

Trust in the Sharing Economy: An Experimental Framework

Research-in-Progress

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Abstract

Peer-to-peer platforms in the realm of the sharing economy, such as Airbnb or BlaBlaCar, have heavily rattled the electronic commerce landscape and are expected to further impact consumer behavior in the future. While trust between the parties involved is of utmost importance in such platform economies, experimental research on this aspect is scarce. In this conceptual paper, we first present an experimental framework for targeting trust in the sharing economy based on experimental economics and the trust game in particular. In doing so, we sketch out a path to complement existing Information Systems research on the sharing economy by experimental methods. Second, we apply the framework to a specific use case, by developing a research model and experimental design to explore the role of user representation for trust on sharing economy platforms. We therefore set the stage for controlled (laboratory) experiments to enrich research on trust in the sharing economy.

Keywords: Sharing economy, trust, experiments, framework

Introduction

Fueled by the Internet and mobile technology, the sharing economy has emerged as a game-changing phenomenon of the 21st century, affecting consumer behavior worldwide (Sundararajan 2014; Avital et al. 2015). A comprehensive and precise definition of the term “sharing economy”, however, is still under dispute – both in popular and academic press (Cohen and Sundararajan 2015). In the context of Information Systems (IS) research the term is often used as an umbrella for different forms of peer-to-peer (P2P) exchange and related phenomena such as collaborative consumption (Botsman and Rogers 2010), access-based consumption (Bardhi and Eckhardt 2012), or commercial sharing systems (Lamberton and Rose 2012). Drivers and impediments for partaking in the sharing economy can be manifold (Hamari et al. 2015; Hawlitschek et al. 2016b; Möhlmann 2015; Teubner et al. 2016a; Tussyadiah 2015). Most authors, however, agree that *trust* is of particular relevance in this context. Botsman (2012) even labeled trust as the sharing economy’s “currency.” Also among IS scholars, trust has been identified as one of the main research objectives for peer-sustained electronic commerce and sharing economy platforms (Knote and Blohm 2016; Puschmann and Alt 2016; Sundararajan 2016; Zervas et al. 2015).

Trust within the sharing economy is characterized by a set of unique transaction characteristics beyond other forms of exchange such as retailing on eBay and Amazon. Möhlmann (2016) suggested the following four factors of differentiation: First, transactions take place in at least a “triad of relationships” (Möhlmann 2016, p.4), involving peers, platforms, and underutilized products (Hawlitschek et al. 2016c). Second, social interactions not only involve an online but also an offline component (Möhlmann 2016), i.e., both matching and interaction. Third, transactions often involve no transfer of ownership (Bardhi and Eckhardt 2012; Fraiberger and Sundararajan 2015; Möhlmann 2016), i.e., comprise a component of entrusting a product with expectations of a reciprocal return; and fourth, transactions may be associated with more personal characteristics of service exchange (Lusch and Nambisan 2015; Möhlmann 2016) rather than pure goods exchange. Therefore, we argue that trust in the particular setting of P2P sharing economy platforms has to be differentiated from other forms of economic exchange, such as established business-to-consumer (B2C) or consumer-to-consumer (C2C) e-commerce (Hawlitschek et al. 2016c; Möhlmann 2016).

The overarching goal of this work is to better understand consumers’ and providers’ trusting decisions on sharing economy platforms. IS research approaches and methods are well-suited to investigate trusting behavior in platform-mediated interactions, because they are interdisciplinary by nature (Puschmann and Alt 2016). We thus develop an experimental protocol, which allows us to study human behavior in (controlled) sharing economy scenarios by varying platform and transaction characteristics. In particular, we focus on the measurement of trust in experimental sharing economy settings in this paper.

Examining the nature, the role, the moderators, and antecedents of trust in different online environments are key objectives for IS research. Hence, a variety of methodologies has evolved to measure and investigate trust in online environments, e.g., analytical modeling, case studies, econometric analysis, field interviews, surveys, and experiments (Gefen et al. 2008). In the context of the sharing economy, scholars have focused on survey-based approaches for measuring trust as a construct (e.g., Hamari et al. 2015; Hawlitschek et al. 2016b; Hawlitschek et al. 2016c; Kim et al. 2015; Matzner et al. 2015; Mittendorf 2016; Möhlmann 2015; Teubner et al. 2016a; Tussyadiah 2015). Such approaches yield valuable insights about phenomena in the field. However, as for instance observed in knowledge sharing, gaps between stated intentions and actual behavior call such methods’ predictive power into question (Kuo and Young 2008). Survey-based research may hence be enriched by complementary methods (Pinsonneault and Kraemer 1993). In particular, the methods of behavioral economics bear the potential to extend and enrich IS research (Goes 2013). Experiments can thereby be understood as a complementary approach, addressing some of the difficulties and limitations of survey-based research on trust and trustworthiness (Ermisch and Gambetta 2006). Economists have a long tradition of conducting laboratory experiments to examine trust-related issues in e-commerce using controlled experiments (Bente et al. 2012; Bolton et al. 2004a; Bolton et al. 2008; Loebbecke et al. 2007). However, despite the promising possibilities, IS research has not fully realized the potential of experiments in the context of trust in the sharing economy, yet. With this paper, we introduce an experimental framework that covers the characteristics and conflicting interests of sharing economy platforms and therefore provides a complementary approach to survey-based IS research. Experiments are particularly well-suited to systematically investigate trusting decisions in the sharing economy, due to the high level of control that can be achieved (especially in laboratory settings) and may well be enriched by survey elements.

The contribution of this paper is twofold. First, we develop an experimental framework for the sharing economy based on the well-established trust game (Berg et al. 1995) and a set of domain-specific requirements. Second, based on this framework, we derive a specific research model and an experimental design as an illustrative use case. Building on social identity theory, we model the influence of user representation on trust, mediated by perceived social presence and sense of virtual community, within sharing economy platforms. Our expected results may inform both, platform operators and users trying to support and sustain trust in sharing economy transactions, by pointing out means of influencing trusting behavior through the adaptation of platform characteristics (such as user interfaces or profiles). Furthermore our experimental framework may serve as a basis for IS scholars seeking to better understand and further investigate trusting decisions within the sharing economy.

An Experimental Framework for Trust in the Sharing Economy

Our approach is grounded in literature on trust in the sharing economy and is based on the renowned trust game (Berg et al. 1995), which represents one of the most frequently applied economic standard experiments (e.g., Ananthakrishnan et al. 2015; Hawlitschek et al. 2016a; Riedl et al. 2014). In this section, we thus briefly review the literature on trust in the sharing economy and on the trust game itself. Based on requirements derived from a typical flow of peer interactions on the P2P apartment rental platform Airbnb, we propose an experimental framework, the *sharing game*. An experimental framework allows researchers to build on a comprehensive high-level conceptualization of the problem domain (here: trust in the sharing economy) which then informs the implementation of individual experiments that target specific research questions of the broader research domain (e.g., the role of user representation).

Trust in the Sharing Economy

Trust as an important factor in (online) social interactions has been studied extensively by researchers from different disciplines, particularly including IS (Camerer 2003; Gefen et al. 2008; Grabner-Kräuter and Kaluscha 2003; McKnight et al. 2002). As we will elaborate in the following, the rise of platforms within the sharing economy, however, requires a renewed examination and critical analysis of the role and nature of trust in sharing economy transactions. To define trust, many scholars (e.g., Burt 2000; Capra et al. 2008; Fehr 2008) refer to Coleman's (1988; 1990) work. Coleman argued that, if one actor does something for another actor, trust refers to the expectation and obligation that this exchange is reciprocated in the future. This definition is particularly suitable in the context of the sharing economy, since it imports the economist's principle of rational action for use in the analysis of social contexts (Coleman 1988; 1990).

Internet-based transactions make it difficult to develop social and economic bonding that support the emergence of trust (Bolton et al. 2004b). This is particularly true for transactions in which private individuals interact on large-scale commercial platforms. While transactions in B2C e-commerce are mainly based on consumers' trust towards a professional e-vendor (Gefen and Straub 2004), consumer-to-consumer transactions depend on trust from the consumers' and the providers' perspective (Leonard 2012). In the sharing economy, building and sustaining trust, is hence more complex due to the specific features of this form of economic exchange. Indeed, it is differentiated from mere e-commerce transactions (Hawlitschek et al. 2016c; Möhlmann 2016). Möhlmann (2016) suggested four factors of differentiation, on which we will draw here: First, there exists at least a "triad of relationships" (Möhlmann 2016, p.4) and parties in each transaction (Möhlmann 2016). On sharing economy platforms, products or services are usually offered by private individuals (Teubner et al. 2016a), resulting in three different targets of trust, that is, "trust towards peer, platform, and product (3P)" (Hawlitschek et al. 2016c, p.26). Thereby, the intermediary platform facilitates transactions conducted on a P2P level, mainly by matching buyers and sellers and allowing them to engage with each other in a convenient and trustworthy environment (Einav et al. 2015; Möhlmann 2016; Sundararajan 2016; Weber 2014). Consequently, research on trust may be informed by existing literature on C2C e-commerce (e.g. Jones and Leonard 2008; Lu et al. 2010; Leonard 2012; Yoon and Océña 2015) rather than B2C or B2B settings. Second, social aspects become more relevant in the sharing economy context compared to other types of e-commerce transactions – even compared to C2C e-commerce (Möhlmann 2016). Transactions among peers on platforms like Airbnb, not only incorporate an online (matching) but also an offline (interaction) component. Service provision here often involves real-world interaction like staying in someone else's apartment or having a conversation about the best sightseeing activities in a city (Möhlmann 2016). Therefore, research on trust in the sharing economy

should draw from both, literature on online- but also offline interactions such as the trust game of Berg et al. (1995), which is similar to many economically relevant settings (Glaeser et al. 2000). Third, the sharing economy has been associated with a shift from ownership towards the access to shared goods or services (Bardhi and Eckhardt 2012). Thus, it is characterized by temporary rental activities among peers (Fraiberger and Sundararajan 2015; Möhlmann 2016; Teubner et al. 2016a). This type of interaction requires a higher level of trust and reciprocation compared to P2P transactions with a transfer of ownership (e.g., on Ebay), since people are most commonly sharing (more or less personal and valuable, i.e., “high-stake”) assets that they are willing to get back in a good condition. Research on this type of interactions might thus be informed by trust or gift exchange games (Fehr and Schmidt 1999; Teubner et al. 2013). Fourth, the sharing economy is frequently associated with activities of service-exchange (Lusch and Nambisan 2015), rather than activities of pure goods exchange, and might thus be investigated before the background of literature on online service provision (e.g., Jøsang et al. 2006). Thereby, service exchange is much more complex and involves many additional components such as a longer time span, location, cleanliness, and friendliness (Möhlmann 2016). Based on these four characteristics suggested by Möhlmann (2016), we argue that research on trust (informed by the above mentioned streams of literature) in the explicit context of the sharing economy is necessary. However, despite a long history of IS research on trust in online environments (see Gefen et al. 2008), literature on trust in the sharing economy is scarce. In the following we provide a brief overview of completed research on trust in the sharing economy that is related to the IS discipline.

In a survey-based approach, Möhlmann (2015) found that trust affects consumers’ satisfaction with sharing options. Furthermore, Möhlmann (2016) argued that trust in the provider of an online sharing platform is mediating effects of trust building management measures on the trust in peers. Differentiating between the two perspectives of consumers’ and providers’ trust, Hawlitschek et al. (2016c) outlined a conceptual model that differentiates between three substantial variants of trust towards peers, platforms, and products (3P). Based on survey data from a university student pool, the authors suggested that the different variants of trust positively influence the intentions to consume or provide on sharing economy platforms. Focusing on an accommodation provider’s perspective, Mittendorf (2016) found positive influences of trust in renters and in Airbnb.com on the intentions to offer an accommodation and to accept a booking request. The survey-based approach confirmed both, disposition to trust and familiarity with Airbnb.com as significant trust antecedents. Sundararajan (2016) agreed with the general notion of trust playing a central role in P2P exchange. He argued that trust in the sharing economy is stemming from eight principle cues: government or third-party certification, brand (certification), institutions and contracts, cultural dialog (familiarity), digital conduits to individual traits, digitized social capital, digitized peer feedback, and prior bilateral interaction. Beyond these considerations, Keymolen (2013) particularly emphasized the need for research considering the interplay of trust between peers and the platform or system.

The Trust Game

The trust game is one of the most extensively studied standard experiments and can be used as a basis for modeling a large variety of real-world transactions (Riegelsberger et al. 2005). Published in 1995 by Joyce Berg and colleagues, the trust game has been applied in a variety of different contexts in recent IS research such as user representation through avatars (Riedl et al. 2014), the impact of displaying fraudulent reviews (Ananthakrishnan et al. 2015), or user interface (UI) design (Hawlitschek et al. 2016a). In the trust game, two subjects (the trustor and the trustee) interact in two stages. In the first stage, the trustor decides on how much of an initial endowment (e.g., 10\$) to transfer to the trustee. The transferred amount is multiplied by a factor >1 (e.g., tripled). In the second stage, the trustee then decides on how much of the received amount to return. The respective amounts invested and returned are considered indicators for trust and reciprocation. In the sub-game perfect Nash equilibrium of the trust game, assuming self-regarding preferences, the trustor anticipates to not receive anything from the trustee in return and will hence not invest.

The following set of studies applies variations of the trust game in the context of (consumer-to-consumer) e-commerce. Bolton et al. (2004a) investigated the influence of different matching mechanisms (a repeated “partner” interaction and a randomized “stranger” matching with and without “reputation” measures) in a simplified trust game scenario of buyers (trustors) and sellers (trustees) in an online market. As opposed to the trust game setup of Berg et al. (1995), buyers in this “shipping game” could only decide whether or not to buy a good from the seller (i.e., to trust the trustee). On the other hand, sellers could only decide whether

or not to ship (i.e., to reciprocate). The authors found that the lowest levels of trust and reciprocation occurred in the markets with stranger matching. Both trust and reciprocation increased significantly for the reputation and even more for the partner market. Loebbecke et al. (2007) and Bolton et al. (2008) investigated the influence of competition for trading partners or for price in the shipping game. In the matching competition, buyers could choose to either buy from the same seller as in the previous round or to be randomly matched to a new seller. Furthermore, the price competition allowed sellers to set an individual price. The authors found that competition in stranger markets yielded higher levels of trust and reciprocation, while the effect almost vanished in partner markets. Bente et al. (2012) extended previous investigations in the context of the shipping game by the introduction of seller photos and a reputation system (based on five-star ratings). Both reputation scores and photos yielded positive effects on trusting behavior. However, forcing participants to see the photo of a randomly matched counterpart in a trust game had no effect on the trustors' behavior, while providing the opportunity to buy a photo increased trusting behavior of participants with a positive willingness to pay (Eckel and Petrie 2011).

Experimental Framework: The Sharing Game

An experimental market framework for trust in the sharing economy should not only model the 3P constellation of peers, platform, and products (Hawlitschek et al. 2016c), but should also match the key characteristics of a representative market platform. At the same time, the basic experimental design should be kept as simple as possible (Friedman and Cassar 2004). Horton and Zeckhauser (2016) demonstrate that Airbnb is often considered as a role model for other types of P2P rental. Therefore, we suggest requirements for an experimental sharing economy market framework guided by the example of Airbnb. According to the getting-started-guide by Airbnb.com (accessed at 2016-04-12), the basic steps to be performed as a host on Airbnb are “List Your Space”, “Respond to Requests”, and “Welcome Your Guests.” Accordingly, the basic steps for guests are “Search”, “Book”, and “Travel” (c.f. Edelman and Luca 2014; Zervas et al. 2015). In Figure 1, we depict the requirements R1 to R6 that we derive from the relationships between providers, consumers, products, and the platform.

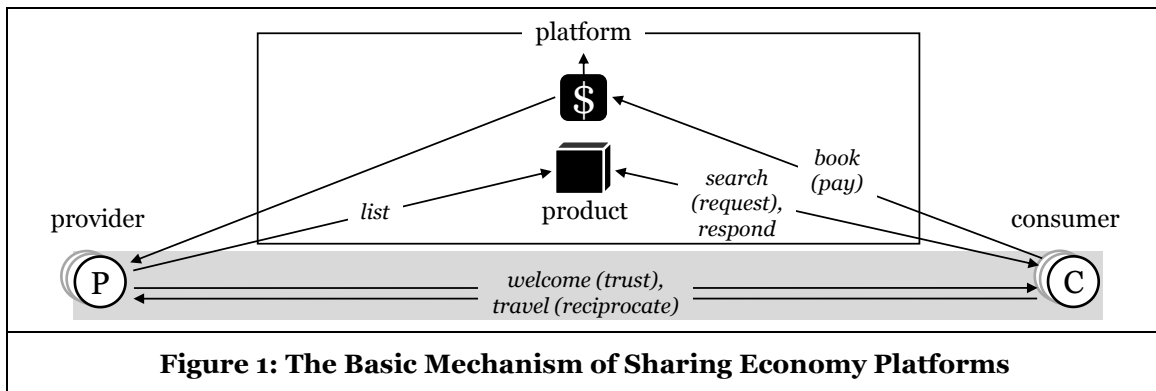


Figure 1: The Basic Mechanism of Sharing Economy Platforms

R1: Providers shall be able to *list* resources. Hosts on Airbnb can create listings with descriptions, amenities, and photos of their property. They can also decide on individual pricing and availability of the listings. The listing is published by the approval of the host. A listing represents a product/service promise, which may or may not be kept by the actual apartment and service at site.

R2: Consumers shall be able to *search* and *request* resources. Based on the provided information, consumers can browse through the listings and decide to request an offered resource from the corresponding host.

R3: Providers shall be able to *respond to (confirm/reject)* requests. Each host can decide to accept or reject requests from consumers based on the information contained in the request (usually including information on the requester) and the availability of the listing.

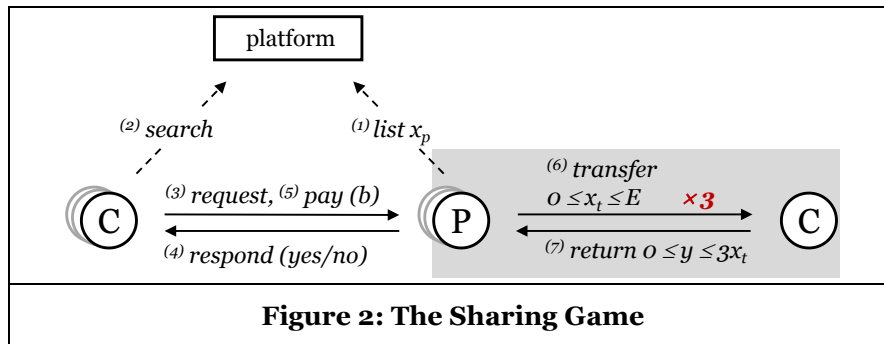
R4: Consumers shall be able to *book* a resource (for a fee). In case of the consent of a provider, the respective consumer can bindingly book the requested space. On Airbnb, the guest's payment is transferred

to the platform (in the role of a fiduciary) and released for the host 24 hours after check-in. Airbnb charges a service fee from both sides.

R5, R6: Providers/consumers shall be able to perform *trusting/reciprocating* behavior. In case of a confirmed reservation, providers are encouraged to put effort into preparation and coordinating arrival and departure, before lastly entrusting the consumer with access to their space. Guests are encouraged to be friendly and considerate during the trip and can treat the apartment with more or less care.

We argue that an experimental framework for analyzing the role of trust in the sharing economy should consider the above mentioned requirements R1 through R6. A good experimental design includes the creation of “[...] simple environments that capture the essence of the real problem while abstracting away all unnecessary details” (Katok 2011, p. 2). Consequently, we propose a simple market framework that captures the crucial characteristics of sharing economy platforms – the *sharing game*. It describes the fundamental trust problem between a consumer and a provider in the sharing economy within a simple platform setting. It combines both the shipping game of Bolton et al. (2004a) in a first, and the trust game of Berg et al. (1995) in a second phase. We show the game’s mechanics in Figure 2.

Phase I – Consumer’s Trust in Provider: In a first step (1), the provider creates a *listing* [R1] with a prospective description of x_p , which corresponds to the prospect (or promise) of transferring x_p monetary units (MU) as the trustor, that is, the first mover in a subsequent trust game. The listing is then published on the platform. Then the consumer browses or *searches* through the platform (2) and may submit a *request* [R2] for participating in a transaction with the provider (3). As soon as the provider *confirms* [R3] the request (4), the consumer pays a *booking* [R4] fee b to the provider (5). The consumer’s choice to request to enter the trust game with the provider hence represents a first trusting decision. The moral hazard is that, on receiving the booking fee b from the consumer, the provider has no immediate incentive to deliver the promised quality x_p in the trust game (cf. Bolton et al. 2004a). *Phase I* covers requirements R1 to R4.



Phase II – Provider’s Trust in Consumer: Now, the matched transaction partners enter a trust game (Berg et al. 1995). As depicted in Figure 2, the provider decides on how much of the endowment E to transfer (i.e., *entrust* [R5]) to the consumer, formally represented by x_t (6). The amount x_t (an indicator for trust) is tripled and credited to the consumer. This transfer corresponds to the quality of the offered product or service. The tripling illustrates the added value for the consumers based on what is provided to them by the providers. The expectation of the consumer is the prospect x_p . Hence, if $x_t \geq x_p$, the consumer has a positive experience. The provider, however, may transfer any value of x_t , independent of the announcement x_p . In the last step, the consumer decides on the degree of reciprocation y , that is, on how much to re-transfer to the provider, where $0 \leq y \leq 3x_t$ MU (7). Note that (within the scope of a one-shot interaction) the consumer has no immediate incentive to *reciprocate* [R6] at all. The return y of the consumer to the producer resembles the state in which the consumer returns the asset (e.g., the apartment) to the provider. For transfers x_t that are greater than zero, the provider hence faces exposure. The consumer’s re-transfer decision thus corresponds to the behavior during the offline interaction (e.g. how the product is treated). For instance, a product could be simply used in a socially expected manner or might be destroyed, over- or abused, etc. *Phase II* covers the requirements R5 and R6. To represent the typical property of P2P platforms with multiple hosts and consumers on the respective market sides, default matching is decentralized. Consumers see all available hosts and can send requests. If a request is accepted, consumer and host are matched and enter *Phase II*. If a request is rejected, both players remain in *Phase I* and solicit (or wait for) further requests. The matching phase ends after a certain time interval or when all players are matched.

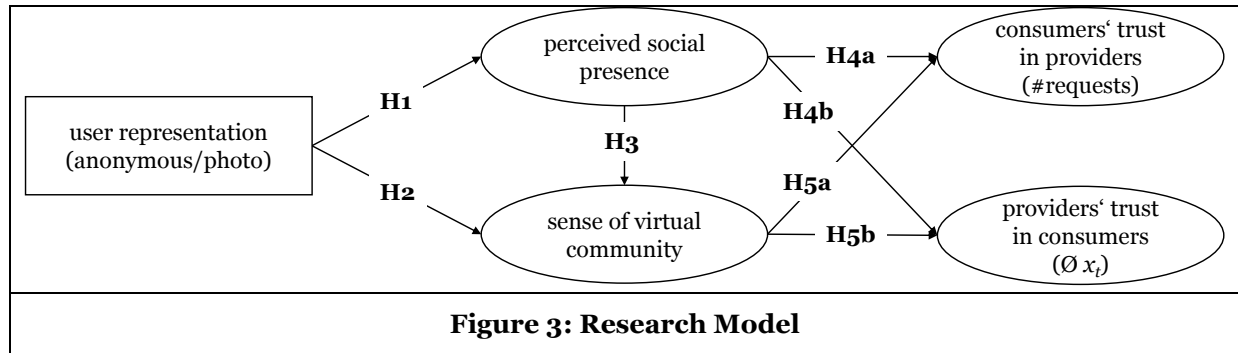
Our framework provides a large variety of controllable and modifiable variables. The most important dependent focus variables are speed, rate, and characteristics of matching, as well as trusting (x_t) and reciprocating (y) behavior over time. The basic independent variables are the absolute and relative numbers of consumers and providers, the structure of listings/booking costs (x_p), and the endowments (E). Moreover, a systematic variation of UI elements is possible.

Use Case: User Representation and Trust

To illustrate the applicability of the presented framework, in this section we depict a use case, focusing on an important variable in sharing economy platforms: user representation, that is, by which graphical feature users are presented in the UI of the platform (e.g., a portrait photograph versus no image). The investigation of reputation systems and user representation is highly relevant in the context of C2C e-commerce (Bente et al. 2012) and the sharing economy in particular (Ert et al. 2016). Especially against the background of limited variance in the distribution of ratings on platforms such as Airbnb (Zervas et al. 2015), the signaling and trust fostering role of user profiles and portrait photographs (Guttentag 2015) is important to investigate. Other trust-relevant factors include user ID verification, text-based reviews, and insurances (Teubner et al. 2016b). As a starting point we thus focus on user representation as an exemplary use case that may readily be extended by investigating alternative considerations on web site design (cf. Cyr 2008).

Theoretical Background and Research Model

In the present use case, we explore the influence of different types of user representation on trust, mediated by *perceived social presence* (PSP) (Short et al. 1976), and *sense of virtual community* (SOVC) (Blanchard and Markus 2002). Our argumentation is grounded in social identity theory. We argue that, while the media-richness perspective on PSP has proven successful for understanding trust in B2C e-commerce (Gefen and Straub 2003), interactions on sharing economy platforms require an additional, relational view. Social presence then captures the medium's ability to convey user signals as well as interpersonal transactions (Kehrwald 2008). This relates to forming an identity within a virtual community (Blanchard et al., 2011). The novelty of our approach lies in the structured assessment of the interplay of PSP, SOVC, and trust in an experimental sharing game setting. Figure 3 depicts a concise research model, summarizing our hypotheses, which we derive in the following.



For computer-mediated communication, social presence represents “the degree of salience of the other person [...] and the consequent salience of the interpersonal relationships” (Short et al. 1976, p. 65). Transmitting this sense of human contact is based on social cues. Pictures of human faces, personalized text, shopping assistants, voice interaction, or recommender agents were found to represent effective social cues in B2C e-commerce (Qiu and Benbasat 2010; Steinbrück et al. 2002), and to increase trusting behavior towards e-vendors through PSP (Gefen and Straub 2004). In contrast to B2C e-commerce, sharing economy transactions are based on P2P structures. Rather than buying from an aloof corporation, users hence in most cases act inter pares. As each user stands for a social identity, it is not surprising that social presence in the sharing economy can be fundamentally based on *user representation* (Teubner et al. 2014). User photographs and avatars for example were found to foster resource sharing and to stabilize gift giving markets in laboratory experiments (Teubner et al. 2013; 2014).

H1: *Photographs as user representation have a positive influence on PSP.*

Beyond the experience of social presence, user representation may yield another, more subtle influence. SOVC has been defined as “members’ feelings of identity, belonging, and attachment with each other” (Blanchard et al. 2011, p. 84). As such, it captures the observation that in some virtual groups, members support each other, develop and maintain norms, or conduct social control (Blanchard and Markus 2004). The construct of SOVC represents an adaptation of sense of community (SOC; McMillan and Chavis 1986) to online environments, where SOC originally referred to offline groups. In contrast to SOC, social processes of creating own identities and identifying others play a major role in SOVC because of participant’s anonymity in many online environments. Consequently, Blanchard and Markus (2004) suggested regarding identity/identification as one dimension of SOVC, with the other dimensions being recognition of members, exchange of support, attachment obligation, and relationship with specific members. Albeit proposing a diverging conceptualization of SOVC, Tonteri et al. (2011) follow this lead in considering the creation of a distinct identity as a community member as one of SOVC’s dimensions. We therefore argue that providing participants with an individual profile picture for their user profile will increase SOVC for both, the profile owners who create their identities (Blanchard et al. 2011; Ma and Agarwal 2007) and their transaction partners who are able to identify them.

H2: *Photographs as user representation have a positive influence on SOVC.*

SOVC’s relationship with social presence has mainly been theorized in research on online and distant learning. In the field, researchers usually apply the concept of SOC, which they transfer to online settings (e.g. Aragon 2003; Rovai 2002). It is generally assumed that social presence is among the key factors that affect the development of SOC in online learning environments (Aragon 2003; Rovai 2002). Wang and Tai (2011b) conceptualize SOVC as a mediator between social relationship factors such as social presence and virtual community participation. Although often proposed on a conceptual level, research has not yet systematically examined the relationship between social presence and SOVC. The few existing studies, however, support the notion of social presence as an antecedent of SOVC. Examining distant learning groups, Walker (2007), in a qualitative study, found that social presence promotes the growth of SOC. Findings by Liu et al. (2006; 2007) point into a similar direction. We hence suggest that:

H3: *PSP has a positive effect on SOVC.*

Riegelsberger et al. (2005) identified a set of design heuristics for trust-supporting systems, inter alia including social presence. The authors argued that social presence not only fosters norm-compliant behavior, but also signals benevolence through rich channels. For B2C e-commerce, information-rich and consumer-oriented websites, e.g. based on elements evoking social presence, can help to reduce consumers’ perceptions of ambiguity and risk (Simon 2001). Furthermore, social presence has been associated with greater levels of trust in B2C e-commerce (e.g., Cyr et al. 2009; Gefen and Straub 2003; Gefen and Straub 2004; Hassanein and Head 2007). In contrast to the means of infusing social presence in the B2C context (often photo models accompanying the product), user representation in consumer-to-consumer e-commerce refers to *actual* other users. We hence suggest that the general relation between social presence and trust transfers well to the platform context of the sharing economy. Formally, we hypothesize:

H4a/H4b: *PSP has a positive effect on Consumers’ Trust in Providers/Providers’ Trust in Consumers.*

Various studies suggest that SOVC is connected to the emergence of trust in online environments. While some authors propose that trust induces SOVC (Ellonen et al. 2007; Wang and Tai 2011a), Blanchard et al. (2011) argue that, conversely, trust emerges as a result of SOVC. Studying members of online bulletin boards, they find that SOVC plays a significant role in developing trust between members. We follow Blanchard et al. (2011) in their assumption that SOVC facilitates trusting relationships. Formally:

H5a/H5b: *SOVC has a positive effect on Consumers’ Trust in Providers/Providers’ Trust in Consumers.*

Experimental Evaluation

We will evaluate our research model by a series of laboratory experiments based on the sharing game in a setting with an equal number of consumers and providers. Using a between-subjects design, these markets will feature different forms of user representation, where the user profiles either comprise anonymous placeholder images (anonymous treatment) or portrait photographs (identified treatment). Participants in each treatment will be recruited from the experimental subject pool at the Karlsruhe Institute of Technology. Each participant will take a survey based on the available user profiles, including the construct items of perceived social presence and sense of virtual community as proposed by Gefen and Straub (2004) and Blanchard et al. (2011). The participants’ behavior in the sharing game serves as a proxy for consumers’

and providers' trust, based on, for instance, the number of requests issued and the amounts transferred. We will implement the experiment using the platform Brownie (Hariharan et al. 2015). It facilitates research on individual and group behavior in the lab with experimental stimuli. Moreover, it enables the integration of neurophysiological measurements. As our laboratory infrastructure we use the KD2Lab at the Karlsruhe Institute of Technology (40 air-conditioned and soundproof booths with computers and psychophysiological instruments). In doing so, we set out for large-scale P2P market experiments.

Conclusion and Further Research Agenda

The rise of the sharing economy has created new opportunities for consumers and platform operators, enabling new business models, which are inherently different from established B2B, B2C, and also C2C settings. Sharing economy platforms facilitate on-demand, P2P matching to coordinate the sharing of personal resources across a wide spectrum of application areas. This however entails complexities, which do not exist in established e-Commerce settings – complexities, which need to be addressed by well-informed platform design. In many business transactions a consumer trusts in the provision of a good or service by a provider. In contrast, according to Möhlmann (2016), most transactions in the sharing economy can be characterized by i) several trust relationships between the 3P, with ii) both online and offline components, that iii) imply no transfer of ownership, and iv) may include characteristics of service exchange. In such platform-mediated transactions, the consumer not only needs to choose a trustworthy product or service, but also needs to trust the provider to offer the requested product or service quality. In turn, the provider has to trust the consumer when giving access to personal resources (e.g., a house or car). In this paper, we proposed an experimental framework to facilitate research on human behavior in the sharing economy in experimental settings. While existing frameworks such as the trust game (Berg et al. 1995) focus on unidirectional trusting relationships (e.g., the trust of a consumer in a B2C platform), our framework captures the key characteristics of P2P interactions on sharing economy platforms, including the matching of transaction partners and thus the bidirectional trusting relationship between the provider and the consumer. Building on the experimental framework, we presented a specific use case of user representation in the sharing economy, focusing on how user interface design can contribute to establishing trust between providers and consumers. Grounded in social identity theory, the theoretical model considers PSP and the SOVC as key drivers of consumers' and providers' trust and sharing behavior. By systematically varying platform and transaction characteristics in a laboratory experiment based on the proposed sharing game framework, we will thus be able to better understand consumers' and providers' trusting decisions on sharing economy platforms. The experimental framework can serve as a reference for investigating trusting relationships in the sharing economy, enabling researchers to consider the “big picture” of the reciprocal trusting relationships involved and setting the space for individual experimental implementations.

While the use case focuses on P2P interaction and user-interface design in the sharing economy, the proposed experimental framework is applicable to a wide range of research questions regarding the design of sharing economy platforms. First, there is a variety of user-interface design elements that warrant investigation in sharing economy settings, such as design aesthetics (Cyr et al. 2006), color (Cyr et al. 2010) or the use of affective images aiming at user motives and their impact on affective processes (Adam et al. 2016; Hawlitschek et al. 2016b). Second, the framework can be used to compare different matching mechanisms (c.f. Bolton et al. 2008) for facilitating transactions between providers and consumers (e.g., prioritizing transaction partners within a user's own immediate or extended social network). Third, review and reputation mechanisms play an important role in establishing trust in one-shot interactions (cf. Bolton et al. 2004a; Dellarocas 2003) and hence warrant further investigation in the context of the sharing economy. Fourth, racial discrimination in the sharing economy (Edelman and Luca 2014, Edelman et al. 2016) is an important issue that may be addressed by insights from controlled investigation on the impact of “apparent racial differences” (Edelman and Luca 2014, p.9) on the willingness to trust in sharing economy environments. Fifth, experiments on the trust game suggest a variety of influences resulting from slight variations in the trust game mechanics such as repeated interactions, experience, learning effects, or endowments and payment protocol (Johnson and Mislin 2011). In order to put experimental results from the sharing game into perspective, the controlled investigation of such effects is important. Methodologically, the experimental framework facilitates the application of NeuroIS tools, such as eye tracking and EEG (Dimoka et al 2012; Léger et al. 2014), which are commonly employed in laboratory settings, by providing a simplified conceptualization of trust and sharing behavior in the lab. Our experimental framework contributes to complementing survey-based approaches and to enriching theories of trust and human behavior in the sharing economy.

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