

Enhancing customer trust in peer-to-peer accommodation: A “soft” strategy via social presence

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ABSTRACT

Despite its global popularity, the Web-based Peer-to-Peer (P2P) accommodation platform (e.g. *Airbnb*, *Xiaozhu.com*) commonly suffers insufficient customer trust due to its lean human/social elements. This study examines a soft strategy of trust establishment that addresses the impersonal nature of Web-mediation by improving social presence, and assesses its applicability and functional mechanism in the context of P2P sharing economy. Specifically, this study models and tests a *social presence-utilitarian/hedonic engagement-trust-purchase intention* framework. Data was collected from 571 Chinese P2P accommodation customers, and analyzed using structural equation model. The result confirms that social presence does enhance P2P customer trust and purchase intention via both utilitarian and hedonic engagement. Implications and limitations are also discussed.

1. Introduction

Boosted by computer-mediated-communication (CMC) technology, the sharing economy has gained its global momentum of development (Pizam, 2014). Hospitality industry is one of its pioneering sectors, and is characterized by explosive growth of Peer-to-Peer (P2P) accommodation platforms (e.g. Airbnb). Despite being a new entrant into the market, the P2P accommodation has become a strong competitor to conventional hotels. By 2018, Airbnb has been offering accommodation in more than 81,000 cities around the globe, with over 5 million rooms in its inventory, which is larger than any branded chain hotels (Airbnb.com, 2018). In China, the total revenue of online P2P accommodation rentals grew by a factor of ten thousand to CNY4.05 billion (approximately US\$608 million) between 2009 and 2014 (Zhu and Guo, 2016). Leading local P2P platforms such as *Xiaozhu.com* and *Tujia.com* are so popular in finance market that they have attracted billions of dollars of investment in recent years (Tujia, 2016; Xiaozhu, 2016). By this momentum of development, scholars envision that P2P accommodation will continue to reshape the future dynamics of the hospitality industry (Guttentag, 2015).

Rapidly as it grows, most P2P accommodation platforms are suffering scanty trust, which has largely impeded the participation of many potential customers (Ert et al., 2016; Wu et al., 2017). Tussyadiah and Pesonen's (2018) empirical study confirms that trust has been the “most cited barrier to sharing economy such as P2P accommodation, which includes the basic mistrust among strangers and concerns for

privacy” (p.5). In its nature, the P2P accommodation is a Web-mediated transaction of excess property capacity between individuals. Therefore, it bears the stigmas including: *information asymmetry* inherent in Web-based marketplaces, and exaggerated by the intangible and inseparable nature of accommodation service (Hong and Cho, 2011); and *decreased presence of human and social elements* due to the impersonal, anonymous and automated nature of Web (Hassanein and Head, 2007).

Offsetting these two stigmas is the pre-requisite of establishing trust and encouraging customer participation in the P2P accommodation. Conventional trust-establishing strategies mostly aim at addressing information asymmetry problem by increased disclosure of critical information, e.g. peer online reviews, verified product information (Jøsang et al., 2007). Such practices can be regarded as “hard” strategy, as they are pronounced and straightforward, and enable customers to learn details of the product so as to reduce uncertainties and suspicions. Despite their popularity in regular e-commerce, such strategy faces significant ceiling effect in the context of accommodation. This is because accommodation service and its delivery process are dynamic, intertwined with consumption process, and vulnerable to various factors. Thus, service actually experienced tend to be different from those described either by peer customer or by the service provider (Zekanovic-Korona and Grzunov, 2014).

Such ceiling effect can be mitigated by another subtle or “soft” strategy that aims at addressing the lean social/human elements of Web mediation, by increasing its perceived *social presence* (Short et al., 1976). Social presence theory suggests that by making people feel the

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presence of the seller, the impersonal nature of mediated communication can be alleviated, customer trust can be improved and finally purchasing behavior can be encouraged (Hassanein et al., 2009). This *social presence—trust—behavior intention* framework has been widely confirmed by e-business and e-learning literature (e.g. Gefen and Straub, 2004; Lu et al., 2016).

This soft strategy, however, is in need of more trans-contexts investigations. Previous modelling efforts mostly approaches the effect of social presence on trust as direct, non-mediated, and thus “*how social presence affect trust*” remains unanswered. Moreover, extant investigations are mostly confined in business-to-person form of e-transaction in relation to tangible products. Comparatively, person-to-person, service-based e-business (e.g. P2P accommodation) contains more exchange risks, and faces more challenges in establishing trust. This gives rise to another two rarely answered questions: *Is the soft strategy applicable in P2P accommodation? How can it be applied?*

This study contributes to knowledge on e-trust establishment by answering the above questions and verifying the alternative trust-establishing approach for P2P accommodation. Based on previous research, the effect of social presence on customer trust is hypothesized to be mediated by customer engagement (including both *utilitarian* and *hedonic* engagement) with the platform. A model of *social presence—utilitarian/hedonic mediation—trust—purchase intention* was constructed and tested using data collected from 571 Chinese P2P accommodation users.

2. Literature review

2.1. The sharing economy and P2P accommodation

The sharing economy refers to an innovative economic system where excess resources are shared between private individuals by means of the Internet, with or without profiting goals (Finck and Ranchordás, 2016). The P2P accommodation is among the leading forms of sharing economy. It connects individuals who have excess property capacity, to tourists that have needs for accommodation, with an online platform maintained by a third-party company (Botsman and Rogers, 2011). In this sense, it can be approached either as a form of social interaction between complete strangers (Molz, 2012), or as an integration of various communication technologies (e.g. mobile devices, digital payment) that transforms face-to-face exchange to Web-mediated transaction (Hamari et al., 2016).

Recent studies on P2P accommodation have seen a transition from simple description to systematic modeling of customer behavior, including their attitude and participation (re-participation) intention (e.g. Tussyadiah and Pesonen, 2016). Although factors driving user behavior vary across studies, a common finding is that trust plays a central role in shaping decision for (re)participation of P2P consumption (Yang et al., 2016; Ye et al., 2017). P2P accommodation features relative paucity of regulations and customs (Reichheld and Scheffer, 2000), and the accommodation is offered by completely strange individuals. This brings forth many additional risks including bad service quality, privacy violation and even personal safety (Gefen et al., 2003). Unlike conventional hotels, P2P accommodation can not rely fully on traditional risk-mitigation measures such as brand, reputation, formal proceedings (Owyang, 2013), and thus require a common basis of trust to reduce uncertainties and encourage purchasing behavior (Tussyadiah and Pesonen, 2016).

2.2. Trust and purchase intention to P2P accommodation

In a marketplace, trust refers to a general attitude of optimism about the goodwill and capability of the exchange partner to fulfill claimed obligations (Schurr and Ozanne, 1985). This implies that trust is essentially an affective attitude, as is echoed by Butler (1991) and Gefen et al. (2003). Literature on trust generally distinguishes between two

forms of trust: *swift trust* developed prior to the trustor-trustee interaction without first-hand experience; and *knowledge-based trust* developed through interaction with the exchange partner (Ye et al., 2017). Notably, consumer behavior research mostly deals with knowledge-based trust (e.g. Ert et al., 2016; Mittendorf, 2016).

The mediation of Web brings forth new complexities to trust relation in P2P exchange, and splits it into trust on the seller and trust on the platform (Han et al., 2016). Tussyadiah and Pesonen (2018) summarized that trust in P2P accommodation could be rooted between guests and hosts, and between guests and the platform. Notably, trust on the platform and trust on the host is interconnected and transferable, where platform trust can largely increase host trust, and finally determines the consumer's participation (Mittendorf, 2016). Therefore, trust on the platform could be more critical to consumer choice, and the platform plays a central role in mitigating uncertainties.

Following previous P2P accommodation studies (Ert et al., 2016; Ye et al., 2017), this study defines trust as a general, positive attitude towards P2P accommodation platform regarding its benevolence and capability in a post-interaction stage. Classic consumer behavior literature generally suggests that customers' trust on a company will decrease the perceived risk of transaction, and thus encourage purchasing behavior (e.g. Garbarino and Johnson, 1999). Similar assertions are also pervasive in e-commerce research (Cyr et al., 2007; Flavián et al., 2006), where trust is widely believed to rule customer behavior in online P2P marketplaces, especially P2P accommodation (Keymolen, 2013), albeit with few empirical evidences. As a result, this study hypothesizes that,

Hypothesis 1. *Consumers' trust on the P2P accommodation platform positively affects their purchasing intention.*

2.3. Social presence theory

P2P accommodation faces new complexities in establishing customer trust, partly due to the mediation of the Web and lack of physical presence (Keymolen, 2013). Unlike offline shopping experience, exchange in an online marketplace is characterized by automated/interactions with lean social cues (e.g. body language, emotional expressions) and human warmth (Cyr et al., 2009; Gefen and Straub, 2003). Such limited human element does not allow consumers to judge whether a vendor is trustworthy as in conventional face-to-face interaction (Reichheld and Scheffer, 2000).

This drawback can be offset by increasing *social presence* level of the online social interface. Social presence is an attribute embedded in the interface of an online P2P platform, and it measures the extent to which an online platform enables its customers to experience exchange partners as being psychologically present, and thereby to perceive human contact, sociability, and sensitivity (Rice and Case, 1983; Short et al., 1976). Social presence brings about a feeling of human contact (Yoo and Alavi, 2001), and is often created by integrating multimedia elements of the interface, actual or imaginary interactions (e.g. socially-rich pictures and text, personalized greetings) (Hassanein et al., 2009).

The social presence theory was first proposed in information system research, where it has been widely examined as a critical element of communication media that profoundly shapes user experience (e.g. Ogara et al., 2014; Short et al., 1976). Later, it was introduced into e-education and e-commerce studies, where the concerns are the impacts of social presence on online-consumers' attitude (Hassanein and Head, 2004), loyalty (Cyr et al., 2007), online purchase intention (Hausman and Siekpe, 2009), and online-students' learning experience and satisfaction (e.g. Mavroidis et al., 2013; Richardson et al., 2017). Recently, scholars are trying to generalize the social presence theory into non-western cultural contexts, e.g. e-commerce in China. For example, Lu et al. (2016) used a Chinese e-commerce website to examine the impact of social presence on customer trust and further on online purchasing behavior.

Previous e-commerce studies suggest that social presence can enhance online trust, and further encourage (re)purchasing intention (e.g. Han et al., 2016; Lu et al., 2016). Gefen and Straub (2003), Lu et al. (2016) explained that in contexts with high social presence and rich social contents, it was difficult to hide information and engage in unreliable behavior; and in contrast, a lean social presence environment may facilitate information hiding and untrustworthy behavior. Pavlou et al. (2007) further added that increased social presence might shorten the perceived social distance between the seller and buyer, and thereby increase online trust.

This “social presence—trust—behavior intention” framework has also been widely adopted and confirmed in the literature of social networking and e-education (Han et al., 2016), but has rarely been examined in the context of P2P sharing economy. The mediating mechanism between social presence and trust is still unknown, and few empirical evidences are available as to how social presence enhances online trust.

2.4. Mediation between social presence and trust: consumer engagement

Social presence is a perceived attribute of the online P2P platform, whilst trust is a post-hoc, general attitude formed based on the customer's engagement with the platform. The customer trust on P2P accommodation platform are not merely utility-driven (Davis, 1989), but also sociality- and hedonism- driven (Hassanein et al., 2009). As a result, the impact of social presence on trust is mediated by the customer's engagement with the platform, including both *utilitarian* and *hedonic* engagement (Lombard et al., 2000; Han et al., 2016). Specifically, increased social presence creates an illusion of non-mediated communication, and thereby improve online trust in utilitarian terms, such as providing useful information, solving product-related problems, and in hedonic terms, including social experiences and enjoyment (Kwon and Sung, 2011).

2.4.1. Utilitarian engagement

From functional perspective, P2P accommodation is basically a technology designed to provide quality and cheap accommodation for its users during trip (Hamari et al., 2015). Increased social presence can enhance the task performance of the platform, including its *perceived usefulness* and *ease of use*, and thereby increase the user trust (Cyr et al., 2007; Gefen and Straub, 2000). In the context of P2P accommodation, perceived usefulness is the extent to which the platform enhances the effectiveness of information acquisition and exchange carry-out, and enables the user to achieve satisfying accommodation; while perceived ease of use is the perceived extent to which using the P2P platform is free of effort for the user (Davis, 1989).

The technology acceptance model (TAM) (Gefen and Straub, 2000) suggests that perceived usefulness and ease-of-use determine the user's attitude towards a technology, and perceived usefulness can be affected by perceived ease-of-use. Such semi-mediation effects have been well documented in e-commerce literature (e.g. Cyr et al., 2007) as well as P2P accommodation research (e.g. Park et al., 2004; Tussyadial, 2015). Based on the TAM model, it can be inferred that the attitudinal trust will be affected by perceived usefulness and ease-of-use. This has been confirmed by various empirical findings. For example, Lee and Jun (2007) found that perceived usefulness and ease-of-use were important predictors of consumer trust in the context of mobile commerce, which was further confirmed by Amin et al. (2014). In the context of P2P accommodation, Yang et al. (2016) have found that consumer trust on the platform (Airbnb) be shaped by the platform features that are closely related to its usefulness and ease-of-use. Therefore, it is reasonable to hypothesize that,

Hypothesis 2. *Perceived usefulness of the P2P platform positively affects customers' trust.*

Hypothesis 3. *Perceived ease-of-use of the P2P platform positively affects*

customers' trust.

Hypothesis 4. *Perceived ease-of-use positively affects perceived usefulness of the P2P platform.*

Communication research has confirmed the psychological connection between perceived warmth/personalness of a medium and its usefulness or ease-of-use (Rice and Case, 1983), and similar results can be found in online education (Mavroidis et al., 2013) and online marketplace (Hassanein and Head, 2007). Improved social presence means enhanced website features in terms of both technical and human factors. On technical aspect, more social cues and information contents can add to media richness (e.g. facial expression, posture, human audio and video) and information richness (various forms of informative contents) (Gefen and Straub, 2003; Massey and Montoya-Weiss, 2006). On the human aspect, these features and information are organized and presented with more interactivity and personalization (Gefen and Straub, 2003; Rice et al., 1989). As such, it creates a feeling of warmth, user-friendliness and human contact (Yoo and Alavi, 2001), and thereby the cognitive burden of the user can be alleviated and their involvement can be improved, and the platform can be perceived as being both more useful and easy to use. Therefore, this study hypothesizes that,

Hypothesis 5. *Social presence of the P2P accommodation platform positively affects perceived usefulness.*

Hypothesis 6. *Social presence of the P2P accommodation platform positively affects perceived ease-of-use.*

2.4.2. Hedonic engagement

As the usage of the Internet has turned from utility to entertainment, online shopping activities have been transformed to fulfilling customers' desire for pleasure and sociality (Godes et al., 2005). The hedonic engagement with the technology forms another aspect of online consumer behavior, where social presence can strengthen affective values of enjoyment and social connection, and further improves customer trust (Cyr et al., 2007; Kim et al., 2013).

Plenty of studies reveal that customers pursue enjoyment in sharing activities (Bellotti et al., 2015; Nov et al., 2010). Perceived enjoyment refers to the extent to which using the platform is perceived to be enjoyable in its own right, apart from any performance consequences that may be anticipated (Davis et al., 1992). In a P2P accommodation setting, it is partly induced by the experience of social connection, as the P2P platform fosters communication between hosts and guests in various ways (e.g. dialogue through direct speaking, eliciting users' personal stories), and thus offers travelers opportunities to make new friends, develop meaningful connections, and build up sense of community (Tussyadiah and Pesonen, 2016).

Both perceived social interaction and enjoyment can positively affect customer trust. Higher degree of social interaction enables customers to get more social knowledge and experiences, to better understand their purchase purpose, and thereby to make more informed and accurate decisions (Dennison et al., 2009). Meanwhile, social interaction usually creates enjoyable feelings, and thus improves perceived enjoyment. Like social interaction, enjoyment is an important experiential aspect in both offline and online shopping, and has significant impacts on online consumers' attitudes (Koufaris et al., 2001; Koufaris, and Hampton-Sosa, 2002). Based on the above reasoning, it is reasonable to hypothesize that,

Hypothesis 7. *Perceived social interaction positively affects customers' trust on the P2P accommodation.*

Hypothesis 8. *Perceived enjoyment positively affects customers' trust on the P2P accommodation.*

Hypothesis 9. *Perceived social interaction positively affects perceived enjoyment.*

Lombard and Ditton (1997) argued that the most prominent psychological consequences of social presence were social experience and enjoyment. Communication literature has widely confirmed the positive effect of social presence on perceived enjoyment (Cyr et al., 2007; Hassanein and Head, 2007). Meanwhile, empirical findings support that social presence is a significant driver of increased social interaction and satisfying relationship building in computer-mediated communication (Han et al., 2015), and social media marketing (Kwon and Sung, 2011; Kelleher and Miller, 2006). Therefore, this study hypothesizes that,

Hypothesis 10. *Perceived social presence positively affects perceived enjoyment.*

Hypothesis 11. *Perceived social presence positively affects perceived social interaction.*

3. Methodology

3.1. Research context

The population for the survey is P2P accommodation users in China. Previous observations of P2P accommodation were mostly carried out in western contexts featuring individualism, with few attentions paid to collectivism-oriented context like China. Trust relation in China is mainly built through frequent face-to-face communications (Jarvenpaa and Leidner, 1999). Xiaotong Fei, a renowned Chinese sociologist, described the social relationship between Chinese people as a differential pattern of trust, and people commonly relied on those most trusted relations in their daily life (Fei, 1992). In this sense, examining the relationship between social presence and trust would be of more implications in such a context.

3.2. Measurement

Measurement items for each construct were adapted from previous studies (See Table 1), with slight re-working in order to capture the uniqueness of P2P accommodation. Following Gefen (2000), this study operationalized trust (TR) as a single-dimension construct encompassing a consumer's assessment that the platform is trustworthy, and measured it with three items (TR1 to TR3). Social presence (SP) was approached as a subjective, perceived impression that measures the extent to which the P2P accommodation platform was perceived to convey a sense of human warmth and sociability (Gefen and Straub, 2004), and five items (SP1 to SP5) were adapted to measure this construct.

Following Davis (1989), perceived usefulness (PU) was operationalized as the perceived extent to which the P2P platform enhances the effectiveness of information acquisition and exchange carry-out, and enable the user to achieve satisfying accommodation; and similarly, perceived ease-of-use (PE) was operationalized as the perceived extent to which using the P2P platform was easy and free of effort. Both perceived ease of use and usefulness were measured with four items (PU1 to PU4, PE1 to PE4). Perceived enjoyment (EN) was operationalized as the extent to which the process of using the P2P accommodation platform was perceived as enjoyable (Davis et al., 1992), and was measured with four items (EN1 to EN4). Perceived social interaction (SI) was operationalized as the extent to which the P2P platform enables the user to make new friends and to develop meaningful connections (Tussyadiah, 2015), and was also measured by four items (SI1 to SI4). Lastly, purchasing intention (PI) was defined as the extent to which the user may expect to use the P2P accommodation platform again in the future, and was measured by three items (PI1 to PI3).

All the adjusted items were carefully assessed by the author for its face validity and content validity. As data was collected on Chinese participants, the English statements were translated to Chinese, and

assessed by another two Chinese colleagues to identify and correct blurredness. Finally, the Chinese items were back-translated into English and compared with the original English scale. The differences were all addressed before the actual survey.

3.3. Survey and data

The survey was carried out on those who had experience of using P2P accommodation within most recent three months. Following previous studies (e.g. Tussyadiah, 2016), all items were scored by five-point unipolar scale. The respondent was asked to express their extent of agreement with the statement ranging from “to a minimum extent” (coded as 1) and “to a very large extent” (coded as 5). According to Dolnicar (2013), unipolar scale was suitable for evaluative measures. Meanwhile, five-point scale can keep a balance between user-friendliness (i.e. less options) and information-integrity regarding respondent preference (i.e. more options).

The survey questionnaire comprises four parts. Part I introduces the definition, characteristics and appearance of online P2P accommodation platform, and involves screen clips of seven most famous P2P accommodation Webpages. The definition of P2P accommodation platform is put as “an online platform that connects individuals who have excess property capacity, to tourists that have needs for accommodation” (Botsman and Rogers, 2011). Part II comprises screening questions to exclude those unqualified respondents, and questions regarding the P2P platform and the trip. Part III includes measurements for the relevant constructs based on the latest trip involved with the P2P accommodation platform. Part IV requests for the participants' socio-demographic information.

A pilot test was carried out during 17 and 20, August of 2017. Around 30 participants were recruited through Internet to fill the questionnaire and assess its quality. A few comments were collected, and the questionnaire was revised accordingly. The main survey was carried out on a Chinese survey platform, *Sojump* (www.sojump.com). *Sojump* is currently the largest online survey platform targeted at Chinese respondents, with more than 26 million users, including more than 90% of universities in China (Sojump, 2018). In order to further ensure the answer quality of the online survey, we randomly put anchor questions such as “if you are reading this question, please select agree to a very large extent”. Those answers that do not pass these test questions will be counted as invalid answer, and be excluded automatically. The main survey lasts for around two weeks, and in total 571 samples were collected and analyzed.

Data analysis was conducted with two-step structural equation modelling (SEM) using Amos 17.0 software package. The measurement models for all the relevant constructs were assessed first using confirmatory factor analysis, and the hypothesized model was then tested using SEM analysis.

4. Results

4.1. Descriptive data analysis

Tables 2 and 3 show the characteristics of the respondents and their trips associated with P2P accommodation use. Despite being a new entrant in China, Airbnb has become a popular platform used by most participants (31.87%). *Xiaozhu.com*, a local P2P room sharing platform, ranks second and takes a share of 30.82%. An overwhelming majority of respondents use P2P accommodation for holiday (86.7%) and for domestic trips (84.3%). Younger generation that is aged between 26 and 35 accounts for almost half of the respondents (46.6%). Notably, the mean score of the social presence varies across different P2P platforms (Fig. 1), which justifies the necessity of investigating its impact.

The authors believe the above sample has good representativeness for several reasons. First, online survey has been employed by most e-commerce and P2P accommodation studies (e.g. Ert et al., 2016;

Table 1
Measurement items.

Abbr.	Item	Source
<i>Social presence (SP)</i>		
SP1	There is a sense of human contact in the P2P platform.	Gefen and Straub (2004)
SP2	There is a sense of personalness in the P2P platform.	Gefen and Straub (2004)
SP3	There is a sense of sociability in the P2P platform.	Gefen and Straub (2004)
SP4	There is a sense of human warmth in the P2P platform.	Gefen and Straub (2004)
SP5	There is a sense of human sensitivity in the P2P platform.	Gefen and Straub (2004)
<i>Trust (TR)</i>		
TR1	The platform makes truthful claims	Newell and Goldsmith (2001)
TR2	I trust this platform	Newell and Goldsmith (2001)
TR3	I believe what the platform tells me	Newell and Goldsmith (2001)
<i>Perceived usefulness (PU)</i>		
PU1	This platform provides good quality information for accommodation.	Moon and Kim (2001)
PU2	This platform improves my performance in searching and ordering accommodation products.	Moon and Kim (2001)
PU3	This platform increases my effectiveness in searching and ordering accommodation products	Moon and Kim (2001)
PU4	This platform is very useful searching and ording accommodation products.	Moon and Kim (2001)
<i>Perceived ease of use (PE)</i>		
PE1	It is easy to become skillful at using the platform.	Gefen et al. (2013)
PE2	Learning to operate in the platform is easy.	Gefen et al. (2013)
PE3	The platform is flexible to interact with.	Gefen et al. (2013)
PE4	My interaction with the platform is clear and understandable.	Gefen et al. (2013)
<i>Social interaction (SI)</i>		
SI1	This platform enables me to have a more meaningful interaction with locals.	Tussyadiah (2016)
SI2	This platform enables me to get to know people from the local community.	Tussyadiah (2016)
SI3	This platform enables me to develop social relationships.	Tussyadiah (2016)
SI4	This platform helps me connect with locals.	Tussyadiah (2016)
<i>Perceived enjoyment (EN)</i>		
EN1	I found this platform interesting	Mun and Hwang (2003)
EN2	I found this platform entertaining	Mun and Hwang (2003)
EN3	I enjoy using the platform	Mun and Hwang (2003)
EN4	I found this platform pleasant	Mun and Hwang (2003)
<i>Purchasing intention (PI)</i>		
PI1	I expect to continue using this P2P accommodation platform in the future.	Tussyadiah (2016)
PI2	I can see myself using this P2P accommodation platform in the future.	Tussyadiah (2016)
PI3	It is likely that I will use this P2P accommodation platform in the future.	Tussyadiah (2016)

Table 2
Trip and socio-demographic attributes.

	N	%		N	%
<i>Platform</i>			<i>Gender</i>		
Airbnb	182	31.87	Male	253	44.30
Xiaozhu.com	176	30.82	Female	317	55.50
Mayi.com	130	22.77	<i>Age</i>		
Tujia.com	43	7.53	< 18	2	0.40
Ziroomstay.com	19	3.33	18 to 25	51	8.90
Muniao.com	11	1.93	26 to 35	266	46.60
Quhuhu.com	6	1.05	36 to 45	66	12.00
Others	4	0.70	46 to 55	62	11.00
<i>Purpose</i>			56 to 65	59	10.30
For holiday	495	86.7	> 65	65	11.40
For business	46	8	<i>Education</i>		
Visting friends and relatives	27	4.7	primary school or no education	3	0.50
<i>Destination</i>			Secondary school	67	11.70
Domestic	481	84.3	High school	103	18.00
Abroad	90	15.7	College	362	63.40
			Post-graduate	36	6.30

Tussyadiah and Pesonen, 2018), for its respondents are internet users who may be likely to be users of online exchange platforms. Therefore, the sample representativeness can partly be ensured by source of data. Second, the sample covers different genders, ages, education levels, and most provinces of China except for a few self-administration area (*Tibet* and *Xinjiang*). Third, the descriptive feature (percentage of younger generation) echoes that of Tussyadiah and Pesonen (2018) and Tussyadiah (2016), and fits into the observation that those younger are better at and are more fond of technologies.

Table 3
Descriptive statistics of continuous variables.

	N	Min	Max	Mean	Std.	Skewness	Kurtosis
SP1	571	1	5	3.91	0.867	-0.706	0.479
SP2	571	1	5	3.84	0.896	-0.566	0.001
SP3	571	1	5	3.87	0.87	-0.679	0.337
SP4	571	1	5	3.88	0.939	-0.675	-0.004
SP5	571	1	5	3.9	0.898	-0.612	-0.087
TR1	571	1	5	3.81	0.92	-0.628	0.083
TR2	571	1	5	3.85	0.865	-0.628	0.278
TR3	571	1	5	3.85	0.911	-0.816	0.553
PU1	571	1	5	3.64	0.909	-0.71	0.329
PU2	571	1	5	3.76	1.056	-0.576	-0.491
PU3	571	1	5	3.85	0.966	-0.64	-0.093
PU4	571	1	5	3.94	0.904	-0.754	0.323
PE1	571	1	5	3.91	0.932	-0.893	0.635
PE2	571	1	5	3.85	1.026	-0.809	0.083
PE3	571	1	5	3.72	1.005	-0.662	-0.122
PE4	571	1	5	3.89	0.976	-0.809	0.166
SI1	571	1	5	3.72	0.93	-0.505	-0.099
SI2	571	1	5	3.81	0.934	-0.569	-0.075
SI3	571	1	5	3.66	0.986	-0.396	-0.355
SI4	571	1	5	3.95	0.855	-0.813	0.779
EN1	571	1	5	3.95	0.858	-0.689	0.415
EN2	571	1	5	3.65	0.979	-0.391	-0.286
EN3	571	1	5	4.11	0.835	-0.869	0.661
EN4	571	1	5	4.12	0.824	-0.832	0.624
PI1	571	1	5	4.17	0.773	-0.966	1.404
PI2	571	1	5	4.17	0.818	-0.847	0.389
PI3	571	1	5	4.23	0.755	-0.849	0.832

4.2. Measurement model

The validity and reliability of the measurement models were assessed through confirmatory factor analysis (CFA). A full measurement

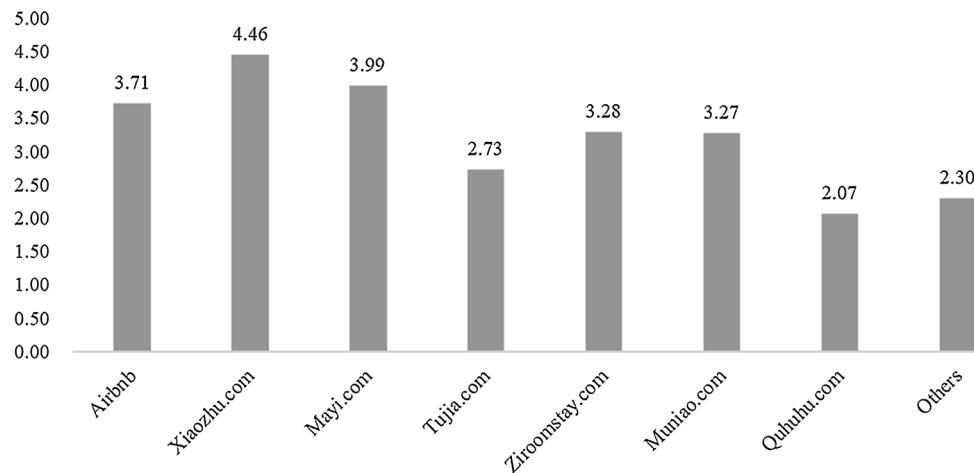


Fig. 1. Mean score of social presence.

model was constructed and tested, with all factors allowed to correlate. The fitness indices shows good overall fitness of the CFA model except for the χ^2/df values ($\chi^2/df = 2.969$, $p = 0.000$; $RMR = 0.043$; $CFI = 0.922$; $RMSEA = 0.059$). However, considering the complexity of this model owing to the number of indicators (Cortina et al., 2001) and given that χ^2/df values are very sensitive to large sample size (Bentler, 1990), this high value is within expectations.

Table 4 presents the result of reliability and validity assessment. The Cronbach’s alpha values for the seven constructs all surpass the critical value of 0.70, suggesting good internal consistency of the measurement scales (Bagozzi and Yi, 2012). All the factor loadings were mostly higher than 0.70, implying good indicator reliability for all measurement scales. Average variance extracted (AVE) values for the constructs are larger than 0.5, except for PE (which is lower than but close to 0.5), implying good convergent validity. Discriminant validity was established by assessing whether the AVE value of the latent construct is larger than its squared correlations with the remaining constructs

(Fornell and Larcker, 1981). The result demonstrates good discriminant validity for all constructs except EN, and that the variables in the study are distinct from each other.

4.3. SEM model

A full structural model was constructed and estimated to test the hypotheses. The fitness indices shows good overall fitness of the SEM model ($\chi^2/df = 2.813$, $p = 0.000$; $RMR = 0.044$; $CFI = 0.927$; $RMSEA = 0.056$). Fig. 2 demonstrates the result of SEM analysis.

Generally, the result of SEM analysis supports the hypothesized social presence —utilitarian/hedonic engagement—trust—purchasing intention framework. Trust on the P2P platform positively affects purchasing intention (0.281, $p < 0.01$), and thus hypothesis 1 is supported. Social presence positively, directly affect perceived usefulness (0.329, $p < 0.01$) and perceived ease-of-use (0.185, $p < 0.01$), and positively, indirectly affect perceived trust through perceived usefulness

Table 4 Result of CFA.

	Loading	Var	Squared correlation								
			AVE	CR	SP	PU	PE	EN	SI	TR	RI
SP1	0.719	0.362	0.561	0.864		0.162	0.028	0.682	0.537	0.177	0.521
SP2	0.653	0.46									
SP3	0.609	0.476									
SP4	0.770	0.359									
SP5	0.782	0.313									
PU1	0.828	0.259	0.631	0.872	0.162		0.212	0.065	0.224	0.388	0.213
PU2	0.801	0.398									
PU3	0.757	0.398									
PU4	0.737	0.373									
PE1	0.766	0.359	0.466	0.771	0.028	0.212		0.031	0.038	0.191	0.066
PE2	0.821	0.341									
PE3	0.526	0.729									
PE4	0.544	0.669									
EN1	0.694	0.381	0.584	0.849	0.682	0.065	0.031		0.471	0.089	0.587
EN2	0.720	0.460									
EN3	0.728	0.327									
EN4	0.739	0.308									
SI1	0.679	0.465	0.555	0.833	0.537	0.224	0.038	0.471		0.234	0.442
SI2	0.739	0.394									
SI3	0.745	0.432									
SI4	0.708	0.364									
TR1	0.770	0.343	0.665	0.856	0.177	0.388	0.191	0.089	0.234		0.294
TR2	0.805	0.263									
TR3	0.780	0.325									
RI1	0.791	0.259	0.703	0.877	0.521	0.213	0.066	0.587	0.442	0.294	
RI2	0.772	0.314									
RI3	0.815	0.223									

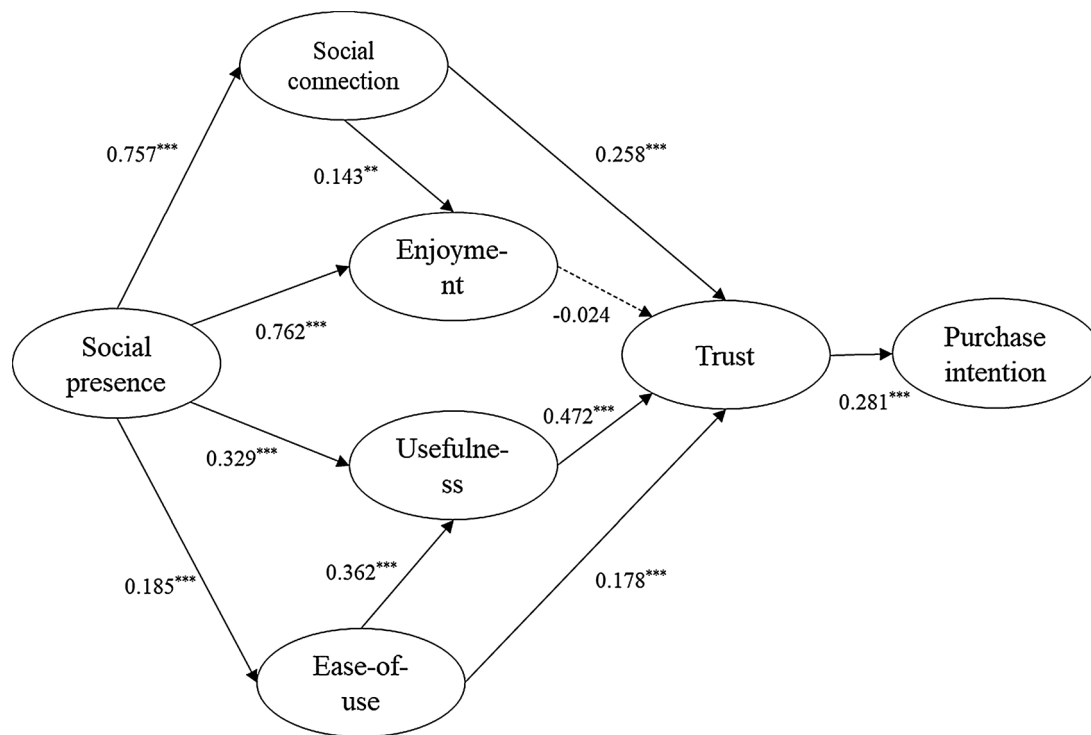


Fig. 2. Result of SEM analysis.

($0.329 \times 0.472 = 0.155$; Sobel test statistics = 5.623; two-tailed $p < 0.01$) and perceived ease of use ($0.185 \times 0.178 = 0.033$; Sobel test statistics = 2.674; two-tailed $p < 0.01$). Perceived ease of use was also found to positively affect perceived usefulness (0.362, $p < 0.01$). Therefore, *hypotheses 2, 3, 4, 5, 6* are all supported, implying significant mediation of utilitarian engagement.

Hypothesized relationships involved in the hedonic engagement are all supported except for that between enjoyment and trust. Social presence positively and directly affect perceived social interaction (0.757, $p < 0.01$) and perceived enjoyment (0.762, $p < 0.01$), and positively, indirectly affect trust via social interaction ($0.757 \times 0.258 = 0.195$; Sobel test statistics = 3.008; two-tailed $p < 0.01$). Social interaction was also found to positively affect enjoyment (0.143, $p < 0.01$). Therefore, *hypotheses 7, 9, 10, 11* are all supported. Notably, the hypothesized positive effect of enjoyment on trust is not significant (-0.024 , $p = 0.744$). Therefore, *hypothesis 8* is not supported. Generally, the mediation effect of hedonic engagement is confirmed. The result of hypotheses test are summarized in [Table 5](#).

5. Discussion and conclusions

Customer trust has been widely found to effectively predict purchasing behavior in traditional economic systems ([Corritore et al.,](#)

[2003](#)). This study further confirms its role in determining customers' future behavior intention in the context of P2P sharing economy. The data analysis result shows that customers with higher trust on the P2P platform are more likely to keep using its accommodation service, which is consistent with previous conceptual ideas (e.g. [Keymolen, 2013](#); [Tussyadiah and Pesonen, 2016](#)). Similar effect has also been documented in e-commerce literature (e.g. [Cyr et al., 2007](#); [Gefen and Straub, 2003](#)).

The P2P accommodation platform is perceived to differ in their degree of social presence. E-commerce literature commonly suggests that social presence will impact consumers' overall trust on the online vendor (e.g. [Choi et al., 2011](#); [Han et al., 2016](#); [Lu et al., 2016](#)). This study confirms such effect in context of P2P accommodation platform, and reveals that it is exerted via users' engagement with the platform, with both utilitarian and hedonic aspects.

The utilitarian mediation mechanism is completely supported by the data analysis result. Social presence will improve perceived usefulness and perceived ease-of-use, and further enhance customers' purchasing intention. This finding implies that the more warm/personal the website, the more useful and easy-to-use it would be perceived, and the more likely a customer may use the P2P accommodation in the future. Such findings confirm the applicability of TAM in predicting consumer trust in context of P2P accommodation ([Davis, 1989](#)), and are also

Table 5
Results of hypotheses test.

<i>Hypothesis 1:</i> Consumers' trust on the P2P accommodation platform positively affects their purchasing intention.	Supported
<i>Hypothesis 2:</i> Perceived usefulness of the P2P platform positively affects customers' trust.	Supported
<i>Hypothesis 3:</i> Perceived ease-of-use of the P2P platform positively affects customers' trust.	Supported
<i>Hypothesis 4:</i> Perceived ease-of-use positively affects perceived usefulness of the P2P platform.	Supported
<i>Hypothesis 5:</i> Social presence of the P2P accommodation platform positively affects perceived usefulness.	Supported
<i>Hypothesis 6:</i> Social presence of the P2P accommodation platform positively affects perceived ease-of-use.	Supported
<i>Hypothesis 7:</i> Perceived social interaction positively affects customers' trust on the P2P accommodation.	Supported
<i>Hypothesis 8:</i> Perceived enjoyment positively affects customers' trust on the P2P accommodation.	Unsupported
<i>Hypothesis 9:</i> Perceived social interaction positively affects perceived enjoyment.	Supported
<i>Hypothesis 10:</i> Perceived social presence positively affects perceived enjoyment.	Supported
<i>Hypothesis 11:</i> Perceived social presence positively affects perceived social interaction.	Supported

consistent with previous researches regarding the effects of perceived usefulness and ease-of-use on consumer attitudes and behavior intention (e.g. Tussyadial, 2015).

The hedonic mediation mechanism is mostly supported. Social presence significantly improves perceived social interaction and perceived enjoyment, which echoes communication literature in that increased social presence will induce stronger affective responses including sociality (Heeter, 1995; Kim et al., 2013), and pleasure (Cyr et al., 2007). Perceived social interaction, in turn, will enhance customer trust. That is, those who perceived higher level of social interaction during the usage of P2P accommodation platform may trust the platform to a higher level. In contrast, enjoyment has no significant effect on trust. These findings imply that the hedonic mediation mechanism works in social terms, instead of entertaining terms. Enjoyment is an important experiential aspect in both online and offline shopping, and previous research generally agree on its impact on online consumers' attitudes, e.g. satisfaction, delight (Koufaris et al., 2001; Tussyadiah and Pesonen, 2016). Its insignificant effect in this study is probably due to its intrapersonal nature, as enjoyment is stimulated and formed within a person, and remains on emotional level. In contrast, trust is interpersonal and formed based on interaction between (real or virtual) humans. Therefore, it is reasonable that hedonic mediation is largely exerted through social interaction rather than enjoyment.

Based on above findings, this study draws several research conclusions. First, P2P accommodation customers' purchasing intention is largely determined by an assessment of overall trust on the platform, in terms of its good will and capability to fulfill their needs. Therefore, it is confirmed that trust is very critical to P2P accommodation development. Second, customer trust on the P2P accommodation can be enhanced by improving social presence level of the platform, i.e. increasing its humanness and sociality. Therefore, the soft trust-establishment strategy is thus applicable in P2P settings. Finally, social presence will improve trust via two mediating routes, i.e. utilitarian engagement and hedonic engagement. In the former case, increased social presence will enhance customer trust by improve the perceived usefulness and ease-of-use, and thereby be conducive to trust establishment; and in the latter case, social presence increases trust by improving perceived social interaction experience. Notably, both social presence and perceived social interaction will positively impact enjoyment, which, according to previous researches, is among primary user values pursued by P2P accommodation consumers.

6. Implications and limitations

The prosperity of Web-mediated sharing economy has brought fundamental changes to the competitive landscape of hospitality industry. Unlike conventional hotels, the P2P accommodation is offered by individuals (or household), and thus relies heavily on customers' trust on the platform to reduce perceived uncertainties and encourage participation. This study investigates a soft strategy of trust establishment based on social presence, and confirms the impacts of social presence on customer trust and future intention in context of P2P accommodation. By these efforts, it has several contributions to knowledge.

Primarily, this study extends the current knowledge of social presence by establishing its impact on customer trust in context of P2P accommodation. Previous e-commerce literature generally suggests that social presence can improve customer trust in business-to-person (B2P) settings (e.g. Gefen and Straub, 2003; Han et al., 2016; Lu et al., 2016), but such effect has rarely been examined in person-to-person (P2P) sharing economy featuring much higher risk and uncertainty (Reichheld and Scheffer, 2000). In this sense, this study and its findings can provide evidence for the trans-context generalizability of social presence theory.

Second, this study adds to the social presence theory by revealing the mediation mechanisms between social presence and customer trust.

To our best knowledge, this study is the first endeavor in this regard. Although the conventional *social presence—trust* relationship has been widely confirmed in the literature of social networking and e-education (Gefen and Straub, 2003; Han et al., 2016), limited knowledge is available regarding how such impact takes place, resulting in a “black box” that has largely constrained the credibility of the implied causal relationship. By developing an alternative *social presence—utilitarian/hedonic engagement—trust* framework, this study opens the black box, and can provide robust underlying reasoning for the effect of social presence.

Finally, this study generates and verifies a trust-centered theoretical framework as an explanatory paradigm for P2P customer behavior. Compared with previous P2P customer behavior research that draws on satisfaction as a key role in determining purchase intention (e.g. Tussyadiah, 2016), this study emphasizes the role of trust in the cyberspace. The authors believe this alternative trust-based framework can be complementary with prior satisfaction-based paradigm, and thereby form a more comprehensive picture of P2P consumption behavior.

Based on the current findings, P2P accommodation platforms are suggested to improve consumer trust by imbuing their website with more human and social elements so as to create higher level of social presence. This can be achieved by integrating multimedia elements of the interface, actual interactions or imaginary interactions (Hassanein et al., 2009; Hassanein and Head, 2007). First, Web 2.0 capabilities that have been widely utilized are still helpful (Huang and Benyoucef, 2013): the website design can be polished to enable users to change its characteristics (e.g. language, page arrangement) or interact with it through its given form (Teo et al., 2003); those non-verbal cues (gestures, humorous content and emoticons) can be added; and timely self-disclosure of messages (e.g. one's thoughts, feelings, experiences) can be exchanged (Aragon, 2003). Second, the emerging AR (augmented reality) /VR (virtual reality) technology offers new opportunities, whereby the platform can reshape their interface with more AR/VR settings, so as to create a sense of immersion and improve perceived social presence. Third, as social presence can shape trust through both functional and emotional approaches, the above features added should be added only if they are able to make the website more useful, easy to use, or more enjoyable. Notably, social presence can not be created simply by the platform itself, because it is the host that provides most descriptions of the accommodation and interacts with the potential customers. Therefore, the platform should involve the host in their social presence improvement strategy, and encourage their participation through various ways (e.g. advertisement, training, and incentives). Aside of this, the platform should also encourage the host in terms of delivering satisfying service during the stay of customers, as the actual experience of the customer with the host family can be very critical to their trust on P2P accommodation.

This study also has limitations that need to be overcome in future studies. First, it can not fully exclude the interference effect of the actual experience with the hosts in the accommodation site when examining the effect of social presence on trust. Future research should further incorporate the customers' attitudes towards the hosts into the framework. Second, survey has its shortcomings in terms of internal validity. Therefore, future research can be carried out by experimental design, so as to achieve more robust relationships. Third, although this study confirms the effectiveness of social presence in increasing customer trust in P2P accommodation, it does not mean the platform can achieve this goal all by itself, as they commonly have no self-owned lodging product. Therefore, this study fully acknowledges that: 1) solely enhancing social presence of the platform is not enough in addressing trust issues in sharing economy; 2) the platform can not increase social presence all by themselves. Finally, this study has limitation in its research scope and sample size. Future research can be carried out in contexts other than China, and thus verify the generalizability of the identified effects of social presence.

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