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Share a ride, rent a tool, swap used goods, change the world? Motivations to engage in collaborative consumption in Brazil

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ABSTRACT

During the last decade, access to goods and services in the form of collaborative consumption (CC) has gained more popularity and consumer favour across the globe. This paper explores the role of motivations behind the engagement in four different collaborative consumption behaviours. Consumer engagement in CC may result from a perception of shared consumption modes as better attending individual utilities, such as personal economic benefits and timesaving. Alternatively, CC adoption may spring from value-related, sustainability concerns. This paper tests the influence of these two competing motivations in metropolitan areas of Brazil. Results from survey data indicated that sharing transportation and exchanging of services are driven by individual motives, while sharing physical spaces and exchanging second-hand goods are motivated by sustainability goals. Social norms are strongly and positively associated with behavioural intention across all expressions of CC. This study highlights the need for recognising the autonomy of specific CC domains and behavioural practices subjected to different types of influences. It also contributes to extending CC debate beyond Western societies.

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1. Introduction

In the last decade, the expansion of collaborative consumption (hereinafter CC) led to its acceptance as a critical practice for sustainable outcomes (Botsman and Rogers 2010; Mont 2004; Prothero et al. 2011; Schor 2014). Social payoffs for the environment and society motivated both individuals as well as city planners to embrace CC (Zvolska et al. 2019), yet individually gathered economic benefits were also recognised as a major inducement for its adoption (Bardhi and Eckhardt 2012). To what extent individualistic or sustainability-oriented motivations shape collaborative consumption behaviours across different sharing economy situations? To what extent the experience of a Global South society like Brazil helps to clarify these tensions in a discussion usually circumscribed to developed Northern hemisphere cases?

CC differs from conventional, acquisition-based consumption as it usually involves peer-to-peer transactions simultaneous to the occurrence of business-to-consumer (B2C) dealings, it addresses personal consumption needs through access-based mechanisms while having the potential of generating sustainability dividends for the society as a whole. According to Belk (2014), “collaborative consumption is people coordinating the acquisition and distribution of a resource for a fee or compensation”. These compensations encompass bartering, trading, renting, and swapping, usually

among individuals unfamiliar to each other, thus requiring “a triangle of actors: a platform provider, a service provider, and a client” supported by offline or online tools of information, reputation, and contact (Benoit et al. 2017). CC behaviours (or practices) can take three forms (Botsman and Rogers 2010). First, a service-centric way of access to goods through a rental fee (ex. Uber); secondly, a redistribution of products based on giving, swapping, selling, or renting among individuals; and finally a lifestyle-related action favouring collaborative endeavours like couch-surfing, crowdsourcing, crowd-funding, or co-working initiatives. In other words, CC involves access or recirculation of resources for consumption in a wide array of domains and involving qualitatively different practices. It includes people outside the circle of family or close friendships, regardless of the type of compensation that takes place, if any. Goods purchases or ownership is avoided, so the focus goes to the utility of the experience instead of the shopping experience (Bardhi and Eckhardt 2012).

1.1. Motivations for collaborative consumption engagement

CC implications for sustainability are numerous. It encourages higher efficiency in resource usage by promoting longer life-cycles of products, waste reduction, and less pressure on natural resources. CC also improves the process of addressing needs by focusing on outcomes generation instead of product possession thereby generating more social just outcomes; it helps to diffuse a less commercialised lifestyle through the naturalisation of money-less access to goods; and it spurs a revitalisation of social exchanges (Arnould and Thompson 2005; Belk 2007; Botsman and Rogers 2010). Social benefits harvested from sharing economy experiences work as a major inducement to involve individuals as well as institutional agents like cities authorities and planning policy-makers (Zvolska et al. 2019). Pioneers in articulating CC environments were inspired by socio-tropic concerns sourced in pro-sustainability values, aspirations to reform market practices, and boosting communitarian and sociability interests (Botsman and Rogers 2010). Scholars presupposed environmental concerns and social justice values behind expressions of critical or alternative consumption like CC, which epitomised a conscious act to redress market-system grievances to society and the environment (Stolle and Micheletti 2013; Thøgersen and Ölander 2002). This perspective explains CC as motivated by impulses favouring improved rules and outcomes for consumers and society as a whole (Albinsson and Yasanthi Perera 2012; Botsman and Rogers 2010; Schor 2014), thus interpreting shared consumption as a lever for a new, progressive economic paradigm.

However, empirical evidence also supports that economic interests or self-centred gratification critically determines consumer adoption of particular forms of CC, such as car mobility or fashion renting (Bardhi and Eckhardt 2012; Becker-Leifhold 2018; Benoit et al. 2017). Under this light, rather than challenging traditional consumer markets, the sharing economy entails a newer, recycled response to individual, short-termed needs (Martin 2016). In addition to these tensions, extant literature acknowledges the co-existence of pro-sustainability motivations together with material benefits to individuals behind CC practices (Martin, Upham, and Budd 2015; Prothero et al. 2011; Roos and Hahn 2017; Schor 2014) – even within the same domain, for example, car-riding (Bardhi and Eckhardt 2012; da Silva Nascimento, de Lima, and Melo 2018). In other words, within specific domains motivations may supplement each other.

Research on the online environment of peer-to-peer activities like file-sharing and crowdsourcing suggests that there are more than pocketbook reasons or value-led eco-friendly or anti-consumerism goals behind collaboration practices. Belonging to a broader community and pluralising arenas for sociability are identified as drivers of individual engagement as well (Albinsson and Yasanthi Perera 2012; Hamari, Sjöklint, and Ukkonen 2015). Moreover, sharing is connected to pro-social behaviours favouring community building, and interpreted as a sign of solidarity, cooperation and mutual aid (Benkler 2004).

The motivational complexity behind CC falls in line with scholars’ suggestions of taking a flexible approach to understanding how and why people engage in behaviours with potential sustainability payoffs (Moisander 2007; Szmigin, Carrigan, and McEachern 2009). Individuals may join CC out of

purposeful values like environmental conservation or anti-consumption, as much as out of convenience, a favourable cost–benefit ratio or for time-bound personally rewarding reasons like joy and sociability (Agrawal, Chhatre, and Gerber 2015). Such a variety of influences requires explicit recognition by developing specific measures. Moreover, differentiating how and where personal benefits or social payoffs like sustainability gains stimulate individual engagement with CC is critical for building effective narratives and action by policy-makers engaged in sustainability planning.

1.2. Distinguishing motivations across types of CC

Motivations take the form of favourable attitudes to CC, factoring in both pocketbook and societal benefits considerations. Individuals engage in shared consumption practices because there is an underlying (material or symbolic) value attributed to enacting pro-CC behaviours. However, those behaviours are heavily dependent on other conditions that exceed attitudes, specially the perceived performativity and social acceptance of those behaviours. For these reasons, we opt to model the effects of motivations within the broader framework of the theory of planned behaviour (TBP).

By using unique survey data on a sample of metropolitan Brazilian residents, this paper sheds light on motivations behind the engagement in collaborative consumption practices. We explore how better individual economic payoffs or sustainable motives explain behavioural intentions. Assuming that CC is far from a monolithic set of behavioural routines, we acknowledge four different expressions that contain independent practices and domains of shared consumption. One CC mode relates to ways of enabling and performing mobility/transportation solutions (e.g. bike and car-sharing). Another CC mode refers to facilitating and engaging in space occupation (e.g. sharing individual or collectively physical spaces with others like home and office). A third form of CC refers to access to commodity goods throughout their lifecycle (e.g. exchanging or buying second-hand products like clothes, books, toys, and electronics). A fourth and last type of CC under study relates to outcomes and benefits conditional to functional interactions with others through sharing maintenance or assistance services (for example, through time-banks).

Given the specifics of each domain, we expect that CC types will elicit different motivations. We also hypothesise that various factors in different contextual scenarios may motivate the same individual. Following the approach proposed by Hamari, Sjöklint, and Ukkonen (2015), we distinguish between individual motivation, on the one hand, and –alternatively- sustainability or social stimuli for CC engagement. When people do something because it is enjoyable and the activity strictly responds to self-interest, we are in the domain of individual motivation. On the other hand, when people's behaviours meet a superior value considered suitable for the society or the environment – and not directly good for the self – we are in the domain of sustainability or socially oriented motivation.

The present study is the first, to the authors' knowledge, that models different practices of CC within the same survey. Furthermore, we investigate this phenomenon in middle-income society (Brazil) thus contributing to expand the literature on CC beyond the context of highly developed, affluent societies in the Northern hemisphere.

1.3. Shared consumption in Brazil

Expressions of shared consumption as social routines, needs-satisfying choices, and business opportunities have been present in Brazil for well over half a decade. Early in the mid-2000s the online platform OLX, aiming at trading unused goods, was launched in Brazil. By 2015, it merged with another similarly oriented service provider run by website *BomNegócio*, becoming the largest platform for enabling fee-based sharing and exchanging goods and services. Before that, back in 2011, the launch of website *Descol.Ai* occurred, which aimed at the promotion of shared consumption, crowd-funding, and exchanges of services and activities. A little earlier, in 2009, pioneering local car-sharing initiative *Zazcar* had took off; yet it closed operations ten years later. Despite their role as previous

promoters of sharing consumption experiences, those commercial endeavours account for only part of the collaborative economy story in Brazil. Local news-stories acknowledge the importance of free systems of services provision like bike-access schemes (e.g. *Bike Sampa* or *Bike POA*) that worked as flagship initiatives contributing to raising awareness and increasing the acceptance and credibility of sharing actions in Brazil (Rosemblum 2015). As of 2016, over 100 commercial and non-commercial-oriented sharing economy projects were active just considering the largest Brazilian city, São Paulo,¹ with a consumer outreach estimated in 14.5 million individuals (Viana 2015). Altogether, Brazil accounts for 1/3 (32%) of collaborative consumption, activities in Latin America and most transactions are heavily commercial, with the goal of renting, promotion or selling (IE Business School/BID/Ministerio de Economía y Competitividad 2015). Projections for 2018 estimate Brazil's overall shared consumption worth at about USD 265mi (IE Business School/BID/Ministerio de Economía y Competitividad 2015). Currently, the three most significant activities of sharing consumption initiatives relate to transportation, services to companies, and sharing physical spaces.²

We organise the rest of this paper as follows. In the next section, we present the Theory of Planned Behavior (TPB) that structures our measurement model, along with needed extensions to improve explanations. Following this, we describe the survey data and statistical methodology in use. Next, results are discussed, presenting conclusions and implications for future research.

2. Material and methods

2.1. Theoretical model

We chose the TPB framework (Ajzen 1991) as the theoretical framework to explore the motivational background of CC. Given the limited number of research on CC in developing societies, a standard theory like TPB facilitates results comparisons and enables a broader discussion about drivers of sustainable consumption (Jackson 2005; Kollmuss and Agyeman 2002). The standard TPB model assumes that attitudes, social norms, and perceived behavioural control affect intentions and behaviours. The attitudinal component comprises behavioural beliefs and expected outcomes of enacting practices that contain individual and social reasoning for action. Those motivations can be socio-tropic or merely oriented to address personal interests. Social norms correspond to the perceived social desirability of the action and relate to the importance of social influence when choosing to behave in a certain way. Perceived behavioural control reveals an individual's ability to act by considering the role of barriers and facilitators that might occur during the decision process. We also added some additional constructs to model CC more adequately, e.g. market reformism orientation and interpersonal trust. Market reformism orientation captures the adherence to challenging views of conventional, monetised business-as-usual market practices, including support for anti-consumerism. This motivation was present among early adopters of CC practices (Botsman and Rogers 2010). Concomitantly, interpersonal trust captures the level of confidence in fellow individuals – an essential precondition for negotiations and agreements among unknown parties (Möhlmann 2015). We controlled the performance of the extended model by including sociodemographic factors, in particular education, income, gender, age category, household size, and presence of members below 18 years old in the family. The model is presented in Figure 1.

The exploration of the determinants of individual behaviours here proposed follows a long consolidated research programme about the role of motivations in understanding sustainable consumption. Motivations may reflect culturally specific features, but also reveals values or goal-orientations that we classify into addressing individual, personal interests (like economic payoffs or convenience), or realising collective, societal goods like sustainability. Motivations are revealed as attitudes since they contain goal-oriented predispositions towards CC actions. In accordance to this, our ontological assumption is that orientations towards engaging with the object (CC) to attain specific goals

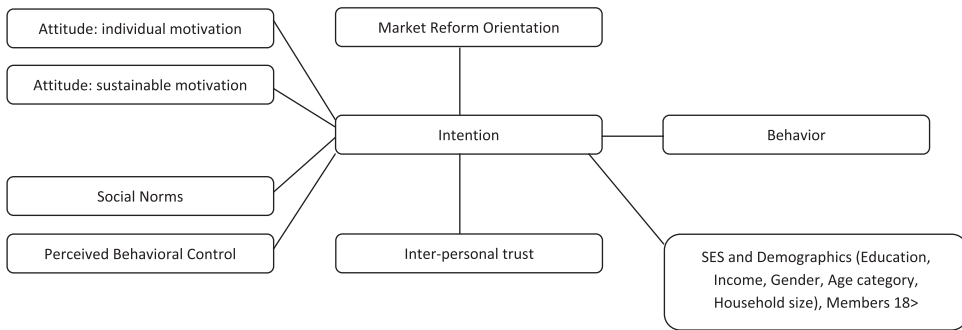


Figure 1. An extended version of the Theory of Planned Behavior.

(individual payoffs or collective, sustainability-prone goods) can explain some of the behaviours (that is, a motivation-centered analysis).

Individuals may choose to behave inspired by different goals, yet the motivations they give priority to and the extent they do so do not happen in a vacuum. Social norms and perceptions of self-competence critically shape that process, as reported by numerous studies using TPB as conceptual framework. People need to feel that is the right thing to do or at least a socially acceptable behaviour (social norms) and that they can effectively enact the action (perceived behavioural control).

Moreover, there might be beliefs that enhance or deter involvement with CC or condition some of the pre-requisites to enable participation. That is the case for introducing market reformism and inter-personal trust.

In other words, motivations to engage in CC are better understood if considering the perceived social acceptability or prestige of such behaviours (*social norms*), the perceptions of self-capabilities to perform the necessary actions (*perceived behavioral control*), beliefs about others upon whom CC depends (*inter-personal trust*), and beliefs about the essence of CC as a catalyser of values (*market reformism*).

Furthermore, another critical aspect that makes TPB appropriate in this context is that our data relates to CC-aware citizens, not necessarily CC practitioners. Awareness of CC presupposes a common cognitive ground on the object of research, but it is insufficient to propel actions by itself, such outcome being conditional to the surrounding influences in place. The way these influences operate as part of a social cognition mechanism can have the additional virtue of suggesting a cross-cultural, generalisable understanding of what favours or deters CC involvement. For these reasons, we opt for using a social cognition model like TPB, rather than assuming that actions and differences among CC-aware individuals solely respond to specific culturally informed factors or antecedents. These individuals vary in their propensities to engage in CC but - more interestingly - they vary in how catalysers (like motivations, favourable attitudes, and personal resources) and barriers (like personal capabilities, norms of social acceptability, and trust in other individuals) operate upon their decision to act collaboratively or in line with sharing economy standards.

2.2. Survey data, model's constructs, and statistical procedure

This paper used data from a general population survey of those living in Brazilian major urban centres – São Paulo, Rio de Janeiro, Belo Horizonte, Recife, Salvador, Porto Alegre, Curitiba, Brasília, Goiania, Belem, and Manaus – and it was conducted between January 18th and February 12th, 2015. The survey was fielded by a commercial polling firm in Brazil, Market Analysis, as part of its annual tracking study on sustainable consumption and environmental concerns. Focusing on the rise of collaborative consumption, the research polling firm independently determined the standards used for variable measurement. A substantial portion of the questionnaire measured standard sustainability

motivations, while other parts enabled the modelling of a TPB framework and explored different CC domains in the instrument.

In total, the polling firm interviewed 905 adult Brazilians via face-to-face home interviews, conducted by a qualified team of professional interviewers. About 20% (179 cases) were familiar with some CC practices, which is the core sample of this study. Selection of cases for interviewing followed a multi-stage probability selection method, splitting cases across the central 4 geographical regions of Brazil proportional to population size, then selecting the two or three largest metropolitan areas in each region, dividing each area by a number of homogeneous clusters of census tracks with 10 interviews allotted per group to ensure a widespread representation of the geographical areas and the related socio-economic and cultural heterogeneity. Within each cluster, we mapped out and selected residences randomly. Within each household, we then selected respondents based on an interlocked demographics quota criterion (that is, considering age group, social class, and gender), and weighed observations to ensure the sample representativeness of the Brazilian metropolitan population.

Items in the questionnaire measured the different components of the TPB model. Table 1 reports a list of the questions used in the analysis, together with the Cronbach's alpha calculated for each set. Each construct was built independently, enabling for variation in the ratio of number of items per construct, a characteristics that also reflects the fact that the baseline questionnaire was not originally designed for this type of analysis. When the number of items was less than two, we reported Pearson's correlation coefficient. The next step was to calculate the model's blocks using the mean score method as suggested in Acock (2013). Lastly, we transformed each model's measure into a categorical variable with three cut-off points (low, medium, high). A detailed description of the procedure we employed is available in the Appendix.

We use ordered regression models to assess which constructs significantly relate to the intention of engaging in collaborative consumption practices. Given the categorical nature of our variables, we opted for ordered categorical regression models, specified as logistic regressions. In each regression, we used as the dependent variable the intention to engage in a collaborative consumption practice, respectively *intention to share transportation* (1), *intention to share physical space* (2), *intention to share second-hand items* (3), *intention to exchange services* (4). In all the four regression models, the independent variables were *individual payoffs* and *social payoffs* as attitudes, controlled for additional orientations such as *social norm*, *perceived behavioral control*, *interpersonal trust*, and *market reformism orientation*. We also controlled for socio-demographic variables, namely *income*, *education*, *gender*, and *age*. The dependent variables were categorical variables with three outcomes expressing agreement level (low, medium, and high) towards the intention to engage in the specific cc activity. We report more details about the statistical procedure and the underlying regression model in the Appendix. We used Stata 15 to perform the statistical analysis.

3. Results

Table 1 reports the descriptive statistics of the constructs and the variables included in the model. Intention to consume collaboratively was quite moderate among urban Brazilians, with the majority of respondents falling in the low and medium categories for all forms of CC. Shared mobility stands out as the type of CC with the greater proportion of respondents in the high category (26%). Contrariwise, intention to exchange services records the lowest proportion of respondents in the high category (20%). High involvement resonated individual motivations by a greater proportion than sustainable motivations (29% versus 22%); though no differences occurred in the low category (29% versus 28%). About 63% of respondents agreed that social norm was highly influential. Frequencies of perceived behavioural control were evenly distributed among categories. Concerning market reformism orientation, a majority fell in the medium-level category, followed by a concentration in the high category, which entails a propensity for change (32%). Interpersonal trust was

Table 1. Operationalising measures.

Construct	Items	Reliability and correlation
Intention: collaborative consumption as a form of transportation <i>How likely are you to ...</i>	Renting or borrowing a bike from public system. Hitchhiking, paying to ride with other consumers, or renting a car	Pearson's correlation coefficient = 0.48
Intention: collaborative consumption as a form of sharing physical space	Staying in other consumers' homes when you're travelling. Sharing a workplace	Pearson's correlation coefficient = 0.45
Intention: collaborative consumption as a form of sharing second-hand goods	Exchanging clothes or buying them used Exchanging toys or buying them used. Exchanging books or buying them used. Exchanging electric or electronic devices or buying used devices	Cronbach's alpha = 0.80
Intention: collaborative consumption as a form of sharing services	Using or performing domestic repair services to/from other consumers in exchange for other services or products. Using or performing qualified services such as classes or specialised labour tasks to/from other consumers in exchange of other services/not money involved	Pearson's correlation coefficient = 0.60
Attitude (AT1) individual motivation	Collaborative consumption is a smart option CC it could be a fun experience CC allows me or would allow me to save money CC allows me or would allow me to save time CC allows me or would allow me to make money Collaborative consumption allows me or would allow me to meet interesting people, with whom I might have things in common CC allows me or would allow me to stand out among friends and acquaintances	Cronbach's alpha = 0.78
Attitude (AT2) sustainable motivation	CC is a positive novelty CC is a better way to consume than buying and selling products CC helps to save energy and other natural resources I encourage others to buy from companies that have social and environmental responsibility I am willing to pay more for products manufactured in socially and environmentally responsible manner I believe we need to consume less to preserve the environment for future generations Whenever I can, buy environmentally responsible products rather than common products CC is a way to help other people	Cronbach's alpha = 0.73
Social norm (SN)	People engaged in collaborative consumption are admired My friends and acquaintances are engaged in collaborative consumption	Pearson's correlation coefficient = 0.3
Perceived Behavioral Control (PBC)	If I were to engage in collaborative consumption I'd rather do it with a company that can be liable for it instead of doing it directly with other consumers I don't have time to use products or services through collaborative consumption I wouldn't know how to use products and services in a collaborative or shared way I've never seen anything like the CC in the region where I live	Cronbach's alpha = 0.67
Market reformism orientation	Collaborative consumption is more democratic because it enables access to products and services to a wider group of people CC enables us not to use only money or think only in monetary terms	Pearson's correlation = 0.66
Interpersonal trust (T)	I don't trust other consumers to share a product with them, catch a ride with them, perform a service at my place or at their place	NA, single variable

highly skewed, with 82% of respondents declaring to have a low level of interpersonal trust, thus leaving little room for variation and co-variation thus offsetting the influence of this factor over CC (Table 2).

Table 2. Descriptive statistics ($n = 179$).

Core model constructs	Socio-demographic variables
Intention CC as sharing transportation Low 32% Medium 42% High 26%	Income to r \$ 788 between r \$ 789 and r \$ 1,576 11% between r \$ 1,577 and r \$ 2,364 26% between r \$ 2,365 and r \$ 3,152 20% between r \$ 3,153 and r \$ 3,940 15% between r \$ 3,941 and r \$ 7,880 12% between r \$ 7.881 and r \$ 15.760 11%
Intention CC as sharing physical spaces Low 36% Medium 42% High 22%	Education Low 31% Medium 41% High 28%
Intention CC as sharing second-hand items Low 34% Medium 43% High 23%	Gender Male 46% Female 54%
Intention CC as exchanging services Low 35% Medium 45% High 20%	Age-category 18–29 31% 30–44 41% 45–69 28%
Attitude: individual motivation Low 29% Medium 42% High 29%	Household size One 7% Two 18% Three 25% Four 31% Five or up 19%
Attitude: sustainable motivation Low 28% Medium 49% High 22%	Have members under 18 living in the house Yes 56% No 44%
Social Norm (SN) Low 18% Medium 19% High 63%	
Perceived Behavioral Control (PBC) Low 37% Medium 31% High 32%	
Market reformism orientation (MR) Low 15% Medium 51% High 34%	
Interpersonal Trust (T) Low 82% Medium 8% High 12%	

Table 3 reports the results of the regression. The regressions' coefficients are in the form of odds ratios (OR). With an $OR > 1$, there is a positive association between the independent and the dependent variables, while with an $OR < 1$, there is a negative association between the dependent and the independent variables.

Results indicate that intentions to use CC as a form of transportation ($OR = 4.79$, $p < 0.001$) and service exchange ($OR = 2.5$, $p < 0.1$) are greatly influenced by a higher personal motivation (compared to a higher sustainability or pro-social motivation). This outcome meets Bardhi and Eckhardt (2012) and de Barcellos and da Silva (2014) findings regarding car-sharing.

Conversely, a higher odds ratio of sharing physical spaces ($OR = 2.21$, $p < 0.05$) and second-hand items ($OR = 2.25$, $p < 0.05$) are positively associated to a higher sustainable motivation. These results are consistent with past research on shared hospitality and fashion swapping (Lang and Armstrong 2018; Tussyadiah and Pesonen 2018). Within these domains of CC practice in Brazil, personal returns offered no incentive for engagement.

Results also indicate that alternative value-driven motivations seeking to challenge mainstream consumer model –such as beliefs in reforming the way the market works– does not offer any

Table 3. Odds Ratios of ordered logistic regressions, statistical significance standard errors and (SE) in parenthesis ($n = 179$).

Construct	CC as a form of transportation	CC as sharing physical spaces	CC as sharing second hand items	CC as sharing services
Attitude: individual motivation	4.79** (2.81)	1.00 (.34)	1.14 (.43)	2.5* (1.33)
Attitude: sustainable motivation	.58 (.33)	2.21** (.82)	2.25** (.92)	1.35 (.76)
Social norms	1.90** (.59)	1.92*** (.44)	2.53*** (.69)	2.34*** (.70)
Perceived Behavioral Control	1.02 (.22)	.99 (.24)	1.13 (.24)	1.00 (.22)
Market reformism orientation	.69 (0.24)	.63 (.20)	.61 (.20)	.70 (.26)
Inter-personal trust	.73 (.22)	.57** (.16)	.61* (.17)	.70 (.20)
Income	1.09 (.09)	.91 (.93)	1.10 (.12)	.86 (.20)
Education	1.12 (.28)	1.62* (.44)	.73 (.20)	1.19 (.26)
Age category	1.30 (.45)	.90 (.20)	.56** (.13)	.86 (.18)
Gender	.80 (.17)	.89 (.27)	1.66 (.65)	.81 (.28)
Household size	1.09 (.17)	1.26 (.22)	1.07 (.18)	1.31 (.23)
Family members below 18 years	1.51 (.54)	1.09 (.38)	1.17 (.45)	1.50 (.60)
<i>F-value and model significance</i>	$F = 1.90^{**}$	$F = 2.16^{**}$	$F = 2.58^{***}$	$F = 2.28^{**}$

Robust standard errors in parentheses; * p -value < 0.1, ** p -value < 0.05, *** p -value < 0.001.

additional stimuli to engage in CC. Market reformism towards building community and anti-consumption value may have inspired early adopters, but not the average Brazilian. Instead, social norms are systematically and highly significant, an outcome in line with other studies with Brazilians about car sharing user motivations (da Silva Nascimento, de Lima, and Melo 2018). Arguably, the novelty of CC practices makes them highly dependable of its acceptability and prestige among relevant social references, a recognition that the opinions of relatives or friends exercise a major influence, no matter the domain of shared consumption. On the other hand, perceived behavioural control does not achieve statistical significance, which suggests that potential users do not limit their CC engagement because of performative barriers, like lack of access to services, or by deficits of comprehension about how to get involved in CC routines. This finding echoes the results of studies about shared travelling, mainly shared accommodations (Tussyadiah and Pesonen 2018).

Results also show that interpersonal trust is significant for sharing physical spaces ($OR = 0.57$, $p < 0.05$) and second-hand items ($OR = 0.61$, $p < 0.01$) but producing a counter-intuitive effect as lower confidence with unknown persons correlates with higher (not lower) odds of CC engagement. We suspect that domains like space sharing and used goods exchange, characterised by higher involvement and more durable relationships, require that trust deficits be overcome by reliance on traditional, market-mediated modes of confidence. These limitations appear in recent research. For example, successful fashion swaps prosper conditional to being sponsored and organised by retailers (Lang and Armstrong 2018), whereas co-working and co-housing schemes progress only after the presence of highly visible commercial platforms like Airbnb and WeWork.

Socio-demographic variables play an occasional moderate role as well. Namely, the association between a higher level of education and a higher intention of sharing physical spaces is positive ($OR = 1.62$, $p < 0.1$), whereas the association between sharing or exchanging second-hand goods and age indicates that younger people are more likely to engage in this behaviour ($OR = 0.56$, $p <$

0.01). Consistent with previous research, CC adoption practices may vary across generations (Mahadevan 2017).

Table 4 reports the predicted probabilities of each outcome of the dependent variable. Panel A reports the predicted probabilities of $y = 1$ (*low*), panel B of $y = 2$ (*medium*), and panel C of $y = 3$ (*high*). The predicted probabilities were calculated for each type of CC.

Predicted probabilities entail a standard post-estimation procedure presented after the examination of ordered regression models. They provide information about the relative weight that each independent variable has on the specific outcome of the dependent variables. For example, considering the first ordered regression ($y = \text{intention to share transportation}$), the most considerable effects of the independent variables are observed for low and high categories. When the individual payoff goes up by one unit, the probability of having a low intention decreases by 35%, while the likelihood of having a high intention increases by 27% ($p < 0.05$).

4. Discussion

CC adoption does not follow a universal model. The nature of influences shaping individuals' engagement with CC depends on the type of domains and the available set of practices. This study contributes to revealing that reasons for sharing transportation, physical spaces, services exchanges, and used goods are not the same. These reasons fall within one major tension recognised in sustainability studies concerning the antagonism of individual versus social motivations. Our research finds no support for the co-existence of individual and social motivations in each of the domains under investigation, thus challenging findings reported elsewhere (Böcker and Meelen 2017). This study further contributes to the literature on CC by assessing the impact of each motivation, controlled by other critical forces like social acceptance of the examined behaviours, the perceived difficulty for executing actions, trust in others and, attitudes towards the standard functioning of the consumer market.

Our paper also contributes to stretch the discussion on shared consumption behaviours beyond the self-selected sample of users by relying on a representative sample of adults from the general population. Furthermore, it illustrates how engagement takes place beyond the over-researched societies of the Northern Hemisphere, as we focus on how Brazilians approach CC.

4.1. Car and service sharing

When it comes to car and service sharing, private interests rule together with the effect of social pressures (or social norms). Given the short-termed, low-involvement scenario in which car-riding and repair/maintenance service-exchange practices may take place, these domains of behaviours are more likely to be strongly shaped by utilitarian motivations (and more weakly influenced by sustainability considerations). Equally important, CC adoption within these domains can hardly be associated with a sustainability-inspired drive. It means that further progress for these types of CC will rely not on ideological persuasions about the collective payoffs, but on palpable returns of financial convenience. If CC engagement within the domains of mobility sharing and services exchange remains autonomous from pro-sustainability purposes, these domains and set of practices may prove unlikely to bring forward any significant progressive social change. Some of these limitations were already acknowledged in the literature (Zademach and Musch 2018). Their reliance on material payoffs and immediate benefits is likely to reproduce, rather than redress, the market inequalities CC was supposed to correct (Cohen, Brown, and Vergragt 2013; Schor 2014). In other words, our results dispel the idea of a tension between self-interest and benefit maximisation incentivized by market-mediated domains of CC, on the one hand, and non-market norms of sustainability and community-development tightly connected to other realms of CC, on the other hand. This is consistent with the prevalence of individual, immediate utility payoffs as the core motivational driver in the car sharing domain found in other studies (Joo 2017; Wilhelms, Henkel, and Falk 2017).

Table 4. Predicted probabilities.Panel A. Predicted probabilities for $y = 1$ (low), statistical significance and standard errors in parenthesis

Construct	CC as a form of transportation	CC as sharing physical spaces	CC as sharing second-hand items	CC as sharing services
Attitude: individual motivation	-.35** (.13)	-.00 (.02)	-.03 (.08)	-.06 (.04)
Attitude: sustainable payoffs	.11 (.12)	-.04* (.02)	-.18** (.09)	-.02 (.04)
Social norms	-.14** (.58)	-.04* (.01)	-.21*** (.06)	-.06** (.02)
Perceived Behavioral Control	-.00 (.05)	.00 (.01)	-.03 (.05)	-.00 (.01)
Market reformism orientation	.08 (.08)	.03 (.02)	.11 (.07)	.02 (.02)
Inter-personal trust	.07 (.06)	.03* (.02)	.10* (.06)	.02 (.02)
Income	-.02 (.02)	.00 (.00)	-.02 (.02)	.00 (.01)
Education	-.02 (.05)	-.03 (.07)	.07 (.06)	-.01 (.01)
Age category	.05 (.05)	.00 (.01)	.13** (.05)	.01 (.01)
Gender	.06 (.07)	.00 (.02)	-.11 (.90)	.014 (.02)
Household size	-.02 (.03)	-.01 (.01)	-.03 (.04)	-.02 (.01)
Family members below 18 years	-.01 (.08)	-.00 (.02)	-.03 (.08)	-.03 (.03)

Robust standard errors in parentheses; * p -value < 0.1, ** p -value < 0.05, *** p -value < 0.001.Panel B. Predicted probabilities for $y = 2$ (medium), statistical significance and standard errors in parenthesis

Construct	CC as a form of transportation	CC as sharing physical spaces	CC as sharing second-hand items	CC as sharing services
Attitude: individual motivation	.08 (.05)	-.00 (.03)	.01 (.03)	-.11 (.07)
Attitude: sustainable motivation	.02 (.03)	-.08* (.04)	.07 (.04)	-.04 (.07)
Social norms	-.03 (.03)	-.06** (.03)	.08** (.04)	-.11** (.04)
Perceived Behavioral Control	.00 (.01)	.00 (.02)	.01 (.02)	-.00 (.03)
Market reformism orientation	-.02 (.02)	.04 (.03)	-.04 (.03)	.04 (.05)
Inter-personal trust	-.07 (.02)	.05* (.03)	-.04 (.03)	.04 (.04)
Income	.00 (.00)	.00 (.01)	.00 (.01)	.02 (.01)
Education	.01 (.01)	-.05 (.03)	-.03 (.03)	-.02 (.03)
Age category	-.01 (.01)	.01 (.02)	-.05* (.03)	.02 (.07)
Gender	.00 (.01)	.01 (.03)	.05 (.04)	.03 (.04)
Household size	.04 (.01)	-.02 (.02)	.01 (.01)	-.03 (.02)
Family members below 18 years	.02 (.01)	-.00 (.03)	.01 (.03)	-.05 (.05)

Robust standard errors in parentheses; * p -value < 0.1, ** p -value < 0.05, *** p -value < 0.001.

4.2. Sharing of physical spaces and using second-hand goods

Results for shared physical spaces and used goods exchanges suggest a wholly different approach to expand CC adoption. Unlike the short-lived, low involvement experiences previously reviewed, engagement in collaborative practices with regards to physical spaces and used items imply a

Table 4. ContinuedPanel C. Predicted probabilities for $y = 3$ (high), statistical significance and standard errors in parenthesis

Construct	CC as a form of transportation	CC as sharing physical spaces	CC as sharing second-hand items	CC as sharing services
Attitude: individual motivation	.27*** (.09)	.00 (.03)	.02 (.05)	.11* (.06)
Attitude: sustainable motivation	-.09 (.10)	.08* (.04)	.10** (.05)	.03 (.07)
Social norms	.11** (.05)	.07** (.03)	.12*** (.04)	.10** (.04)
Perceived Behavioral Control	.04 (.04)	-.00 (.03)	.01 (.03)	.00 (.02)
Market reformism orientation	-.06 (.06)	-.05 (.04)	-.06 (.04)	-.04 (.04)
Inter-personal trust	-.05 (.05)	-.06* (.03)	-.06* (.04)	-.04 (.03)
Income	.02 (.01)	-.00 (.01)	.01 (.01)	-.02 (.01)
Education	.02 (.04)	.05 (.03)	-.04 (.03)	.02 (.03)
Age category	-.04 (.08)	.05 (.03)	-.08** (.03)	-.02 (.02)
Gender	.05 (.06)	-.01 (.03)	.06 (.05)	-.02 (.04)
Household size	.01 (.03)	.02 (.02)	.00 (.02)	.03 (.02)
Family members below 18 years	.07 (.06)	.00 (.04)	.02 (.05)	.07 (.05)

Robust standard errors in parentheses; * p -value < 0.1, ** p -value < 0.05, *** p -value < 0.001.

longer usage relationships (like going daily to a co-working space, or couch-surfing within the intimacy of someone else's residence) or assimilating consequences of such behaviours (like adjusting fashion lifestyles to recently swapped clothing or apparel). On the other hand, given the higher time exposure and personal stakes involved when sharing physical spaces or stretching the lifecycle of used goods through swapping, personal utility-based attitudes will play a weaker role while sustainability beliefs will display a stronger influence. Thus, CC engagement in those two domains requires an alignment of ideals over short-term interests or personal satisfaction, which leverages socio-tropic concerns about sustainability as a substantive influencer. Studies on food sharing and collaborative gardening, for example, have made clear that certain domains and sets of practices are particularly sensitive to a specific set of social or pro-sustainability motivations (Rombach and Bitsch 2015). Our results are also in line with studies on motivations for using home-sharing platforms such as Airbnb, where in addition to price value, the role of social and community also plays an important role (Sthapit et al. 2019; Wisker, Kadirov, and Bone 2019). Apparently, consumers adopting these practices in Brazil remain impervious to market-related stimuli or considerations, revealing a higher sensitivity to a community building, environmental protection, and social equity reflections.

4.3. Influence of other factors

Socio-demographic factors, except the age category for sharing second-hand goods and education for sharing physical spaces, does not play a significant role in our studies. That is, younger people tend to be more likely to use second-hand goods, whereas Brazilians that are more educated are more likely to use shared spaces. Interestingly, income fails to play any significant role, echoing the complex dynamics between income and sharing consumption acknowledged elsewhere (Böcker and Meelen 2017; Frenken 2017). The difficulty for internet access and online platforms

use among lower economic and educational status segments in developing societies contributes to this outcome.

Overall, our study indicates that among CC-aware Brazilians, social legitimacy substantively propelled the growth of a sharing economy. An encouraging social context for engagement provides cues about why, how, and where to adopt collaborative choices. Social norms-oriented messaging may motivate citizenry into the adoption of collaborative routines, as it has already proved useful in understanding pro-sustainability and cooperative intentions in contexts of negative attitudes (Vermeir and Verbeke 2006) and social distrust (De Cremer, Snyder, and Dewitte 2001). Furthermore, it could help accelerate the internalisation of proper attitudes based on claims of social desirability (Tarkiainen and Sundqvist 2005). Finally, the irrelevance of PBC in shaping intentions suggests that Brazilians do not perceive serious barriers to practicing CC. Adopting CC falls far from questions of personal abilities or recognisable obstacles to performing this behaviour.

4.4. Conclusions and limitations

By focusing on how the public in Brazil approaches CC, this study contributes to broadening the geographical and methodological scope of the research agenda on collaborative consumption. This study illustrates how motivations radically vary across domains and available sets of practices, thereby acknowledging the underlying heterogeneity behind the CC phenomenon.

In general, the analysis of motivations indicates that goal-oriented attitudes differ across domains of CC. However, these orientations influence engagement together with considerations about the social acceptability and perceived performativity of individuals. In Brazil, the motivational explanation of CC adoption reflects a binary approach of consumers whereby personal incentives run parallel to normative values. Consumers conceptualise specific formats of CC differently. When it comes to sorting out individual mobility bottlenecks or addressing daily life problems or performance gaps like house repairing, individuals face available repertoires of CC engagement as a personal strategy for satisfying highly personal, immediate, and material needs. However, when it comes to ways of redistributing access to substantive resources, like physical spaces and existing goods or products, individuals confront CC repertoires as instrumental to addressing social problems and thereby advancing collective goals, not just personally rewarding initiatives. The more material the object of collaborative behaviour (like used goods or buildings), the easier it is for individuals to attach a social value to it and leverage this value as the primary motivation for their action. The less tangible, transient, or the faster turn-around of the experience around the source of collaborative behaviour, the easier it is for individuals to interpret their relevance merely in personal or immediacy terms. Research within the same CC domain usually finds that personal interests may co-exist with sustainability goals (Roos and Hahn 2017; Tussyadiah and Pesonen 2018); however, our study suggests that specific contexts like Brazil may be an exception. Trade-offs of motivations occur not within domains, but rather across them.

This information is critical for optimising narratives and mobilisation actions by policy-makers and urban planners seeking to capitalise the social dividends of sharing economy opportunities. Understanding what triggers consumer engagement in each specific domain of collaborative consumption as part of a smart cities strategy certainly improves the efficiency of local authorities' initiatives (McLaren and Agyeman 2015).

This study has some limitations. Given the commercial nature of the survey used for fielding the study, the measurement instrument allowed for a somewhat limited number of variables to model both the conventional motivations considered by the theory of planned behaviour and the additional influences included as extensions to this model. Alternatively, conceptual shortcomings related to the excessive individualism and rational suppositions behind TPB theorising and measurement (Connolly and Prothero 2008; Moraes, Carrigan, and Szmigin 2012) have been partially addressed by including a multidimensional measure of sustainability motivations, together with measures of inter-personal trust and market reformism. Although in this manuscript we offered some explanations on why individual motivations affect some CC practices and social motivations

affect others, we were unable to verify in depth the reasons behind these findings. Future research can cover this direction.

Furthermore, given the relatively low awareness of shared consumption among Brazilians at the time of the survey (20%) and the fact that most attitudinal measures that feed the explanatory model were only asked to the knowledgeable public, the power of our inferences are limited. In other words, data inferences for the greater population requires caution. On the other hand, given the news making nature of sharing economy practices and business opportunities that have certainly expanded media attention on the topic and, most likely, the public's level of awareness, there is a clear incentive to replicate this study so that future studies may go beyond urban population samples. This decision is important, as metropolitan centres are natural hubs of Internet connectedness, and online access embodies a key factor for the success of shared economy initiatives. Examination of high and low Internet-covered populations should further illuminate the extent to which shared consumption becomes successful only when online infrastructure resources apply.

Notes

1. See: <http://www.cidadecolaborativa.org/downloads/guia-digital-cidade-colaborativa.pdf>.
2. IE Business School/BID/Ministerio de Economía y Competitividad, Gobierno de España (2015), "Economía colaborativa en América Latina", <http://informeeconomicolaborativatam.ie.edu/informe-economia-colaborativa.pdf> (Accessed May 14, 2016).

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Appendix

A1. The mean score method

The original questions were measured using a four-point Likert scale instead of a five-seven point scale. This procedure is commonly used and largely accepted when researchers want to eliminate the influence of the "neutral" mid-point, which is not logically correct in the scale and creates a bias when calculating (as we did) a score by pulling together similar items. Model constructs were built using the mean score method. The result of this procedure is a score that corresponds to the arithmetic mean of the answers to the items as reported in Eq. (A.1):

$$X_C = \sum_{i=1}^N x/n_i$$

Where X_C is the value of the construct C , and $\sum_{i=1}^N x$ is the sum of the values of each item and n_i is the number of items used for each construct. We could have calculated a factor score instead of a mean score. The main difference between these two measures is that the mean score assumes that each item is equally important to the concept being measured, while the factor score does not. In our analysis, we met this assumption, so we opted for a mean score. This for two reasons: A) the interpretation of the mean score is easier because each construct has the original scale used for the items and B) the mean score manages missing values more efficiently. To make all the score variables homogenous in terms of measurement and guarantee some variability for all, we then transformed each construct into a categorical variable with three cut-off points: "1", "2", "3", corresponding to "low", "medium", or "high."

A2. Ordinal regression models

Ordinal regression models also have the advantage of relaxing the assumption that the distance between the outcomes is the same, which is appropriate in this case. The theoretical foundations of ordinal categorical models are the same as in, and a critical assumption is that respondents' perceived distance between semantic scale categories is not the same, although they are presented as adjacent choice options. For example, in our study, the distance between *low* and *medium* and *high* is unlikely to be analogous to the gap between *medium* and *high*. In particular, the underlying model is:

$$y_i \begin{cases} 1 \rightarrow \text{low} & \text{if } \delta_0 = -\infty \leq y_i^* < \delta_1 \\ 2 \rightarrow \text{medium} & \text{if } \delta_1 \leq y_i^* < \delta_2 \\ 3 \rightarrow \text{high} & \text{if } \delta_2 \leq y_i^* < \delta_3 = \infty \end{cases}$$

Each interval corresponds to the three categories so that when y^* crosses a cut-point, the observed category changes. The structural model is specified as follows, where x_s is a vector of the independent variables:

$$y^* = \alpha + \beta x + \varepsilon$$

We also calculated predicted probabilities of observing $y = m$ (m indicates the category, *low*, *medium* or *high*), for given values of independent variables x_s .

$$\Pr(y = m | \mathbf{x}) = F(\delta_{m-1} \leq y^* < \delta_m | \mathbf{x})$$