CC-QUAL: A HOLISTIC SCALE TO ASSESS CUSTOMER PERCEPTIONS OF SERVICE QUALITY OF COLLABORATIVE CONSUMPTION SERVICES.

Abstract

The paper defines and validates a scale—CC-Qual—to assess the quality of services provided through a Collaborative Consumption (CC) model.

The authors have borrowed a set of items arranged in eight dimensions from the literature on CC. A panel of selected practitioners (seven CEOs of CC companies) assisted in the design of the questionnaire, which was launched in June 2018. A sample of 127 questionnaires was used for exploratory factor analysis. A second sample of 301 users was used for confirmatory analysis using EQS 6.4 software.

A scale of 21 items gathered under five dimensions is proposed. Accordingly, the perceived quality in CC is composed of five dimensions: three of them related to the interaction with the platform ("site organization", "platform responsiveness and agility" and "legal protection and trustworthiness"), another related to the perceived quality of the peer service supplier ("peer service provider") and the last one to assess the encounters with other consumers and with the person who provides the service ("social interaction").

This study provides a useful measure for the assessment of the perceived quality of CC services, regardless of the activity sector. This instrument might assist managers for both assessing and benchmarking. The instrument also provides independent and reliable information for customers.

Keywords: Collaborative Consumption; Quality; Service; e-commerce; Sharing economy; Quality scale.

1. INTRODUCTION

The sharing economy has become an umbrella term for a wide range of non-ownership forms of consumption activities such as swapping, bartering, trading, renting, sharing and exchanging (Habibi, Davidson, & Laroche, 2017). Indeed, Hamari, Sjöklint and Ukkonen (2016) defined the term as the "peer-to-peer-based activity of obtaining, giving, or sharing the access to goods and services, coordinated through community-based online services." Owners make available their goods through a digital platform to find someone interested in using these goods, which are usually underutilized. The platform also provides a rating system where customers can check the reputation of peer providers before proceeding with the transaction. More and more companies are founding their business on a digital platform that provides a match between two peers, where one provides a service and the other buys it. The platform creates income and profit by matching supply and demand.

This new method of consumption, where people enjoy a good without ownership, has had different labels, although the most common is collaborative consumption (CC) (Belk, 2014; Benoit, Baker, Bolton, Gruber, & Kandampully, 2017). The correct label for referring to this phenomenon is still open to debate, although this type of consumption is receiving increasing notoriety and has shaped new ways for transactions to occur. Within traditional industries, CC is expanding and presents an alternative to traditional business models (Barnes & Mattsson, 2016; Cheng, Fu, & de Vreede, 2018; Möhlmann, 2015). Barnes and Mattsson (2016) have defined CC as the use of online marketplaces and social networking technologies to facilitate peer-to-peer sharing of resources (such as space, money, goods, skills and services) between individuals, who may be both suppliers and consumers.

The sharing economy is thus grounded in an established online community within a web platform. A very recent and still limited literature analyses this new way of consuming where customers access services provided by other peers. Huang and Benyoucef (2013) and Sigala (2017) have analysed the evolution from e-commerce to social commerce, where customers also interact by sharing information. It appears that social commerce is transforming customers into active transaction players.

In the CC model, the customer interacts with three different agents: the platform, the peer service provider and other customers. First, the customer interacts with the platform, as in the e-commerce setting. Second, the customer interacts with the peer service provider, who is the one who eventually provides the service in the "real" world. This service

provider is an amateur, not a professional (Cheng et al., 2018; Ert, Fleisher, & Magen, 2016). Finally, the customer also interacts with other customers.

The interaction between customers is particularly interesting because a customer often decides to operate through one platform and with one particular peer service provider based on the information available about the service and their peers' reputations. Vouching for a reliable transaction is therefore of paramount importance, because both the reputation of the peer service provider and the image of the platform allows the match (Ert et al., 2016; McKnight, Choudhury, & Kacmar, 2002). Customers build their expectations based on information about the experiences of other customers, which is usually available on the same platform. Customers may, however, doubt the reliability of these data, which the platform may have filtered or moderated, as suggested by the fact that online ratings are mainly positive, and negative reviews are rarely given (Zervas, Proserpio, & Byers, 2017). This suggests that these rating systems may not be either fully reliable or transparent. This information is also structured according to each provider, which makes it difficult for consumers to conduct a comparative analysis among providers. Although the customer can also use comparison shopping engines as they look for reliable information, the original information is always provided by the platform (Ert et al., 2016).

A measurement provided by an independent and reputable instrument would therefore provide the required trustworthiness to assist customers in choosing their best buying option. From the point of view of the provider, the instrument would also be a relevant tool for benchmarking actions, because the same scale could be applied to different competitors. Accordingly, this paper provides a conceptualization of the perceived quality of the customer of CC services and develops a multidimensional scale to measure it and assess its psychometric properties.

Because CC is a recent phenomenon, there a valid measurement instrument for perceived quality still has not been developed. Although a few articles can be found that propose measurement scales for CC companies, these have focused on transport and the hospitality sector (Cohen & Kietzmann, 2014; Zervas et al., 2017). Based on this gap, this paper therefore sought to design, develop and validate a scale for assessing the quality perceived by the final customer, which we have called CC-Qual. The scale is intended to be useful without regard to the specific economic activity of the CC company. To accomplish this, some key conceptual and empirical issues on the assessment of quality

in sharing economy companies will first be identified from previous studies, and second, an empirical analysis will be carried out to define CC-Qual.

The scale will be of interest for both academics and practitioners. From the academic point of view, it will provide insight for the conceptualization of the dimensions that encompass the perceived quality construct, which is envisaged to be multifactorial. On the practical side, this scale will provide clues for managers in assessing the provided service and identifying issues for improvement; it will also provide evidence for benchmarking activities.

The remainder of the paper is organized as follows. After this introduction, we review the literature on the assessment of service quality and provide a theoretical framework that enables the conceptualization of quality in this new setting. In the third section, we describe the methodology used, and the fourth section is devoted to the presentation of the results. Debate and discussion is established in the fifth section, while in the sixth and final section, we present our conclusions, which are devoted to providing key emerging points from the paper, along with some the paper's limitations and proposals for future research agenda.

2. LITERATURE REVIEW

2.1 *Assessment of off-line service quality*

Parasuraman and his team were among the first pioneers on quality service assessment (Parasuraman, Zeithaml, & Berry, 1985). In the early 1980s, they proposed a scale for assessing service quality that was useful for all kind of services. They began conducting a set of focus groups to generate items, and the participants were asked about their experiences in services such as the insurance, banking or appliance repair sectors. The scale (called SERVQUAL) consisted of two sets of 22 analogous items, one to assess perceptions and the other for expectations. The discrepancy between perceptions and expectations assessed the perceived quality of the service. These items were grouped into five dimensions:

- Tangibles: Appearance of physical facilities, equipment, personnel and communication material.

- Reliability: Ability to perform the promised service dependably and accurately.

- Responsiveness: Willingness to help customers and provide prompt service.

- Assurance: Knowledge and courtesy of employees and their ability to convey trust and confidence.

- Empathy: Caring, individualized attention provided by the firm to its customers.

The instrument was, therefore, based on the personal care and attention of the provider's employees. Only one dimension, the first, was not connected to the people who directly provided the service. There was, naturally, no reference to the Internet, which was not then in general use.

Although the instrument was criticized by Cronin and Taylor (1992), it nevertheless became very popular. Ladhari (2009) published a review of different adaptations of the scale, providing evidence of the scale's success after 20 years of existence. The scale has been used by researchers and practitioners in all kinds of services, geographical areas and industries. Almost ten years have elapsed since Ladhari's review and the instrument still remains useful. The seminal paper that presented the scale, Parasuraman, Zeithaml and Berry (1988), is still quoted intensively.

2.2 *Assessment of on-line service quality*

In the first decade of this century, the Internet became increasingly popular and played an important role in providing services, and some services became entirely provided online. Parasuraman and his team published another scale for these services, called E-S-QUAL (Parasuraman, Zeithaml, & Malhotra, 2005), which consisted of 22 items grouped into four quality factors (efficiency, fulfilment, system availability and privacy). Efficiency refers to the ability of the customers to interact with the website, find their desired product and associated information, and check out with minimal effort. Fulfilment includes the accuracy of service promises, the availability of ordered products in stock and the capacity to deliver in the promised time. System availability assesses the technical issues of the platform, and privacy is the care that the website takes with personal data.

E-S-QUAL was also a very useful scale and was adapted to different sectors and cases. Like the review by Ladhari (2009) on the adoption of SERVQUAL, Petnji Yaya and team conducted a homologous study of the use of E-S-QUAL (Petnji Yaya, Marimon, & Casadesus, 2012; Petnji Yaya, Marimon, & Casadesús, 2017). At that time, the scale was

tested in 11 countries and in different languages such as English, Turkish, Chinese, Croatian, Taiwanese, Hindi, Spanish and Catalan, among others. The E-S-QUAL scale was used to measure e-service quality in a variety of domains and types of service industries, including department stores, sites offering music, books, DVDs, electronics and computers, as well as in other online activity sectors such as banking, job portals, HR services, taxation filing services, travel agencies and book stores (e.g. Bernardo, Marimon, & Alonso-Almeida, 2012; Berbegal-Mirabent, Mas-Machuca, & Marimon, 2016; Petnji Yaya, Marimon, & Casadesus, 2011).

2.3 *Assessment of mixed (on- and off-line) service quality*

New attempts have been made to merge SERVQUAL and E-S-QUAL to assess services that combine one element provided as a traditional service and another that is provided online. Ganguli and Roy (2010) called these types of services *hybrid* and argued that there are still conventional services such as restaurants and barbershops that continue to rely on human–human interactions. A new category of services has nevertheless emerged, which can be called hybrid services because they require human providers as well as technological assistance. This new type of service requires assessment by a hybrid instrument. The complementarity of SERVQUAL and E-S-QUAL is therefore proposed, resulting in eight dimensions: (i) staff competence, (ii) reputation, (iii) price, (iv) tangibles, (v) ease of subscription, (vi) technology security and information quality, (vii) convenience of the technology and (viii) ease of use and reliability of the technology.

Note that reputation is considered here, along with dimensions related to the competence of the employee and other issues for assessing "traditional" services, while the last three dimensions are related to the technology embedded in the service. In an analogous way, Sousa and Voss (2012) proposed an instrument to assess bank services, where it was necessary to assess different channels simultaneously. The scale encompassed 18 technological items and 28 traditional service items, which were distributed in eight dimensions.

The CC model requires a new measurement instrument. The model cannot be a simple merging of offline and online experiences analysed altogether: the concept is essentially diverse. Our theoretical framework is based on service quality management, specifically SERVQUAL and E-S-QUAL, and the stream of later contributions is based on this

theoretical framework. These two scales have been largely and extensively used and it has been demonstrated that they include the critical dimensions for measuring quality and achieving business goals (Agarwal & Venkatesh, 2002; Devaraj, Fan, & Kohli, 2002; Ladhari, 2008, 2009; Loiacono, Watson, & Goodhue, 2002; McKinney, Yoon, & Zahedi, 2002). Both scales have been proved to have a great capacity for being adopted to many different cases and companies and in different settings and geographical areas. These scales have the malleability to cover a great variety of situations. The use of these scales alone is not enough, however. The new CC-Qual scale will need additional items to contain the conceptualization that is not embedded in the Parasuraman scales.

2.4 *Assessment of CC service quality*

Although the literature on the conceptualization of CC from a theoretical point of view is scant, it is worth reading Benoit et al. (2017) and Cheng et al. (2018). While Benoit identified criteria to analyse CC from the conceptual point of view of the roles of the agents at play in this consumption model, Cheng and his research team published an empirical work that proposed a scale for quality measurement in CC, based on Chinese mobile car-hailing users. They were not, however, aware of Benoit's work and consequently the scale did not benefit from the conceptualization achieved by Benoit and colleagues.

Only few articles proposing measurement scales for CC companies can be found. However among them, only two kinds of services are extensively analysed: transport (e.g. Bardhi & Eckhardt, 2012; Belk, 2014; Benoit et al., 2017; Cheng et al., 2018; Cohen & Kietzmann, 2014; Möhlmann, 2015; Schaefers, Wittkowski, Benoit & Ferraro, 2016) and hospitality (e.g. Benoit et al., 2017; Ert et al., 2016; Möhlmann, 2015; Tussyadiah, 2016). The same companies—Airbnb and Uber—are frequently analysed.

As mentioned above, the concept of CC is still subject to debate (Habibi et al., 2017). Only few years ago, some authors treated the terms "sharing economy" and "collaborative consumption" as almost synonymous (Cohen & Kietzmann, 2014). We would, however, like to take the concept of CC drawn from recent authors (Barnes & Mattsson, 2016; Benoit et al., 2017; Hamari et al., 2016). According to Benoit et al. (2017), three actors with different roles interact in a CC model transaction: (i) a platform provider enables exchange, (ii) a peer service provider offers a service and (iii) a customer seeks access

and use of assets. The final customer needs to interact with two agents to receive the desired service: the platform and the peer server or supplier. The contact with the first agent is online, whereas the contact with the second occurs both on- and off-line. The customer also experiences encounters with other consumers that may enrich the total experience. The contribution of Benoit and her team is particularly relevant because it provides a pioneering conceptualization of CC by comparing it with related phenomena such as "buying", "renting", "non-ownership or access based services" and "sharing or co-owning". Their paper also analyses the motivations of each one of the three agents or actors involved and lists the activities that each actor performs.

All of these authors also highlight the importance of social networking (as discussed in Barnes & Mattsson, 2016) or community-based online technologies (discussed by Hamari et al., 2016). With this sort of technology, users enjoy interacting with the community by posting or acquiring the information they need (Islam & Rahman, 2017). Information technology enables interactions between peers and supports value co-creation from the assets underutilized by the owners. It is worth noting the recent contribution from Kamboj, Sarmah, Gupta and Dwivedi (2018), who analysed the co-creation process on social media based on the stimulus-organism-response theory. Technology is not sufficient, however; the customer really needs the excellent service experience that is actually provided by a peer.

One additional question that emerges from the very nature of the CC model must be taken into account. Previous on-line service models (e.g. e-commerce) were settled between a professional server and a customer in the B2C (business-to-consumer) typology, whereas the emerging model consists of both B2C and C2C (consumer-to-consumer) typologies. The encounter with the platform falls within the B2C typology, while the encounter with the peer supplier is C2C type. Devaraj et al. (2002) were pioneers in developing a full research model built on three theories (Technology Acceptance Model, TAM; Transaction Cost Analysis, TAC; and Service Quality, SERVQUAL) and analysing the antecedents of satisfaction in B2C e-commerce setting. The C2C model has also been extensively analysed (Chen, Zhang, & Xu, 2009; Lu, Zhao, & Wang, 2010). Dwivedi and his team have also developed another rich and extended contribution through the analysis of the electronic transaction between the government and its citizens (Dwivedi et al., 2017; Rana & Dwivedi, 2015; Rana, Dwivedi, Lal, Williams, & Clement, 2017; Rana,

Dwivedi, Williams, & Weerakkody, 2016), which differs from the B2C model, because rather than "business", one must read "government" and instead of "consumer", "citizen".

CC-Qual is not just a mix of both typologies (B2C and C2C), nor is it an update or a refreshed release of old scales that applied to B2C or to C2C, but is rather a new instrument built *ex novo* for the new CC model.

3. MATERIALS AND METHODS

Churchill (1979) proposed a framework to define and validate measurement scales that was particularly useful for marketing constructs. It has been extensively used, and it has also been updated and criticized (Rossiter, 2011); indeed, this framework has even been used—with some improvements and adaptation—in other fields to define new constructs (e.g., Dwivedi, Choudrie, & Brinkman, 2006; Loiacono et al., 2002; McKinney et al., 2002; Moore & Benbasat, 1991; Webster & Martocchio, 1992). This framework began the specification of the intended domain. The second step was focused on the generation of items that can be included. Once the original set of items was proposed, the third step was focused on the validation of the scale. This third step can be further divided as follows: (i) assessment of reliability and discriminant validity of the dimensions emerged and (ii) confirmation of the scale.

3.1 *Specification of the construct's domain*

The literature review indicates that few authors have attempted to define a scale for perceived quality in CC companies. Different authors have included different dimensions and have enriched the former perceived quality definition. The pioneers of service quality management have defined it as a gap between perception and expectation. Parasuraman et al. (1988) proposed a set of five dimensions for the construct, and Parasuraman et al. (2005) later proposed another set of dimensions to assess services provided online. Since that time, the set of dimensions has been extended with additional elements such as hedonics, trustworthiness or image.

The definition of "quality" has also evolved and been defined from many different perspectives. A deep commonality is, however, apparent. The common element is that quality refers to the perception according to the customer's expectations. In this broad sense, quality encompasses all of those issues (or dimensions) for which customers have

expectations, because these issues or dimensions are really important for them. Both the American Society for Quality (ASQ) and the European Foundation for Quality Management (EFQM) have similar approaches to quality: the characteristics of a service that satisfy stated or implied needs. The EFQM defines quality in terms of excellence: "Excellent Organizations achieve and sustain outstanding levels of performance that meet or exceed the expectations of all their stakeholders". This broad scope has accordingly been adopted in this paper and different dimensions of quality are discussed.

3.2 *Generating the sample of items*

In this next step, items that better capture the defined domain are proposed. It is an exploratory research, which was the result and synthesis of the literature review. The items used in previous papers were collected and grouped to list those that encompass each dimension included in the construct's domain; this resulted in the first version of the scale.

Once the set of items were grouped into dimensions, the opinions of experts in CC were collected to refine the scale. A set of seven experts provided their assessment of the relative importance of each item, giving evidence to redefine and modify the scale. These experts were also asked for additional dimensions or items that were not included in the original proposed scale.

The panel of experts was composed of CEOs in the CC economy, all of whom were owners and managers of a CC company. Their opinions were therefore very valuable for the purpose of this paper, which was to propose a scale to assess perceived quality in CC.

3.3 *Validation of the scale*

The validation process consisted of establishing the definitive dimensions of the scale and assessing its reliability and discriminant validity. The original dimensions were established according to the literature review, and the experts' debugging process proved consistency and enhanced content validation. Consequently, an exploratory analysis was performed, consisting of two exploratory factor analyses (EFAs) to determine the definitive dimensions of the scale. These EFAs were analysed using principal component analysis to explore the natural latent dimensions that emerged. A first survey was therefore launched in May 2018, and a sample was collected from 127 users. The targeted

population consisted of customers who had experience with this kind of consumption during the last year.

Once the reliability and discriminant analysis were vouched for, a larger second sample was collected in June 2018 (301 questionnaires) to confirm the configuration of the scale. A second-order confirmatory factor analysis (CFA), with structural equation modelling (SEM) using the EQS 6.4 software, was conducted.

4. CC-QUAL SCALE PROPOSAL

The three methodological steps are followed in this section. As already mentioned, and following the notation of previous quality scales, we have called this scale CC-Qual.

4.1. *Specify the construct's domain*

4.1.1 *Platform*

The dimensions of the service that customers are looking for and that are important for assessing the quality of service were analysed. Because the final consumer interacts with the platform, with the peer server and also with other consumers, three domains were analysed.

We began by proposing dimensions related to the website. The first dimension assessed the organization of information on the website, the quality of this information, its design and overall appeal. Design and usability are two critical aspects of web quality to make it easy to navigate the site and find content (Agarwal & Venkatesh, 2002; McKinney et al., 2002), which in turn are critical to vouch for the acceptance of the technology according to the TAM framework (Devaraj et al., 2002; Loiacono et al., 2002). It is also noteworthy that information should be accessible regardless of the device used to access it. This is close to the efficiency dimension from Parasuraman et al. (2005). Möhlmann (2015) also includes this dimension in the construct. In the same way, Cheng et al. (2018) include a dimension called "structural assurance" that refers to how comfortable customers feel with a website.

The second dimension that was taken into consideration was how the platform ensured a quick transaction match. This encompasses how the website finds suitable peers that fit the customer's needs, and also the ease of establishing the agreement with the chosen

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supplier of the service. This dimension is called "responsiveness" by Cheng et al. (2018) and also overlaps with the "efficiency" dimension of E-S-QUAL (Parasuraman et al., 2005), which includes items such as "It enables me to complete a transaction quickly" or "This site enables me to get on to it quickly". Möhlmann (2015) also includes the item "I have quick and easy access to collaboratively consume website offers" in this quality construct.

The third important dimension was the way that the platform ensured the protection of customers' personal information (see e.g. Cheng et al., 2018; McKnight et al., 2002; Parasuraman et al., 2005). Customers are also interested in legal protection if something is wrong with the transaction: customers need to feel that security is in place when accessing such services. Barnes and Mattsson (2016) have also noted that legal, regulatory and tax issues are inhibitors for the expansion of CC.

The fourth dimension was the trustworthiness of the platform in terms of the authenticity of the offers on the platform, the reliability of the information published and also the accuracy of the opinions of the other customers. Liu, Cheung and Lee (2016) in their empirical study found that social commerce sites provided good opportunities for customers to communicate their opinions and exchange product- or service-related information. Olaisen and Revang (2017), in a different context, analysed the antecedents of trust, which in the case analysed had a positive impact within an inter-organizational structure. The BlaBlaCar DREAMS model included how content exchanged by members was moderated and verified by the platform. This dimensions is also close to the reliability dimension of the SERVQUAL instrument, which concerns the fulfilment of the agreement. In this vein, Barnes and Mattsson (2016) found some inhibitors of CC, including lack of awareness, lack of trust and fear of strangers.

The fifth and final dimension considered, the hedonic dimension, was also considered important for e-commerce (Bernardo, et al., 2012). Establishing a social community is also included in this construct (Benoit et al., 2017; Möhlmann, 2015; Tussyadiah & Pesonen, 2016), as much of the previous literature has included social exchange within the hedonic dimension. Other authors (Voss, Spangenberg, & Grohmann 2003) have analysed hedonics as an independent construct.

In summary, the proposed set of five dimensions related to the interaction with the website are:

- Site organization: Design of the site that makes it appealing and easy to browse.

- Platform responsiveness: Quickness to deal with and to establish agreements.

- Legal protection: Privacy and legal protection.

- Trustworthiness: Reliability and honesty of the published information.

- Hedonics: Characteristics that make interaction with the site pleasant and enjoyable.

4.1.2 *Peer service*

There are two dimensions connected to the peer service. The first concerns the physical facilities and behaviour of the peer provider. This was the first dimension in the original E-S-QUAL scale, called "Efficiency", and has been extensively used (Ladhari, 2009), although Cheng et al. (2018) did not mention it in their scale. The assessment of the shared assets is, however, included in the quality assessment system by some CC companies: the Airbnb satisfaction scale is based on seven items, one of which is "Cleaning: the degree of cleanliness and order of the accommodation".

The second dimension connected to the peer provider is the interaction with the peer provider in itself. Users of Uber expect their driver partners to drive safely and behave in a courteous and professional way. Employees' professionalism and their willingness to serve were included in SERVQUAL. Likewise, Cheng et al. (2018) devoted three items to assessing how the peer supplier performed with professionalism, looking for the customer's best interest. Two of the dimensions they proposed also overlapped with "peer service provider": competence and empathy. SERVQUAL also included a dimension to assess empathy of the provider's employees.

The two dimensions are conceptualized in the following way:

- Tangibles: Assessment of the physical appearance of the shared assets.
- Peer service provider: Professionalism, honesty and empathy of the peer server provider.

4.1.3 *Social encounters*

The last dimension includes the assessment of the quality of the social interaction with other consumers and with the peer server. Along with the interaction with the peer service

provider, this CC transaction fuels social encounters with other customers, resulting in a social experience. Guttentag (2015) has emphasized the importance of direct interaction with the local community for consumers. Möhlmann (2015) found that community belonging was an antecedent of satisfaction in CC. The interaction with the peer provider is also considered here. The previous dimension (peer service provider) analysed the professionalism, empathy and honesty of the provider, but not the personal social experience that results from this interaction (Benoit et al., 2017; Möhlmann, 2015; Tussyadiah & Pesonen, 2016). This social contact with the peer is captured in this dimension. Barnes and Mattsson (2016) have found that willingness to engage in social bonding is a driver for the expansion of CC in the future. This dimension is described as:

- Social interaction: Experience interacting with people (including other users and the peer provider).

4.2 *Generate the sample of items*

The results from the previous step are listed in Table 1, including the suggested dimensions and items for the CC-Qual scale. Because some authors use the same items, described in different terms, we first engaged in a debugging of the scale, so the items included in the final list from Table 1 were rewritten to homogenize the style.

Table 1. Items proposed for the CC-Qual scale, grouped in three subsets of perceived quality dimensions (platform, peer service and social encounters)

	Original code	Original dimensions	Item	CEO ratings: mean (standard deviation)	References
1	SO1		The information of the [CCS] is well organized.	4.71 (0.49)	Parasuraman et al. (2005)
2	SO2		This [CCS] is easy to use.	4.86 (0.38)	Parasuraman et al. (2005)
3	SO3	Site organization	The [CCS] makes it easy to find what I need.	4.71 (0.49)	Parasuraman et al. (2005); Cheng et al. (2018)
4	SO4		The design of the [CCS] offer/website is appealing to me.	4.43 (0.79)	Möhlmann (2015)
5	SO5		It is easy to access the [CCS], regardless of the device.	4.14 (0.90)	Own proposal
6	PR1		[CCS] makes it easy for me to conclude my transaction.	4.29 (0.95)	Möhlmann (2015)
7	PR2		The [CCS] is always quick to respond to my inquiries.	4.43 (0.53)	Cheng et al. (2018)
8	PR3	Platform responsiveness	The [CCS] allows quick delivery of the ordered service.	4.14 (0.90)	Parasuraman et al. (2005)
9	PR4		The [CCS] resolves my complaints quickly.	4.57 (0.79)	Parasuraman et al. (2005)
10	PR5		The [CCS] offers fair compensation for its mistakes.	4.57 (0.79)	Ganguli and Roy (2010); Parasuraman et al. (2005)
11	LP1		The [CCS] provides enough safeguards to make me feel comfortable about personal information.	4.29 (0.49)	Cheng et al. (2018); McKnight et al. (2002); Parasuraman et al. (2005)
12	LP2	Legal protection	I feel assured that the legal structures adequately protect me from problems on the [CCS].	4.14 (0.38)	Cheng et al. (2018)
13	LP3		I feel confident that the [CCS] makes it safe for me to conduct online transactions there.	4.71 (0.49)	Cheng et al. (2018)
14	TR1	Trustworthiness	The offline goods and services are always in line with the descriptions online.	4.14 (0.90)	Cheng et al. (2018); Möhlmann (2015); Parasuraman et al. (2005)

(Rows 1–13 span the vertical label "Platform perceived quality".)

15	TR2		The [CCS] is truthful about the information of the peer service provider.	4.00 (0.58)	Bapna, Gupta, Rice, & Sundararajan (2017)
16	TR3		The [CCS] provides reliable opinions from other customers.	4.29 (0.59)	Bapna et al. (2017)
17	TR4		The [CCS] has a good reputation.	4.43 (0.53)	Ert et al. (2016)
18	HE1		I enjoy sharing comments and experiences from other customers.	4.00 (0.82)	Bernardo et al. (2012)
19	HE2		The [CCS] allows connection with other customers (connected with Facebook or LinkedIn).	2.71 (1.38)	Bapna et al. (2017)
20	HE3	Hedonics	The [CCS] provides interesting complementary services.	2.86 (0.69)	Bernardo et al. (2012); Hamari et al. (2016)
21	HE4		It is fun to browse the [CCS].	3.00 (1.15)	Bernardo et al. (2012); Hamari et al. (2016)
22	HE5		I enjoy the information and recommendations provided to the customer on the [CCS].	3.57 (0.79)	Bernardo et al. (2012); Hamari et al. (2016)
1	TA1		The company offers more affordable prices than traditional services.	4.29 (0.76)	Benoit et al. (2017); Tussyadiah and Pesonen (2016)
2	TA2		The peer service provider is polite and pleasant.	4.29 (0.49)	Parasuraman et al. (1988)
3	TA3	Tangibles	The appearance of the physical facilities is consistent with the type of service industry.	3.86 (0.90)	Parasuraman et al. (1988)
4	TA4		The company offers different options according to my requirements (customization).	3.43 (1.27)	Own proposal
5	IP1		The peer service provider interacts at the times promised.	4.29 (0.95)	Parasuraman et al. (1988)
6	IP2		The peer service provider is willing to help customers.	4.71 (0.49)	Parasuraman et al. (1988)
7	IP3	Peer service provider	The peer service provider is trustworthy.	5.00 (0.00)	Parasuraman et al. (1988)
8	IP4		The peer service provider acts in the customers' best interest.	4.57 (0.79)	Cheng et al. (2018); McKnight et al. (2002); Parasuraman et al. (2005)
9	IP5		The peer service provider does their best to help.	4.86 (0.38)	Cheng et al. (2018); Parasuraman et al. (1988)

The column "Peer service perceived quality" is printed vertically spanning rows 1–9.

10	IP6			I rely on the competence and professionalism of the peer service provider.	4.29 (0.76)	Cheng et al. (2018)
11	IP7			I rely on agreements with the peer service provider.	4.43 (0.53)	Cheng et al. (2018); Parasuraman et al. (1988)
12	IP8			I value that the transaction is peer-to-peer.	4.14 (0.69)	Own proposal
1	SI1	Quality of social encounters	Social interaction	The experience helps me interact with the peer service provider.	4.29 (0.49)	Tussyadiah and Pesonen (2016)
2	SI2			The other customers are truthful in dealing with one another.	4.43 (0.53)	Möhlmann (2015)
3	SI3			The other customers will not take advantage of me.	4.57 (0.53)	Möhlmann (2015)
4	SI4			The transaction helps me meet and get to know people.	3.57 (0.53)	Benoit et al. (2017); Tussyadiah and Pesonen (2016)

Note: [CCS] Collaborative consumption site.

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This list of items was presented to a panel of seven CEOs, who were asked to assess the relative importance of each item on a Likert-scale from 1 (unimportant) to 5 (essential). The participants agreed to participate after personal contact was made with them. The experts were all entrepreneurs (owners or managers) of CC companies, which ensured the value of the information they provided. Each one was isolated and was asked to rate these items. Table 1 also presents the mean (and standard deviations) of the experts' ratings for each item. The consensus was high: the mean of the standard deviations for these ratings was 0.68.

Items below a rating of four were dropped. Four out of the five items for the hedonic dimension were discarded. It was also decided to withdraw the remaining hedonic item that was just at the threshold: the experts clearly advised dropping the entire dimension. For each item, the content validity ratio (CVR) was also estimated following Lawshe (1975) and Dwivedi et al. (2006). We assumed that the experts considered essential those items rated as a 5, and for the hedonic items, these ratios ranged between −1.00 and −0.43, which suggested a lack of content validity.

Two out of the four tangible dimension items were also dropped for similar reasons. The last item that did not pass the threshold for importance, and consequently was dropped, was originally embedded in "social interaction". This process yielded a total of 30 items: 17 for platform dimensions and 13 for people dimensions (peer provider and other customers).

4.3 *Validation of the scale*

Two samples were used. The first was for exploratory purposes to establish the dimensions of the scale and to assess the psychometric characteristics of those dimensions. The second sample was for confirmatory purposes.

Data from the first sample were collected from a convenience sample of CC company customers who had made a purchase within the preceding 12 months. The questionnaire consisted of the 30 items that remained from the previous phase and three sociodemographic questions. The survey was distributed, via snowball sampling, through the authors' personal contacts. Respondents were mainly from Europe (including Spain, Croatia, Czech Republic, Italy and Portugal). The companies most used by respondents were, by far, Airbnb (44%) and Uber (18%). Other companies mentioned were Glovo,

BlaBlaCar, Vivendex, Uship, Couchsurfing, Deliveroo, Iddink and Wingz. This variety of companies vouched for the usability of the instrument intended for any situation, proving its broad applicability. The left side of Table 2 shows the characteristics of the first sample.

Table 2. Demographic characteristics of both samples.

		Sample 1		Sample 2	
		Number	%	Number	%
Gender					
	Male	77	60.6	151	50.2
	Female	50	39.4	150	49.8
	Total	127	100	301	100
Age					
Between 16 and 25 years		40	31.5	10	3.3
Between 26 and 35 years		27	21.3	60	19.9
Between 36 and 44 years		41	32.3	115	38.2
> 45		19	15.0	116	38.5
	Total	127	100	301	100
Annual income (in euros)					
< 10,000 euros		29	22.8	25	8.3
Between 10,000 and 30,000		32	25.2	114	37.9
Between 30,000 and 50,000		22	17.3	65	21.6
Between 50,000 and 70,000		12	9.4	17	5.6
> 70,000 euros		13	10.2	9	3.0
I prefer not to answer		19	15.0	71	23.6
	Total	127	100	301	100

To investigate which factors emerged, two EFAs, using principal components analysis and varimax rotation, were launched with the first sample. The first EFA took only the 17 items from the dimensions of the perceived quality of the platform. The second EFA was conducted with the remaining 13 items from the dimensions related to the interaction with people, both the peer service provider and other consumers. The results for the Kaiser–Meyer–Olkin tests (KMOs) were 0.909 and 0.903, respectively, forecasting a good result for these analyses. Both Bartlett tests were also positive. These results confirmed a linear dependence among the variables and supported our view that the results were sound. We preferred to separate the items into these two analyses instead of using one EFA to avoid merging items that assess the encounter with the platform with those items that assess encounters with people.

The scales were analysed in accordance with very strict criteria, greater even than those used by Bernardo et al. (2012), who in turn used the criteria of Ladhari (2012) and Wolfinbarger and Gilly (2003) to retain items. The criteria were that the items (i) loaded at 0.66 or more on a factor, (ii) did not load at more than 0.50 on two factors, and (iii) had an item-to-total correlation of more than 0.50. In total, five factors emerged with eigenvalues greater than 1 (Kaiser criterion).

Table 3 summarizes both EFAs. Three factors emerged from the first EFA, all together accounting for 67.01% of the variance in the sample, whereas the second EFA extracted 66.58% of the variance with two factors. Table 3 shows these suggested five factors, where loads greater than 0.66 are shadowed. New (definitive) labels are proposed, although high overlap with original dimensions is shown.

- Site organization (SOR). This factor explained 27.22% of the variance of the 17 "platform" items and assessed the organization of the website, including how easy it was to find information and how easy it was to interact with the site. It retained three out of the five original items in this dimension (SO1, SO2 and SO3) and included an additional one that was previously under another dimension (PR1). A careful reading of this item clarifies why it has been re-aligned to this dimension.

- Platform responsiveness and agility (PRA) retained three out of the previous five items of this original dimension (PR2, PR4 and PR5) and explained 22.25% of the variance. It assessed interaction speed. Note that in its definitive label, the term "agile" is included because two of its items contain the word "quick".

- Legal protection and trustworthiness (LPT) was composed of the three original items of the dimension (LP1, LP2 and LP3) and gained an additional item (TR3), which concerned the reliability of the information posted by other users. It accounted for the 17.55% of the variance.

- Peer service provider (PSP) included the first 7 out of the 8 initial items and extracted 38.57% of the variance of the 13 items of the second EFA. It captured the perceived quality related to the peer service provider. It was closely related in content to the responsiveness and assurance dimensions of the SERVQUAL instrument. It measures characteristics of the peer server, the person who is serving: professionalism, competence, trustworthiness, quickness in interaction, honesty, etc.

- Social interaction (SIN) was composed of the two original items of this dimension (SI1 and SI2), and a third item was also included (IP8). It captured 28.02% of variance of the second EFA. This dimension assessed the social interaction with both other users and the peer service provider. TA1 was also included in this factor, although it was later removed because its content (service price) had nothing to do with the other three items.

Note that each of the five factors overlapped with some of the original dimensions of Table 1, and therefore only slight adjustments to the labels are proposed. The "migration" of items between original dimensions was also consistent with the definitive dimension contents.

Three original dimensions were removed at this point. The hedonic dimension was dropped based on the experts' feedback and, based on the two EFAs, trustworthiness and tangibles were also removed. These findings are consistent with Cheng et al. (2018) and Ganguli and Roy (2010), whose research models clearly proposed constructs similar to ours.

The definitive five dimensions are grouped in three subsets of dimenions: (i) the encounters with the platform (SOR, PRA and LPT), (ii) the perceived quality of the peer server provider (PSP), and (iii) the social interaction with the peer and with other customers (SIN).

Table 3. Matrixes of the components extracted using two EFAs. The left side shows the results of the first EFA, which takes the 17 items related to the platform encounter. The right side shows the second EFA with the remaining 13 items, which assessed the interactions with people.

	EFA (17 items "platform")			EFA (13 items "people")	
	1 SO	2 LP	3 PR	4 IP	5 SI
SO1	0.735	0.349	0.091		
SO2	0.758	0.331	0.187		
SO3	0.761	0.241	0.239		
SO4	0.680	0.114	0.157		
SO5	0.666	0.129	0.221		
PR1	0.799	0.291	0.188		
PR2	0.365	0.297	0.681		
PR3	0.569	0.045	0.590		
PR4	0.187	0.236	0.874		

PR5	0.133	0.361	0.800		
LP1	0.293	0.668	0.401		
LP2	0.029	0.795	0.312		
LP3	0.475	0.670	0.234		
TR1	0.355	0.647	0.252		
TR2	0.113	0.616	0.423		
TR3	0.445	0.689	0.027		
TR4	0.479	0.549	0.053		
TA1				0.152	0.745
TA2				0.518	0.507
IP1				0.743	0.260
IP2				0.827	0.307
IP3				0.734	0.412
IP4				0.753	0.377
IP5				0.775	0.329
IP6				0.824	0.210
IP7				0.795	0.258
IP8				0.339	0.691
SI1				0.266	0.805
SI2				0.323	0.790
SI3				0.420	0.623
% of variance	27.218	22.246	17.547	38.566	28.018

Note: Shaded items show loads over the 0.66 threshold. Note that TA1 is shadowed because it achieved retention criteria, although, as mentioned above, it was dropped in the subsequent step due to the criterion of content validity.

To examine the unidimensionality of these new and definitive five constructs, five new independent EFAs were conducted, each with only the items suggested in the previous step (the shaded items in Table 3). The five analyses extracted only one factor each. Table 4 shows the statistics for reliability and convergent validity of these five factors. The reliability of individual items was vouched for by their high loads. Cronbach's alpha coefficient and the composite reliability in every case exceeded the threshold value of 0.7 for internal consistency (Nunnally & Bernstein, 1994). The average variance extracted (AVE) for each factor was also greater than 0.5, which is on the edge of the recommended threshold (Fornell & Larcker, 1981). The Cronbach's alpha values did not improve when any of the items were removed from the scales for each dimension, and the correlations between each item and the total corrected scales were all far beyond 0.5. Convergent validity was confirmed for all of the factors, where all of the items were shown to have significant loads (t > 2.58).

Table 4. Loads of the five EFAs and statistics for their reliability analyses.

	Site organization		Legal protection and trustworthiness		Platform responsiveness and agility		Peer service provider		Social interaction	
	SO1	0.720	LP1	0.865	PR2	0.838	IP1	0.782	IP8	0.867
	SO2	0.822	LP2	0.813	PR4	0.938	IP2	0.882	SI1	0.874
	SO3	0.741	LP3	0.858	PR5	0.890	IP3	0.843	SI2	0.861
	PR1	0.780	TR3	0.801			IP4	0.849		
							IP5	0.845		
							IP6	0.843		
							IP7	0.830		

All loads significant at p-value = 0.01

	Site organization	Legal protection and trustworthiness	Platform responsiveness and agility	Peer service provider	Social interaction
Cronbach's alpha	0.987	0.853	0.864	0.930	0.834
Range of Cronbach's alpha if one item is removed	0.849–0.880	0.792–0.833	0.713–0.883	0.705–0.830	0.773–0.781
Range of correlations between items and total corrected scale	0.736–0.820	0.645–0.742	0.658–0.846	0.651–0.767	0.687–0.708
Composite reliability	0.968	0.902	0.919	0.944	0.901
Average variance extracted	0.588	0.697	0.791	0.705	0.752

Table 5 provides the results of the discriminant validity analysis, which was conducted using linear correlations or standardized covariances between latent factors by examining whether the inter-factor correlations were less than the square root of the AVE (Fornell & Larcker, 1981). Table 5 shows that the square roots of each AVE were greater than the off-diagonal elements, vouching for discriminant validity. The only concern was connected with the high correlation between "legal protection and trustworthiness" and "peer service provider", although this was still under the recommended threshold of 0.85 used by Kamboj et al. (2018).

Table 5. Correlation matrix of latent factors.

	1	2	3	4	5
1 Site organization	*0.767*				
2 Legal protection and trustworthiness	0.679	*0.835*			
3 Platform responsiveness and agility	0.522	0.636	*0.890*		
4 Peer service provider	0.636	0.801	0.606	*0.840*	
5 Social interaction	0.423	0.556	0.358	0.654	*0.867*

Note: In the main diagonal the square of AVE

To set up the definitive scale, the next and final step was to analyse these five CC-Qual dimensions as dimensions of a second-order CFA. The model was estimated using the robust maximum likelihood method from the asymptotic variance–covariance matrix. The second sample was used in this step. A total of 301 questionnaires were collected, which consisted of the remaining 21 items after the scale debugging process.

This second data collection process was assisted by a specialized company. The right side of Table 2 shows the demographic characteristics of this second sample (n = 301). The targeted people were, again, persons who had made a purchase using one of these CC companies within the last 12 months. In this second sample, participants were only from Spain. This sample did not show any bias in terms of gender. The weights of Airbnb and Uber were still very significant in terms of the number of respondents that had used them, but were less than in the first sample. Airbnb was mentioned by 33.3% and Uber by 13.0%, while eBay took second place in the ranking (14.3%) and BlaBlaCar (6.6%) was fourth.

The fit indices obtained in the measurement model estimation showed that the variables converged toward the factors established in the CFA (see Table 6). The Satorra–Bentler

χ^2 was 245.97, with 179 degrees of freedom and a p-value of 0.001; χ^2/df was 1.37, which was below the acceptable limit of 5. The root mean-square error of approximation (RMSEA) was 0.035 and the comparative fit index (CFI) was 0.973. Taking the significance of the robust χ^2 statistic with caution and noting the global indicators, the global fit was acceptable.

Table 6. Confirmatory factor analysis of CC-Qual, using the second sample (n = 301).

Dimension	Items	Load	t-value	r^2
Site organization	SO1	0.847	–	0.717
	SO2	0.828	16.60	0.686
	SO3	0.763	16.39	0.581
	PR1	0.826	16.54	0.683
Legal protection and trustworthiness	LP1	0.808	–	0.653
	LP2	0.747	13.33	0.558
	LP3	0.615	10.52	0.378
	TR3	0.747	14.29	0.557
Platform responsiveness and agility	PR2	0.825	–	0.681
	PR4	0.807	14.42	0.651
	PR5	0.680	11.62	0.463
Peer service provider	IP1	0.783	–	0.613
	IP2	0.848	17.73	0.719
	IP3	0.839	15.28	0.703
	IP4	0.808	15.87	0.652
	IP5	0.841	17.07	0.707
	IP6	0.824	16.72	0.680
	IP7	0.818	17.93	0.669
Social interaction	IP8	0.705	–	0.496
	SI1	0.776	12.74	0.602
	SI2	0.703	10.76	0.495

Goodness of fit summary

Satorra–Bentler scaled χ^2	245.97
Degrees of freedom	179
p-value	0.001
χ^2/df	1.37
Comparative fit index (CFI)	0.973
Root mean-square error of approximation (RMSEA)	0.035
90% confidence interval of RMSEA	(0.024–0.046)

In summary, the validation process of this scale started with the literature review, which resulted in eight dimensions and 38 items. The list was presented to a panel of seven entrepreneurs, which resulted in the removal of eight items that were considered not

relevant. The remaining 30 items were used in a survey, and 127 questionnaires were collected and used for an exploratory analysis, which resulted in the removal of nine additional items. As a result, the final and definitive scale (consisting of 21 items in five dimensions) was applied in a survey of a second sample of 301 customers, the data from which were used to confirm the definitive CC-Qual scale. Table 7 shows the number of remaining items (and dimensions) after each debugging step. The appendix shows the definitive scale, with two codifications: the original assigned at the literature review step and the definitive code.

Table 7. Number of items after each step.

	Original dimension	Literature review	Entrepreneur focus group	Exploratory analysis	Definitive dimension
	Site organization	5	5	4	Site organization
Platform	Platform responsiveness	5	5	3	Platform responsiveness and agility
	Legal protection	3	3	4	Legal protection and trustworthiness
	Trustworthiness	4	4		
	Hedonics	5	–	–	–
Peer service	Tangibles	4	2	–	–
	Peer service provider	8	8	7	Peer service provider
Social encounters	Social interaction	4	3	3	Social interaction
Number of items remaining		38	30	21	

5. DISCUSSION

The first finding in this article is that the perceived quality of CC service is a multifactor construct. The proposed scale (CC-Qual) is composed of 21 items arranged in five dimensions: three related to interaction with the website ("site organization", "platform responsiveness and agility" and "legal protection and trustworthiness"); one related to the encounter with the person who supplies the service (interaction with the peer service provider); and the last related to social interaction. The first set of dimensions are, as it were, "online" dimensions, because the encounter with the platform is purely online; and

the two remaining dimensions assess the encounter with other people (the peer service provider and other customers), which can incorporate both on- and off-line elements. This double assessment of the service is consistent with previous authors. Cheng et al. (2018) also found that both perspectives (on- and off-line) are required to assess the overall service. Previously, Ganguli and Roy (2010) also underpinned this double perspective with their hybrid model. Parasuraman and his team had also envisaged this double focus when they proposed two different instruments, one for off-line services (SERVQUAL) and another for on-line services (E-S-QUAL).

A first analysis based on a sample of 127 users concluded with five dimensions encompassed in the CC-Qual, and at this point the scale was settled. A second, confirmatory analysis conducted on a larger sample (n = 301) vouched for the definitive CC-Qual scale in a consistent way.

The first dimension that emerged was "site organization," which encompassed the items that dealt with the information on the website: its organization, the quality of this information and the way it was displayed to enhance the interaction. This was consistent with previous instruments (E-S-QUAL), which also included a similar dimension. Möhlmann (2015), in her study, did not, however, include this dimension as an antecedent of satisfaction, nor did Priporas et al. (2017) consider this dimension in any of the constructs of their model, although they refer to some of its content. Our finding enhances the relevance of this dimension.

"Platform responsiveness and agility" was the second online dimension and assessed the quality of the reaction of the site to customer inquiries and complaints. This dimension encompassed items included in the previous scales of Parasuraman and his team (E-S-QUAL and E-RecS-QUAL). This last scale (E-RecS-QUAL) assesses non-routine encounters with a site. This dimension was clearly established by Cheng *et al.*, (2018).

"Legal protection and trustworthiness" assessed the degree of concern felt by customers that something might go wrong in the service. This dimension was also analysed and highlighted as being of paramount importance in recent literature (Cohen & Kietzmann, 2014; Leighton, 2016; Priporas, Stylos, Rahimi, & Vedanthachari, 2017). Note the inclusion of the word "trustworthiness" in this label.

Beyond the encounter with the website, the way the service was supplied was also important. The interaction with the person delivering the service was another dimension

of the scale. Cheng et al. (2018) proposed some latent variables (e.g. competence, empathy and attitude) that were included in this fourth dimension. This dimension also inquired into the trustworthiness of the peer service provider, which, as the recent literature agrees, is of key importance (Bardhi & Eckhardt, 2012; Cohen & Kietzmann, 2014; Richardson, 2015).

The last dimension dealt with the social interaction during the service, both with the peer service provider and with other customers. This was particularly significant for some CC companies, such as Airbnb and other hospitality websites. Priporas et al. (2017) have asserted that the authenticity of the peer-to-peer contact in the accommodation experience is particularly relevant.

It was also remarkable that the hedonic dimension was not included in the scale, due to its rejection by the seven experts. Benoit et al. (2017) included this issue in their analysis, while Llach, Marimon, Alonso-Almeida and Bernado (2013) considered this dimension in their scale for online travel agencies. It seems possible that this dimension could be relevant for particular CC companies (e.g. online travel agencies), but it lost significance when viewed through the lens of the common CC costumer. An analogous explanation applied for another original dimension that was not included in the final scale: tangibles. While tangibles might be important in particular cases, but it lost interest as a general dimension for the scale. This emphasized that the scale needs careful adaptation for every particular case where it could be used.

More explanation is required to justify the exclusion of "trustworthiness" from the scale, although it should be stressed that the original content of this dimension was assessed in the final "legal protection and trustworthiness" dimension, particularly item TR3— "reliability on opinion of others consumers". The literature has asserted the importance of trustworthiness in e-commerce (Ert et al., 2016; Kamboj et al., 2018; Loiacono et al., 2002; McKnight et al., 2002), and, more particularly, in the CC setting the relevant role of trust and reputation has also been noted (Cheng et al., 2018; Möhlmann, 2015). The fourth dimension ("peer service provider") also assessed the trustworthiness of the peer interaction, so it did not emerge as a pure dimension, but rather one the content of which was embedded in other dimensions, which is consistent with the current literature (Chen et al., 2009; Ert et al., 2016; McKnight et al., 2002).

5.1 *Research contributions*

The paper will be of interest to both academics and practitioner. Whereas the theoretical contribution deals with the conceptualization of the CC setting and with the set of dimensions proposed, the practical implications are valid for the three players of the CC setting: the CC organization, the peer provider and the final customer.

The present research has been an effort to better conceptualize the CC model and its perceived quality, along with the development of an instrument to measure perceived quality in this setting. This research will be valuable for academics, because it provides for the first time a valid instrument for any CC service that can be applied to analyse quality management and used in the construction of research models, along with other well-established constructs such as satisfaction, loyalty or intention behaviour.

CC-Qual is also of interest for practitioners, because the scale is valid for any company that operates in this pattern, regardless of specific activity or sector. The scale encompasses the main dimensions of these services and has the potential to be adapted for any particular case. Accordingly, it contains a number of items to assess the website encounter experience, the supplier contact experience and, finally, the encounters with other CC consumers. It can be valuable for companies that want to provide a complete and reliable assessment of their quality to their customers. This scale can also assist in benchmarking, because the instrument is applicable to any company operating within the CC model.

The scale will also interest customers, because it provides a complete view of the service. Moreover, in cases where the assessment is published by an independent and prestigious organization, the results would gain in credibility and veracity.

Finally, the scale is also short enough (21 items) to ensure easy application. Even small CC companies with limited resources will be able to use it. This very fact makes the scale universal and easy to adapt to different settings, although each company would need to make an effort to adapt it to the company's particular case.

6. CONCLUSIONS

The paper describes the entire process designing and validating an instrument to measure the perceived quality for consumers of CC. First, a summary of the contributions to

service quality measurement enabled the conceptualization of a CC model. Next, the definition of the domains provided the content of the construct. The content validity was verified through the CVR for all initial items considered. An exploratory analysis with a small sample (n = 127) established the definitive dimensions, which were confirmed with SEM conducted with a larger sample (n = 301). The results demonstrated acceptable reliability of the dimensions and acceptable fit of the scale.

It must, however, be mentioned that there are a series of limitations to the present study that, in turn, represent avenues for future research. The empirical application used a sample from one country, so the results may not be generalizable worldwide. A broader sample should be used in future research to examine its validity in other socio-cultural and geographical setting. Cross-country comparisons would be a potential avenue for future research, although we are naturally aware of the difficulties in obtaining homogeneous data.

There is also an additional issue that has not yet been raised: the role of the device used by the customer. The device plays an important role in consumer experience and was not analysed in this scale. In their model, Devaraj et al. (2002) analysed the influence of "usefulness" and "ease of use" in satisfaction within the e-commerce setting. Further research that would incorporate the device type in the assessment is warranted.

Although this paper provides an original contribution to the existing literature on assessing the quality of services provided by CC companies, we hope that these findings encourage further research and that they can be applied to help achieve effective assessment of perceived quality. Careful attention will be needed to adapt this instrument to different situations. This will lead to research that will analyse whether it would be worthwhile to include additional dimensions, such as hedonics, trustworthiness or tangibles, that are not in the current scale.

APPENDIX. Proposed scale for perceived quality in collaborative consumption companies.

Dimension		Original code	Definitive code	Descriptive
Site organization	1	SO1	SOR1	The information of the [CCS] is well organized.
	2	SO2	SOR2	This [CCS] is easy to use.
	3	SO3	SOR3	The [CCS] makes it easy to find what I need.
	4	PR1	SOR4	[CCS] makes it easy for me to conclude my transaction.
Platform responsiveness and agility	5	PR2	PRA1	The [CCS] is always quick to response to my inquiries.
	6	PR4	PRA2	The [CCS] resolves my complaints quickly.
	7	PR5	PRA3	The [CCS] offers fair compensation for its mistakes.
Legal protection and trustworthiness	8	LP1	LPT1	The [CCS] provides enough safeguards to make me feel comfortable about personal information.
	9	LP2	LPT2	I feel assured that legal structures adequately protect me from problems on the [CCS].
	10	LP3	LPT3	I feel confident that the [CCS] makes it safe for me to conduct online transactions there.
	11	TR3	LPT4	The [CCS] provides reliable opinions from other customers.
Peer service provider	12	IP1	PSP1	The peer service provider interacts at the times promised.
	13	IP2	PSP2	The peer service provider is willing to help customers.
	14	IP3	PSP3	The peer service provider is trustworthy.
	15	IP4	PSP4	The peer service provider acts in the customers' best interest.
	16	IP5	PSP5	The peer service provider does their best to help.
	17	IP6	PSP6	I rely on the competence and professionalism of the peer service provider.
	18	IP7	PSP7	I rely on the agreements with the peer service provider.
Social interaction	19	IP8	SIN1	I value that the transaction is peer-to-peer.
	20	SI1	SIN2	The experience helps me interact with the peer service provider.
	21	SI2	SIN3	The other customers are truthful in dealing with one another.

Note: CCS, Collaborative consumption site.

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