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INTRINSIC AND EXTRINSIC MOTIVATIONS IN SHARING ECONOMY POST-ADOPTION

Antonela Sofia Cordeiro Calado

Dissertation presented as partial requirement for obtaining the Master's degree in Information Management

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by

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Dissertation presented as partial requirement for obtaining the Master's degree in Information Management, with a specialization in Marketing Intelligence

Advisor: Professor Doutor Tiago André Gonçalves Félix de Oliveira

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DEDICATION

To my family and friends, for their unconditional support.

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ABSTRACT

The fast advancement of communications, mobile technologies, and the proliferation of smart devices has increased the importance of sharing economy. Nowadays it offers several opportunities for consumers. The debate about this new consumption is increasing all over the world. We developed an integrated model by examining how intrinsic and extrinsic motivations influenced consumers' intentional behavior in the context of sharing economy. We proposed a theoretical model based on the self-determination theory and the most representative constructs from literature review, providing new insights for the participation in sharing economy and how it influences consumers. To test the conceptual model we collected data from 256 respondents. The study investigates the determinants of post-adoption, i.e., users' behavior and continuance intention to use in sharing economy. The results show that participation in sharing economy is motivated by several determinants. Enjoyment, social influence, sustainability, economic benefits, utility, and mobile device capability were found important in explaining users' behavior. Enjoyment, community, economic benefits, utility, mobile device capability, and user behavior were found important in continuance intention to use sharing economy. This shows the importance of intrinsic and extrinsic motivations in the explanation of user behavior and continuance intention to use sharing economy.

KEYWORDS

RESUMO

O rápido avanço das comunicações, tecnologias móveis e a proliferação de dispositivos inteligentes tem aumentado a importância da economia de partilha. Hoje em dia, esta apresenta várias oportunidades para os consumidores. O debate sobre este novo consumo está a aumentar no mundo inteiro. Desenvolvemos um modelo integrado, examinando como as motivações intrínsecas e extrínsecas influenciam o comportamento intencional dos consumidores no contexto da economia de partilha. Propusemos um modelo teórico baseado na teoria de autodeterminação e nos itens mais representativos de revisão literária feita, proporcionando novas perspetivas para a participação na economia de partilha e como esta influencia os consumidores. Para testar o modelo conceitual foram recolhidos dados de 256 respondedores. O estudo investigou os determinantes da pós-adoção, ou seja, o comportamento do utilizador e a intenção de continuar a usar a economia de partilha. Os resultados mostram que a participação na economia de partilha é motivada por vários determinantes. Prazer, influência social, sustentabilidade, benefícios económicos, utilidade e capacidade de dispositivos móveis revelaram-se importantes para explicar o comportamento dos utilizadores. Prazer, comunidade, benefícios económicos, utilidade, capacidade dos dispositivos móveis, e o comportamento do utilizador revelaram-se importantes na intenção continuar a usar a economia de partilha. Isto mostra a importância das motivações intrínsecas e extrínsecas na explicação do comportamento do utilizador e da contínua intenção de utilizar a economia de partilha.

PALAVRAS-CHAVE

Economia de partilha; Consumo colaborativo; Teoria de autodeterminação; Motivações intrínsecas; Motivações extrínsecas.

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ACRONYMS AND ABBREVIATIONS

AVE   Average variance extracted

ICT   Information and communications technologies

PLS   Partial least squares

SDT   Self-determination theory

SEM   Structural equation modeling

1. INTRODUCTION

Described as the non-monetary transfer of goods between actors (Krush, Pennington, Fowler and Mittelstaedt, 2015), sharing is a fundamental consumer behavior that we have either tended to overlook or to confuse with commodity exchange and gift giving (Belk, 2010). The public perception of shared goods has changed substantially in the past few years (Cohen and Kietzmann, 2014). It has become important again thanks to the Internet and, most recently, to the mobile devices, such as tablets and smartphone's (Belk, 2010). This new information and communications technologies (ICT) have enabled the rise of the peer-to-peer-based activity of obtaining, giving, or sharing the access to goods and services, coordinated through community-based online services (Hamari, Sjöklint, and Ukkonen, 2015). With the growing consumer preference for sharing products and services, the notion of sharing bikes, cars, or clothes on an on-demand basis started to gain widespread popularity, enabling the growing of sharing economy at an impressive rate across the globe (Cohen and Kietzmann, 2014).

Earlier studies (see Appendix A) have mentioned several determinants for consumers to choose this type of consumption instead of the traditional one. Some of them have addressed the same determinants to adopt sharing economy and collaborative consumption, mostly in social, economic, environmental, and practical areas. Since rare studies have addressed the adoption of sharing economy (Möhlmann, 2015) and there is a lack of knowledge concerning the reasons why consumer engage in this new type of economy, the purpose of this study is to understand the user behavior and the continued intention to use this type consumption. No study has conducted a holistic evaluation of the intrinsic and extrinsic motivations on the post-adoption of sharing economy and the continuance intention to use it. To fill this gap, this study will be able to empirically test a research model that integrates the self-determination theory (SDT) framework with the most representative determinants from the literature reviewed. Thus, the contribution of the article is twofold. First, to investigate the intrinsic and extrinsic motivations of consumers on the post-adoption of sharing economy, with a more holistic assessment of the determinants than earlier studies. Second, by investigating the continuance intention to use sharing economy, we contribute to the wider body of scientific knowledge that has so far not studied the post-adoption of sharing economy.

Following this introduction there is an overview of the theoretical literature and prior research on the sharing economy field. The conceptual model with the motivations for choosing sharing economy and hypotheses is then conceptualized. Next, the methodology is provided with a quantitative survey to test these hypotheses. The paper ends with the discussion of the results, including the implications for theory and management, and further possible research directions are outlined.

2. THEORETICAL BACKGROUND

People are now able to share and access to products and services among each other, not only inside their family and friends circle, but also with people that they never heard about it before (Tussyadiah, 2015). This new opportunity opened a host of new means for self-extension, using new consumption objects to reach a vastly broader audience (Belk, 2013). This modern phenomenon of the so-called sharing economy is affecting the global economy with increasing scale (Balck and Cracau, 2015), particularly because of the new possibilities offered in the digital world (Belk, 2013).

As mobile computing becomes increasingly pervasive, commercial opportunities for new forms of sharing economy are likely to emerge (Harvey, Smith, and Golightly, 2014). With these new changes, an enormous number of online platforms started to help exchange commodities in an organized way (Balck and Cracau, 2015). These innovative platforms and the increasing consumer approval are helping individuals to find easy ways to monetize goods and services and to purchase directly from one another at lower cost and at greater convenience (Böckmann, 2013). The current wave of digital technologies is fundamentally changing consumer behavior (Belk, 2013).

2.1. SHARING ECONOMY

The shift to access, instead of owning, is giving new opportunities to share (Böckmann, 2013). When people lend and borrow assets, rather than purchase and own them, a different process of a transaction and product exchange is delivered, relying on peer-to-peer to relationships (Kim, Yoon, & Zo, 2015). These processes became known as the sharing economy.

Sharing economy is an economic model based on sharing underutilized assets from spaces to skills to stuff for monetary or non-monetary benefits (Botsman & Rogers, 2010), through online platforms (Hamari et al., 2015). Also known as 'asset-light lifestyle', 'peer economy', 'access economy', or 'shared economy' (Böckmann, 2013), this new economy is based on websites and applications, which are platforms where individuals can share products or services (Dillahunt and Malone, 2015). Because of these dominant online websites (Kim et al., 2015), sharing economy is also known as an IT-enabled phenomenon (Sach, 2015). Consumers benefit from the sharing economy by renting goods at lower cost or with lower transaction overhead than buying or renting through a traditional provider (Byers, Proserpio, and Zervas, 2013).

Since there is no universally accepted definition of the sharing economy, in this study we assumed the definition of sharing economy based on Hamari et al. (2015, pp. 1-2), that specifies it "as an umbrella concept that encompasses several ICT developments and technologies, among others collaborative consumptions, which endorses sharing the consumption of goods and services through online platforms".

2.2. SHARING ECONOMY AND COLLABORATIVE CONSUMPTION ADOPTION

Earlier studies on sharing economy and collaborative consumption have mentioned several determinants for consumers to choose this type of consumption. Some studies have addressed the same factors to adopt sharing economy and collaborative consumption. We determined the most representative factors evaluated in the published literature, then identified and examined each construct to determine its applicability to sharing economy (see Appendix A). To identify the constructs of the integrative research model we used SDT framework.

2.3. SELF-DETERMINATION THEORY (SDT)

Self-determination theory (SDT) is an empirically derived theory of human motivation and personality in social contexts, that differentiates motivation in terms of being autonomous and controlled (Ryan and Deci, 2000). In SDT framework, Ryan and Deci (2000) distinguished between three different types of motivation based on the different reasons or goals that rise to an action: intrinsic, extrinsic and the amotivation. For this study, and based on literature review, we only considered intrinsic and extrinsic motivations. Since intrinsic motivation reflects the natural human propensity to learn and assimilate (Ryan and Deci, 2000), we addressed social and environmentalism sustainability contexts into the intrinsic motivations group. Extrinsic motivation is argued to vary considerably in its relative autonomy and thus can either reflect external control or true self-regulation (Ryan and Deci, 2000). By this, we addressed economic and practical contexts in extrinsic motivations group.

Table 1 summarizes the most representative constructs to adopt sharing economy. There we find the factors of each investigation in explaining the participation in sharing economy and collaborative consumption, by the author.

Constructs	(Botsman & Rogers, 2010)	Ozanne and Ballantine, 2010	Moeller and Wittkowski, 2010	Wen, Prybutok, and Xu, 2011	Lamberton and Rose, 2012	Albinsson and Yasanthi Perera, 2012	Owyang, J., Tran, C., and Silva, 2013	Böckmann, 2013	Schor, 2014	Kim et al., 2015	Hamari et al., 2015	Matzner et al., 2015	Möhlmann 2015
													Source
Enjoyment	X			X									
Trust				X						X	X	X	X
Satisfaction				X									X
Community	X	X				X	X	X					X
Environmental impact			X			X			X			X	X
Environmental Consciousness	X	X					X						
Sustainability		X					X					X	
Economic Benefits			X				X	X		X	X	X	
Costs Savings	X	X			X								X
Monetization							X	X					
Utility				X	X	X							X
Convenience			X										
Internet Capacity	X						X					X	X
Mobile Device Capability								X					X

Table 1 – Constructs for participation behavior in sharing economy and collaborative consumption

3. RESEARCH MODEL AND HYPOTHESES

The integrative research model is shown in Figure 1. Although literature review allows us to have 14 constructs (Table 1), after first analysis of the data collected, we removed identical statistical construct values. We eliminate satisfaction (similar to enjoyment), environmental impact and environment consciousness (similar to sustainability), cost savings (similar to economic benefits and monetization), and convenience (similar to utility). By combining the intrinsic and extrinsic motivations of SDT, and the most representative constructs from the reviewed literature, we developed an integrated model to examine which motivations influence user behavior and continuance intention to use sharing economy. As we can see in Figure 1, the intrinsic motivation is divided in two contexts: social (enjoyment, trust, community, and social influence) and environmental sustainability (sustainability). The extrinsic motivation is also divided in two contexts: extrinsic (economic benefits and monetization) and practical (utility, Internet capability, and mobile device capability).
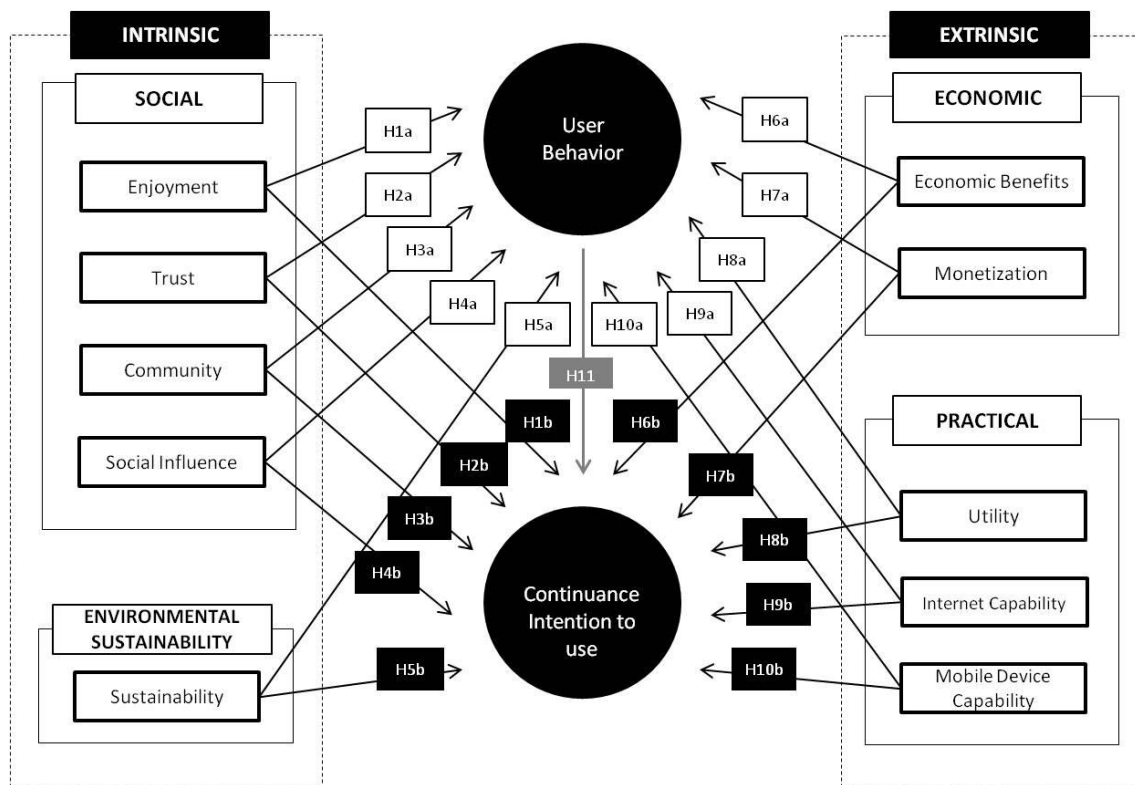

Figure 1 - The research model

3.1. HYPOTHESES OF THE SOCIAL CONTEXT

Enjoyment , conceptualized as an emotion tied to improvement of one's condition, is likely to react very strongly to the degree of self-approval (Lindenberg, 2001). Having fun or enjoying oneself when taking part in an activity is at the core of the idea of intrinsic motivation (Ryan

and Deci, 2000). Driven by enjoyment, online sharing has been regarded as an important factor in information sharing on the Internet services (Hamari et al., 2015). By this, we hypothesized that:

H1a. Enjoyment positively influences user behavior to choose sharing economy.
H1b. Enjoyment positively influences continuance intention to use sharing economy.

Trust is the behavioral intention of willingness to act (Morgan and Hunt, 1994) and one of the most influential factors explaining consumer adoption in a variety of information systems (Hamari et al., 2015). Trust becomes an essential prerequisite for customer relationship building (Papadopoulou, Andreou, Kanellis, and Martakos, 2001) and is a more important factor in Internet technology acceptance than is off-line environment acceptance, particularly when purchasing is involved (Yang, Lee, Park, and Lee, 2014). In sharing economy users voluntarily share goods with others on the basis of trust, which significantly differentiates commercial sharing systems from existing rental services (Hamari et al., 2015). Thus, it is hypothesized that:

H2a. Trust positively influences user behavior to choose sharing economy.
H2b. Trust positively influences continuance intention to use sharing economy.

Without community, we are isolated, disconnected, and unable to unite towards common goals (Albinsson and Yasanthi Perera, 2012). Through community interaction and the use of network technologies (Owyang et al., 2014), online community perpetuates (Krush et al., 2015) and sharing economy grow. This leads to hypothesize the following:

H3a. Community belonging positively influences user behavior to choose sharing economy.
H3b. Community belonging positively influences continuance intention to use sharing economy.

Customers are not just using social technologies to share their activities, opinions, and media, but also to share goods and services (Owyang et al., 2013). New technologies of peer-to-peer economic activity are potentially powerful tools for building a social movement centered on genuine practices of sharing and cooperation (Schor, 2014). Defined as the degree to which an individual perceives that important others believe he or she should use the new system, social influence is a direct determinant of behavioral intention (Venkatesh, Morris, Gordon, & Davis, 2003). Hence, the fifth hypothesized reads:

H4a. Social influence positively affects user behavior to choose sharing economy.
H4b. Social influence positively affects continuance intention to use sharing economy.

3.2.   HYPOTHESES OF THE ENVIRONMENTAL SUSTAINABILITY CONTEXT

In sharing economy context, the potential to reduce consumption and support greater environmental sustainability has also been emphasized (Stokes, Clarence, Anderson, and Rinne, 2014). Understanding consumer behavior and how to bring about change is deemed

essential to reduce the environmental impact of consumption (Piscicelli, Cooper, & Fisher, 2015). By this, we hypothesize that:

H5a. Sustainability positively influences user behavior to choose sharing economy.
H5b. Sustainability positively influences continuance intention to use sharing economy.

3.3. HYPOTHESES OF THE ECONOMIC CONTEXT

Sharing economy is competitive in quantifiable economic benefit, providing improved use of assets, which add distinctive rivalry compared to the traditional economy (Kim et al., 2015). Benefits can be saved money, facilitating access to resources, and free-riding (Hamari et al., 2015). Hence, we hypothesized that:

H6a. Economic benefits positively influence user behavior to choose sharing economy.
H6b. Economic benefits positively influence continuance intention to use sharing economy.

One of the foundations of sharing was the excess capacity monetization of personal property, such as homes, cars, bicycles, driveways, skills, or other assets (Li, 2015). Idle resources, which are robust and stay in good shape for long, can now be shared and often monetized (Böckmann, 2013). This leads us to the following hypothesis:

H7a. Monetization positively influences user behavior to choose sharing economy.
H7b. Monetization positively influences continuance intention to use sharing economy.

3.4. HYPOTHESES OF THE PRACTICAL CONTEXT

Research has found that utility influences an individual's consumption decisions and habits (Möhlmann, 2015). Individuals having resources with idling capacity during some time and being able to maximize the utility of these resources is what helps the sharing economy function (Dillahunt and Malone, 2015). As the costs of sharing are minimized and utility is maximized relative to owning, propensity to choose a sharing system will rise (Lamberton and Rose, 2012). This leads us to the following hypothesis:

H8a. Utility positively influences user behavior to choose sharing economy.
H8b. Utility positively influences continuance intention to use sharing economy.

The Internet has opened up a new era in sharing (Belk, 2014). Being a participatory network, the Internet is a platform itself (Choudary, 2013), that facilitates scheduling the sharing among participants, borrowing and lending (Belk, 2014). Sharing enables individuals to obtain rides, accommodations, and other goods and services from peers via the Internet or mobile application (Li, 2015). Therefore, we hypothesize that:

H9a. Internet capability positively influences user behavior to choose sharing economy.
H9b. Internet capability positively influences continuance intention to use sharing economy.

Recent technological advances in online and mobile communications have enabled collaborative consumption or product sharing among consumers on a massive scale (Jiang and Tian, 2015). Increasing development in information communication technology led to huge attention over smartphones (Hassan, Kouser, Abbas and Azeem, 2014) and tablets. This new equipment has helped to facilitate product sharing among consumers on an unprecedented scale (Jiang and Tian, 2015). This leads us to the following hypothesis:

H10a. Mobile device capability positively influences user behavior to choose sharing economy. **H10b.** Mobile device capability positively influences continuance intention to use sharing economy.

All ten determinants are conceptualized to have an effect on the endogenous variable user behavior. This core element is modeled to have a positive influence in continuance intention to use sharing economy. Therefore, we hypothesize that:

H11. User behavior has a positive influence on continuance intention to use sharing economy.

4. RESEARCH METHODOLOGY

4.1. MEASUREMENT INSTRUMENTS

To evaluate the research (Figure 1), a survey was conducted based on previously published literature (see Appendix B). The measurement instrument was tested among a small sample (pilot study with 30 respondents) that wasn't included in the main survey. The objective was to examine whether the respondents had difficulty in answering the questionnaire, as well as test the reliability and validity of the scales. The results of this pilot study showed evidence of the reliability and validity of the scales. Since the questionnaire was administered in Portugal, the English version of the instrument was independently translated into Portuguese by a professional translator. It contained two distinct sections: literature data constructs and general information and demographic characteristics.

To be consistent with the sources, ten constructs (enjoyment, trust, community, social influence, sustainability, economic benefits, monetization, utility, Internet capability, mobile device capability) were measured on an interval level ranging from ''strongly disagree'' to ''strongly agree'', user behavior from "have not used" to "several times a month" and continuance intention to use from "very unlikely" to "very likely". All items were measured using a seven-point range scale and the survey also included questions relating to age, gender, and education.

Based on Table 1, and after a first analysis of the data collected, which included examining missing data, suspicious response patterns, outliers, and data distribution (Hair, Hult, Ringle, and Sarstedt, 2014) some items were dropped to reduce the instrument length and ambiguity and to simplify interpretation. The most important changes were the elimination of satisfaction (similar to enjoyment), environmental impact and environment consciousness (similar to sustainability), cost savings (similar to economic benefits and monetization) and convenience (similar to utility). Thus, we adjusted the research model and the hypotheses.

4.2. DATA COLLECTION

Data were collected using an online version of the questionnaire, between July and August 2016. To target respondents and to increase content validity, we provided a clear description of sharing economy and gave examples. To test the questionnaire, a pilot study was conducted among a group of 30 individuals, which were not included in the main survey. 307 responses were received and 51 were removed due to incompleteness, leaving 256 valid responses (143 early respondents and 113 late respondents). To test the non-response bias we compared the early and the late respondent groups using Kolmogorov–Smirnov (K–S) test (Ryans, 1974). The results revealed an absence of non-response bias and the sample distributions of the two groups was not statistically significantly different (Ryans, 1974) (see Table 2). We examined the common method bias in two ways. First, we used Harman's one-factor test and found that none of the factors individually explained the majority of the variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), i.e., the first factor explains 40%of the variance. Second, we used a marker-variable technique (Lindell & Whitney, 2001), which showed a theoretically irrelevant

marker variable in the research model, having 2.0% as the maximum shared variance with other variables. This value can be considered as low (Johnson, Rosen, & Chang, 2011). The results showed that no significant common method bias was found.

Constructs	Early (n=143)		Later (n=113)		Kolmogorov–Smirnov (K–S)
	Mean	S.D.	Mean	S.D.	P-value
Enjoyment (Enj)	4.924	1.078	4.979	1.307	0.519
Trust (Tru)	4.586	1.132	4.782	1.138	0.279
Community (Com)	4.402	1.230	4.618	1.377	0.134
Social Influence (SI)	3.658	1.359	3.513	1.465	0.321
Sustainability	4.954	1.258	4.821	1.497	0.552
Economic benefits (EC)	5.069	1.294	4.941	1.485	0.985
Monetization (Mon)	5.103	1.278	5.053	1.222	0.968
Utility (Uti)	4.158	1.357	4.470	1.402	0.457
Internet Capability (IC)	6.270	1.044	6.112	1.141	0.325
Mobile Device Capability (MDC)	5.558	1.439	5.417	1.479	0.676
User Behavior (UB)	4.050	1.442	4.011	1.581	0.952
Continuance Intention (INT)	4.702	1.670	4.582	1.695	0.667

Table 2 – Early and late respondents

Detailed descriptive statistics on the respondents' characteristics are shown in Table 3. 50.8% of the respondents were men; almost 47% of respondents were aged over 35 years old, and 49.2% with a Bachelor's degree.

Measure	Value	Frequency	%
Gender	Female	126	49.2
	Male	130	50.8
Age	<20	3	1.2
	20-24	20	7.8
	25-29	35	13.7
	30-35	79	30.9
	>35	119	46.5
Education	None or high School	52	20.3
	Undergraduate degree	126	49.2
	Graduate degree	78	30.5

Table 3 - Descriptive statistics of respondents' characteristics

5. RESULTS

To evaluate the research model we used structural equation modeling (SEM) (Hox and Bechger, 1998), beginning with the measurement model to test the reliability and validity of the instrument and then analyzing the structural model (Anderson and Gerbing, 1988). The partial least squares (PLS) is a powerful statistical technique considered appropriate for many research situations (Henseler, Ringle, & Sinkovics, 2009), suitable for studying complex models with numerous constructs (Chin, 1998). Since the research is an early stage assessment of sharing economy and all items in the data are not normally distributed (p<0.01 based on Kolmogorov–Smirnov's test), the PLS is the most appropriate method for this study (Hair et al., 2014). The sample in our study consisted of 256 respondents and met the necessary conditions for using PLS. The statistical software SmartPLS 3 was used to estimate the model (Ringle, Wende, and Becker, 2015). Below, we present the measurement model assessment and structural model assessment.

5.1. MEASUREMENT MODEL

The measurement model was assessed for construct reliability, indicator reliability, convergence validity, and discriminant validity. Composite reliability was used to analyze the reliability of the constructs. As shown in Table 4, all the constructs have a composite reliability above 0.7 (Henseler et al., 2009), which indicates that the constructs are reliable. The indicator reliability was evaluated based on the criteria that the loadings should be greater than 0.70 (Henseler et al., 2009). As shown in Table 4, the loadings are greater than 0.7, except UB3, that is above the minimum required by 0.40 (Hair et al., 2014). This indicates that no items were eliminated. All the items were statistically significant at 0.001. Overall, the instrument presented good indicator reliability. The average variance extracted (AVE), was used as the criterion to test convergent validity. The AVE should be higher than 0.5 (Henseler et al., 2009). As shown in Table 4, all constructs have AVE higher than 0.5, this criterion is satisfied.

Constructs	Item	Loading	AVE	CR	CA	*t*-value
Enjoyment (Enj)	Enj1	0.875	0.751	0.923	0.889	16.353
	Enj2	0.848				16.885
	Enj3	0.881				18.805
	Enj4	0.862				16.008
Trust (Tru)	Tru1	0.916	0.784	0.916	0.862	17.138
	Tru2	0.861				11.755
	Tru3	0.879				13.744
Community (Com)	Com1	0.867	0.737	0.918	0.882	12.511
	Com2	0.874				12.834
	Com3	0.810				10.875
	Com4	0.880				13.341
Social Influence (SI)	SI1	0.899	0.762	0.905	0.840	13.606
	SI2	0.937				18.996
	SI3	0.775				9.574
Sustainability	Sus1	0.928	0.829	0.951	0.932	18.234
	Sus2	0.917				13.359
	Sus3	0.891				9.349
	Sus4	0.907				12.145
Economic benefits (EC)	EB1	0.937	0.848	0.944	0.911	26.129
	EB2	0.903				23.123
	EB3	0.923				24.018
Monetization (Mon)	Mon1	0.891	0.800	0.923	0.875	17.634
	Mon2	0.891				19.532
	Mon3	0.900				18.747
Utility (Uti)	Uti1	0.849	0.741	0.896	0.825	15.218
	Uti2	0.902				20.017
	Uti3	0.831				15.008
Internet Capability (IC)	IC1	0.966	0.924	0.973	0.959	24.995
	IC2	0.968				23.914
	IC3	0.950				19.491
Mobile Device Capability (MDC)	MDC1	0.964	0.926	0.974	0.960	32.368
	MDC2	0.969				36.092
	MDC3	0.955				27.711
User Behavior (UB)	UB1	0.881	0.644	0.878	0.814	20.309
	UB2	0.883				21.242
	UB3	0.699				11.980
	UB4	0.730				14.632
Continuance Intention (INT)	INT1	0.966	0.957	0.989	0.985	67.735
	INT2	0.986				81.817
	INT3	0.985				100.235
	INT4	0.975				80.758

Note: Average variance extracted (AVE), composite Reliability (CR), and Cronbach's alpha (CA).

Table 4 - Quality criteria and factor loadings

The discriminant validity of the constructs was assessed using Fornell-Larcker criteria and the examination of cross-loadings (Hair et al., 2014). Fornell-Larcker criteria postulate that the square root of AVE should be greater than the correlations between the construct (Fornell & Larcker, 1981). As shown in Table 5, the square roots of AVEs (diagonal elements) are higher than the correlation between each pair of constructs (off-diagonal elements). The cross-loadings (see Appendix C) allows verifying that loading are higher than cross-loadings (Henseler et al., 2009). Thus, both measures are satisfied.

	Mean	SD	Enj	Tru	Com	SI	Sus	EB	Mon	Uti	IC	MDC	UB	INT
Enj	4.948	1.183	**0.867**											
Tru	4.673	1.136	0.594	**0.886**										
Com	4.498	1.299	0.527	0.506	**0.859**									
SI	3.594	1.406	0.450	0.388	0.510	**0.873**								
Sus	4.895	1.367	0.487	0.389	0.554	0.374	**0.911**							
EB	5.013	1.381	0.497	0.434	0.550	0.392	0.591	**0.921**						
Mon	5.081	1.251	0.457	0.333	0.401	0.249	0.440	0.626	**0.894**					
Uti	4.296	1.383	0.454	0.405	0.449	0.331	0.468	0.484	0.518	**0.861**				
IC	6.200	1.088	0.501	0.365	0.257	0.171	0.381	0.442	0.491	0.304	**0.961**			
MDC	5.496	1.456	0.507	0.319	0.270	0.210	0.294	0.470	0.469	0.342	0.673	**0.962**		
UB	4.033	1.502	0.519	0.432	0.479	0.464	0.348	0.530	0.471	0.560	0.333	0.421	**0.803**	
INT	4.649	1.679	0.538	0.402	0.374	0.398	0.379	0.584	0.521	0.502	0.468	0.531	0.648	**0.978**

Note: SD: Standard deviations; Enj: Enjoyment; Tru: Trust; Com: Community; SI: Social influence; Sus: Sustainability; EB: Economic benefits; Mon: Monetization; Uti: Utility; IC: Internet capability; MDC: Mobile device capability; UB: User behavior; INT: Continuance intention.

Table 5- The square root of AVE (in bold on diagonal) and factor correlation coefficients

The evaluation of construct reliability, indicator reliability, convergent validity, and discriminant validity of the constructs were satisfactory, revealing the different criteria to be fulfilled, a fact that legitimate the choice of the scales used for measurement (Möhlmann, 2015).

5.2. STRUCTURE MODEL

The structure model, which provides information about the relationship between the latent variables in the model (Möhlmann, 2015), was assessed using R2 measures and the level of significance of the path coefficients. The research model explains 50.4% of the variation in user behavior and 57.9% of the variation in continuance intention to use. The analysis of hypotheses and constructs' relationships were based on the examination of path coefficients and their significance. The path coefficients significance were estimated using the bootstrap resampling method (Henseler et al., 2009), with 500 iterations of resampling (Chin, 1998). The results of the study are presented in Figure 2.
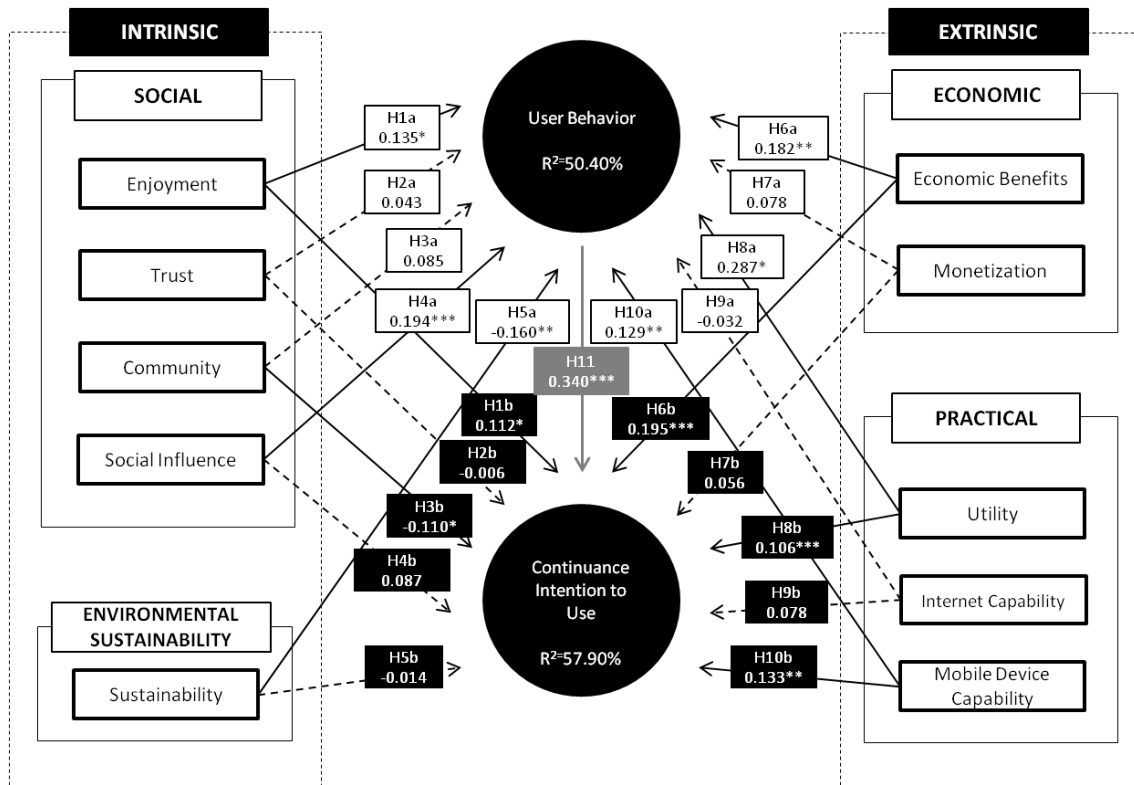
Note: *** p value < 0.01; ** p value< 0.05; * p value < 0.10; significant. Dashed line arrows represent not statically significant path coefficients.

Figure 2 – Structural model results.

With regard user behavior, the study found that: (i) in social context, enjoyment ($\hat{\beta}$ =0.135, p<0.10) and social influence ($\hat{\beta}$ =0.194, p<0.01) were statistically significant, while trust ($\hat{\beta}$ =0.043, p>0.10) and community ($\hat{\beta}$ =0.085, p>0.10), were not statistically significant; (ii) in environmental sustainability context, the study found that sustainability ($\hat{\beta}$ =-0.160, p<0.05) was statistically significant, but with opposition sign that expect; (ii) in economic context, economic benefits ($\hat{\beta}$ =0.182, p<0.05) was statistically significant, while monetization ($\hat{\beta}$ =0.078, p>0.10) was not statistically significant; (iv) in practical context, utility ($\hat{\beta}$ =0.287, p<0.10) and mobile device capability ($\hat{\beta}$ =0.129, p<0.05) were statistically significant, while Internet capability ($\hat{\beta}$ =-0.032, p>0.10) was not statistically significant. Thus, hypotheses H1a, H4a, H5a, H6a, H8a and H10a were supported and hypotheses H2a, H3a, H7a, and H9a were not supported.

With regard continuance intention, the study found that: (i) in social context, enjoyment ($\hat{\beta}$ =0.112, p<0.10), community ($\hat{\beta}$ =-0.110, p<0.10) were statistically significant, while trust ($\hat{\beta}$ =-0.006, p>0.10) and social influence ($\hat{\beta}$ =0.087, p>0.10) were not statistically significant; (ii) in environmental sustainability context, the study found that sustainability ($\hat{\beta}$ =-0.014, p>0.10) was not statistically significant; (ii) in economic context, economic benefits ($\hat{\beta}$ =0.195, p<0.01) was statistically significant, while monetization ($\hat{\beta}$ =0.056, p>0.10) was not statistically significant; (iv) in practical context, utility ($\hat{\beta}$ =0106, p<0.01) and mobile device capability ($\hat{\beta}$ =0.133, p<0.05) were statistically significant, while Internet capability ($\hat{\beta}$ =0.078, p>0.10)

was not statistically significant. (v) User behavior ($\hat{\beta} = 0.034$, p<0.01) statistically significant. Thus, hypotheses H1b, H3b, H6b, H8b, H10b, and H11 were supported and hypotheses H2b, H4b, H5b, H7b and H9a were not supported.

Overall, of the twenty-one hypotheses formulated, twelve were supported by data collect. The results show that participation in sharing economy is motivated by several determinants. Enjoyment, social influence, sustainability, economic benefits, utility, and mobile device capability were found important in explaining users' behavior. Enjoyment, community, economic benefits, utility, mobile device capability, and user behavior were found important in continuance intention to use sharing economy. This shows the importance of intrinsic and extrinsic motivations in the explanation of user behavior and continuance intention to use sharing economy.

6. DISCUSSION

Enjoyment, social influence, economic benefits, utility, and mobile device capability were found to have a positive and statistically significant impact on user behavior. Sustainability, revealed a negative and statistically significant impact on user behavior. Enjoyment, economic benefits, utility, mobile device capability, and user behavior were found facilitators of continuance intention to use sharing economy. In opposition, community was found as inhibitor. Overall, factors such as trust, monetization, and Internet capability were not substantial in choosing products or services from sharing economy. Both intrinsic and extrinsic motivations represent fundamental factors affecting consumers' choice of sharing economy.

Thus, our study provides valuable support to literature that have sought strategic justification of sharing economy determinants (Hamari et al., 2015; Lamberton and Rose, 2012; Möhlmann, 2015). It also provides additional support to the importance of incorporating awareness in politicians, decision makers, companies, and the consumer itself, about the increasing of this new type of consumption. Our study may help influence the decision maker's attitude towards sharing economy.

6.1. THEORETICAL IMPLICATIONS

This research makes important contributions to the body of research on sharing economy. For researchers, the model presents a holistic approach to examine the factors that influence sharing economy post-adoption, using SDT. By establishing the relationship between the users' behavior, continuance intention to use of sharing economy, the study makes new contribution to the published literature. Furthermore, other academic studies should consider this paper in order to improve the number of studies and compare data between countries. In addition, our study revealed that SDT enables us to integrate intrinsic and extrinsic motivations as constituents of participation in sharing economy.

This research results show relevance by determining what potential there is for the sharing economy. As in contrast to individualized consumption, our study place greater value on alternative socially-oriented forms of ownership and consumption (Heinrichs and Grunenberg, 2013). First, only few studies have attempted to comprehensively evaluate sharing economy from a post-adoption perspective. Our study adds new insights by evaluate the different factors to use and continue use of the sharing economy. Second, unlike most studies in sharing economy that use several determinants, we test the difference between intrinsic and extrinsic motivations. Thus, our study adds new knowledge to this emergent area of sharing economy research. It provides findings into the impact of sharing economy and its influence on consumers' choice. Third, we developed a survey instrument with items corresponding to the factors that determine sharing economy choice, based on literature review. The instrument was tested for reliability and validity of the scales, and used successfully to collect data from 256 responders. Future researchers can readily use the instrument to replicate the study in the different companies operating in sharing economy and compare the results between countries.

6.2.   MANAGERIAL AND PRACTICAL IMPLICATIONS

The findings of this study contribute to add value to sharing economy research. Our study results suggest that enjoyment, social influence, sustainability, economic benefits, utility and mobile device capability influence user behavior. Results also suggest that enjoyment, community, economic benefits, utility, mobile device capability, and user behavior influence continuance intention to use sharing economy.

This study makes important contributions for brand managers, politicians and consumers. For brand managers, the results of this paper offer significant insights that gives a picture of the customer and collaboration skills that companies need to develop in order to compete effectively in the sharing economy for the years to come (Owyang et al., 2014). Since organizations need to be constantly responsive to emerging technologies and consumer needs by innovating their business model (Sach, 2015), the findings of this study provide a solid basis for allowing brand managers to adapt their products or services to this type of economy. Our findings indicate that sharing economy offers economic benefits as well as utility to those who choose this type of consumption. This may contribute for politicians to be able to improve the communities' way of life and social work since the potential of these new forms of consumption have for decision-makers in politics (Heinrichs and Grunenberg, 2013).

Finally, for the consumer, in general, this study creates the necessary structures so that the sharing economy and collaborative consumption can develop their potential alongside an economy based on the ownership of private property (Heinrichs and Grunenberg, 2013).

6.3.   LIMITATIONS AND FUTURE RESEARCH

Despite our study adds knowledge on the topic, there is still more to find in order to better understand the opportunities and limitations of sharing economy. First, this study was carried out in Portugal. It will be interesting to determine whether the findings differ in other countries, by applying the model and compare the results, in accordance to their corresponding services and products available. Second, our focus was only in the consumer of sharing economy in general. To address this limitation, it becomes important in future research to understand the consumer in different areas of sharing economy, testing and comparing this model in several services, such as transportation and accommodation. Third, this study only focus on two of the three different types of motivation in SDT framework (Ryan and Deci, 2000): intrinsic and extrinsic. It will be interesting in future research to add amotivation to the model and compare the results of the state of lacking the intention to act (Ryan and Deci, 2000), in this case, the lack of intention to adopt sharing economy. Fourth, during our research we found that there is a lack of research on how sharing economy business models work, as well as their evolution. It will be interesting to analyze the post-adoption models and frameworks applied to various organizational contexts to explore factors affecting specific services' intention to use. This study opens possibilities for additional research and a refinement of the constructs to further elucidate sharing economy post-adoption. Finally, the study determined that participation in sharing economy is motivated by several determinants. Further research to confirm the impact of these factors can be beneficial to policy makers for proposing incentives and developing policies that promote the adoption of sharing economy.

7. CONCLUSIONS

Sharing economy adoption is increasing all over the world. Its use is enormous and presents several opportunities for consumers and companies. However, and because sharing economy is recent, it has received limited attention in the literature so far. To address this gap, we contribute to post-adoption theory by offering a conceptual framework that adds new findings on sharing economy. Based on earlier sharing economy acceptance studies, a research model was developed that integrates the self-determination theory (SDT) framework, identifying relevant factors. The model was empirically evaluated based on a sample of 256 respondents. It was used to examine how intrinsic and extrinsic motivations influenced consumers' intentional behavior in the context of sharing economy. We found that enjoyment, social influence, sustainability, economic benefits, utility, and mobile device capability were statistically significant in explaining users' behavior. On the contrary, trust, community, monetization, and Internet capability were not deemed important to explain the usage. The results also indicated that enjoyment, community, economic benefits, utility, mobile device capability, and user behavior have an important effect on continuance intention to use sharing economy. Trust, social influence, sustainability, monetization, and Internet capability had no significance. Both intrinsic and extrinsic motivations were found to have fundamental factors affecting consumers' choice of sharing economy. This study contributes to knowledge advancement and new insights for the participation in the sharing economy.

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9. APPENDICES

SE adoption (dependent variable)	Adoption Theory	Constructs/factors (independent variables)	Methods	Data and context	Findings	Source
Preference for non-ownership	Non-ownership model	Importance of possession, experience orientation, price consciousness, convenience orientation, trend orientation, environmentalism	Survey	461 members of a German online peer-to-peer sharing network	The demand for non-ownership services is negatively influenced by "possession importance" and positively influenced by "trend orientation" and "convenience orientation". "Experience orientation", "price consciousness", and "environmentalism" do not appear to influence.	(Moeller and Wittkowski, 2010)
Likelihood of Choosing a Sharing Option	Augmented Utility Model for Commercial Sharing	Gross utility of ownership stated, price of ownership, price of sharing, technical costs of sharing, search costs of sharing, transaction utility of sharing, transaction utility of ownership, flexibility/mobility utility of sharing, storage utility of sharing, anti-industry utility of sharing, social utility of sharing, moral utility of sharing, degree of substitutability, sharing knowledge, perceived product scarcity risk	Study 1 and study2 survey. Study 3 course	Study 1 - 369 licensed US drivers, Study 2 - 123 US participants, Study 3 - 105 undergraduate students.	Beyond cost-related benefits of sharing, the perceived risk of scarcity related to sharing is a central determinant of its attractiveness.	(Lamberton and Rose, 2012)
Attitude, Behavioral Intention	Self-Determination Theory (SDT)	Sustainability, enjoyment, reputation, economic benefits	Survey	168 registered users of the service Sharetribe	Participation in collaborative consumption is motivated by sustainability, enjoyment of the activity and economic gains.	(Hamari et al., 2015)
Satisfaction with a Sharing Option, Likelihood of Choosing Sharing Option Again	N.A.	Community belonging, cost savings, environmental impact, familiarity, Internet capability, service quality, smartphone capability, trend affinity, trust, utility	Survey	In study 1, users of the B2C car-sharing service car2go (N = 236), and in study 2, users of the C2C online community accommodation marketplace Airbnb (N = 187) are surveyed.	Utility, trust, cost savings, and familiarity were found to be essential in both studies, while service quality and community belonging were identified solely in study 1. Environmental impact, Internet capability, Smartphone capability, and trend affinity had no influence on any of the endogenous variables.	(Möhlmann, 2015)
Participation in Sharing Services*	Theory of Planned Behavior (TPB)	Attitude towards participation in sharing services, subjective norm regarding participation in sharing services, perceived behavioral control of participation in sharing services, perceived value-for-money, perceived availability, openness towards using sharing services, perceived economic benefits, perceived demand, openness towards providing sharing services	Survey	The authors will use the data to analyze changes in the participants' predisposition to using the service and to analyze the relationship between the growth of the service and acceptance and participation behavior.	Search for a theoretical foundation revealed the Theory of Planned Behavior as the most appropriate lens because this theory enables us to integrate provider behavior and user behavior as constituents of participation behavior.	(Matzner, Chasin, and Todenhöfer, 2015)
Participation Intention*	Social Exchange Theory	Trust (reputation, social presence, benevolence), relative advantage (social benefits, economic benefit)	Survey	The model will be tested with the Airbnb users' data.	The research results are expected to contribute to researchers and practitioners to understand the sharing economy.	(Kim, Yoon, and Zo, 2015)

Note: SE – Sharing Economy; N.A. - Not Applicable; *Research in progress

9.2. APPENDIX B - MEASUREMENT ITEMS

Constructs	Items		Source
Enjoyment (Enj)	I think sharing economy is enjoyable. I think sharing economy is exciting. I think sharing economy is fun. I think sharing economy is interesting.	Enj1 Enj2 Enj3 Enj4	(Hamari et al., 2015; Wen et al., 2011)
Trust (Tru)	I think sharing economy offers trust. I think the other users of sharing economy are truthful. I think sharing economy providers give trust on the service they provide.	Tru1 Tru2 Tru3	(Möhlmann, 2015; Wen et al., 2011)
Community (Com)	The use of sharing economy allows me to belong to a group of people with similar interests. The use of sharing economy makes me feel like I'm more involved in the community. The use of sharing economy allows me to gain recognition from community. The use of sharing economy allows me to know people with similar interests.	Com1 Com2 Com3 Com4	(Hamari et al., 2015; Möhlmann, 2015)
Social influence (SI)	People who influence my behavior think that I should use sharing economy. People who are important to me think that I should use sharing economy. Sharing economy is a status symbol in my environment.	SI1 SI2 SI3	(Venkatesh et al., 2003)
Sustainability (Sus)	Sharing economy helps save natural resources. Sharing economy is a sustainable mode of consumption. Sharing economy is efficient in terms of using energy. Sharing economy is environmentally friendly.	Sus1 Sus2 Sus3 Sus4	(Hamari et al., 2015)
Economic benefits (EB)	My participation in sharing economy benefits me financially. My participation in sharing economy can improve my economic situation. My participation in sharing economy saves me money.	EB1 EB2 EB3	Hamari et al., 2015
Monetization (Mon)	Sharing economy allows idle resources to be shared and often monetized. Sharing economy allows me to utilize something of value as a source of profit. Sharing economy allows me to monetize products that I usually don't use.	Mon1 Mon2 Mon3	(Owyang et al. , 2013)
Utility (Uti)	I believe that sharing economy substitutes quiet well an own product. I think sharing products is as good as owning products. I prefer sharing economy over the traditional economy.	Uti1 Uti2 Uti3	(Möhlmann, 2015)
Internet capability (IC)	The Internet is useful to access sharing economy. The Internet enables me a convenient use of sharing economy. Using the Internet increases the productive use of sharing economy.	IC1 IC2 IC3	(Möhlmann, 2015)
Mobile device capability (MDC)	My mobile device is useful for consuming sharing economy. My mobile device enables me a convenient use of sharing economy. Using my mobile device increases the productive use of sharing economy.	MDC1 MDC2 MDC3	(Möhlmann, 2015)
User behavior (UB)	Please choose your usage frequency for each of the following sharing economy services: a) Pre-owned goods b) Loaner products c) Custom products d) Private/Professional services e) Transportation services f) Loaner vehicles g) Office space h) Place to stay i) Money lending j) Crowdfunding k) Cryptocurrency l) Food sharing. Note: Frequency ranged from "never" to "many times per month."	UB1 UB2 UB3 UB4 UB5 UB6 UB7 UB8 UB9 UB10 UB11 UB12	Adapted from (Venkatesh, Thong and Xu, 2012)
Continuance intention (INT)	I intend to continue using sharing economy, rather than discontinue its use. I plan to continue using sharing economy. I will continue using sharing economy. I predict I will continue using sharing economy in the future.	INT1 INT2 INT3 INT4	(Bhattacherjee 2001; Venkatesh and Goyal 2010; Venkatesh et al., 2011)

9.3. APPENDIX C - LOADINGS (IN BOLT) AND CROSS-LOADINGS

Construct	Item	Enj	Tru	Com	SI	Sus	EB	Mon	Uti	IC	MDC	UB	Int
Enj	Enj1	**0.875**	0.515	0.431	0.367	0.422	0.459	0.405	0.375	0.494	0.466	0.436	0.458
	Enj2	**0.848**	0.478	0.508	0.433	0.425	0.397	0.374	0.379	0.317	0.377	0.456	0.418
	Enj3	**0.881**	0.507	0.482	0.375	0.417	0.417	0.379	0.411	0.400	0.404	0.466	0.449
	Enj4	**0.862**	0.555	0.412	0.386	0.423	0.448	0.424	0.405	0.517	0.504	0.442	0.534
Tru	Tru1	0.584	**0.916**	0.491	0.368	0.392	0.406	0.335	0.427	0.341	0.326	0.413	0.396
	Tru2	0.515	**0.861**	0.426	0.352	0.298	0.354	0.226	0.280	0.228	0.229	0.360	0.307
	Tru3	0.475	**0.879**	0.424	0.310	0.336	0.390	0.316	0.357	0.391	0.284	0.373	0.357
Com	Com1	0.545	0.491	**0.867**	0.443	0.499	0.469	0.378	0.447	0.289	0.294	0.487	0.407
	Com2	0.455	0.457	**0.874**	0.455	0.514	0.497	0.309	0.380	0.220	0.189	0.377	0.282
	Com3	0.348	0.406	**0.810**	0.418	0.419	0.433	0.308	0.381	0.131	0.190	0.375	0.248
	Com4	0.429	0.370	**0.880**	0.435	0.463	0.492	0.371	0.318	0.217	0.232	0.383	0.315
SI	SI1	0.404	0.367	0.414	**0.899**	0.306	0.342	0.283	0.291	0.190	0.173	0.395	0.358
	SI2	0.438	0.379	0.448	**0.937**	0.355	0.373	0.229	0.304	0.164	0.194	0.432	0.378
	SI3	0.331	0.262	0.479	**0.775**	0.316	0.309	0.133	0.270	0.088	0.184	0.387	0.303
Sus	Sus1	0.429	0.355	0.517	0.333	**0.928**	0.547	0.410	0.424	0.330	0.258	0.329	0.349
	Sus2	0.479	0.379	0.539	0.392	**0.917**	0.567	0.462	0.473	0.424	0.339	0.367	0.423
	Sus3	0.370	0.341	0.491	0.320	**0.891**	0.518	0.339	0.392	0.277	0.214	0.261	0.266
	Sus4	0.479	0.335	0.459	0.300	**0.907**	0.512	0.365	0.400	0.328	0.233	0.286	0.311
EB	EB1	0.486	0.419	0.495	0.396	0.549	**0.937**	0.620	0.452	0.431	0.477	0.504	0.541
	EB2	0.420	0.335	0.530	0.366	0.529	**0.903**	0.540	0.428	0.332	0.362	0.477	0.514
	EB3	0.467	0.442	0.497	0.322	0.555	**0.923**	0.567	0.457	0.454	0.456	0.483	0.558
Mon	Mon1	0.444	0.324	0.389	0.203	0.459	0.629	**0.891**	0.495	0.516	0.478	0.419	0.498
	Mon2	0.385	0.309	0.371	0.263	0.356	0.545	**0.891**	0.436	0.382	0.361	0.415	0.469
	Mon3	0.395	0.259	0.314	0.201	0.362	0.500	**0.900**	0.459	0.416	0.415	0.429	0.427
Uti	Uti1	0.349	0.311	0.308	0.191	0.415	0.433	0.474	**0.849**	0.304	0.356	0.424	0.433
	Uti2	0.399	0.339	0.404	0.290	0.394	0.413	0.498	**0.902**	0.255	0.282	0.536	0.421
	Uti3	0.420	0.395	0.441	0.366	0.401	0.407	0.367	**0.831**	0.229	0.252	0.480	0.442
IC	IC1	0.466	0.335	0.248	0.150	0.387	0.414	0.486	0.290	**0.966**	0.659	0.322	0.446
	IC2	0.516	0.357	0.237	0.162	0.359	0.422	0.468	0.271	**0.968**	0.639	0.301	0.453
	IC3	0.464	0.359	0.256	0.181	0.353	0.437	0.462	0.314	**0.950**	0.641	0.337	0.450
MDC	MDC1	0.482	0.316	0.250	0.197	0.287	0.460	0.460	0.342	0.669	**0.964**	0.403	0.518
	MDC2	0.504	0.303	0.269	0.209	0.291	0.424	0.450	0.331	0.627	**0.969**	0.400	0.523
	MDC3	0.479	0.301	0.261	0.201	0.270	0.474	0.443	0.315	0.647	**0.955**	0.411	0.491
UB	USE1	0.534	0.418	0.405	0.424	0.300	0.489	0.381	0.518	0.328	0.414	**0.881**	0.613
	USE2	0.478	0.404	0.402	0.359	0.317	0.472	0.375	0.538	0.291	0.363	**0.883**	0.546
	USE3	0.242	0.298	0.393	0.354	0.165	0.294	0.251	0.328	0.110	0.189	**0.699**	0.345
	USE4	0.356	0.249	0.350	0.355	0.309	0.413	0.489	0.380	0.299	0.343	**0.730**	0.533
Int	Int1	0.520	0.416	0.376	0.416	0.380	0.563	0.503	0.477	0.448	0.510	0.638	**0.966**
	Int2	0.518	0.399	0.363	0.386	0.361	0.560	0.519	0.485	0.455	0.509	0.633	**0.986**
	Int3	0.527	0.374	0.349	0.379	0.360	0.560	0.507	0.494	0.452	0.524	0.625	**0.985**
	Int4	0.540	0.382	0.375	0.376	0.384	0.602	0.510	0.507	0.474	0.532	0.640	**0.975**

Note: Enj: enjoyment; Tru: Trust; Com: Community; SI: Social influence; Sus: Sustainability; EB. Economic benefits; Mon: Monetization; Uti: Utility; IC: Internet capability; MDC: Mobile device capability; UB: Use behavior; INT: Continuance intention