



Antecedents of the Sharing Economy in a Pandemic Scenario: Prosocial Attitudes, Past Behaviour and Transformation Expectations

Antecedentes de la Economía Colaborativa en un Escenario de Pandemia: Actitudes Pro-sociales, Comportamientos Pasados y Expectativas de Transformación

Helena Alves^{*}, Marta P. Alves^a, Arminda Paço^b

^a Universidade da Beira Interior, Núcleo de Estudos em Ciências Empresariais (NECE-UBI), Rua Marquês d'Ávila e Bolama, 6201-001, Covilhã, Portugal – mpalves@ubi.pt – <https://orcid.org/0000-0002-8074-7168>

^b Universidade da Beira Interior, Núcleo de Estudos em Ciências Empresariais (NECE-UBI), Rua Marquês d'Ávila e Bolama, 6201-001, Covilhã, Portugal – apaco@ubi.pt – <https://orcid.org/0000-0002-2806-4247>

* **Corresponding author:** Research Center in Business Sciences (NECE-UBI), University of Beira Interior, Rua Marquês d'Ávila e Bolama, 6201-001, Covilhã (Portugal) – haves@ubi.pt – <https://orcid.org/0000-0001-5192-2310>

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ABSTRACT

The COVID-19 pandemic is expected to have a significant impact on most sharing economy activities, and at present, it is particularly challenging to achieve a consensual model to predict sharing economy behaviour. Based on empirical and theoretical premises established before the pandemic, we intend to explore the association between a set of psychosocial variables (i.e., cooperation, environmental awareness, past behaviour) and sharing economy behaviour, particularly the use of shared assets (i.e., cars and accommodation) during the COVID-19 pandemic. Furthermore, the present study analyses the mediating role of transformation expectations, as the decision to engage or not in sharing behaviour may be influenced by beliefs about the consequences of those actions from the user's perspective. This study comprised a total of 596 participants. Data was collected through a self-administered questionnaire and was statistically analysed and interpreted using PLS 3.0. Structural Equation Modelling statistical software. Contrary to our predictions, the results show that cooperation negatively influenced the willingness to participate in sharing activities during the COVID-19 pandemic, that environmental awareness was not a significant predictor, and that past sharing behaviour has the strongest influence on the willingness to share during pandemic times. Finally, the mediating effect of transformation expectations was significant in both associations, i.e., pro-environmental consciousness and past sharing experiences, and the willingness to adopt sharing behaviour during COVID-19.

Keywords: Sharing Economy; Cooperation; Environmental Awareness; Transformation Expectations; COVID-19.

R E S U M E N

Se espera que la pandemia de COVID-19 tenga un impacto importante en la mayoría de las actividades de la economía colaborativa, y en la actualidad, es particularmente difícil lograr un modelo consensual para predecir el comportamiento de la economía colaborativa. Sobre la base de premisas empíricas y teóricas establecidas antes de la pandemia, pretendemos explorar la asociación entre un conjunto de variables psicosociales (es decir, cooperación, conciencia ambiental, comportamiento pasado) y el comportamiento de la economía colaborativa, en particular el uso de activos compartidos (automóviles y alojamiento), durante la pandemia de COVID-19. Además, el presente estudio analiza el papel mediador de las expectativas de transformación, ya que la decisión de participar o no en el comportamiento de compartir puede estar influenciada por creencias sobre las consecuencias de esas acciones desde la perspectiva del usuario. Este estudio comprendió un total de 596 participantes. Los datos se recopilaron a través de un cuestionario autoadministrado y se analizaron e interpretaron estadísticamente utilizando el PLS 3.0., un software estadístico de modelación de ecuaciones estructurales. Contrariamente a nuestras predicciones, los resultados muestran que la cooperación influyó negativamente en la voluntad de participar en actividades compartidas durante la pandemia de COVID-19, que la conciencia ambiental no fue un predictor significativo y que el comportamiento de compartir en el pasado tiene la influencia más fuerte en la voluntad de compartir durante tiempos de pandemia. Finalmente, el efecto mediador de las expectativas de transformación fue significativo en ambas asociaciones, es decir, la conciencia proambiental y las experiencias pasadas de intercambio, y la disposición a adoptar un comportamiento de intercambio durante COVID-19.

Palabras clave: Economía Colaborativa; Cooperación; Conciencia Ambiental; Expectativas de Transformación; COVID-19.

1. INTRODUCTION

The year 2020 will be forever marked by the COVID-19 pandemic. This tragic event had consequences in all aspects of societies worldwide. In some cases, individuals in general, and consumers, in particular, completely changed their habits and consumption patterns because of lockdown, travel restrictions and financial impacts, as stated by Mathios *et al.* (2020). More assertively, Sheth (2020) argues that this pandemic lockdown and the need for social/physical distancing have completely disrupted consumers' buying habits, leading them to improvise and acquire new habits. Additionally, individuals had to adjust to the new situation of being at home during quarantine (Chen *et al.*, 2020), dealing with depression and stress (Debata *et al.*, 2020). According to Sheth (2020), four major contexts can disrupt consumer habits: (i) change in the social context provoked by life events; (ii) technology; (iii) laws and regulations; and (iv) unexpected situations, such as natural disasters and global pandemics, as is the case of COVID-19. Once this situation passes, some habits will return, but others might disappear because consumers have had contact with other alternatives (e.g., buying online, working at home, using takeaway services, etc.).

We believe this pandemic scenario has also had a severe impact on most sharing economy activities and even on the perception of the "sharing philosophy" as with the pandemic, fear and social distancing have prevented people from continuing to share, for example, cars, houses and other objects. To clarify this concept, one of its most relevant authors, Belk (2007, 2010, 2014), described "sharing" as an alternative way of distributing goods and services promoting the exchange and offer, which implies the existence of trust between strangers (Botsman & Rogers, 2010). Belk (2014) puts collaborative consumption somewhere between sharing and marketplace exchange and introduces the term "pseudo-sharing" to illustrate some practices that are not really sharing. The author considers that there is no sharing involved if users have utilitarian rather than communitarian and altruistic reasons. The main advantages of this "new" system lay in fostering the community and saving resources, also emphasising the role of the companies that have considerable responsibility as the environment suffers from problems caused by their operations, and challenging them to balance their economic, social and environmental actions (Villegas Pinuer *et al.*, 2022).

Several variables have been used to explain attitudes and behaviour regarding the sharing economy, based on traditional theories (e.g., Theory of Planned Behaviour). However, it has been challenging to reach a consensual model to predict sharing economy behaviour. Thus, this research aims to examine the links between psychosocial variables and sharing economy behaviour during COVID-19. Particularly, we intended to study the influence of cooperation, environmental awareness and past behaviour, which role on sharing economy was clearly emphasised by literature before COVID-19. Additionally, in a pandemic context, due to perceived risk concerning sharing activities, the decision to engage or not in these behaviours may be influenced by beliefs about the personal consequences of doing so. Furthermore, individual attitudes may influence expectations about the occurrence of positive life changes after the sharing behaviour. Thus, the mediation role of transformation expectations on the association between psychosocial antecedents and sharing economy behaviour is also analysed.

The relevance of studying antecedent variables is highlighted by Hossain (2020), who presented a systematic literature review concluding that collaborative initiatives face challenges to scaling up because this can sometimes go against community interests. Additionally, the author pointed out environmental and social challenges as of interest for future studies. Presenting a systematic and holistic review of the sharing economy, Cheng (2016) states that it has a strong base in the lifestyle and social movement (as a primary means to foster social change), consumption practice and the sharing paradigm. Thus, individual factors should be carefully analysed.

Finally, following the distinction of sharing economy types of Alharthi *et al.* (2021) (i.e., hospitality/dining, retail/consumer goods, media/entertainment and automotive/transportation), we focus on the use of shared cars and accommodation as transportation and hospitality sharing services are those who necessarily requires experiences outside home and so, unlike the other services, are expected to suffer a more significant negative impact of the pandemic situation due to the increase of perceived health risk.

Concluding, the present study contributes to previous research in different ways. First, the study helps to better understand how individual attitudes and expectations influence the disposition to participate in sharing economy activities in a pandemic context where people may change their individual and social priorities. Second, the study analyses the perspective of the user/customer when confronted with the possibility of sharing assets during a critical situation of public health, as it is expected that car sharing and accommodation may be perceived as involving relatively unsafe activities, compared to other economy sharing services. Finally, findings may contribute to the existing literature about the sharing economy as the proposed model is a comprehensive framework that brings important implications for both theory and practice.

2. LITERATURE REVIEW

2.1. Sharing economy concept

According to Belk (2014) and Hossain (2020), the sharing economy intersects with other concepts, such as the collaborative economy, collaborative consumption, access economy, platform economy, and community-based economy. Belk (2014) defended that sharing was a phenomenon as old as humankind, while collaborative consumption and the sharing economy just appeared in the Internet era. Sharing among close family members and friends has existed since ancient times. However, the sharing concept has evolved, taking advantage of the advent of the Internet and new information and communication technologies since 2000 (Botsman & Rogers, 2010), in response to the growing concern about rationalising natural resources and the need for a more sustainable way of consuming, which is related with the premise that civilisation and industry should use the existing resources in a way that does not put at risk the well-being of future generations (Pero *et al.*, 2017). Thus, the relevance of sustainable consumption, guided by consumer sustainable involvement and described in terms of pro-environmental and prosocial attitudes and behaviours, is assumed. The problem is that individuals have limited understanding of the impact of their unsustainable choices, and even of sustainability in general, the reason why educating consumers is of main importance (Kadic-Maglajlic *et al.*, 2019).

Backing to economy sharing, this “new” economy is seen as the third industrial revolution. The sharing economy induces a new paradigm in terms of production and consumption, stimulating technological advances and provoking sociological changes (Parguel *et al.*, 2017). Henten and Windekilde (2016) defend that the sharing economy concept was built on the concept of collaborative consumption, but authors often use the same terms interchangeably (e.g., Botsman & Rogers, 2010; Cheng, 2016; Schor, 2014). However, the meaning of collaborative consumption, first presented by Felson and Spaeth in 1978, was associated with events in which several individuals shared and consumed products in an activity in which they were engaged. Since 2010, with the book published by Botsman and Rogers (2010) on the growth of collaborative consumption, the sharing economy has become a common buzzword in the media. Thus, the most popular terms referring to the concept of peer-to-peer sharing, which allows access to underutilised products, with use and availability prevailing over ownership (Schor & Fitzmaurice, 2015), are “peer to peer economy”, sharing economy’ and “collaborative consumption” (Cheng, 2016).

According to Botsman and Rogers (2010), collaborative consumption is an activity that allows individuals to obtain great benefits by accessing products and services without owning them, thereby saving money, space, and time. In parallel, it facilitates getting to know new people and situations. These authors present collaborative practices around three types of activities: (i) product-service systems, including activities related to renting or sharing durable goods, where ownership is not transferred; (ii) redistribution markets, including activities of gifting, switching or selling pre-owned goods with an effective transfer of ownership, but the exchange does not necessarily imply money; (iii) collaborative lifestyles, including sharing immaterial resources such as space, money (crowdfunding) or services. In turn, Schor (2014) defines the sharing (or collaborative) economy as a series of digital platforms and offline activities centred on the concept of sharing.

Thus, it has been difficult to define clearly the sharing economy and its conceptual and empirical frontiers, with no consensus being reached. This is partly motivated by the multiple bordering concepts such as the capitalism platform, collaborative consumption, gift economy, peer-to-peer economy and others (Acquiera *et al.*, 2017). Therefore, the sharing economy can be considered an umbrella construct, as defended by Hirsch and Levin (1999). In this research, we adopt the term sharing economy. In Appendix 1 is possible to observe the main studies and contributions used in the present study.

2.2. Prosocial and Pro-Environmental Attitudes and Sharing Intentions

The concept of sustainability is associated with several contexts and areas, having a broader scope, sometimes difficult to understand completely. Thus, besides the environmental dimension, sustainability is also about social and economics, which means that the three dimensions are mutually dependent and form the Triple Bottom Line model defended by Elkington (1997). Accordingly, the sharing economy also combines different environmental, social and economic premises (Acquiera *et al.*, 2017). Böcker and Meelen (2017) found that individualistic motives, such as materialism, altruism and environmental concerns, were important antecedents for those engaging in sharing economy activities. However, in a

context of a collective challenge, such as a pandemic, prosocial beliefs and dispositions may have an important role as antecedents of sharing behaviour. Norm activation theory (Schwartz, 1968, 1973) proposes that when personal norms, such as prosocial norms, are activated by acknowledging the potential negative consequences of not acting and accepting individual responsibility for doing the “right thing”, a person would respond to prevent those harmful outcomes. Hence, during the COVID-19 pandemic, people have become more easily aware of each individual’s importance in preventing dissemination of the virus and more conscious of the meaning of their own individual contribution to the collective welfare and sustainability. Consequently, personal norms of altruism, cooperation and helping may become more intense and salient and then prescribe the corresponding behaviour. In the present study, we anticipate that a willingness to cooperate and pro-environmental attitudes will continue to influence sharing behaviour positively during the COVID-19 pandemic, as before the pandemic, the association between both prosocial and pro-environmental concerns and sharing economy actions was already well established, as the following empirical findings suggest.

First, regarding the social premise, the sharing economy may be viewed as a way to promote cheaper access to services, or even generate non-reciprocal exchange, and represent a new form of collaboration, solidarity and social bonding among individuals (Belk, 2010). In fact, there is empirical evidence that moral and altruistic motives positively influence attitudes toward sharing behaviour (Bucher *et al.*, 2016; Wilhelms *et al.*, 2017). So, we anticipate that cooperation, defined as the willingness to help or support another person (De Hooge *et al.*, 2007), is positively associated with the disposition to participate in sharing activities. In summary, both sharing and cooperative behaviour are oriented towards others and related to the sense of interdependence between people. Secondly, the environmental issue regarding the sharing economy is related to encouraging more sustainable use of assets by supporting access over ownership (Botsman & Rogers, 2010). This makes it possible to promote more sustainable consumption and production practices (Acquiera *et al.*, 2017). Specifically, the literature points to a positive association between environmental concerns and sharing activities, such as buying second-hand clothing (Styvén & Mariani, 2020) or carpooling (Hartl *et al.*, 2020). Hence, the following hypotheses are proposed:

Hypothesis 1: Cooperation is positively associated with willingness to participate in sharing economy activities during COVID-19.

Hypothesis 2: Pro-environmental attitudes are positively associated with willingness to participate in sharing economy activities during COVID-19.

2.3. Transformation Expectations and Sharing Intentions

Richins (2011) defined transformation expectations as consumers’ beliefs that certain behaviour will bring important and meaningful changes to themselves and their personal quality of life and identified different positive consequences that can be anticipated from participating in consumption behaviour. Research tends to consider transformational expectations as an effect of individualistic and hedonic motives for consuming (e.g., Richins, 2011, 2013) and sharing activities (Davidson *et al.*, 2018). At first glance, the association between prosocial attitudes and self-cen-

tered gains expectations could be seen as counterintuitive. However, there is evidence that both altruistic and egoistic motives lead people to engage in prosocial and collaborative actions. Particularly, when actions are not directed to people that are close but instead to strangers, prosocial behaviour is relatively more likely to be motivated by egoistic concerns (Maner & Gailliot, 2007). Thus, since sharing economy activities do not generally involve close others, we anticipate that the willingness to cooperate with others and pro-environmental attitudes may have an important role in increasing the use of sharing activities through expectations that desirable individual transformations will result from sharing behaviour.

Furthermore, consumer expectations are considered an important antecedent of emotional and behavioural outcomes related to purchasing and consuming actions (Santos & Boote, 2003). Transformation expectations positively predict impulsive buying and conspicuous consumption (Boonchoo & Thoumrungroje, 2017), and also the predisposition to participate in sharing actions (Davidson et al., 2018). Several theoretical perspectives consider the beliefs about the expected consequences of a specified behaviour as an essential antecedent of intention or behaviour, such as the theory of planned action (Ajzen, 1991) and social-cognitive theory (Bandura, 1986). Accordingly, research has already pointed out that during the COVID-19 pandemic, prosocial behaviour, compared to self-interest actions, has led to more individual favourable outcomes, such as positive affect, meaningfulness and social connectedness (Varma et al., 2020). Therefore, positive expectations about the consequences of engaging in sharing activities could increase the propensity to adopt those behaviours.

Based on the previous literature review, we expect both cooperation and pro-environmental attitudes to be positively associated with transformation expectations which, in turn, are also positively related to the willingness to participate in sharing economy activities during COVID-19. Accordingly, we present the following mediation hypotheses:

Hypothesis 3: The association between cooperation and willingness to participate in sharing economy activities during COVID-19 is mediated by transformation expectations.

Hypothesis 4: The association between pro-environmental attitudes and willingness to participate in sharing economy activities during the COVID-19 pandemic is mediated by transformation expectations.

2.4. Past Behaviour and Sharing Intentions

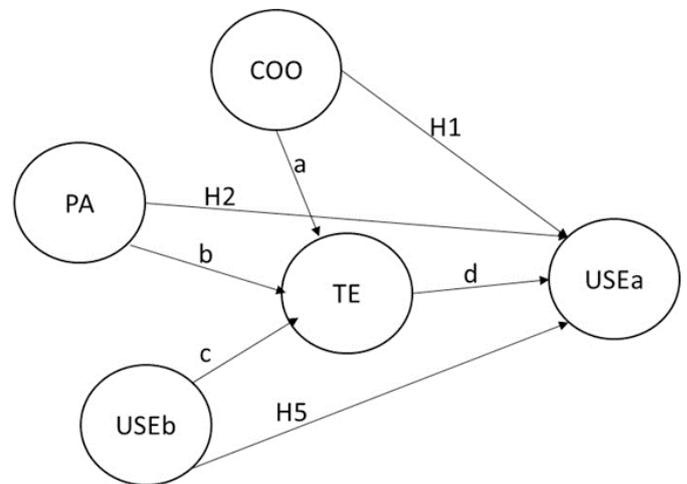
According to the theory of planned behaviour, behavioural intentions are predicted by attitudes, subjective norms and perceived behavioural control (Ajzen, 1991). Based on several meta-analyses, Ajzen (2011) suggests that past behaviour can also be an antecedent of people’s current intentions to perform a particular behaviour. Particularly, Carrus et al. (2008) found a positive direct effect between past behaviour and pro-environmental behavioural intentions related to using public transport and recycling household waste. In another study related to apartments booking, Küster and Pascual (2021) reported the determining role of previous experience through the significant direct effect on the intention of booking. Therefore, we anticipate that people who have already used sharing services before the pandemic will be more willing to participate in the same sharing activities at the present moment.

Hypothesis 5: Past sharing economy behaviour before the COVID-19 pandemic is positively associated with willingness to adopt the same behaviour during the COVID-19 pandemic.

Additional variables may explain the association between past behaviour and intentions, and this issue requires further research (Ajzen, 2011). Based on a meta-analytic approach, Ouellete and Wood (1998) distinguish two processes that could explain the association between past behaviour and future actions. When behaviour is regularly repeated, learned and becomes a habit, the direct effect will be stronger. However, when the context is unstable, unpredicted and complex, the association between past behaviour and the intention to continue to adopt it in the future may be explained by reasoning processes. In the shifting context of a pandemic, we would assume that future actions concerning sharing activities will depend on cognitive variables, particularly on the expected consequences of those behavioural responses based on recall of the positive consequences of past sharing experiences. Thus, we suppose that past sharing economy behaviour, before COVID-19, can be positively associated with transformation expectations, which positively predict the use of sharing services in the COVID-19 context. Therefore, the following mediating hypothesis is proposed:

Hypothesis 6: The association between past sharing economy behaviour before COVID-19 and willingness to adopt the same behaviour during the COVID-19 pandemic is mediated by transformation expectations.

The model representing all the hypotheses is presented in Figure 1.



- H1: COO → USEa
- H2: PA → USEa
- H3: COO → TE → USEa: ad
- H4: PA → TE → USEa: bd
- H5: USEb → USEa
- H6: USEb → TE → USEa: cd

Figure 1
Model proposal

Note: COO: Cooperation; PA: Pro-environmental attitudes; TE: Transformation Expectations; USEa: Willingness to use during COVID19; USEb: Willingness to use before COVID19.

Source: Own elaboration

3. METHODS

3.1. Procedure and Variables

The method of data collection was a survey, taking the form of a self-administered questionnaire consisting mainly of closed questions. To assess the willingness to participate in sharing economy activities, participants were asked to state how likely they were to use shared assets, namely a car and accommodation. Three questions (two for car sharing and one for accommodation sharing) were adapted from Böcker and Meelen (2017) and were rated on a seven-point Likert scale from 1 (Never) to 5 (Always). Respondents were invited to respond to each question, bearing in mind both the situation prior to COVID-19 and the current moment. Secondly, willingness to cooperate was assessed using seven items adapted from the Everyday Cooperation Scale (De Hooge et al., 2007), a one-dimensional measure of nine items developed to measure general cooperation tendencies. The items of "Support a person who is emotionally distressed" and "Help a person while others are watching the way I do everything" were not considered in the present study because their content was already reflected in two other items (i.e., "Comfort someone who is emotionally upset" and "Help a person while others are looking at me", respectively). Then, environmental consciousness was assessed by Parguel et al.'s (2017) measure, which includes three items to determine how much consumers consider ecological motives in purchasing-related decisions. Both cooperation and environmental awareness constructs were evaluated on a seven-point Likert scale ranging from 1 (Strongly disagree) to 7 (Strongly agree). Participants were asked to report their agreement with each item, considering how they usually think and act. Finally, transformation expectations were measured through Richins' (2013) scale, which was developed to assess how consumers believe that consuming or purchasing a certain product will bring significant positive transformations for them and their lives. The measure includes 14 items about potential changes in others' consideration about themselves (self-related dimension), interpersonal relationships quality (relational dimension), opportunities to have enjoyable moments (hedonic dimension), and perception of self-efficacy in daily life (efficacy dimension). Respondents were asked to indicate how much they agree with each statement if they engage in the sharing economy system and share goods or a service, using a seven-point Likert scale (1 = Strongly disagree to 7 = Strongly agree). In the present study, transformational expectations were operationalised as a one-dimensional construct. At the end of the questionnaire, demographic information was also collected regarding gender, age, level of education and area of residence. The list of constructs and items can be consulted in Appendix 2.

Data was collected through a service called Random Device Engagement (RDE) provided by the Pollfish company. RDE relies on advertising networks or other portals on devices to engage random people wherever they are (organic sampling). Through this methodology, respondents are asked to participate in a poll (in this case, our survey) in exchange for an incentive token that stays true to the philosophy of the app in which they are engaged. For example, respondents contacted via the popular mobile gaming App Harry Potter: Hogwarts Mystery can be reimbursed for survey participation with energy points, a crucial

currency of the game. Direct monetary incentives are also possible, such as the chance to win an Amazon gift certificate.

RDE samples are both random and organic (people are inquired where they are during their daily tasks, this is, on the apps they use daily) and target respondents' unique ID, which can be tracked across changing devices. It also allows defining criteria such as age, gender, level of education, hobbies or professional activities in order to obtain population depth. RDE detects fraudulent bots and suspicious activities at the question level detecting anything from nonsensical open-ended responses to questionnaires being answered too quickly. This type of sampling was considered adequate for the purpose of this research since individuals who participate in the sharing economy usually participate using electronic devices. In this study, we only used two criteria: age (above 18 years old) and country (the USA was the birthplace of several firms (e.g., Uber, AirBnB) connected to the sharing economy). Although we only used two criteria (age and Country), three initial screen questions (mentioned previously) were used to assure that respondents were involved in the sharing economy at least in one of three ways.

After collection, the data was statistically analysed and interpreted using PLS 3.0. Structural Equation Modelling (SEM) statistical software.

3.2. Participants

The sample composition is shown in Table 1. It consisted of 596 participants with a greater number of young and middle-aged respondents (18 to 45 years old); 56% are females. The majority have nine years (45.2) or 12 years (29.2) of schooling and live in urban (68.6) and coastal (60.7) areas.

Table 1
Sample composition

		n	%
Age	18-25	124	20.9
	26-35	189	31.8
	36-45	139	23.4
	46-55	61	10.3
	56-65	62	10.4
	66-75	15	10.4
	76-85	6	1.0
Gender	Male	262	44.0
	Female	334	56.0
Level of education	Until 4 years of school	42	7.0
	9 years of school	26	4.4
	12 years of school	272	45.6
	Bachelor	174	29.2
	Master	56	9.4
	Ph.D	26	4.4
Area of residence	Urban	409	68.6
	Rural	187	31.3
	Coast	362	60.7
	Inland	234	39.3

Source: Own elaboration.

4. RESULTS

The model was tested in two different analytical phases according to the recommendations set out by Chin (1998) and Hair et al. (2011). Firstly, the measurement model was analysed in order to verify whether the indicators for each construct were valid and robust for measuring the respective analytical constructs. This involves calculating: a) the composite reliability of each indicator's loadings; b) the average variance ex-

tracted (AVE), and c) the discriminant validity of the reflective constructs.

4.1. Measurement model

Table 2 presents the results for composite reliability, Cronbach's Alpha and AVE, after eliminating the COO5 variable due to not conforming to the required minimum, as recommended by Bagozzi and Yi (1998).

Table 2
Composite Reliability, Cronbach's Alpha and AVE

Construct and Sub-constructs	Indicator	Loadings Value	t Statistics	p Values	Composite Reliability	Alpha	AVE	
COO	COO1	0.860	59.738	0.000	0.930	0.924	0.724	
	COO2	0.824	35.812	0.000				
	COO3	0.863	57.074	0.000				
	COO4	0.856	54.129	0.000				
	COO6	0.840	43.174	0.000				
	COO7	0.864	52.802	0.000				
	PA	PA1	0.863	54.116				0.000
PA2		0.868	54.650	0.000				
PA3		0.889	87.016	0.000				
TE	TEE	TEE1	0.921	95.161	0.000	0.909	0.968	0.845
		TEE2	0.927	104.550	0.000			
		TEE3	0.910	86.246	0.000			
	TEH	TEH1	0.912	98.834	0.000	0.898	0.908	0.830
		TEH2	0.910	90.064	0.000			
		TEH3	0.911	96.451	0.000			
	TER	TER1	0.896	77.192	0.000	0.903	0.898	0.837
		TER2	0.926	108.001	0.000			
		TER3	0.922	112.145	0.000			
	TES	TES1	0.831	51.153	0.000	0.914	0.902	0.742
		TES2	0.882	80.614	0.000			
		TES3	0.867	70.537	0.000			
		TES4	0.880	71.386	0.000			
		TES5	0.846	55.625	0.000			
	USEa	ACCOaU	0.899	91.728	0.000	0.859	0.856	0.776
CARaU		0.876	58.272	0.000				
RIDEaU		0.869	66.070	0.000				
USEb	ACCObU	0.891	88.776	0.000	0.840	0.838	0.755	
	CARbU	0.849	49.015	0.000				
	RIDEbU	0.867	63.930	0.000				

Notes: COO: Cooperation; PA: Pro-environmental attitudes; TE: Transformation Expectations; USEa: Willingness to use during COVID19; USEb: Willingness to use before COVID19.

Source: Own elaboration.

As seen in Table 2, all the construct loadings return results in excess of 0.7 and hence in keeping with the recommendations of Hair et al. (2011). This means that all indicators are suitable to measure the construct they belong to and able to represent the inherent constructs. Table 3 also shows the reliability for all constructs is good,

as the results for composite reliability and Cronbach's alpha return values above 0.7 as recommended by Bagozzi and Yi (1998). The average extracted variance (AVE) also presents values better than 0.5, as suggested by Bagozzi and Yi (1998), meaning that all constructs capture more than 50% of the variance.

Table 3
Heterotrait-Monotrait Ratio (HTMT)

Constructs	COO	PA	TE	USEa	USEb
COO					
PA	0.688	—			
TE	0.428	0.549	—		
USEa	0.258	0.400	0.498	—	
USEb	0.505	0.594	0.549	0.691	—

Notes: COO: Cooperation; PA: Pro-environmental attitudes; TE: Transformation Expectations; USEa: Willingness to use during COVID19; USEb: Willingness to use before COVID19.

Source: Own elaboration.

Discriminant validity was analysed using the Heterotrait-Monotrait Ratio (HTMT) criterion (Table 3). All HTMT indices are lower than 0.9 (Henseler et al., 2015).

4.2. Structural model

According to Hair, Risher et al. (2019) and Hair, Sarstedt et al. (2019), primary assessment of the structural model is carried out considering two assessment criteria, namely determination of the coefficient statistic (R²), which measures the degree of model adjustment, and the statistical significances of the path coefficients. Analysing the values presented in Table 4, the results show that the structural model presents a R² of 38.5%.

Table 4
Construct effects on endogenous variables

	Path coefficient	Confidence intervals (95%)		p-value	R ² (dependent construct)
		5% CIlo	95% CIhi		
Direct effect					
COO à USEa (H1)	-0.114 (*)	-0.186	-0.044	Yes (.003)	.385
PA à USEa (H2)	0.042	-0.055	0.128	No (.369)	
USEb à USEa (H5)	0.496 (*)	0.408	0.586	Yes (.000)	
Indirect effect					
COO à TE à USEa (H3)	0.025	0.000	0.052	No Mediation (.067)	
PA à TE à USEa (H4)	0.068 (*)	0.036	0.106	Full mediation (.000)	
USEb à TE à USEa (H6)	0.075 (*)	0.034	0.379	Partial mediation (.000)	

Notes: COO: Cooperation; PA: Pro-environmental attitudes; TE: Transformation Expectations; USEa: Willingness to use during COVID-19; USEb: Willingness to use before COVID-19. * p < .05; ** p < .01; *** p < .001

Source: Own elaboration.

Henseler et al. (2009) refer that bootstrapping (5000 resamples) produces standard errors and t-statistics to measure the statistical significance of the path coefficients and confidence intervals. Since PLS-SEM is a non-parametric technique, the percentile bootstraps at the 95% confidence interval are presented in Table 4. The table shows that concerning direct effects, the direct effect of cooperation on willingness to participate in sharing economy activities during COVID-19 is significant but negative, thus not supporting Hypothesis 1. The direct effect of past sharing economy behaviour before the COVID-19 pandemic on willingness to adopt the same behaviour during COVID-19 is significant and positive, thus supporting Hypothesis 5. H2 (pro-environmental attitudes are positively associated with willingness to participate in sharing economy activities during COVID-19) was not supported. Concerning indirect effects, the results show that the mediating role of transformation expectations was supported for Hypothesis 4 (the association between pro-environmental attitudes and willingness to participate in sharing economy activities during the COVID-19 pandemic is mediated by transformation expectations). The mediating effect of transformation expectations on the relationship between past sharing economy behaviour before COVID-19 and willingness to adopt the same behaviour during COVID-19 (Hypothesis 6) was partly supported. Finally, the mediating effect of transformation expectations on the association between cooperation and willingness to participate in sharing economy activities during COVID-19 (Hypothesis 3) was not supported. Figure 2 presents the final estimated model.

The final model is represented in Figure 2.

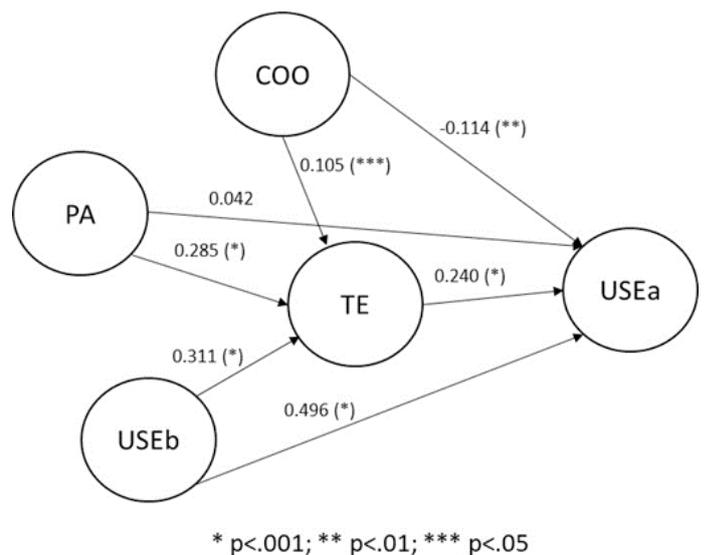


Figure 2
Final model

Note: COO: Cooperation; PA: Pro-environmental Attitudes; TE: Transformation Expectations; USEa: Willingness to use during COVID19; USEb: Willingness to use before COVID19.

Source: Own elaboration.

5. DISCUSSION

This study presented a sharing economy model proposal to test user behaviour considering two scenarios: before and during the COVID-19 pandemic. The primary aim of this research was to analyse the association between psychosocial variables (i.e. cooperation, environmental awareness, past behaviour) and sharing economy behaviour, particularly the use of shared assets (i.e. cars and accommodation) during the COVID-19 pandemic.

First, the results showed that cooperation influenced the willingness to share a car and accommodation during the COVID-19 pandemic. However, contrary to what was expected, according to Bucher *et al.* (2016) and Wilhelms *et al.* (2017), the association was negative, and Hypothesis 1 was not supported. This finding might be due to the perceived health risk and possible adverse effects not only for the individual but also for other people when thinking about helping or supporting others through sharing assets. In fact, sharing economy customers indicated fear of COVID-19' consequences and difficulties maintaining safety precautions, such as social distancing, as possible reasons for stopping using sharing services (Hossain, 2021). We can also point out that, apparently, sharing activities might be more related with self-interests than collective interests, as pointed out by Böcker and Meelen (2017), and therefore, without individual gains, cooperation may not happen. This idea can reinforce the conclusion of Hartl *et al.* (2016), who calls for more research on the problem of cooperation in the scope of the sharing economy, namely on how to encourage cooperation by either monitoring and/or sanctioning defection.

Second, the results also show that pro-environmental attitudes seem to lose influence on sharing behaviour during pandemics, contrary to what was found before the pandemic (Hartl *et al.*, 2020; Styvén & Mariani, 2020). Thus, Hypothesis 2 was not supported. This result is not completely surprising since motivations can change over time, and individuals may feel more pressure to be more environmentally friendly during a specific period and on other occasions to act due to security or economic reasons (Böcker & Meelen, 2017). There is empirical evidence that the COVID-19 pandemic impacts individuals' attitudes, values and expectations, leading to significant changes in consumption and buying patterns (e.g., Di Crosta *et al.*, 2021; Watson & Popescu, 2021). More studies are necessary to analyse the modifications due to the pandemic in the participation of customers in different types of sharing economies.

According to what was predicted by the theory of planned behaviour (Ajzen, 2011), past behaviour influenced current intentions. The results obtained confirmed Hypothesis 5 prevision since the past sharing economy behaviour before COVID-19 was positively associated with the willingness to adopt the same sharing behaviours during COVID-19. Considering all the predictors, findings revealed that past sharing behaviour has the strongest influence on willingness to share cars and accommodation during the pandemic. These findings corroborate previous research (e.g., Carrus *et al.*, 2008) and contribute to theoretically reinforcing the role that theory of planned behaviour has been having in predicting several behaviours throughout the years.

Moreover, the present study intended to analyse the mediating role of transformation expectations since the choice to

adopt or not sharing behaviours can be explained by the beliefs about the effects of those actions from the user's perspective. Contrasting to empirical findings (e.g., Davidson *et al.*, 2018), the present results showed that transformation expectations did not mediate the association between cooperation and willingness to participate in sharing economy activities during COVID-19 and Hypothesis 3 was not supported. In line with what we suggested before, sharing behaviour could be avoided due to the awareness of the possible risks of cooperating through sharing assets. However, the mediating effect of transformation expectations is total and significant concerning the association between pro-environmental consciousness and willingness to adopt sharing behaviour during COVID-19, according to the predictions of Hypothesis 4. In fact, results suggest that pro-environmental motivations positively predict the predisposition to engage in sharing activities only through the increase of transformational expectations. The expected consequences in terms of meaningful changes for individuals and their personal quality of life derived from sharing objects raise the willingness to share with others, indicating that individualistic motives could explain the adoption of accommodation and car sharing economy behaviours, as already suggested by previous studies (e.g., Davidson *et al.*, 2018). Finally, the mediating effect of transformation expectations on the association between past sharing economy behaviour before COVID-19 and willingness to adopt the same behaviour during COVID-19 is significant and partial. Hence, Hypothesis 6 was partially supported by the results. Again, these findings show that economy sharing behaviours, similarly to other prosocial actions that do not involve close others, may be driven by egoistic, more than collectivistic motives (Maner & Gailliot, 2007). The fulfilment of these personal expectations may reinforce sharing behaviours, increasing the probability of these actions occurring in the future.

6. PRACTICAL IMPLICATIONS

The current findings have important practical implications. We consider this research gives novel conceptual reinforcement to previous research on the sharing economy and introduces a new contextual variable, a pandemic, which causes fear and uncertainty in people's lives.

Pro-environmental attitudes were not an indicator of engagement in sharing economy activities during COVID-19. The results show that critical events, like pandemic situations, can radically change people's behaviours. Only recalling people about the potential effects of their behaviours on their individual lives can lead them to return to previous behaviours. In the face of a pandemic situation, people might modify their behaviour and, since past behaviour is the greater predictor of future behaviour, a change now might lead to the adoption of different behaviours in the future and the development of new consumer habits. In this sense, providers of this type of service may tend to emphasise the individual benefits people might obtain by using these services, especially in the context of a pandemic. They can also develop loyalty mechanisms that allow people to reinforce their behaviour, which in the future will act as the main behaviour influencers. Furthermore, promoting the transformation expectations could also bring ad-

ditional challenges to providers, and, more specifically, to those providing car and accommodation services, since the expectations about the benefits that can be obtained, predominantly the individualistic ones, influence people's behaviour.

Additionally, appealing to individual environmental consciousness could also be an effective approach. Further, associating sharing economy activities to a pro-environmental lifestyle, which is socially attractive and generally encouraged, can also contribute to behavioural change as an incentive for new users or reinforcement for existing ones. In fact, considering Wilson *et al.*'s (2020) typology, sharing economy behaviours (i.e., car and accommodation sharing services) could be considered as an incremental environmental adaptation behaviour, defined by short-term and short-scale activities that involve minimal costs to the individual and provide only private benefits. Contrastingly, transformative pro-environmental actions have a long-term and large-scale impact and present high personal costs and collective benefits. Based on this framework, Mudaliar *et al.* (2021) found that although people show environmental concerns, they tend to engage primarily in incremental actions, which have personal advantages, mostly related to green consumption and saving resources. Thus, further research is needed to ascertain both personal and collective pro-environmental motives that foster participation in sharing economy activities and the barriers that can inhibit engaging in those practices, particularly during and after the COVID-19 pandemic.

7. LIMITATIONS AND FURTHER RESEARCH

The cross-sectional nature of our research, in addition to being a non-experimental study, makes it difficult to establish causal relationships between variables. In fact, it is not possible to attribute the economy sharing behavioural differences before/during the pandemic exclusively to this event. It would be necessary to perform longitudinal research to assess attitudinal and behavioural changes during the pandemic. Further studies should examine other mediating and moderating variables, such as materialism, lifestyle and trust, as well as control variables, such as geographical location (e.g., urban/rural) or demographics (e.g., age, level of education, income). Additionally, it would be pertinent to carry out this study in different geographical locations to capture not only behavioural differences but also the level of development of these activities. Thus, samples of individuals from European countries could be used, comparing consumers' willingness to engage in sharing economy activities. In the near future, it will be necessary to study what can be learnt from consumers' experiences during this crisis and what this means for consumer policy in its various dimensions (i.e., psychological, social and emotional). Also, it would be recommendable to analyse the perspective from the provider point of view.

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APPENDIX 1

Table A1.1
 Synthesis of previous studies focused on Sharing Economy

Authors	Study's title	Main focus
Belk (2014)	"You are what you can access: Sharing and collaborative consumption online"	Sharing economy and the impact of the online.
Böcker and Meelen (2017)	"Sharing for people, planet or profit? Analysing motivations for intended sharing economy participation"	General motivations to participate in the sharing economy.
Bucher <i>et al.</i> (2016)	"What's mine is yours (for a nominal fee): Exploring the spectrum of utilitarian to altruistic motives for Internet-mediated sharing"	Internet-mediated sharing and altruistic motivations.
Davidson <i>et al.</i> (2018)	"Materialism and the sharing economy: A cross-cultural study of American and Indian consumers"	Participation in sharing-based programs and cross cultural differences.
Godelnik (2017)	"Millennials and the sharing economy: Lessons from a 'buy nothing new, share everything month' project"	Engagement with the sharing economy through experiential learning.
Hartl <i>et al.</i> (2020)	"Take me on a ride: The role of environmentalist identity for carpooling"	Environmental variables and carpooling.
Küster and Pascual (2021)	"Non-monetary price perceived in e-peer-to-peer accommodation. Airbnb guests' perspective"	Airbnb booking and non-monetary costs.
Parguel <i>et al.</i> (2017)	"Sustainability of the sharing economy in question: When second-hand peer-to-peer platforms stimulate indulgent consumption"	Second-hand sharing platforms and consumer behaviour.
Styvén and Mariani (2020)	"Understanding the intention to buy second hand clothing on sharing economy platforms: The influence of sustainability, distance from the consumption system, and economic motivations"	Second-hand sharing and responsible, sustainable consumption.
Wilhelms <i>et al.</i> (2017)	"To earn is not enough: A means-end analysis to uncover peer providers' participation motives in peer-to-peer car sharing"	Car sharing and motivation to participate.

Source: Own elaboration.

APPENDIX 2

Table A2.1
Constructs and Items

Construct	Items
Willingness to use USEa – during COVID19 USEb – before COVID 19	Imagine you temporarily need a car, and the possibility exists to rent a car in the neighbourhood Imagine you need to go somewhere, and someone in your neighbourhood offers you a lift in his/her car for a fee Imagine you are travelling, and local residents offer the possibility to rent their home
Pro-environmental attitudes (PA)	When possible, I systematically choose the product that has the lowest impact on the environment. I try not to buy from companies that strongly pollute. When I have the choice between two equivalent products, I always question which one pollutes less before buying.
Cooperation (COO)	I'm willing to help an unknown other. I'm willing to help a person while others are looking at me. I'm willing to comfort someone who is emotionally very upset. I'm willing to help a person when (s)he does not know who is helping. I'm willing to help a person while I get in the spotlight as a consequence. I'm willing to help a person without him/her knowing. I'm willing to help someone who hurt him/herself.
Transformation Expectations (TE)	Other people would respect me more. I would feel like a more important person. I'd feel more self-confident. I would become more attractive to other people. My appearance would be improved I would become closer with other people I would have more or better quality time with people I care about I'd have better relationships with others I would have more fun I'd have more interesting things to do I'd enjoy life more I would be better able to carry out my responsibilities I'd be more effective in my work or daily life I would be more efficient in the way I use my time

Source: Own elaboration.