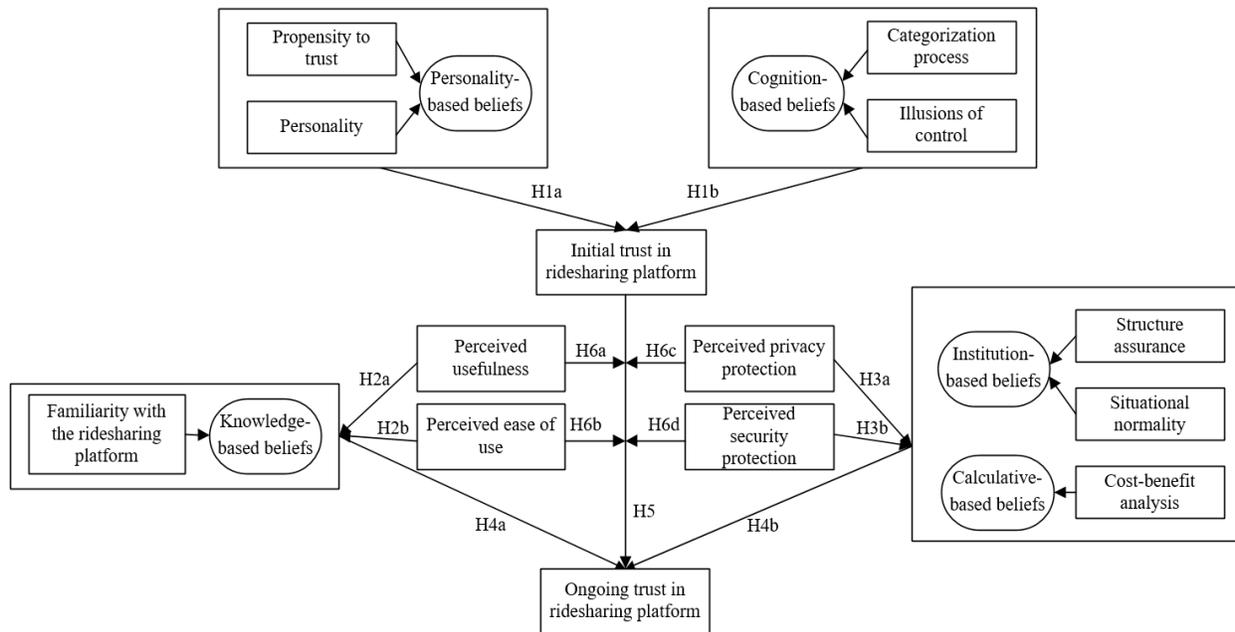
**Table 1. Results of the opening coding (portion)**

Original statement (interviews on clients)	Coding Process		
	Definition	Conceptualization	Categorization
I prefer drivers who are well-dressed and well-mannered, or I will be upset(a1).....I have never had similar experience before so I am a little confused about using this platform(a2).	a1 Drivers' personal traits a2 Absence of previous experience	A1 Categorization process(a1) A2 Illusions of control(a2)	AA1 Cognition-based trust(A1)
I care about the punishment policy of invasion of privacy, higher cost of crime means low rate of crime(a3).....The ridesharing policy really matters to me because I think that privacy protection is of vital importance(a4).	a3 Cost of invasion of privacy a4 Privacy protection policy	A3 Cost of crime(a3) A4 Policy(a4)	AA2 Calculative-based trust (A3, A4)
I will think about the firm reputation before I use a new platform and application(a5).....Maybe I would check the drivers' working experience before I get into his(her) car(a6).	a5 Platform reputation a6 Working experience	A4 Previous interactions and familiarity(a5)	AA3 Knowledge-based trust(A4)
If the ordering process is just familiar to me and just as it ought to be, I will accept the platform(a7).....I really care about the reputation of the platform and the firm. For example, if I know that the firm got the investment of the Alibaba, I will feel at ease to use the platform(a8).....Insurance from the platform makes me feel comfortable to use the ridesharing platform(a9).	a7 Familiarity of the ordering process a8 Third party endorsement a9 Third party insurance	A5 Situational normality(a6) A6 Structural assurances(a7,a8)	AA4 Institution-based trust(A5, A6)
I don't think the drivers or platform will use my personal information for others, I trust in them(a10).....I haven't think of the security before and maybe I don't care that(a11).	a10 Believe in the platform and drivers a11 Don't care about security	A7 propensity to trust the platforms (a9,a10)	AA5 Personality-based trust(A7)

## 4. Model and hypotheses

According to the literature review and interview coding, we proposed the model shown in figure 2. Our model consists of a number of factors and antecedents that can affect clients' trust in the ridesharing platform in two stages, including personality-based beliefs, cognition-based beliefs and institution-based beliefs. These factors are verified as trust antecedents both in

literature and in our research. We also draw upon the technology acceptance model (TAM) and rational choice theory (RCT) to investigate the dynamic development process of trust in two stages. After the coding analysis, we developed a comparison of the two-stage coding and find that perceived privacy and the security protection of clients plays an important role in the development of initial trust and ongoing trust, which is considered as a moderator in this research model.



**Figure 2. Research model of trust development in two stages**

Initial trust is not based on any experience or first-hand previous experience [28]. As a result, the clients' personality and their propensity to trust, which constitute personality-based trust in this research, play an important role in the trust building process of the initial stage. According to the literature, clients' willingness to use something and their trust in a new platform sometimes depends on their first impression. Therefore, when people have never had prior first-hand experience with the ridesharing platform, they may observe the platform by observing cues that confirm the platform is trustworthy and build their initial trust on the platform [29]. Therefore, we hypothesize that:

**H1a.** Personality-based beliefs have a positive impact on clients' initial trust in a ridesharing platform.

**H1b.** Cognition-based beliefs have a positive impact on clients' initial trust in a ridesharing platform.

As clients have more interaction and user experience with the ridesharing platform, they may accumulate more trust-relevant knowledge and understanding of the rules of the platform [30], including when and how to enter their private location information or credit information. In addition, they may find that the ridesharing platform can largely reduce their time waiting for a bus or taxi and improve their efficiency, their perceived usefulness (PU) and perceived ease of use (PEOU) will positively impact

clients' knowledge-based trust, which is based on clients' user experience and familiarity with the platform [31]. Therefore, we hypothesize that:

**H2a.** Perceived usefulness (PU) of the platform has a positive impact on clients' knowledge-based beliefs.

**H2b.** Perceived ease of use (PEOU) has a positive impact on clients' knowledge-based beliefs.

Perceived privacy protection refers to clients' perception of the likelihood that the platform will protect their private information collected during the transaction or trading process [32]. Perceived security protection refers to clients' perception that the platform will fulfill security requirements during the transaction process [33]. For example, when clients realize that there are some security features and protection mechanisms, including a security policy, a safe guarantee or protection in the ridesharing platform, they will obtain more assurance from the platform and their institution-beliefs will be built [34]. During our interview with the clients, many clients mention that policy on privacy protection in ridesharing platforms may enhance their beliefs that the ridesharing platform is under the supervision of the central government and their rights and interests are guaranteed.

In addition to the structural assurance brought to clients, the perceived privacy and security protection of the platform can also increase the cost of criminal

behavior in use of the platform [35]. According to RCT, individuals are rational and once the cost of offending others' rights exceeds the benefit from deviant behavior [36], they will make rational choices and regulate their behavior. As a result, privacy or security from the government or the platform will have a positive impact on clients' calculative-based beliefs in the platform [37]. Therefore, we propose the following hypotheses:

**H3a.** Perceived privacy protection of clients has a positive impact on clients' institution-based beliefs and calculative-based beliefs.

**H3b.** Perceived security protection of clients has a positive impact on clients' institution-based beliefs and calculative-based beliefs.

After a long-term experience with the ridesharing platform, clients' trust develops to a new stage. In this ongoing stage, personality-based beliefs and cognition-based beliefs will be less important to clients' trust in the platform [38]. Instead, different factors have proved to be the main factors that affect clients' trust in the platform at this stage. For example, after several times using the platform, clients become more familiar with the platform, and they will be more trusting of the platform, which means that the knowledge-based beliefs of clients can increase their level of trust during the ongoing stage [39].

Additionally, clients' institution beliefs in the platform resulting from the structural assurance and situational normality also will increase clients' ongoing trust in the platform [40]. Therefore, we propose the hypotheses that:

**H4a.** Knowledge-based beliefs have a positive impact on clients' ongoing trust in a ridesharing platform.

**H4b.** Institution-based beliefs and calculative-based beliefs have a positive impact on clients' ongoing trust in a ridesharing platform.

We consider initial trust as a very important antecedent of building ongoing trust. Based on positive feelings in previous user experience in the initial stage, people will be willing to have more interactions or trading in the future. Moreover, it has been shown in some literature that the trust relationship is robust over time [41], positive feelings in the initial stage will have a positive impact on feelings in the ongoing stage. Therefore, we propose following hypotheses:

**H5.** Clients' initial trust in the ridesharing platform has a positive impact on the level of their ongoing trust.

We believe that a high level of initial trust may lead to a high level of ongoing trust [42]. Moreover, since we take a dynamic view of trust development, it will be true that the dynamic process from the initial stage to the ongoing stage will vary in degree resulting from different factors.

Usefulness and ease of use are two key characteristics of the platform after several interactions with the ridesharing platform. These two factors were first proposed in the technology acceptance model (TAM). PU estimates clients' subjective assessment of the utility offered by the new IT. PEOU estimates the effort needed to learn and to utilize the new IT [43]. In this study, we postulate that the more utility clients can obtain from using the ridesharing platform, the more positive the effect will be in the dynamic process between initial trust and ongoing trust. In a similar way, PEOU has the same effect on trust in the two stages.

Moreover, when the government promulgates a privacy protection policy or security protection policy, the positive effect between trust in the two stages will increase, and the level of clients' ongoing trust will be higher. The following hypotheses are formulated:

**H6a.** Perceived usefulness (PU) of the platform has a moderating relationship between initial trust and ongoing trust.

**H6b.** Perceived ease of use (PEOU) has a moderating relationship between initial trust and ongoing trust.

**H6c.** Perceived privacy protection (PPP) of clients has a moderating relationship between initial trust and ongoing trust.

**H6d.** Perceived security protection (PSP) of clients has a moderating relationship between initial trust and ongoing trust.

## 5. Conclusion and future research

### 5.1. Conclusion

Trust development is vital to emerging business models. This research puts forward new insights in trust relationships in ridesharing. It distinguishes trust antecedents in different stages and investigates trust in a dynamic view. The purpose of this study is to investigate the antecedents of clients' trust in the sharing economy-driven ridesharing platforms and the

dynamic development process of trust between initial and ongoing stages. In this research, we draw several preliminary conclusions based on the questions that we asked at the beginning of the study.

For the first research question we found that personality-based beliefs, cognition-based beliefs, calculative-based beliefs, institution-based beliefs, and knowledge-based beliefs are the main antecedents that lead to clients' trust in ridesharing platforms. Specifically, cognition-based beliefs and personality-based beliefs are unique antecedents of initial trust, which are based on first impressions of the platform. Knowledge-based beliefs, calculative-based beliefs, and institution-based beliefs are unique antecedents of ongoing trust, which is built on the actual interactions with the platform.

For the second research question, we found that clients' initial trust in the ridesharing platform has a positive impact on their ongoing trust. In the dynamic process of trust development, the degree of perceived usefulness (PU), perceived ease of use (PEOU), perceived privacy protection (PPP), and perceived security protection (PSP) of clients have a moderating effect on the relationship between initial trust and ongoing trust. A high level of these moderators leads to deeper impact of trust development in two stages.

Theoretically, this study investigates the clients' trust in the ridesharing platform and provides a new viewpoint in ridesharing economy. Also, this study takes trust as a dynamic process from initial stage and ongoing stage, which is more suitable for the real status. As a result, this research contributes to the sharing economy research and the trust research in information systems. It also provides new directions for information communication technology and business collaboration research for development.

Practically, this research finds out that after a period of development of ridesharing platform and business environment, clients may be more familiar with the ridesharing platform. Their perceived feelings on the platform and government policy will influence their trust in the ongoing stage. As a result, for the online ridesharing company, more functions on clients' perceived security and privacy prediction should be enhanced. This study could also enhance communication for clients and the ridesharing platforms. Furthermore, it could help improve future business collaboration for drivers and platforms.

## 5.2. Limitation and future research

However, as this is ongoing research, there are still some limitations in this study. First, this current study only investigates the trust development process but doesn't take clients' real behavior outcomes and

consumer behavior into consideration. Second, our data is limited as a result of time and financial constraints. Third, survey-based research to test the model should be considered in the future.

The development of information technology and the growth of Web2.0 has enabled the growth of online platforms that promote user-generated content, sharing and collaboration [44]. Future research could focus more on consumer behavior and ongoing willingness in the ridesharing platform. Moreover, more interviews need to be conducted and more data needs to be collected to further the investigation. In addition, survey could be used to test our research model.

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