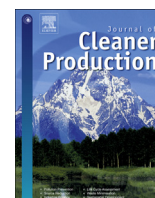Contents lists available at ScienceDirect

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"Sustainability is a nice bonus" the role of sustainability in carsharing from a consumer perspective

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ABSTRACT

Carsharing has been discussed as one of the most prominent examples of the sharing economy. The worldwide growth of services whereby consumers share access to cars rather than owning a car themselves could be a sustainable solution to environmental problems. However, first research indicates that consumers' environmental concerns play a minor role for using a carsharing compared to financial considerations. Moreover, prior research on B2C carsharing services may not be applicable to P2P services. The current research addresses this gap by investigating the role of sustainability in B2C and P2P carsharing from consumers' perspective. By applying quantitative as well as qualitative methods three studies show that consumers' image of carsharing is "greener" than owning a car and that environmental concerns play a role when consumers decide to use P2P service over B2C services. However, interviews with carsharing users indicate that the sustainable impact of carsharing is rather perceived as a positive side effect than a main argument for carsharing. This should be considered by policy makers and marketers when promoting carsharing because of sustainable benefits.

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1. Introduction

Over the last decades, a progressive increase in the public concern for environmental problems resulted in a paradigm shift moving environmental issues from a fringe to a mainstream issue (Kalafatis et al., 1999). Environmental protection has become one of the most important public agendas in Europe and Northern America (Dunlap and Scarce, 1991), which is reflected in a rise of public's sensitivity towards the origin of products and the way goods are produced (c.f., "green consumers", Roberts, 1996). Due to a growing concern about air pollution, climate change or resource scarcity, combined with an increasing use of network technologies, more sustainable ways of consuming have received growing attention (McDonald et al., 2006).

Mobility or transportation is one of the three areas accounting for most of the greenhouse gas emissions worldwide, becoming even more dominate in rich countries (Hertwich and Peters, 2009). In 2016, the economic sector transport (28,5%) caused the most greenhouse gas emissions in the U.S., followed by electricity

(28,2%), and industry (21,6%) (EPA, 2018). As a result, public concerns about sustainable solutions in the area of mobility have raised, resulting in discussions about e-mobility (Wappelhorst et al., 2016), public transportation (Carrus et al., 2008), carpooling (Vanoutrive et al., 2012), and sharing cars (Nobis, 2006). Bearing that in mind, 'carsharing'-organizations, like *zipcar* (Labrecque et al., 2013), *car2go* (Firnkorn and Muller, 2012), or *DriveNow* (Muller et al., 2017), promote their services as a sustainable driving practice, trying to position themselves as a green brand (Bardhi and Eckhardt, 2012). In doing so, carsharing companies try to profit from the fact that consumers started to pay more attention to the environmental impact of the product they use. Furthermore, by adjusting their marketing strategy under the banner of sharing, companies like *zipcar*, actually offering short-term car rental services (Belk, 2014a), try to benefit from the positive green image of the "sharing economy" calling their service "car*sharing*" instead of "car *rental*".

The rise of the sharing economy, whereby ownership is replaced by access (Belk, 2014b; Botsman and Rogers, 2010), is, at least partly, traced to public's growing environmental concerns. Instead of buying goods and owning them, consumers gain temporarily access to goods they need (Bardhi and Eckhardt, 2012). One million carsharing members in North America in the beginning of 2013

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(Birdsall, 2014) show that the sharing economy is increasing in popularity (Belk, 2014b). By offering consumption through pooled resources and social collaboration, carsharing companies match many of the criteria of the sharing economy (Habibi et al., 2017). Although members of *zipcar* can borrow the car hourly by using a smartphone app and pick up the vehicle at a local parking space (Sundararajan, 2013), consumers still use cars owned and maintained by a for-profit company. Therefore, in contrast to peer-to-peer carsharing services (P2P; c.f., Ballus-Armet et al., 2014), business-to-consumer services (B2C), like *zipcar*, are rather associated with access-based consumption than with sharing economy (Bardhi and Eckhardt, 2012; Belk, 2014a). Oskam and Boswijk (2016, p. 25) describe the problematic use of the term "Sharing economy" relating to (Meelen and Frenken, 2015) as follows: "Sharing is about consumer-to-consumer platforms and not about renting or leasing a good from a company (business-to-consumer)". Whereas more and more research restrict the concept of "sharing economy" to the definition that consumers grant each other temporary access, the definition of "access-based consumption" (Bardhi and Eckhardt, 2012) is broader, also refering to large-scale business-to-consumer-services, thereby including *zipcar* (Böcker and Meelen, 2017). It is doubted that research on B2C services can be directly applicable to P2P carsharing, as for P2P services, transactions are made with strangers, involves asymmetric information and economic risks and raises the relevance of trust (Wilhelms et al., 2017). When addressing the role of sustainability in carsharing, it seems necessary to distinguish between B2C and P2P services.

Although carsharing companies try hard to position their service as green, research shows that sustainable and environmental concerns are not among the priorities of consumers using carsharing services (Bardhi and Eckhardt, 2012). Similar to Botsman and Rogers (2010) argumentation concerning collaborative consumption, sustainability may only be an unintended consequence of the sharing economy in the sense that the driving motivation for users of carsharing services may not be about being sustainable. Given the growth and development of carsharing services and the market potential of these services, it is relevant to gain further understanding of the role of sustainability in consumers' decision to use carsharing, thereby taking into account the differences between P2P carsharing, which is associated with the sharing economy, and B2C carsharing, which is rather defined as access-based consumption.

The central premise of this paper is to identify the role of sustainability in promoting carsharing services from the perspective of consumers. In analyzing carsharing to that end, four research questions arise: First, it is relevant to examine whether consumers perceive the image of car sharers as ecologically sustainable compared to consumers owning a car, i.e. consumers hold a green image of carsharing, for both P2P and B2C services.

RQ 1a. Do consumers perceive the image of people who share cars as ecologically sustainable in contrast to people who own cars?

RQ 1b. Does the image of B2C carsharing services differ from P2P services?

Second, it is relevant to identify the role of sustainability when marketing and public policy mechanisms are kept under control. As the importance of sustainability may differ for B2C and P2P services, sustainable concerns may still play a role for consumers when deciding between P2P and B2C carsharing services if carsharing is not intentionally promoted as "green" and not related to the sharing economy.

RQ 2. If carsharing is not intentionally promoted as "green", does

sustainability still play a role for consumers when choosing B2C carsharing services over P2P services?

Third, the current research investigates the importance of sustainable concerns for consumers' decision to use carsharing compared to other considerations. Consumers may as well perceive carsharing as ecological sustainable alternative, but nevertheless consider other aspects as more important for their decision to engage in sharing.

RQ 3. How important is the role of sustainable concerns for consumers, who share cars via B2C carsharing services?

RQ 4. If consumers, who share cars via B2C carsharing services, have the possibility to promote carsharing, would sustainability be part of their marketing strategy?

The current research thereby extends previous research in several ways: First, since the sharing economy and access-based consumption are relatively new phenomena with an enormous potential, there is a strong need for research on drivers to enter and operate in the sharing economy. The current research addresses this research gap by investigating whether consumers consider sustainable issue when choosing offers related to the sharing economy. Second, we address the problem of sharing economy as an umbrella term for a great variety of business models. Previous research, especially on carsharing, do not distinguish between access-based consumption and actual sharing activities. However, a clear distinction is necessary, as drivers to enter and engage in these activities may differ (Belk, 2014a). Likewise, the role of ecological sustainability and environmental concerns may vary. The current research distinguishes between B2C and P2P carsharing services and examines differences between them. Fourth, the question whether sustainability plays a role as driver of sharing economy activities is addressed using a multiple method approach to utilize both, qualitative and quantitative research, and to gain a deeper understanding of the role of sustainability.

2. Conceptual background

2.1. Carsharing

Over the past decades carsharing services have become more attractive for consumers, especially in Europe (Susan A Shaheen et al., 1999) and have grown into a worldwide industry (Susan A. Shaheen et al., 2012). Carsharing can be "defined as a service where members of shared-use vehicle organizations get access to a fleet of vehicles" (Nobis, 2006, p. 2), covering different operational and business models (Susan A. Shaheen and Cohen, 2007). "Carsharing" is the most frequently used term referring to the collective and alternating utilization of cars. The current article builds on the definition of Nobis (2006) and Katzev (2003), defining carsharing as a service that enables a group of individuals to share cars with other persons. Providers of carsharing services differ widely in their objectives, business models, technology (e.g., operating through online platforms), and target markets (Millard-Ball, 2005). Companies offering carsharing services (B2C services; e.g., Cohen and Kietzmann, 2014; Lamberton and Rose, 2012) need to compete with private persons offering their car in platforms (e.g., Cohen and Kietzmann, 2014) or, less frequently and associated with P2P services, small neighborhood communities (self-regulating communities; e.g., Ozanne and Ballantine, 2010).

2.2. B2C carsharing

Research on B2C carsharing services has a long tradition,

compared to research on P2P services (Wilhelms et al., 2017). Traditional B2C carsharing organizations provide members with access to a car for short-term daily use, whereby usage is often charged per time or mile (Susan A. Shaheen et al., 2012). In the current studies, we focus on B2C carsharing services that share the following features: (1) a company enables consumers access to vehicles for their own use, (2) which are located close to their home, workplace, or public transport stations and owned by the company; (3) customers book the vehicles in advance, (4) rent them for a limited time period and (5) access them on their own. Excluded from the definition are companies offering arrangements such as carpooling, ride-sharing services, or taxi services (Wallsten, 2015).

The fact that the usage of carsharing services results in a reduction of ownership, as consumers no longer own a car, but grant access to different cars, leads to the association of carsharing with the sharing economy. While B2C carsharing share similarities with activities in the sharing economy, such as the shared use of resources and the organization via online platforms, a distinction can be made concerning the actual degree of sharing involved (Habibi et al., 2017). Carsharing companies are therefore described as a form of access-based consumption (Bardhi and Eckhardt, 2012), rather than fall under the sharing economy lexicon (Habibi et al., 2017). However, carsharing companies may use the term 'sharing' intentionally and therefore commit sharewashing (Kalamar, 2013), where the language of sharing is used to promote new modes of selling in the more socially desirable mantle of sharing (c.f., Belk, 2016; Light and Miskelly, 2015). In the sharing economy, access to a good rather than ownership of a good is of relevance (Belk, 2014b; Botsman and Rogers, 2010; Leismann et al., 2013). Consumers share goods, such as cars, toys (Ozanne and Ballantine, 2010) and many other services, such as tool lending workshops and community gardens, owning neither the cars nor toys nor tools, but instead, having access to them (Hartl et al., 2016; Hofmann et al., 2017). The sharing economy offers appealing alternatives for consumers and is gaining popularity due to the economic crisis and increased concern for protecting the environment (Tussyadiah, 2015), as it is associated with cost savings and environmental benefit (Cohen and Kietzmann, 2014).

2.3. P2P carsharing

Peer-to-peer carsharing involves short-term access to privately-owned vehicles, thereby, private car owners enable consumers to benefit from their car without the costs and responsibilities of ownership. Via P2P carsharing privately-owned cars are temporarily made available for shared use by an individual. Similar to many B2C carsharing models, P2P services typically entails an hourly rental fee that includes gas and insurance and relies on the internet to connect owners with potential users (Cohen and Kietzmann, 2014). In exchange for sharing their private vehicle, the owner is paid a portion of the usage fee. As the owner of the car is a private person and not a company (as in B2C), consumers do not usually benefit from a repeated interaction with a single service provider, who offers the choice between several cars that are largely of the same quality (Wilhelms et al., 2017). Regarding the car maintenance, cleanliness and the smooth operation of the rental process, consumers need to rely on the private car owner. Due to these differences, motives for choosing B2C or P2P services might differ and research on carsharing focusing on B2C services might not be applicable to P2P carsharing.

2.4. The role of sustainability in carsharing

Sharing cars can result in environmental benefits (Susan A. Shaheen et al., 2012) and a more sustainable consumer behavior (Pizzol et al., 2017) due to the reduction of vehicle ownership. However, Susan A. Shaheen et al. (2012) discuss that P2P sharing has the potential for negative environmental impacts, as it will lead to increased vehicle usage rates and encourage private persons to keep a personal car or even purchase new vehicles in order to lease it. If carsharing services actually positively affect the environment is subject to an ongoing discussion (Firnkorn and Muller, 2011; Kopp et al., 2015; Martin and Shaheen, 2011), however, sustainable concerns may be one driver for consumers to engage in carsharing.

In the theory of consumer choice behavior (Sheth et al., 1991), sustainability can be viewed as a functional value, as one of five consumption values influencing consumer choice behavior. Consumer decision may be influenced by any of the five consumption values or all five: functional values, such as sustainability or cost savings, social value, related to social identity, emotional value, such as enjoyment, epistemic value, related to risky, novelty behavior, and conditional value. Values have an inherent motivational component, shaping consumers' motivations and thereby impacting the types of decision people make (c.f., Parks and Guay, 2009; Tse et al., 1988). Motivation is a force that prompts action (Pinder, 2014) and relates to decisions involving how, when, and why to allocate effort to an activity (Parks and Guay, 2009). In that sense, sustainable concerns may motivate consumers to use carsharing instead of buying a car. Yet, the role of sustainability for consumers' decision to engage in carsharing remains unclear, as environmental issues have been identified as possible motives for using B2C carsharing (Schaefers, 2013), but sustainable concerns are not among the priorities of consumers neither when choosing B2C carsharing services (Prettenthaler and Steininger, 1999) nor P2P carsharing services (Wilhelms et al., 2017). Usage of services rather seems motivated by more pragmatic reasons, such as cost reductions (c.f., Kopp et al., 2015). These findings indicate that either efforts from carsharing companies in promoting their service as a sustainable economy practice are not effective or consumers simply consider other benefits of carsharing services as more important. Sustainability and environmental friendliness may only be an unintended consequence of carsharing in the sense that the driving motivation for customers of carsharing services may not be about being sustainable (c.f., Botsman and Rogers, 2010).

3. Overview of studies

The aim of the current studies is to shed light on the role of sustainability in the use of carsharing from a consumer perspective and to contribute to the question whether sustainability drives consumers to enter the sharing economy. In analyzing the example of carsharing and comparing B2C and P2P services to that end, three studies were conducted to answer the research questions:

First, it is relevant to investigate whether consumers perceive carsharing as ecologically sustainable. Study 1 applies an online experiment, using the projective technique by Haire (1950) to identify the image of carsharing compared to car ownership. The projective technique is a measurement technique, which captures the consumer' attitude towards a product, even if they are unwilling or unable to articulate responses (Peltier and Schribrowsky, 1992). The use of projective techniques has been very common in marketing research (Fram and Cibotti, 1991), but its advantage is subject to discussion (Anderson, 1978; Boddy, 2005). To provide additional robustness to the obtained findings, closed questions using Likert-Scales on attitudes towards the service followed an open question.

Second, the current article aims to examine whether environmental concerns do play a role for consumers in a controlled setting. In study 2, two homepages were designed for both a

fictional B2C and a P2P carsharing organization, differing only in the ownership of the shared cars (company vs. private car owners). The homepages do not contain any reference or information on sustainability. Further, in a second condition, the term "sharing" was replaced to control for the association with the sharing economy.

Third, as research shows that consumers mention predominantly functional reasons for choosing carsharing services, the question arises whether they perceive the promoted sustainable benefits complementing, for instance, monetary benefits. For public policy and practitioners it is highly relevant to know what consumers perceive as most important in carsharing and whether they would consider the promotion of sustainable benefits as important, especially for B2C carsharing services, as they are usually promoted as green options. As the results of study 1 and study 2 suggest that environmental concerns are less relevant for choosing B2C services, the question arises whether B2C carsharing users do not perceive B2C carsharing as a sustainable option and whether sustainability as a functional value plays a minor role driving their decision. Therefore, other marketing strategies, for instance focusing on financial benefits would be more successful. On one hand, B2C carsharing companies try to position themselves as green brand (Bardhi and Eckhardt, 2012), on the other hand, in study 2, a great majority of participants choose the B2C services over the P2P service, but not due to environmental consumption concerns. Study 3 investigates this apparent contradiction by applying structured interviews with customers of B2C carsharing services. Participants should think about an optimal marketing strategy for carsharing organizations and about suitable advertising slogans. Further, they were asked about the role of sustainability in the marketing of carsharing.

3.1. Study 1: the image of carsharing vs. owning a car

3.1.1. Method
3.1.1.1. Sample. A convenience sample of 158 individuals (68.4% women; $M_{age} = 38.61$, $SD_{age} = 14.85$) was recruited via snowball technique (c.f., Baltar and Brunet, 2012) and filled in an online questionnaire. Whereby the majority of participants (36.1%) reported earnings less than 1000 Euro per month, the majority of participants stated to have a university degree (39.2%). About a third reported to live in a city with less than 5000 inhabitants (31.6%), 20.9% live in a city with 5000–50,000 inhabitants, 7.0% in a city with 50,000–500,000 inhabitants and 40.5% live in a city with more than 500,000 inhabitants. Twenty-three percent of the participants reported profound knowledge about car-sharing, but only 10.1% stated to be users of carsharing services.

3.1.1.2. Procedure and material. Participants completed an online questionnaire comprising two parts: *list of characteristics and free associations* and *measures* (see Fig. 1).

3.1.1.3. Part one: list of characteristic and free associations. In order to capture consumers' perception of and attitude towards carsharing services, part one was built on an indirect measure, the 'shopping list technique', a projective technique by Haire (1950). This technique has been used to uncover consumers' attitudes and feelings about products and services that might not necessarily have been detected by direct questioning (Steinman, 2009). In the first part, participants were introduced to the study and were presented a *list of characteristics* of a fictitious person. Following a projective technique, using a between-subject design, each participant received one of two versions of the list (*list of characteristics*: car-sharing vs. own car). The two versions differ only in one aspect: The person was either described as driving a car-
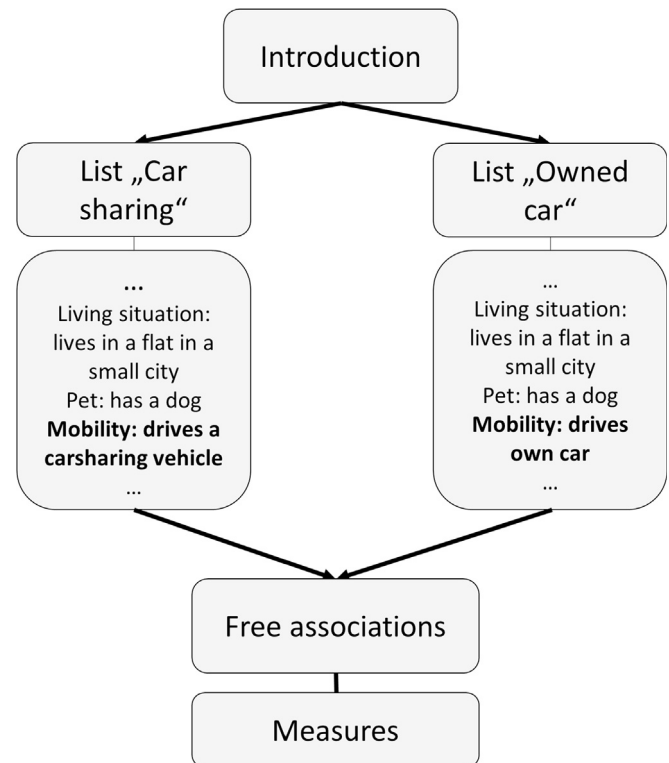

Fig. 1. Study 1. Graphical display of the experimental procedure.

sharing vehicle ('car-sharing list') or as driving an own car ('own-car list'). After reading the list, all participants were asked to write down their spontaneous associations according to the person described (part two: *free associations*) and were asked to evaluate each association as being positive, neutral, or negative. They were free to list one to ten associations.

3.1.1.4. Part two: measures. The third part, including Likert scales, served to assess the perception of the fictitious person and therefore complement the information gathered from the free associations (*measures*). Part three contained closed questions concerning the perception of the person described with the list of characteristics (c.f., Hellyer et al., 2014). After the open question participants had to fill in Likert scales, ranging from 1 (totally disagree) to 5 (totally agree), concerning their perception of the described person in terms of psychographic aspects: value-seeking (seven items; based on Schaefers, 2013), convenience (nine items; based on Schaefers, 2013), need for affiliation (nine items; Hill, 1987), trustfulness (four items; Cattell, 2001), risk aversion (six items; Colquitt et al., 2006), environmental consciousness (ten items; Alsmadi, 2007), and green consumerism (twelve items; Alsmadi, 2007). The internal consistency was satisfying for all scales (Cronbach's $\alpha > 0.60$). Additionally, people were asked about their experience with carsharing and what modality of carsharing they thought of when answering the questionnaire (professional organization, private person or carsharing community) and filled in demographic questions.

3.1.2. Results
3.1.2.1. Measures. To test whether the image of sharing a car differs from owning a car (RQ 1a), a MANOVA was conducted including the condition (*list* including carsharing vs. own car) as independent variable. The analysis revealed a significant difference in environmental consciousness, $F(1, 156) = 27.96$, $p < .001$, $\eta^2_p = .15$, and

green consumerism, $F(1, 156) = 46.63$, $p < .001$, $\eta^2_p = .23$. Carsharing users were perceived as more environmental conscious ($M_{share} = 5.75$, $SD_{share} = 0.75$) than people using their own car ($M_{owned} = 5.01$, $SD_{owned} = 0.99$) and more concerned about green consumerism ($M_{share} = 4.86$, $SD_{share} = 0.94$; $M_{owned} = 3.78$, $SD_{owned} = 1.05$). The analysis revealed no significant difference concerning value seeking ($p = .773$), need for affiliation ($p = .977$), trustfulness ($p = .641$), and risk seeking ($p = .299$) and only a tendency effect for convenience ($F(1, 156) = 3.45$, $p = .065$; $M_{share} = 4.22$, $SD_{share} = 0.83$; $M_{owned} = 4.47$, $SD_{owned} = 0.84$).

3.1.2.2. Free associations. The 'owned-car' list evoked 450 associations; on average, every participant wrote 6.16 words describing the fictitious person. The three most frequently mentioned terms regard a positive perception of the described person, his/her well ordered living condition and his/her sporty nature. The 'carsharing' list evoked 568 associations, resulting in 6.68 words per participant on average. The three most frequently mentioned terms relate to positive characteristics (e.g., "*friendly*") and describing the person as environmentally conscious (e.g., "*eco-type of guy*") and as loving animals (e.g., "*the dog makes her happy*").

To test whether associations regarding carsharing differed from car owning, polarity and neutrality indexes were calculated based on the participants' evaluation (positive, neutral, negative) of their associations (c.f., de Rosa, 1996). The polarity index was calculated as the difference between the number of positive and negative associations, related to the total number of associations, varying from −1 to +1. The neutrality index was calculated as relative frequency of associations evaluated as neutral. A comparison between the two conditions (carsharing/car owning) using *t*-tests showed no significant difference in polarity index ($M_{share} = 0.43$, $SD_{share} = 0.40$; $M_{owned} = 0.32$, $SD_{owned} = 0.46$; $p = .11$) and neutrality index ($M_{share} = 0.31$, $SD_{share} = 0.23$; $M_{owned} = 0.33$, $SD_{owned} = 0.27$; $p = .60$). Thus, a person sharing a car is perceived as positive as a person owning a car.

In order to answer whether the image of B2C carsharing differs from P2P carsharing and car ownership (RQ 1b), three groups were formed based on what modality of carsharing participants thought of when answering the questionnaire: B2C carsharing ($N = 38$), P2P carsharing ($N = 26$; comprised of carsharing provided by private persons and communities), and car ownership ($N = 73$). Twenty-one participants had to be excluded from further analyses as they could not be assigned to one of the three groups due to multiple answers.

For further analysis, all associations were categorized by two raters (one female, one male) into 26 categories. An interrater reliability analysis using the Kappa statistic was performed to determine consistency among raters (Kappa = 0.66), which indicated substantial agreement (Landis and Koch, 1977). In case of disagreement, the raters afterwards discussed each statement until an agreement was reached.

For all three conditions (B2C, P2P, car owner), "positive characteristics" was the most frequent category (13.4%, 9.1%, 10.2%). Users of B2C services were further described with association referring to "well-ordered living conditions" (e.g., "*structured everyday life*") (5.7%) and "socially integrated" (e.g., "*large circle of friends*") (5.7%). Users of P2P services were associated with "environmentally conscious" (8.5%) and "sporty/athletic" (8.0%). For the car owner-condition, "well-ordered living conditions" (7.1%) and "sporty/athletic" (6.4%) were the most frequent categories besides "positive". To answer RQ 1b, whether the image of B2C carsharing differs from P2P carsharing and car ownership, a correspondence analysis was applied (Blasius, 2001). The correspondence analysis yields a graphical representation of the associations between columns (B2C, P2P, car owner) and rows (26 categories identified by the raters) of a contingency table. It thereby depicts the similarity of assignment profiles; concepts that are related to one another are closely related in the figure. The correspondence analysis yielded a two-dimensional solution (see Fig. 2).

The poles of dimension 1 can be described by "environmental consciousness" on one hand and "rural", "well-ordered-living conditions" and "conservative" on the other hand. Dimension 1 might therefore distinguish between characteristics often associated with different political orientations. Dimension 2 can be interpreted as differentiation between abstract ("security", "environmentally consciousness", "conservative") and concrete ("sporty/athletic", "desire to own a house", "education", "musical") characteristics. The figure shows that in comparison to both carsharing services, owning a car is rather associated with terms related to "average", "strives for balance" and "well-ordered-living conditions". P2P services are cognitively related to being "thrifty" or having the "desire to own a house", indicating that the ownership of other goods instead of a car is more relevant for its users. B2C services are cognitively related to the categories "positive" "socially integrated", and "conservative". Study 1 therefore shows that whereas sustainability is not the most frequent category for owned cars as well as shared cars, it seems to be closer associated with shared cars concerning the correspondence analysis. Further, as "environmental consciousness" was the second most frequent condition for P2P car sharing services but not for B2C carsharing services, study 1 indicates that sustainability may play a different role for these two forms of carsharing.

3.2. Study 2: B2C and P2P carsharing

3.2.1. Method

3.2.1.1. Sample. A convenience sample of 127 individuals (61.4% women; $M_{age} = 28.81$, $SD_{age} = 9.07$) was recruited via snowball technique and filled in an online questionnaire. The majority of participants (50.4%) reported earnings less than 1000 Euro per month, stated to have a university degree (58.3%) and reported to live in a city with more than one million inhabitants (65.4%). Whereas the majority reported to have driving license (92.9%), only 42.5% of the participants owned a car. About a third have used carsharing services before (33.9%).

3.2.1.2. Procedure. In the beginning, participants were asked to imagine that they have moved to a new town and that they need a car for a shopping trip, but do not own one. All participants were provided with two options which enabled them to use a car for a short term: a business-to-consumer service (B2C), whereby a company owns the car, or a peer-to-peer service (P2P), whereby a private person owns the car and lends it through a web platform. They were told that they would be able to view the homepage of both options (see Fig. 3). All participants were asked, which option they would prefer spontaneously and want to see first (*preference*).

3.2.1.3. Homepages. The two homepages were presented in the order chosen by the participants. Both homepages were identical, differing only in the presentation of the business model (B2C vs. P2P), and were designed in the style of existing homepages of carsharing offers. While browsing the homepages, participants were able to click on an 'information'-button, for more information about the business model, and on an 'area'-button, revealing a map showing cars nearby. Besides the cars, either icons of faces were shown (P2P) or the company logo (B2C). After they had a look at both homepages, participants had to choose between both offers (*Selection*).
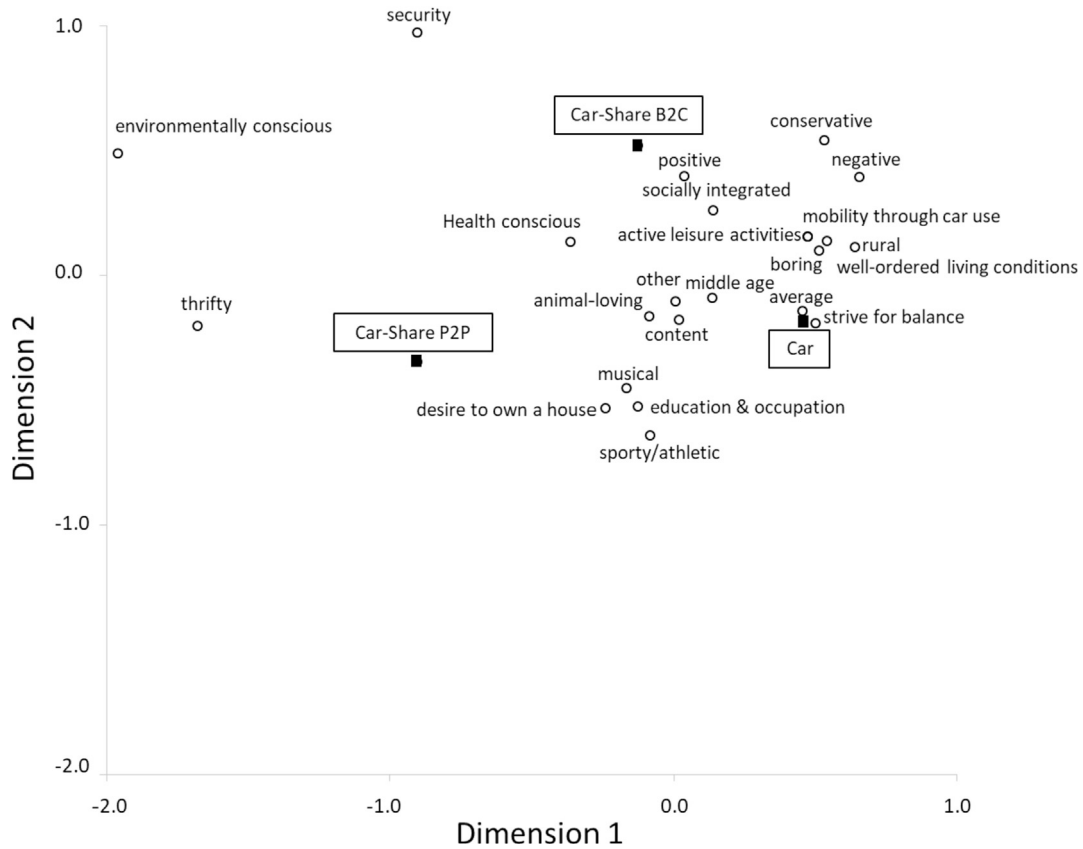
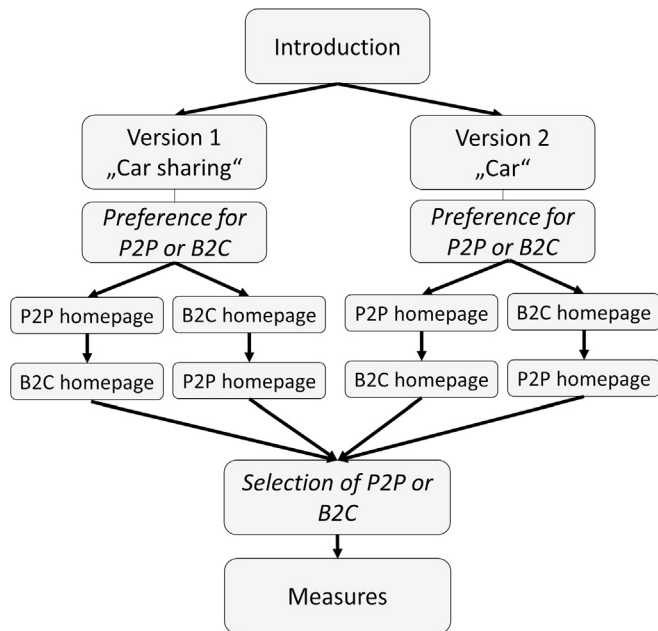**Fig. 2.** Study 1. Graphical portrayal of correspondence analysis results.

Fig. 3. Study 2. Graphical display of the experimental procedure.

3.2.1.4. Between-subject manipulation: "carsharing" vs. "Car". In order to control for effects of the term sharing, a between-subject manipulation was added. Participants were randomly assigned to one of two conditions of the questionnaire: In version 1

('*carsharing*'), both options, B2C and P2P, were framed as carsharing services. The B2C service was called 'Company carsharing', whereas the P2P service was called 'Peer-to-Peer carsharing'. These terms were used throughout the instruction and the whole homepages. In contrast, version 2 ('*car*') did not contain any reference to carsharing. The B2C service was called 'Company car', whereas the P2P service was called 'Peer-to-Peer car'. The two versions of the questionnaire therefore differed only in the use of the word 'sharing'.

3.2.1.5. Measures. After participants chose an offer, they answered questions concerning their motivation for their decision. Building on the literature concerning motivations to use car-sharing, the questionnaire contained scales measuring cost savings, convenience, time savings (adapted from convenience), socio-environmental consciousness, social identity, trust in the business model, risk perception (Pizzol et al., 2017), enjoyment, attitude, and behavioral intention (Hamari et al., 2015). Further, scales measuring trustfulness (Cattell, 2001), environmental consciousness, and green consumerism (Alsmadi, 2007; Hofmann et al., 2017) and questions regarding demographic variables were included. The internal consistency was satisfying for all scales (Cronbach's $\alpha > 0.75$).

3.2.2. Results

In order to measure the initial *preference* of B2C and P2P carsharing services, participants could choose which homepage (B2C or P2P) they wanted to see first. More than eighty percent of the participants (80.6%) decided to see first the B2C homepage. When viewing the homepages, 31.5% clicked on the information button on

the P2P homepage and 33.9% clicked on the information button on the B2C homepage.[1] After examining both homepages, 77.2% participants chose the B2C carsharing service (*selection*). Thus, participants were 4 times more likely to decide for a B2C rather than a P2P carsharing service.

To test if sustainability plays a role when choosing B2C or P2P carsharing (Research Question 2), a MANOVA was conducted, including the selection (P2P vs. B2C) and the manipulation (*sharing label* vs. *no sharing label*) as independent variables. The analysis revealed no main effect of the sharing label or interaction effect. The analysis showed a significant difference for B2C and P2P in socio-environmental consciousness, $F(1, 123) = 7.215$, $p = .008$, $\eta^2_p = .06$, trust in the business model, $F(1, 123) = 12.498$, $p = .001$, $\eta^2_p = .09$, and risk perception, $F(1, 123) = 38.419$, $p < .001$, $\eta^2_p = .24$. People who chose the P2P carsharing service, were higher motivated to use the service for environmental reasons ($M_{P2P} = 3.77$, $SD_{P2P} = 2.15$) than people who chose the B2C carsharing service ($M_{B2C} = 2.79$, $SD_{B2C} = 1.60$). Otherwise people who chose B2C carsharing had more trust in the service ($M_{B2C} = 5.50$, $SD_{B2C} = 1.17$) than people who chose P2P ($M_{P2P} = 4.63$, $SD_{P2P} = 1.07$). Also people who chose B2C carsharing perceived the P2P model as more risky ($M_{B2C} = 4.80$, $SD_{B2C} = 1.70$), as vice versa ($M_{P2P} = 2.50$, $SD_{P2P} = 2.08$).

The analysis of the participants' attitude towards the service in general revealed significant differences in green consumerism $F(1, 123) = 6.279$, $p = .014$, $\eta^2_p = .05$, attitude $F(1, 123) = 12.401$, $p = .001$, $\eta^2_p = .10$, and behavioral intention $F(1, 123) = 8.512$, $p = .004$, $\eta^2_p = .07$. People who chose the P2P carsharing service, show higher values for pro-environmental consumer culture (Alsmadi, 2007), reporting to be "greener consumers" ($M_{P2P} = 4.50$, $SD_{P2P} = 1.30$) compared to people who chose the B2C carsharing service ($M_{B2C} = 3.82$, $SD_{B2C} = 1.20$). Also, people who chose the P2P carsharing service had a better attitude towards the service ($M_{P2P} = 5.60$, $SD_{P2P} = 1.19$) and were more likely to use such a service in the future ($M_{P2P} = 4.57$, $SD_{P2P} = 1.64$) than people who chose the B2C carsharing service (attitude, $M_{B2C} = 4.64$, $SD_{B2C} = 1.32$; intention, $M_{B2C} = 3.52$, $SD_{B2C} = 1.70$). The analysis revealed no significant difference concerning cost savings ($p = .057$), time savings ($p = .544$), convenience ($p = .482$), social identity ($p = .276$), enjoyment ($p = .183$), environmental consciousness, which is characterized by a more general attitude towards environmental protection than green consumerism ($p = .067$), and trustfulness ($p = .165$).

3.3. Study 3: interviews: carsharing and the role of sustainability

3.3.1. Method

Individual interviews were conducted with eight B2C carsharing users (for demographic characteristics, see Table 1), who were recruited via snowball technique. The interviews started with general questions about the interviewee's motives for using carsharing services. Then, interviewees should put themselves in the position of a marketer and think about a marketing strategy for a carsharing service, in particular, they were asked to think about a possible marketing target group, content of an advertising campaign, and an advertising slogan. Until that point of the interview the topic of sustainability had not been mentioned by the interviewer and was again not part of the question, as it is of interest whether carsharing users bring up the topic of sustainability themselves when talking about motives for using carsharing and advertising strategies. Afterwards, interviewees were specifically

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Table 1
Study 3: Demographic characteristics of the interviewee.

	Age	Gender	Occupation	Car Ownership
P1	31	male	bank employee	yes
P2	25	female	student	no
P3	33	female	investment manager	no
P4	29	male	student	no
P5	29	male	Austrian Armed Forces employee	yes
P6	26	female	Front Office Manager Sofitel	no
P7	22	female	Controller Raiffeisen/student	no
P8	38	male	Field work employee WMF	yes

asked about their perception of the role of sustainability in promoting carsharing and whether and how they would integrate the concept of sustainability in an advertising campaign for carsharing.

All interviews were recorded and transcribed. A template analysis as utilized by Brooks et al. (2015) was applied to the transcripts. The researchers went through all transcripts paragraph by paragraph to become familiar with the data to be analysed. Next, by highlighting relevant text passages that contribute to the research question, preliminary coding was conducted. Finally, emerging codes were organized into meaningful clusters and a final coding template was defined.

3.3.2. Results

When asked about defining a target group for promoting carsharing services, participants focus on age, income and living area of possible carsharing users. They draw a picture of young people living either in a city or urban area, being in a specific life cycle phase: They have their driving license, but do not own a car, either, because they have not enough money to afford it or because they do not need it permanently. Apart from one exception, the attitude towards sustainability or environmental protection did not play a role for defining a target group.

The aspect, which should play the most important role when promoting carsharing was the simple handling: Participants emphasize the flexibility, functionality and easiness of carsharing services. The perception of carsharing as something uncomplicated is also reflected in the slogans participants create for promoting the service: "*Easy to use. EasyToUse.*" (#P8) or "*Uptown, downtown drive now.*" (#P3). Besides the simple handling, cost issues were identified as highly relevant that should be addressed in advertising campaigns. Carsharing was perceived as a cheap alternative to owning a car:

> "*Compare the costs of owning a car with the price of carsharing*" (#P4)

Further aspects mentioned less often were the issue of quality and freedom gained by using carsharing. One participant mentioned environmental concerns as second aspect that plays a role in carsharing marketing besides the issue of cost savings:

> „ *Ahm … because it is cheaper, that you need less gasoline and of course environmental protection, if you do not have to buy a car*" (#P2)

When directly asked whether green motives drive consumers to use carsharing services, all interviews were convinced that environmental concerns are not the main reasons. Again, some refer to the issue of cost savings as the main reason for using carsharing. However, the fact that the use of carsharing can provide benefits for the environment is perceived as a positive side benefit: "*I think sustainability is rather a nice bonus*" (#P7).

When participants were asked to think about how the sustainable benefits can be promoted in advertising campaigns, participants described rather vague that it should be promoted as "green" ("*how green everything will be*", #P 4) or focus on "environmental protection" ("*Well, that the environment is preserved, that the resources are preserved*", #P7). Specific responses refer to electric cars, the sustainable life span of cars and the reduction of CO_2 emissions. Some interviewees mention the issue of costs that ultimately may lead to environmental protection:

"*I would allude very strongly to the costs, in that sense, that the individual pays less, because of the use of efficient cars concerning emissions, environmental pollution is reduced*" (#P8)

4. Discussion

Carsharing is discussed as one of the most prominent and most successful examples of the sharing economy (Habibi et al., 2017). The worldwide growth of services like carsharing could be a sustainable solution to environmental problems (Meijkamp, 1998; Nobis, 2006). However, a distinction has to be made between B2C and P2P services, the latter being rather associated with access-based consumption than with the sharing economy (Bardhi and Eckhardt, 2012; Belk, 2014a). The current research aims to investigate the role of sustainability from a consumer perspective, thereby distinguishing between B2C and P2P carsharing.

Although previous research shows that environmental motives were not among the priorities for carsharing users (e.g., Ballus-Armet et al., 2014), study 1 and study 2 indicate that concerns about green consumption do play a role in carsharing. The image of carsharing in general is "greener" than owning a car and environmental concerns play a role when consumers decide to use P2P service over B2C services. Using a projective technique, study 1 reveals that the image of carsharing and car ownership differs in environmental consciousness and green consumerism, but not concerning other psychographic aspects (value seeking, need for affiliation, trustfulness, risk seeking and convenience). Sustainability seems to play a role in carsharing in so far as sharing a car is perceived more environmentally friendly than owning a car.

In order to investigate differences between B2C and P2P carsharing offers, in study 2, consumers had to decide which offer they would prefer. A great majority, nearly eighty percent, of the participants chose the B2C service over the P2P service. They reported to do so because they trusted the service more and perceived it as less risky. Trust is a fundamental concept in the sharing economy (Ert et al., 2016; Hartl et al., 2016; Hofmann et al., 2017) and serves as central differentiator between P2P and B2C services in the sharing economy (Wilhelms et al., 2017). When using P2P carsharing services, consumers make transaction with strangers, which involves economic risks due to a lack of regulation, raising the relevance of trust (Hartl et al., 2016; Hofmann et al., 2017).

Participants who chose the P2P service in study 2 were higher motivated to use the service because of green consumerism compared to B2C services. Previous research has demonstrated that consumers engage in carsharing mainly because of cost savings (Lamberton and Rose, 2012). This may be the case for consumers' decision to engage in carsharing or not, but when they have to decide between different options, sustainable consumption concerns may play a role.

Based on the theory of consumer choice behavior (Sheth et al., 1991), it seems that the perception of functional value differs between the two contexts B2C and P2P. While for the former, cost savings are motivating consumers, for the latter, sustainable aspects might prevail in consumer choice behavior. Thus, an understanding of the functional value depending on the buying context presents a new theoretical perspective and helps to tailor the offer of the respective carsharing service to the respective needs of consumers. In this sense, sustainable concerns may motivate consumers to use a certain carsharing offer within a certain context (P2P).

This supports the assumption of Wilhelms et al. (2017) that research on carsharing focusing on B2C services might not be, at least fully, applicable to P2P carsharing. Sustainable concerns might play a minor role for consumers' image of B2C services. In this vein, the current research underlines the importance of distinguishing between P2P and B2C services in future studies (Habibi et al., 2017).

Whether the services were associated with the sharing economy or not, i.e., labelling the services as car*sharing*, did not influence the results in study 2. The effect of the term sharing may not necessarily lead to an increased willingness to use a car-sharing service, at least in German speaking countries. The term 'carsharing' is well established in many German speaking countries and frequently used by the German scientific community (Loose et al., 2004; Petersen, 2013) as well as high quality newspapers (e.g., Schafflik, 2018), and public institutions (e.g., document on mobility in Austria from three Austrian ministries, BMLFUW et al., 2014). On the other hand, B2C carsharing companies are sometimes referred to as "car clubs" (Enoch and Taylor, 2006) or short term car rental (Koen et al., 2011)in English. When it comes to advertising, English words in general are common in German advertisements (Gerritsen et al., 2007) and the term "carsharing" is used by B2C companies such as zipcar to advertise their service in German speaking countries (Zipcar, 2018b), whereas on their British website zipcar state that "zipcar is a car club" and propose "car hire made simple" (Zipcar, 2018a). The use of the term 'carsharing' may therefore have no impact on the results using a German-speaking sample, as "sharing" no longer provide a labeling function. However, the use of the term "sharing" in advertising carsharing services may lead to different associations in other countries. Further research should deal with the effectiveness of the word 'sharing' maybe in terms of labels in the promotion of B2C services and the image of the sharing economy in general. Only recently, a debate has emerged about the disadvantages of the sharing economy (c.f., Malhotra and Van Alstyne, 2014; Schor, 2016). This may be reflected in a change of public's opinion towards the sharing economy. If the image of the sharing economy changes and the term 'sharing' has no longer entirely positive connotations, share-washing may no longer be beneficial for companies.

The current research applies quantitative as well as qualitative methods to contribute to an understanding of consumers' sustainability concerns in the sharing economy and access-based consumption, as part of their choice behavior. It indicates that although consumers acknowledge the sustainable impact of carsharing, sustainable concerns are not among the priorities of consumers when choosing carsharing services. The driving motivation for consumers to engage in carsharing may not be about consuming environmentally friendly (Botsman and Rogers, 2010), sustainability is perceived as a positive side effect, or as a driver for a consumer segment that prefers P2P services. The interviews with B2C carsharing users indicate that feelings of "warm glow" derived from moral satisfaction (c.f., Hartmann and Apaolaza-Ibáñez, 2012) are viewed as some kind of "bonus" to other advantages, mostly cost-savings. These emotional values too are drivers for consumer choice behavior, however not as strong as functional ones. Consumers may well receive green sharing services as long as more important factors, such as price and quality are right.

From a practical perspective, the research helps to clarify the circumstances within which carsharing are offered and suggest

communication strategies. Offers of carsharing from B2C or P2P may be represented differently when it comes to functional value (cost versus sustainable), using cost-saving arguments to users who are B2C buyers and consider P2P services to be risky. In a similar vein, users of P2P services, who trust these services more, may be receptive to emotional appeals in respective messages and communication. Addressing the limitations of the current research, future studies should examine the role of sustainability in existing marketing campaigns of B2C and P2P services and investigate whether the result for carsharing holds for other services associated with the sharing economy. Another limitation is a possible self-selection bias introduced by the fact that those who participated in the studies might differ from those who did not. Due to convenience sampling, we are not able to test this difference. Future studies might concentrate on a predefined and well-known target group, such as registered customers from an online carsharing service. Participants in study 2 based their preference for B2C or P2P services on mock-up homepages. Nowadays, consumers obtain information through various channels, including social media (Mangold and Faulds, 2009; Wang et al., 2012) before deciding. It will be necessary to investigate on what kind of information consumers rely on when deciding to use carsharing and what kind of information consumers search for through their decision process. Further, as consumers as well as actual users of carsharing services can interact and exchange information easily through the web, it is relevant to examine whether they express sustainable concerns in their interaction. We find that sustainability is a motivation to engage in carsharing, but the engagement depends on the service provider. Sustainability is more important with P2P services than with B2C services. Further, if policy makers and marketers want to promote carsharing because they are confident about the positive effects on the environment, they have to be aware that consumers might still perceive sustainable benefits as an additive. Consumers are more concerned about the price of the service, the easiness to use and flexibility.

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Appendix A

Scales Study 1.

Study Variable	Items translated	Items original (german)
Value Seeking (Schaefers, 2013)	The person is happy if he/she can save money.	Die Person ist glücklich, wenn sie Geld sparen kann.
	The person chooses the cheapest product when he/she has the choice between various products.	Die Person wählt das billigste, wenn sie die Wahl zwischen verschiedenen Produkten hat.
	The person habitually compares prices when shopping.	Die Person vergleicht beim Einkaufen gewohnheitsmäßig Preise.
	The person has a feeling of elation when he/she can make a bargain.	Die Person hat ein Hochgefühl, wenn sie etwas besonders günstig erwerben kann.
	When purchasing products, the person saves money wherever possible.	Bei der Anschaffung von Produkten spart die Person, wo immer es möglich ist.
	The person is content when he/she can make a bargain.	Die Person ist zufrieden, wenn sie ein Schnäppchen machen kann.
	The person preferentially buys products at a discount.	Die Person kauft bevorzugt verbilligte Ware.
Convinience (Schaefers, 2013)	It is important for the person to save time in daily routine.	Es ist der Person wichtig, im Alltag Zeit sparen zu können.
	The person is happy when he/she only has to go short distances by foot.	Die Person freut sich, wenn sie nur kurze Wegstrecken zu Fuß zurücklegen muss.
	The person feels safe when he/she can rely on a service.	Die Person fühlt sich sicher, wenn sie sich auf eine Dienstleistung verlassen kann.
	The person tries to avoid going long distances by foot.	Die Person versucht, lange Fußwege zu vermeiden.
	Being able to save time at a settlement makes the person happy.	Es macht die Person fröhlich, wenn sie bei einer Erledigung Zeit sparen kann.
	The person values the reliability of services highly.	Die Person legt großen Wert auf die Verlässlichkeit von Dienstleistungen.
	The person likes the feeling of not wasting time.	Die Person mag das Gefühl, keine Zeit zu verschwenden.
	The person only makes use of services that appear very reliable to him/her.	Die Person nimmt nur Dienstleistungen in Anspruch, die ihr sehr zuverlässig erscheinen.
	The person always uses the possibility of taking a shortcut when going distances by foot.	Die Person ergreift bei Wegen zu Fuß gerne die Möglichkeit, eine Abkürzung einzuschlagen.
Need for affiliation (Hill, 1987)	The person thinks being close to others, listening to them, and relating to them on a one-to-one level is one of his/her favorite and most satisfying pastimes.	Die Person denkt, eine ihrer liebsten Beschäftigungen, aus der sie viel Zufriedenheit schöpft, sei es, anderen nahe zu sein, ihnen zuzuhören und eine persönliche Beziehung zu jedem einzelnen zu pflegen.
	Just being around others and finding out about them is one of the most interesting things the person can think of doing.	Mit anderen Menschen zusammen zu sein und sie näher kennenzulernen, ist eines der interessantesten Dinge, die sich die Person vorstellen kann.
	The person feels like he/she has really accomplished something valuable when he/she is able to get close to someone.	Wenn die Person es schafft, zu jemandem ein Naheverhältnis aufzubauen, hat sie das Gefühl, etwas Wertvolles erreicht zu haben.
	One of the most enjoyable things the person can think of that he/she likes to do is just watching people and seeing what they are like.	Es zählt zu den schönsten Dingen für die Person, andere Menschen und ihre Verhaltensweisen einfach nur zu beobachten und zu sehen, wie sie sind.
	The person would find it very satisfying to be able to form new friendships with whomever he/she liked.	Die Person würde es sehr schön finden, wenn sie, mit wem auch immer sie möchte, neue Freundschaften schließen könnte.
	The person seems to get satisfaction from being with others more than a lot of other people do.	Sich mit anderen zu umgeben, scheint der Person mehr Zufriedenheit zu verschaffen als vielen anderen Menschen.
	The person thinks it would be satisfying if he/she could have very close friendships with quite a few people.	Die Person denkt, es wäre für sie sehr schön, wenn sie mit vielen Menschen sehr enge Freundschaften pflegen könnte.

(*continued*)

Study Variable	Items translated	Items original (german)
Trustfulness (Cattell, 2001)	The main thing the person likes about being around other people is the warm glow he/she gets from contact with them.	Wenn die Person andere Menschen um sich hat, schätzt sie vor allem das schöne Gefühl des Zusammenseins.
	The person thinks he/she gets satisfaction out of contact with others more than most people realize.	Die Person denkt, sie schöpfe aus dem Kontakt mit anderen mehr Zufriedenheit als die meisten Menschen vermuten würden.
	The person trusts in what people say.	Die Person vertraut auf das, was Menschen sagen.
	The person trusts others.	Die Person vertraut anderen.
	The person believes that others are benevolent.	Die Person glaubt, dass andere guten Willens sind.
	The person believes that humans are inherently moral.	Die Person glaubt, dass Menschen grundsätzlich moralisch sind.
Risk Seeking/Aversion (Colquitt et al., 2006)	The person enjoys being reckless.	Die Person genießt es, waghalsig zu sein.
	The person takes risks.	Die Person geht Risiken ein.
	The person seeks danger.	Die Person sucht die Gefahr.
	The person seeks adventure.	Die Person sucht das Abenteuer.
	The person would go paragliding or bungee jumping, if he/she got the opportunity.	Die Person würde Paragliding oder Bungee Jumping machen, wenn sich die Möglichkeit ergibt.
	The person would invest in risky assets, if he/she got the opportunity.	Die Person würde in riskante Kapitalanlagen investieren, wenn sich die Möglichkeit ergibt.
Environmental Consciousness (Alsmadi, 2007)	The person always advises others to keep the environment clean.	Die Person rät anderen immer, die Umwelt sauber zu halten.
	The person gets annoyed when someone contaminates the environment.	Die Person ärgert sich, wenn jemand die Umwelt verschmutzt.
	The person respects all efforts to maintain and preserve the environment.	Die Person respektiert alle Bemühungen, die Umwelt zu erhalten und zu schonen.
	The person appreciates living in a healthy and clean environment.	Die Person schätzt es, in einer gesunden und sauberen Umwelt zu leben.
	The person respects rules and regulations to maintain and preserve the environment.	Die Person respektiert Regeln und Vorschriften, um die Umwelt zu erhalten und zu schonen.
	The person always admires those who rationalize energy consumption.	Die Person bewundert immer jene, die ihren Energiekonsum einschränken.
	The person is aware of the impact of population explosion on the environment.	Der Person sind die Auswirkungen der Bevölkerungsexplosion auf die Umwelt bewusst.
	The person realizes that natural resources are scarce, thus must be used wisely.	Der Person ist klar, dass die natürlichen Ressourcen knapp sind und daher mit Bedacht eingesetzt werden müssen.
	The person believes that man and nature have to be in harmony for survival.	Die Person glaubt, dass Mensch und Natur in Harmonie sein müssen, um das Überleben zu sichern.
	The person understands that the environment is for us and future generations, thus must be well maintained and preserved.	Die Person versteht, dass die Umwelt uns und zukünftigen Generationen zur Verfügung steht und dass sie daher erhalten und geschont werden muss.
Green Consumerism (Alsmadi, 2007)	The person drives his/her car within speed limits to rationalize petrol consumption.	Die Person fährt Auto innerhalb der Geschwindigkeitsbegrenzung, um Treibstoff zu reduzieren.
	The person avoids buying products which extensively use scarce resources.	Die Person vermeidet den Kauf von Produkten, die hauptsächlich knappe Ressourcen verwenden.
	The person usually chooses the products that do not consume much energy.	Die Person verwendet gewöhnlich Produkte, die nicht viel Energie verbrauchen.
	The person usually buys environment-friendly products.	Die Person kauft gewöhnlich umweltfreundliche Produkte.
	The person may change brand loyalty for environmental reasons.	Die Person würde aus Umweltschutzgründen die Produktmarke wechseln.
	The person always chooses recyclable products.	Die Person wählt immer wiederverwertbare Produkte.
	The person always advises others to buy environment-friendly products.	Die Person rät anderen immer, umweltfreundliche Produkte zu kaufen.
	The person always chooses products with reusable packaging.	Die Person wählt immer Produkte mit wiederverwendbarer Verpackung.
	The person is willing to pay extra for green products.	Die Person ist bereit, für umweltfreundliche Produkte mehr zu bezahlen.
	When the person buys a product he/she always considers its impact on the environment.	Wenn die Person ein Produkt kauft, denkt sie immer an seine Auswirkung auf die Umwelt.
	The person always prefers to deal with pro-environmental sellers over others.	Die Person kauft immer lieber bei umweltfreundlichen Verkäufern als bei anderen.
	The person is willing to spend considerable time and efforts to buy green products.	Die Person ist bereit, viel Zeit und Mühen auf sich zu nehmen, um umweltfreundliche Produkte zu kaufen.

Appendix B

Scales Study 2.

Study Variable	Items	Items used (german)
Cost Savings (Pizzol et al., 2017)	**I chose this option…**	**Ich habe mich für diese Möglichkeit entschieden…**
	because, by doing so, I can cut my costs.	weil ich dadurch Kosten sparen kann.
	because participating benefits me financially.	weil die Teilnahme mir finanziell nützt.
	because it is cheaper than other means of transportation	weil es günstiger ist, als andere Transportmöglichkeiten.
	because I only pay for the period in which I use the service	

(continued)

Study Variable	Items	Items used (german)
		weil ich nur für den Zeitraum zahle, in dem ich den Service in Anspruch nehme.
Time Savings adopted from convenience (Pizzol et al., 2017)	**I chose this option…** because it saves me time. because it gives me more time for something else.	**Ich habe mich für diese Möglichkeit entschieden…** weil ich dadurch Zeit spare. weil ich dadurch mehr Zeit für anderes habe.
Convinence (Pizzol et al., 2017)	**I chose this option…** because then I don't have to worry about parking spaces. because I don't have to worry about public transportation. because I don't have to worry about filling the tank in the car. because it means there is always a vehicle available for use when I need one. because I appreciate the convenience, that go along with using it.	**Ich habe mich für diese Möglichkeit entschieden…** weil ich mir dann keine Gedanken um einen Parkplatz machen muss. weil ich mir keine Gedanken über öffentliche Transportmittel machen muss. weil ich mir keine Gedanken um das Betanken des Autos machen muss. weil das bedeutet, dass immer ein Fahrzeug verfügbar ist, wenn ich eines brauche. weil ich die Annehmlichkeiten schätze, die damit einhergehen.
Socio-environmental consciousness (Pizzol et al., 2017)	**I chose this option…** because it is a sustainable mode of consumption. because it reduces the consumption of natural resources because it means thinking about the environment.	**Ich habe mich für diese Möglichkeit entschieden…** weil es eine nachhaltige Form des Konsums ist. weil es den Verbrauch von natürlichen Ressourcen reduziert. weil es zeigt, dass ich an die Umwelt denke.
Social identity (Pizzol et al., 2017)	**I chose this option…** Because it allows me to be part of a group of people with similar interests. Because it improves my image vis-à-vis the community and society. because therby I feel accepted by the society.	**Ich habe mich für diese Möglichkeit entschieden…** weil es mir ermöglicht, Mitglied einer Gruppe zu sein, die ähnliche Interessen hat wie ich. weil es mein Image innerhalb der Gesellschaft verbessert. weil ich mich dadurch von der Gesellschaft akzeptiert fühle.
Enjoyment (Hamari et al., 2015)	**I chose this option…** because it is enjoyable. because it is exciting. because it is fun. because it is interesting. because it is pleasant.	**Ich habe mich für diese Möglichkeit entschieden…** weil es unterhaltsam ist. weil es aufregend ist. weil es Spaß macht. weil es interessant ist. weil es angenehm ist.
Trust (Pizzol et al., 2017)	I trust the operating model with its processes and structures. I trust the service. The service is safe.	Ich vertraue dem Betriebsmodell mit seinen Prozessen und Strukturen. Ich vertraue dem Service. Das Service ist sicher.
Risks (Pizzol et al., 2017)	**I decided against the other option because I'm afraid that…** I can't use the car when I need it. the car will not be suitable for use (condition, cleanliness).	**Ich habe mich gegen die andere Möglichkeit entschieden, da ich befürchte, dass…** ich das Auto nicht nutzen kann, wenn ich es brauche. das Auto nicht geeignet für den Gebrauch sein könnte (Zustand, Sauberkeit).
Attitude (Hamari et al., 2015)	I think the use of my chosen alternative is meaningful. I think that this alternative is a positive thing. I think that participating in the alternative I have chosen is a good thing. Overall, the use of this alternative within society makes sense. Using the alternative I have chosen is a better way of consumption.	Ich halte die Nutzung der von mir gewählten Alternative für sinnvoll. Ich finde, dass diese Alternative eine positive Sache ist. Ich finde, dass die Teilnahme an der von mir gewählten Alternative eine gute Sache ist. Alles in allem macht die Nutzung dieser Alternative innerhalb der Gesellschaft Sinn. Die Nutzung der von mir gewählten Alternative ist eine bessere Art des Konsums.
Behavioral intention (Hamari et al., 2015)	I intend to use the alternative I have chosen frequently in the future. I think that in the future I will participate more frequently in this alternative. I can see myself increasing my activities related to this alternative, if possible. It is likely that I will use the alternative I have chosen more often in the future	Ich nehme mir vor, die von mir gewählte Alternative in Zukunft häufig zu nutzen. Ich denke, dass ich mich in Zukunft öfter an dieser Alternative beteiligen werde. Ich denke, dass ich Aktivitäten bezüglich dieser Alternative erhöhen werde, wenn es möglich ist. Es ist wahrscheinlich, dass ich die von mir gewählte Alternative in Zukunft öfter nutzen werde.
Environmental consciousness (Alsmadi, 2007)	I always advise others to keep the environment clean. I get annoyed when someone contaminates the environment. I respect all efforts to maintain and preserve the environment. I appreciate living in a healthy and clean environment. I respect rules and regulations to maintain and preserve the environment. I always admire those who rationalize energy consumption. I am aware of the impact of population explosion on the environment. I realize that natural resources are scarce, thus must be used wisely I believe that man and nature have to be in harmony for survival. I understand that the environment is for us and future generations, thus must be well maintained and preserved.	Ich rate anderen immer, die Umwelt sauber zu halten. Ich ärgere mich, wenn jemand die Umwelt verschmutzt. Ich respektiere alle Bemühungen, die Umwelt zu erhalten und zu schonen. Ich schätze es, in einer gesunden und sauberen Umwelt zu leben. Ich respektiere Regeln und Vorschriften, um die Umwelt zu erhalten und zu schonen. Ich bewundere immer jene, die ihren Energiekonsum einschränken. Mir sind die Auswirkungen der Bevölkerungsexplosion auf die Umwelt bewusst. Mir ist klar, dass die natürlichen Ressourcen knapp sind und daher mit Bedacht eingesetzt werden müssen. Ich glaube, dass Mensch und Natur in Harmonie sein müssen, um das Überleben zu sichern. Ich verstehe, dass die Umwelt uns und zukünftigen Generationen zur Verfügung steht, und dass sie daher erhalten und geschont werden muss.
Green consumerism (Alsmadi, 2007; Hofmann et al., 2017)	I drive my car within speed limits to rationalize petrol consumption. I avoid buying products which extensively use scarce resources.	Ich fahre mein Auto innerhalb der Geschwindigkeitsbegrenzung, um Treibstoff zu reduzieren. Ich vermeide den Kauf von Produkten, die hauptsächlich knappe Ressourcen verwenden.

(*continued*)

Study Variable	Items	Items used (german)
	I usually choose the products that do not consume much energy.	Ich verwende gewöhnlich Produkte, die nicht viel Energie verbrauchen.
	I usually buy environment-friendly products.	Ich kaufe gewöhnlich umweltfreundliche Produkte.
	I may change brand loyalty for environmental reasons.	Ich würde aus Umweltschutzgründen die Produktmarke wechseln.
	I always choose recyclable products.	Ich wähle immer wiederverwertbare Produkte.
	I always advise others to buy environment-friendly products.	Ich rate anderen immer, umweltfreundliche Produkte zu kaufen.
	I always choose products with reusable packaging.	Ich wähle immer Produkte mit wiederverwendbarer Verpackung.
	I am willing to pay extra for green products.	Ich bin bereit, für umweltfreundliche Produkte mehr zu bezahlen.
	When I buy a product I always consider its impact on the environment.	Wenn ich ein Produkt kaufe, denke ich immer an seine Auswirkung auf die Umwelt.
	I always prefer to deal with pro-environmental sellers over others.	Ich kaufe immer lieber bei umweltfreundlichen Verkäufer/inne/n als bei anderen.
	I am willing to spend considerable time and efforts to buy green products.	Ich bin bereit, viel Zeit und Mühen auf mich zu nehmen, um umweltfreundliche Produkte zu kaufen.
Trustfulness (Cattell, 2001)	I trust in what people say.	Ich vertraue auf das, was Menschen sagen.
	I trust others.	Ich vertraue anderen.
	I believe that others are full of good intentions.	Ich glaube, dass andere guten Willens sind.
	I believe that people are basically committed to a moral code.	Ich glaube, dass Menschen grundsätzlich moralisch sind.

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