

The Sharing Economy: Why People Participate in Collaborative Consumption

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Information and communications technologies (ICTs) have enabled the rise of so-called “Collaborative Consumption” (CC): *the peer-to-peer-based activity of obtaining, giving, or sharing the access to goods and services, coordinated through community-based online services*. CC has been expected to alleviate societal problems such as hyper-consumption, pollution, and poverty by lowering the cost of economic coordination within communities. However, beyond anecdotal evidence, there is a dearth of understanding why people participate in CC. Therefore, in this article we investigate people’s motivations to participate in CC. The study employs survey data ($N = 168$) gathered from people registered onto a CC site. The results show that participation in CC is motivated by many factors such as its sustainability, enjoyment of the activity as well as economic gains. An interesting detail in the result is that sustainability is not directly associated with participation unless it is at the same time also associated with positive attitudes towards CC. This suggests that sustainability might only be an important factor for those people for whom ecological consumption is important. Furthermore, the results suggest that in CC an attitude-behavior gap might exist; people perceive the activity positively and say good things about it, but this good attitude does not necessary translate into action.

Introduction

Attitudes towards consumption have shifted in recent years and brought increasing concern over ecological, societal, and developmental impact. A growing concern about climate change and a yearning for social embeddedness by localness and communal consumption (Albinsson & Perera, 2012; Belk, 2010; Botsman & Rogers, 2010) have made the “collaborative consumption”/“sharing economy” (*The peer-to-peer-based activity of obtaining, giving, or sharing the access to goods and services, coordinated through community-based online services*) an appealing alternative for consumers. Past literature shows that people are turned away from ethical consumption because of economical and institutional reasons (Bray, Johns, & Kilburn, 2011; Eckhardt, Belk, & Devinney, 2010), yet with the development of new ways of consumption through the sharing economy, such as collaborative consumption (CC), these issues are addressed and potentially overcome. The sharing economy is an emerging economic-technological phenomenon that is fuelled by developments in information and communications technology (ICT), growing consumer awareness, proliferation of collaborative web communities as well as social commerce/sharing (Botsman & Rogers, 2010; Kaplan & Haenlein, 2010; Wang & Zhang, 2012). We consider the sharing economy as an umbrella concept that encompasses several ICT developments and technologies, among others CC, which endorses sharing the consumption

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of goods and services through *online* platforms. In this study, we explore how continued participation is motivated in the part of the sharing economy that is concerned with CC, namely sharing the consumption of goods and services through activities such as renting, swapping, or trading. This includes services such as Zipcar, as well as Couchsurfing and Airbnb.

Forbes (Geron, 2013) has estimated that “revenue flowing through the sharing economy directly into people’s wallets will surpass \$3.5 billion, with growth exceeding 25% [SE is referring to only CC and microwork].” At the same time, investors regard the sharing economy as the new “mega-trend”; investing hundreds of millions into related start-ups (Alsever, 2013). Further, the rise of the sharing economy is predicted to have a major societal impact, and thus holds relevance to both practitioners and policy makers (EU Environment, 2013). For instance, a potential change in e-commerce patterns may have a significant impact on online sales, which makes it important to examine the role and effects of CC in an online consumption context.

Despite a growing practical importance, there is a lack of quantitative studies on motivational factors that affect consumers’ attitudes and intentions towards CC. The context is of especially great interest since participation in CC communities and services is generally characterized as driven by obligation to do good for other people and for the environment, such as sharing, helping others, and engaging in sustainable behavior (Prothero et al., 2011; Sacks, 2011). However, CC may also provide economic benefits (saving money, facilitating access to resources, and free-riding), which constitute more individualistic reasons for participating. For these reasons there exists a real practical problem of how CC could become more widespread. In particular, the possible discrepancy between motivations and their effect on attitudes and behavior warrants an interesting context for research (Bray et al., 2011; Kollmuss & Agyeman, 2002).

This article explores people’s motivations to participate in CC. We explore how CC can be defined in more detail in the section, *The Sharing Economy as a Technological Phenomenon*, but we mainly consider CC to be based on access over ownership, the use of online services, as well as monetary and nonmonetary transactions such as sharing, swapping, trading, and renting (See Botsman & Rogers, 2010). We adopt the lens of intrinsic and extrinsic motivations in attitude formation and use intentions related to CC (see e.g., Deci & Ryan, 1985; Lindenberg, 2001). The research model and hypotheses were developed as a triangulation of three sources: (a) self-determination theory (classification of motivations into intrinsic and extrinsic motivations) (Deci & Ryan, 1985; Lindenberg, 2001); (b) previous studies on parallel sharing economies-related phenomena (Hennig-Thurau, Henning, & Sattler, 2007; Lakhani & Wolf, 2005; Nov, Naaman, & Ye, 2010); and (c) context-specific adjustments. The article is structured as follows. The next section presents the theoretical framework and background for our hypotheses. The subsequent section then outlines data and

methods, followed by the results. The article concludes with a discussion on implications and avenues for future research.

Background

This section gives an overview of how CC is positioned in the sharing economy as a technological phenomenon. As a first step, we present our mapping of 254 platforms to better understand the overall CC landscape. We then unravel the contextual understanding of the term “sharing” within the sharing economy and the characteristics it is assigned, such as the common traits of social dynamics and collectivism versus individual reputation.

The Sharing Economy as a Technological Phenomenon

The development of information technologies alongside the growth of web 2.0 has enabled the development of online platforms that promote user-generated content, sharing, and collaboration (Kaplan & Haenlein, 2010). Classical examples of these include open source software repositories (e.g., SourceForge and Github), collaborative online encyclopedias (e.g., Wikipedia) and other content sharing sites (e.g., Youtube, Instagram), or even peer-to-peer file sharing (e.g., The Pirate Bay). More recent examples are peer-to-peer financing such as microloans (e.g., Kiva) and crowdfunding services (e.g., Kickstarter). These four examples, open-source software, online collaboration, file sharing, and peer-to-peer financing, are considered as different instances of the phenomenon we label the “sharing economy.” The phenomenon of the sharing economy thus emerges from a number of technological developments that have simplified sharing of both physical and nonphysical goods and services through the availability of various information systems on the Internet. We will thus view the “sharing economy” primarily through the lens of information technology.

We argue that although these different instances (open source, online collaboration, file sharing, peer-to-peer financing) of the sharing economy seem superficially different, they share a number of common aspects. To begin with, all have origins and growth stemming from the tech-driven culture of Silicon Valley. This is easily attributed to open source and content sharing services, but as reported by, for example, Sacks (2011), this is also where the first, largest, and most successful CC services have emerged in the last few years. More importantly, the various instances of the sharing economy also share the characteristics of online collaboration, online sharing, social commerce, and some form of underlying ideology, such as collective purpose or a common good, as will be discussed in the section, *Aspects of the Sharing Economy*. All of these characteristics can also be attributed to CC services.

In this article, also CC is mainly positioned as a category of this contemporary technology-driven sharing economy. In our view this is an interesting and relevant approach to CC, because almost all practical CC activities are mediated

by various information systems, as we will outline here. Therefore, we study CC mainly as a technological phenomenon, as opposed to, for example, the perspective of an emerging consumer culture. We position our study in the literature on technology participation and adoption, as well as content contribution. We view CC as not just consumption but as an activity where both the contribution and use of resources are intertwined through peer-to-peer networks. The consumer-related literature is also relevant. For example, CC could be viewed from perspective of sharing (e.g., Belk, 2014a, 2014b), borrowing (e.g., Jenkins et al. 2014), reuse and remix culture (e.g., Lessig, 2008), charity (e.g., Hibbert & Horne, 1996; Strahilevitz & Myers, 1998), second-hand markets, sustainable consumption (e.g., Young, Hwang, McDonald, & Oates, 2010), and for instance, even anticonsumption (Ozanne & Ballantine, 2010). We note, however, that although framing CC in the context of consumer studies is of course complementary, it is beyond the scope of this work.

We define the term CC broadly as the peer-to-peer-based activity of obtaining, giving, or sharing access to goods and services, coordinated through community-based online services. This definition was formed by the combination of previous considerations as well as by the mapping of 254 CC websites of. The websites were identified by systematically going through all the categories (i.e., transport, equipment, children, etc.) of the directory on collaborative-consumption.org. This contains a collection of various types of websites that relate their business to the sharing economy/CC. The directory is continuously updated by adding CCs that are just starting out and also updated by removing those CCs that have halted operations.

To qualify for the mapping, the CC must be an online website, a mobile app, or a combination that is continuously used and maintained by the users. However, a website that advertises a standalone and purely offline activity, such as a flea market, would not qualify. The evaluation of each website was made by alphabetically and systematically going through the directory, opening the website, then reading and examining its content, and, if necessary, signing up for an account to look at any additional features. The mapping placed the CCs in different categories that described the mode of exchange: sharing, new purchase, second-hand purchase, renting, donating, swapping, and lending or borrowing. An overview of the mapping can be

seen in Table 1. Notably, some services facilitate multiple types of activities, such as renting as well as purchasing, and thus belong to more than one category.

The mapping of 254 CC platforms revealed that the activities may be separated into two main categories of exchange: access over ownership and transfer of ownership. However, it is possible for a platform to facilitate both modes of exchange. This occurs when the platform has more than one type of trading activity, such as lending (access over ownership) and donating (transfer of ownership), causing an overlap between the main categories. Out of the 254 platforms, 191 were identified as facilitating access over ownership while 139 provided the transfer of ownership. A total of 76 platforms had overlapping categories.

Access over ownership is the most common mode of exchange. Access over ownership means that users may offer and share their goods and services to other users for a limited time through peer-to-peer sharing activities, such as renting and lending (see Bardhi & Eckhardt, 2012). Most common was renting. For example, MonJouJou rents out childrens' toys for a duration of 15, 30, or 60 days. Other examples are AirBnb, and RentTheRunway where goods and services can be accessed by users for a certain amount of time and often for a fee. Another example, Berlin-based Drivenow is a paid car-sharing service where a user may book any of the designated cars randomly distributed throughout the city and when the user is done, he may park the car anywhere within the assigned city area.

Alternatively, the transfer of ownership passes ownership from one user to another through swapping, donating, and purchasing of primarily second-hand goods. For instance, services such as Swapstyle or ReSecond help users to swap unwanted clothes. Other examples are Zilch and ThredUp. Swapping or donating are the most popular categories followed by the least popular category, namely purchasing used goods. An overview of the mapping can be seen in Table 1.

Furthermore, this analysis sheds light on numerous aspects of the sharing economy but particularly on the multiplicity of the term "sharing." We want to emphasize that our definition of the sharing economy differs slightly from those of other scholars (Belk, 2007, 2010), as well as some other definitions of "sharing economy" (Lessig, 2008; Sacks, 2011) or "collaborative consumption" (Belk, 2014a, 2014b; Botsman & Rogers, 2010).

TABLE 1. Overview of mapping of 254 collaborative consumption services.

Mode of exchange	Trading activity	Monetary transaction	Market allotment	Example
Access over ownership	Renting	Yes	131 platforms	Renttherunway.com
	Lending	No	60 platforms	Couchsurfing.com
Transfer of ownership	Swapping	No	59 platforms	Swapstyle.com
	Donating	No	59 platforms	Freegive.co.uk
	Purchasing used goods	Yes	51 platforms	TheDup.com

Moreover, CC operates through technological platforms, such as a website or mobile app, yet relies heavily on social dynamics for the actual sharing and collaboration. In fact, Wiertz and de Ruyter (2007) propose that firms that own and operate such online platforms do not control the actual sharing at all. Instead, the development is led by social dynamics, such as enjoyment and self-marketing of a community (Lin and Lu, 2011; Wasko & Faraj, 2000). Therefore, sharing economy (and in particular CC) platforms act merely as economical-technological coordination providers. This resembles for example, GitHub and Torrent trackers, which do not necessarily have control of the content distributed, exchanged and coordinated. “Collaborative consumption communities” represent such coordinating centers in the context of CC.

In summary, this article suggests that CC is a peer-to-peer-based activity of obtaining, giving, or sharing access to goods and services, coordinated through community-based online services. This is based on existing definitions that are combined and refined with the findings from the mapping of the 254 platforms. Nevertheless, there remains a difficulty in defining this phenomenon, because of the wide variations in existing terminology. A definition should include CC’s socioeconomical as well as technological aspects, taking into account that it manifests varying degrees of digital and physical exchange. In this way, CC also affords several equally important perspectives for analysis. However, mainstream media have merely defined CC as an “economic model based on sharing, swapping, trading, or renting products and services, enabling access over ownership” (Botsman, 2013). Another previous scholarly definition restricts CC only to nonmonetary transactions “the acquisition and distribution of a resource for a fee or other compensation” (Belk, 2014b, p. 1597). However, this is where the definitions diverge based on whether monetary exchange is allowed as a part of CC. Moreover, as we discussed earlier, publicly available listings of CC services include a variety of services that have different features and modes of exchange including monetary transactions. In this article we have primarily investigated CC as a technological development, and have viewed it from the perspective of research on peer-to-peer technologies, such as open source software repositories (e.g., SourceForge and Github), collaborative online encyclopedias (e.g., Wikipedia), and other content sharing sites (e.g., Youtube, Instagram), or even peer-to-peer file sharing (e.g., The Pirate Bay). This approach provides a solid bridge to tie the CC phenomenon into the existing literature, both conceptually and in terms of theory.

Aspects of the Sharing Economy

In the following four sections we take a more detailed look at the characteristics of the sharing economy; namely online collaboration, social commerce, the notion of sharing online, and consumer ideology.

Collaboration online. The growing use of information technologies in the web 2.0 era has increased the amount of user-generated content and also the manner in which information is created and consumed online (Kaplan & Haenlein, 2010; Nov, 2007). The peer-to-peer platform has grown into an essential tool for the purposes of such information creation and consumption. The term peer-to-peer is commonly associated with file sharing, however, it also refers to the larger phenomenon of collaborative activities between users online, such as consumer-to-consumer exchanges. In fact, Rodrigues and Druschel (2010) describe the peer-to-peer platform as a system in which content generation is highly distributed and decentralized as a result of the organic growth and strong user self-organization. Moreover, an essential aspect of this type of platforms is the focus on collaboration (Kaplan & Haenlein, 2010; Rodrigues & Druschel, 2010), in which, for example, open software projects may be gathered and facilitated. A particularly well-known example is Wikipedia, where online users work together to produce content by sharing knowledge. In addition, studies on participation motives in open-source software (OSS) projects (Lakhani & Wolf, 2005; Oreg & Nov, 2008; Roberts, Hann, & Slaughter, 2006) suggest that participation is influenced by a variety of factors such as reputation, enjoyment, and both intrinsic and extrinsic motivation (see also Wasko & Faraj, 2005).

Social commerce. Online social commerce rests on peer-to-peer interaction as it is “a form of commerce that is mediated by social media” and uses social media to “support social interactions and user contributions to assist activities in the buying and selling of products and services online and offline” (Wang & Zhang, 2012, p. 2). Social commerce and social shopping are often used interchangeably, although social shopping is a subcategory of social commerce (Stephen & Toubia, 2010) and is more related to the social influence exerted by peers on purchasing decisions (Wang & Zhang, 2012). On the other hand, group deals that are obtained via social buying services (such as Groupon) seem to mostly be motivated by saving money.

Social commerce thus relies on platforms with peer-to-peer interaction, which in turn rely on users being motivated to continue using and engaging through social networking sites (SNS). SNS and social commerce share common ground as both involve peer-to-peer interaction on social media, although the latter also include mercantile features (Ellison & boyd, 2013; Wang & Zhang, 2012). The motivation of users to continue participating in social commerce is multifaceted, and often relies on the perception of individual enjoyment (also through relatedness) and economic benefits.

Nevertheless, Wang and Zhang (2012) assert that social commerce is moving beyond individual enjoyment and centering on economic concern. For instance, a pertinent form of social commerce is the consumer self-coordination of group deals for pursuit of economic gains (Wang & Zhang, 2012). Kozinets (1999) also proposes that consumers are empowered through peer-to-peer sharing in an online

commerce setting in which they turn to their social networks to retrieve information about products, rather than commercial sources. The role of marketers is thus reduced while the role of users is induced to be both a consumer and a producer. This is also important in many cases of CC in which the participants can be consumers, providers, or both.

Sharing online. The term “sharing” has experienced a major change in meaning with the evolution of online services, especially in an SNS setting (Kaplan & Haenlein, 2010). In an SNS context, the concept of sharing commonly refers to sharing information, such as status updates, links, or photos. However, increased reliance on IT-based e-commerce systems has also facilitated the sharing of goods and services through information technology (Galbreth, Ghosh, & Shor, 2012; Hennig-Thurau et al., 2007), such as CC platforms like Couchsurfing, Zipcar, Neighbourgoods, and Sharetribe.

The development of CC platforms, have thus far primarily been investigated from a service design perspective (e.g., Hamari, 2013; Lamberton & Rose, 2012; Suhonen, Lampinen, Cheshire, & Antin, 2011). For example, Couchsurfing, a community for sharing accommodation among travelers and one of the most successful sharing services to date, has received the most attention (Molz, 2012; Rosen, Lafontaine, & Hendrickson, 2011). Sharing has been studied in the context of digital goods (e.g., music files—see e.g., Shang, Chen, & Chen, 2008) and open source software. For example, Huang (2005) studies norms and motivations associated with peer-to-peer music sharing, whereas Zentner (2006) focuses on the effects of music sharing on record sales. Finally, in the context of information sharing, Nov (2007) examines motivations for Wikipedia editors and Nov et al. (2010) address online photography sharing.

Ideological considerations. Information technology is increasingly used as a means to further collective action in support of the advancement of an ideology or idea (Oh, Agrawal, & Rao, 2013). For instance, the social media platform Twitter was used as a reporting tool during the Arab Spring (Metzgar & Maruggi, 2009) and the 2008 U.S. presidential candidates campaigned extensively through social media (Wattal, Schuff, Mandviwalla, & Williams, 2010). Open-source and in particular the free software movement have strong ideological underpinnings (Raymond, 1999). However, the ideology and ideas that underlie the sharing economy may go beyond collective action for political purposes, even if notions of anticonsumerism clearly are related (Ozanne & Ballantine, 2010). We argue that green consumption (see e.g., Eckhardt et al., 2010) and other sustainable behavior are even more important drivers in the context of CC.

Research Model and Hypotheses

As discussed, online collaboration, such as peer-to-peer activity, is fuelled by enjoyment, economic incentive,

reputation, and self-fulfillment. This is much like social commerce and online sharing that are also driven by enjoyment, economic incentive, reputation, yet additionally paired with collaboration. The application of ideology, such as sustainability and green consumption, is mainly propelled by reputation and economic concern. As a result, we propose four possible and distinguishable categories in which the forthcoming hypotheses are developed, namely *sustainability*, *enjoyment*, *reputation*, and *economic benefits*. These will be discussed in more detail.

Self-determination theory (SDT; Deci & Ryan, 1985) posits that motivations can be distinguished as intrinsic or extrinsic. The former emerge from the intrinsic value or enjoyment related to the given activity, whereas extrinsic motivations are related to external pressures, such as reputation and monetary gain. According to Lindenberg (2001), there are two kinds of intrinsic motivations: enjoyment derived from the activity itself and value derived from acting appropriately—that is, conforming to norms. Related studies have also classified these motivations by the degree of association with other people (Lakhani & Wolf, 2005; Nov et al., 2010), which is complementary to Lindenberg’s (2001) conceptualization. For example, striving to enjoy an activity or obtaining economic gains through the activity are not directly affected by others’ opinions. On the other hand, reputation and conforming to norms depend directly on how other people reflect upon the activity. We operationalize these motivational dimensions as follows: for intrinsic motivations we consider (a) enjoyment, (b) sustainability and for extrinsic motivations, (c) economic benefits, and (d) reputation. The following subsections discuss the variables and hypotheses in more detail.

Sustainability

Participation in CC is generally expected to be highly ecologically sustainable (Prothero et al., 2011; Sacks, 2011). Such motivations are generally linked to ideology and norms (Lindenberg, 2001), which in our theoretical framework and in related work (Lakhani & Wolf, 2005; Nov et al., 2010) are conceptualized as intrinsic motivations. Recent developments suggest that CC platforms are used to foster a sustainable marketplace (Phipps et al., 2013) that “optimizes the environmental, social, and economic consequences of consumption in order to meet the needs of both current and future generations” (Luchs et al., 2011, p. 2). Also, open source software development and participation in peer production (e.g., Wikipedia) are driven by altruistic motives such as openness and freedom of information as argued by Nov (2007) as well as Oreg and Nov (2008). Thus, participation and collaboration in online platforms may be influenced by attitudes shaped by ideology and socio-economic concerns, such as anti-establishment sentiments (Hennig-Thurau et al., 2007) or a preference for greener consumption, which we believe to be a particularly important factor in the context of CC. Therefore, we operationalize the intrinsic motivation related to norms as ecological sustainability.

We hypothesize that sustainability is a major predictor for attitude formation and behavioral intentions towards CC.

H1a: (Intrinsic motivation: Sustainability). Perceived sustainability of CC positively influences attitudes towards CC.

H1b: (Intrinsic motivation: Sustainability). Perceived sustainability of CC positively influences behavioral intentions to participate in CC.

Enjoyment

A fundamental dimension of intrinsic motivation is the autotelic nature of the activity or the enjoyment derived from the activity itself (Deci & Ryan, 1985; Lindenberg, 2001). In terms of intrinsic motivation, software developers contribute to open-source projects as a result of enjoyment and a feeling of competence (Lakhani & Wolf, 2005; Nov, 2007; Roberts et al., 2006; Wasko & Faraj, 2000; see also Ryan & Deci 2000). Enjoyment has been regarded as an important factor also in other sharing-related activities, such as information system use (Van der Heijden, 2004), and information sharing on the Internet (Nov, 2007; Nov et al., 2010). Nevertheless, the initial motivation to collaborate does not explain nor predict sustained participation (Fang & Neufeld, 2009). A study on the continued use of social networking services established that enjoyment is a primary factor, followed by the number of peers and usefulness (Lin & Lu, 2011). Social networking services and similar service design used elsewhere can be seen to especially promote relatedness (see Hamari & Koivisto, 2015 and e.g., Deci & Ryan, 1985; Ryan & Deci, 2000 on relatedness), which is a major determinant for intrinsically motivated use such as enjoyment. Therefore, we include enjoyment as the second intrinsic motivation to our model to predict attitudes and behavioral intentions towards CC.

H2a: (Intrinsic motivation: Enjoyment). Perceived enjoyment from participating in CC positively influences attitude towards CC.

H2b: (Intrinsic motivation: Enjoyment). Perceived enjoyment from participating in CC positively influences behavioral intentions to participate in CC.

Reputation

Reputation has been shown to be an important external motivation factor in determining participation in communities and other online collaboration activities such as information sharing (Davenport & Prusak, 1998; Wasko & Faraj, 2005) and open-source projects (Lakhani & Wolf, 2005; Nov et al., 2010). In particular, gaining reputation among like-minded people has been shown to motivate sharing in online communities and open-source projects (Parameswaran & Whinston, 2007; Raymond, 1999). Anthony, Smith, and Williamson (2009) reported that reputation and commitment to the community are important drivers for Wikipedia editors. When Wasko and Faraj (2005) explored why individuals share knowledge in electronic networks of practice, they

established that contribution is often underlined by the perception that it enhances personal reputation. Donath (1999) also supported the conclusion that reputation can be a motivator for active participation. Yang and Lai (2010, p. 1377) found that “individuals are more likely to gain self-based achievement rather than enjoyment in the process of sharing knowledge.” Hars and Ou (2001) also found that self-marketing and building of reputation are the strongest indicators of likelihood to collaborate online. Similarly, an active participant in CC may expect intangible rewards in the form of higher status within the CC community.

H3a: (Extrinsic motivation: Reputation). Perceived reputation increase from participating in CC positively influences attitude towards CC.

H3b: (Extrinsic motivation: Reputation). Perceived reputation increase from participating in CC positively influences behavioral intentions to participate in CC.

Economic Benefits

As the previous sections discuss, CC—and sharing goods and services in general—is often regarded as not only ecologically sound but also economical. See, for example, the works of Belk (2010) as well as Lamberton and Rose (2012). Therefore, participating in sharing can also be rational, utility maximizing behavior wherein the consumer replaces exclusive ownership of goods with lower-cost options from within a CC service. Furthermore, there are signs of both positive and negative influences of economic incentives on sharing behavior (Bock, Zmud, Kim, & Lee, 2005; Davenport & Prusak, 1998; Kankanhalli, Tan, & Wei, 2005). Hars and Ou (2001) study both the intrinsic and extrinsic motivations of participation in open source development, and find that a strong extrinsic motivation is the potential future rewards, such as economic benefits. Additionally, in the context of peer-to-peer networks, sharing serves as an incentive for saving economic resources (Luchs et al., 2011). Therefore we hypothesize that extrinsic rewards, in the form of saving money and time, derived from CC positively influence attitudes toward CC and intentions to participate in it.

H4a: (Extrinsic motivation: Economic outcomes). Perceived extrinsic reward of participating in CC positively influences attitude towards CC.

H4b: (Extrinsic motivation: Economic outcomes). Perceived extrinsic reward of participating in CC positively influences behavioral intentions to participate in CC.

Attitude

Attitude is regarded as a major determinant of behavior (Ajzen, 1991). Furthermore, when studying a phenomenon with which there is reason to expect a possible discrepancy between attitudes and behavior it is essential to measure them separately.

With respect to motivation to participate or consume certain goods, consumer behavior literature suggests that

although consumers may be ideologically and ethically minded, their aspirations may not translate into sustainable behavior (e.g., Bray et al., 2011; Phipps et al., 2013; Vermeir & Verbeke, 2006). A few issues might explain this attitude-behavior gap: (a) actually pursuing sustainable behavior can be costly both in terms of coordination and direct cost, (b) people lack the means of deriving benefits from signaling such behavior (and thus not able to gain recognition from the behavior). For instance, studies show that people are motivated to take on sustainable behavior especially when other consumers have been able to signal that they are also participating (Goldstein, Cialdini, & Griskevicius, 2008). (c) There is not enough information for the consumers about sustainable consumption. We argue that technologically mediated CC may alleviate these concerns. They may enable a more efficient coordination of sharing activities, which in turn aids in the facilitation of active communities around a cause. Nonetheless, the question remains whether peoples' attitudes towards CC are determined by for example, green values and if so, do they also reflect their actual behavior? Or does the attitude-behavior gap exist also in this context? In order to address this issue, among other predictions, we investigate the relationship between the attitudes and behaviors.

H5: Attitude towards CC positively influences behavioral intention to participate in CC.

Methods and Data

Data

The data consist of responses obtained from 168 registered users of the service Sharetribe who were recruited via an official Sharetribe e-mail newsletter. Sharetribe (<http://www.sharetribe.com/>) is an international CC hub that offers its service package to various organizations. Sharetribe is used in communities all over the world, and at the time of writing there were 479 local "Sharetribes," worldwide. The company, Sharetribe Ltd., is a social for-profit enterprise registered in Finland. Its stated mission is to help people connect with their community and to help eliminate excessive waste by making it easier for everyone to use assets more effectively by sharing them. Most of the "Sharetribes" are narrow, local communities such as organizations or neighborhoods where the benefits of CC are emphasized in forms of trust and information access, and also to decrease transaction costs.

The responses were gathered in January 2013. Participants were informed that they had the chance of winning a 100-Euro gift card for an Internet store. The demographics of the sample are shown in Table 2. We also want to point out that although the respondents were all registered users of Sharetribe, most of them were not active users of the site. However, as registered users of a CC service, we expect the respondents to be more knowledgeable about CC than the population at large, and therefore in a better position to give an informed response to our survey. At the beginning of the

questionnaire we defined CC as "an economic model based on sharing, swapping, bartering, trading or renting access to products within a community as opposed to personal ownership."

The questionnaire employed psychometric measurement (Nunnally, 1978). We measured each construct with four or five items that were all on a 7-point Likert scale. All items were adapted from existing prominent published sources except for the items for the SUST construct (see Appendix).

The primary analytical technique was structural equation modeling (SEM, see e.g., Hair et al., 2010; Nunnally, 1978). SEM provides the possibility to run multivariate, multilevel path analyses and, thus, permits more complex models than traditional regression analyses. For instance, path modeling provides a powerful tool to investigate both direct and mediated effects. Furthermore, SEM analyses are the primary technique when using latent psychometric variables. The descriptive demographic data were analyzed in SPSS 20, and all of the model testing was conducted through partial least squares (PLS) analysis with SmartPLS 2.0 M3 (Ringle, Wende, & Will, 2005).

Validity and Reliability

We tested convergent validity with three metrics: average variance extracted (AVE), composite reliability (CR), and Cronbach's alpha (alpha). All of these values were acceptable (see Table 3, AVE should be greater than 0.5, CR greater than 0.7, and Cronbach's alpha above 0.8—Fornell & Larcker, 1981; Nunnally, 1978). Construct EXTR had a slightly smaller alpha than recommended; however, the other validity metrics were good and the lower alpha is not likely to point to a validity issue. The construct passed all of the validity and reliability tests. No indicators were omitted.

Discriminant validity was first assessed by a comparison of the square root of the AVE of each construct to all correlations between it and other constructs (Fornell & Larcker, 1981), where all of the square roots of the AVEs should be greater than any of the correlations between the corresponding construct and another construct (Chin, 1998). Second, we assessed discriminant validity by confirming that all items corresponding to a specific construct had a higher loading with the appropriate construct than with any

TABLE 2. Demographic information.

		N	%			N	%
Gender	Female	71	42%	Tenure	<3 months	30	18%
	Male	97	58%		3–6 months	28	17%
Age	<20	19	11%	6–12 months	38	23%	
	20–25	66	39%	12–24 months	41	24%	
	26–30	28	17%	24–36 months	18	11%	
	31–35	21	12%	>36 months	13	8%	
	36–40	12	7%				
	>40	22	13%				

TABLE 3. Convergent and discriminant validity.

	AVE	CR	Alpha	ATT	BI	ENJ	EXTR	REP	SUST
ATT	0.641	0.899	0.858	0.801					
BI	0.710	0.907	0.863	0.684	0.843				
ENJ	0.694	0.919	0.889	0.706	0.778	0.833			
EXTR	0.549	0.829	0.724	0.473	0.569	0.591	0.741		
REP	0.655	0.883	0.824	0.391	0.544	0.605	0.492	0.809	
SUST	0.656	0.907	0.867	0.798	0.511	0.526	0.426	0.306	0.810

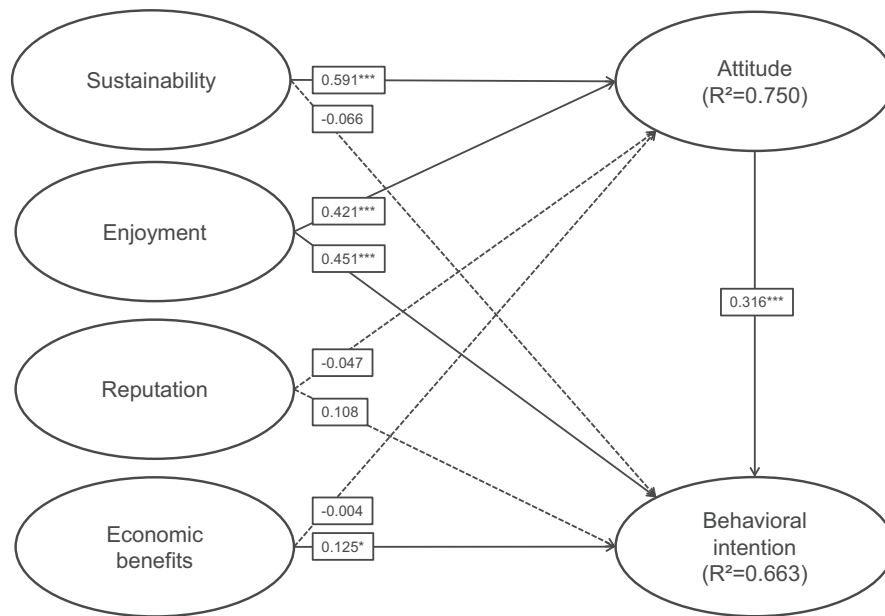


FIG. 1. Results model.

other construct. Third, following Pavlou, Liang, and Xue (2007), we determined that no intercorrelation between constructs was more than 0.9 in the correlation matrix (see Table 3). All three tests indicate that the discriminant validity and reliability are acceptable. In addition, to reduce the likelihood of common method bias, we randomized the order of the measurement items in the survey, limiting respondents' ability to detect patterns between measurement items (Cook, Campbell, & Day, 1979).

The sample size satisfies different criteria for the lower bounds of sample size for PLS-SEM: (a) 10 times the largest number of structural paths directed at a particular construct in the inner path model (therefore, the sample size threshold for the model in this study would be 55 cases) (Chin & Newsted, 1999); and (b) according to Anderson and Gerbing (1984), a threshold for any type of SEM is approximately 150 respondents for models where constructs comprise of three or four indicators. (c) The sample size also satisfies stricter criteria relevant for variance-based SEM: For example, Bentler and Chou (1987) recommend a ratio of five cases per observed variable (therefore, the sample size threshold for the model in this study would be 135).

Results

The model could account for 75% of the variance in attitudes towards CC and 66.3% of the variance in behavioral intention to participate in CC. The results are summarized in Figure 1 and Table 4.

In case of the intrinsic motivations, perceived sustainability significantly predicted attitude to CC (H1a beta = 0.591, $t = 10.211$); however, it did not have a direct association with behavioral intentions (H1b beta = -0.066, $t = 0.859$). Further investigation, though, showed that perceived sustainability has a small (beta = 0.121, $t = 1.832$) total effect through attitude to behavioral intention. Perceived enjoyment had a significant positive effect on both attitude towards CC (H2a beta = 0.421, $t = 7.491$) and behavioral intention to participate in CC services (H2b beta = 0.451, $t = 4.936$).

In case of the extrinsic motivations, expected gains in reputation did not significantly affect either attitude towards CC (H3a beta = -0.047, $t = 0.913$) or behavioral intention to participate in CC services (H3b beta = 0.108, $t = 1.581$). Anticipated gain of economic benefits did not have a

TABLE 4. Direct and mediated effects.

	Direct effects		Total effects (direct effect + mediated effect via attitude)
	Attitude	Behavioral intention	Behavioral intention
<i>Attitude</i>	n/a	0.316***	0.316***
<i>Sustainability</i>	0.591***	-0.066	0.121*
<i>Enjoyment</i>	0.421***	0.451***	0.583***
<i>Reputation</i>	-0.047	0.108	0.093
<i>Economic benefits</i>	-0.004	0.125*	0.124*

Note. * = $p < .1$, *** = $p < .01$.

significant effect on attitude towards CC (H4a beta = 0.004, $t = 0.063$), but did have significantly positive direct influence on intention to participate in CC (H4b beta = 0.125, $t = 1.769$).

Finally, attitude had a significant positive effect on behavioral intentions (H5 beta = 0.316, $t = 3.342$). The effect of reported attitude on behavior is interesting in the contexts of sustainability. As noted, many studies have found that there is a gap between people's attitudes and behavior in similarly motivated sharing activities. Although, the path coefficient here is significant and positive, the effect size from attitude is rather low. When the path between attitude and behavior is deleted from a model, the remaining models still explain 63.8% of behavioral intentions compared to the original 66.3%. Therefore, it appears that also in the context of CC, an attitude-behavior gap may exist. Moreover, the path coefficient between attitude and behavior can be regarded as relatively small when compared to studies on technology adoption in general.

Discussion and Directions for Further Research

Our results indicate that intrinsic motivations are a strong determinant of attitude (H1a and H2a not rejected) whereas extrinsic motivations did not reflect positively on attitude (H3a and H4a rejected). For continuous use intentions, however, extrinsic motivations were a more prominent predictor (H4b not rejected), along with enjoyment from the activity (H2b not rejected).

Attitude, also as expected, positively influences use intentions, but to quite a small degree in comparison to the relationship typically observed between these constructs. This could indicate a *discrepancy between reported attitudes and actual behavior in this context*. Although perceived sustainability positively influences attitudes towards CC, it plays a lesser role when people consider actual participation in CC. However, we could also observe that some of the perceived sustainability was translated into behavioral intentions through attitude. On the other hand, economic benefits (saving money and time) seem to have a significant effect on behavioral intentions but not on attitudes towards CC. Thus, there seems to be a discrepancy between factors

that affect attitudes and behavioral intentions: *Perceived sustainability is an important factor in the formation of positive attitudes towards CC, but economic benefits are a stronger motivator for intentions to participate in CC.*

Eckhardt et al. (2010) found three main reasons why people may not be willing to consume sustainably: economic rationalizations, institutional dependencies, and developmental realism. The same reasons might also apply to CC with regards to the motivations related to sustainability. For instance, related to economic rationalizations, CC might not in all cases turn out to be economical. Sporadic and unstandardized trades with a variety of unknown people can unexpectedly increase search and coordination costs. Although CC could be more economical in monetary terms, it may not be so in other respects. Moreover, as long as new imported products remain on the market with relatively low prices (that do not necessarily reflect the ecological price or impact that the manufacturing and shipping necessitate) people might not be interested in sharing. Along those same lines, Eckhardt et al. (2010) suggest that people commonly justify their unsustainable consumption with institutional reasons: legislators have not curbed consumption, manufacturing, or imports of unsustainable products with regulations and taxes. Following from these institutional dependencies, and as Eckhardt et al. suggest, it is believed that sharing may curb economic growth. Although these notions have come up in general qualitative inquiries, they deserve further research, not only in the context of CC, to investigate their quantitative impact on sustainable consumption behavior (see also, Carrington, Neville, & Whitwell, 2010 and Kollmuss & Agyeman, 2002).

CC has been regarded as a mode of consumption that engages especially environmentally and ecologically conscious consumers. Our results also support the notion that viewing CC as a sustainable activity can lead to an increase in participation, but only if by taking this view we increase positive attitudes towards CC. Our results, however, also suggest that these aspirations might not translate strongly into action. Expectations as to the diffusion of CC might thus be deflated; it may actually be people seeking economic benefits who in the end opportunistically adopt CC as one of the modes of consumption. In a worst-case scenario, some users in a sharing economy might be altruistic and share their goods whereas other users may be mostly enjoying benefits from others' sharing. This situation might affect the sustainability of CC services in general. Further studies could investigate coordination mechanisms that would alleviate such problems in CC. See, for example, Ostrom (1990) on managing shared resources.

On the other hand, our results also suggest that enjoyment plays an essential role in attitude formation and use intentions. Some people might take part in CC simply because it is fun and provides a meaningful way to interact with other members of the community. Therefore, even if the particular motivations of individual participants vary from mainly altruistic to strongly gain-seeking, the sharing economy as a whole remains functional, provided that the

benefits for each participant outweigh possible costs incurred through the imbalance of contributions. And, of course, “economic gains” as defined in this study also translate into saving money, which is an understandable motivator for many consumers such as those affected by the recent financial crisis.

Norms diffuse in communities over time (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975), and, according to Lindenberg (2001), when obligation to those norms is a strong motivator for an individual, personal-gain seeking will be minimized. Our results might suggest that in relatively new CC services (see Table 1 for how long users had been members of the Sharetribe service) perhaps not enough time has elapsed for diffusion and establishment of norms within the community. Also, ties between people within the community may be too weak for norms to have a meaningful effect.

Furthermore, as initially discussed in the context of blood donation (Titmuss, 1970) and further theoretically developed by Frey and Jegen (2001), the “crowding-out” phenomenon might be at play within the sharing economy. In this phenomenon, extrinsic motivations start overshadowing the initial intrinsic motivations. Although people might have started participating in CC for intrinsic reasons (e.g., because of perceived sustainability), the motivations might have shifted toward extrinsic ones. Similar phenomena have been discussed in the contexts of recycling (De Young, 1988) and information sharing (Nov, 2007).

Two alternative approaches to preventing the crowding-out effect and therefore preventing the economic benefits becoming the dominant motivator can be conceived. We can either increase the intrinsic motivations or curb the extrinsic ones. In the context of this study two main intrinsic motivations were considered; the enjoyment of participating and internalized ideological reasons (sustainability). As seen in the results, the enjoyment of participation was the strongest determinant. Therefore, simply, attempting to make participation more pleasurable, more communal, and supportive for the ideological cause by promoting a positive buzz should prove to hinder the crowding-out effect via enforcing the intrinsic motivations. The other approach would attempt to impede extrinsic motivations taking hold of those participating. A softer form of this approach might include the employment of trust systems that enable participants to formally signal to other users how equally they share or consume. For instance, gamification, has been used for both; increasing intrinsic motivations via attempting to make the interaction with the system more game-like as well as for tracking participant behaviors (Hamari, 2013; Hamari, Huotari, & Tolvanen, 2015). A popular example of such a system would be “achievements” that monitor user behavior and award badges in user profiles of differing feats and predefined behaviors (Hamari & Eranti, 2011). Simple trust systems have been employed in several e-commerce websites such as eBay in the form of seller feedback.

In sharing economy platforms different ideological and communal tendencies, such as anti-establishment sentiment, freedom of information, and in the case of CCs, especially the greenness of the activity, are considered important internalized drives for behavior. If we observe for example the culture around file sharing, we can immediately notice how strong and prevalent the ideology is within the communities that participate. “Pirates” have their own political parties, they organize rallies, and generally celebrate their idea of free information sharing. There are many channels and mechanisms for participants to congregate and revel in the community-binding ideological drive that potentially further boosts the internalized motivations to participate in the file-sharing activities. Following this reasoning, CCs also could benefit from employing affordances for participants to signal their norms and their compliance to those norms that are commonly held within a CC community.

A stricter method could employ systems that would allocate resources evenly (in contrast to merely monitoring the sharing activities) with the aim of regulating free riding and preventing excessive economic exploitation of CCs. This could be achieved, for example, by regulating the ratio of contributions and receivers of favors. (Some file-sharing systems employ such mechanisms.) Although goods and services shared in CCs are not of equal value, another method would be to monitor the inbound and outbound value (rather than absolute amount) of goods and services from the individuals participating in the CC. However, in the end all regulatory systems seem to partly defeat the original ideas of sharing economies: freedom of exchange, altruism, and communal trust. On the other hand, even though the crowding-out effect is commonly considered as a negative motivational phenomenon, strong utilitarian motivations may also encourage people to liquidate their possessions and therefore stimulate the activity within the sharing economy. Therefore, pure utilitarian or economic motivations do not necessarily have to be considered as solely negative aspects. Perhaps users with differing motivations for participating could coincide in CC platforms in mutually beneficial ways. Further studies could longitudinally follow the shifts in motivations for participating in the sharing economy.

The technological and economical developments around sharing economies can also lead to interesting legal repercussions. The maintaining organizations of some other online peer-to-peer coordination hubs have ended up in legal problems based on what individuals have exchanged through the hub (e.g., Pirate Bay). Because in practice and principle all sharing economy services, to varying degrees, possess the trait of being autonomous and separated hubs from their users, it is an interesting question to what extent their operators should be held responsible for the goods being exchanged through them. Legal troubles could loom over any distribution and coordination of sharing, whether the goods being shared are digital or physical (see e.g., Manner, Siniketo, & Polland, 2009; Radbod, 2010 for Craigslist- and Pirate Bay-related cases). These aspects also pose interesting further research questions.

In summary this study has the following implications for the providers of CC platforms and services. The service should be pleasurable to use because enjoyment is an important motivator. The problem of free-riders can be alleviated using trust systems or gamification, or even by employing stricter resource allocation mechanisms that enforce contribution and not just consumption. Such systems have proven to be useful in other contexts (e.g., online shopping, Wikipedia, file sharing), and in light of our study, CC platforms are no exception.

Furthermore, future studies should consider measuring actual use, to investigate usage patterns more accurately. Usage data from CC services could reveal whether consumers indeed show different behavior patterns that match the altruistic (sustainability) versus individualistic (economic benefits) motivations considered in this article. Are some users, in fact, mainly giving whereas others mainly receive? Another important question has to do with practical issues in designing CC systems so as to alleviate potential problems of one-sided gain-seeking. Time banking (Seyfang, 2004) is one such mechanism. Finally, understanding what types of goods and services are particularly amenable to CC is another important avenue for future work.

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Appendix A: Survey items and loadings

Item	Statement	Loading	Adapted from
ATT1	All things considered, I find participating in collaborative consumption to be a wise move.	0.748	Ajzen (1991)
ATT2	All things considered, I think collaborative consumption is a positive thing.	0.836	
ATT3	All things considered, I think participating in collaborative consumption is a good thing.	0.877	
ATT4	Overall, sharing goods and services within a collaborative consumption community makes sense.	0.813	
ATT5	Collaborative consumption is a better mode of consumption than selling and buying individually.	0.720	
BI1	All things considered, I expect to continue collaborative consumption often in the future.	0.775	Bhattacharjee (2001)
BI2	I can see myself engaging in collaborative consumption more frequently in the future.	0.862	
BI3	I can see myself increasing my collaborative consumption activities if possible.	0.847	
BI4	It is likely that I will frequently participate in collaborative consumption communities in the future.	0.882	
ENJ1	I think collaborative consumption is enjoyable.	0.794	van der Heijden (2004)
ENJ2	I think collaborative consumption is exciting.	0.819	
ENJ3	I think collaborative consumption is fun.	0.892	
ENJ4	I think collaborative consumption is interesting.	0.784	
ENJ5	I think collaborative consumption is pleasant.	0.870	
EXTR1	I can save money if I participate in collaborative consumption.	0.770	Bock et al. (2005)
EXTR2	My participation in collaborative consumption benefits me financially.	0.790	
EXTR3	My participation in collaborative consumption can improve my economic situation.	0.754	
EXTR4	My participation in collaborative consumption saves me time.	0.641	
REP1	Contributing to my collaborative consumption community improves my image within the community.	0.865	Kankanhalli et al. (2005); Wasko & Faraj (2005)
REP2	I gain recognition from contributing to my collaborative consumption community.	0.786	
REP3	I would earn respect from others by sharing with other people in my collaborative consumption community.	0.810	
REP4	People in the community who contribute have more prestige than those who do not.	0.773	
SUST1	Collaborative consumption helps save natural resources.	0.864	Constructed by the authors – Please refer to this study.
SUST2	Collaborative consumption is a sustainable mode of consumption.	0.746	
SUST3	Collaborative consumption is ecological.	0.883	
SUST4	Collaborative consumption is efficient in terms of using energy.	0.750	
SUST5	Collaborative consumption is environmentally friendly.	0.796	