Understanding Collaborative Consumption: Test of a Theoretical Model

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Abstract

Collaborative consumption websites have enabled consumers to focus on shared access to products rather than owning them. This study aims at developing a comprehensive theoretical model to explain consumer outcomes for collaborative consumption. It develops and tests a structural equation model using partial least squares path modelling and survey data collected from a car-sharing website. The results suggest that consumer intentions to rent are driven primarily by perceived economic, environmental and social benefits through the mediator of perceived usefulness, and enjoyment, in turn driven by sense of belonging to the sharing community. Interestingly, social influence did not play a role. When making word-of-mouth recommendations, in addition to these factors, consumers also take website trust into account, underpinned by the structural assurances of the website. The paper rounds off further implications of the research for theory and practice.

Keywords: collaborative consumption; PLS-PM; TRA; car sharing; consumer behavior.

Introduction

Collaborative consumption enables the sharing of real-world assets and resources (Botsman and Rogers 2011), typically through websites with peer-to-peer marketplaces where unused space, goods, skills, money, or services can be exchanged. Time magazine has proposed collaborative consumption as one of the "10 ideas that will change the world" (Walsh, 2011). However, there is currently little empirical evidence regarding the future growth of collaborative consumption and its likely economic impact on incumbent industries. The few available studies in the hotel sector

have indicated a powerful wind of change. Zervas et al. (2015) demonstrated that AirBnB had claimed 8-10% of revenues in the hotel sector in Austin, Texas, and exerted downward pressure on prices. In support, a report by HVS found that in the year to July 2013, AirBnB had 416,000 guests staying in New York, equivalent to one million lost room nights for city hotels (Kurtz, 2014). Not surprisingly, there is now intense commercial interest regarding the impact of the sharing economy upon industry sectors – and whether it represents a disruptive shift (Christensen 2003). In the car industry alone, traditional car rental services, manufacturers, distributors, dealers and suppliers are likely to experience significant impact from collaborative consumption, as are supporting services in car financing, insurance, taxation, servicing, cleaning, retailing of sundries, and petrol supply and retail.

Belk (2014a) defines collaborative consumption as "people coordinating the acquisition or distribution of a resource for a fee or other compensation." Access-based consumption refers to "transactions that can be market mediated but where no transfer of ownership takes place" (Bardhi and Eckhardt 2012, p. 881); such consumption is sometimes considered as pseudo-sharing when there are profit motives, a lack of feelings of community, and expectations of reciprocity (Belk, 2014b). The rapid expansion of websites aimed at collaborative consumption has been said to be leading the way for a "sharing economy" (Buczynski 2013; Gansky 2010; Griffiths 2013; Sacks 2011) where individuals are mainly interested in access to rather than owning products (Bardhi and Eckhardt 2012; Chen 2009; Rifkin 2000). Fremstad (2014) calculates that the average US household spends $9090 per annum on shareable goods, and that there is a positive inclination to share: 52% of Americans have rented, borrowed or leased items that are typically owned, whilst 83% would do so if this was stress-free (Wise 2013). PwC (2015) predict that five key sharing sectors (car sharing, accommodation, finance, music video

streaming, and staffing) will soar in global revenues from $15 billion in 2013 to $335 billion by 2025.

The drivers for collaborative consumption websites are broad and wide-ranging, including those that are political, economic, environmental and social. As the global economy continues to reel after the effects of the financial crisis, many are beginning to question the prevailing Western political and economic models. These models appear to have created economic disparity and division in society, consumerism and excessive use of resources that have contributed to current and future environmental problems (Agyeman et al. 2013; Botsman and Rogers 2011). Such a trajectory for development is not sustainable, especially as developing nations begin to prosper and emulate this pattern of economic activity (Johnson 2008). This has led some to question whether it is actually necessary for consumers to buy and own so many assets, especially during a time of economic difficulty, or whether a new model in which people share what they have will contribute to better resource efficiency, social benefit and reduced environmental pollution. Thus, unifying these drivers, the concept of sustainable consumption has risen in perceived significance, defined as "consumption that simultaneously optimizes the environmental, social, and economic consequences of acquisition, use and disposition in order to meet the needs of both current and future generations" (Phipps et al. 2013: p. 1227).

A key factor that both enables and drives collaborative consumption is information technology (John 2013a). A number of technological movements have been considered as laying the foundations for the current wave of resource sharing activities on the Web, including the open source movement, typically motivated by altruism, recognition and community sharing and improvement (Benkler 2011) and peer-to-peer file sharing (Giesler 2006). More recently, online social networking has provided an unprecedented new platform for supporting large-scale resource sharing. Indeed, the growth of social networking is notable as one of the most

significant technological trends in the last decade, with 2.34 billion users in 2016, nearly a third of the world's population (Statista, 2016). Initial research focusing on the economic benefits derived from social commerce suggests that their value to buyers and sellers is derived from both the individual and overall characteristics of the social network involved (Stephen and Toubia 2010). Thus, we would expect the social network to play an important role in online collaborative consumption decisions.

Collaborative consumption can also have negative impacts and has received recent criticism for providing communications platforms with little value-added service and notable a lack of ethics and appropriate government regulation (Slee 2015). For example, Airbnb has been criticized by virtue of the fact that its business model has led to long-term housing becoming less affordable by the restriction of supply as a result of short-term lettings, and the likelihood that some rentals are illegal and not properly regulated. Indeed, evidence suggests that rental increases of 11% in New York severely outstripped median income rises of 2% from 2005 to 2012 (Ellen and Karfunkel, 2016). Uber has been criticized in a similar way, as a taxi service, rather than an ecological form of car sharing, that exploits workers with long hours and poor pay.

Evidence also suggests that some consumers are resistant to sharing. For example, some products may not be suitable for sharing amongst consumers due to the deep level of emotional attachment associated with them, such as Harley Davidson motorcycles (Catulli et al. 2016). Similarly, consumers may be reticent to share due to the desire for exclusivity and control, for example to enable personalization of products (Catulli et al., 2016). Catulli et al. (2017) in their study of product service systems (another name for access-based consumption) find that certain consumers who prize functional value, such as nomadic consumers, may be more amenable to sharing.

The most active market for collaborative consumption is car sharing, an area of sharing with potentially high economic and environmental benefits. According to research by Fremstad (2014), the largest gains from collaborative consumption will in fact be in car-sharing, which was calculated to be of the highest economic cost and value to households in the US. The environmental benefits of car sharing are also extremely significant. According to Berners-Lee (2010), a car produces approximately 720kg of CO_2 per £1000 ($1500) spent on buying it: for example, running a 1.4 TSI S Volkswagen Golf for 40,000 miles would produce 7.9 tonnes of CO_2, but manufacturing it would produce 14 tonnes of CO_2. Indeed, there is not a need to build or run as many cars if they are shared: cars are parked 95% of the time and therefore represent a significant untapped resource (Shoup 2005).

Collaborative consumption through online channels is not well understood. The limited amount of research and anecdotal evidence suggests that the purchase process is being redefined and that individual motivations are likely to be quite different to previous social sharing initiatives such as open source software (Benkler 2011), including, for example, possible new economic and environmental drivers (Hamari et al. 2015; Moelmann 2015). However, as yet, no model exists to systematically explain a consumer's engagement in online collaborative consumption and its key conative outcomes. The key aims of this paper are to explain consumer engagement in the collaborative consumption context and to draw practical implications from the empirical results. The research question for the study is: what factors explain a consumer's intentions to share and to recommend in the online collaborative consumption context?

This paper contributes to the emergent literature on the sharing economy, as well as that on consumer behavior, by providing a comprehensive model to explain a consumer's intention to share and to recommend in the collaborative consumption context. The theoretical foundation of the paper is the theory of reasoned action (Fishbein and Ajzen 1975), extended to capture key

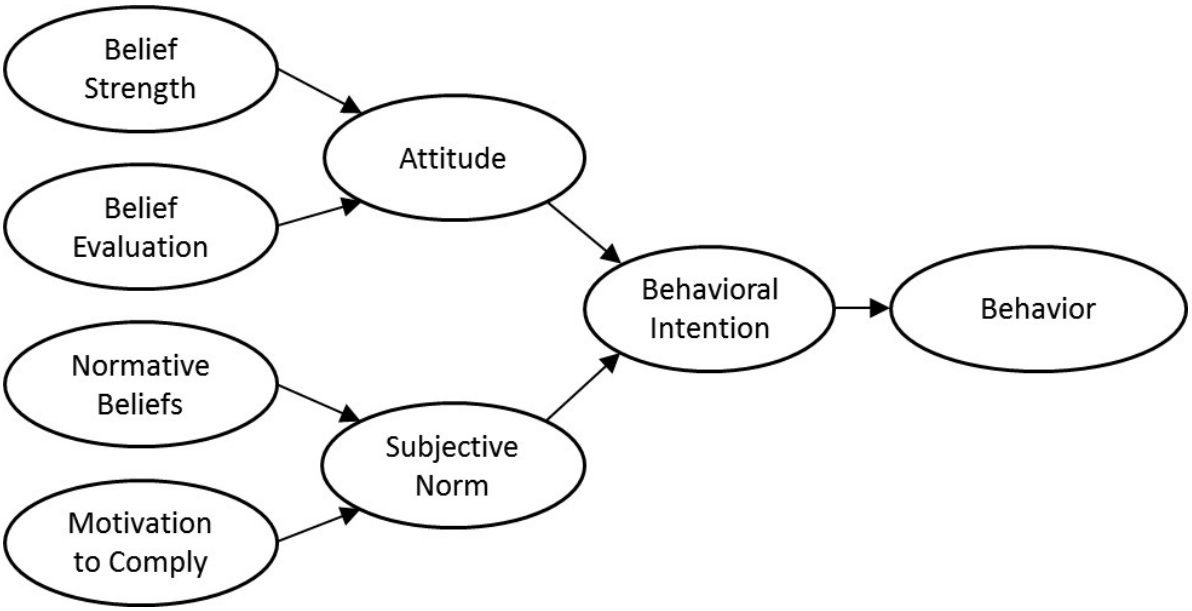
social and attitudinal factors in the online sharing environment from the literature on social commerce plus relevant factors from sustainable consumption, social sharing and Web 2.0. The findings of our research have significant implications for managers and developers of collaborative consumption websites.

The paper is organized as follows. In the next two sections we describe both the underlying theory for our study and a research model for investigation of the factors determining consumer behavior (intention to act and to recommend) in collaborative consumption respectively. This is followed by sections explaining the methodology for the research and the results of testing the research model via a car sharing website. Finally, the paper concludes with a discussion of the implications of the study for theory, a consideration of its value to practice, and some notes on the possible limitations of the study and directions for further research.

Theory background

The theory of reasoned action (TRA) is an important model for explaining rational human behavior in a plethora of contexts. The model has its roots in social psychology and the work of Fishbein and Ajzen (1975; 1980). It is a predictive model that seeks to examine the relationship between attitudes and behavior based on “principles of compatibility” and “behavioral intentions”. TRA is particularly appropriate in contexts in which an individual has volitional control. Figure 1 shows the basic theoretical model.

Figure 1. Theory of reasoned action.



The decisions of the individual in TRA are captured by behavioral intentions, defined by Fishbein and Ajzen (1975) as "people's expectancies about their own behavior in a given setting" (p.288) and operationalized as the likelihood of intended actions, e.g. a person's intention to rent a certain product, say a particular room on Airbnb. This measure is generally operationalized in research as a common sense notion of intentions measuring whether an agent has formulated a plan to act (Bagozzi et al. 2000). An individual's intentions to act determine actual behavior, e.g. the actual renting of a room on Airbnb, although this relationship weakens if a significant period of time intervenes and behavior becomes less connected with the intentions that had been formed. TRA posits that under the right conditions, behavioral intentions will approximate actual behavior (Ajzen 1991; Fishbein and Ajzen 1975): people tend to do what they intend to do. Indeed, a significant body of research has shown that the relationship between intentions and behavior is extremely strong (Sheppard et al. 1988). Thus, for both theoretical and practical reasons, the majority of academic research has tended to focus on behavioral intentions rather

than behavior the outcome variable (i.e. omitting the behavior variable) – creating a more parsimonious model and enabling testing and measurement via snapshot survey.

Intentions to act in TRA are determined by two factors: (1) attitude towards the behavior; and (2) subjective norms. Attitude refers to the degree to which an individual has a favorable or unfavorable evaluation of a behavior in question, resulting from the positive or negative behavioral beliefs that are held about undertaking a particular behavior weighted by the perceived evaluation of associated outcomes from such behavior. For example, an individual's attitude towards the rental of a room from Airbnb may be determined by a noting costs and benefits and weighting these to assess whether renting the room is a good or bad thing to do. Subjective norms refer to the perceived influence of social pressure for a person to perform a particular behavior, whereby significant others approve or disapprove of a behavior in question – the pressure from what an individual thinks that other people thinks that they should do. For example, does an individual's social milieu think that renting a room from Airbnb is a good idea? Subjective norms are influenced by normative beliefs, which refer to whether a person thinks that significant others – such as a partner, family, friends, work colleagues, and so on – think that they should perform a behavior, and an individual's motivation to comply with those beliefs. Thus, the beliefs of a significant other, such as a friend, are evaluated and weighted, e.g., does the friend think that renting a room from Airbnb is a good idea and how likely is the individual to listen to them?

The theory of reasoned action has proven to be a robust theory in many contexts. The theory has been applied and adapted to many types of voluntary behaviors, particularly consumer behaviors, including purchasing soft drinks, gasoline, toothpaste, banking, sports tickets, restaurants and food tourism (Bagozzi et al. 2000; Kim et al., 2011; Ryan and Bonfield 1980; Sheppard et al. 1988). More recently, the theory has been applied to online contexts, such as online stock trading (Ramayah et al. 2009), software piracy (Aleassa et al. 2011), cyberbullying (Doane et al. 2014),

sustainable purchasing contexts such as buying green products (Ramayah et al. 2010), green information technology products (Mishra et al. 2014) and purchasing green energy brands (Hartmann and Apaolaza-Ibanez 2012).

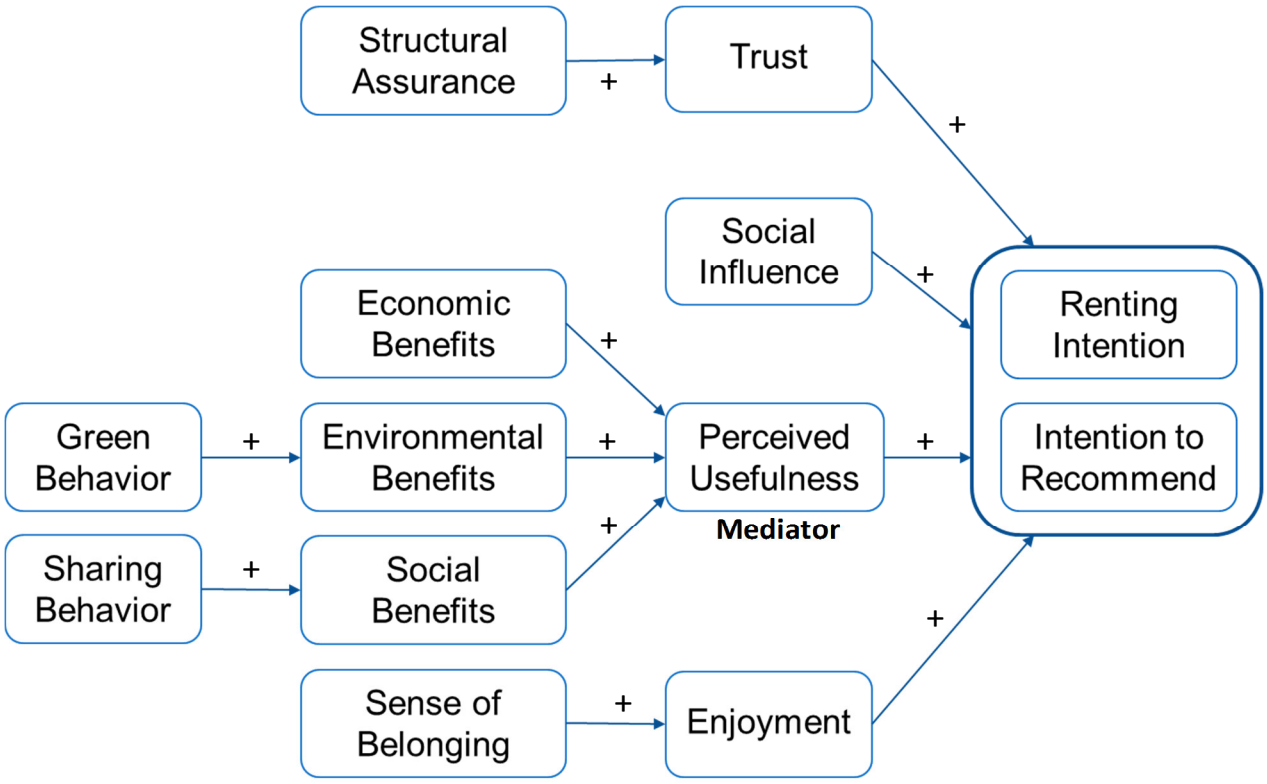
We have selected the theory of reasoned action as an appropriate foundation for our study and the research model in the next section. The theory is broad enough to allow us to examine attitudes informed by variety of sets of beliefs. The understanding of these sets of beliefs are, in turn, informed by diverse streams of literature to enable the inclusion of existing constructs or the creation of new constructs under the umbrella theory – the theory of reasoned action. Thus, we create a new unified model for explaining renting intentions and intentions to recommend in the context of collaborative consumption.

Research model and hypotheses

Our research model, shown in Figure 2, draws together the sparse literature on collaborative consumption, social commerce and a number of important factors that have gone largely overlooked from additional literature on sustainable consumption, social sharing and Web 2.0. The underlying theory for the research is the theory of reasoned action extended to provide a comprehensive explanatory model for a consumer's behavioral intentions to rent via a collaborative consumption website and to recommend the website to others. Both outcomes are critical in order to build critical mass. Social norms are captured in our model using the construct of social influence. Attitudes are captured via the triple-bottom-line antecedents, economic, environmental and social benefits, the mediator variable, perceived usefulness, and the intrinsic variable, enjoyment. Behavioral beliefs, each associated with particular attitudes, in line with the TRA, are also contained within our model, and captured by green behavior (driving perceived environmental benefits), sharing behavior (driving perceived social benefits) and sense of

belonging (driving enjoyment). Trust in the website is an additional antecedent of intentions included in our model, and has beliefs about structural assurances as an antecedent. In the following text, we explain the constructs, justification and literature support for their addition to our model via defined hypotheses.

Figure 2. Research Model.



Economic benefits

The economic value of collaborative consumption is perhaps the most dominant factor in discussions about its value. Fraiberger and Sundarajan (2015) provide an insightful economic analysis of the car sharing company Getaround using two years of customer data from San Francisco. They found clear evidence that the car sharing industry was creating consumer surplus

and substituting rental for ownership, particularly for below-median income users, who were the main users. In another economic study, Fremstad (2014) supports Benkler's (2004) argument that "decentralised sharing among loosely-connected individuals is viable, pervasive and increasingly important," but points to the need for critical mass in sharing networks due to issues of adverse selection from asymmetric information about goods and participants. Put simply, sharing networks succeed by building trust in the core of participants, and this will typically occur through selection, information and safeguards. Using data from four surveys, including data from the website NeighborGoods, Fremstad demonstrates that collaborative consumption is currently worth around $774 a year for 8 percent of Americans, but could potentially be worth more than 10 times this amount to a typically US household.

Other studies that examine car sharing have found that economic benefits are a clear driver for determining value and behavior. Tussyadiah (2015) found economic benefits to be a key motivation for peer-to-peer accommodation sharing. Bardhi and Eckhardt (2012) conducted a qualitative study of the access economy for cars and found some surprising results, with consumers largely motivated by self-interest and utilitarianism. A quantitative study of car sharing by May et al. (2008) found that financial savings were important factors in explaining behavioral intention. Hamari et al. (2015) test a simple structural model of online collaborative consumption (n=168) and find that the extrinsic motivation of economic benefits also determines behavioral intention to use. Moelmann (2015) found that cost savings did not influence continuance behavior for car sharing or accommodation sharing, although it did impact satisfaction. Utility on the other hand was found to impact both. In our model economic benefits are mediated by perceived usefulness which acts as a mediator and processor of perceptions about the values of sharing. The processing effect of perceived usefulness on these benefits has not been tested in previous studies. This is in line with the theory of reasoned action (Fishbein

and Ajzen 1975), in which the variable "attitude towards behavior or act" plays this particular role. Both the behavioral intentions to participate in collaborative consumption and to recommend are captured by the theory. Zehrer et al. (2011) found that perceived usefulness was a determinant of willingness to recommend based on blog postings. We therefore posit that:

H1: Perceptions of economic benefits will be positively associated with perceived usefulness.

H2a: Perceived usefulness will be positively associated with renting intention.

H2b: Perceived usefulness will be positively associated with intention to recommend.

H3: Perceived usefulness is a mediator between perceived benefits and intentions to recommend and renting intention.

Environmental benefits and green behavior

Hamari et al. (2015) find that intrinsic motivations of sustainability influence attitudes towards use, while May et al. (2008) found that environmental savings were important factors in explaining behavioral intentions to car share. Tussyadiah (2015) also found sustainability benefits to be a key motivational factor in her study of accommodation sharing. Surprisingly, Moelmann (2015) found that cost savings did not influence continuance behavior or satisfaction for car sharing or accommodation sharing. In concert with Hamari et al. (2015) and May et al. (2008), we expect that perceptions of environmental (sustainability) benefits will motivate behavioral intentions in collaborative consumption environments. Several models of generalized sustainable consumption have been proposed by conservationists including values-beliefs-norms, motivation-opportunity-abilities and more recently a social cognitive theory, which suggests that consumers both create their own behaviors and are a product of their environment and past behaviors

(Phipps et al. 2013). A consumer's past behaviors with regard to sustainability will determine their understanding and perception of environmental benefits, which in turn will influence their overall perceived usefulness of an initiative. Thus, in our study we capture green (sustainable) behaviors and perceptions of environmental benefits using the following hypotheses:

H4: The perception of environmental benefits is influenced by an individual's green behavior.

H5: Perception of environmental benefits determines perceived usefulness.

Social benefits and sharing behavior

Sharing refers to the "act and process of distributing what is ours to others for their use and/or the act and process of taking from others for our use" (Belk 2007, p. 126). The Internet and more recently the Web have become conduits for the development of social sharing activities that span far beyond local communities. The open source movement, where software source code is made available to all, typically on a gratis or generalized reciprocity basis, was one initial driver for such activity. Motivations for developers of, for example, Linux and the Apache Web server, included altruism, recognition and community sharing and improvement (Benkler 2011). Web 2.0 and social networking represent an extension of previous social sharing activities, where Internet services such as Facebook, YouTube and Wikipedia are rooted in shared user-generated content (John 2013b). Subsequently, Web 2.0 has contributed to community-building and developing social capital (Ellison et al. 2007). Indeed, Tussyadiah (2015) found that community benefits in peer-to-peer accommodation sharing were a key motivation. We posit that collaborative consumption extends sharing behavior and creates social benefits, generating perceived usefulness for participants:

H6: Sharing behavior positively influences social benefits.

H7: Perception of social benefits determines perceived usefulness.

Enjoyment and sense of belonging

The nature of the social commerce environment suggests that, as in general online social networks, intrinsic benefits as well as extrinsic benefits will be important in determining behavior (Cheung et al. 2011; Lin and Lu 2011), pointing to the possible importance of perceived enjoyment in determining intentions. Indeed, this has been found in existing research on social shopping (Shen 2012), where humans have a strong and innate desire to form and maintain relationships with others. Similarly, in collaborative consumption environments, Hamari et al. (2015) found that enjoyment influenced attitudes and behavioral intentions. Research also suggests that enjoyment influences word-of-mouth recommendation (Derbaix and Vanhamme 2003; Hosany and Prayag 2013), although as yet this does not appear to have been tested in the online consumer behavior literature.

Like other social networks, members of collaborative consumption networks are likely to feel a sense of belongingness to the community they engage with. Theory suggests that this sense of belongingness is associated with enjoyment (Raghunathan and Corfman 2006). However, this has only been tested in an experimental laboratory setting. Further, this relationship does not appear to have been empirically tested in the online consumer behavior context. Therefore, confirming this relationship using empirical data with genuine consumers could offer a potential contribution of this paper. Thus, we posit:

H8: Sense of belonging is positively associated with feelings of enjoyment.

H9a: Feelings of enjoyment are positively associated with renting intention.

H9b: Feelings of enjoyment are positively associated with intention to recommend.

Social influence

The theory of reasoned action posits that subjective norms about behavior will influence behavioral intentions (Fishbein and Ajzen 1975). Social influence factors are also considered important motivators of behavior in online social networking (Cheung et al. 2011; Jung et al. 2007; Krasnova et al. 2008). Hsu and Lin (2008) identify social norms and community identification as elements of social influence in blog acceptance. Further, they point out that such norms can have normative and informational influences. Such influences are likely to include those from the social support mechanisms of a social commerce sharing network, including recommendation and referrals, forums and communities, and rating and reviews (as examined by Hajli 2012). Research examining social influences through social network theory has found that the strength of social ties impacts word-of-mouth referral behavior (Brown and Reingen 1987; Sohn 2009). In concert with the foregoing, we posit:

H10a: Social influence is positively associated with renting intention.

H10b: Social influence is positively associated with intention to recommend.

Trust and structural assurance

Several authors have used trust to explain online social commerce purchasing and recommendation (Kim and Park 2013; Ng 2013; See-To and Ho 2014). Word-of-mouth through recommendation, rating and reviews offered by the network (Hajli 2012; See-To and Ho 2014;

Wang and Chang 2013) may contribute to building reputation (Kim and Park 2013), a key element in building trust in social commerce (Yang et al. 2012). Teh and Ahmed (2012) develop a model based on TAM (Davis 1989) for explaining social commerce adoption by adding a trust variable to explain behavioral intention and four additional constructs for determining trust perceptions: security, structural assurance, vendor familiarity and situational normality. Structural assurance refers to "'the goodness' of online vendors through structural supports, such as legal protection and guarantees" (p. 360). Their results suggest that trust has a very strong influence on behavioral intention, and is strongly influenced by structural assurance, which is further supported by the literature in e-commerce (Gefen et al. 2003; Teo and Jiu 2007). Based on the foregoing we posit:

H11: Structural assurance is positively related to the establishment of trust.

H12a: Trust is positively related with renting intention.

H12b: Trust is positively related with intention to recommend.

Methodology

The research reported in this paper is explanatory, but builds upon initial, exploratory qualitative research (see Barnes and Mattsson, 2017). The following sections outline the main aspects of the method used.

Data collection

In this study, we focused on a car-sharing website. Data were collected using an online survey in Qualtrics from both drivers and passengers of the car sharing service MinBilDinBil (https:/minbildinbil.dk). MinBilDinBil, which translates into English as "my car your car", was

established in August 2013 and is one of four vehicle-sharing websites in Denmark (the others are Gomore, Jepti and Lejdet). Denmark is one of the most expensive countries in the world to own a car, with 180% taxation on car purchase and high registration, tax, insurance and fuel costs. It is therefore a very interesting and relevant context in which to examine car sharing initiatives. The MinBilDinBil website and mobile app allows owners to post car rentals for free, along with photos and pricing, and desired user groups, e.g. businessmen aged 30 or over. Owners receive requests for rentals via email and text message and then assess previous reviews and reputation (ratings) of the renter on MinBilBinBil, along with those of associated social media websites (such as Instagram and Facebook). It is then up to the owner to meet the potential car renter. All cars rented are covered by comprehensive insurance policies during rental. MinBilDinBil earns revenue by top-slicing the fees charged for car rental. The overall rental price is approximately 30-40% less than typical car rental services. MinBilDinBil was acquired by Netherlands-based SnappCar in 30th April 2015, at which point is was reported to have 20000 users and 2500 cars.

Table 1. Sample characteristics.

Characteristic		Number	Frequency (%)
What is your gender?	Male	51	44.3
	Female	64	55.7
Which of the following are you? (Driver and/or Passenger)	Driver only	34	29.6
	Passenger only	79	78.7
	Both	2	1.7
What is your age in years?	18 to 24	4	3.5
	25 to 34	20	17.4
	35 to 44	37	32.2
	45 to 56	28	24.3
	55 to 64	20	17.4
	65 plus	6	5.2
What is your highest level of educational achievement?	High school (non-graduate) or below	20	17.4
	High school graduate or equivalent	24	20.9
	Bachelor's degree or equivalent	40	34.8
	Master's degree or equivalent	30	26.1

	Doctoral degree or equivalent	1	0.9
In an average week, how much time would you say you spend on using online social network sites?	less than 1 hour	9	7.8
	between 1 and 5 hours	43	37.4
	between 6 and 10 hours	34	29.6
	between 11 and 25 hours	14	12.2
	between 26 and 50 hours	12	10.4
	between 51 and 75 hours	2	1.7
	more than 75 hours	1	0.9
How long have you been using MinBilDinBil?	Less than a month	17	14.8
	1 to 3 months	20	17.4
	4 to 6 months	11	9.6
	6 to 12 months	28	24.3
	1 to 2 years	31	27.0
	More than 2 years	8	7.0

In all, 115 usable responses were received. The characteristics of the final sample is shown in Table 1. Just over half of the sample was female (55.7%). The median age was 35 to 44 years. The respondents were quite educated, with around three-quarters holding a first degree or equivalent. Social media usage among the sample was moderate, with a median of 6 to 10 hours per week. The users of MinBilDinBil were relatively new, with a median period of patronage of 6 to 12 months, which is perhaps not surprising given the young age of the company, although 34% of respondents had used it for more than a year.

Measurement scales

The survey was delivered to respondents in Danish. The survey content was first created in English, then translated into Danish by natives and back-translated into English to ensure accuracy and consistency of meaning between languages. The English version of the scale items are shown in Appendix 1. Items for constructs within the research model were measured using 5-point Likert scales ranging from 1=strongly disagree to 5=strongly agree, where 3=neutral. Where possible, items for scales were adapted from previous research applications. However, five new constructs and corresponding scale items were required for the study: Green Behavior,

Sharing Behavior, Economic Benefits, Environmental Benefits and Social Benefits. These scales were tested and refined using a pilot study with another collaborative consumption website — Hinner Du? in Sweden. A sample of 65 responses was collected and used to examine and refine the scales using the protocol of Churchill (1979). Metrics for the final scales revealed that the Cronbach's Alpha scores ranged from 0.765 to 0.891.

Descriptive statistics for the scales is provided in Table A1 in the appendices. Means ranged from 2.748 to 4.296, and standard deviations from 0.753 to 1.071. It is notable that the majority of items had means of between 3 and 4, although the scale items for structural assurance, intention to recommend and perceived usefulness all had means above 4.

Table 2. Psychometric analysis of constructs.

Construct	Items	Standardized Loadings (Bootstrap)	Standard Error	Critical Ratio	Cronbach's Alpha	Dillon-Goldstein's Rho
Structural Assurance	ASSUR1	0.925	0.038	24.373	0.921	0.950
	ASSUR2	0.925	0.033	28.868		
	ASSUR3	0.908	0.034	26.960		
Trust	TRUST1	0.912	0.035	26.778	0.876	0.915
	TRUST2	0.840	0.061	14.083		
	TRUST3	0.740	0.101	7.513		
	TRUST4	0.827	0.067	12.468		
Social Influence	OTHERS1	0.970	0.081	12.349	0.833	0.923
	OTHERS2	0.714	0.175	4.108		
Economic Benefits	ECON1	0.888	0.062	14.580	0.881	0.927
	ECON2	0.812	0.090	9.226		
	ECON3	0.915	0.046	19.946		
Green Behavior	GREEN1	0.684	0.153	4.722	0.796	0.880
	GREEN2	0.761	0.108	7.204		
	GREEN3	0.918	0.046	20.633		
Environmental Benefits	ENV1	0.939	0.036	26.275	0.872	0.921
	ENV2	0.770	0.107	7.366		
	ENV3	0.810	0.077	10.689		
Sharing Behavior	SHAR1	0.859	0.090	9.837	0.837	0.891
	SHAR2	0.683	0.148	4.783		
	SHAR3	0.788	0.134	6.307		
	SHAR4	0.698	0.127	5.801		
Social Benefits	SOCIAL1	0.842	0.088	9.757	0.768	0.867

	SOCIAL2	0.719	0.118	6.283		
	SOCIAL3	0.810	0.083	9.804		
Perceived Usefulness	PU1	0.944	0.037	26.035		
	PU2	0.925	0.033	28.167	0.940	0.961
	PU3	0.939	0.033	28.621		
Sense of Belonging	BELONG1	0.812	0.083	9.939		
	BELONG2	0.791	0.077	10.428	0.695	0.831
	BELONG3	0.686	0.135	5.314		
Enjoyment	ENJOY1	0.874	0.067	13.357		
	ENJOY2	0.895	0.048	18.552	0.883	0.928
	ENVOY3	0.889	0.047	19.222		
Renting Intention	RI1	0.964	0.035	28.213		
	RI2	0.960	0.035	27.689	0.970	0.981
	RI3	0.894	0.065	14.040		
Recommendation	REC1	0.948	0.028	34.421		
	REC2	0.965	0.024	40.584	0.950	0.968
	REC3	0.911	0.063	14.638		

Tables 2, 3 and A2 in the appendices examine the reliability, discriminant validity and convergent validity of the constructs. Table 2 shows that all measurement items loaded on their constructs at $p<.001$, demonstrating convergent validity. Further, the levels of Cronbach's Alpha and Dillon-Goldstein's Rho were all above the recommended level of 0.7 (Nunnally 1978). Table A2 in the appendices examines cross-loadings of items on constructs. All items loaded more strongly on their own construct than on other constructs, demonstrating discriminant validity (Chin 1998). The discriminant validity of constructs is further examined in Table 3. The AVEs for constructs were considerably larger than the squared intercorrelations of other constructs, again confirming discriminant validity (Fornell and Larcker 1981). Convergent validity was measured by average variance extracted (AVE) and ranged from 0.616 to 0.926, above the recommend level of 0.50 (Fornell and Larcker 1981).

Table 3. Test for discriminant validity (squared correlations < AVE on diagonal).

Construct	SA	TR	SI	ECB	GB	ENB	SHB	SOB	PU	BEL	ENJ	RI	REC
Structural Assurance (SA)	**0.862**												

Trust (TR)	0.634	**0.719**											
Social Influence (SI)	0.139	0.167	**0.757**										
Economic Benefits (ECB)	0.258	0.257	0.108	**0.789**									
Green Behavior (GB)	0.066	0.069	0.172	0.037	**0.668**								
Environmental Benefits (ENB)	0.177	0.213	0.233	0.185	0.333	**0.740**							
Sharing Behavior (SHB)	0.183	0.194	0.243	0.110	0.267	0.150	**0.636**						
Social Benefits (SOB)	0.242	0.329	0.281	0.270	0.110	0.301	0.268	**0.655**					
Perceived Usefulness (PU)	0.427	0.434	0.110	0.447	0.053	0.235	0.135	0.301	**0.891**				
Sense of Belonging (BEL)	0.314	0.316	0.234	0.271	0.081	0.260	0.218	0.412	0.238	**0.616**			
Enjoyment (ENJ)	0.216	0.179	0.233	0.265	0.101	0.127	0.231	0.297	0.177	0.375	**0.809**		
Renting Intention (RI)	0.133	0.179	0.077	0.193	0.056	0.073	0.085	0.157	0.221	0.143	0.299	**0.926**	
Recommendation (REC)	0.358	0.405	0.162	0.382	0.109	0.248	0.198	0.296	0.540	0.292	0.362	0.334	**0.909**

Note: AVE on diagonal; squared correlations off diagonal.

The potential threat of common method bias (CMB) was examined via Harman's one-factor test by entering all constructs into an unrotated principal components factor analysis (Podsakoff and Organ 1986). Nine factors were produced and the first accounted for just 38.3% of the variance. This suggests that there is unlikely to be significant common method bias.

Data analysis

The test for the research model used partial least squares path modelling (PLSPM) – a variance maximization technique for structural equation modelling (SEM) that makes no distributional assumptions for data. PLSPM has more statistical power than traditional covariance-based SEM (Hair et al. 2014), and has grown in popularity in business research and the social sciences more generally in the last decade or so. PLSPM, sometimes referred to as 'soft-modelling' is a more flexible techniques that is able to handle small-to medium-sized samples (Chin, 1998). Our study is based on a small sample and therefore PLS was selected as an appropriate choice for our analysis.

Results

The results of testing our research model via PLS path modeling in XLSTAT are shown in Table 4. The fit of the model was evaluated using Esposito Vinzi et al.'s (2010) Relative Goodness-of-Fit Index (GoF_{rel}), designed and recommended as best practice for PLS path modelling (Henseler and Sarstedt 2013). We find that the fit of the model is above the level of 0.9 recommended by Esposito Vinzi et al. (2010) and is therefore acceptable (GoF_{rel}=0.958). The goodness-of-fit of the outer model and inner model were also high (0.980 and 0.978 respectively), providing positive support for the fit of the model.

All but three relationships were statistically supported in our research model. The model explains 37.6% of Renting Intention in collaborative consumption using the website (R^2=0.376, F=16.589, p<.001), which was significantly determined by both Enjoyment (H9a: β=0.426, SE=.091, t=4.669, p<.001) and Perceived Usefulness (H2a: β=0.237, SE=.102, t=2.314, p=.023), but not by Trust or Social Influence (H10a, H12a). In terms of our other outcome measure, the model explains an impressive 66.3% of variance in Intention to Recommend (R^2=0.663, F=54.076, p<.001), driven by Perceived Usefulness (H2b: β=0.477, SE=.075, t=6.336, p<.001), Enjoyment (H9b: β=0.316, SE=.067, t=4.714, p<.001) and Trust (H12b: β=0.182, SE=.077, t=2.363, p=.020), but again not by Social Influence (H10b). Around 53% of the variance was due to Perceived Usefulness, 29% to Enjoyment and 17% to Trust.

More than half of the variance in Perceived Usefulness in our research model was significantly explained by the three antecedents (R^2=0.520, F=40.036, p<.001), with Economic Benefits accounting for 63% of variance (H1: β=0.493, SE=.079, t=6.266, p<.001), Social Benefits 22% (H7: β=0.205, SE=.085, t=2.411, p=.018) and Environmental Benefits 15% (H5: β=0.161, SE=.080, t=2.004, p=.048).

Table 4. Test of Research Model.

Relationship	Path Coeff.	St. Error	t	Pr > |t|
Structural Assurance → Trust	0.803	0.056	14.330	<0.001
Trust R^2 = 0.645 (F=205.359, Pr > F <.001)				
Sense of Belonging → Enjoyment	0.613	0.074	8.238	<0.001
Enjoyment: R^2 = 0.375 (F=68.862, Pr > F <.001)				
Green Behavior → Environmental Benefits	0.577	0.077	7.516	<0.001
Environmental Benefits: R^2 = 0.333 (F=56.487, Pr > F <.001)				
Sharing Behavior → Social Benefits	0.517	0.080	6.428	<0.001
Social Benefits: R^2 = 0.268 (F=41.322, Pr > F <.001)				
Economic Benefits → Perceived Usefulness	0.493	0.079	6.266	<0.001
Environmental Benefits → Perceived Usefulness	0.161	0.080	2.004	0.048
Social Benefits → Perceived Usefulness	0.205	0.085	2.411	0.018
Perceived Usefulness: R^2 = 0.520 (F=40.036, Pr > F <.001)				
Trust → Renting Intention	0.108	0.105	1.034	0.303
Social Influence → Renting Intention	-0.050	0.089	-0.566	0.572
Perceived Usefulness → Renting Intention	0.237	0.102	2.314	0.023
Enjoyment → Renting Intention	0.426	0.091	4.669	<0.001
Renting Intention: R^2 =0.376 (F=16.589, Pr > F < .001)				
Trust → Intention to Recommend	0.182	0.077	2.363	0.020
Social Influence → Intention to Recommend	0.017	0.065	0.257	0.797
Perceived Usefulness → Intention to Recommend	0.477	0.075	6.336	<0.001
Enjoyment → Intention to Recommend	0.316	0.067	4.714	<0.001
Intention to Recommend: R^2 =0.663 (F=54.076, Pr > F < .001)				

Nearly two-thirds of the variance in Trust was explained by Structural Assurance (R^2=0.645, F=205.359, p<.001), and the relationship was significant at the p<.001 level (H11: β=0.803, SE=.056, t=14.330, p<.001). Sense of Belonging explained 37.5% of the variance in Enjoyment (R^2=0.375, F=68.862, p<.001), and the path was again significant (H8: β=0.613, SE=.074, t=8.238, p<.001).

A third of the variance in Environmental Benefits was explained by Green Behavior (R^2=0.333, F=56.487, p<.001), and the path between the two was extremely significant (H4: β=0.577, SE=.077, t=7.516, p<.001). Similarly, 26.8% of the variance of Social Benefits was explained by Sharing Behavior (R^2=0.268, F=41.322, p<.001), again with a highly significant structural path (H6: β=0.517, SE=.080, t=6.428, p<.001).

The mediating role of perceived usefulness between the three benefits and two consumer outcomes –intention to rent and to intention to recommend – was analyzed using Preacher and Hayes (2008) bootstrapping method with 5000 resamples, implemented using their SPSS macro. Hayes (2009, 2013) demonstrates that bootstrapping is superior to normal theory tests, such as the Sobel test (Baron and Kenny 1986; Sobel 1986), for inference about indirect effects. The bias-corrected (BC) bootstrapping method does not assume normality and enables repeatedly sampling from the data to estimate the indirect effects of mediators via the construction of 95% confidence intervals (CI) for the indirect effects. If the confidence interval for a mediator contains zero, the indirect effect of the mediator does not differ from zero, and it cannot act as a mediator. The BC bootstrap method performs better than traditional methods in terms of both statistical power and Type I error rate (Preacher & Hayes, 2008). The results of testing the mediating effects of perceived usefulness are shown in Table 5. Overall, we find that none of the 95% confidence intervals obtained from applying the bias-corrected bootstrap method contain zero, and thus in each case perceived usefulness acts as a mediator in the paths from economic, environment and social benefits to renting intention and intention to recommend.

Table 5. Mediation tests for Perceived Usefulness.

Effect Modeled	'a' path: A→B	'b' path: B→C	'c' path: Total Effect	INDIRECT EFFECT (BC Bootstrap)	Result

	β_a	SE_a	p	β_b	SE_b	p	β_c	SE_c	p	Effect	SE	Upper CI	Lower CI	
Economic Benefits → Perceived Usefulness → Renting Intention	.722	.078	***	.398	.136	.004	.574	.116	***	.285	.104	.525	.110	Mediated
Environmental Benefits → Perceived Usefulness → Renting Intention	.492	.086	***	.527	0.117	***	.353	.116	.003	.256	.091	.465	.109	Mediated
Social Benefits → Perceived Usefulness → Renting Intention	.588	0.094	***	.393	0.116	.001	.634	.121	***	.230	.101	.464	.063	Mediated
Economic Benefits → Perceived Usefulness → Intention to Recommend	.722	.078	***	.561	0.078	***	.628	.078	***	.404	.097	.614	.240	Mediated
Environmental Benefits → Perceived Usefulness → Intention to Recommend	.492	.086	***	.601	0.066	***	.503	.080	***	.292	.088	.479	.138	Mediated
Social Benefits → Perceived Usefulness → Intention to Recommend	.588	.094	***	.583	0.067	***	.598	.086	***	.341	0.098	.555	.173	Mediated

Discussion and conclusions

The growing sharing economy promises to bring about a radical change in consumer purchasing and consumption, both online and offline, potentially presenting a phenomenon as important to economies in the coming decade as e-commerce was during the last decade. However, successful collaborative consumption ventures need loyal communities of members and often struggle to determine the key features that will help them to survive. In an effort to better understand collaborative consumption on the Web, this paper has developed and tested an original model for explaining consumer outcomes in this new environment based on an extension of the theory of reasoned action. The model has nomological validity, explaining 66.3% of the variance of Intention to Recommend and 37.6% of Renting Intention with respect to the car-sharing website examined. The model also displayed acceptable reliability, validity and goodness of fit using the measures employed.

The motivators for car sharing for consumers are both intrinsic and extrinsic. Enjoyment and perceived usefulness are the key motivators for renting intentions. Consumers feel part of the community on MinBilDinBil, adding to a feeling of enjoyment and a desire to participate in car sharing and to tell others about it. Concurrently, consumers perceive significant benefits from car sharing activities, spearheaded by economic benefits, with social and environmental benefits

playing a significant but less important role (and depending particularly on consumers' disposition regarding sharing and green behavior). Paradoxically, consumers who car share appear very independently-minded and opportunistic, and thus do not feel the impact of social influence upon their activities. This is perhaps in line with Bardhi and Eckhardt's (2012) finding that car sharing appears to be associated with self-interest and utilitarianism. They also do not consider trust to be a particular consideration for using the website themselves, but think that it is an important requisite for recommending the site to others.

The absence of a significant relationship between trust and renting intention is an interesting issue. Arguably, MinBilDinBil act as a broker in the relationship between owners and renters. Although reviews, ratings and other reputational content are provided to individuals in order to assist them in the decision to rent, the decision itself is ultimately their own. After the decision is made, safeguards are provided, in that identification and transactions are securely handled by the website and all cars rented are covered by comprehensive insurance as standard. Indeed, items for structural assurance were among the highest in our survey, emphasizing that strong assurance was felt among the sample of respondents, and perhaps a degree of "big-brother governance" (Bardhi and Eckhardt 2012).

Our model makes a significant contribution to the emergent stream of literature on the sharing economy as well as mainstream literature on consumer behavior. It unifies a number of conceptual components within the basic framework of the theory of reasoned action to create an original model to explain sharing behavior. Particularly important aspects of the contribution to knowledge are a comprehensive set of measures for understanding key antecedents of the mediating variable, perceived usefulness (i.e. economic, environmental and social benefits) and their determinants (i.e. sharing behavior and green behavior), and an understanding of enjoyment and social belonging in intentions to rent and recommend. To our knowledge, this is the first

study to formally test the relationship between sense of belonging and enjoyment in a non-experimental setting. Our study uses data from real consumers and finds support for this relationship. Our study makes a contribution by discovering the important role of perceived usefulness in carrying forward different types of perceived benefits to determine recommendation and renting intentions. Furthermore, we have found that disposition for sharing and green behavior are very important determinants of perceived environmental and social benefits, in line with sustainability theory for the former (Phipps et al. 2013), and studies on previous social sharing initiatives such as the open source movement for the latter (Benkler 2011). The final research model provides a comprehensive coverage of intrinsic and extrinsic factors to understand consumer behavior (in line with Baldus et al., 2015) in a collaborative consumption context.

Our research has implications for practice and points to areas of development for collaborative consumption in order to build communities of loyal followers via word-of-mouth. Successful communities can become successful with low-cost marketing techniques that capitalize on the power and wisdom of the crowd via social networks: in this case the loyal community of online followers. Our research has identified the pattern of determinants that works for the particular type of business studied: car sharing. Focusing upon the right factors can provide a cognitive boost in developing loyal community members, where enjoyment and utility are key to participation (in that order) and usefulness, enjoyment and trust are key to creating positive word-of-mouth.

In order to create successful collaborative consumption websites developers should aim to build cohesive communities of consumers that have an affinity with the nature of the sharing activities and each other. Cohesive communities of sharers will not only create social benefits but also engender a sense of belonging that contributes to creating an enjoyable experience. In targeting

new leads, marketers should also emphasize the economic savings that consumers will obtain from renting and the environmental benefits of sharing rather than buying. If metrics can be provided for sharers to more accurately and clearly assess these benefits then they are likely to be even stronger. Marketing to the right groups is essential: price-conscious individuals that are active sharers and users of social media, who are also likely to have an environmental conscience. Such groups may include voluntary simplifiers, downshifters and other green segments (Craig-Lees and Hill 2002; Etzioni 1998; Shama 1985): green consumers tend to focus on reduced consumption, downshifters deliberately reduce income and consumption, and voluntary simplifiers deliberately reduce income and consumption and are guided by some spiritual element (McDonald 2014).

In order to create word-of-mouth about collaborative consumption websites, managers should also focus upon building mechanisms that create trust. Such structural assurance mechanisms include those that ensure that problems of adverse selection, which inhibit the building of critical mass (Fremstad 2014), do not occur. These include providing the legal framework and policies that fairly manage transactions and resource use, secure payment mechanisms and protection, appropriate insurance policies, helpful and accurate review and reputation systems, user identification and tracking (including audit), and the flagging of problem users. Indeed, there are numerous issues that can seriously impede the large scale up of collaborative consumption (Catulli and Reed 2016), including product liability, difficulties in exercising due diligence for consumers, scalability, and credit legislation, the last of which is regulated in different ways in different countries (e.g. often there are rental thresholds over which a credit license is required).

Our research has some limitations and possible directions for further research. First, we focus on just one type of collaborative consumption website, and testing the model in other online sharing contexts is recommended. Testing the model in other contexts may surface different

patterns of importance in determinants for building a successful sharing community. Second, our sample size, although adequate for PLS-PM, could be considered limited. Socio-demographic features may also be of value in targeting potential consumers, but our sample size was not large enough to test for them. A secondary analysis (not reported above) did, however, find that female users and those with higher social media use had a significantly higher Intention to Recommend score ($p<.001$ and $p<.05$ respectively), suggesting that more data and further analysis into respondent characteristics might be fruitful. Future research should aim to collect more data to test the impact of socio-demographic features on the model.

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References

Agyeman, J., McLaren, D., & Shaefer-Borrego, A. (2013). *Sharing Cities*. London: Friends of the Earth.

Ajzen, I., & Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behavior*. Englewood Cliffs, NJ: Prentice Hall.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211.

Aleassa, A., Pearson, J. P., & McClurg, S. (2011). Investigating software piracy in Jordan: An extension of the theory of reasoned action. *Journal of Business Ethics*, 98(4), 663-676.

Bagozzi, R. P., Wong, N., Abe, S., & Bergami, M. (2000). Cultural and situational contingencies

and the theory of reasoned action: Application to fast food restaurant consumption. *Journal of Consumer Psychology*, 9(2), 97-106.

Baldus, B. J., Voorhees, C., & Calatone, R. (2015). Online brand community engagement: Scale development and validation. *Journal of Business Research*, 68(5), 978-985.

Bardhi, F., & Eckhardt, G. M. (2012). Access-based consumption: The case of car-sharing. *Journal of Consumer Research*, 39, 881-898.

Barnes, S.J., & Mattsson, J. (2017). Building tribal communities in the collaborative economy: An innovation framework. *Prometheus*, in press.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personal and Social Psychology*, 51(6), 1173–1182.

Belk, R. (2007). Why not share rather than own? *Annals of the AAPSS*, 611(1), 126-140.

Belk, R. (2014a). You are what you can access: Sharing and collaborative consumption online. *Journal of Business Research*, 67, 1595-1600.

Belk, R.W. (2014b). Sharing versus pseudo-sharing in Web 2.0. *Anthropologist*, 18, 7-23.

Benkler, Y. (2004). Sharing nicely: On shareable goods and the emergence of sharing as a modality of economic production. *Yale Law Journal*, 114, 273-358.

Benkler, Y. (2011). *The Penguin and the Leviathan*. New York: Crown.

Berners-Lee, M. (2010). *How Bad are Bananas? The Carbon Footprint of Everything*. London: Profile Books.

Bhattacherjee, A., & Premkumar, G. (2004). Understanding changes in belief and attitude toward information technology usage: A theoretical model and longitudinal test. *MIS Quarterly*, 28(2), 229-254.

Botsman, R., & Rogers, R. (2011). *What's Mine Is Yours: How Collaborative Consumption is*

Changing the Way We Live. London: Collins.

Brown, R., & Evans, W.P. (2002), Extracurricular activity and ethnicity: Creating greater school connection among diverse student populations. *Urban Education*, 37(1), 41-58.

Brown, J.J, & Reingen, P.H. (1987). Social ties and word-of-mouth referral behavior. *Journal of Consumer Research*, 14, 350-362.

Buczynski, B. (2013). *Sharing is Good*. Gabriola Island: New Society.

Catulli, M., Cook, M., & Potter, S. (2016). PSS users and Harley Davidson riders: The importance of consumer identity in the diffusion of sustainable consumption solutions. *Journal of Industrial Ecology*, in press, DOI: 10.1111/jiec.12518.

Catulli, M., Cook, M., & Potter, S. (2017). Consuming use orientated product service systems: A consumer culture theory perspective. *Journal of Cleaner Production*, 141, 1186-1193.

Catulli, M., & Reed, N. (2016). A personal construct psychology based investigation into a product service system for renting pushchairs to consumers. *Business Strategy and the Environment*, in press, DOI: 10.1002/bse.1944.

Chen, Y. (2009). Possession and access: Consumer desires and value perceptions regarding contemporary art collection and exhibit visits. *Journal of Consumer Research*, 35, 925-940.

Cheung, C. M. K., Chiu, P. Y., & Lee, M. K. O. (2011). Online social networks: Why do students use Facebook? *Computers in Human Behavior*, 27(4), 1337-1343.

Chin, W. W. (1998). The partial least squares approach for structural equation modeling. In G. A. Marcoulides (Ed.), *Modern Methods for Business Research* (pp. 236-295). London: Lawrence Erlbaum.

Christensen, C. M. (2003). *The Innovator's Solution: Creating and Sustaining Successful Growth*. Boston: Harvard Business Press.

Churchill, G. A (1979). A paradigm for developing better measures of marketing constructs.

Journal of Marketing Research, 16, 64-73.

Craig-Lees, M. & Hill, C. (2002). Understanding voluntary simplifiers. *Psychology and Marketing*, 19, 187-210.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–339.

Derbaix, C., & Vanhamme, J. (2003). Inducing word-of-mouth by eliciting surprise – A pilot investigation. *Journal of Economic Psychology*, 24, 99-116.

Doane, A. N., Pearson, M. R., & Kelley, M. L. (2014). Predictors of cyberbullying perpetration among college students: An application of the theory of reasoned action. *Computers in Human Behavior*, 36, 154-162.

Ellen, I. G., & Karfunkel, B. (2016). *Renting in America's Largest Metropolitan Areas*. New York: NYU Furman Center/Capital One.

Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook "friends": Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication*, 12(4), 1143-1168.

Esposito Vinzi, V., Trinchera, L., & Amato, S. (2010). PLS path modeling: From foundations to recent developments and open issues for model assessment and improvement. In V. EspositoVinzi, W. W. Chin, J. Henseler, & H. Wang (Eds.), *Handbook of Partial Least Squares: Concepts, Methods and Applications* (pp. 47–82). Heidelberg: Springer.

Etzioni, A. (1998). Voluntary simplicity: Characterization, select psychological implications, and societal consequences. *Journal of Economic Psychology*, 19, 619-643.

Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention, and Behavior*. Reading, MA: Addison-Wesley.

Fraiberger, S. P., & Sundararajan, A. (2015). *Peer-to-peer rental markets in the sharing*

economy. NYU Stern School of Business Research Paper. Retrieved August 22, 2015 from http://dx.doi.org/10.2139/ssrn.2574337

Fremstad, A. (2014). *Gains from sharing: Sticky norms, endogenous preferences, and the economics of shareable goods*. Economics Working Paper 168. University of Massachusetts, Amherst.

Fornell, C., & Larcker, F.D. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50.

Gansky, L. (2010). *The Mesh: Why the Future of Business is Sharing*. New York: Penguin Group.

Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping: An integrated model. *MIS Quarterly*, 27, 51-90.

Giesler, M. (2006). Consumer gift system. *Journal of Consumer Research*, 33, 283-290.

Griffiths, R. (2013). *The Great Sharing Economy*. Manchester: Co-operatives UK.

Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2014). *A Primer on Partial Least Squares Structural Equation Modeling*. Thousand Oaks, CA: Sage.

Hajli, M. (2012). Social commerce adoption model. *Proceedings of the UK Academy for Information Systems*, Oxford, UK, March.

Hamari, J., Sjöklint, M., & Ukkonen, A. (2015). The Sharing Economy: Why People Participate in Collaborative Consumption. *SSRN*. Retrieved August 20 from http://dx.doi.org/10.2139/ssrn.2271971

Hartmann, P., & Apaolaza-Ibáñez, V. (2012). Consumer attitude and purchase intention toward green energy brands: The roles of psychological benefits and environmental concern. *Journal of Business Research*, 65(9), 1254-1263.

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new

millennium. *Communication Monographs*, 76, 408-420.

Hayes, A. F. (2013). *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*. New York: The Guilford Press.

Henseler, J., & Sarstedt, M. (2013). Goodness-of-fit indices for partial least squares path modeling. *Computational Statistics*, 28, 565-580.

Hosany, S., & Prayag, G. (2013). Patterns of tourists' emotional responses, satisfaction, and intention to recommend. *Journal of Business Research*, 66(6), 730-737.

Hsu, C. L., & Lin, J. C. C. (2008). Acceptance of blog usage: The roles of technology acceptance, social influence and knowledge sharing motivation. *Information and Management*, 45, 65-74.

John, N. A. (2013a). *Sharing, collaborative consumption and Web 2.0*. Media@LSE Working Paper No. 26, LSE, London.

John, N. A. (2013b). The social logics of sharing. *The Communication Review*, 16(3), 113-131.

Johnson, H. D. (2008). *Green Plans: Blueprint for a Sustainable Earth*. Lincoln: University of Nebraska Press.

Jung, T., Youn, H., & McClung, S. (2007). Motivations and self-presentation strategies on Korean-based 'cyworld' weblog format personal homepages. *CyberPsychology and Behavior*, 10(1), 24-31.

Kim, Y. K., Kim, M. C., & Goh, B. K. (2011). An examination of food tourist's behavior: Using the modified theory of reasoned action. *Tourism Management*, 32(5), 1159-1165.

Kim, S., & Park, H. (2013). Effects of various characteristics of social commerce (s-commerce) on consumers' trust and trust performance. *International Journal of Information Management*, 33(2), 318–332.

Krasnova, H., Hildebrand, T., Guenther, O., Kovrigin, A., & Nowobilska, A. (2008). Why participate in an online social network? An empirical analysis. *Proceedings of the 16th*

European Conference on Information Systems, Galway, Ireland, June.

Kurtz, M. (2014). *AirBnB's Inroads into the Hotel Industry*. Houston: HVS.

Limayem, M., Hirt, S. G., & Cheung, C. M. K. (2007). How habit limits the predictive power of intention: the case of information systems continuance. *MIS Quarterly*, 31(4), 705-737.

Lin, K. Y., & Lu, H. P. (2011). Why people use social networking sites: An empirical study integrating network externalities and motivation theory. *Computers in Human Behavior*, 27, 1152-1161.

May, A., Ross, T., Segarra, G., & Grebart, J. (2008). User reaction to car-share and lift-share within a transport 'marketplace'. *IET Intelligent Transport Systems*, 2(1), 47-60.

Maxham, J. G., & Netemeyer, R. G. (2002), Modeling customer perceptions of complaint handling over time: The effects of perceived justice on satisfaction and intent. *Journal of Retailing*, 78(4), 239-252.

McDonald, S. (2014). Voluntary simplicity. In Parker, M., Cheney, G., Fournier, V., & Land, C. (Eds.), *The Routledge Companion to Alternative Organization* (pp. 210-235). Abingdon: Routledge.

Mishra, D., Akman, I., & Mishra, A. (2014). Theory of reasoned action application for green information technology acceptance. *Computers in Human Behavior*, 36, 29-40.

Moelmann, M. (2015) Collaborative consumption: Determinants of satisfaction and the likelihood of using a sharing economy option again. *Journal of Consumer Behavior*, 14(3), 193-207.

Ng. C. (2013). Intention to purchase on social commerce websites across cultures: A cross-regional study. *Information and Management*, 50(8), 609–620.

Nunnally, J. C. (1978). *Psychometric Theory*. New York: McGraw-Hill.

Phipps, M., Ozanne, L., Luchs, M., Subrahmanyan, S., Kapitan, S., & Catlin, J. (2013).

Understanding the inherent complexity of sustainable consumption: A social cognitive framework. *Journal of Business Research*, 66(8), 1227-1234.

Podsakoff, P. M., & Organ, D. W. (1986). Self-reports in organizational research: Problems and prospects. *Journal of Management*, 12(4), 531–544.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40, 879-891.

PwC (2015). *The sharing economy – sizing the revenue opportunity*. Retrieved August 15, 2015 from http://www.pwc.co.uk/issues/megatrends/collisions/sharingeconomy/the-sharing-economy-sizing-the-revenue-opportunity.jhtml

Raghunathan, R., & Corfman, K. (2006). Is happiness shared doubled and sadness shared halved? Social influence on enjoyment of hedonic experiences. *Journal of Marketing Research*, 43(3), 386-394.

Ramayah, T., Lee, J. W. C., & Mohamad, O. (2010). Green product purchase intention: Some insights from a developing country. *Resources, Conservation and Recycling*, 54(12), 1419-1427.

Ramayah, T., Rouibah, K., Gopi, M., & Rangel, G. J. (2009). A decomposed theory of reasoned action to explain intention to use Internet stock trading among Malaysian investors. *Computers in Human Behavior*, 25(6), 1222-1230.

Rifkin, J. (2000). *The Age of Access*. New York: Penguin.

Ryan, M. J., & Bonfield, E. H. (1980). Fishbein's intentions model: A test of external and pragmatic validity. *Journal of Marketing*, 44, 82-95.

Sacks, D. (2011). *The sharing economy*. Retrieved September 14 2012 from http://www.fastcompany.com/magazine/155/the-sharing-economy.html

See-To, E. W. K., & Ho, K .K. W. (2014). Value co-creation and purchase intention in social network sites. *Computers in Human Behavior*, 31, 182-189.

Shama, A. (1985). The voluntary simplicity consumer. *Journal of Consumer Marketing*, 2, 57-64.

Sheppard, B. H., Hartwick, J., & Warshaw, P. R. (1988). The theory of reasoned action: A meta-analysis of past research with recommendations for modifications and future research. *Journal of Consumer Research*, 15, 325-343.

Shen, J. (2012). Social comparison, social presence, and enjoyment in the acceptance of social shopping websites. *Journal of Electronic Commerce Research*, 13(3), 198-212.

Shoup, D. C. (2005). *The High Cost of Free Parking*. Chicago: American Planning Association.

Slee, T. (2015). *What's Yours is Mine: Against the Sharing Economy.* New York: OR Books.

Sobel, M. E. (1986). Some new results on indirect effects and their standard errors in covariance structure. *Sociological Methodology*, 16, 159–186.

Sohn, D. (2009). Disentangling the effects of social network density on electronic word-of-mouth (eWOM) intention. *Journal of Computer-Mediated Communication*, 14, 352–367.

Statista (2016). *Number of social media users worldwide from 2010 to 2020 (in billions).* Retrieved December 16, 2016 from https://www.statista.com/statistics/278414/number-of-worldwide-social-network-users/

Stephen, A. T., & Toubia, O. (2010). Deriving value from social commerce networks. *Journal of Marketing Research*, 47(2), 215-228.

Teh, P. L., & Ahmed, P.K. (2012). Understanding social commerce adoption: An extension of the technology acceptance model. *Proceedings of the 2012 IEEE Conference on Management of Innovation and Technology*, Sanur Bali, Indonesia, June.

Teo, T. S. H., & Liu, J. (2007). Consumer trust in e-commerce in the United States, Singapore and China. *Omega*, 35, 22-38.

Tussyadiah, I. (2015). An exploratory on drivers and deterrents of collaborative consumption in travel. In Tussyadiah, I., & Inversini, A. (Eds.), *Information and Communication Technologies in Tourism 2015*. Springer International Publishing, Switzerland.

Venkatesh, V., & Davis, F.D. (2000). A theoretical extension of the technology acceptance model: four longitudinal field studies. *Management Science*, 46(2), 186-204.

Walsh, B. (2011). Today's smart choice: Don't own, share. *Time magazine*. Retrieved September 2 from http://content.time.com/time/specials/packages/article/0,28804,2059521_2059717,00.html

Wang, J.-C., & Chang, C.-H. (2013). How online social ties and product-related risks influence purchase intentions: A Facebook experiment. *Electronic Commerce Research and Applications*, 12(5), 337–346.

Wise, S. (2013). New survey reveals disownership as the new normal. *Sunrun*. Retrieved August 22 from http://blog.sunrun.com/new-survey-reveals-disownership-is-the-new-normal/

Yang, X., Liu, L., & Davison, R. (2012). Reputation management in social commerce communities. *Proceedings of the American Conference on Information Systems*, Seattle, WA, July.

Zehrer, A., Crotts, J. C., & Magnini, V. P. (2011). The perceived usefulness of blog postings: An extension of the expectancy-disconfirmation paradigm. *Tourism Management*, 32(1), 106-113.

Zervas, G., Proserpio, D., & Byers, J.W. (2015). *The rise of the sharing economy: Estimating the impact of AirBnB on the hotel industry*. Boston University School of Management Research Paper No. 2013-16. Retrieved August 20 from http://dx.doi.org/10.2139/ssrn.2366898

Appendix 1: Survey items used in the study

Structural Assurance (Gefen et al. 2003; Teh and Ahmed 2012)

ASSUR1. I feel safe conducting business with MinBilDinBil because the assurances it provides will protect me.

ASSUR2. I feel safe conducting business with MinBilDinBil because of its statements of guarantees.

ASSUR3. I feel safe conducting business with MinBilDinBil because it verifies identities of users**.**

Trust (adapted from Gefen et al. 2003)

TRUST1. MinBilDinBil is honest.

TRUST2. MinBilDinBil cares about its customers.

TRUST3. MinBilDinBil is predictable.

TRUST4. MinBilDinBil knows its market**.**

Perceived Usefulness (Limayem et al. 2007; Davis 1989)

PU1. MinBilDinBil is of benefit to me.

PU2. The advantages of MinBilDinBil outweigh the disadvantages.

PU3. Overall, using MinBilDinBil is advantageous.

Green Behavior (created for this study)

GREEN1. I actively recycle items that I am able to.

GREEN2. I try to repair or reuse items rather than throwing them away.

GREEN3. I actively try to reduce my carbon footprint.

Environmental Benefits (created for this study)

ENV1. I feel as if I am making a contribution to the environment by using MinBilDinBil.

ENV2. MinBilDinBil's use of resources is environmentally-friendly.

ENV3. MinBilDinBil is an example of a 'green' company.

Economic Benefits (created for this study)

ECON1. By using MinBilDinBil I am earning or saving money.

ECON2. MinBilDinBil is a low-cost option.

ECON3. MinBilDinBil represents good value for money.

Sharing Behavior (created for this study)

SHAR1. I like to lend items to my friends and family.

SHAR2. I tend to borrow rather than buy.

SHAR3. I often try to share what I have with others.

SHAR4. I prefer to share with others rather than purchase.

Social Benefits (created for this study)

SOCIAL1. By using MinBilDinBil I am helping others.

SOCIAL2. Users of MinBilDinBil help each other.

SOCIAL3. Using MinBilDinBil brings people closer together.

Sense of Belonging (adapted from Brown and Evans 2002)

BELONG1. I can be myself with MinBilDinBil.

BELONG2. I feel like I belong with MinBilDinBil.

BELONG3. I am comfortable talking to others who use MinBilDinBil about problems.

Enjoyment (Hsu and Lin 2008)

ENJOY1.While using MinBilDinBil, I experienced pleasure.

ENJOY2. The process of using MinBilDinBil is enjoyable.

ENJOY3. I have fun using MinBilDinBil.

Social Influence (Hsu and Lin 2008; Ventakesh and Davis 2000)

OTHERS1. People who are important to me think that I should use MinBilDinBil.

OTHERS2. People who influence my behavior encourage me to use MinBilDinBil.

Renting Intention (Bhattacherjee and Premkumar 2004; own items)

RI1. I will consider using MinBilDinBil in the future.

RI2. It is very likely that I will use MinBilDinBil in the future.

RI3. I intend to use MinBilDinBil in the future.

Intention to Recommend (adapted from Maxham and Netmeyer 2002)

REC1. I would recommend MinBilDinBil to my friends.

REC2. I am likely to spread positive word-of-mouth about MinBilDinBil.

REC3. If my friends were looking to travel, I would tell them to try MinBilDinBil.

Table A1. Descriptive statistics for the constructs.

Item	Minimum	Maximum	Mean	Std. deviation
ASSUR1	1.000	5.000	4.096	0.823
ASSUR2	1.000	5.000	4.122	0.759
ASSUR3	1.000	5.000	4.009	0.937
TRUST1	1.000	5.000	4.026	0.785
TRUST2	1.000	5.000	3.913	0.900
TRUST4	1.000	5.000	3.591	0.864
TRUST5	1.000	5.000	3.687	0.868
RI1	1.000	5.000	4.070	1.011
RI2	1.000	5.000	3.957	1.058
RI3	1.000	5.000	3.904	1.047
REC1	1.000	5.000	4.235	0.868
REC2	1.000	5.000	4.252	0.778
REC3	1.000	5.000	4.296	0.780
OTHERS1	1.000	5.000	3.017	0.995
OTHERS2	1.000	5.000	2.748	1.070
PU1	1.000	5.000	4.261	0.824
PU2	1.000	5.000	4.096	0.884
PU3	1.000	5.000	4.183	0.881
ENJOY1	1.000	5.000	3.687	0.858
ENJOY2	1.000	5.000	3.565	0.825
ENVOY3	1.000	5.000	3.417	0.923
ECON1	1.000	5.000	4.026	0.849
ECON2	1.000	5.000	3.948	0.811
ECON3	1.000	5.000	3.983	0.823
ENV1	1.000	5.000	3.678	0.947
ENV2	1.000	5.000	3.730	0.795
ENV3	1.000	5.000	3.626	0.899
SOCIAL1	1.000	5.000	3.791	0.860
SOCIAL3	1.000	5.000	3.765	0.795
SOCIAL4	1.000	5.000	3.417	0.923
BELONG1	1.000	5.000	3.652	0.781
BELONG2	1.000	5.000	2.896	0.917
BELONG4	1.000	5.000	3.104	0.828
GREEN3	1.000	5.000	4.157	0.753
GREEN4	1.000	5.000	3.904	0.913
GREEN5	1.000	5.000	3.652	0.960
SHAR1	1.000	5.000	3.904	0.894
SHAR2	1.000	5.000	3.191	1.071
SHAR4	1.000	5.000	3.957	0.806
SHAR5	1.000	5.000	3.504	0.908

Table A2. Cross-loadings of items on constructs.

Items/Constructs	*SA*	*TR*	*RI*	*REC*	*SI*	*PU*	*ENJ*	*ECB*	*ENB*	*SOB*	*BEL*	*GB*	*SHB*
ASSUR1	**0.938**	0.747	0.328	0.533	0.349	0.595	0.391	0.482	0.393	0.441	0.508	0.232	0.394
ASSUR2	**0.938**	0.747	0.293	0.509	0.297	0.594	0.397	0.500	0.418	0.476	0.525	0.240	0.407
ASSUR3	**0.909**	0.724	0.384	0.613	0.382	0.626	0.496	0.439	0.366	0.454	0.528	0.241	0.392
TRUST1	0.750	**0.926**	0.381	0.587	0.300	0.576	0.411	0.459	0.399	0.515	0.473	0.173	0.376
TRUST2	0.709	**0.856**	0.336	0.544	0.342	0.610	0.390	0.420	0.378	0.499	0.521	0.184	0.376
TRUST3	0.605	**0.762**	0.382	0.426	0.393	0.426	0.242	0.277	0.342	0.439	0.426	0.334	0.323
TRUST4	0.631	**0.841**	0.348	0.582	0.429	0.643	0.362	0.535	0.455	0.503	0.537	0.270	0.436
RI1	0.362	0.413	**0.990**	0.565	0.275	0.465	0.548	0.436	0.267	0.403	0.405	0.226	0.298
RI2	0.352	0.422	**0.978**	0.573	0.273	0.463	0.523	0.428	0.265	0.375	0.322	0.246	0.272
RI3	0.379	0.410	**0.919**	0.574	0.235	0.409	0.526	0.409	0.226	0.297	0.352	0.192	0.239
REC1	0.577	0.615	0.581	**0.954**	0.368	0.687	0.597	0.579	0.462	0.522	0.529	0.303	0.415
REC2	0.604	0.619	0.558	**0.978**	0.365	0.743	0.596	0.617	0.487	0.517	0.540	0.313	0.433
REC3	0.522	0.585	0.512	**0.927**	0.430	0.664	0.522	0.567	0.476	0.522	0.471	0.334	0.426
OTHERS1	0.373	0.409	0.278	0.402	**1.000**	0.332	0.482	0.329	0.482	0.530	0.483	0.414	0.492
OTHERS2	0.379	0.331	0.194	0.294	**0.718**	0.262	0.449	0.317	0.463	0.421	0.431	0.402	0.423
PU1	0.646	0.617	0.437	0.672	0.323	**0.951**	0.419	0.640	0.500	0.518	0.469	0.220	0.335
PU2	0.562	0.620	0.433	0.710	0.334	**0.932**	0.384	0.614	0.428	0.524	0.444	0.206	0.360
PU3	0.638	0.631	0.469	0.710	0.274	**0.948**	0.379	0.638	0.429	0.512	0.468	0.225	0.349
ENJOY1	0.371	0.325	0.516	0.572	0.353	0.372	**0.901**	0.425	0.312	0.440	0.498	0.319	0.384
ENJOY2	0.474	0.426	0.516	0.503	0.444	0.358	**0.899**	0.514	0.279	0.491	0.565	0.253	0.447
ENVOY3	0.415	0.402	0.432	0.544	0.532	0.410	**0.898**	0.454	0.378	0.556	0.606	0.281	0.480
ECON1	0.444	0.445	0.369	0.472	0.268	0.608	0.409	**0.910**	0.422	0.477	0.419	0.150	0.296
ECON2	0.446	0.466	0.344	0.507	0.346	0.555	0.424	**0.830**	0.362	0.524	0.512	0.124	0.272
ECON3	0.481	0.473	0.441	0.660	0.319	0.616	0.533	**0.921**	0.365	0.454	0.516	0.210	0.312
ENV1	0.386	0.386	0.234	0.437	0.440	0.450	0.333	0.394	**0.956**	0.469	0.441	0.566	0.361
ENV2	0.393	0.444	0.261	0.446	0.425	0.404	0.336	0.432	**0.791**	0.541	0.496	0.437	0.345
ENV3	0.371	0.484	0.265	0.483	0.436	0.426	0.300	0.375	**0.825**	0.550	0.503	0.450	0.332
SOCIAL1	0.446	0.507	0.235	0.465	0.391	0.487	0.437	0.508	0.472	**0.863**	0.522	0.260	0.433
SOCIAL2	0.431	0.463	0.517	0.459	0.390	0.437	0.520	0.405	0.332	**0.742**	0.512	0.231	0.354
SOCIAL3	0.359	0.445	0.392	0.436	0.513	0.426	0.455	0.350	0.469	**0.819**	0.554	0.306	0.447
BELONG1	0.560	0.547	0.292	0.562	0.321	0.529	0.508	0.485	0.428	0.567	**0.829**	0.198	0.293
BELONG2	0.378	0.447	0.302	0.368	0.460	0.255	0.493	0.422	0.457	0.521	**0.804**	0.284	0.436
BELONG3	0.338	0.284	0.306	0.290	0.389	0.317	0.439	0.286	0.303	0.401	**0.716**	0.199	0.410
GREEN1	0.291	0.304	0.198	0.353	0.299	0.305	0.186	0.212	0.416	0.210	0.214	**0.720**	0.504
GREEN2	0.190	0.210	0.106	0.324	0.366	0.164	0.287	0.179	0.449	0.270	0.166	**0.777**	0.544
GREEN3	0.217	0.214	0.247	0.252	0.371	0.185	0.294	0.149	0.542	0.314	0.289	**0.939**	0.390
SHAR1	0.388	0.372	0.197	0.388	0.373	0.351	0.421	0.348	0.296	0.459	0.416	0.339	**0.886**
SHAR2	0.272	0.282	0.225	0.320	0.397	0.223	0.355	0.225	0.363	0.365	0.344	0.358	**0.706**
SHAR3	0.375	0.426	0.317	0.378	0.435	0.296	0.372	0.213	0.315	0.437	0.389	0.539	**0.844**
SHAR4	0.274	0.272	0.228	0.337	0.481	0.244	0.433	0.241	0.408	0.383	0.342	0.500	**0.740**