Trust in the Sharing Economy:

A Behavioral Perspective on Peer-to-Peer Markets

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Abstract

The sharing economy has shaped consumer behavior around the globe and disrupted a broad variety of traditional industries. The rapid development of this technology-driven phenomenon has led to a plethora of platforms and business models that are subsumed under the blurry sharing economy umbrella term. From a scientific point of view, pinning down and understanding this broad, complex and constantly evolving socio-technical system is not an easy task. This cumulative dissertation sheds light on consumer motives for and against the participation in the sharing economy. In particular, trust is identified as a key driver of sharing economy adoption. Consequently, a conceptualization and different means of measurement for trust in the sharing economy are introduced. Furthermore, two approaches for building trust through platform design are investigated and discussed. The work is concluded with an outlook on the possible role of blockchain technology for the sharing economy and suggestions for future research.

Acknowledgements

I would like to thank my colleagues and friends at the Institute of Information Systems and Marketing at the Karlsruhe Institute of Technology for their advice and support. In particular, I want to thank the "Rocket Science Fiction Lab" and all affiliated researchers. Special thanks are due to Prof. Dr. Timm-Christopher Teubner for his longstanding cooperation and support. I would like to thank Prof. Dr. Christof Weinhardt for creating the inspiring and challenging environment that provided the fundament of my work.

Finally, my special thanks goes to my wife and family.

Contents

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List of Abbreviations

Anti-Capitalism (CAP)
Average Variance Extracted (AVE)
Business-to-Consumer (B2C)
Common Method Variance (CMV)
Consumer-to-Consumer (C2C)
Covariance-Based (CB)
Ecological Sustainability (ECO)
Effort Expectancy (EFF)
Exploratory Factor Analysis (EFA)
Familiarity (FAM)
Financial Benefits (FIN)
Functional Magnetic Resonance Imaging (fMRI)
Geldeinheiten (GE)
Independence through Ownership (IND)
Information System (IS)
Information Technology (IT)
Internal Consistency Reliability (ICR)
Karlsruhe Decision and Design Laboratory (KD²Lab)
Minimum-Average-Partial-Test (MAP test)
Modern Lifestyle (LIF)
Monetary Units (MU)
Online Recruitment System for Economic Experiments (ORSEE)
Partial Least Squares (PLS)
Peer-to-Peer (P2P)
Peer-to-Peer Sharing (PPS)
Peer, Platform, and Product (3P)
Perceived Social Presence (PSP)
Perceived Warmth (PW)
Prestige of Ownership (PRS)
Privacy Concerns (PRV)
Process Risk Concerns (RSK)
Resource Scarcity Concerns (SCR)
Sense of Belonging (BLG)
Sense of Community (SOC)
Sense of Virtual Community (SOVC)
Social Experience (SCX)
Standardized Root Mean Square Residual (SRMR)
Structural Equation Modeling (SEM)
Theory of Planned Behavior (TPB)
Trust in Other Users (TRU)
Ubiquitous Availability (UBI)
Uniqueness (UNI)
User Interface (UI)
Variance Inflation Factor (VIF)
Variety (VAR)

“Sharing,
whether with our parents, children, siblings,
life partners, friends, coworkers, or neighbors,
goes hand in hand with trust and bonding.”

(Belk 2010, p. 717)

PART I: UNDERSTANDING THE SHARING ECONOMY

Chapter 1: The Rise of the Sharing Economy

Motivation and Introduction

The e-commerce platform landscape of the 21st century has experienced the development of novel and innovative forms of online market places. An ever-growing variety of platforms now enables resource coordination and exchange among private individuals (Botsman and Rogers 2010; PwC 2015; Sundararajan 2016). In this so called 'sharing economy,' a broad variety of products and services is sold, rented, lended, swapped, or gifted from peer to peer. While sharing is almost as old as mankind (Sahlins 1972), the sharing economy and correspondingly peer-to-peer (P2P) sharing among strangers is greatly facilitated by Internet and mobile technology and represents a novel phenomenon (Frenken and Schor 2017). In fact, driven by the facilitating role of P2P platforms and Information Systems (IS), its rise is changing the consumption behavior of millions of people around the globe.

Large sharing economy platforms for apartments, rides, or other goods experienced tremendous growth in the first and second decade of the twenty-first century. Airbnb – as a posterchild example of the disruptive success of modern sharing economy platforms – almost tripled its market capitalization from 13 billion USD in 2014[1] to more than 30 billion USD in 2017[2] according to the Wall Street Journal. A recent study on behalf of the European Commission suggests that the influence of P2P platforms for the collaborative use of resources, such as apartments, is expected to even increase further (Hausemer et al. 2017). With 27.9 billion Euro in total annual spending on P2P platforms (with a quarter of expenses in the sector of apartment sharing) and the further expected growth, the sharing economy has emerged as a phenomenon with serious economic impact (Hausemer et al. 2017).

Research, however, is struggling to keep up with this rapid development. Even the term sharing economy itself still lacks a widely accepted and precise definition (Botsman 2013). In the IS community it is primarily used as an umbrella term for phenomena such as collaborative consumption (Botsman and Rogers 2010), commercial sharing systems (Lamberton and Rose 2012), or access-based consumption (Bardhi and Eckhardt 2012). While 'sharing' is widely regarded as a communal, non-monetary and not necessarily reciprocal activity (e.g., with family members and friends) (Belk 2010), 'economy' represents institutions and processes (such as renting and selling) that are connected to the production and consumption of goods[3]. Making generalized statements regarding 'the sharing economy' based on platforms located somewhere between these diametrically opposed concepts is difficult if not impossible.

Given the large variety of concepts under the broad sharing economy umbrella term, the following taxonomy (see Figure 1), first used by Teubner and Hawlitschek (2018), will provide a means and basis for structuring research approaches and discussions on sharing economy related issues along four characteristics: (1) degree of peer-provider professionality (ressources can be provided by private persons or professional providers, e.g., carsharing companies with a dedicated vehicle fleet), (2) role of economic compensation (i.e., the commercial orientation of the sharing-model), (3) the degree of casualness and short-term

[1] http://www.wsj.com/articles/airbnb-mulls-employee-stock-sale-at-13-billion-valuation-1414100930
[2] http://www.wsj.com/articles/airbnb-raises-850-million-at-30-billion-valuation-1474569670
[3] http://www.bpb.de/nachschlagen/lexika/lexikon-der-wirtschaft/21149/wirtschaft

nature of transactions (transaction can be differentiated regarding potential transfer of ownership or long term rental, e.g. of flats and houses), and (4) the materiality of resources (e.g. physical goods vs. services) (Teubner and Hawlitschek 2018).

This taxonomy allows to classify sharing platforms with respect to their degree of commerciality and the type of the underlying resources. A bijective classification of platforms, however, is not reasonable, since many platforms are used in different ways by different users. Airbnb, for instance, has not only attracted users that occasionally rent out a spare room but also a number of regular landlords and professional hotel and large-scale operators (Teubner et al. 2017).

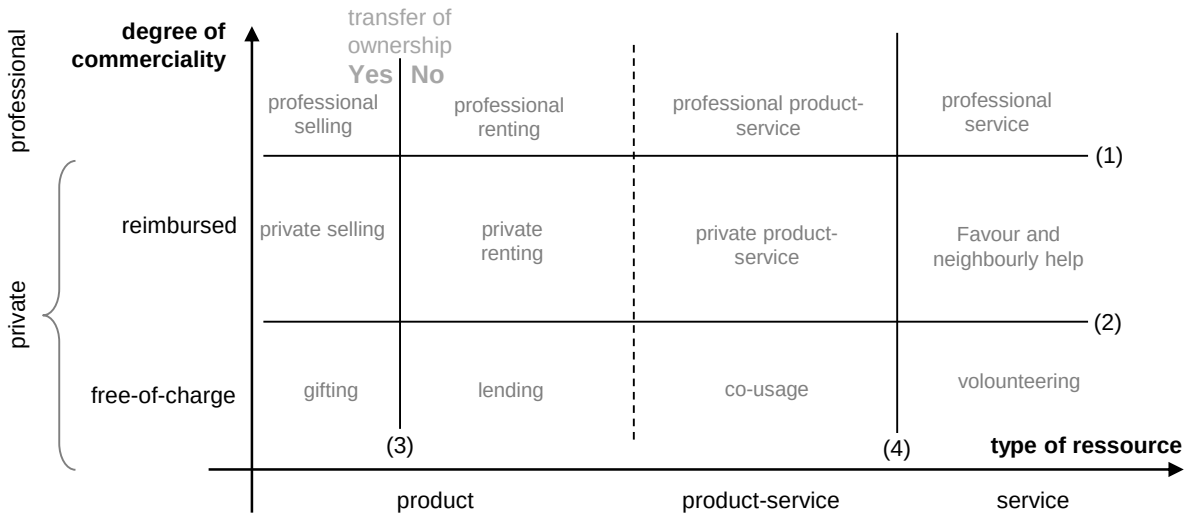


FIGURE 1: SHARING ECONOMY TAXONOMY, BASED ON TEUBNER AND HAWLITSCHEK (2018)

While phenomena located within a professional realm, such as selling, renting, and servicing are well understood from an IS perspective (Gefen and Straub 2004; Shaheen et al. 2012), the knowledge on private interactions from peer to peer is still rather limited and mainly focused on private selling activities, for example on Ebay (Bolton et al. 2004a, 2008, 2013). Considering the fact that less than 15 percent of a user sample from the 28 EU Member States have used P2P platforms for sharing or renting goods, accommodations or rides (Hausemer et al. 2017) both, entrepreneurial and research efforts could help to enable a more widespread adoption. According to the study on behalf of the European Commission, "growth can only be accommodated by wider societal penetration, which depends on whether consumer groups which currently do not participate in certain online P2P markets will decide that such platforms are reliable, safe and offer good value for money" (Hausemer et al. 2017, p. 109).

Beyond obvious financial motivation that can result from the extended use of resources – that is 'good value for money' – as well as process risk and safety concerns, reasons for or against the adoption of P2P platforms in the realm of the sharing economy are perceived as manifold,

including sustainability[4] or social motives[5]. However, trust (inter alia in terms of reliability beliefs), is prominently discussed as a "key element"[6] or "key currency"[7] that "really greases the wheels"[8] the sharing economy.

Against the backdrop of the comparatively young history of the sharing economy and corresponding research activities, scientific literature backing the public press coverage is still rather scarce. The overarching goal of this dissertation is thus to provide a better understanding of user behavior on P2P markets with regard to driving and impeding factors for platform usage. A particular focus will be granted to the central theme of trust in the sharing economy. This goal is manifested in the following research Agenda.

Research Agenda and Research Questions

The structure of this thesis[9] (as depicted in Figure 2) is grounded in three main parts addressing I) the development of an understanding of the sharing economy phenomenon from a user perspective, II) a detailed view on the issue of trust in the sharing economy, and III) a finale with concluding remarks and paths for future research.

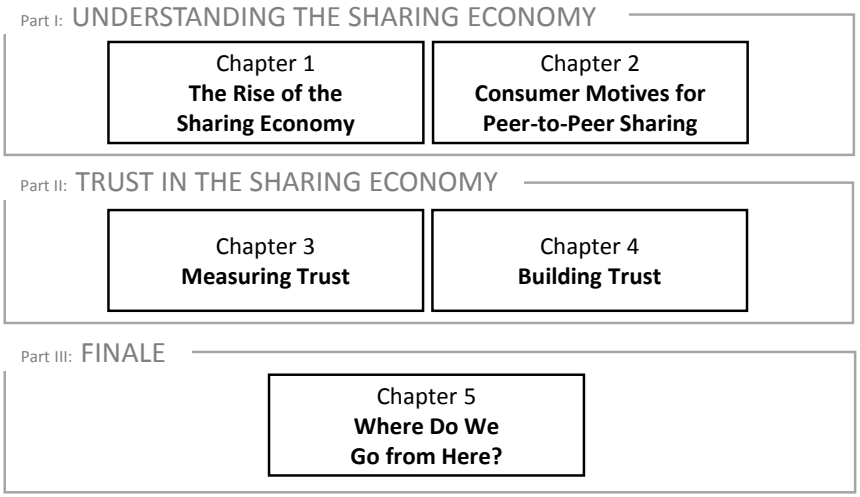


FIGURE 2: STRUCTURE OF THIS THESIS

[4] https://www.forbes.com/sites/mnewlands/2015/07/17/the-sharing-economy-why-it-works-and-how-to-join/\#5778c73058e1
[5] http://www.huffingtonpost.co.uk/helen-goulden/building-a-sharing-economy_b_17455462.html
[6] www.bbc.co.uk/news/business-37894951
[7] https://www.ft.com/content/f560e5ee-36e8-11e6-a780-b48ed7b6126f
[8] https://www.forbes.com/sites/theyec/2015/02/10/the-future-of-the-sharing-economy-depends-on-trust/\#3648d2ed4717

[9] The work at hand is based on the results and contributions of 7 major studies that have been published in book chapters as well as in peer-reviewed journals and conference proceedings. All studies are parts of joint research projects with my honorable colleagues Timm Teubner, Henner Gimpel, Christof Weinhardt, Marc T. P. Adam, Nils Borchers, Mareike Möhlmann, Tim Straub, Tobias Kranz, Constantin Mense, Daniel Elsner, Felix Fritz, Marius B. Müller, Ewa Lux and Lars-Erik Jansen and will be indicated as such within this document.

The thesis is further divided into five chapters. Chapter 1, titled "The Rise of the Sharing Economy" provides a brief motivation for the need of research related to the phenomenon of the sharing economy and introduces the structure of this thesis. It draws on two book chapters that have been published as joint work together with Dr. Timm Teubner (Hawlitschek and Teubner 2018; Teubner and Hawlitschek 2018)[10].

Chapter 2 titled "Consumer Motives for Peer-to-Peer Sharing" sheds light on the potential drivers and impediments for sharing economy participation. It was under review at (and is now published in) the Journal of Cleaner Production (Hawlitschek et al. 2018) and based on a joint research project together with Dr. Timm Teubner and Prof. Dr. Henner Gimpel[11]. A corresponding pre-study was published in the proceedings of the Hawaii International Conference on System Sciences (Hawlitschek, Teubner, and Gimpel 2016). The chapter addresses two main research questions that are sketched out in the following.

The success of sharing economy platforms depends on how well platform providers are able to understand and cater to the motives of (potential) participants, that is both consumers and providers. In recent years, the number of studies addressing a better understanding of such motives has experienced considerable growth. However, the set of motives considered in existing studies is often limited to a rather small and incomprehensive set. To set the stage for more fine-grained research approaches that may support platform providers in designing tailor-made solutions, a comprehensive understanding and conceptualization of potential drivers and impediments is necessary. The first research question thus states:

RQ1: *What are the motives for sharing economy participation?*

A key advantage of studying a broad and comprehensive set of user motives lies in the possibility to study their relative importance quantitatively and thus derive a better understanding of how essential it may be for certain platform providers to focus on addressing distinct drivers and impediments. Especially the frequently discussed importance of trust has not yet been investigated in the context of a broad set of competing drivers and impediments. In order to develop a better understanding of the relative importance of different motives and to shed first light on consumer trust in particular, the second research question thus states:

RQ2: *What is the relative importance of trust in the sharing economy from a consumer perspective?*

After quantifying the need for a detailed understanding of trust in the context of the sharing economy in relation to other factors, the chapters 3, and 4, are dedicated to a more detailed look at questions related to the concept of trust in the sharing economy.

Chapter 3 ("Measuring Trust") provides the basis for further investigations by deriving an operationalization of the concept of trust in the sharing economy in quantifiable measurements. Building on the fundamental typology of McKnight and Chervany (2002), it deals with the development of two distinct means to measure both trusting beliefs or intentions and trust-related behavior in a sharing economy context. The chapter is based on

[10] In both chapters my main contribution lies in the theoretical development of the notion of trust.

[11] My main contributions to the study inter alia comprise the literature review, the development and evaluation of the research model, and the discussion of theoretical as well as practical implications.

joint research projects and publications with Marc T. P. Adam, Nils S. Borchers, Mareike Möhlmann, Timm Teubner, and Christof Weinhardt. First, a survey-based measurement model for trust in the sharing economy is evaluated. The corresponding study was published in the Swiss Journal of Business Research and Practice (Hawlitschek, Teubner, and Weinhardt 2016)[12]. Second, an experimental framework for laboratory experiments in the context of the sharing economy is developed. The corresponding article was published in the proceedings of the International Conference on Information Systems (Hawlitschek, Teubner, Adam, et al. 2016)[13]. Thereby, chapter 3 addresses the following research question:

RQ3: *How can trust in the sharing economy be measured?*

Chapter 4 ("Building Trust"), deals with the successful design of sharing economy platforms with regard to interpersonal trust. The chapter is based on joint research projects and publications with Daniel Elsner, Felix Fritz, Lars-Erik Jansen, Tobias T. Kranz, Ewa Lux, Constantin Mense, Marius B. Müller, Timm Teubner, Tim Straub, and Christof Weinhardt. In particular, based on the design science research methodology for IS research by Peffers et al. (2007), the design and implementation of a P2P sharing economy platform for wild camping sites in Germany will be presented. A corresponding prototype paper was published in the proceedings of the International Conference on Group Decision and Negotiation (Hawlitschek, Kranz, et al. 2017)[14]. Within the scope of this chapter, furthermore an economic laboratory experiment will be elaborated that investigates the influence of user interface (UI) design on trust and reciprocity. The study was published in the proceedings of the Hawaii International Conference on System Sciences (Hawlitschek, Jansen, et al. 2016)[15]. Overall, chapter 4 is addressing the following research question:

RQ4: *How can trust in the sharing economy be built?*

Finally, chapter 5, titled "Where Do We Go from Here?" summarizes and discusses the contributions of this thesis. Furthermore, future research directions are sketched out that relate the issue of trust in the sharing economy to other upcoming research streams. As a prominent example, the application of blockchain technology will be discussed in order to set the stage for follow-up research efforts.

Methodology

In order to answer the previously stated research questions, this dissertation combines two complementary research approaches: survey-based and experimental (economics) research.

[12] My main contributions to the study inter alia comprise the identification of the research gap, the initiation of the research project and the scale and model development.

[13] My main contributions in this case inter alia comprise the requirement engineering and basic design of the experimental framework, as well as the initiation of the research model development.

[14] As a co-founder and chairman of the Sharewood-Forest e.V. my main contributions comprise the requirements engineering and conceptualization of the platform as well as the initiation of the corresponding research project.

[15] My contributions to this work inter alia comprise the initiation of the research project, along with the identification of the research gap, design and implementation of the experiment, as well as the statistical analysis.

While survey-based approaches are particularly well-suited to understand phenomena in the field and thus establish high degrees of external validity, economic experiments allow for higher degrees of control and thus for higher internal validity (Friedman and Cassar 2004). Therefore, a survey-based approach was chosen to answer RQ1 and RQ2 (mainly focusing on a general understanding of the sharing economy phenomenon), while the answers to RQ3 and RQ4 (mainly addressing individual decision making) mainly draw on experimental economics.

Survey-based Research

Survey-based research has a strong history in the IS domain. Not least in the context of technology acceptance studies, a wide range of researchers apply survey methods to study the adoption, use and influence of IS (Davis 1985, 1989; Legris et al. 2003; Mathieson 1991; Venkatesh et al. 2003, 2012, 2016; Venkatesh and Bala 2008; Venkatesh and Davis 2000).

The survey-based research approaches applied in this dissertation follow established guidelines (e.g. Hair et al. 2016; MacKenzie et al. 2011). In doing so, the following approach is implemented within the scope of this dissertation: i) conceptualization, ii) development of measures, iii) model specification, iv) exploratory scale evaluation and refinement, v) confirmatory model evaluation.

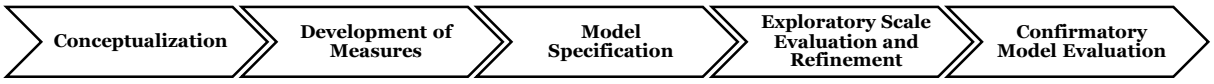


FIGURE 3: PROCEDURE OF THE SURVEY-BASED RESEARCH APPROACH (MACKENZIE ET AL. 2011)

The approach is largely based on and adapted from MacKenzie et al. (2011) and Hair et al. (2016). The different steps (see Figure 3) are illustrated in more detail in the following paragraphs.

Conceptualization

In the conceptualization step, we develop a common understanding and definition of the relevant latent variables to be measured in the respective survey study. As a basis for this, we conduct both a literature review of relevant work in the concept domain and an exploratory pre-study with open ended questions that extends the scope of our understanding of innovative concepts beyond the existing (and sometimes outdated) literature. Based on the corresponding results, we develop a conceptual (working) definition of all latent variables.

Development of Measures

Based on the conceptual (working) definitions, we first try to identify and adapt existing scales from the related literature that already cover the specified latent variable. If no adequate measures are available, a novel set of items is derived from the related literature or – if needed – generated from scratch. The content validity of the respective items is then evaluated by a group of unrelated judges for example by performing a sorting task.

Model Specification

Grounded in a theory-driven approach, we arrange the latent variables in a structural model that hypothesizes the expected causal relationships. In doing so, we also specify the

corresponding measurement model and arrange the generated items as either formative or reflective indicators of the latent variables in our model.

Exploratory Scale Evaluation and Refinement

Using the previously developed set of items in our measurement model, we conduct a first survey study to collect data for an exploratory scale evaluation and refinement. In particular, we conduct an EFA to explore the structure of our dataset. Based on a parallel analysis, the MAP test and an assessment of content validity (Hayton et al. 2004), we determine the number of underlying factors that will be extracted from the dataset. We purify and refine the survey scales by dropping indicators that either reveal low main loadings on the extracted factors, low communality, high cross-loadings or a lack of content validity (Costello and Osborne 2005; Matsunaga 2011). The remaining set of items is then used to develop the main survey.

Confirmatory Model Evaluation

For a confirmatory model evaluation, we collect a new, original dataset by conducting an additional main survey study. For evaluating the previously developed structural model, we apply partial least squares (PLS) structural equation modeling (SEM) based on the recommendations and guidelines by Hair et al. (2016). Therefore we begin with an evaluation of the reflective constructs in the outer model in terms of internal consistency (based on Cronbach's alpha and Internal Consistency Reliability), convergent validity (based on indicator reliability and average variance extracted), and discriminant validity (based on Fornell-Larcker, cross-loadings, and heterotrait-monotrait ratio). We then evaluate the formative constructs in the outer model in terms of collinearity (based on the variance inflation factor) and significance and relevance of outer weights and loadings. After having established the necessary properties of the outer model, we analyze the inner model based on the PLS algorithm and a corresponding Bootstrapping procedure (Hair et al. 2016)

However, a central issue of this procedure is that, while the results of structural equation modelling suggest causal relationships between the investigated latent factors, causality cannot necessarily be derived from non-experimental data due to the problem of endogeneity (Antonakis et al. 2014).

One possible approach for overcoming the issues related to endogeneity, is experimental research – that is the attempt to gain a maximum of control over the observed phenomenon and to apply predefined treatments to facilitate causal claims. Consequently, as described in the following section, we complement the survey-based approach by research methods grounded in experimental economics.

Experimental Economics

A fundament for the discipline of experimental economics was laid in the 1950's with the classroom experiments conducted by Edward H. Chamberlin and the corresponding advancements, for example, by Vernon L. Smith (Friedman and Cassar 2004). Experiments and in particular economic experiments provide a means of testing predefined hypotheses in a controlled environment. In this sense, external confounding factors can be reduced for the benefit of internal validity (Meyer 1995).

The core idea of experimental economics is that by creating microeconomic systems that „capture the essence of the real problem while abstracting away all unnecessary details" (Katok

2011, p. 16), researchers are able to investigate agent behavior in a microeconomic environment with a certain microeconomic institution and draw conclusions for the real world (see Figure 4). According to Smith (1976) a microeconomic institution consists of a predefined set of rules and procedures. In order to achieve a high level of control over the experimental setup, he proposes the use of a reward structure to induce prescribed monetary value on action.

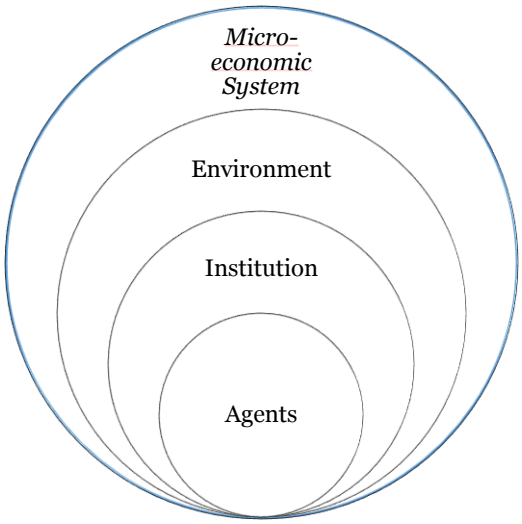


FIGURE 4: THE MICROECONOMIC SYSTEM IN EXPERIMENTAL ECONOMICS

Based on this simple notion Smith (1976) introduced the *Induced Value Theory*, which provided the basis for a far-reaching history of economic experiments. In a nutshell, the Induced Value Theory proposes three properties that a reward structure should provide: monotonicity, salience, and dominance (Smith 1976). In other words, the more of a reward medium an agent earns, the better it is for her (e.g., excluding sweets as a medium), the link of the reward medium to an agents actions is always obvious and clear, and the preference for the reward medium is higher than for any other possible reward in the microeconomic system. Consequently, money or monetary units (MU) are frequently used as a reward medium in practice. Given this notion of a fully controlled microeconomic system, it becomes obvious that also experimental (economics) approaches have some shortcomings that the experimenter should be aware of. Most importantly, the participants and the simplified laboratory environment pose a threat to the external validity and generalizability of experimental results (Schram 2005).

To conclude, (economic) experiments pose a viable opportunity to complement survey-based research and to enrich research on IS in general (Goes 2013; Pinsonneault and Kraemer 1993). The studies presented within the scope of this cumulative dissertation therefore draw on and conflate both strands of research methodologies.

Chapter 2: Sharing Economy Consumer Motives: The Role of Trust

To provide a sound basis for discussing the role of trust in the sharing economy, in this chapter I will present a survey-based study on the drivers and impediments for consumers' partaking in P2P *sharing. The study reveals the fundamental role trust plays in the formation of users' intentions to participate in the sharing economy and highlights its impact in relation to other motives.*

Florian Hawlitschek, Timm Teubner, Henner Gimpel[16]

Introduction

Today's e-commerce landscape has experienced the development of novel and innovative forms of online market places. An ever-growing variety of platforms now enables resource coordination and exchange among private individuals (PwC 2015; Sundararajan 2016). While the rapid growth of ventures such as Airbnb is almost unparalleled (Avital et al. 2014, 2015), many others fail to grow and vanish (e.g., SnapGoods; Choudary, 2013; Van Alstyne et al., 2016). Against this background, it is vital for platform operators to understand which clientele they are serving and what drives and bothers these (and potential future) users. Thus, research providing deeper insights into the consumers' motives for or against partaking in this "sharing economy" is essential.

Importantly, the popular notion of the sharing economy represents an umbrella term and often subsumes a broad variety of concepts such as "collaborative consumption" (Botsman and Rogers 2010; Meelen and Frenken 2015), "access-based consumption" (Bardhi and Eckhardt 2012), or "commercial sharing systems" (Lamberton and Rose 2012). Within the scope of this work, we focus on a specific subset within the broader sharing economy landscape, which we denote as "peer-to-peer sharing" (PPS). We theoretically establish and empirically evaluate a comprehensive model on consumer motives for using PPS grounded in the well-established Theory of Planned Behavior (TPB; Ajzen, 1991, 1985). In this context, a motive for a certain activity can be defined as a factor that arouses, directs, and integrates a person's behavior with regard to this activity (Iso-Ahola 1982). We explore which factors specifically drive and inhibit attitude, subjective norms, perceived behavioral control, as well as behavioral intention and actual usage of PPS in the consumer role.

The paper makes two core contributions. First, based on an extensive overview on potential motives, that is, drivers and impediments for partaking in PPS from a consumer's point of view, we develop a validated survey-based measurement model with satisfactory psychometric properties. Second, we establish a comprehensive model on consumer motives for taking part

[16] This study was under review at (and is now published in) the *Journal of Cleaner Production* with the title "Consumer Motives for Peer-to-Peer Sharing: The Relative Importance of Drivers and Impediments" (Hawlitschek et al. 2018) – see https://doi.org/10.1016/j.jclepro.2018.08.326.

in (or evading) PPS services, shedding light on the usage (intention) of platform mediated PPS as a socio-technical system. We find empirical support for twelve distinct factors, playing a significant role as antecedents of PPS usage.

Foundations

Almost 30 years ago, Malone, Yates, and Benjamin (Malone et al. 1987) foresaw that information technology (IT) would reduce transaction costs and, thus, make market-based coordination more and more attractive as compared to hierarchical coordination. The sharing economy is one manifestation of this progressive shift from hierarchical to decentralized and peer-based market schemes. Today, platforms such as Airbnb enable users to share their private access to resources with a large community of "strangers" (Frenken and Schor 2017). The growth of these platforms is substantially enabled by IT artifacts reducing transaction costs (Puschmann and Alt 2016).

Consequently, we investigate the acceptance of PPS as a larger socio-technical system and enclosed services. In order to explore consumer motives we thus decided to revisit the core theory of technology acceptance models (Benbasat and Barki 2007). Our approach is conceptually based on the TPB (Ajzen 1985, 1991) and its decomposed extension (Shih and Fang 2004; Taylor and Todd 1995a). In direct comparison to technology acceptance models, the TPB "provides more information about the factors users consider when making their choices" (Mathieson, 1991; p. 188).

Theory of Planned Behavior

The TPB (Ajzen 1985, 1991) originates from psychology research. It posits a subject's behavior result from an explicit *behavioral intention*, which in turn is based on *attitude*, *subjective norm*, and *perceived behavioral control*. These categories can be further differentiated. In particular, attitude entails *relative advantages/ disadvantages*, that is, the degree to which an innovation provides benefits which supersede those of its precursor, *compatibility*, the degree to which the innovation fits with the potential adopter's existing values, previous experience and current needs, and *complexity*, the degree to which an innovation is perceived to be difficult to understand, learn, or operate. The model has often been used as a theoretical basis to study technology acceptance. It can be considered a standard model for predicting adoption behavior in the context of electronic commerce and has proven its predictive power in a variety of studies (Pavlou and Fygenson 2006).

In the course of an ongoing discussion around the supposed shortcomings of the theory, critics recently demanded its retirement (Sniehotta et al. 2014). Within this study, we will deliberately not elaborate on these critiques but refer to Weigel et al. (2014) and Ajzen (2014; p. 6) stating that: "Contrary to their claims, the TPB is alive and well and gainfully employed in the pursuit of a better understanding of human behavior."

Peer-to-peer Sharing & Co-Usage

As Botsman (Botsman 2013) put it: "The Sharing Economy lacks a shared definition." While recent press coverage revolves around the sharing economy or related topics, the fundamental question of what exactly characterizes the sharing economy usually remains open, or is answered inchoately. In recent IS research the sharing economy is regarded as an umbrella

term for a variety of phenomena and hence remains vague (Acquier et al. 2017; Hamari et al. 2016).

A concise overview of existing definition approaches from related fields is provided by Frenken and Schor (2017). The authors define the sharing economy as "consumers granting each other temporary access to under-utilized physical assets ('idle capacity'), possibly for money" (Frenken and Schor, 2017; p. 2-3) and consider the three characteristics *consumer-to-consumer (C2C) interaction*, *temporary access,* and *physical goods* as characterizing.

To define PPS and to locate it within the sharing economy landscape, we propose the following perimeter (see Figure 1). Consider the two dimensions *type of resource* (on a scale from product to service), and *degree of commerciality* (on a scale from private to professional). Private providers can further be differentiated as free-of-charge and reimbursed or paid alternatives. Resources on PPS platforms may be goods (physical products) such as cars, tools, equipment, or clothing. Goods, however, can also entail service character, as for instance a spare car seat on the way from Amsterdam to Berlin, or the use of one's guest room for an overnight stay. Here, the product involved in performing the service is central and essential. We refer to this type of sharing as product-services. On the other end of the scale, services capture volunteering or regular work. Admittedly, the transition between product and service is often smooth. The "product" category on the type of resource axis is further divided with regard to transfer of ownership, by which we loosely differentiate between selling, exclusive usage, and co-usage.

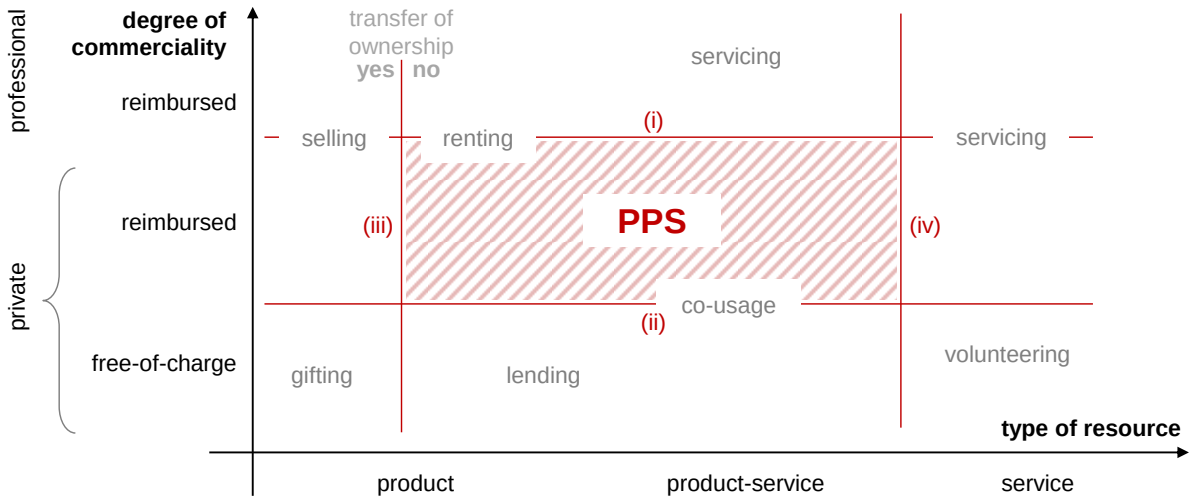


FIGURE 5: PEER-TO-PEER SHARING TAXONOMY

This taxonomy allows to classify sharing platforms with respect to their degree of commerciality and the type of the underlying resources. A bijective classification of platforms, however, is not reasonable, since many platforms are used in different ways by different users. To delineate the scope of our research, we focus on the specific sharing economy sub-domain of PPS where there occurs resource co-usage. This includes, for instance, accommodation sharing (e.g., Airbnb, Homestay) and ride sharing (BlaBlaCar, Zimride). More formally, PPS can be located within our taxonomy based on the following characterizations.

(i) *Non-professionalism:* transactions are carried out between private individuals (excluding professional programs such as car sharing fleets, as maintained by Zipcar),
(ii) *Commercialism*: transactions are commercial (excluding neighborly help or mainly idealistic communities such as Couchsurfing),
(iii) *Temporality*: resource transfer is temporal and usually rather short-term (excluding transfer of ownership, and long-term transactions such as on Realtor.com),
(iv) *Tangibility*: transactions are centered around products or product-services (excluding pure service provision such as on crowd work platforms, e.g., Amazon Mechanical Turk, TaskRabbit, Uber).

Materials, Methods, and Theory

Motives for partaking in or evading PPS can be manifold. Scholars from different fields have set out to investigate the character and relative importance of these motives. Building on the theoretical foundation outlined above, we amalgamate a broad set of potential consumer motives and segment these into the categories *attitude*, *subjective norm*, and *perceived behavioral control*. The set of consumer motives is derived from existing literature and a complementary exploratory pre-study (see Hawlitschek et al., 2016b). The location of all motives within our research model is illustrated in Figure 2 and will be derived in the following.

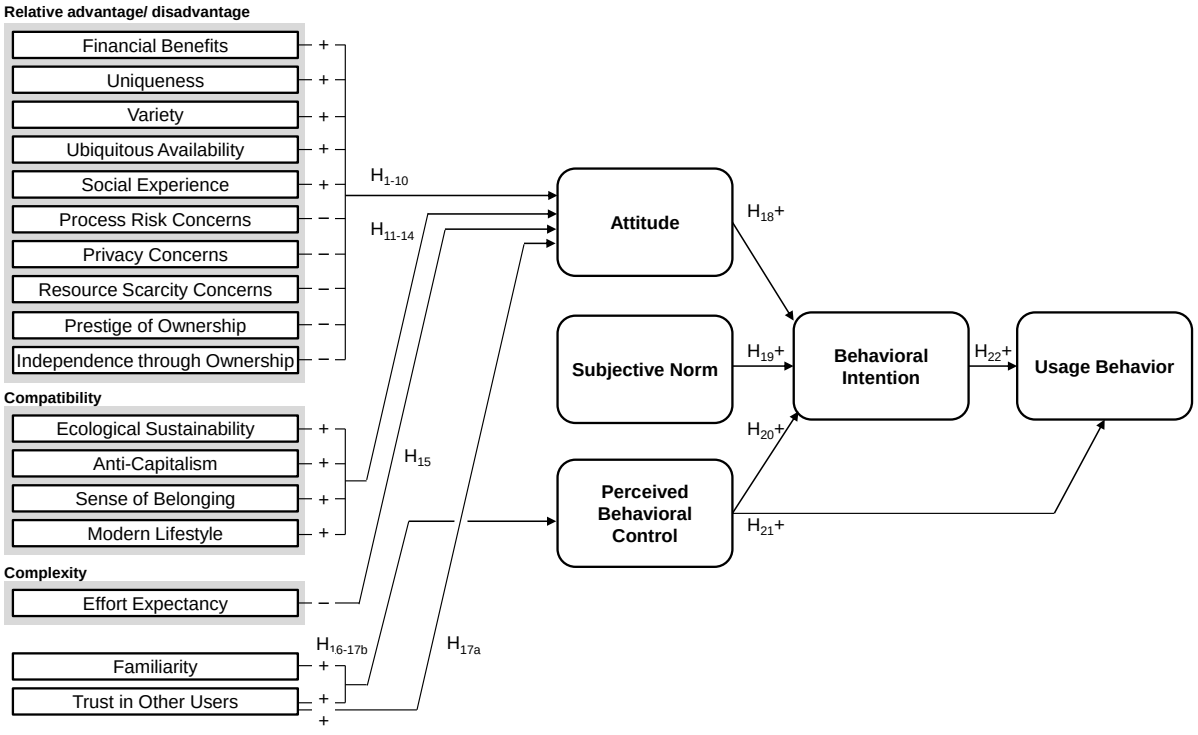


FIGURE 6: THEORETICAL MODEL ON CONSUMER MOTIVES TO TAKE PART IN PEER-TO-PEER SHARING

An overview of academic contributions on user motives in the sharing economy is provided in Table 1. It contains information on the perspective (C: consumer, S: supplier, P: platform), the methodology (i: interviews, s: survey, c: conceptual), sample size (n), and which potential motives and barriers were considered. While several studies explore user motives qualitatively, some follow an approach similar to ours, typically involving validated constructs and correlation estimation based on survey data. Overall, empirical evidence on the type of motives for PPS and also their importance in relation to each other is still scarce and dispersed. In the upper part of Table 1, we list survey studies with validated scales ordered by descending publication date. We highlight positive (+) and negative (–) path coefficients and correlation estimation with $p<.05$ as well as insignificant findings (o) among the studies that provided a corresponding statistical analysis. We integrate the corresponding findings in the development of our research model.

	Authors		C	S	P	M	N	FIN	UNI	VAR	UBI	SCX	RSK	PRV	SCR	PRS	IND	ECO	CAP	BLG	LIF	EFF	FAM	TRU
	this study		×			s/s	605/745	+	o	+	+	+	−	o	o	o	−	+	o	+	+	−	+	+
Validated scales + correlation estimation	Barnes and Mattsson	2017	×			s	115	+				+						+		+				o
	Schaffner et al.	2017	×			s	76					+										−		
	Akbar et al.	2016	−×−			s/i/s	117/130/251	o	o							o			+		+			
	Bucher et al.	2016	×			i/s/s	110/300/491	+				+												
	Hawlitschek et al.	2016	×	×		s	91						−										+	+
	Tussyadiah	2016	×			s/s	356/644	+				+						−						
	Hamari et al.	2016	−×−			s	168	+										+						
	Möhlmann	2015	×			s/s	236/187	o										o		+	o		+	o
	Lamberton and Rose	2012	×			s/s	369/123	+			+				o			o	o			−	+	
	Moeller and Wittkowski	2010	×			s	461	o								−		o			+			
	Bock et al.	2005	−×−			s	154													+				
	Kankanhalli et al.	2005	−×−			s	150													o	o	o	+	o
Other studies	Guttentag	2017	×			s	844		●	●		●						●			●			
	Milanova and Maas	2017	×			i	49	●						●						●	●			
	Wilhems et al.	2017		×		i	20					●				●		●		●				
	Böcker and Meelen	2017	×	×		s	1330	●				●						●						
	Lawson et al.	2016	−×−			s/s	72/214	●		●						●		●						
	Lee et al.	2016	×			c		●					●	●										
	Tussyadiah and Pesonen	2016	×			s/s	799/1246	●				●						●		●		●	●	●
	Yin et al.	2016	×			s	755									●		●						
	Zhang et al.	2016		×		i/s	35/1786					●												●
	Zhang et al.	2016	×			c							●	●								●		
	Edbring et al.	2016	×			i/s	9/1159	●	●			●	●		●	●		●		●		●	●	●
	Hellwig et al.	2015	×			i/s	10/1121	●																
	Bellotti et al.	2015	×	×	×	i	68	●				●	●			●		●						
	PwC	2015	−×−			s	1000	●										●		●			●	●
	Kim et al.	2015	×			c		●		●		●	●											●
	Balck and Cracau	2015	×			s	105	●	●	●	●	●						●						
	Matzner et al.	2015	×	×		c		●						●		●		●				●	●	●
	Frick et al.	2013	−×−			i/s	10/1121	●				●	●	●			●	●				●		
	Albinsson and Perera	2012	×			i/i	10/36					●						●	●	●				
	Bardhi and Eckhardt	2012	×			i	40					●				●				●				
	Shaheen et al.	2012	×		×	i	17						●		●							●		●
	Clausen et al.	2010	−×−			s	2404	●	●			●	●					●				●		
	Ozanne and Ballantine	2010	×			s	397	●				●				●			●	●				
							#	24	6	5	3	19	10	6	4	11	2	21	5	13	7	11	9	12
							sig <5%	**(6)**	(0)	**(1)**	**(2)**	**(5)**	**(2)**	(0)	(0)	(1)	**(1)**	**(3**/1)	(1)	**(4)**	**(3)**	**(3)**	**(5)**	**(2)**

TABLE 1: LITERATURE OVERVIEW

Hypothesis Development

In the following, we develop our hypotheses. In order to provide an overall structure, all candidate motives are organized along the dimensions as provided by the theoretical framework of TPB. In particular, we distinguish between the attitudinal categories relative advantages /disadvantages, compatibility, and complexity as well as subjective norms and perceived behavioral control. The attitudinal categories comprise motives which bear specific benefits or downsides (e.g., financially, product-related, or socially) as well as motives that fit or oppose a subject's more abstract and inherent values (e.g., ecological sustainability). The category of subjective norm is not differentiated further – it is congruent with the motive of social influence, that is, the influence one's personal environment such as colleagues, friends, and family exert. Last, the category of perceived behavioral control comprises factors that can be considered as prerequisites of usage intention and behavior – not so much because they motivate people to engage but rather since a lack of these factors will deter people from doing so.

Attitude

Relative Advantages/ Disadvantages refer to the degree to which PPS provides benefits (or drawbacks) which supersede those of other modes of resource consumption. It may incorporate disadvantages such as process risk and privacy concerns as well as advantages such as saving money or time (Shih and Fang 2004).

From the consumer perspective, privately shared goods are considered less expensive by 81 percent of US adults familiar with the sharing economy (PwC 2015), which points to the fact that financial benefits may drive user participation. Hellwig et al. (2015) found that "saving money" constitutes an effective motive, particularly for sharing pragmatists. We capture this notion by the motive of *Financial Benefits* (FIN), that is, the idea that PPS may save money. Several studies have considered how economic factors impact the use of PPS (or related activities) and found positive influences on behavioral intention (Hamari et al. 2016) and satisfaction (Möhlmann 2015; Tussyadiah and Pesonen 2016). We hence hypothesize its effect on attitudinal beliefs to be positive:

H_1: *Financial benefits have a positive impact on attitude towards PPS.*

Besides such financial benefits, the offers on PPS platforms exhibit properties that can hardly be found within traditional channels of consumption, that is, that are unique to PPS. Airbnb, for instance, advertises that its hosts offer experiences in the most extraordinary lodgings, including tree houses, castles, or house boats. Such offers are unique to PPS platforms compared to hotel chains and sites such as Expedia or Booking.com. In this sense, PwC (2015; p. 23) notes that the "hospitality sharing economy is appealing because it offers [...] more unique experiences and more choice." Users may hence seek this very exclusivity of experiences when using PPS. Edbring et al. (2016) reported that one out of four participants in a survey on second-hand furniture and short-term renting stated second-hand consumption to fulfill their "desire to be unique." Akbar et al. (2016) found that users' *desire for unique products* mitigates the detrimental effect of materialism on sharing intentions. Furthermore, Guttentag et al. (2017) highlight the importance of the unique value proposition Airbnb has introduced by providing unique (non-standardized) experiences. We hence propose that

Uniqueness (UNI), that is, the idea that PPS allows to access products and services that are not available elsewhere, positively affects attitude towards PPS:

H_2: *Uniqueness has a positive impact on attitude towards PPS.*

In a similar vein, the open concept of PPS allows providers to offer products and services in large varieties. Turo.com (formerly RelayRides, P2P car rental) emphasized its "unbeatable rental car selection." Users may appreciate this great diversity and large amount of choices (Balck and Cracau 2015), for instance, renting a convertible today for the trip to the sea, and a truck for some home improvement next week. Kim, Yoon and Zo (2015), for instance, proposed variety-seeking (along with exploratory and novelty-seeking) consumption behavior to be a form of epistemic value pursuit, that is, product variety as a motive for participating in the sharing economy, in particular for curious users. Lawson et al. (2016) find that the most likely customer segment to access products (in access-based consumption) seek variety more than any other customer segment. Lastly, Guttentag et al. (2017) suggest that the variety of benefits associated with staying in a home is a characteristic of the disruptive innovation of Airbnb accommodations. We capture this by the motive of *Variety* (VAR), that is, the idea that PPS offers a wide range of different products and services.

H_3: *Variety has a positive impact on attitude towards PPS.*

Moreover, PPS platforms typically operate nation- or worldwide. Once registered, users tap into shared resources virtually wherever they are. This *Ubiquitous Availability* (UBI), that is, the idea that PPS allows to access products and services in many places, was found to be a determinant of peer-based platform adoption (Lamberton and Rose 2012). We hence suggest this motive to positively affect attitude towards PPS:

H_4: *Ubiquitous availability has a positive impact on attitude towards PPS.*

Beyond economic and product-related considerations, peer-based consumption patterns can also entail an enjoyable social aspect in and by itself. For instance, consumers may seek social interaction and friendships (Albinsson and Perera 2012; Ozanne and Ballantine 2010). Loewenstein, Thompson and Bazerman (1989) argued that the social context is important for beings that live in companionship with others or in a community, rather than in isolation. This may include meeting new people, communication, collaboration, and other forms of interaction. Such social motives are based on the human drive to build and maintain social relationships (Maslow 1943). We hence propose the motive of *Social Experience* (SCX), that is, the idea that PPS enables positive social interactions. Consistent with the narrative of Botsman and Rogers (2010), Tussyadiah (2015) found collaborative consumption to be driven by social motives (e.g., to get to know, interact, and connect with others). Furthermore Barnes and Mattsson (2017), Schaffner et al. (2017), and Bucher et al. (2016) consistently found positive effects of social experience on the intention to use different kinds of P2P offers. Also Tussyadiah (2016) found that users of P2P accommodation particular value social benefits when staying in private rooms (under the same roof with the host), as compared to renting an entire house or apartment. Based on 596 quotes from P2P platform users, Bellotti et al. (2015) found social motives to be consistently claimed as relevant. We hence suggest:

H_5: *Social experience has a positive impact on attitude towards PPS.*

Now, besides such upsides, PPS also bears its intricacies. Compared to traditional modes of consumption, it is usually associated with a higher degree of uncertainty and hence a variety

of risks and circumstances (Hooshmand 2015). A product may simply not fulfill one's expectations. Also, communication/handling may fail as it involves another, error-prone human being. As PPS draws on private-to-private connection of supply and demand, both market sides are typically not well-accustomed to professional business processes. Potential concerns could refer to legality, to "what-if, in case of" problems or to some form of "stranger-danger-biases" (Belk 2014a; Gebbia 2016). Shaheen, Mallery and Kingsley (2012), for instance, considered user (non-)adoption of vehicle sharing platforms and identified insurance issues and fear of sharing as major barriers to adoption. Furthermore, Hawlitschek et al. (2016b) found a positive correlation of individual risk propensity with consuming intentions on Airbnb. As a potential barrier for PPS usage we thus propose the motive of *Process Risk Concerns* (RSK), that is, the idea that in PPS something may simply go wrong. In line with Quintal, Lee, and Soutar (2010) and Liao, Lin, and Liu (2009), we propose that:

H_6: *Process risk concerns have a negative impact on attitude towards PPS.*

Privacy is considered of utmost importance in the information age (Acquisti et al. 2015). It may be defined as the desire to determine "when, how, and to what extent information [...] is communicated to others" (Westin, 1968; p. 7). On most current sharing platforms, many of the (intended) trust-building mechanisms demand the disclosure of personal information (Teubner 2014), for example including photographs, textual self-descriptions, and links to one's profiles in online social networks. In comparison to traditional B2C transactions, consumers here need to "market themselves" in order to be granted permission to book (Karlsson et al. 2017), which may compel consumers to disclose more (or more sensitive) personal information than intended. The perception of *Privacy Concerns* (PRV), that is, the idea that PPS entails a loss of privacy, may thus inhibit PPS use (Lee et al. 2016; Xu et al. 2015). Extant research suggests that privacy concerns inhibit online activity, for instance, in instant messaging (Jiang et al. 2013), online social networks (Chen et al. 2009), electronic commerce (Dinev and Hart 2006), and the adoption of novel technologies (Kordzadeh and Warren 2017). For sharing platforms, only few contributions have specifically considered privacy at all. Frick et al. (2013), for instance, identified privacy concerns as the most important motive for sharing retention. Based on the high conceptual relevance of privacy within PPS and the substantial empirical evidence, our next hypothesis states:

H_7: *Privacy concerns have a negative impact on attitude towards PPS.*

Resource Scarcity Concerns (SCR), that is, the idea that products or services may not be available when attempting to access them through PPS, may affect attitude negatively. Lamberton and Rose (2012) identified perceived risk of product scarcity as a main deterrent of sharing service adoption (partially supported for the case of P2P bicycle sharing). Also Edbring, Lehner and Mont (2016) found fear of product unavailability to be a concern towards collaborative consumption and sharing. Compared to, for instance, maintaining one's own car, relying on a peer-provided rental car is associated with the risk of not being able to find or access such a car when needed. This may be due to a temporarily peaking demand or to the non-existence of such cars in remote areas. We hence propose:

H_8: *Resource scarcity concerns have a negative impact on attitude towards PPS.*

For several product categories, ownership is usually associated with a higher social prestige, as for example, for cars (Bardhi and Eckhardt 2012) or furniture (Edbring et al. 2016).

Traditionally, renters – in contrast to owners – "were perceived to have lower financial power and status or to be at a more transitory life stage, as access has been considered to be purely financially motivated" (Ronald, 2008; p. 83). Access was historically thus stigmatized as an inferior mode of consumption (Ronald 2008) whereas ownership signaled high social status. Edbring et al. (2016) identified the "desire to own" as an important barrier for access-based and collaborative consumption, and Moeller and Wittkowski (2010) found individual importance of possession to negatively affect a user's preference for sharing schemes. Stressing the relevance of ownership-related constructs, Akbar et al. (2016) also considered product ownership as an important variable for determining the degree to which consumers are willing to participate in commercial sharing systems. We capture this by *Prestige of Ownership* (PRS), that is, the idea that ownership is associated with social prestige, and hypothesize that:

H_9: *Prestige of ownership has a negative impact on attitude towards PPS.*

A further ownership-related aspect that may impede PPS usage is the idea of *Independence through Ownership (IND)*, that is, the idea that ownership increases independence from others. Ownership offers higher levels of freedom than PPS in many cases and hence independence from others (Frick et al. 2013). Renting may for example be associated with organizational overhead, waiting times, risk of unavailability, payment, and paperwork. We hence suggest that:

H_{10}: *Independence through ownership has a negative impact on attitude towards PPS.*

Compatibility refers to the degree to which PPS fits with a consumer's values, experiences, and needs (Shih and Fang 2004).

Consumers are increasingly aware of the potential negative environment impact of consumption in general and over-consumption in particular (Tussyadiah 2015). Product sharing strategies are stated to "have the potential to conserve resources" (Leismann et al., 2013; p. 184). Consequently, a preference for "green" consumption positively impacts attitude towards shared consumption patterns (Hamari et al. 2016). Furthermore, 76 percent of PwC's (2015) survey respondents agreed that "the sharing economy is better for the environment" (PwC, 2015; p. 29). For ecologically aware consumers, as (Tussyadiah, 2015; p. 4) put it, "collaborative consumption can be considered a manifestation of sustainable behaviour." Building on the findings of Barnes and Mattsson (2017) and Hamari et al. (2016), we thus propose *Ecological Sustainability* (ECO), that is, the idea that PPS is environmentally friendly, as a driver of PPS.

H_{11}: *Ecological sustainability has a positive impact on attitude towards PPS.*

Besides environmental considerations, other societal aspects are also considered to influence PPS usage. In one of the first empirical approaches to understand motives for sharing, Ozanne and Ballantine (2010) performed a survey-based exploration of "anti-consumption" motives of toy library members. The authors found anti-consumption attitude and sense of belonging with fellow toy library users to be consistent determinants of participation. Albinsson and Perera (2012) considered "alternative markets" which were initially created as an expression of resistance against the capitalist economic model, and were intended to spotlight issues of over-consumption. The authors' findings indicate that the entrenched notion of exchange and reciprocity is challenged on such markets. In this vein, Akbar et al. (2016) suggest a negative impact of materialistic motives on sharing participation. Also Lamberton and Rose (2012)

found that sharing can serve as an expression of anti-materialistic or anti-capitalistic views. We hence propose *Anti-Capitalism* (CAP), that is, the idea that PPS is a statement against capitalism, as a potential motive for PPS usage.

H_{12}: *Anti-capitalism has a positive impact on attitude towards PPS.*

Moreover, PPS may offer a more abstract sense of belonging to a community sharing a common ideology and worldview (Möhlmann 2015). Four out of five US adults accredit "stronger community building" as one of the sharing economy's benefits (PwC 2015). This *Sense of Belonging* (BLG), that is, the idea that one feels as part of a sharing community (Guttentag 2015), is also addressed by platforms such as Airbnb, featuring the slogans "never a stranger," "belong anywhere," and "see how Airbnb hosts create a sense of belonging around the world." Tussyadiah and Pesonen (2016) found the social appeal for community to be a consistent driver for the use of P2P accommodation for Finnish and American travelers. Möhlmann (2015) found community belonging to drive the likelihood to use car sharing (again), whereas there occurred no such effect for Airbnb. Other studies based on interview data have also identified the desire to join a community of like-minded people as a driving force behind shared consumption patterns (Albinsson and Perera 2012; Edbring et al. 2016). In line with the findings on Barnes and Mattsson (2017), we thus hypothesize that:

H_{13}: *Sense of belonging has a positive impact on attitude towards PPS.*

The sharing economy is often associated with a certain lifestyle, commonly perceived as modern, lightweight, and smart (Botsman and Rogers 2010). PPS users are typically young, well-educated, tech-affine, and live in urban rather than rural areas (PwC 2015). Among them, collaborative and minimalistic lifestyles have gained popularity and represent a novel form of conspicuous consumption and the display of independence (Teubner and Hawlitschek 2018). In that sense, "I am doing the smart thing/ Makes me feel smart" ranked among the top 3 emotional benefits of sharing (Lahti and Selosmaa 2013). We conceptualize this by the motive of *Modern Lifestyle* (LIF), that is, the idea that PPS expresses a timely and smart way of living. The notion of being up-to-date can also be transferred from using a sharing system to the specific products accessed via the system. Seeking access to novel, fashionable, or trending products and services can be understood as an accentuated self-expression, making the act of consumption part of a user's social identity (Möhlmann 2015). For consumer goods, Moeller and Wittkowski (2010) found that individual trend orientation had a positive influence on a consumer's preference for sharing, that is, non-ownership modes of consumption. Similarly, Akbar et al. (2016) found the perception of innovativeness to be positively related to general sharing intentions. We thus suggest that:

H_{14}: *Modern lifestyle has a positive impact on attitude towards PPS.*

Complexity refers to the degree to which PPS is perceived to be difficult to understand, learn, and operate. Complexity (and its antipode, ease of use) have been found to be important factors in technology adoption processes (Shih and Fang 2004).

One manifestation of this concept is *Effort Expectancy* (EFF), that is, the idea that PPS is associated with (a lot of) effort. It is standing to reason that expected effort should influence attitude towards PPS. For the context of collaborative consumption, Edbring et al. (2016) reported that many users state that it would be impractical to share resources due to distance to other people and the necessity to plan ahead. Lamberton and Rose (2012) found a

significant negative impact of the technical costs of car sharing on the likelihood to use, for example, related to the annoyance of having to familiarize with the controls of a new car every time. Furthermore, Schaffner et al. (2017) found the functional value of a P2P sharing platform (e.g., ease of use, clarity, support) to be a strong driver of usage intentions. In line with Park et al. (2007), we hence suggest that the impact of effort expectancy can be extended to PPS as an antecedent of attitude.

H_{15}: *Effort expectancy has a negative impact on attitude towards PPS.*

Perceived Behavioral Control

As a last pillar of our theoretical conception, perceived behavioral control refers to "the perceived ease or difficulty of performing [a certain] behavior and it is assumed to reflect past experience as well as anticipated impediments and obstacles" (Ajzen, 1991; p. 188). This construct is further divided into the sub-categories *facilitating conditions* and *efficacy*. Facilitating conditions (also controllability; Pavlou and Fygenson, 2006) reflect the availability of resources needed to perform a particular behavior. This may include access to time, money, or a certain technology (Shih and Fang 2004). Efficacy (or self-efficacy; Ajzen, 1991) refers to the confidence of acting successfully in a given situation (Bandura 1977).

With regard to this category, several potential aspects come to mind: the availability of technical equipment, the necessary skills to operate it (i.e., tech-savviness), and a fundamental understanding of the operating principles of PPS. We consolidate these aspects into the single category of *Familiarity* (FAM), that is, the idea that one is familiar with PPS and its peculiarities. Consumers might be reluctant to use PPS if they are not able to clearly assess transaction costs (Möhlmann 2015). On the other hand, becoming familiar with a system not only reduces uncertainties about its use and the ability to successfully access the system's utility (Alba and Hutchinson 1987), but also the *actual* operation cost, for example, due to learning effects. Prior experience with Airbnb was found to be positively related with future consumption intentions (Hawlitschek et al., 2016b). Furthermore, Tussyadiah and Pesonen (2016) found that travelers were deterred from using P2P accommodation when they did not have sufficient information regarding how the system works. While familiarity with the car sharing program Zipcar was found to increase sharing propensity (Lamberton and Rose 2012), Möhlmann (2015) confirmed this factor to be a driver both of satisfaction and usage intentions of Car2Go and Airbnb. We thus hypothesize familiarity to increase PPS users' perceived behavioral control.

H_{16}: *Familiarity on PPS has a positive impact on perceived behavioral control in PPS.*

One major aspect for the design and operation of e-commerce platforms is trust, both for traditional B2C (Gefen and Straub 2004; Hassanein and Head 2007) and – presumably even more so – for novel C2C market places (Hawlitschek et al., 2016b; Jones and Leonard, 2008; Lu et al., 2010). From a PPS user perspective, *Trust in Other Users* (TRU), that is, the idea that PPS providers are trustworthy, is crucial (Botsman, 2012; Ert et al., 2016; Hawlitschek et al., 2016a, 2016b; Mittendorf, 2017). Trust can be defined by "the belief that the other party will behave in a socially responsible manner, and, by so doing, will fulfill the trusting party's expectations without taking advantage of its vulnerabilities" (Pavlou, 2003; p. 74). It plays a key role in environments of high uncertainty and difficult liabilities such as e-commerce platforms (Gefen et al. 2008). The degree of uncertainty along different dimensions is of

particular importance in the context of P2P interactions, where Hawlitschek et al. (2016b) pointed out trust towards peers, the platform, and the product as three main categories. A lack of trust, or even the existence of distrust, can hence be a deterrent for peer-based forms of consumption (Tussyadiah 2015). Trust towards service providers is critical in forming attitudes towards leasing and renting (Catulli et al. 2013). IS research on the role of trust for providing and/or consuming intentions on P2P markets agrees that it is a major driver of the respective behavioral intention (Leonard 2012; Lu et al. 2010), which was confirmed for a variety of contexts as, for instance, P2P accommodation (Hawlitschek et al., 2016b; Mittendorf, 2016) and car/ride sharing (Mazzella et al. 2016; Mittendorf 2017; Shaheen et al. 2012). In the context of this study, trusting beliefs towards others in P2P interactions are associated with the belief that one can successfully complete a transaction without being misled, harmed, or exploited. As argued by Pavlou and Fygenson (2006), trusting beliefs are therefore both, antecedents of positive attitudes and "uncertainty absorption resource[s]" (Pavlou and Fygenson, 2006; p. 124) that increase perceived behavioral control. We hypothesize that:

$H_{17a/b}$: *Trust has a positive impact on attitude towards PPS/perceived behavioral control in PPS.*

The Antecedents of Behavioral Intention

PPS constitutes a phenomenon potentially holding a discrepancy between attitude towards usage and actual usage behavior, which calls for measuring behavior and intentions separately (Hamari et al. 2016). Attitude is regarded as a main determinant of behavior (Ajzen 1991). We hence hypothesize:

H_{18}: *Attitude has a positive influence on the behavioral intention to use PPS.*

Subjective norms refer to the perceived social pressure to perform (or not to perform) a certain behavior. As this factor is operationalized by the single construct *social influence* that is, the idea that one's social environment appreciates the use of PPS (Venkatesh et al. 2012), it is congruent with this construct and hence not measured separately (Shih and Fang 2004; Taylor and Todd 1995b). We hypothesize the effect of subjective norm on behavioral intention to be positive, which is consistent with findings for sharing in general (G.-W. Bock et al. 2005; Frick et al. 2013; Kankanhalli et al. 2005). Our next hypothesis thus states:

H_{19}: *Subjective norm has a positive impact on behavioral intention to use PPS.*

Internal and external factors may restrict a person's behavioral control over a situation (Ajzen 1985). Therefore, it is important to take into account not only subjective norms and attitudes, but also perceived behavioral control as a determinant of intention and actual behavior (Ajzen 1991). It is suggested that perceived behavioral control drives behavioral intentions, as it anticipates the successful performance – and hence the outcomes – of a certain behavior.

H_{20}: *Perceived behavioral control has a positive effect on the behavioral intention to use PPS.*

A person's intention to perform a certain behavior can be assumed to determine actual behavior, in particular for situations under volitional control (Fishbein and Ajzen 1975). According to Ajzen (1991), perceived behavioral control, along with behavioral intention, can predict behavior for two main reasons. First, the confidence of being able to successfully perform a certain behavior increases the effort expended to perform a behavior (Ajzen 1991).

Second perceived behavioral control is generally understood as a substitute measure for actual control (depending on the accuracy of the perception) (Ajzen 1991). We hence suggest that:

H_{21}: *Perceived behavioral control has a positive effect on PPS usage behavior.*

Lastly, linking intentions to actions, human behavior usually follows plans that are developed to a certain degree. We thus follow the general assumption that intentions can be seen as a predictor of the attempt to perform a behavior (Ajzen 1985).

H_{22}: *Behavioral intention has a positive effect on PPS usage behavior.*

Survey Design and Results

The empirical evaluation of our theoretical model comprises two surveys. First, we operationalized the theoretical model and validated a measurement model based on data from a first survey as reported in Hawlitschek et al. (2016). Next, we implemented a second survey based on the validated measurement model to test our proposed hypotheses on the relations between constructs. The sample of Survey 2 comprised 745 millennials. In line with Akbar, Mai and Hoffmann (2016) and a recent study published by the European Commission (Hausemer et al. 2017), we argue that PPS is particularly attractive to young users (PwC 2015) that is to millennials (Godelnik 2017; Ranzini et al. 2017). Therefore, we recruited participants from the student pool at the Karlsruhe Institute of Technology (Germany) and offered incentives in form of a prize draw of 5 ×50 EUR and 25 × 20 EUR. Participants were assured that their answers would only be reported in aggregate and remain anonymous. We invited a total of 2,247 persons to the survey via email and sent a reminder to non-responders after three days. The survey was accessible for one week. Altogether, 938 participants started the survey and 776 completed it. With regard to the length of the survey, we consider response rate (41.7%) and completion rate (82.7%) as high. To ensure data quality, we excluded subjects who did not pass understanding and attention questions or stated that they did not answer honestly. This resulted in the final set of 745 observations with an average completion time of 14.6 minutes (median 13.0 minutes). In total, 218 of the 745 participants were female (29.3%), 527 were male. Age ranged from 17 to 35 years with mean and median 23 years. 125 participants (16.8%) lived on their own, 508 (68.2%) in households with two to four persons, 112 (15%) in larger households. We assessed a potential non-response bias by comparing the demographics of early and late respondents (Armstrong and Overton 1977) without identifying significant differences. Thus, non-response bias does not seem to be a major issue.

Results

We used PLS-SEM and the software SmartPLS 3 to evaluate our model (Ringle et al. 2015). PLS-SEM was preferred over a covariance-based approach (CB-SEM) due to the fact that our model comprises a formative scale (Gefen et al. 2011), for the modest distributional requirements of PLS-SEM, and the independence of a highly developed theory base (Barclay et al. 1995). Before evaluating the structural model, we first establish construct reliability and validity, following the guidelines by Hair et al. (2016) as displayed in the Appendix (Supplementary Material Chapter 1).

We dropped item EFF3 of the effort expectancy construct due to a factor loading below .70 and a substantial increase in average variance extracted (AVE) and composite reliability after deletion. Recent studies suggest that fit measures like the Standardized Root Mean Square

Residual (SRMR) can identify a range of model misspecifications (Dijkstra and Henseler 2015; Henseler et al. 2014). For our model, SRMR is 0.041 for the saturated model and 0.045 for the estimated model. Both values are well below common thresholds of 0.10 or 0.08 (Henseler et al. 2014, 2016), suggesting a good model fit. Note, however, that unlike in CB-SEM, in PLS-SEM it is not (yet) common to study global model fit measures.

Table 2 reports the results of estimating the PLS path coefficients of our research model with data from Survey 2 (5,000 samples, no sign changes, complete bias-corrected and accelerated bootstrapping, two-tailed hypotheses testing). All path coefficients are summarized in Table 2.

		Hypoth.	Estimate	SD.		Effect size f^2	Classification
DV: ATT							
Relative Adv./ Disadvantage	FIN	H_1 (+)	.231	.042	***	.096	small
	UNI	H_2 (+)	-.040	.029		.003	
	VAR	H_3 (+)	.112	.036	**	.019	small
	UBI	H_4 (+)	.064	.028	*	.007	
	SCX	H_5 (+)	.076	.035	*	.010	
	RSK	H_6 (–)	-.069	.030	*	.010	small
	PRV	H_7 (–)	-.043	.028		.004	
	SCR	H_8 (–)	.026	.024		.002	
	PRS	H_9 (–)	.007	.027		.000	
	IND	H_{10} (–)	-.069	.027	**	.011	
Compatibility	ECO	H_{11} (+)	.129	.035	***	.027	small
	CAP	H_{12} (+)	.048	.025		.005	
	BLG	H_{13} (+)	.090	.033	**	.015	
	LIF	H_{14} (+)	.163	.036	***	.044	small
Complexity	EFF	H_{15} (–)	-.139	.030	***	.038	small
	TRU	H_{17a} (+)	.129	.029	***	.028	small
	Adj. R^2		.689	.025	***		moderate
DV: PBC							
Fac. Cond. & Efficacy	FAM	H_{16} (+)	.524	.028	***	.416	large
	TRU	H_{17b} (+)	.254	.032	***	.096	small
	Adj. R^2		.440	.030	***		weak
DV: INT							
	ATT	H_{18} (+)	.581	.032	***	.569	large
	INF	H_{19} (+)	.234	.029	***	.114	small
	PBC	H_{20} (+)	.119	.028	***	.026	small
	Adj. R^2		.601	.029	***		moderate
DV: USE							
	INT	H_{22} (+)	.471	.033	***	.233	medium
	PBC	H_{21} (+)	.030	.038		.001	
	Adj. R^2		.235	.030	***		

*** p<.001; ** p<.01: * p<.05

TABLE 2: STRUCTURAL EQUATION MODEL ESTIMATES
(DV = DEPENDENT VARIABLE; SD = STANDARD DEVIATION)

PPS usage behavior is significantly influenced by the behavioral intention to use PPS with medium effect size. The hypothesized influence of perceived behavioral control on actual PPS usage is not supported by our data. This might speak in favor of the fact that PPS usage, in contrast to Ajzen's (1991) original example of learning to ski, is a behavior under one's volitional control. Hence, the confidence of being able to successfully use PPS may not influence the effort expended to use PPS. Therefore, in the context of our study, perceived behavioral control contributes well to the understanding of the behavioral intention to use PPS, while it has no direct predictive power for actual PPS usage. The explanation of variance for PPS usage is rather weak (R^2=.235). In turn, the model explains the variance in behavioral intention to a moderate degree (R^2=.601), which is due to significant effects of attitude (large effect size), subjective norm (small effect size), and perceived behavioral control (small effect size). Variance in perceived behavioral control is explained moderately (R^2=.440), by the

effects of familiarity and trust in other users (large and small effect sizes, respectively). Finally, the R^2 of attitude is moderate (R^2=.689). For attitude, 11 out of 16 hypothesized effects are significant. Given the large number of hypothesized antecedents and the simultaneous test, it is not surprising that effect sizes are rather small. Only financial benefits have a medium effect size. In the full statistical model, any path estimate significantly different from zero points into the hypothesized direction. In summary, as shown in Table 2, twelve out of seventeen candidate motives for PPS were confirmed and the model possesses explanatory power for the behavioral intention to use PPS and actual PPS usage behavior.

An analysis of the total effects (see Table 3) reveals the predominant roles of financial benefits, trust in other users, and modern lifestyle as the three strongest drivers of behavioral intentions. Furthermore, effort expectancy, independence through ownership, and process risk concerns constitute significant deterrents of behavioral intentions.

	FIN	TRU	LIF	EFF	ECO	VAR	FAM	BLG	SCX	IND	RSK	UBI	CAP	PRV	UNI	SCR	PRS
Total effect	.134	.105	.095	-.081	.075	.065	.062	.053	.044	-.040	-.040	.037	.028	-.025	-.023	.015	.004
St. Dev.	.026	.019	.022	.018	.020	.021	.016	.020	.020	.016	.017	.016	.015	.016	.017	.014	.016
Sign.	***	***	***	***	***	**	***	**	*	**	*	*					

*** p<.001; ** p<.01: * p<.05

TABLE 3: TOTAL EFFECT ON BEHAVIORAL INTENTION

(IN DESCENDING ORDER OF ABSOLUTE EFFECT)

Discussion

In summary this paper makes two core contributions. First, we developed a validated survey-based measurement model with satisfactory psychometric properties. This eases the study of PPS users for researchers and practitioners alike. Second, we establish a comprehensive model on consumer motives for taking part in (or evading) PPS services, shedding light on the social side of platform mediated PPS as a socio-technical system.

Overall, we identified twelve out of seventeen consumer motives as significant, including financial benefits, trust in other users, and modern lifestyle as key drivers as well as effort expectancy, independence through ownership, and process risk concerns as key impediments of PPS usage intentions.

Theoretical Implications

The sharing economy is an inherently complex and multi-faceted phenomenon. By reviewing and combining results from multiple disciplines, we have collated the most comprehensive theoretical model of consumer's motives for PPS usage thus far. Extending prior work, our empirical analysis sheds light on the absolute and relative importance of a large set of consumer motives within the context of PPS. Overall, the data suggest that twelve of the seventeen hypothesized motives play a part in the formation of behavioral intention and, hence, actual PPS usage. Contrasting the empirical results with existing literature (see Table 1) yields the following picture: Some of the motives that turn out as significant drivers of behavior have been frequently discussed or analyzed in related literature and, thus, are hardly

surprising (e.g., financial benefits, social experience, ecological sustainability, sense of belonging, and familiarity). However, not each motive commonly discussed and even identified as significant by other authors turns out as significant when studied in the context of a more comprehensive set of motives. Noteworthy examples are prestige of ownership and anti-capitalism. On the contrary, product variety, ubiquitous availability, process risk concerns, independence through ownership, and trust in other users have thus far experienced much less attention. Our analysis points out, however, that they indeed play a significant and substantial role. In summary, our results suggest that it is crucial to jointly examine potential motives for PPS usage in a comprehensive model to be able to judge their absolute and relative importance.

A consideration of the total effects of consumer motives on PPS usage intentions in our model facilitates a holistic view on the relative importance of significant motives. With the work at hand, we can thus provide justified directions for future research taking into account the relative importance of customer motives for PPS adoption. According to our results, we therefore suggest financial benefits, trust, modern lifestyle, effort expectancy, and ecological sustainability as the five most important starting points for future research.

Practical Implications

Customers represent a core pillar of every business model (Osterwalder and Pigneur 2010). This is particularly true for PPS platforms, where private consumers and providers interact and thereby facilitate revenue opportunities for platform operators (Hausemer et al. 2017). With our study, we provide insights and measurement tools for the consumer side of PPS markets that can support platform operators in designing and implementing flourishing online platforms. Our findings are particularly relevant for start-ups in the realm of the sharing economy, seeking to better understand their potential customer base but also for established companies trying to extend their business model. Our study can contribute to business model generation and innovation in terms of a better understanding of customer preferences, customer segments and target customers (Gassmann et al. 2013; Osterwalder and Pigneur 2010). While our results base on the rather narrow segment of millennials, it may well serve as a starting point for other customer groups and types.

Obviously, several motives can be directly addressed by corresponding platform design and IT (e.g., trust in other users), whereas others are less likely to be effectively addressed by specific IT artifacts (e.g., modern lifestyle). In the following, we focus on established motives in the IS community. We briefly sketch out how platform operators may address these motives technically, that is, linking our results to a specific operationalization.

Trust towards other users is considered as one, if not *the* most important prerequisite and driving factor for the long-term success of sharing platforms (Botsman 2013; Gebbia 2016; Hawlitschek, Teubner, and Weinhardt 2016). The results of the present study support this claim. Currently employed mechanisms to establish trust in practice include meaningful user profiles and pictures, mutual ratings and text reviews, identity verification, secure payment systems, and back-up insurances (Hausemer et al. 2017; Mazzella et al. 2016; Teubner 2014). Especially since most of these concepts are well-established within the scientific literature (Bente et al. 2012; Bolton et al. 2013; Ma and Agarwal 2007; Pavlou and Gefen 2004; Weber 2014), platform operators should diligently work to maintain and develop fertile trust-building mechanisms. Due to the unique character of PPS transactions (Hawlitschek, Teubner, Adam,

et al. 2016), platform operators will, however, benefit from more detailed knowledge about the antecedents of trust in the sharing economy (ter Huurne et al. 2017).

Effort expectancy has emerged as a strong barrier of PPS attitude and usage intentions. As indicated by Zhou et al. (2010), technology characteristics such as ubiquitous availability, real-time access, and security can help to lower users' level of effort expectancy. Other significant antecedents of effort expectancy in the context of collaboration technology use are technology experience, social presence, immediacy, concurrency, familiarity with others and computer self-efficacy (Brown et al. 2010). Furthermore, convenience and assistance were identified as effective means of effort expectancy reduction (Chan et al. 2010). Although it is debatable whether an investment in the reduction of effort expectancy would be very effective, since its effect on usage intentions may change over time (Nicolaou and McKnight 2011), we suggest to address the above-mentioned antecedents by platform design. For example, in order to make the process of signing-up, browsing, and booking more convenient, PPS platform operators may apply one-click solutions and embed third-party accounts (e.g., the Facebook connect feature (Krasnova et al. 2014)). User assistance may be facilitated through effective customer service support and real-time, on-demand help (Chan et al. 2010).

One of PPS platforms' core challenges is to mitigate process risk concerns. In practice, certified user or product photographs may help to reduce both product uncertainty (Dimoka, Hong, et al. 2012) and the risk to get into the clutches of a fraud offer. Fiduciary payment processes conducted via the platform can reduce payment risks. Customer support, for instance, performed by agents or chat bots on the website can help users to reduce uncertainty. From a more general IS point of view, platform operators should focus on risk-aware business process management in order to be able to reason about and manage risks in their business processes (Suriadi and Winkelmann 2014).

Limitations and Future Research

Certainly, studying user motives has its limits, in particular with regard to inferences on actual behavior. We are well aware of the fact that, even though user intentions are well, the correlation with *actual* user behavior is weak. Further concerns may relate to our sample population. Like many other studies, our research draws on a student-based subject pool, implying limitations with regard to the ranges of age and education. For the purpose of studying PPS, this limitation may not be too stark in view of the fact that sharing economy users are typically considered as young and well-educated (Akbar et al. 2016; Hausemer et al. 2017; PwC 2015). Nevertheless, future work may well consider broader user samples and include individual differences as moderators. It will also be informative to see whether the relative importance of factors will change over time as the sharing economy matures. The practical implications discussed in Section 5.2 derive from our identification of relevant motives for PPS usage intentions, along with deliberate reasoning and analogies to IS literature. Future work should extend the list of potential IT artifacts, test their effectiveness, and determine appropriate designs and specific implementations in the context of the sharing economy and PPS in particular.

Conclusion

The sharing economy is a growing and fascinating phenomenon. PPS represents an important sub-category within, including services such as accommodation sharing (e.g., Airbnb) or ride

sharing (e.g., BlaBlaCar). As we have unrolled in this paper, the palette of effective user motives for taking part or evading PPS is truly diverse. While previous work has shed light on several of these motives in rather isolated setups, our study provides a comprehensive overview of potential user motives that facilitates the statistical evaluation of their relative importance. The proponents of the sharing economy present narratives of creating more efficient, more social, more personal, or more sustainable ways of doing commerce. Its critics put forward aspects of precarious work, bypassed regulation, tax evasion, or exploitation. While the economic impacts of PPS and its societal side effects are beyond the scope of this paper, it is essential to understand the true drivers and barriers of user adoption – not only to draw conclusions for appropriate IS design, but also to contribute to the ongoing academic and public debate on the sharing economy phenomenon.

PART II: TRUST IN THE SHARING ECONOMY

Chapter 3: Measuring Trust

After having identified trust as one of the strongest antecedents of consumer intentions for sharing economy participation, in this chapter I will present two studies, which further elaborate on the multidimensional and complex concept of trust. The first study introduces a survey-based approach for measuring trust in the sharing economy that captures trusting beliefs and intentions, while the second study proposes an experimental framework that facilitates the measurement of trust trough actual trust-related behavior. A pilot study is conducted to demonstrate the practical suitability of the framework for sharing economy research.

Trusting Beliefs: A Survey-based Approach

Florian Hawlitschek, Timm Teubner, Christof Weinhardt[17]

Introduction

"Sharing, whether with our parents, children, siblings, life partners, friends, coworkers, or neighbors, goes hand in hand with trust and bonding." (Belk 2010, p. 717)

While sharing is almost as old as mankind (Sahlins 1972) the sharing economy, intermediated by Internet and mobile technology, is a phenomenon of the 21st century. In fact, driven by the facilitating role of P2P platforms and IS, its rise is changing the consumption behavior of millions of people around the globe. While C2C platforms such as Airbnb, eBay, or BlaBlaCar have gained considerable market shares in the western world, the incumbents of the respective industries are still atop. The picture differs dramatically in China, where C2C transactions accounted for 80% of the total online sales volume in 2014 (65% in 2013; Baker et al. 2014; Yoon and Occeña 2015).

Large sharing economy platforms such as Airbnb exceed their figures every year. Research, however, is struggling to keep up with this rapid development. Even the term sharing economy itself still lacks a widely accepted and precise definition. In the IS community it is primarily used as an umbrella term for phenomena such as Collaborative Consumption (Botsman and Rogers 2010), Commercial Sharing Systems (Lamberton and Rose 2012), or Access-Based Consumption (Bardhi and Eckhardt 2012). In line with (Botsman 2013), we see the core idea of the sharing economy in making private and underutilized resources usable for others against (non-) monetary benefits[18].

[17] This study was published in the *Swiss Journal of Business Research and Practice* with the title "Trust in the Sharing Economy" (Hawlitschek, Teubner, and Weinhardt 2016)

[18] Thereby the sharing economy, from our point of view, particularly comprises activities that would be considered as 'pseudo-sharing' by *Belk* (2014).

Sharing is closely related to trust (Belk 2010), and so is the sharing economy. In the context of the sharing economy, trust is assumed to play a crucial role and was even referred to as its currency (Botsman and Rogers 2010). Large international business consultancies also agree on that fact: "To share is to trust. That, in a nutshell, is the fundamental principle […]." stated Roland Berger (in the Think Act Shared Mobility, July 2014). One year later PwC stated that "[…] convenience and cost-savings are beacons, but what ultimately keeps this economy spinning – and growing – is trust." (in the Consumer Intelligence Series: The Sharing Economy, April 2015). Hawlitschek, Teubner, and Gimpel (2016) consider trust as one of 24 relevant drivers and impediments for the participation in P2P rental and Voeth et al. (2015) see the establishment of trust as a major challenge for suppliers in the context of the sharing economy. After several years of fundamental research regarding trust in business-to-consumer (B2C) e-commerce (e.g., Gefen 2000; Gefen and Straub 2004; McKnight and Chervany 2002), an increasing number of scholars has started to explore the role of trust in C2C e-commerce (e.g., Jones and Leonard 2008; Leonard 2012; Lu et al. 2010; Yoon and Occeña 2015). It is one, if not the important driving factor for the long term success of C2C platforms (Strader and Ramaswami 2002). Platform operators have hence established a plethora of design patterns and mechanisms to establish and maintain trust among their users, including mutual review and rating schemes, verification mechanisms, or meaningful user profiles (Teubner 2014). However, trust is a multifaceted and complex construct – often hard to pin down (Keen et al. 1999). While in "traditional" (B2C) e-commerce it can be understood as a willingness to depend on an online vendor from an IS perspective (Gefen and Straub 2004), the picture is more complex for C2C markets. Sharing economy users engage in interactions with multiple parties, usually the platform operator and another private individual. Consequently both, the vendor's and customer's role are taken by private individuals, sharing a ride, renting out a car, apartment, or other equipment – or seeking to rent it. The platform, however, acts as a broker and mediator between both market sides, and may also appear trustworthy or not. In this context trust may be affected by privacy concerns (Joinson et al. 2010) or website quality (Gregg and Walczak 2010; Yoon and Occeña 2015). Moreover, even the product (and related experience) itself (think for example of a privately rented apartment or car) may be subject to trust concerns (Gefen et al. 2008), particularly since typically no official quality standards, sovereign regulation, or inspections are in place for these rather novel markets (Avital et al. 2015).

This paper thus outlines a conceptual research model for the role of trust in C2C markets, which differentiates between two market perspectives (consumer and supplier), as well as three variants, or targets, of trust: trust in peer, platform, and product (3P). We develop a questionnaire for assessing the role of the different dimensions of trust in this context. Following the research agenda of Gefen et al. (2008), we thereby contribute to theory on trust in online environments by shedding light on the variants and dimensionality of trust in the sharing economy.

The remainder of this paper is structured as follows. Section 2 provides the theoretical background for trust in C2C markets, building on IS theories of trust in "traditional" (B2C) e-commerce context. We then present our model and derive its central hypotheses. In Section 3, we operationalize our research model by means of a questionnaire and present the results of a validation study comprising 91 subjects. We summarize and discuss our findings in Section 4.

Furthermore, in Section 5, we illustrate limitations and paths for future work. Section 6 presents the conclusions we draw from this work.

Theoretical Background & Research Model

Measuring Trust in E-Commerce

Linking social presence to consumer trust, Gefen and Straub (2004) made a significant contribution in the research area of trust in B2C e-commerce that was frequently cited and used as a foundation for succeeding research models and approaches. Gefen and Straub (2004)'s model focusses on human behavior in the context of "traditional" (B2C) e-commerce, i.e., an Internet user facing the website of an e-vendor. Trust in this context is introduced as a multidimensional construct which differentiates between the four dimensions ability, integrity, benevolence, and predictability. However, caused by the relationship of the parties concerned in a transaction, further aspects are focused on in studies dealing with trust in C2C e-commerce. Lu et al. (2010) analyzed how trust affects purchase intentions in the context of C2C buying in virtual communities. They found that especially the community members' trustworthiness influenced purchase intentions. For this purpose, their research model differentiates between the constructs trust in members and trust in website/vendor of the virtual community. Both constructs were separated into three dimensions: ability, integrity, and benevolence. For the construct trust in members, integrity and benevolence were merged into a single dimension. Jones and Leonard (2008) in contrast considered C2C trust as a single, one-dimensional construct and hypothesized internal (natural propensity to trust, perception of website quality) and external (other's trust, third party recognition) as influencing factors within C2C e-commerce settings. In a more recent study, Leonard (2012) distinguished between the two one-dimensional constructs trust in seller and trust in buyer which, along with risk of both, seller and buyer are hypothesized to influence selling or buying attitudes. Finally, Yoon and Occeña (2015) extended the model of Jones and Leonard (2008), adding age and gender as control variables.

However, as depicted in Table 4, none of the above mentioned models covers the three variants as well as the two distinct perspectives that appear as relevant in the context of transaction within the sharing economy. Hence, we suggest a comprehensive conceptual research model of trust for C2C sharing economy platforms.

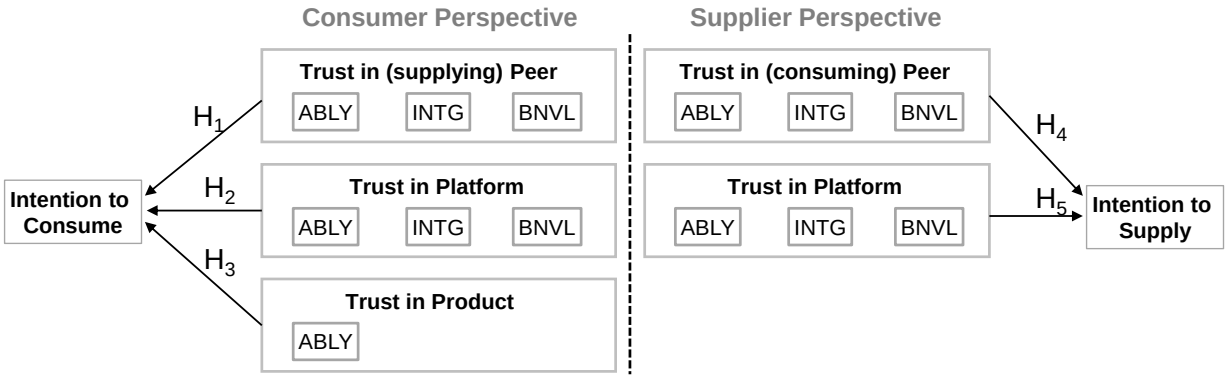
	VARIANTS/TARGETS OF TRUST			PERSPECTIVES	
	peer	*platform*	*product*	consumer	supplier
Gefen/Straub (2004)		**x**		**x**	
Jones/Leonard (2008)	**x**			**x***	**x***
Lu et al. (2010)	**x**	**x**		**x***	**x***
Leonard (2012)	**x**			**x**	**x**
Yoon/Occeña (2015)	**x**			**x***	**x***
This work	**x**	**x**	**x**	**x**	**x**

(*joint perspective)

TABLE 4: LITERATURE ON VARIANTS AND PERSPECTIVES FOR TRUST IN THE SHARING ECONOMY

Towards a Research Model of Trust for C2C Sharing Economy Platforms

Based on the above, we propose the conceptual research model as depicted in Figure 7. Our key objective is to describe how trust influences users' intentions to transact on sharing economy platforms. To this end, we differentiate the perspectives of consumers and suppliers. Moreover, the model distinguishes between three different variants of trust – the 3P: towards peer, platform, and product, represented by the dimensions ability, integrity, and benevolence, respectively. These three dimensions were already covered in the work of Gefen and Straub (2004) and are well established for measuring trust in online environments (Gefen et al. 2008). Within the scope of this work, we present our conceptual research model as a simplified basis for future research. Further aspects such as trust transfer and antecedents of trust (Lu et al. 2010) should also be addressed in future work.



ABLY: *ability*; INTG: *integrity*; BNVL: *benevolence*

FIGURE 7: RESEARCH MODEL FOR TRUST IN C2C MARKETS

Consumer Perspective

Trust in (supplying) peer describes whether the supplier has the skills and competences to execute his part of the transaction, and whether he is considered as a transaction partner of high integrity and benevolence (Pavlou and Fygenson 2006). The constructs integrity ("the supplier keeps his word") and benevolence ("the supplier is interested in satisfying the customer") are closely related as a benevolent supplier will most likely also exhibit high levels of integrity and vice versa. Several scholars have thus employed joint constructs to assess the general notion, e.g., in the context of virtual communities (Lu et al. 2010; Ridings et al. 2002). The general notions of integrity and benevolence are particularly important in C2C markets – compared to B2C – for at least two interacting reasons. First, the supplying peer will most likely not appear as a legal entity but as a private person. In many cases, regulative buyer protection does not yet exist or is still limited or discussed for private-to-private sharing economy transactions (Koopman et al. 2014). Second, customers in today's C2C market interactions are often put into a particular vulnerable position, where – e.g. in the context of apartment and ride sharing – they strongly depend on the desirable behavior and task fulfillment of the supplying peer: Who wants to end up in a foreign city late at night,

discovering that the booked and paid apartment simply does not exist or that the driver does not show up? Another important aspect is ability. Given that a transaction partner is well-meaning, it could still be that he or she is simply lacking the skills to properly (or safely) complete the task – think for example of amateur or hazardous UBER drivers who might unintentionally endanger a customer's safety (see Feeney 2015). This speaks in favor of the conjecture that trust (based on ability, integrity, and benevolence) towards the supplying peer positively affects a user's intention to consume in a C2C market. Furthermore, the intention to complete a transaction was found to depend on trust in the offering peer (Leonard 2012; Lu et al. 2010). We hence hypothesize that:

H1: Trust in the (supplying) peer positively affects intention to consume.

According to Gefen (2002), trust in platform is also based on beliefs about ability, integrity, and benevolence of a website or vendor. In contrast to B2C the platform operator in C2C markets primarily acts as a mediator between the peers. Ability here could refer to whether the platform successfully finds and connects transaction partners, i.e., its adoption. Secure and reliable data handling is another important aspect. Perceptions of a platform's integrity and benevolence, in turn, could be linked to how much it charges its users, the design of user support, excessive email spamming, third-party access to user data, and its general reputation, for instance, for being a "data kraken" or exploiting suppliers. To find a suitable offer, a user typically creates an account (providing private data such as name, credit card information, email, etc.). Privacy calculus theory states the privacy risk involved with this behavior is weighted against its benefits, where trusting beliefs towards the platform operator are positively associated with intention to disclose (Dinev and Hart 2006; Krasnova et al. 2012). Moreover, Gefen (2002) found that trust in platform's ability positively affects window-shopping intentions of consumers and that trust in the integrity as well as benevolence affects the purchase intention. We hence suggest that:

H2: Trust in the platform positively affects intention to consume.

Trust in product describes how the product itself is perceived as reliable by the (potential) consumer. Comer et al. (1999) defined "product trust [as] the belief that the product/ service will fulfill its functions as understood by the buyer" (p. 62). We transfer this notion to C2C sharing economy platforms where consumers have to decide whether to trust in the often virtually presented product characteristics. A rented car needs to work for obvious reasons of convenience and safety, a rented or purchased good is expected to fulfill its purpose, and also a rented apartment needs to be functional in terms of features and experience. Based on the argumentation of Gefen et al. (2008), we argue that trust related to the product (especially to experience products) has a special role in the context of C2C sharing economy platforms. Since the product is an inanimate object, it does not have a will or intention. Its functionality and quality are covered by the trust dimension of ability. Our third hypothesis hence states:

H3: Trust in the product positively affects intention to consume.

Supplier Perspective

As most C2C platforms work on the basis of mutual agreement to trigger a transaction, also the supplier's trust in the consuming peer is of importance. A supplier's concern about damage to a certain resource due to hidden actions by a consumer is a key impediment to sharing (Weber 2014). This becomes particularly evident for P2P rental services as the supplier cedes

her car, apartment, or other resource (the platform Rover.com even connects dog owners and sitters) to another person for use and has no effective control over it for the agreed period of time. Consequently, entrusting personal belongings – one's home, car, let alone a pet – to an unknown stranger requires that the supplier trusts in the ability of the consumer: On the one hand, being convinced by the skills and on the other hand by the knowledge the consumer owns (Lu et al. 2010). Nevertheless, without the supplier trust in the in the integrity and benevolence of the consuming peer, an agreement is hard to achieve. Against the background of the two constructs integrity ("the consumer keeps his word") and benevolence ("the consumer keeps the suppliers interests in mind") this means that the supplier would need to be convinced that her possessions are neither used for purposes that were not agreed nor over- or abused. Think for example of renting out your car at Tamyca.de (a German platform for P2P car rental) to someone who owns a driver's license – which technically means the person is able to drive a car – but conveys the impression that he or she does neither care about the exact time of returning, nor about the condition of the car. Beyond these considerations, empirical evidence supports our claim. Teubner et al. (2014) found, based on different types of user representation in an experiment, that subjects trusted their socially present peers more than their anonymous ones, and that trust translated into sharing behavior. We therefore suggest:

H4: Trust in the (consuming) peer positively affects intention to provide.

In accordance with the train of thought leading to the three dimensions of trust from the consumer perspective (c.f. Dinev and Hart 2006; Gefen 2002; Krasnova et al. 2012), supplier's Trust in the platform also rests upon the constructs ability, integrity, and benevolence. The platform's ability in this context can be understood as a competence or qualification for seamless communication and service operation, i.e. the successful mediation between peers. Suppliers might for example expect an adequate pre-selection of requests by the platform operator as well as a functional and easy-to-use booking, payment, and reputation system. Aspects, such as reliability (especially regarding data privacy and potential claims) or safeguarding of supplier interests (e.g. legal certainty and payments) are reflected in the integrity and benevolence dimension. From a supplier's perspective mechanisms to absorb risks of resource damage, exemplarily by a standardized insurance coverage (Weber 2014) and transparent profit-sharing mechanisms might increase the trust in a certain platform. Furthermore, communication protocols facilitating a supplier's data security so that privacy is not threatened unduly also appear beneficial in terms of promoting trust towards a platform. Extending the argumentation of Lu et al. (2010), we suggest that trust in platform also plays a role for the supplier's intention to commit a transaction:

H5: Trust in the platform positively affects intention to provide.

As the offered product belongs to the supplying peer, its abilities should be known by the supplier. Therefore, a trust dimension from the supplier's point of view is not considered as relevant.

Methodology: Survey Design

In order to evaluate our model empirically, we conducted an online survey, describing an accommodation sharing scenario, guided by the example of Airbnb. In doing so, we followed widely accepted methodological guidelines and frameworks (Churchil Jr. 1979; DeVellis 2016; Hinkin 1998; MacKenzie et al. 2011).

First, a review of related work lead to the identification of variants (peer, platform, product) and dimensions (ability, integrity, benevolence) of trust, as outlined in Section 2. Based on this, we developed a conceptual framework comprising both market sides: supplier and consumer. We now develop a measurement model based on closed-ended items that represent the dimensions and assess their content validity based on data collected in an online survey. We then refine the conceptualization and purify the measurement model by means of exploratory factor analysis. With these steps, we cover the scale development phases conceptualization, development of measures, model specification, as well as scale evaluation and refinement suggested by MacKenzie et al. (2011).

Measurement Model and Survey

Our measurement is based on survey items using 7-point Likert scales (6-point Likert scales for intention to consume and supply). Whenever possible, we used or adapted existing scales. If no adequate template was available, specific items were generated. In total, we used three items for each of the formulated constructs. Wording of items followed standard guidelines (Harrison and McLaughlin 1993; Tourangeau et al. 2000). We performed a content validity assessment with three judges who were otherwise not involved in the research and revised items where necessary.

The questionnaires were presented for consumer and supplier perspective in separate blocks, whereas every participant responded from both perspectives. The sequence of these blocks and of the items within each block was varied randomly. At the beginning, a short introduction explained the scope of the survey. The questionnaire included additional constructs assessing the users' intentions to provide or book an apartment via Airbnb. We furthermore queried the following control variables: gender, age, risk propensity (Dohmen et al. 2011), as well as prior Airbnb usage. Additionally, we added checks to ensure participants in fact read and understood the questions and answered honestly (e.g., "please state if you read the introduction carefully"). Participants were recruited using a pool of voluntary survey participants at the Karlsruhe Institute of Technology. Participation was incentivized by a prize draw of 1 x 50€, 2 x 20€, and 3 x 10€ among all participants completing the survey. To take part in this lottery, participants could enter their email address at the end of the survey on a voluntary basis and were informed that the address would not be matched to their answers in the questionnaire.

We invited a total of 500 participants via email and sent a reminder to non-responders after three days. The survey was accessible for one week. Altogether, 122 participants started the survey, of which 99 completed it. To ensure data quality, we excluded subjects who did not pass understanding questions or stated that they did not answer honestly. Altogether, 91 out of 99 observations were retained, whereas 24 of the corresponding participants are female (26%) and 67 are male. Age ranges from 17 to 31 with mean 22.92 and median 23 years.

Exploratory Factor Analysis

We provide lists of all constructs and items in Table 13, Table 14, Table 15, and Table 16 in the Appendix (Supplementary Material Chapter 2). Moreover, these tables indicate the used references and Cronbach's alphas for each construct, as well as descriptive statistics (mean and standard deviation) for each item. Except for the construct "Trust in providing peer's benevolence" (where Cronbach's alpha is equal to 0.697), the conventional benchmark of 0.7

is exceeded for all constructs, which indicates a high level of consistency (Nunnally and Bernstein 1994).

We performed an EFA with oblique rotation (oblimin) for each of the perspectives (supplier and consumer). The decision on how many factors to retain was based on the Minimum-Average-Partial-Test (MAP test, Hayton et al. 2004). We therefore decided to extract four factors for both perspectives. Items were dropped when they had a major loading <0.4, communality <0.4, a cross-loading ≥0.4, or when they lacked content fit with the factors. The results of the exploratory factor analysis (EFA) for both perspectives are summarized in Table 17 and Table 18 in the Appendix (Supplementary Material Chapter 2).

Consumer Perspective: With regard to the consumer perspective, we see three distinct trust factors emerging, and one factor capturing the consumer's intention to consume on sharing economy platforms. Each factor captures one of our hypothesized concepts of peer, platform, and product. The factor for peer comprises all dimensions ability, integrity, and benevolence, whereas the factor for platform draws on benevolence only. Lastly, trust towards product (based on ability) captures a consumer's willingness to technically rely on the shared resource.

Supplier Perspective: We find that, also from the supplier perspective, there emerge three distinct trust factors and one factor capturing the supplier's intention to supply on sharing economy platforms. The first factor captures trust towards the platform and comprises all dimensions ability, integrity, and benevolence. The second and third factors refer to the peer, whereas now, two distinct factors for benevolence and ability are extracted.

Following the argumentation of Lu et al. (2010), we interpret the loadings of seven items from the consumer perspective, and eight items from the supplier perspective on a respective single factor as reasonable. In both cases all items measure the corresponding sub-dimensions of trust in peer or platform.

Reconsideration of Hypotheses

As a first step towards understanding which variants and dimensions of trust drive the consumers' and suppliers' intention to use sharing economy platforms such as Airbnb, we apply multivariate linear regression models with intention to consume (intention to supply, respectively) as dependent, and the emerged trust factors as independent variables. Moreover, we control for gender (dummy coded as 0="male" and 1="female"), age, risk propensity (scale from 0="highly risk-averse" to 10="highly risk-seeking"), and prior Airbnb experience (coded as 0="not knowing Airbnb," 1="knowing but not using," and 2="using"). Note that, from a methodological point of view, subsequent analyses should in fact be based on independently collected data and require more sophisticated approaches (a refinement of our measurement model, confirmatory factor analysis and eventually a detailed analysis based on structural equation modelling will be subject to future research). Our preliminary analysis and results must hence be seen in light of this limitation and serve only to indicate the general suitability of our 3P approach. Table 5 comprises the results of the multivariate linear regression.

Dependent Variable: Intention to Consume			*Dependent Variable: Intention to Supply*		
	S.E.	*Coef.^{sig}*		*S.E.*	*Coef.^{sig}*
(Intercept)	.6861	-1.4390*	(Intercept)	.8437	-1.4224+
Platform (BNVL)	.0821	.2150*	Platform (ABLY, INTG, BNVL)	.1145	.2418*
Peer (ABLY, INTG, BNVL)	.1009	.2043*	Peer (ABLY)	.1212	.2711*
Product (ABLY)	.0711	.1663*	Peer (BNVL)	.1228	.0215
Age	.0265	.0127	Age	.0326	.0389
Dummy: female	.1840	.3076+	Dummy: female	.2285	.1062
Risk propensity	.0399	.0833*	Risk propensity	.0500	.0357
Experience	.1115	.4822***	Experience	.1313	.2457+
$R^2_{adj.}$	*.452*		$R^2_{adj.}$	*.214*	

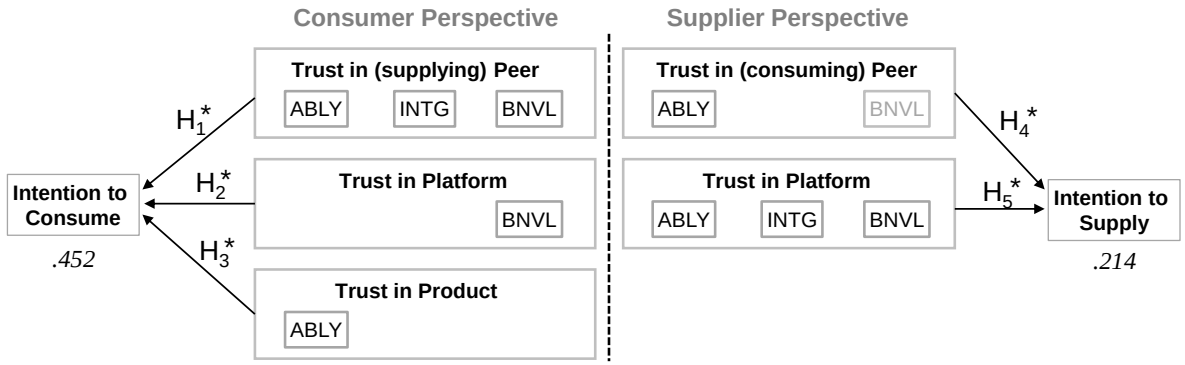
(***p<.001, **p<.01, *p<.05, +p<.1)

Platform (BNVL): trust in *platform benevolence*; Peer (ABLY, INTG, BNVL): trust in *peer ability*, *integrity*, *benevolence*; Product (ABLY): trust in *product ability*; Platform (ABLY, INTG, BNVL): trust in *platform ability*, *integrity*, *benevolence*; Peer (ABLY): trust in *peer ability*; Peer (BNVL): trust in *peer benevolence*

TABLE 5: LINEAR REGRESSION FOR INTENTION TO CONSUME AND INTENTION TO SUPPLY

As depicted in Figure 8, several main results strike the eye: First, higher levels of trust towards the platform significantly increase users' sharing intentions – both for the supply and the demand side (whereas from a consumer perspective, trust towards the platform is only represented by the dimension of benevolence). The same holds for trust towards the peer, where for the supplier, only the ability dimension of peer trust has a significant impact, whereas peer benevolence is non-significant. Moreover, trust towards product ability significantly increases the consumers' sharing intentions as well. Note that non-significance should be interpreted with caution here, since the sample size (n=91) is rather small.

Consequently, hypotheses H1-H5, stating that the 3P – trust towards peer, platform (and product) – positively influence consuming (and supplying) intentions, are supported by our findings. Our models furthermore yield reasonably high adjusted R-squared values (.452 for consumer, .214 for supplier perspective), speaking in favor of that the trust factors in fact capture some of what drives usage intentions.



(***p<.001, **p<.01, *p<.05, +p<.1)
ABLY: *ability*; INTG: *integrity*; BNVL: *benevolence*

FIGURE 8: RECONSIDERATION OF HYPOTHESES

Controlling for risk propensity exhibits more pronounced usage intentions for risk-seeking consumers. We do not observe an analogous effect for suppliers. Additionally, higher usage in the past and present appears to be a good predictor of future usage intentions too, whereas this effect is only marginally significant (p<.10) for suppliers. We do not observe any effects due to age or gender.

These main results indicate i) the validity of our theory-guided separation of trust into its variants and dimensions, and ii) underlines the importance of trust in the sharing economy in the sense of Botsman and Rogers (2010). Note that these results hold robustly for any set of additional control variables used.

Discussion

Within the scope of this paper, we developed a research model for the role of trust in C2C sharing economy platforms that is based on the 3P of trust, i.e., towards peer, platform, or product – represented by the dimensions ability, integrity, and benevolence. It incorporates both, the consumers' and suppliers' intentions to consume or supply a resource, as both are represented by private, i.e. non-professional, persons.

Trust is without any doubt a highly complex construct – especially within the context of the sharing economy. According to Gefen et al. (2008) it is important to reconsider the construct of trust and its dimensionality in the context of different online environments. We agree with this notion. Note, however, that a too fine-grained differentiation of variants and dimensionality into sub-constructs may eventually stretch the participants' sensibility and empirical methods to its limits, if overdone. Our results suggest that the differentiation of trust with respect to its variants (or targets) peer, platform, and product (the 3P of trust) is rather complex, but still well-suited for C2C contexts. For the well-established sub-dimensions ability, integrity, and benevolence people appear to follow a less clear-cut psychological model, especially with regard to integrity and benevolence. While for consumers, the platform's benevolence emerged as distinct factor, the perception of their peers' trustworthiness draws on all three dimensions. Likewise, for suppliers' there emerged a mixed factor for the platform's trustworthiness, and two distinct factors for their peers, capturing ability and

benevolence, whereas the dimension of integrity dissolved and did not manifest in a distinct factor.

These results indicate that the trust relation between supplier and platform is much more pronounced than that between consumer and platform. And in deed, a supplier deals with the platform at various instances and, maybe more importantly, in some way lays her micro-entrepreneurial fate into the hands of the platform. This touches the platform's capability to generate activity and route users to the listing (ability), the fact that providers supply a host of personal data (integrity), and that they may have to rely on obligingness in case of unexpected turns or damages (benevolence). Likewise, consumers see a comprehensive peer trust factor, indicating that guests have to rely on their hosts' trustworthiness in many ways. On the other hand, hosts clearly differentiate between peer ability and benevolence, indicating a much more rational view.

With regard to our preliminary regression results, we find that all variants of trust (peer, platform, and product) play a viable role in positively affecting a user's intention to use sharing economy platforms such as Airbnb.

Limitations

The work presented above is subject to a set of specific limitations. First of all, the data underlying our study is collected from a student sample from the Karlsruhe Institute of Technology and only comprises 91 independent valid observations. Although the age class from 18 to 29 years was identified as a main user group of sharing economy offers (PwC 2015), our sample is not representative for a broader population. Consequently, the question of whether or not our observations are generalizable to a more comprehensive spectrum of potential consumers and suppliers in the sharing economy context remains unanswered. In addition to that our survey data (which is based on voluntary participation) might imply an inherent response bias. Subjects who answered voluntarily to our survey might already be biased in certain respects regarding the role of trust in the sharing economy. Finally, from a methodological point of view, in-depth analyses requires reconsideration of our survey items based on the insight gained from this work, as well as more sophisticated statistical approaches such as confirmatory factor analysis and eventually structural equation modelling based on a broader and larger sample of observations.

Conclusion

In this article, we considered the role of trust in a sharing economy scenario in light of market sides, variants, and dimension of trust, exceeding the degree of differentiation of existing models. While trust research in "traditional" (B2C) e-commerce settings focusses primarily on the consumers' trust towards the online vendor (Gefen and Straub 2004), its interconnections are more complex for C2C e-commerce, comprising mutual trust considerations among peers, the platform, as well as trust towards the product or resource at hand. All these aspects are typically not subject to conventional standardization or regulation, emphasizing the importance of trust in the sharing economy. In this context, platforms not only need to appear trustworthy themselves in order to generate business, they also need to take into account and manage their users' mutual perceptions of one another as well as of the resources exchanged on the platform. Understanding the role of trust in a more fine-grained way will enable research to further explore the behavioral mechanics of the sharing economy, and also guide

practitioners in creating viable markets. Future research should thus focus on how to build and sustain trust in P2P market settings as well as the antecedents and influencing factors of trust towards peer, platform, and product.

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Trust-related Behavior: An Experimental Framework

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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 (Avital et al. 2015; Sundararajan 2014). 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 IS research the term is often used as an umbrella for different forms of 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. 2016; Hawlitschek, Teubner, and Gimpel 2016; Möhlmann 2015; Teubner, Hawlitschek, et al. 2016; 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, Teubner, and Weinhardt 2016). 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 B2C or C2C e-commerce (Hawlitschek, Teubner, and Weinhardt 2016; 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

[19] This study was published in the *Proceedings of the International Conference on Information Systems* with the title "Trust in the Sharing Economy: An Experimental Framework" (Hawlitschek, Teubner, Adam, et al. 2016)

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. 2016; Hawlitschek, Teubner, and Gimpel 2016; Hawlitschek, Teubner, and Weinhardt 2016; Kim et al. 2015; Matzner et al. 2015; Mittendorf 2016; Möhlmann 2015; Teubner et al. 2016; 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. 2004b, 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, Jansen, Lux, et al. 2016; 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 2001; Capra et al. 2008; Fehr 2009) refer to Coleman (1988, 1990)'s 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. 2004a). 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), C2C 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, Teubner, and Weinhardt 2016; 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, Hawlitschek, et al. 2016), resulting in three different targets of trust, that is, "trust towards peer, platform, and product (3P)" (Hawlitschek, Teubner, and Weinhardt 2016, 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. 2016; 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; Leonard 2012; Lu et al. 2010; Yoon and Occeña 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, Hawlitschek, et al. 2016). 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. 2007). 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, Teubner, and Weinhardt (2016) 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,

Mohr, et al. 2014), the impact of displaying fraudulent reviews (Ananthakrishnan et al. 2015), or UI design (Hawlitschek, Jansen, et al. 2016). 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, Teubner, and Weinhardt 2016), 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 et al. (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" (cf. Edelman and Luca 2014; Zervas et al. 2015). In Figure 9, we depict the requirements R1 to R6 that we derive from the relationships between providers, consumers, products, and the platform.

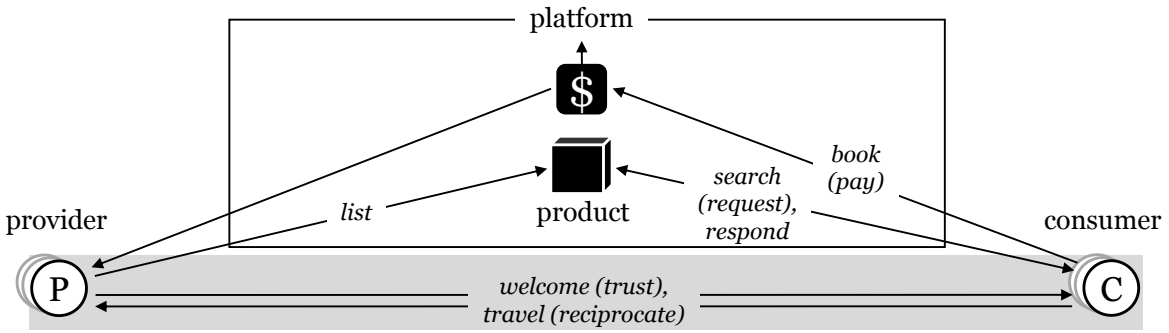


FIGURE 9: THE BASIC MECHANISM OF SHARING ECONOMY PLATFORMS

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 10.

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 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 xp in the trust game (cf. Bolton et al. 2004a). Phase I covers requirements R1 to R4.

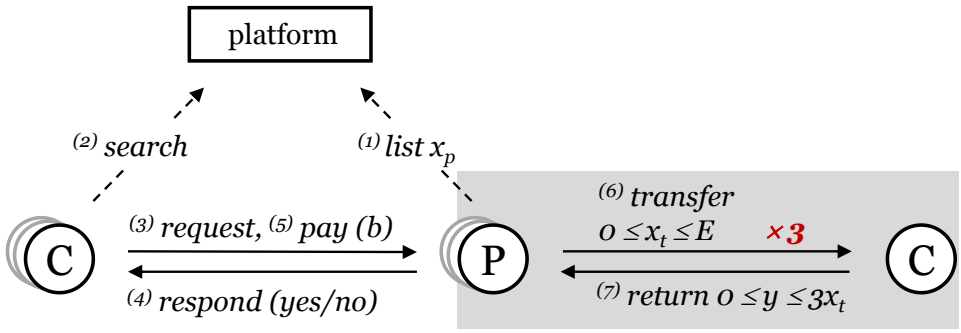


FIGURE 10: THE SHARING GAME

Phase II – Provider's Trust in Consumer: Now, the matched transaction partners enter a trust game (Berg et al. 1995). As depicted in Figure 10, 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, Saade, et al. 2016). 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 11 depicts a concise research model, summarizing our hypotheses, which we derive in the following.

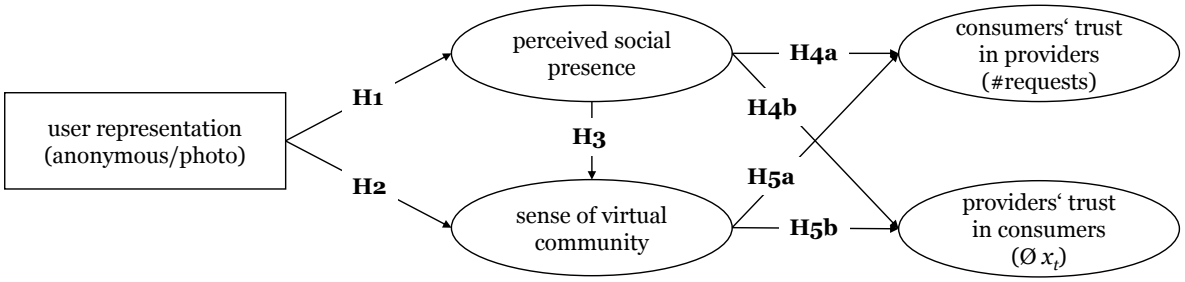


FIGURE 11: RESEARCH MODEL FOR THE SHARING GAME

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 adaption 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 (2011) 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, 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 C2C 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 2011), 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. 2017). 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 UI 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, Teubner, and Gimpel 2016). Second, the framework can be used to compare different matching mechanisms (cf. 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 et al. 2017; Edelman and Luca 2014) 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, Hong, 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.

The Sharing Game in the Laboratory: A Pilot Study

In the following – in order to provide a proof-of-concept – I will present a brief overview on the results of a pilot study that implemented the sharing game. The study was conducted at the Karlsruhe Decision and Design Laboratory (KD²Lab) in July 2017. The experiment was organized and recruited with the software hroot (O. Bock et al. 2012). Participants were recruited from the student subject pool of the Karlsruhe Institute of Technology (N=24). The average age of the participants was 24.25 years with a median of 23 years. Half of the participants were female. All participants were reimbursed according to the induced value theory, with an expected payout of approximately 10 to 15 € per hour.

Within the scope of the pilot study, 2 sessions of the sharing game (x_p = Ø, E = 10, b = 5) were conducted. In each session the 12 participants were randomly assigned to the roles of 6 consumers and 6 providers and thereupon exposed to one treatment (following a between subject design). Treatment 1 (T1) provided participants with a rating system, while treatment 2 (T2) comprised both a rating system and profile photos. A simplified representation of the two treatments is depicted in Figure 12.

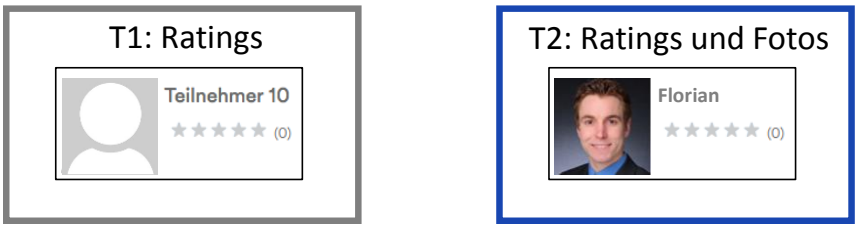


FIGURE 12: TREATMENT STIMULI IN THE SHARING GAME PILOT STUDY

Participants in both sessions took part in 6 consecutive periods of the sharing game (where 1 period corresponded to a matching phase and a potential interaction phase). To circumvent repeated bilateral exchange, a 1-period blacklisting mechanism was introduced (i.e., participants could not interact with the same partner in two consecutive periods). At the end of the experiment, the participants were asked to answer a short survey inter alia covering demographic questions and the constructs perceived social presence, sense of virtual community, and trust in other users (Blanchard 2007; Gefen 2000; Gefen and Straub 2004).

In the following I will present descriptive statistics of both, the behavioral and survey-based measures collected during the pilot study. As indicated in Figure 12, results from T1 will be depicted in grey and blue for T2, respectively. Importantly, given the pilot character of the study and the small sample size, no significance test will be conducted. Instead, the observed results will be presented in a purely descriptive manner.

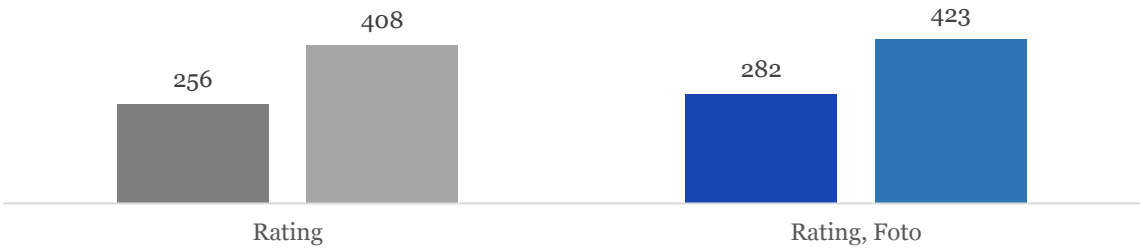


FIGURE 13: AGGREGATED TRANSFER (IN DARK COLOR) AND RETURN (IN LIGHT COLOR)

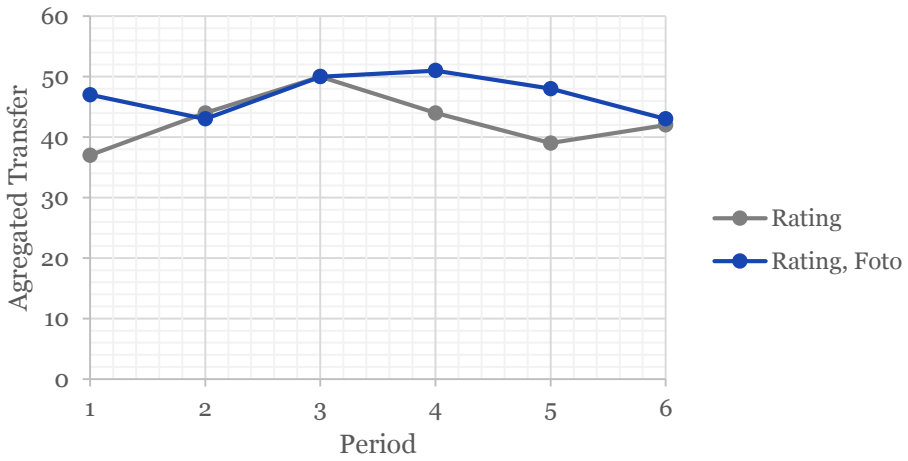


FIGURE 14: AGGREGATED TRANSFER PER PERIOD

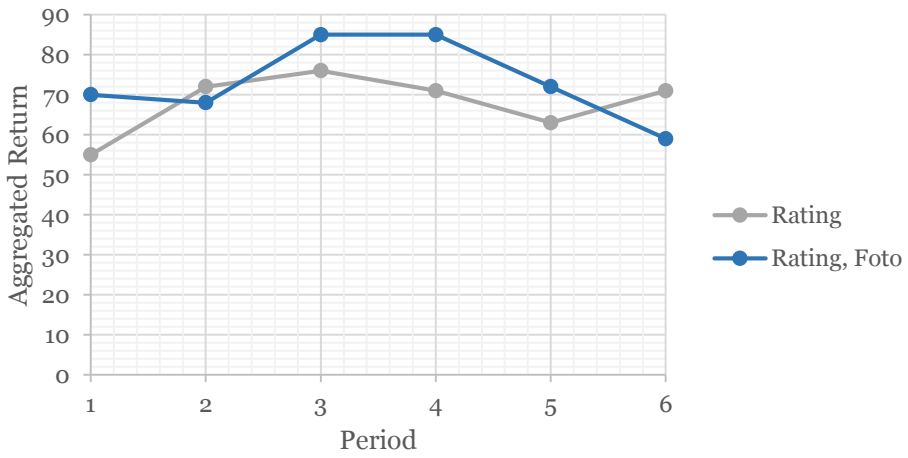


FIGURE 15: AGGREGATED RETURN PER PERIOD

First, as depicted in Figure 13, the aggregated transfer and return in T2 (with both, ratings and fotos) exceed those in T1 (with only ratings). Overall, 256 MU were transferred in t1, compared to 282 in T2. The returns add up to 408 MU in T1 and 423 in T2. Considering the participant behavior over time, both, the aggregated transfers (Figure 14) and returns (Figure 15) per period in T2, exceed or equal those of T1 – with period 2 as the only exception. This speaks in favor of a possible treatment effect of profile fotos on the sharing or trusting behavior of participants. This tendency can also be observed in the survey-based measures of the experiments. As depicted in Figure 16, the three constructs *perceived social presence*, *sense of virtual community*, and *trust in other users* reveal higher mean values in T2. However, this difference is not statistically verifiable based on the small number of observations.

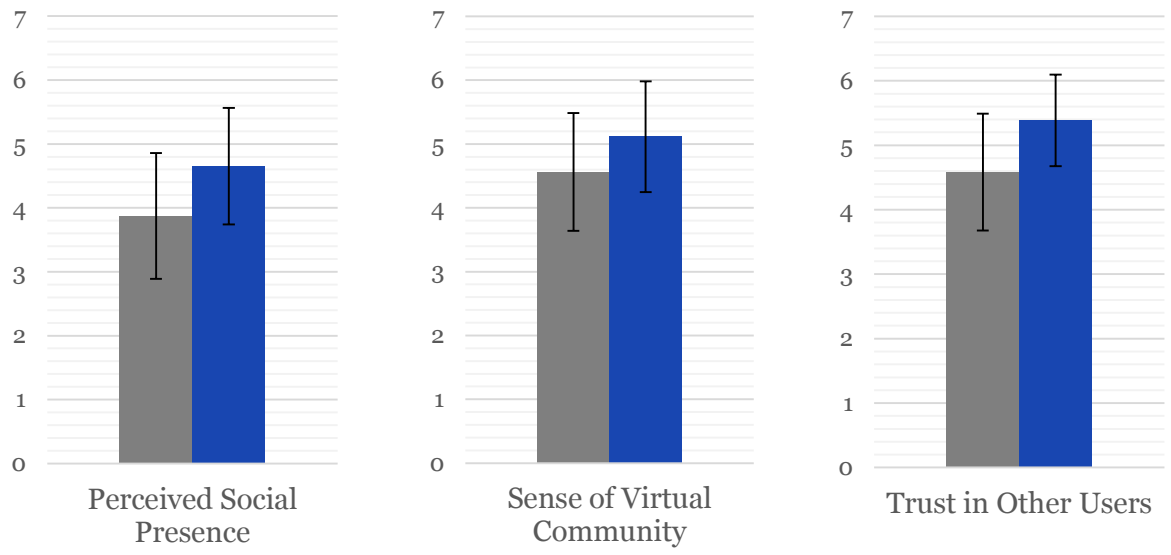


FIGURE 16: MEANS AND 95 PERCENT CONFIDENCE INTERVALS OF SURVEY-BASED MEASURES

Beyond the transaction behavior and the potential foto-treatment effect, an analysis of the mutual rating behavior allows a comparison with real-world data. Figure 17 depicts the distribution of mutual ratings that were provided in the course of the pilot study. A comparison to the rating distribution on Airbnb (see Figure 17) reveals a common trend to overall rather high, ratings. In an early study by Zervas et al. (2015) this observation of skewed rating distributions was described as "A First Look at Online Reputation on Airbnb, Where Every Stay is Above Average" (Zervas et al. 2015). The authors however do not provide a sound explanation for the dramatically high ratings and instead use the phenomenon as a motivation for future work. Since the observation of overly positive ratings is also well replicated within our study design, the sharing game can serve as a basis for the controlled investigation of the emergence of skewed rating distributions. Given the above observations, the sharing game appears as a promising approach for exploring trust-related behavior in a controlled sharing economy environment.

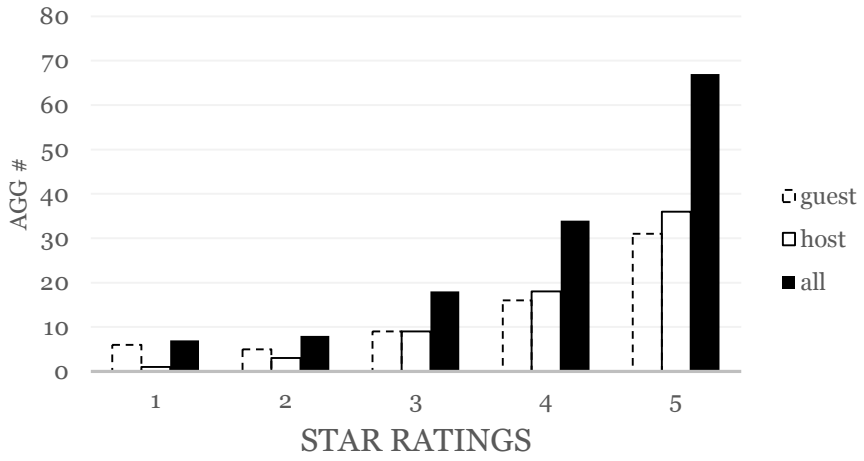


FIGURE 17: NUMBER OF STAR RATINGS (1-5) AGGREGATED OVER PILOT SESSION 1 AND 2

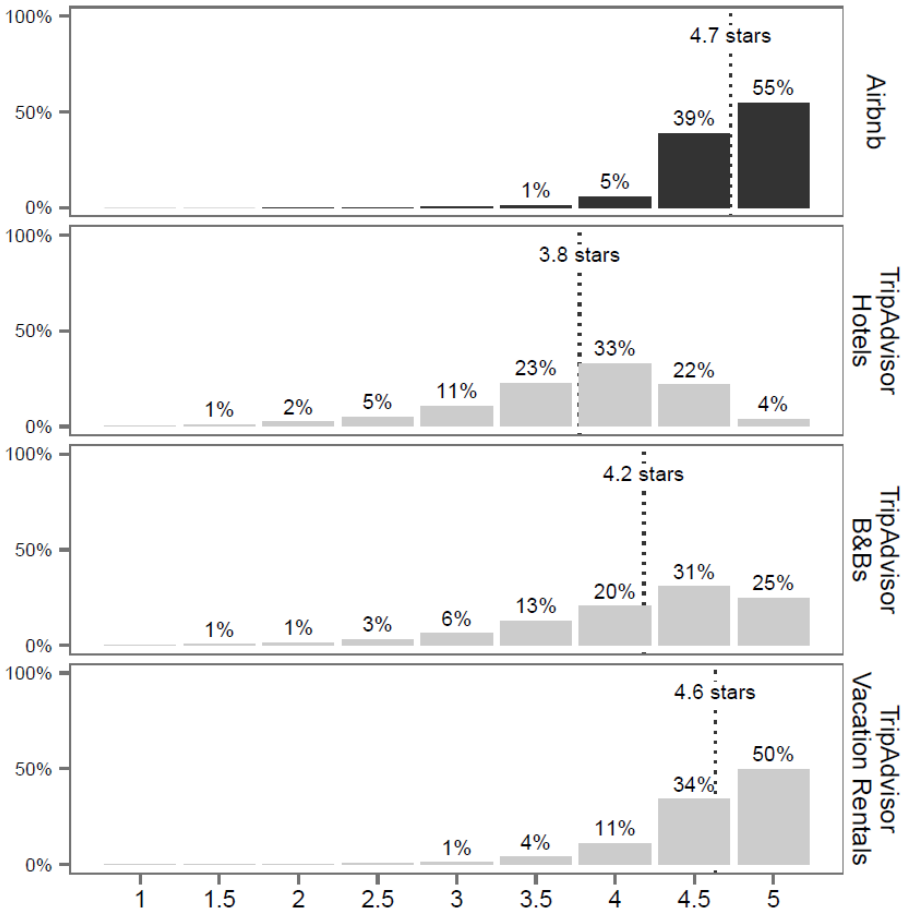


FIGURE 18: DISTRIBUTION OF RATINGS ON AIRBNB AND TRIPADVISOR (ZERVAS ET AL. 2015).

Chapter 4: Building Trust

After the theoretical examination of possible means to appropriately address the measurement of trust in the sharing economy, we will now approach the matter from a more practical point of view. I will present two studies – the first grounded in design science research, the second in classical experimental economics – that both aim at answering the question of how to build trust in the context of the sharing economy through successful platform and UI design.

Platform Design for Trust: The Case of Sharewood-Forest

Florian Hawlitschek, Tobias T. Kranz, Daniel Elsner,
Felix Fritz, Constantin Mense, Marius B. Müller, and Tim Straub[20]

Introduction

Spending a night in a tent – out in the wilderness – is an untamed desire of many modern "urban" adventurers. The longing for experiences with the lonely beauty of nature fanned by popular writers such as Jack London or Thomas Hiram Holding has led to the pilgrimage of many German adventurers to European countries with the right of *freedom to roam*. This desire may be best expressed within the renowned verbalization by Hetfield and Ulrich (1991): "Anywhere I roam, where I lay my head is home / And the earth becomes my throne".

The main reason for many German adventurers to make the effort of a long journey, to countries such as Norway, Scotland, or Sweden is grounded in the German forest legislation, which prohibits the act of "wild camping" in public forests. The only option for German adventurers to camp "wild" is to elaborately identify private land owners of desired wild camping spots and ask for a special permission. Since the process of identifying the corresponding land owner and negotiating the terms for a special permission requires an unreasonable high amount of effort and time, the less (environmentally) sustainable and more expensive journey to foreign countries is frequently preferred.

This inefficiency in both the search and negotiation process may be well addressed by IS. The implementation of an IS artifact such as an online platform for sharing privately owned forests in terms of wild camping permits, could help to address this problem. In today's internet based society, IS – and P2P platforms in particular – leverage transactions among peers in large scales.

[20] This study was published in the *Proceedings of the International Conference on Group Decision and Negotiation* with the title "Sharewood-Forest – A Peer-to-Peer Sharing Economy Platform for Wild Camping Sites in Germany" (Hawlitschek, Kranz, et al. 2017)

The so called 'Sharing Economy' as an umbrella term subsumes a variety of P2P transactions with both online and offline components (Hawlitschek, Teubner, Adam, et al. 2016). Within a broad platform landscape (e.g., *gartenpaten.org* for garden sharing, *hipcamp.com* or *youcamp.com* for renting wild camping sites in the US and Australia), a variety of goods and services is provided and consumed by private individuals. While renowned platforms such as *Couchsurfing* stress the communal aspects of a transaction, others such as *Airbnb* increasingly focus on the provision of professional quality standards within a professionalized interaction, blurring the lines between *true* and *pseudo-sharing* (Belk 2014b).

For both providers and consumers trust – among other potential drivers and impediments (Hawlitschek, Teubner, and Gimpel 2016) – is a crucial factor within the decision process for partaking in sharing economy activities (Ert et al. 2016; Hawlitschek, Teubner, and Weinhardt 2016). It is thus a major issue among sharing economy platform providers to design a platform that serves the need of a specialized community in guiding transactions and supporting the formation of trust (Hawlitschek, Teubner, and Weinhardt 2016).

Within the scope of this work we will present a design science approach for implementing a P2P sharing economy platform for wild camping sites in Germany.

The novelty of our platform design is grounded in the special domain it is addressing. Compared to other established sharing economy platforms, *www.sharewood-forest.de* possesses a set of unique and exciting characteristics. These inter alia include:

i) The character of the shared resources (wild camping sites) requires specialized means of communication and negotiation support (e.g., for determining where to build camp, where to find water or a toilet, how to arrange with animals, trees, dangers or other environmental factors).

ii) The platform exclusively enables nonmonetary exchange, i.e., the permission for a guest-night is granted on a voluntary and altruistic basis, which may require non-monetary means of reciprocity (e.g., through permanent communication channels). Furthermore, in contrast to platforms like *Couchsurfing* the shared resources is typically not within a directly controllable range for the land owner.

iii) The platform addresses a small, nature enthusiastic, altruistic and responsible user community – which needs to be especially protected from improper or abusive platform usage.

In order to develop a basic and prototypical design for an adequate mediating platform, we follow the design science research approach as suggested by Peffers et al. (2007), covering the phases of problem identification and motivation (Section 1), definition of the objectives for a solution, design and development (Section 2), as well as demonstration and evaluation (Section 3). The design artifact is the German platform *www.sharewood-forest.de* that facilitates sharing of privately owned camping sites in the forest by supporting and guiding the trust- and reciprocity-based request and permission process.

Basic Platform Design of Sharewood-Forest

The central problems to be addressed by a platform for P2P sharing of tangible resources (i.e., wild camping sites) inter alia comprise i) the provision of a trustworthy platform environment that encourages the registration of resource providers (i.e., land owners with their property) – particularly, if no prospect of monetary compensation is provided – ii) an online matching

process with registered consumers (i.e., adventurers), and iii) the facilitation of offline interaction and subsequent evaluation of interaction. Since Sharewood-Forest is a *true sharing* platform in the sense of Belk (2014b), transactions are mainly based on social and altruistic motives (c.f. Hawlitschek, Teubner, and Gimpel 2016), as no means of (monetary) compensation is provided. A key issue to be solved is therefore the formation of trust between adventurers and land owners (with higher stakes on the altruistically motivated land owner side).

Building on the work of Hawlitschek, Teubner, Adam, et al. (2016), we break these problems down to six basic requirements: *R1*) Providers shall be able to *list* resources. *R2*) Consumers shall be able to *search and request* resources. *R3*) Providers shall be able to *respond* to (confirm/reject) requests. *R4*) Consumers shall be able to *book* a resource. *R5)*, *R6)* Providers (consumers) shall be able to perform *trusting (reciprocating) behavior*.

The Sharewood-Forest booking process follows a unique and context-specific communication and cancellation policy in order to appropriately support and guide communication, negotiation and interaction between users (see Figure 19).

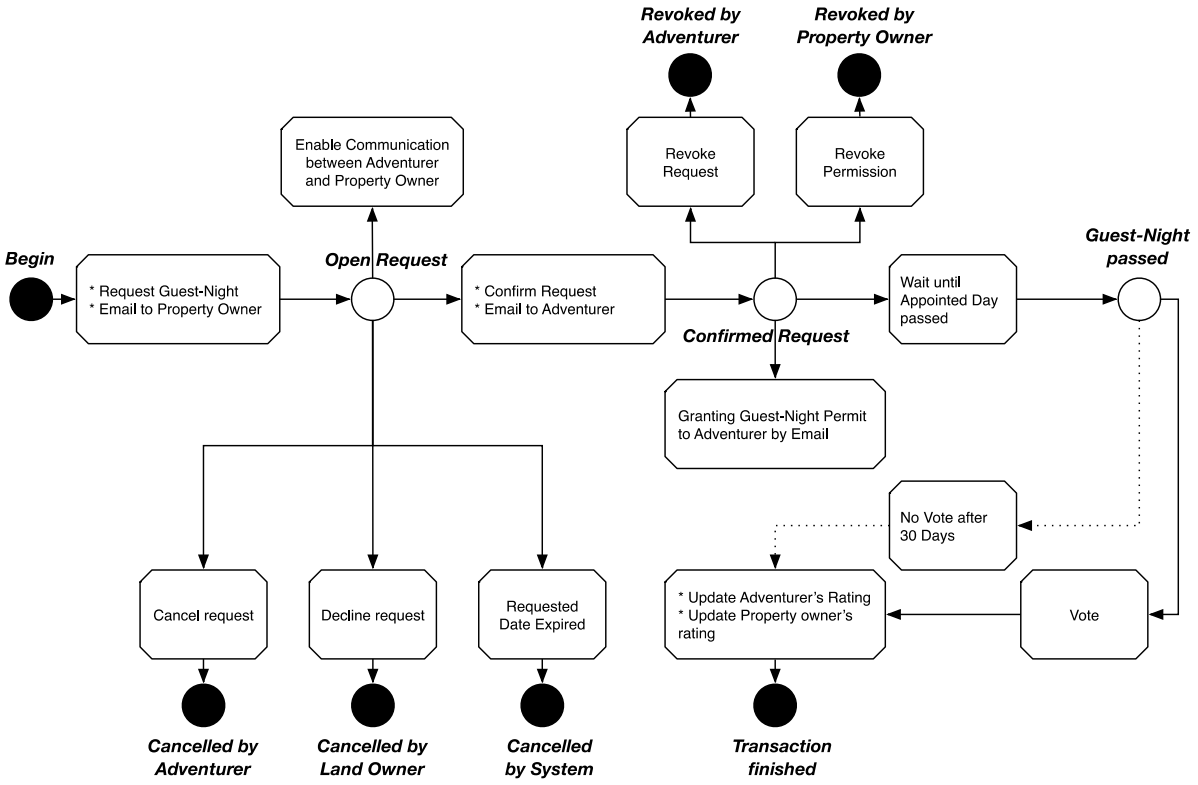


FIGURE 19: FLOW CHART OF THE SHAREWOOD-FOREST BOOKING PROCESS

The design and implementation of the Sharewood-Forest platform that fulfills *R1)-R6)* will be described in the following:

Subject to a prior registration, land owners can offer a well-defined spot on their ground to adventures (*R1*). While presenting their land to all registered adventures on the platform (*R2*),

they remain in full control of their right to permit or prohibit adventures to spend a guest-night (*R3*). Adventurers are given the possibility to browse all land owners' adverts, inspect their details and eventually bindingly book a spot for a guest-night (*R2, R4*).

Offering and booking are facilitated by the unique booking process of Sharewood-Forest, which is depicted in Figure 19. By requesting a spot on a specified day for a guest-night, an email is sent to the respective land owner informing about that particular request (*R2*). The request contains profile information, a profile photo and a reputation score to increase perceived social presence and trust (Bente et al. 2012; Ert et al. 2016; Gefen and Straub 2004)]. Synchronously, a bilateral chat is provided on the platform for the participants in a transaction to exchange further details of the stay and provide a socially rich means of communication (Hassanein and Head 2007).

This *open request* can either change its state into a *confirmed request* through the land owner by granting the adventurer a guest-night permission, or into a *cancelled request* by one of the following actions: i) the adventurer cancels his former request, ii) the land owner declines the request, or iii) by the platform itself, if the requested date of the guest-night is expired (*R3*).

By trustfully granting the guest-night permission, an email containing an auto-generated legally binding permission is sent to the requesting adventurer (*R5*). This allows him to substantiate his right towards any person or authority he might get into contact with on the land owner's spot. But even in case of a *confirmed request*, both adventurer and land owner can cancel it at any time, leading to one of the respective *revoked* states. In case of the occurrence of a guest-night, it is the adventurer's responsibility to behave in a nature-friendly and trustworthy manner following outdoor ethics such as the leave-no-trace principle (*R6*).

In order to strengthen mutual trust amongst platform participants, access to a bilateral reputation and rating system (Jøsang et al. 2007) is granted to both parties on the day after the guest-night was "booked". Here, the adventurer may rate the visited spot, whereas the land owner may rate the adventurer's behavior; both using a wide-spread five-star rating. By publishing the results no earlier than after both parties cast their votes, or 30 days after the guest-night took place – whichever comes latest – the otherwise obvious conflict of interest is averted and reciprocity in ratings is mitigated (Bolton et al. 2013). In case none party casts a vote, the rating is closed 30 days after the guest-night took place.

Evaluation and Contribution

Our platform *www.sharewood-forest.de* (i) brings together nature enthusiasts; on the one hand land owners willing to share their land, on the other hand adventurers loving to explore wilderness, (ii) empowers nature enthusiast with the freedom to roam, (iii) provides legal certainty, hence supporting risk-averse land owners to securely act as land benefactors, and (iv) unites demand and supply in a non-profit sharing economy way (true sharing).

The platform is evaluated in live operation since September 2016 and used productively by the Sharewood-Forest e.V. – a German association for community-based wild and nature friendly camping (see Figure 25 in the Appendix, Supplementary Material Chapter 3). A community of ~200 nature enthusiasts has created user profiles (see Figure 26 in the Appendix, Supplementary Material Chapter 3) on the platform and first registered camping sites (see Figure 27 in the Appendix, Supplementary Material Chapter 3) speak in favor of the long term

success of the concept[21]. The platform is accessed about 10 times per day, which provides the potential for future survey- and interview-based evaluation of the platform.

Following the call of Matzner et al. (2016), this prototype paper provides a case for the design of a P2P sharing economy platform that may serve as a basis for cross-case replications. We therefore contribute to a growing body of literature that investigates the design of use-case specific P2P sharing economy platforms (e.g. Betzing et al. 2017; Matzner et al. 2016). Specifically, we describe a use-case for the evaluation of designing trust building mechanisms between altruistically motivated peers. Our work is of particular practical relevance for platform providers who aim at designing P2P sharing economy platforms, but most importantly for nature enthusiasts and adventurers in Germany. We set the stage for a growing community of both altruistic land owners and wild campers who may now – facilitated through our platform – share their passion for outdoor experiences on private forest property in Germany.

Conclusion and Outlook

Within this paper we present the context, design, implementation and evaluation of a sharing economy platform for P2P sharing of wild camping sites in Germany, which addresses an existing demand. The platform is used to facilitate the communication and negotiation between users, in order to grant permission to camp on private forest plots in accordance with the German forest laws. The unique characteristics of the described platform design make our work particularly interesting for charitable non-profit organizations, especially with a certain closeness to nature. The concept is based on a user community, which is characterized by two main drivers: closeness to nature and individualization. In other words: By user self-commitment, forests are handled responsibly, enabling renaturation. Zeitgeists idealism enables highly diverse individual experiences (joyriding adventures) – commonly known as utilitarian striving. We contribute to existing work by describing a unique and novel use-case for the design of a P2P sharing economy platform for true sharing.

[21] It should however be noted that the motivation of land owners to share their property without monetary compensation is rather limited.

User Interface Design for Trust: Insights from a Colored Trust Game

Florian Hawlitschek, Lars-Erik Jansen, Ewa Lux, Timm Teubner, Christof Weinhardt[22]

Introduction

Colors have powerful impacts on our live. They influence our mood and emotions but also our task performance, e.g. in decision making (Babin et al. 2003; Bagchi and Cheema 2013; Bock et al. 2013; Elliot et al. 2007; Küller et al. 2006; Mehta and Zhu 2009; Stone and English 1998; Valdez and Mehrabian 1994; Yildirim et al. 2007). Consequently, conscious use of colors for the design of IS and especially online market platforms is of utmost importance (Cyr et al. 2010). It is argued that colors not only influence our attitude and expectations toward brands but are also associated with certain differences in trusting behavior towards websites (Cyr et al. 2010). Especially on P2P e-commerce platforms, trusting and reciprocating behavior between users is key (Bolton et al. 2004a). Most interactions in the context of the so called "sharing economy," (such as P2P rental of cars and apartments or market-based redistribution of used products) require a certain level of interpersonal trust between provider and consumer, e.g. regarding overuse or abuse of the shared product (Lamberton and Rose 2012) or simple shipping decisions (Bolton et al. 2004a), and thus also rely on reciprocal benevolent behavior (see Kramer 1999). Little is known about the impacts of colors on human behavior in P2P market environments with monetary stakes—particularly regarding trust and reciprocity.

Our research is based on two strands of the literature. Firstly, recent NeuroIS experiments have suggested an effect of temperature priming on both, interpersonal warmth and trusting behavior (Kang et al. 2011; Lakoff and Johnson 1999; Storey and Workman 2013; Williams and Bargh 2008). Researchers found that warmer environmental conditions induce greater social proximity and conclude that environmentally induced conditions shape construal of social relationships (IJzerman and Semin 2009). Furthermore, Kang et al. (2011) observed physical temperature to have an influence on trust behavior and identified, consistent with previous work (Craig et al. 2000; Davis et al. 1998; Maihöfner et al. 2002), the insula as a possible neural substrate. Secondly, literature on colors in IS research, consumer behavior, and other fields suggests that colors such as blue (red) are commonly perceived as cool (warm) (Berry 1961; Bjerstedt 1960; Manav 2007). In a recent empirical study on that phenomenon, Fenko et al. (2009) showed that the perceived warmth of products was significantly increased if they had a red in comparison to a blue color. We draw from both strands by investigating the influence of cool (blue) and warm (red) colors on trusting and reciprocating behavior in a simple economic experiment focusing on such behaviors—commonly known as the trust game (Berg et al. 1995).

To the best of our knowledge, the influence of colors on trusting and reciprocating behavior has not been investigated in a comparable setting with monetary stakes so far. The trust game

[22] This study was published in the *Proceedings of the Hawaii International Conference on System Sciences* with the title "Colors and Trust: The Influence of User Interface Design on Trust and Reciprocity" © 2016 IEEE. Reprinted, with permission, from (Hawlitschek, Jansen, et al. 2016).

is a well-established approach to analyze such behavior (Berg et al. 1995). In a first attempt, we investigate the influence of a red and a blue UI on temperature perception and behavior of participants. Specifically, we aim to shed more light on the following research question:

RQ: How does a cool color like blue and a warm color like red influence trusting and reciprocating behavior in computerized trust situations?

In the following we introduce a literature-based research model and give a brief overview on color-related research in IS. We subsequently describe our experimental design and present results and insights from a pilot study. Finally, we discuss the potential impact of our research on IS design as well as the limitations of the work at hand.

Related Literature and Research Model

Colors can induce a certain perception of warmth (see Fenko et al. (2009), for instance). It furthermore has been suggested that cold and warm temperatures, driven by the role of the insula, influence interpersonal warmth and trusting behavior (e.g., Williams and Bargh (2008) and Kang et al. (2011). We argue that such effects are also observable for cool and warm colors such as blue and red.

As a theoretical basis for our research model (depicted in Figure 20) we present an overview of related literature. Firstly, we review research related to the trust game from a NeuroIS perspective. Secondly, we summarize different studies on colors and temperature perception. Thirdly, we present a brief overview on the role of colors in IS research. We finally condense our argumentation in five research hypotheses.

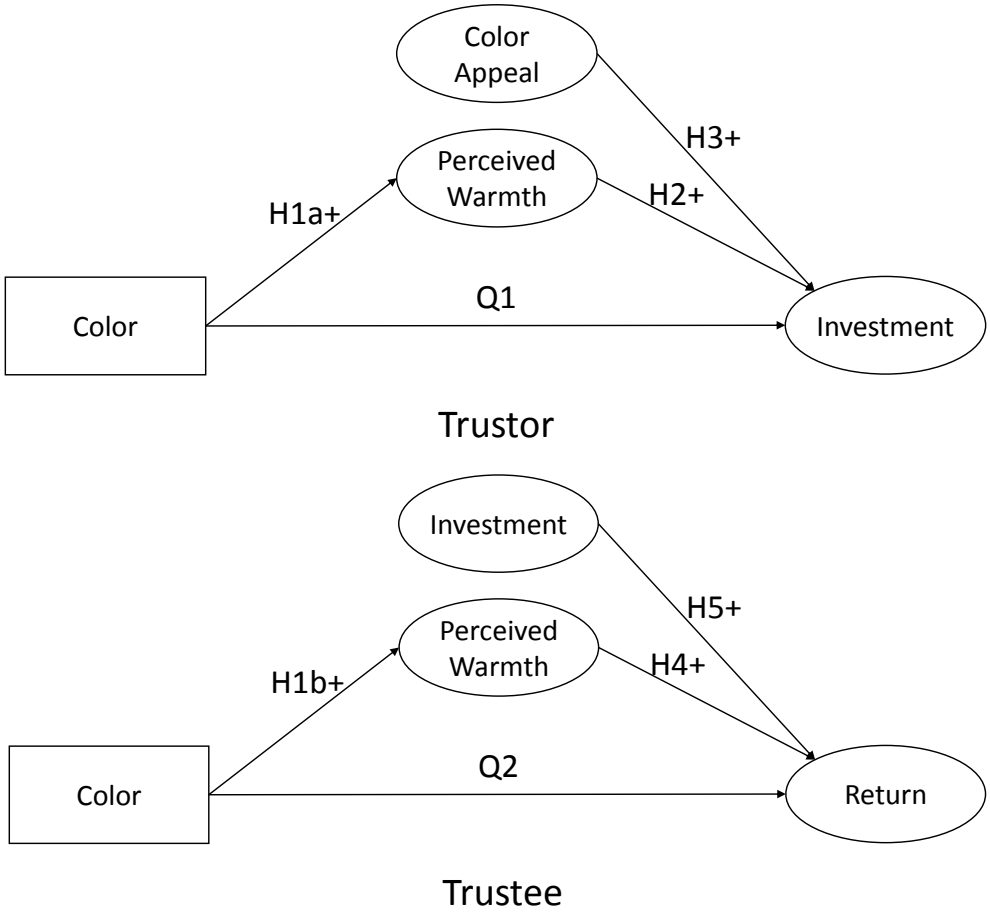


FIGURE 20: RESEARCH MODELS FOR TRUSTOR AND TRUSTEE

A NeuroIS View on the Trust Game

Trust in Internet transactions has experienced a lot of attention in IS research. In 1995, the trust game was introduced by Berg et al. (1995) as a means of analyzing interpersonal trust and reciprocity. Since then it was applied, further developed, and cited in several thousand studies. According to the original game's mechanics (see Figure 21), two subjects (the "trustor" and the "trustee") interact in a two-stage investment setting. In the first stage of the game the trustor must decide on how much of an endowment of 10 MU she wants to transfer to the anonymous trustee (a 10$ show-up fee was provided in the original experiment). The transferred amount is tripled. In the second stage, the trustee decides on how much of the received (and tripled) amount to return. The respective amounts invested and returned are considered indicators for trust and reciprocation.

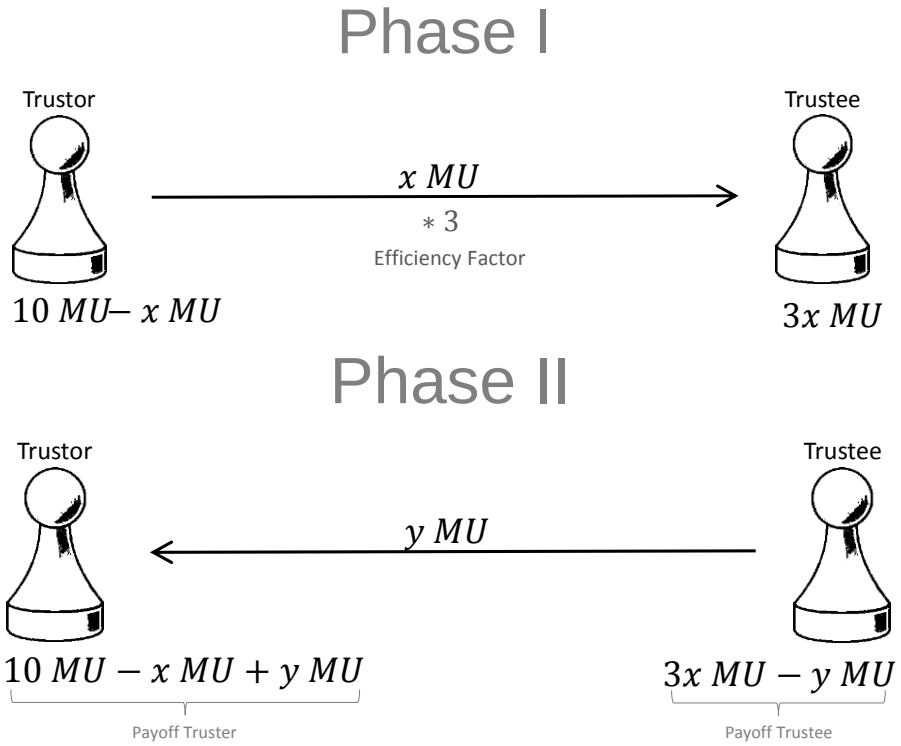


FIGURE 21: MECHANICS OF THE TRUST GAME

A recent neuroscientific study focused on how temperature priming influences behavior in a trust game (Kang et al. 2011). Participants touched either a cold or a warm temperate pad prior to the experiment. The packs were cooled down to 15°C or heated up to 41°C. Participants who held a cold pack before playing the trust game transferred less money in the first stage than those who touched the warm pack. During the trust game neural activity was measured by functional magnetic resonance imaging (fMRI). It could be shown that the left-anterior insular cortex was more active during trust decisions and betrayals of trust but only after touching the cold pack and not the warm (Kang et al. 2011). The insula is considered as a brain region that translates visceral sensation into emotions (Craig and Craig 2002; Critchley et al. 2002; Critchley et al. 2004). It is especially associated with aversive sensory inputs transformed into negative affective states (Wicker et al. 2003). Kang et al. (2011) concluded that cold temperature priming activates the insula, which eventually influences interpersonal relationships, reducing trust behavior. This conclusion is supported by Dimoka (2010), who showed that distrust is associated with activation of the insular cortex.

Based on the work of Kang et al. (2011), the influence of thermal manipulation on trust decisions, cooperation and therefore trustworthiness in a game of iterated Prisoner's Dilemmas was measured by Storey and Workman (2013). The authors' results indicated that participants primed with hot objects cooperated significantly more frequently than those primed with cold objects. According to Bargh and Shalev (2012) and Cuddy et al. (2008), a "warm" character is viewed as good-natured, trustworthy, tolerant, friendly, and sincere. "Cold" individuals are considered to be self-centered, competitive, and untrustworthy.

In a study by Williams and Bargh (2008), participants were primed with physical coldness (warmth), which resulted in decreased (increased) interpersonal warmth. Participants primed with cold (warm) temperature chose in 75% (54%) of the cases a gift for themselves and in 25% (46%) a gift for a friend. Although these results were not retrieved in a replication study by Lynott et al. (2014), the literature supports the idea of links between temperature and behavior in general. IJzerman and Semin (2009), for instance, conducted three experiments which indicated that warmer environmental conditions induce greater social proximity, more concrete language, and a greater relational focus of participants than colder conditions. Bargh and Shalev (2012) suggested that people try to regulate their feelings of social affiliation with applications of physical warmth. They observed that people with a high score of loneliness tended to take not only longer but also warmer baths and showers. In an experimental setting the authors also manipulated physical temperature by giving the participants objects of different temperatures. It was found that cold objects increased the feeling of loneliness significantly. When participants had to read socially warm and neutral messages from friends and family while holding a warm and neutral temperature object, analog results were found (Bargh and Shalev 2012).

Colors and Temperature Perception

There is a general understanding across several fields that blue is perceived as a cool, whereas red is perceived as a warm color (Berry 1961; Bjerstedt 1960; Manav 2007). In addition to the study of Fenko et al. (2009), the following studies indicate significant differences in the perception of temperature influenced by blue and red color or light, in different contexts. In a recent study, Winzen et al. (2014) tested the influence of colored light in an aircraft cabin on passengers' thermal comfort. Their findings indicate that yellow lights generate a perception of warmer while blue lights induces a perception of cooler temperatures. Effects of color and sound on the perception of warmth were experimentally addressed by Matsubara et al. (2004). As color stimuli, orange and light blue were used. The results revealed that in the presence of orange color people felt warmer at low temperature and in the presence of light blue color felt cooler at high temperature. Michael and Rolhion (2008) could show that the color of a water bottle influenced the thermal sensation in the context of a laboratory experiment. The results indicated that a bottle filled with green water induced a cooling and the red colored liquid induced a warming sensation (Michael and Rolhion 2008). Another experiment, testing the effect of different coffee cup colors on the perception of the containing beverage temperature, was conducted by Guéguen and Jacob (2014). The coffee cups had the colors blue, green, yellow, and red and each cup was filled with 40°C hot coffee. Each participant had to drink from each cup. Afterwards they had to indicate the warmest beverage. The red coffee cup was selected as the cup containing the hottest beverage (Guéguen and Jacob 2014).

Colors in IS Research

Online vendors depend on their Internet presence to attract potential customers (Fogg et al. 2003). Specifically, three dimensions of web design are considered relevant for trust. These are (i) visual design, (ii) social cue design, and (iii) content design (Karimov et al. 2011). According to Cyr (2008) and Cyr et al. (2008), visual design elements include symbols, use of animation, and color. Across cultures, color appeal is a significant cause for satisfaction and trust (Cyr et al. 2010). In a laboratory experiment it could be shown that a higher level of trust in the website resulted in greater levels of e-loyalty (Cyr 2008). An early experimental study

by Jinwoo Kim and Moon (1998) indicated that colors might influence the perceived trustworthiness of websites in cyber-banking environments. The authors suggested that the website's color layout should be rather cool than warm in the context of cyber banking. The main color should be in a moderate pastel hue and of low brightness instead of high laminated colors. According to the authors' findings, a feeling of untrustworthiness was related to bright background colors and asymmetrical color schemes. However, favored colors with regard to a pleasant and happy atmosphere of a website should be bright and lively (Wu et al. 2013). Layout design and atmosphere can have a positive impact on consumers' attitudes towards the website, which in turn impacts purchase intentions. Furthermore, the atmosphere impacts emotional arousal of online shoppers which is also positively related to the attitude towards the website and purchase intention (Wu et al. 2013).

Hypothesis Development

Human beings tend to associate different colors with different degrees of warmth. This phenomenon was already investigated in several contexts reaching from studies on personality traits (Bjerstedt 1960) over room temperature (Berry 1961) to appraisal of office environments (Manav 2007). Most studies agree on the notion that blue is perceived as a cool, while red is perceived as a warm color. In a more recent study Fenko et al. (2009) found that subjects' judgment of warmth in products (scarves and breakfast trays) was significantly different for cool (blue) and warm (red) colors. We therefore hypothesize that blue and red UI background colors should also result in different levels of perceived warmth within UIs (see Figure 2 for illustration).

Hypothesis 1. For the trustor/trustee, red (compared to blue) color has a positive influence on perceived warmth of the UI (H1a+/H1b+).

A recent neurophysiological study on interpersonal warmth suggested that—driven by the role of the insula in processing both physical temperature and interpersonal warmth—physical temperature priming affects trust behavior (Williams and Bargh 2008). The effect of temperature priming with hot and cold therapeutic packs on interpersonal warmth and trust behavior was also shown in iterated Prisoner's Dilemma (Storey and Workman 2013) and trust game situations (Kang et al. 2011). We argue that the color-related perceived warmth of the UI has an analogous effect on interpersonal warmth and trust behavior.

Hypothesis 2. For the trustor, perceived warmth of the UI has a positive influence on trusting behavior, i.e., investment (H2+).

In many cases our rational decision making is influenced by certain biases. Especially in the formation of initial trust, we often rely on different types of cues, such as facial characteristics (Stirrat and Perrett 2017), absence or presence of small grammatical and typological errors (Corritore et al. 2003), or gaze cues (Bayliss and Tipper 2006). The influence of different colors on trust towards an e-commerce website has already been addressed in a multicultural study (Cyr et al. 2009). The authors found that in their experimental setting, color appeal had a significant influence on the perceived trustworthiness of an e-commerce website. We hence expect that the color appeal increases subjects' trust behavior in the trust game.

Hypothesis 3. For the trustor, increased color appeal has a positive influence on trusting behavior, i.e., her investment (H3+).

The argumentation leading to hypothesis H2+ also suggests that there should be an effect of perceived warmth of the UI on interpersonal warmth in form of reciprocating behavior. This is in line with the findings of Storey and Workman (2013) on cooperation in iterated Prisoner's Dilemma situations.

Hypothesis 4. For the trustee, perceived warmth of the UI has a positive influence on reciprocating behavior, i.e., return (H4+).

Not only does the investment of trustors signal positive intentions in a trust game and therefore promotes a trust and reciprocity relationship (McCabe et al. 2003), it also forms a leeway for higher returns that are enabled by the multiplication factor. Based on this and well-known results from trust game experiments (e.g. Berg et al. 1995 and McCabe et al. 2003), we suggest the following:

Hypothesis 5. For the trustee, the trustor's investment has a positive influence on reciprocating behavior, i.e., return (H5+).

Depending on the cultural background of a person, direct effects of different color schemes on trust towards an e-commerce website could be observed in experiments (Cyr et al. 2010). Also a neurophysiological study related to colors suggests a certain role of the insula for the perception of colors (Cavina-Pratesi et al. 2010). Therefore we suggest that in line with the observations of Kang et al. (2011), there exist direct effects of color on interpersonal warmth and trust behavior. Since this influence of UI color could also be mediated by perceived temperature, the effects of red (compared to blue) color on trusting behavior and reciprocation are kept as open questions (Q1 and Q2), with no hypothesized direction.

Experimental Evaluation

In order to test our hypotheses, we conducted a computerized trust game experiment in a controlled laboratory environment. Two participants at a time were matched as a pair and interacted in the trust game situation. Participants were recruited using the Online Recruitment System for Economic Experiments (ORSEE) (Greiner 2015) for the participant pool at the Karlsruhe Institute for Technology. In total 8 sessions were conducted in March 2015. The study hence comprised a total of 92 participants (65 male, 27 female, average age = 22.9 years, and ~58% with economic background).

Each participant was randomly assigned to either a blue or a red color treatment (see Figure 22) and within this treatment group to one of the two possible roles (trustor or trustee). We applied a complete between-subject design, i.e., each participant only encountered one treatment condition and role. Moreover, the interaction was one-shot, i.e., each participant played the trust game only once, avoiding learning and order effects. Consequently, we realized 23 observations per color-role-combination.

FIGURE 22: USER INTERFACE COLORS (LEFT: R:0, G:148, B:255; RIGHT: R:255, G:20, B:0)

The experiment was implemented using the software environment BROWNIE (Müller et al. 2014), a NeuroIS platform for lab experiments. UIs for all participants were displayed on IBM ThinkVision T860 9494-HB0 18" LCD 9494-HB0 computer screens with the following settings: brightness: 100, contrast: 100, color: r 50, g 50, b 50. Furthermore, both room temperature and lighting were kept constant using roller shutters, artificial light and air conditioning (~22°C and ~40% humidity).

Each session was structured as follows: Firstly, after arriving at the lab, participants were welcomed and randomly seated on separate computer terminals. No visual contact or other communication between participants was possible. All participants then listened to the recorded instructions as a group. Afterwards they were exposed to a 10 seconds color priming by watching an empty screen in either red or blue color, according to their assigned treatment. Subsequently, all participants played a one-shot trust game in the same UI background color following the design of Berg et al. (1995). The trustor received an endowment of 10 MU (10 MU = 2.50 EUR ≈ 2.82 US$) and had to decide how much of her endowment to transfer to a randomly assigned trustee in her session. Each unit transferred was multiplied with an efficiency factor δ=3 and afterwards credited to the trustee. In the next step, the trustee had to decide how many of the received MU to transfer back to the trustor. After this one-shot interaction, participants filled out a questionnaire covering the two adapted constructs color appeal (Cyr et al. 2010) and perceived warmth (Fenko et al. 2009) (see Table 6), as well as questions regarding their demographic background and general remarks. Finally and one by one, participants received their individual payoff in a separate room. Each experimental session had an approximate length of 15 minutes.

Construct	Item	Source
perceived warmth (*PW*)	*PW1:* How warm did you find the color of the screen?	adapted from (Fenko et al. 2009)
color appeal (*CA*)	*CA1:* The color on the screen was pleasing.	adapted from (Cyr et al. 2010)
	CA2: I liked the color on the screen.	
	CA3: The color on the screen was appropriate for my culture.	
	CA4: The color on the screen was emotionally appealing.	
	CA5: The color on the screen was interesting.	

TABLE 6: CONSTRUCTS

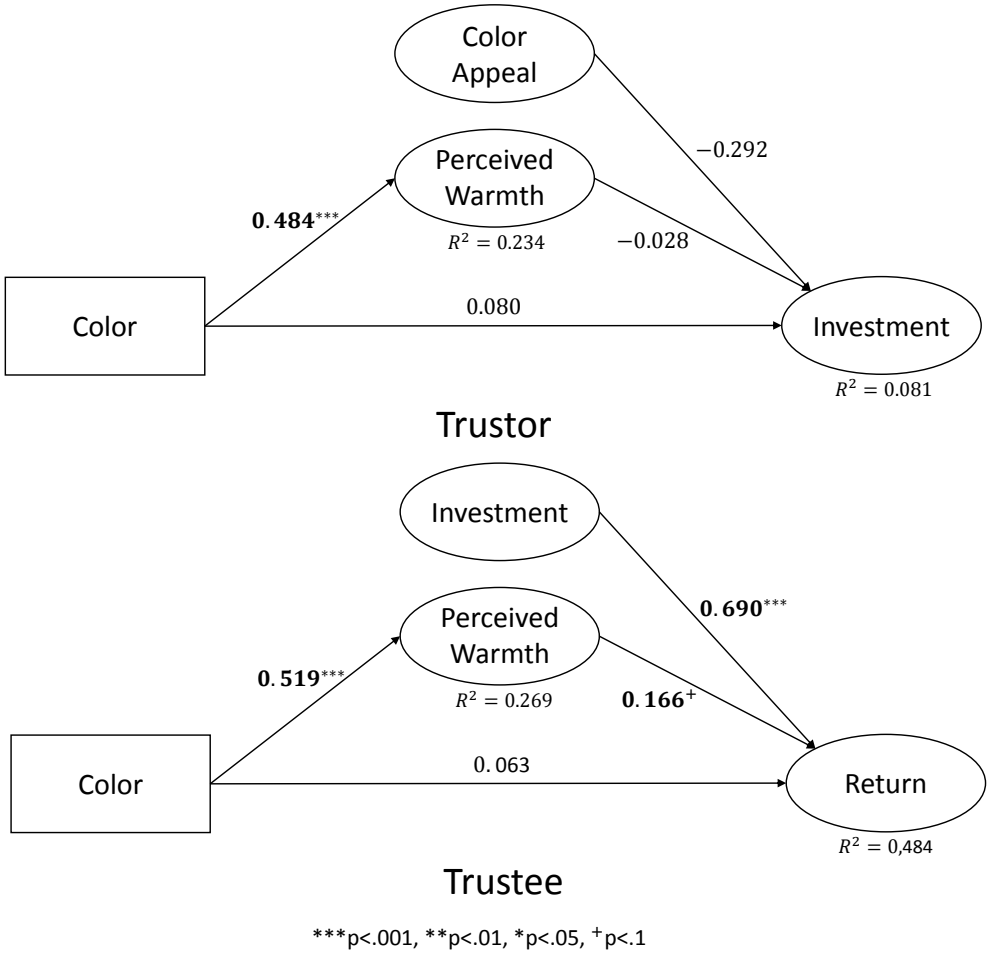
The 1-item construct perceived warmth (adapted from Fenko et al. (2009) was measured on a 1-7 Likert scale (1 = very cold, 7 = very warm). For the adapted 5-items construct color appeal (Cyr et al. 2010), which was also measured on a 1-7 Likert scale (1 = strongly disagree, 7 = strongly agree) construct reliability and construct validity were tested. Construct reliability was examined using Cronbach's alpha. The construct had a Cronbach's alpha of 0.7, and thus did not exceed the threshold suggested by Nunnally and Bernstein (Nunnally and Bernstein 1994). Convergent validity was tested by examining the AVE. The AVE did not exceeded 0.5 (Au et al. 2008) but scored at 0.3. Consequently, the construct should be revised for future work.

Results

In this paper we focus on the two main behavioral variables investment and return (i.e., the amount of MU transferred from the trustor to the trustee and vice versa) as laid out in the experimental design section.

The proposed research model was validated using Structural Equation Modelling (SEM). Specifically, the software smartPLS was used due to its flexibility in terms of sample size, data and residuals distribution (Chin 1998; Ringle et al. 2005). The sample size of this study (ntrustee = 46, ntrustor = 46) exceeded the minimum number required to validate a model in PLS. Following the rule of Gefen et al. (2000) it should exceed (i) the number of path coefficients of every single dependent variable by a factor of 10, and (ii) the number of items of the most complex construct (i.e., a minimum of 30 participants).

The results of the PLS analysis are presented in Figure 23. Following Chin (1998), bootstrapping with 500 subsamples was performed to test the statistical significance of the path coefficients (t-tests).



***p<.001, **p<.01, *p<.05, +p<.1

FIGURE 23: RESULTS OF THE PLS ANALYSIS

For the trustors' initial decision of how much to transfer to the trustee as an investment, none of the hypothesized factors (perceived warmth (H2+), color appeal (H3+) and also color (Red) (Q1)) had a significant impact. Subjects in the red color condition, however, perceived the experimental interface as warmer than subjects in the blue color condition (H1a+/H1b+). Turning to the trustee, i.e., the second mover in the experiment, we find that her return is affected by color, where this effect is fully carried by perceived warmth (H4+) (see Figure 23). In order to control for the fact that different investment values enable different ranges of returns, we use the preceding investment as a control variable. We find a positive relation between investment and return (H5+). However, no significant direct effect of color (Red) (Q2) is observable.

Recent IS literature has started to consider significance levels between .05 and .10 as "marginal" significance (Dimoka, Hong, et al. 2012). Considering this and the relatively small sample size of our study, we find that (i) both trustees and trustors perceive red interfaces as warmer than blue ones, (ii) investment behavior is not affected by color whatsoever, and (iii) there is an enhancing effect of red (compared to blue) interfaces on return behavior, fully mediated by perceived warmth.

Conclusion and Discussion

Within the scope of this article, we introduce a literature-based research model for the role of blue and red UI color on behavior in a trust game. Furthermore, we provide insights from a laboratory pilot study with 92 subjects, indicating that participants perceived increased warmth of their UI when confronted with red instead of blue background color. With respect to the participants' behavior, we find a marginally significant effect of perceived warmth resulting from the background color of the screen and also from color appeal on returns (i.e., reciprocating behavior) by the trustee. However, we find no such effects on the trustor's investment (i.e., trusting behavior).

Bearing in mind that the experiment was carried out as a one-shot interaction with an initial trustor endowment of 2.50 EUR (≈ 2.82 US$), we argue that the distribution of investments might have been effected by the willingness to take higher risks due to low monetary stakes (Johansson-Stenman et al. 2005), as also indicated by participants in written comments. This might have promoted an increased overall level of investment, hiding the effects of color on trust.

Following the same line of reasoning, both questions Q1 and Q2 remain unanswered for the time being and will need to be addressed in future research.

Trust as well as reciprocity are psychological constructs, not only highly relevant for participant interaction in the current research, but also affecting consumer behavior on electronic markets in general and on P2P platforms in particular (Gefen et al. 2008). The conscious use of colors in UI design for such environments (e.g. regarding colored advertising banners as depicted in Figure 28 in the Appendix, Supplementary Material Chapter 3) might help to positively influence user interaction, as indicated by our study.

To gain deeper insights in (i) what causes trust and reciprocal behavior, (ii) how these constructs could be manipulated, and (iii) what their effects on human interaction and IS are, further knowledge about users' cognitive, emotional, and physiological state is required (Dimoka 2010; Dimoka et al. 2011; Dimoka, Benbasat, et al. 2012).

For investigation of such user states, neuroscience methodology is already applied in similar research, e.g. (Brocke et al. 2013; Loos et al. 2010; Riedl, Davis, et al. 2014), to better understand the design, development and use of IS, but also to derive new theories that predict user behavior and impact IS related constructs, such as trust and reciprocity (Loos et al. 2010).

Based on the presented literature review and the results from our pilot study, we propose the application of NeuroIS methodology and tools, to further investigate the effects of color priming. As suggested in recent literature (Kang et al. 2011), temperature priming appears to have an effect on the activation of the insular cortex and trust behavior, which again is associated with the insular cortex. Hence, for future research we suggest to further examine the effects of color priming, specifically its effects on the activation of the insular cortex using NeuroIS tools such as fMRI.

Limitations

Whether or not our results can be generalized for a broader spectrum of users and cultures is an open question and a limitation, since the participants in our study were university students from Karlsruhe, predominantly grown up in Germany, who were placed in an experimental

environment. Furthermore, due to the pilot character of the study, our results are only based on a comparably small number of observations. Another limitation is based on the applied incentive structure which might have encouraged overly risky decisions and therefore lead to unexpectedly high investments. An introduction of higher monetary stakes may yield different outcomes. In addition to that, the small R^2 (for investment) indicates that additional explanatory factors should be considered in future investigations. Finally, we have not yet shown the role of the insula in the context of color treatments in the trust game. Therefore we consider our work as a call for further investigating the impact of colors on trusting and reciprocating behavior based on NeuroIS methodology.

PART III: FINALE

Chapter 5: Where Do We Go from Here?

In the previous chapters, I have provided an overview of my work on trust in the sharing economy, addressing the matter from various perspectives. First, I have outlined the role and relative importance of trust as one of several antecedents of intentions to partake in the sharing economy. Second, I have suggested and introduced advanced means of measuring and investigating the multidimensional and complex concept of trust in the sharing economy via both, survey-based and experimental (economics) approaches. Third, I have investigated and discussed means of building trust through the (interface) design of IS. In this last chapter, I will summarize the results of this cumulative dissertation by answering the research questions introduced in chapter 1. I will furthermore sketch out viable paths for going ahead with research on trust in the sharing economy in future work.

Answers to the Research Questions

With this cumulative dissertation, I have set out to investigate trust in the sharing economy as my primary and central research topic. In doing so I addressed four main research questions that were motivated and introduced in chapter 1. In the following, I will summarize and briefly discuss the answers to RQ1-RQ4.

RQ1: *What are the motives for sharing economy participation?*

The possible motives for sharing economy participation are manifold. As discussed in chapter 2, however, only a certain share evolves as significant in relation to the full spectrum of candidates.

The significant drivers and facilitators of consumers' intention to participate in the sharing economy (in descending order of their impact) are financial benefits, trust in other users, modern lifestyle, ecological sustainability, product variety, familiarity, sense of belonging, social experience, and ubiquitous availability. Analogously, the significant impediments are effort expectancy, independence through ownership, and process risk.

Importantly this result has to be interpreted against the backdrop of the limitations outlined in Chapter 2 (e.g., sampling, timing, and domain).

RQ2: *What is the relative importance of trust in the sharing economy from a consumer perspective?*

To answer this question (also based on the findings presented in chapter 2), we compare the total effect of trust in other users on the intention to participate in the sharing economy with the influence of all other significant drivers and impediments (see Table 3). This comparison reveals that among the 12 significant motives, trust in other users has the second strongest effect (right after financial benefits). Therefore, also in relation to a broad set of consumer motives, trust plays a key role in the decision whether or not to partake in the sharing economy.

RQ3: *How can trust in the sharing economy be measured?*

Trust in the sharing economy is a rather complex concept that exceeds the notion of interpersonal trust. In chapter 3, the unique characteristics of this trust concept are carved out in detail. As a result – and a response to research question three – the survey-based *3P* trust model and the *sharing game* laboratory experiment are introduced as a means of measuring trusting beliefs, intentions, and trust related behavior in a sharing economy context.

RQ4: *How can trust in the sharing economy be built?*

Finally, chapter 4 introduces two distinct approaches to answer research question 4. First, a use-case for the evaluation of designing trust building mechanisms between altruistically motivated peers is described. In particular, the design of the booking process and reputation system of the sharing platform www.sharewood-forest.de is presented. Second, the influence of UI design (i.e., warm and cold design colors) on trusting behavior is investigated – with no significant result as an antecedent of trust.

Importantly, further research efforts are required to comprehensively answer the question of how trust in the sharing economy can be built. The studies provided within the scope of this dissertation can provide first insights with regard to this matter. However, as a starting point for future research, I would like to refer to related literature on the antecedents of trust in the sharing economy (ter Huurne et al. 2017) as well as the outlook and future research section.

Conclusion and Limitations

With this cumulative dissertation, I provide a comprehensive basic work on the issue of trust in the sharing economy. My work covers all elements of the generalized framework of trust-related research (see Figure 24) based on Gefen et al. (2003). Thus, the elements *Conceptualization of Trust*, *Antecedents of Trust*, *Trust Consequents*, and *Contextual Antecedents* are addressed.

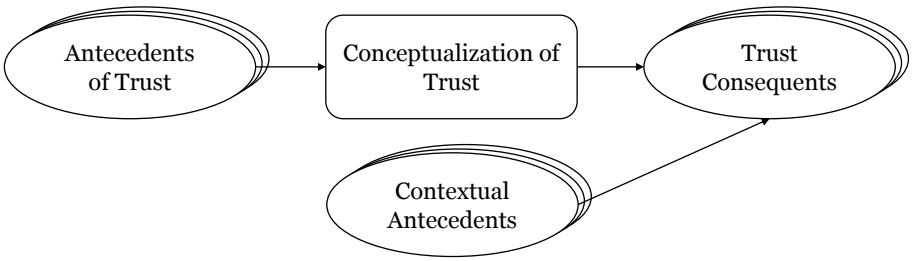


FIGURE 24: FRAMEWORK OF CLASSIFICATION FOR TRUST-RELATED RESEARCH

My work has important implications for both theory and practice. First, my contribution to the growing body of sharing economy literature comprises

(i) A theory driven analysis of user motives – that is drivers and impediments of P2P *sharing (demonstrating the role of trust in relation to 17 further antecedent candidates),*

(ii) the fundamental development of two complementary measurement methods for trust in the sharing economy (a survey-based measurement scale and an experimental framework),

(iii) the investigation of potential trust antecedents in a sharing economy context (i.e., design features that potentially foster trust).

Second, practitioners in the IS domain (i.e., platform providers and other stakeholders striving to facilitate P2P sharing) can profit from the findings of this work by consciously catering to consumer motives. Furthermore the trust models developed in this dissertation can be leveraged as a strategic basis for successful trust-centric platform design as well as brand management (Lundin 2017; Reshetilo 2017). These "top strategies for p2p marketplaces" (Reshetilo 2017), are inter alia applied in the basic design of the Sharewood-Forest platform that was launched during the preparation of this dissertation. This exemplary case for the design of a non-profit P2P sharing economy platform may serve as a basis for cross-case replications and paves the way for further creative platform implementations.

Nevertheless, the contributions of this work need to be interpreted against the backdrop of some important limitations. First and foremost, the participants in all studies presented within the scope of this dissertation are drawn from the same student sample. In particular, the subject pool recruiting software of the KD²Lab was used to acquire the participants. Consequently, our sample is marked by the demographic properties of a German technical university. The results should therefore only be generalized for a broader target group with some caution.

Second, caused by the novelty and innovative nature of the sharing economy, it was necessary to develop and apply research approaches and methodologies that keep up with the rapid development of the field and capture the most important new characteristics of the phenomenon. Consequently, all approaches presented before should be cross-validated in future research (for example in a large scale study of the sharing game, as conducted by my colleague David Dann).

Third, the notion of the sharing economy is subject to a continuous change. When I started my work on the sharing economy in 2014, Airbnb for example offered more than 550000 accommodations [23] and was valued with a market capitalization of around $10 billion according to the Wall Street Journal [24]. Today (according to the company's website) the platform offers more than 4 million accommodations in more than 190 countries. Reuters [25] reports a valuation of Airbnb that equals $31 billion. Other platforms have emerged or vanished in the course of time and therefore shaped the overall sharing economy ecosystem. Importantly, the studies discussed in this work do only provide a snapshot of this restless field. Therefore a longitudinal evaluation would be necessary to derive more robust findings.

Another consequence of this tremendous speed of development is that more recent phenomena, such as the *sharewashing* efforts of companies to blur their profit-oriented business models with aspects of ecological and social sustainability (Hawlitschek, Stofberg, et

[23] https://techcrunch.com/2013/12/19/airbnb-10m/
[24] https://www.wsj.com/articles/tpg-led-group-closes-450-million-investment-in-airbnb-1397845128
[25] https://www.reuters.com/article/us-airbnb-growth/airbnbs-experiences-business-on-track-for-1-million-bookings-profitability-idUSKCN1FX2ZR

al. 2017) are not covered by this cumulative dissertation. Also technological advancements that may disrupt the sharing economy platform landscape – for example the much discussed blockchain technology (Hawlitschek et al. 2018; Hawlitschek, Notheisen, et al. 2017; Notheisen et al. 2017) were not covered in detail.

Importantly, the blockchain– also referred to as the "trust machine" (Economist 2015) or "trust-free" (Beck et al. 2016) technology – bears the potential to massively shape future research and development efforts in the sharing economy context (see for example Sundararajan 2016). In the following I will therefore focus on discussing viable topics for future research that result from the global hype around the blockchain technology.

Outlook and Future Research

In recent years, the blockchain technology has emerged as the epicenter of a global hype (Notheisen et al. 2017). Not least because of the recent speculation around crypto-currencies such as Bitcoin, the blockchain technology has acquired a reputation of facilitating decentralized markets without intermediaries (e.g., financial institutions).

By enabling transparent recording and value exchange mechanisms that are independent from a central authority or institution, the blockchain is also assumed to provide the building blocks of the next generation of sharing economy business models – comprising initiatives such as the ride-sharing application by *Lazooz* or the universal sharing network by *Slock.it* (Avital et al. 2016; Nakamoto 2008; Puschmann and Alt 2016).

The "sharing economy 2.0" (Lundy 2016) is a visionary idea that is built on the disruptive potential of the blockchain technology. Truly decentralized sharing economy platforms that are organized and run by their users and thus enable an actual is P2P exchange fuel the fantasies of visionaries and sharing economy pioneers alike (see Botsman 2016; Sundararajan 2016). While in the popular science the notion of "decentralized" (Lundy 2016) or "distributed" trust (Botsman 2016) through blockchain technology remains a vague concept, IS research has set out to systematically investigate the possible influence of blockchain technology for the issue of trust in the sharing economy (Glaser 2017; Hawlitschek et al. 2018; Hawlitschek, Notheisen, et al. 2017).

However, much work has yet to be done, in order to successfully exploit the potential of blockchain technology as a platform (de Reuver et al. 2017; Parker and Van Alstyne 2017). Future research should thus focus on systematically assessing the potential of blockchain-based platform – with a particular focus on trust. Importantly, the popular idea of trust-free systems within the boundaries of closed ecosystems (Glaser 2017) should be critically assessed against the backdrop of the multidimensional phenomenon of trust in the sharing economy. As suggested by Söllner et al. (2016), institution-based trust in basic infrastructures such as the internet can have important implications for other targets of trust and for the use of IS. In the same way, future research should address the influence of trust in blockchain technology as a platform on other targets of trust – particularly in the context of the sharing economy.

"The knowledge of an unlearned man is living and luxuriant like a forest, but covered with mosses and lichens and for the most part inaccessible and going to waste; the knowledge of the man of science is like timber collected in yards for public works, which still supports a green sprout here and there, but even this is liable to dry rot."

(Thoreau 1906, p. 138)

APPENDIX

Appendix

Supplementary Material Chapter 1

Construct Operationalization (Survey 1) & Design and Procedure (Survey 2)

Our initial measurement model draws upon existing survey scales from established literature wherever possible. If no adequate scale was available, specific items were formulated and refined in a content validity assessment with three judges who were otherwise not involved in the research process. The wording of all items was based on standard guidelines (Harrison and McLaughlin 1993; Tourangeau et al. 2000). To clean and validate the newly developed measurement scales, we conducted an EFA based on a student sample of 605 Internet users. The entire process of measurement development, survey administration, and EFA is documented in (blinded for review).

At the beginning of Survey 2, a short introduction explained the scope and context of the survey as well as the case of PPS platforms to its participants (see Appendix B). In the following, we assessed participants' consumption behavior on PPS platforms as a formative construct with items querying platform usage on a six-point scale with levels "less than once a year," "about once a year," "several times per year," "about once a month," "multiple times per month," and "about every week." Behavioral intention to use PPS was measured with items adopted from Venkatesh (Venkatesh et al. 2012), attitude towards PPS and perceived behavioral control with items was adapted from Taylor (Taylor and Todd 1995b). To control for priming effects, item-context induced mood states, and other biases related to the question context, we presented blocks of items for predictor variables in random order (Podsakoff et al., 2003; p. 888). Additionally, we implemented the marker variable technique (Lindell and Whitney 2001) to control for common method variance (CMV) by including "a measure of the assumed source of method variance as a covariate in the statistical analysis" (Podsakoff et al., 2003; p. 889). For this, we included two unrelated items in the survey (Gimpel et al. 2013). Control questions directly assessed the participants' attention. We assessed the demographic background of participants by a set of separate questions at the end of the survey, including age, gender, and household size.

Survey Introduction

Welcome and thank you for participating in this survey. It will take approximately 12 to 15 minutes. If you wish to enter the lottery, please provide your email address at the end of the survey. It will be used for winner notification only and is deleted right after.

The survey's topic is the sharing economy. First, we would like to outline our understanding of this term. Note that it is not important for your participation whether you have any experience with the services and platforms described below. Your opinion is of interest to us in any case.

The sharing economy is described and understood in various different ways in the media and sometimes it is not clear what is exactly meant. As part of this survey, we concentrate on a clearly defined aspect, namely short-term rental between private persons, usually mediated by online platforms. We summarize this as “Peer-to-Peer Rental and Sharing” and will use the abbreviation PPS henceforth.

Examples for PPS are the private rental of apartments or rooms, cars, commodities, or ride sharing. Furthermore, there are numerous smaller, more specialized platforms for different kinds of resources (parking lots, books and DVDs, clothing, WiFi Internet access, outdoor equipment, and many more).

In order to clarify what is exactly meant by PPS, please consider the following criteria (we also provide negative examples for each rule).

- Transactions work on a renting/renting out basis, thus, it comprises transactions without transfer of ownership. Explicitly not in our focus are hence are portals like eBay, Quoka, etc.
- Transactions take place between private persons. Professional provision of holiday accommodation, car rentals, car sharing programs (e.g., Stadtmobil, Car2Go) is explicitly not meant by PPS.
- Transactions involve a payment. Unpaid neighborhood assistance as lending and borrowing a lawn mower or concepts as Couchsurfing are not meant by PPS.
- Transactions are rather short-term and typically repeated (often with different transaction partners). The mediation of long-lasting rental agreements (as, for instance, on Immoscout24) is not meant by PPS.

Some of the survey's questions aim at your experience with PPS. If you do not have any experience with it, please just answer the question from a hypothetical or general point of view. Please answer all questions as honest and intuitive as possible.

Thank you for your participation. Let's get started!

Construct	Items	Adapted from
Financial Benefits	PPS allows me to save money. PPS allows me to lower my expenses. PPS allows me to live thriftily.	(Hamari et al. 2016) (Lastovicka et al. 1999)
Uniqueness	PPS gives me access to unique products and services. PPS allows me to use unique products and services. PPS allows me to access products and services which cannot be found elsewhere.	own
Variety	PPS allows me to access a diverse range offers. PPS offers a large spectrum of products and services. PPS offers me a great diversity of products and services.	own
Ubiquitous Availability	PPS allows me to access products and services in many places. PPS allows me to access products and services wherever I am. PPS allows me to access products and services regardless of my location.	own
Social Experience	I meet interesting people through PPS. I get to know new people through PPS. Through PPS I make nice acquaintances.	own
Process Risk Concerns	Engaging in PPS constitutes an economic risk to me. Engaging in PPS constitutes a legal risk to me. You take a risk when engaging in PPS.	own
Privacy Concerns	It is unpleasant that anyone can get insights into my private sphere on PPS platforms. It is unpleasant to disclose private data online for PPS. It is unpleasant that many people can see my private data on PPS platforms.	(Krasnova et al. 2009)
Resource Scarcity Concerns	PPS entails a high chance that a resource will not be available when I want to use it. PPS entails the risk that I won't be able to get a resource when I want to use it. In PPS it is possible that when I need a resource, it won't be available. In PPS resources are often unavailable when I want to use them.	(Lamberton and Rose 2012)
Prestige of Ownership	People with many possessions have more prestige than those with less. People with many possessions have a high profile. Having many possessions is a status symbol.	(Venkatesh and Bala 2008)
Independence through Ownership	Ownership increases my independence from others. Owning things myself makes me independent from other people. Through ownership I gain independence from other people.	own
Ecological sustainability	PPS helps saving natural resources. PPS is a sustainable mode of consumption. PPS is ecologically meaningful. PPS is efficient in terms of using energy. PPS is environmentally friendly.	(Hamari et al. 2016)
Anti-capitalism	PPS allows me to not unnecessarily support large corporations. PPS allows me to avoid capitalism. PPS offers me an alternative to the capitalist system.	(Lamberton and Rose 2012)
Sense of belonging	I feel connected with others when using PPS. I have a good bond with others in the PPS community.	(Peterson et al. 2008)
Modern lifestyle	To me, PPS represents an up-to-date life style. own PPS meets the zeitgeist. PPS is in tune with the times.	own
Effort	It is cumbersome to participate in PPS activities.	(Venkatesh et al.

Construct	Items	Adapted from
expectancy	I would have to familiarize with PPS a lot first. It takes a long time to get acquainted to PPS. (dropped) PPS appears to be too circumstantial to me.	2012)
Familiarity	I am familiar with PPS. I have experience with PPS. I know a lot about how PPS actually works.	(Lamberton and Rose 2012)
Trust in Other Users	Other PPS users are trustworthy. Other PPS users keep promises and commitments. Other PPS users usually keep my best interests in mind.	(Pavlou 2003)
Attitude	Using PPS is a good idea. Using PPS is a wise idea. I like the idea of using PPS. Using PPS is pleasant.	(Taylor and Todd 1995b)
Subjective Norm	People who are important to me think that I should participate in PPS. People who influence my behavior think that I should participate in PPS. People whose opinions I value prefer that I participate in PPS.	(Venkatesh et al. 2012)
Perceived Behavioral Control	I am able to use PPS. Using PPS is entirely within my control. I have the resources and the knowledge and the ability to make use of PPS.	(Taylor and Todd 1995b)
Behavioral Intention	I intend to use PPS in the future. I will always try to use PPS in my daily life. I plan to use PPS frequently.	(Venkatesh et al. 2012)
PPS Usage Behavior (formative)	From a consumer perspective, I use PPS to ... ... rent an apartment or room from other users. ... rent a car from other users. (dropped) ... rent products from other users. (dropped) ... find a ride as passenger in a car. ... borrow money from other users. (dropped)	own
Control: CMV	I don't exclusively trust in classic medical therapies. I don't want to be fully dependent on traditional medical treatment.	(Gimpel et al. 2013)

TABLE 7: CONSTRUCTS AND ITEMS

Model Evaluation

We used PLS-SEM and the software SmartPLS 3 to evaluate our model (Ringle et al. 2015). PLS-SEM was preferred over CB-SEM due to the fact that our model comprises a formative scale (Gefen et al. 2011), for the modest distributional and sample size requirements of PLS-SEM, and the independence of a highly developed theory base (Barclay et al. 1995). Before evaluating the structural model, we first establish construct reliability and validity, following the guidelines by Hair et al. (Hair et al. 2011, 2016).

As primary measure of internal consistency reliability (ICR), we report the composite reliability of all constructs in Table 8, since Cronbach's Alpha has been criticized as being a lower bound which underestimates the actual reliability (Peterson and Kim 2013). The smallest ICR arises for Perceived Behavioral Control (ICR = .833). Thus, composite reliability is well above the conventional threshold of .70 (Nunnally and Bernstein 1994), indicating acceptable consistency reliability.

To demonstrate discriminant and convergent validity, we test whether the factor loadings of all items are higher than their respective cross-loadings. We dropped item EFF3 of the effort expectancy construct due to a factor loading below .70 and a substantial increase in AVE and composite reliability after deletion. Also, we establish that the square root of AVE exceeds the correlations with other constructs (Fornell-Larcker criterion). As depicted in Table 8, the smallest AVE occurs for Process Risk Concerns (AVE = .627), which is still well above the conventional threshold of .50 suggesting convergent validity (Au et al. 2008). All heterotrait-monotrait ratios of correlations (HTMT) are below .90, further speaking in favor discriminant validity (Henseler et al. 2015).

The variance inflation factor (VIF) of any item contributing to the formative construct PPS usage and among the latent variables is well below the conventional threshold of 5 (Hair et al. 2016). Thus, multi-collinearity is no major issue in the structural model.

We employed three statistical approaches to check for CMV: First, Harman's single factor test suggests the existence of multiple factors (Podsakoff et al. 2003). Second, we employed the correlational marker technique as a post-hoc test (Lindell and Whitney 2001; Richardson et al. 2009). Partialling out the smallest shared variance in bivariate correlations among substantive exogenous latent variables did not affect the significance of any bivariate correlation among these variables. Third, we implement the marker variable technique with a theoretically unrelated marker variable (Lindell and Whitney 2001; Richardson et al. 2009). The correlation observed between the marker variable and the theoretically unrelated variable is interpreted as an estimate of CMV (Lindell and Whitney 2001). The maximum shared variance of the marker variable with other latent variables is only 5.4%. Again, partialling out the smallest shared variance between the marker and the substantive exogenous variables resulted in no changes in significance of bivariate correlations. In summary, all of these statistical procedures indicate that CMV is not a major concern in this study.

Following the recommendations of (Gefen et al. 2011), we report item loadings, descriptive statistics per item, and construct correlations in
Table 9, Table 10, Table 11, and Table 12.

	FIN	UNI	VAR	UBI	SCX	RSK	PRV	SCR	PRS	IND	ECO	CAP	BLG	LIF	EFF	FAM	TRU	ATT	INF	PBC	INT
Mean	5.51	4.58	5.17	4.93	4.85	4.03	4.63	4.17	4.49	5.61	5.59	4.08	3.98	5.39	3.64	4.21	4.55	5.18	3.56	5.09	4.39
SD	0.93	1.12	0.90	1.07	1.11	1.04	1.45	1.04	1.45	1.07	0.84	1.30	1.14	1.01	1.02	1.28	0.85	0.90	1.34	1.04	1.28
Cron. α	.823	.819	.814	.882	.911	.704	.927	.877	.916	.865	.863	.792	.804	.891	.756	.847	.713	.831	.943	.697	.836
ICR	.894	.892	.889	.927	.944	.834	.954	.915	.944	.916	.901	.877	.911	.932	.859	.907	.839	.888	.963	.833	.901
AVE	.738	.734	.728	.809	.849	.627	.873	.729	.848	.784	.647	.704	.836	.821	.671	.766	.636	.665	.898	.626	.753

TABLE 8: DESCRIPTIVE STATISTICS, RELIABILITY AND VALIDITY OF REFLECTIVE CONSTRUCTS

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*	*21*
FIN1	**.877**	.259	.366	.347	.417	-.210	-.122	-.070	.015	.035	.502	.283	.318	.442	-.266	.303	.384	.580	.254	.387	.435
FIN2	**.859**	.240	.345	.272	.323	-.198	-.062	-.029	.004	.022	.449	.271	.255	.440	-.242	.237	.323	.514	.263	.300	.390
FIN3	**.842**	.219	.300	.292	.359	-.214	-.115	-.061	.000	.031	.472	.247	.283	.405	-.310	.271	.305	.527	.195	.355	.392
UNI1	.242	**.897**	.551	.473	.334	-.045	-.066	-.082	-.057	-.110	.263	.270	.326	.332	-.172	.130	.263	.349	.256	.190	.335
UNI2	.233	**.884**	.567	.500	.283	-.037	-.079	-.083	-.072	-.074	.249	.254	.274	.313	-.119	.107	.213	.306	.220	.115	.280
UNI3	.247	**.785**	.422	.357	.262	-.041	-.004	.001	-.096	-.104	.209	.268	.252	.260	-.100	.107	.178	.258	.243	.131	.256
VAR1	.315	.544	**.847**	.502	.318	-.124	-.071	-.197	.015	-.007	.334	.189	.340	.362	-.219	.225	.374	.455	.247	.269	.377
VAR2	.338	.482	**.855**	.477	.302	-.151	-.044	-.169	.049	-.010	.333	.190	.313	.381	-.241	.330	.340	.437	.254	.310	.336
VAR3	.353	.519	**.858**	.471	.319	-.135	-.070	-.152	.057	.029	.356	.183	.328	.385	-.235	.270	.316	.417	.237	.261	.308
UBI1	.342	.478	.548	**.892**	.348	-.118	-.072	-.203	.028	-.038	.356	.237	.326	.366	-.221	.267	.354	.448	.250	.241	.387
UBI2	.298	.475	.483	**.907**	.313	-.122	-.094	-.170	-.008	-.050	.305	.225	.241	.356	-.208	.178	.309	.401	.199	.171	.340
UBI3	.316	.453	.494	**.900**	.331	-.131	-.113	-.182	-.024	-.076	.312	.239	.253	.362	-.219	.248	.349	.400	.226	.199	.375
SCX1	.377	.343	.347	.353	**.933**	-.154	-.146	-.123	-.022	-.025	.343	.275	.550	.412	-.225	.285	.452	.500	.315	.301	.449
SCX2	.414	.275	.312	.313	**.904**	-.133	-.100	-.053	.022	.072	.344	.226	.492	.400	-.185	.232	.393	.449	.249	.299	.374
SCX3	.397	.331	.352	.350	**.926**	-.149	-.144	-.087	.006	.013	.385	.286	.532	.417	-.239	.266	.451	.490	.296	.294	.446
RSK1	-.302	-.020	-.162	-.111	-.179	**.802**	.274	.208	.158	.121	-.164	-.040	-.133	-.229	.411	-.198	-.354	-.330	-.127	-.317	-.264
RSK2	-.176	-.065	-.136	-.126	-.137	**.840**	.329	.223	.203	.245	-.107	-.030	-.147	-.176	.375	-.204	-.322	-.326	-.155	-.283	-.263
RSK3	-.066	-.026	-.070	-.085	-.040	**.731**	.361	.224	.156	.302	-.082	.009	-.155	-.121	.392	-.174	-.267	-.246	-.146	-.213	-.215
PRV1	-.125	-.078	-.092	-.121	-.141	.367	**.939**	.200	.081	.190	-.145	.002	-.185	-.179	.313	-.118	-.285	-.267	-.149	-.172	-.252
PRV2	-.117	-.042	-.057	-.089	-.136	.383	**.919**	.174	.089	.192	-.140	-.005	-.196	-.147	.303	-.134	-.294	-.259	-.120	-.192	-.243
PRV3	-.085	-.051	-.053	-.076	-.122	.368	**.944**	.190	.076	.164	-.126	.006	-.164	-.141	.305	-.125	-.298	-.250	-.101	-.142	-.241
SCR1	-.093	-.037	-.179	-.162	-.100	.244	.191	**.864**	.095	.146	-.061	-.028	-.108	-.065	.296	-.089	-.205	-.166	-.055	-.140	-.116
SCR2	.005	-.036	-.148	-.167	-.060	.244	.141	**.843**	.094	.160	-.042	.048	-.099	-.055	.288	-.104	-.165	-.134	-.095	-.138	-.132
SCR3	-.038	-.067	-.165	-.180	-.067	.234	.169	**.834**	.141	.180	-.045	.054	-.138	-.069	.258	-.090	-.211	-.140	-.053	-.151	-.121
SCR4	-.077	-.093	-.198	-.198	-.097	.215	.180	**.874**	.103	.120	-.093	.002	-.086	-.069	.307	-.137	-.223	-.156	-.091	-.180	-.146
PRS1	-.004	-.072	.021	.008	.005	.208	.071	.119	**.952**	.404	.005	-.034	-.005	-.020	.161	-.011	-.088	-.080	-.032	-.076	-.085
PRS2	.038	-.079	.076	-.011	-.016	.220	.102	.095	**.917**	.376	.015	-.059	-.007	-.015	.133	-.001	-.067	-.043	-.034	-.053	-.073
PRS3	-.003	-.091	.052	-.005	.012	.174	.081	.134	**.892**	.391	.022	-.043	-.012	-.013	.181	-.012	-.047	-.041	-.019	-.064	-.071
IND1	.029	-.108	.015	-.035	.021	.235	.184	.134	.391	**.843**	.049	-.078	-.133	-.009	.138	-.047	-.120	-.111	-.148	-.016	-.176
IND2	.006	-.120	-.016	-.078	.001	.232	.185	.167	.379	**.929**	-.031	-.118	-.185	-.128	.221	-.100	-.158	-.175	-.148	-.068	-.228
IND3	.071	-.060	.023	-.033	.041	.260	.147	.162	.362	**.882**	.066	-.050	-.139	-.035	.155	-.066	-.108	-.113	-.109	.021	-.185
ECO1	.415	.187	.325	.258	.269	-.088	-.110	-.052	.040	.017	**.799**	.280	.310	.428	-.111	.170	.254	.436	.192	.163	.292
ECO2	.421	.263	.311	.306	.339	-.162	-.105	-.080	-.021	-.009	**.763**	.370	.310	.526	-.172	.160	.313	.487	.221	.188	.345
ECO3	.511	.274	.366	.308	.367	-.151	-.114	-.046	-.019	-.006	**.863**	.367	.343	.529	-.166	.178	.342	.512	.250	.212	.356
ECO4	.450	.192	.295	.297	.289	-.107	-.124	-.037	.063	.045	**.775**	.271	.232	.455	-.169	.168	.274	.451	.170	.216	.274
ECO5	.419	.208	.302	.282	.286	-.093	-.140	-.074	-.005	.042	**.819**	.293	.250	.435	-.189	.156	.284	.438	.161	.208	.281
CAP1	.297	.274	.186	.195	.223	-.051	.002	.011	-.032	-.079	.312	**.801**	.273	.267	-.064	.029	.186	.305	.148	.075	.287
CAP2	.182	.239	.128	.204	.225	.010	.023	.027	-.044	-.076	.324	**.824**	.268	.245	.031	.003	.139	.206	.125	-.029	.214
CAP3	.279	.254	.219	.250	.266	-.021	-.014	.013	-.042	-.090	.359	**.889**	.281	.306	-.040	.074	.178	.329	.177	.075	.318
BLG2	.316	.301	.352	.288	.522	-.168	-.176	-.100	-.002	-.162	.358	.276	**.915**	.355	-.214	.286	.409	.470	.399	.226	.437
BLG3	.294	.310	.349	.272	.521	-.163	-.180	-.129	-.012	-.161	.302	.322	**.913**	.344	-.228	.239	.461	.464	.372	.212	.437
LIF1	.456	.342	.415	.407	.402	-.210	-.165	-.077	-.012	-.103	.560	.341	.389	**.894**	-.276	.252	.426	.578	.330	.255	.495
LIF2	.435	.296	.396	.342	.380	-.222	-.125	-.095	.001	-.046	.512	.278	.287	**.913**	-.284	.249	.383	.556	.274	.335	.480
LIF3	.467	.324	.386	.343	.427	-.184	-.162	-.035	-.037	-.058	.539	.274	.361	**.911**	-.279	.272	.411	.572	.348	.315	.500
EFF1	-.238	-.144	-.236	-.230	-.187	.433	.292	.318	.167	.176	-.146	-.042	-.203	-.233	**.844**	-.273	-.323	-.403	-.18	-.337	-.298
EFF2	-.229	-.067	-.180	-.126	-.147	.404	.241	.227	.109	.128	-.112	.059	-.140	-.192	**.727**	-.416	-.310	-.288	-.153	-.458	-.273
EFF4	-.306	-.155	-.243	-.217	-.233	.389	.275	.277	.140	.183	-.219	-.078	-.234	-.316	**.878**	-.337	-.378	-.452	-.248	-.357	-.405
FAM1	.248	.137	.324	.226	.221	-.198	-.110	-.115	-.003	-.053	.149	.016	.219	.234	-.328	**.870**	.315	.300	.214	.545	.343
FAM2	.309	.108	.285	.247	.274	-.231	-.126	-.114	.009	-.104	.194	.076	.299	.264	-.371	**.870**	.369	.388	.292	.527	.456
FAM3	.274	.109	.237	.206	.251	-.211	-.117	-.094	-.029	-.067	.201	.035	.239	.249	-.361	**.886**	.318	.341	.277	.553	.405
TRU1	.338	.162	.312	.279	.398	-.385	-.308	-.222	-.082	-.138	.323	.150	.383	.367	-.381	.343	**.856**	.518	.296	.422	.453
TRU2	.264	.193	.326	.266	.281	-.304	-.254	-.223	-.017	-.110	.224	.112	.309	.295	-.333	.278	**.790**	.403	.253	.339	.369
TRU3	.337	.270	.332	.358	.437	-.259	-.179	-.119	-.080	-.107	.323	.225	.444	.409	-.268	.285	**.743**	.483	.321	.309	.428
ATT1	.535	.277	.446	.392	.421	-.346	-.247	-.125	-.062	-.126	.552	.307	.449	.560	-.393	.311	.468	**.857**	.342	.386	.596
ATT2	.54	.239	.390	.335	.363	-.266	-.181	-.084	-.044	-.065	.530	.272	.315	.538	-.326	.278	.408	**.799**	.300	.333	.536
ATT3	.516	.314	.404	.401	.488	-.303	-.250	-.149	-.074	-.175	.470	.297	.463	.531	-.380	.347	.522	**.855**	.419	.386	.694
ATT4	.466	.338	.430	.383	.421	-.337	-.220	-.214	-.029	-.137	.337	.245	.430	.414	-.453	.338	.524	**.745**	.346	.419	.571
INF1	.255	.256	.263	.244	.289	-.186	-.148	-.081	-.007	-.166	.220	.168	.399	.333	-.245	.305	.365	.419	**.954**	.244	.500
INF2	.241	.247	.264	.227	.284	-.126	-.121	-.069	-.027	-.140	.242	.158	.400	.328	-.196	.253	.319	.384	**.941**	.177	.459
INF3	.288	.289	.292	.242	.315	-.192	-.107	-.091	-.055	-.131	.247	.192	.401	.336	-.243	.286	.349	.429	**.948**	.217	.502
PBC1	.363	.150	.283	.218	.292	-.248	-.118	-.131	-.018	.002	.221	.065	.195	.283	-.374	.491	.378	.415	.167	**.830**	.380
PBC2	.243	.109	.223	.126	.215	-.324	-.215	-.170	-.047	-.045	.156	.008	.168	.205	-.339	.428	.357	.317	.164	**.698**	.297
PBC3	.348	.145	.270	.190	.255	-.262	-.109	-.129	-.105	-.035	.202	.061	.204	.294	-.363	.545	.339	.372	.204	**.837**	.364
INT1	.475	.291	.377	.374	.453	-.292	-.246	-.157	-.033	-.173	.351	.286	.421	.489	-.370	.421	.507	.690	.421	.430	**.881**
INT2	.308	.284	.306	.337	.330	-.207	-.196	-.087	-.065	-.200	.320	.281	.389	.421	-.282	.320	.397	.547	.420	.309	**.807**
INT3	.433	.315	.354	.356	.407	-.308	-.238	-.141	-.119	-.217	.338	.304	.434	.498	-.388	.439	.456	.674	.496	.399	**.913**

TABLE 9: LOADINGS AND CROSS-LOADINGS OF MEASUREMENT ITEMS

Item	Mean	St.Dev.	Median	Min	Max		Item	Mean	St.Dev.	Median	Min	Max
FIN1	5.592	1.063	6	1	7		*ECO3*	5.816	0.989	6	1	7
FIN2	5.434	1.108	5	1	7		*ECO4*	5.482	1.078	6	1	7
FIN3	5.507	1.065	6	1	7		*ECO5*	5.620	1.017	6	1	7
UNI1	4.647	1.250	5	1	7		*CAP1*	4.510	1.528	5	1	7
UNI2	4.666	1.264	5	1	7		*CAP2*	3.662	1.526	4	1	7
UNI3	4.440	1.398	5	1	7		*CAP3*	4.059	1.580	4	1	7
VAR1	5.183	1.066	5	1	7		*BLG2*	3.805	1.335	4	1	7
VAR2	5.154	1.057	5	1	7		*BLG3*	4.160	1.157	4	1	7
VAR3	5.161	1.040	5	1	7		*LIF1*	5.148	1.171	5	1	7
UBI1	5.093	1.112	5	1	7		*LIF2*	5.529	1.125	6	1	7
UBI2	4.812	1.221	5	1	7		*LIF3*	5.498	1.049	6	1	7
UBI3	4.872	1.227	5	1	7		*EFF1*	3.860	1.310	4	1	7
SCX1	4.809	1.195	5	1	7		*EFF2*	3.448	1.317	3	1	7
SCX2	4.977	1.228	5	1	7		*EFF4*	3.695	1.356	4	1	7
SCX3	4.752	1.194	5	1	7		*FAM1*	4.412	1.436	5	1	7
RSK1	3.207	1.373	3	1	7		*FAM2*	4.110	1.524	5	1	7
RSK2	3.972	1.427	4	1	7		*FAM3*	4.102	1.417	4	1	7
RSK3	4.901	1.139	5	1	7		*TRU1*	4.448	1.054	5	1	7
PRV1	4.624	1.555	5	1	7		*TRU2*	4.609	1.120	5	1	7
PRV2	4.596	1.530	5	1	7		*TRU3*	4.591	1.014	5	1	7
PRV3	4.683	1.564	5	1	7		*ATT1*	5.538	1.059	6	1	7
SCR1	3.970	1.172	4	1	7		*ATT2*	5.377	1.078	5	1	7
SCR2	4.360	1.316	5	1	7		*ATT3*	5.184	1.202	5	1	7
SCR3	4.341	1.214	4	1	7		*ATT4*	4.603	1.084	5	1	7
SCR4	4.001	1.146	4	1	7		*INF1*	3.576	1.403	4	1	7
PRS1	4.462	1.566	5	1	7		*INF2*	3.491	1.407	4	1	7
PRS2	4.467	1.589	5	1	7		*INF3*	3.616	1.424	4	1	7
PRS3	4.554	1.538	5	1	7		*PBC1*	5.660	1.170	6	1	7
IND1	5.514	1.292	6	1	7		*PBC2*	4.471	1.395	4	1	7
IND2	5.678	1.168	6	1	7		*PBC3*	5.152	1.407	5	1	7
IND3	5.652	1.160	6	1	7		*INT1*	5.009	1.457	5	1	7
ECO1	5.584	1.028	6	1	7		*INT2*	3.812	1.494	4	1	7
ECO2	5.462	1.140	6	1	7		*INT3*	4.337	1.489	5	1	7

TABLE 10: ITEM MEANS, STANDARD DEVIATIONS, MEDIANS, MINIMUMS AND MAXIMUMS

	Apartm.	**Car**	**Product**	**Ride**	**Money**
less than once per year	50	84	78	26	92
approx. once per year	27	10	11	14	3
several times per year	20	5	10	36	3
appr. once per month	1	1	1	15	1
several times per month	1	0	0	8	1
basically every week	1	0	0	2	0
	100	100	100	100	100

TABLE 11: STATED CONSUMER USAGE FREQUENCIES (IN PERCENT, N=745 OBSERVATIONS)

		FIN	UNI	VAR	UBI	SCX	RSK	PRV	SCR	PRS	IND	ECO	CAP	BLG	LIF	EFF	FAM	TRU	ATT	INF	PBC	INT
1	FIN	**.859**																				
2	UNI	.279	**.857**																			
3	VAR	.393	.604	**.853**																		
4	UBI	.355	.521	.567	**.900**																	
5	SCX	.429	.345	.367	.368	**.921**																
6	RSK	-.241	-.048	-.160	-.137	-.158	**.792**															
7	PRV	-.117	-.061	-.073	-.102	-.142	.399	**.934**														
8	SCR	-.063	-.068	-.203	-.207	-.096	.274	.201	**.854**													
9	OWN	.008	-.085	.046	.000	.001	.218	.088	.126	**.921**												
10	IND	.035	-.112	.004	-.060	.020	.270	.195	.176	.424	**.885**											
11	ECO	.553	.282	.399	.362	.388	-.152	-.147	-.072	.013	.021	**.804**										
12	CAP	.311	.307	.220	.260	.286	-.029	.001	.019	-.046	-.098	.396	**.839**									
13	BLG	.333	.334	.384	.306	.571	-.181	-.195	-.125	-.008	-.177	.361	.327	**.914**								
14	LIF	.500	.354	.440	.402	.445	-.227	-.167	-.076	-.018	-.077	.593	.329	.382	**.906**							
15	EFF	-.317	-.156	-.271	-.240	-.236	.493	.329	.337	.171	.201	-.201	-.037	-.241	-.309	**.819**						
16	FAM	.316	.135	.322	.258	.284	-.244	-.134	-.123	-.009	-.085	.207	.048	.287	.285	-.404	**.875**					
17	TRU	.395	.258	.403	.376	.470	-.400	-.313	-.236	-.078	-.149	.367	.204	.476	.449	-.413	.381	**.798**				
18	ATT	.630	.358	.512	.464	.521	-.384	-.277	-.176	-.065	-.156	.580	.345	.511	.628	-.475	.391	.591	**.815**			
19	INF	.277	.279	.288	.251	.313	-.179	-.132	-.085	-.031	-.154	.249	.183	.422	.351	-.242	.298	.364	.434	**.948**		
20	PBC	.406	.172	.328	.228	.323	-.347	-.181	-.179	-.072	-.032	.246	.059	.240	.332	-.453	.619	.451	.467	.226	**.791**	
21	INT	.473	.342	.400	.409	.461	-.314	-.263	-.150	-.085	-.226	.388	.334	.478	.543	-.404	.458	.525	.739	.515	.441	**.868**

TABLE 12: CONSTRUCT CORRELATION MATRIX; SQUARE ROOT OF AVE SHOWN ON DIAGONAL

Supplementary Material Chapter 2

Item	*Code*	*Adap. from*	*Mean*	*Stand. Dev.*	*Cron. alpha*
Consumer perspective					
Trust in providing peer's ability					.878
The lessors on Airbnb are competent.	cPeAB1	*Gefen/ Straub* (2004)	4.824	1.028	
The lessors on Airbnb are capable.	cPeAB2		4.769	1.034	
The lessors on Airbnb are qualified.	cPeAB3		4.516	1.109	
Trust in providing peer's integrity					.884
The lessors on Airbnb are reliable.	cPeIN1	*Gefen/ Straub* (2004)	5.066	1.104	
The lessors on Airbnb are honest.	cPeIN2		4.989	1.090	
The lessors on Airbnb keep their word.	cPeIN3		5.088	.996	
Trust in providing peer's benevolence					.697
The lessors on Airbnb also keep my interests in mind.	cPeBE1	*Gefen/ Straub* (2004)	4.736	1.298	
The lessors on Airbnb mean no harm to me.	cPeBE2		5.418	1.096	
The lessors on Airbnb are principally well-meaning.	cPeBE3		5.022	1.174	
Trust in platform's ability					.877
The lessors on Airbnb also keep my interests in mind.	cPlAB1	*Lu et al.* (2010)	5.297	1.005	
The lessors on Airbnb mean no harm to me.	cPlAB2		5.429	1.127	
The lessors on Airbnb are principally well-meaning.	cPlAB3		5.429	1.156	
Trust in platform's integrity					.801
The statements provided by Airbnb are reliable.	cPlIN1	*Lu et al.* (2010)	5.121	1.094	
Airbnb is honest in dealing with my private data.	cPlIN2		4.659	1.276	
Airbnb delivers agreed service to tenants.	cPlIN3		5.176	1.160	
Trust in platform's benevolence					.795
Airbnb is keeps the interests of tenants in mind.	cPlBE1	*Lu et al.* (2010)	5.374	1.061	
Airbnb means no harm to tenants.	cPlBE2		5.692	1.171	
Airbnb has no bad intentions towards tenants.	cPlBE3		5.714	1.047	
Trust in product's ability					.789
The acc. on airbnb are well suited for my purposes.	cPrAB1	*Plank et al.* (1999)	5.648	1.129	
With the accommodations on airbnb you rarely experience nasty surprises.	cPrAB2		4.582	1.326	
The acc. on airbnb meet my requirements.	cPrAB3		5.593	.977	
Consuming intention					.904
I would consider to rent accomodations on airbnb.	cINT1	*Lu et al.* (2010)	5.088	.985	
Probably I would indeed rent accomodations on airbnb.	cINT2		4.758	1.186	
I would intend to rent accomodations on airbnb.	cINT3		4.791	1.080	

TABLE 13: CONSTRUCT ITEMS AND DESCRIPTIVE STATISTICS (CONSUMER PERSPECTIVE)

Item	*Code*	*Adap. from*	*Mean*	*Stand. Dev.*	*Cron. alpha*
Supplier perspective					
Trust in consuming peer's ability					.812
The tenants on Airbnb are competent.	sPeAB1	*Gefen/ Straub* (2004)	2.769	2.604	
The tenants on Airbnb are capable.	sPeAB2		3.044	2.670	
The tenants on Airbnb are qualified.	sPeAB3		2.615	2.585	
Trust in consuming peer's integrity					.828
The tenants on Airbnb are reliable.	sPeIN1	*Gefen/ Straub* (2004)	3.681	2.394	
The tenants on Airbnb are honest.	sPeIN2		3.275	2.638	
The tenants on Airbnb keep their word.	sPeIN3		3.560	2.491	
Trust in consuming peer's benevolence					.709
The tenants on Airbnb also keep my interests in mind.	sPeBE1	*Gefen/ Straub* (2004)	3.538	2.410	
The tenants on Airbnb mean no harm to me.	sPeBE2		4.549	2.301	
The tenants on Airbnb are principally well-meaning.	sPeBE3		3.681	2.371	
Trust in platform's ability					.824
Airbnb is competent in dealing with lessors.	sPlAB1	*Lu et al.* (2010)	5.275	.990	
Airbnb is capable of meeting my requirements as a lessor.	sPlAB2		5.319	1.010	
Airbnb is qualified to offer me a good service for letting.	sPlAB3		5.319	1.124	
Trust in platform's integrity					.710
The statements provided by Airbnb are reliable.	sPlIN1	*Lu et al.* (2010)	5.319	1.094	
Airbnb is honest in dealing with my private data.	sPlIN2		4.791	1.287	
Airbnb delivers agreed service to lessors.	sPlIN3		5.363	.983	
Trust in platform's benevolence					.829
Airbnb is keeps the interests of lessors in mind.	sPlBE1	*Lu et al.* (2010)	5.176	1.101	
Airbnb means no harm to lessors.	sPlBE2		5.802	.980	
Airbnb has no bad intentions towards lessors.	sPlBE3		5.670	1.126	
Supplying intention					.926
I would consider to rent my apartment/ my room on airbnb.	sINT1	*Lu et al.* (2010)	4.011	1.354	
Probably I would indeed rent my apartment/ my room on airbnb.	sINT2		3.374	1.339	
I would intend to rent my apartment/ my room on airbnb.	sINT3		3.593	1.358	

TABLE 14: CONSTRUCT ITEMS AND DESCRIPTIVE STATISTICS (SUPPLIER PERSPECTIVE)

Item (German)	*Code*	*Adap. from*	*Mean*	*Stand. Dev.*	*Cron. alpha*
Consumer perspective					
Trust in providing peer's ability					.878
Die Vermieter auf Airbnb sind kompetent.	cPeAB1	*Gefen/ Straub* (2004)	4.824	1.028	
Die Vermieter auf Airbnb sind fähig.	cPeAB2		4.769	1.034	
Die Vermieter auf Airbnb sind qualifiziert.	cPeAB3		4.516	1.109	
Trust in providing peer's integrity					.884
Die Vermieter auf Airbnb sind verlässlich.	cPeIN1	*Gefen/ Straub* (2004)	5.066	1.104	
Die Vermieter auf Airbnb sind ehrlich.	cPeIN2		4.989	1.090	
Die Vermieter auf Airbnb halten sich an Ihr Wort.	cPeIN3		5.088	.996	
Trust in providing peer's benevolence					.697
Die V. auf Airbnb berücksichtigen auch meine Interessen.	cPeBE1	*Gefen/ Straub* (2004)	4.736	1.298	
Die Vermieter auf Airbnb wollen mir nichts Schlechtes.	cPeBE2		5.418	1.096	
Die V. auf Airbnb meinen es im Prinzip immer gut mit mir.	cPeBE3		5.022	1.174	
Trust in platform's ability					.877
Airbnb ist kompetent im Umgang mit Mietern.	cPlAB1	*Lu et al.* (2010)	5.297	1.005	
Airbnb ist fähig meine Anforderungen als M. zu erfüllen.	cPlAB2		5.429	1.127	
Airbnb ist qualifiziert mir einen guten Service für das Mieten von Unterkünften anzubieten.	cPlAB3		5.429	1.156	
Trust in platform's integrity					.801
Die Angaben von Airbnb sind verlässlich.	cPlIN1	*Lu et al.* (2010)	5.121	1.094	
Airbnb ist ehrlich im Umgang mit meinen privaten Daten.	cPlIN2		4.659	1.276	
Airbnb erbringt zugesagte Leistungen tatsächlich.	cPlIN3		5.176	1.160	
Trust in platform's benevolence					.795
Airbnb berücksichtigt die Interessen der Mieter.	cPlBE1	*Lu et al.* (2010)	5.374	1.061	
Airbnb will den Mietern nichts Schlechtes.	cPlBE2		5.692	1.171	
Airbnb hat gegenüber den Mietern keine schlechten Absichten.	cPlBE3		5.714	1.047	
Trust in product's ability					.789
Die Unterkünfte auf Airbnb sind für meine Zwecke gut geeignet.	cPrAB1	*Plank et al.* (1999)	5.648	1.129	
Bei den Unterkünften auf Airbnb erlebt man keine Überraschungen.	cPrAB2		4.582	1.326	
Die Unterkünfte auf Airbnb erfüllen meine Anforderungen.	cPrAB3		5.593	.977	
Consuming intention					.904
Ich würde es in Betracht ziehen Unterkünfte auf Airbnb zu mieten.	cINT1	*Lu et al.* (2010)	5.088	.985	
Es ist wahrscheinlich, dass ich tatsächlich Unterkünfte auf Airbnb mieten werde.	cINT2		4.758	1.186	
Ich würde beabsichtigen Unterkünfte auf Airbnb zu mieten.	cINT3		4.791	1.080	

TABLE 15: GERMAN CONSTRUCT ITEMS AND DESCRIPTIVE STATISTICS (CONSUMER PERSPECTIVE)

Item (German)	*Code*	*Adap. from*	*Mean*	*Stand. Dev.*	*Cron. alpha*
Supplier perspective					
Trust in consuming peer's ability					.812
Die Mieter auf Airbnb sind kompetent.	sPeAB1	*Gefen/ Straub* (2004)	2.769	2.604	
Die Mieter auf Airbnb sind fähig.	sPeAB2		3.044	2.670	
Die Mieter auf Airbnb sind qualifiziert.	sPeAB3		2.615	2.585	
Trust in consuming peer's integrity					.828
Die Mieter auf Airbnb sind verlässlich.	sPeIN1	*Gefen/ Straub* (2004)	3.681	2.394	
Die Mieter auf Airbnb sind ehrlich.	sPeIN2		3.275	2.638	
Die Mieter auf Airbnb halten sich an Ihr Wort.	sPeIN3		3.560	2.491	
Trust in consuming peer's benevolence					.709
Die M. auf Airbnb berücksichtigen auch meine Interessen.	sPeBE1	*Gefen/ Straub* (2004)	3.538	2.410	
Die Mieter auf Airbnb wollen mir nichts Schlechtes.	sPeBE2		4.549	2.301	
Die Mieter auf Airbnb meinen es im Prinzip immer gut mit mir.	sPeBE3		3.681	2.371	
Trust in platform's ability					.824
Airbnb ist kompetent im Umgang mit Vermietern.	sPlAB1	*Lu et al.* (2010)	5.275	.990	
Airbnb ist fähig meine Anforderungen als V. zu erfüllen.	sPlAB2		5.319	1.010	
Airbnb ist qualifiziert mir einen guten Service für die Vermietung anzubieten.	sPlAB3		5.319	1.124	
Trust in platform's integrity					.710
Die Angaben von Airbnb sind verlässlich.	sPlIN1	*Lu et al.* (2010)	5.319	1.094	
Airbnb ist ehrlich im Umgang mit meinen privaten Daten.	sPlIN2		4.791	1.287	
Airbnb erbringt zugesagte Leistungen tatsächlich.	sPlIN3		5.363	.983	
Trust in platform's benevolence					.829
Airbnb berücksichtigt die Interessen der Vermieter.	sPlBE1	*Lu et al.* (2010)	5.176	1.101	
Airbnb will den Vermietern nichts Schlechtes.	sPlBE2		5.802	.980	
Airbnb hat gegenüber den Vermietern keine schlechten Absichten.	sPlBE3		5.670	1.126	
Supplying intention					.926
Ich würde es in Betracht ziehen meine Wohnung/mein Zimmer auf Airbnb zu vermieten.	sINT1	*Lu et al.* (2010)	4.011	1.354	
Es ist wahrscheinlich, dass ich meine Wohnung/mein Zimmer tatsächlich auf Airbnb vermieten werde.	sINT2		3.374	1.339	
Ich würde beabsichtigen meine Wohnung/mein Zimmer auf zu Airbnb vermieten.	sINT3		3.593	1.358	

TABLE 16: GERMAN CONSTRUCT ITEMS AND DESCRIPTIVE STATISTICS (SUPPLIER PERSPECTIVE)

Factors	*1*	*2*	*3*	*4*	*Comm.*	*Uniq.*
cPeIN3	.829	.002	.151	-.094	.748	.2523
cPeIN2	.827	-.051	.000	.087	.720	.2801
cPeAB2	.801	.074	-.045	.094	.758	.2424
cPeBE1	.785	-.009	-.010	-.048	.570	.4303
cPeIN1	.779	-.061	.165	-.068	.646	.3536
cPeAB3	.672	.201	-.152	.056	.572	.4277
cPeAB1	.669	.067	-.094	.174	.588	.4120
cINT1	-.099	.911	.055	.003	.797	.2029
cINT2	.073	.893	-.046	-.016	.817	.1834
cINT3	.117	.701	.127	.047	.732	.2677
cPrAB1	.006	.039	1.074	*.011*	1.204	-.2040
cPrAB3	.124	.046	.605	*.156*	.583	.4172
cPlBE3	-.003	-.010	.030	1.027	1.062	-.0622
cPlBE2	.050	.042	.018	.650	.491	.5088
Prop. Var.	.317	.169	.126	.123		
Cumu. Var.	.317	.486	.612	.735		

TABLE 17: EXPLORATORY FACTOR ANALYSIS WITH OBLIMIN ROTATION (CONSUMER PERSPECTIVE)

Factors	*1*	*2*	*3*	*4*	*Comm.*	*Uniq.*
sPlAB1	.865	-.005	-.064	-.009	.697	.303
sPlAB3	.811	-.119	.121	-.165	.649	.351
sPlBE1	.723	.047	.034	.140	.647	.353
sPlAB2	.651	.098	.020	.195	.603	.397
sPlIN2	.605	.153	.175	-.213	.558	.442
sPlIN3	.581	.070	-.063	.334	.552	.448
sPlBE3	.561	.180	-.130	.133	.416	.584
sPlIN1	.523	.189	.139	.082	.521	.479
sINT2	.098	.913	.011	-.140	.889	.111
sINT3	.026	.907	.037	-.024	.860	.140
sINT1	-.101	.855	.015	.183	.760	.240
sPeAB2	.063	.001	.796	-.055	.668	.332
sPeAB3	-.067	.030	.743	.027	.536	.464
sPeAB1	-.020	.049	.738	.102	.595	.405
sPeBE3	.154	.096	.230	.542	.537	.463
sPeBE2	.271	-.161	.213	.469	.430	.570
Prop. Var.	.256	.170	.131	.063		
Cumu. Var.	.256	.426	.557	.620		

TABLE 18: EXPLORATORY FACTOR ANALYSIS WITH OBLIMIN ROTATION (SUPPLIER PERSPECTIVE)

Supplementary Material Chapter 3

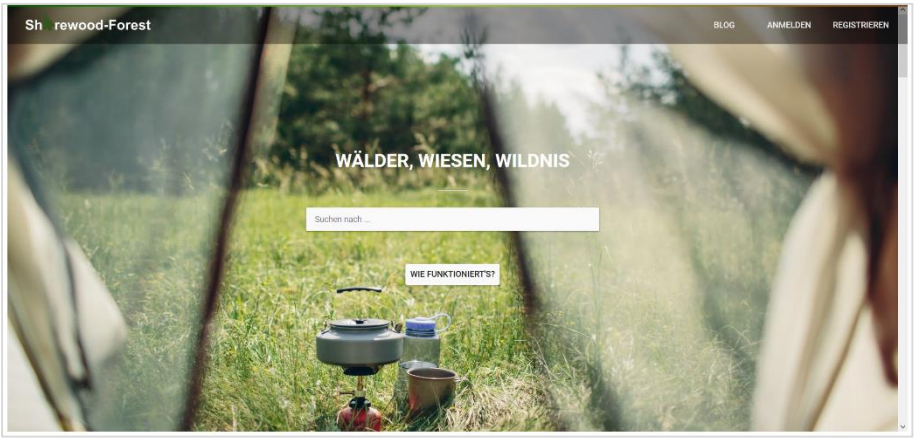


FIGURE 25: SHAREWOOD-FOREST HOMEPAGE (WWW.SHAREWOOD-FOREST.DE)

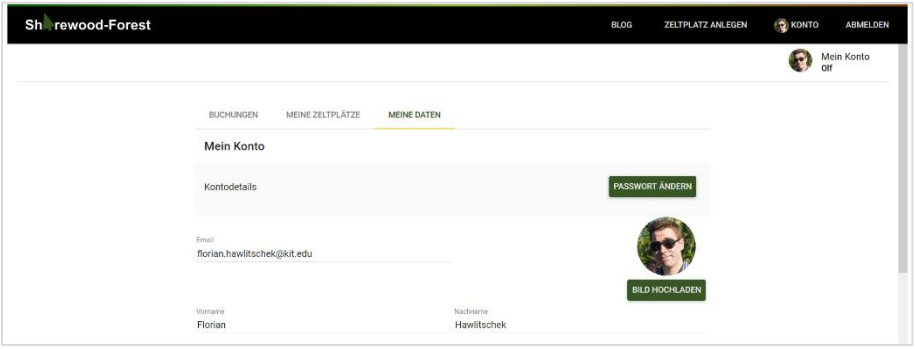


FIGURE 26: USER PROFILE ON SHAREWOOD-FOREST

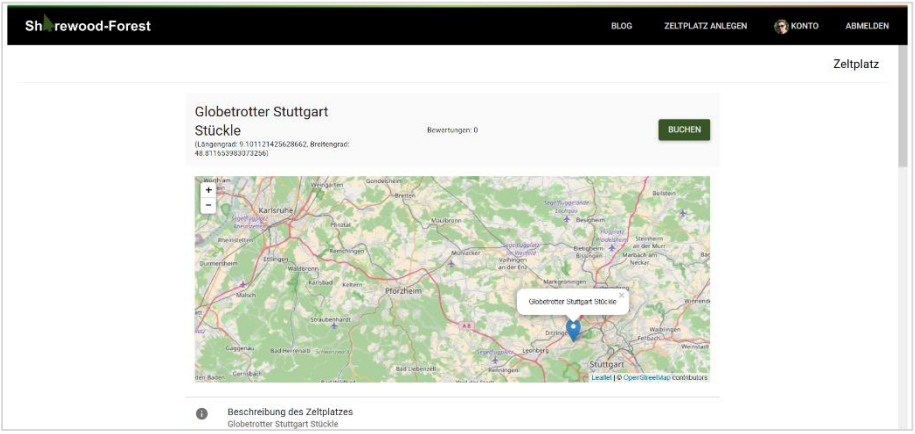


FIGURE 27: REGISTERED CAMPING SITE ON SHAREWOOD-FOREST

Teilnehmeranleitung

1. Allgemeines zum Experiment

Sie nehmen an einem Experiment teil, bei dem Sie Geld verdienen können. Sie agieren während der gesamten Dauer mit realen Geldwerten, welche zum Ende des Experimentes in Euro umgerechnet und Ihnen ausgezahlt werden. Dabei gilt **10 Geldeinheiten (GE) = 2,50 €.** Die Höhe Ihrer individuellen Auszahlung hängt von Ihrem, sowie dem Verhalten eines anderen Experimentteilnehmers ab.

2. Ablauf des Experimentes

Allgemein

Das Experiment umfasst lediglich **eine Runde.** Während dieser Runde interagieren Sie mit einem der 11 weiteren Experimentteilnehmer, der Ihnen zufällig zugeordnet wird. Nach Ende der Runde wird Ihnen Ihr persönlicher Gewinn angezeigt und abschließend in Euro ausgezahlt. Ein negativer Gewinn ist ausgeschlossen und kann aus dem Experiment auch nicht entstehen. Im Anschluss an das Experiment bitten wir Sie einen kurzen Fragebogen auszufüllen.

Der Ablauf der Runde

Zu Beginn der Runde wird zunächst per Zufall ermittelt, welche Rolle Ihnen für das Experiment zugeteilt wird. Sie erhalten entweder die Rolle „Person 1“ oder „Person 2“.

Person 1 erhält eine Grundausstattung von $10\ GE$. Person 2 erhält keine Grundausstattung.

1. Interaktion: Für Person 1 erscheint zunächst ein Eingabefeld. Als Person 1 müssen Sie sich nun entscheiden, wie viel Sie von Ihrer Grundausstattung von $10\ GE$ an die Ihnen zufällig zugeteilte Person 2 abgeben möchten. Der abgegebene Betrag wird von Ihrer Grundausstattung abgezogen. Daraufhin wird der Betrag mit dem Faktor 3 multipliziert und Person 2 gutgeschrieben. (Für Person 2 erscheint während diesem Teil der Interaktion ein Wartebildschirm.)

2. Interaktion: Für Person 2 erscheint während der Entscheidungsphase von Person 1 zunächst ein Wartebildschirm. Nachdem Ihnen (als Person 2) die abgegebenen und mit dem Faktor 3 multiplizierten GE gutgeschrieben wurden, müssen Sie nun entscheiden, wie viele der erhaltenen GE Sie an Person 1 zurückgeben möchten. Die zurückgegebenen GE werden daraufhin von Ihrem Konto abgezogen und Person 1 gutgeschrieben. (Für Person 1 erscheint während diesem Teil der Interaktion ein Wartebildschirm.)

Nach Ende der Runde wird jedem Teilnehmer sowohl die eigene Auszahlung, als auch die des zugeteilten Teilnehmers angezeigt.

Beispiel:

Die Anfangsausstattung von Person 1 beträgt $\mathbf{10\ GE}$. Person 1 entscheidet sich $\mathbf{8\ GE}$ an Person 2 abzugeben. Person 1 trägt deshalb die Zahl „8“ in das vorgesehene Feld ein und bestätigt die Eingabe. Der aktuelle Kontostand von Person 1 beträgt zu diesem Zeitpunkt $10 - 8 = 2\ GE$. Auf dem Monitor von Person 1 erscheint nun ein Wartebildschirm.

Person 2 erhält nun den mit Faktor 3 multiplizierten abgegebenen Geldbetrag, also $\mathbf{3} * \mathbf{8} = 24\ GE$. Person 2 kann nun entscheiden, wie viele der erhaltenen $24\ GE$ sie an Person 1 zurück senden möchte. Entscheidet sich Person 2 dazu, **6 *GE*** an Person 1 zurück zu senden, so gibt Sie die Zahl „6“ in das Eingabefeld ein und bestätigt die Eingabe. Die zurückgegebenen **6 *GE*** werden von dem Konto von Person 2 abgezogen und auf dem Konto von Person 1 gutgeschrieben. Die finalen Auszahlungen aus der Runde lauten wie folgt:

Person 1: $\mathbf{10 - 8 + 6 = 8\ GE}$

Person 2: $\mathbf{0 + (3 * 8) - 6 = 18\ GE}$

3. Informationen zur Experimentsoftware

Da Sie das Experiment an dem vor Ihnen befindlichen Computerterminal durchführen, folgen nun noch einige Informationen zur Bedienung der Experimentsoftware:

Um den gewünschten Betrag zu senden, geben Sie diesen als Zahlenwert in das dafür vorgesehene Feld ein. Nach Ihrer Eingabe bestätigen Sie ihn über den „OK“-Button. Zugelassen sind ausschließlich ganzzahlige nicht-negative Werte, welche kleiner oder gleich Ihrem Kontostand sind. Bei einer falschen Eingabe werden Sie aufgefordert den Vorgang zu wiederholen.

4. Einige Verhaltensregeln

Kommunikation mit den anderen Experimentteilnehmern **ist nicht gestattet** und führt zum Ausschluss vom Experiment – und von der Auszahlung.

Sollten Sie Fragen zum experimentellen Ablauf haben oder sollten während des Experimentes Unklarheiten auftreten, bleiben Sie bitte ruhig an Ihrem Platz sitzen und informieren den Experimentleiter per Handzeichen. Der Experimentleiter wird sich daraufhin zu Ihnen an Ihren Platz begeben. Bitte **stellen Sie Ihre Frage so leise wie möglich**, sodass keiner der anderen Teilnehmer beeinflusst wird.

Bitte **bleiben Sie auch nach Ausfüllen des abschließenden Fragebogens** ruhig an Ihrem Platz **sitzen**! Der Experimentleiter ruft Sie zu Ihrer individuellen Auszahlung auf.

Fragebogen

Bitte beantworten Sie die folgenden Fragen:

Bitte kreuzen Sie an:
Als wie warm haben Sie die Farbe des Bildschirms wahrgenommen?
(1 steht für „sehr kalt“, 7 steht für „sehr warm“?)

Sehr kalt						Sehr warm
1	2	3	4	5	6	7

Bitte kreuzen Sie jeweils an, wie sehr sie der Aussage zustimmen:
(1 steht für „Stimme überhaupt nicht zu“, 7 steht für „Stimme vollkommen zu“?)

	Stimme überhaupt nicht zu						Stimme vollkommen zu
	1	2	3	4	5	6	7
Die Bildschirmfarbe war angenehm.							
Ich mochte die Farbe des Bildschirms.							
Die Bildschirmfarbe wäre auch anderen in meinem kulturellen Umfeld recht.							
Die Bildschirmfarbe war emotional ansprechend.							
Die Bildschirmfarbe war interessant.							

Wie schätzen Sie sich persönlich ein: Sind Sie im Allgemeinen ein risikobereiter Mensch oder versuchen Sie, Risiken zu vermeiden?

Bitte kreuzen Sie an:
(1 steht für „gar nicht risikobereit“, 7 steht für „sehr risikobereit“?)

Gar nicht risikoberei						Sehr risikobereit
1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Bitte kreuzen Sie jeweils an, wie sehr sie der Aussage zustimmen:
(1 steht für „Stimme überhaupt nicht zu“, 7 steht für „Stimme vollkommen zu“?)

	Stimme überhaupt nicht zu						Stimme vollkommen zu
	1	2	3	4	5	6	7
Im Allgemeinen vertraue ich anderen Personen	☐	☐	☐	☐	☐	☐	☐
Ich tendiere dazu mich auf andere Personen zu verlassen	☐	☐	☐	☐	☐	☐	☐
Ich habe Vertrauen in die Menschheit.	☐	☐	☐	☐	☐	☐	☐
Im Allgemeinen vertraue ich anderen Personen, außer sie geben mir einen Grund dafür es nicht zu tun.	☐	☐	☐	☐	☐	☐	☐

Welches Geschlecht haben Sie (m/w)? _____

Wie alt sind Sie? _____

In welchem Land sind Sie aufgewachsen? _____

Was ist Ihre Lieblingsfarbe? _____

Sind Sie farbenblind? Ja ☐ Nein ☐

Haben Sie alle Frage ehrlich beantwortet? Ja ☐ Nein ☐

Haben Sie Anmerkungen zum Experiment und/oder Fragebogen?

_____

_____

_____

_____

_____

_____

Vielen Dank!

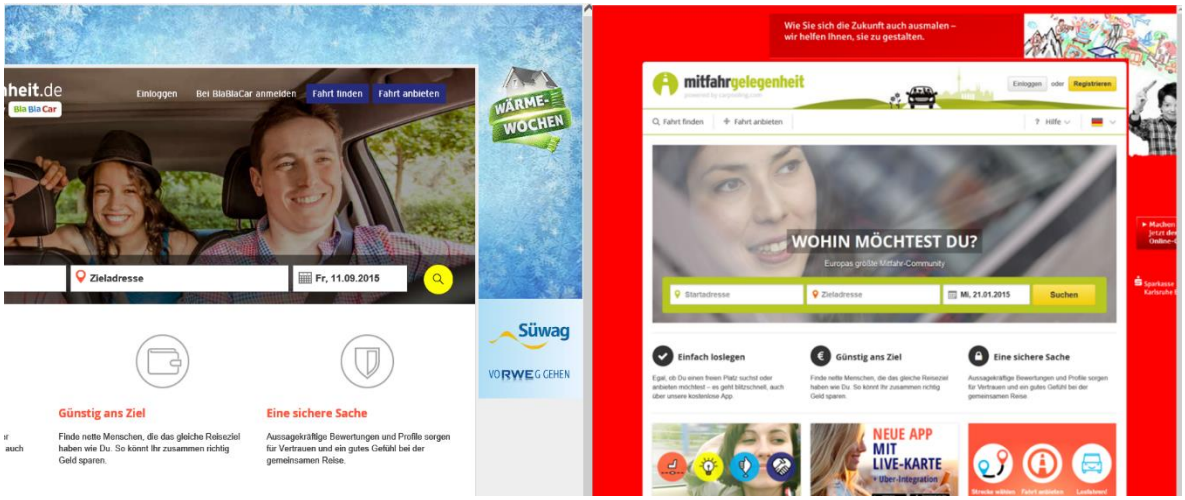


FIGURE 28: BLUE AND RED ADVERTISING BANNERS (WWW.MITFAHRGELEGENHEIT.DE)

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