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ABSTRACT

The present article seeks to identify the reasons why some articles are more cited than others, with a specific focus on the recent and innovative research area of the sharing economy. To determine how characteristics of the research drive citations, we carry out a systematic analysis of articles published from 2012 to 2018 in high-impact social science journals. Comparative analyses were conducted to visualise what features relate to higher citations. The results show that citations vary depending on the approach, field, unit of analysis, and the data analyses used in the research. Our contributions will be useful both for authors when deciding the type of analysis to undertake and the journal to which to send their papers, as well as for editors setting editorial policy.

1. Introduction

The first author to discuss the sharing economy was Ray Algar in his 2007 (Algar 2007) article 'Collaborative Consumption' in the *Leisure Report* newsletter. However, the topic only became popular in 2011, when Rachel Botsman & Roo Rogers published their book 'What's Mine Is Yours: The Rise of Collaborative Consumption'. Since then, increasing numbers of articles have analysed the phenomenon of the sharing economy and/or collaborative consumption, particularly in the literature promoting more sustainable economic practices (Curtis & Lehner, 2019), and it has become a trending issue in the current research agenda (Arcidiacono, Gandini, & Pais, 2018; Kumar, Lahiri & Dogan, 2018).

When a new research field becomes popular and attracts growing academic interest, a bibliometric study becomes worthwhile to analyse its literature in a systematic way and investigate its scientific and academic impact.

The bibliographic material in the field under study is analysed using statistical methods (Broadus, 1987) and citation analysis is one of the most widely used bibliometric methods for assessing research impact, productivity, and quality (Hamrick, Fricker, & Brown, 2010).

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In current academic research, a highly cited article tends to be seen as a higher quality one, citation numbers having become one performance metric for weighing the influence, impact, and relevance of academic work (Judge, et al., 2007). This metric is not without its critics constituting, as it does, a crude proxy for quality, and one which sometimes is affected by factors unrelated to the research contribution (Hamrick et al., 2010). But even so, its quantitative nature, and its consistency in standardizing academic impact across journals and papers, explain its relevance in the literature on judging and analysing the impact of research and its frequent use as a metric (Hamrick et al., 2010).

It is used for different purposes, such as the assessment and ranking of journals, performance comparison between research institutions, or the evaluation of academics within the scientific community (Hamrick et al., 2010). Authors with higher productivity in terms of articles and citations may receive higher grants and salaries (Ali, Bhattacharyya, & Olejniczak, 2010; Judge et al., 2007), and their reputation and visibility may also improve. Citation analysis sheds some light on the characteristics of the articles that have been published, tells us which articles are more cited and helps explain why. Its results are useful for authors when deciding the topics of most current interest, what are the best approaches to apply, what type of analysis to conduct, and to what journals should they send their papers in order to attract more citations and reach a larger audience.

As the subject of research excellence has attracted increased attention in the academic literature over the last few decades, an increasing number of bibliometric studies have been published dealing with, and characterising the impact of, papers in different disciplines (Bornmann, 2014). However, in the field of the sharing economy and collaborative consumption such systematic analyses are, to the best of our knowledge, scarce and only address the growth of contributions in the field, the geographical contexts of these studies (Arcidiacono et al., 2018), or use generic, conceptual or theoretical approaches (Görög, 2018), but not paying attention to the characteristics of the papers themselves (Ranjbari, Morales-Alonso, & Carrasco-Gallego, 2018). As yet, there is no citation analysis literature for the sharing economy, so we have taken a first step into a promising research area.

The aim of this research is to provide an overview of the key publication and citation factors in the sharing economy and collaborative consumption area, and to conduct an exploratory bibliometric assessment on the impact of the relevant papers. Articles related to the sharing economy and collaborative consumption, published between 2012 and 2018 in the Scopus database, are analysed to determine how citations are driven by the characteristics of the articles themselves.

In this paper, we first sketch the theoretical framework regarding citation analysis by examining the current literature in both areas; the methodology used for data collection is described; the results are presented and discussed together with their implications; finally some conclusions are drawn, and the limitations of the current work and areas needing further investigation are highlighted.

2. Literature review

Despite the popularity of the sharing economy as a research field for scholars during the past few years (Arcidiacono et al., 2018, Kumar, Lahiri, & Dogan, 2018), no

generally accepted definition of the term yet exists (Dredge & Gyimóthy, 2015; Görög, 2018). One reason might be that the wide scope of the sharing economy includes many types of platforms or ways of sharing and these differences lead to inconsistencies in how researchers conceptualise the topic (Habibi, Kim, & Laroche, 2016).

Another reason for the lack of consensus on the definition is the popularisation of the sharing economy as a form of collaborative consumption (Botsman & Rogers, 2011). The academic analysis of the sharing economy has generally been diffuse and heterogeneous, and there is no consensus on the terms to use when analysing the area (sharing economy, collaborative economy, collaborative consumption, peer-to-peer, etc.). In that sense, Belk (2014) identifies some differences between what is called true sharing and the dynamics of collaborative consumption.

Due to the lack of consensus on the terms used and the similarities, and their frequently shared use, rather than differentiate them, we focus on the current literature where sharing economy and collaborative consumption are analysed. A systematic literature review and a citation analysis are carried out in the present article in order to shed light on the most common and successful practices in the analysis of the issues of the sharing economy and collaborative consumption.

2.1. Systematic literature review

Firstly, we will describe what a systematic review normally involves. In the bibliometric analysis literature, it is common to choose a specific journal and identify its trends and topics, studying some features and characteristics of its higher impact studies (Cancino, Merigó, Coronado, Dessouky, & Dessouky, 2017; Merigó, Blanco-Mesa, Gil-Lafuente, & Yager, 2017). Among these bibliometric studies centred in one journal, more frequent are those studies that make a specific approximation to one highly recognised journal in a specific field, once the topic has been selected (Lowe & Gardner, 2000; and Gardner, Lowe, Cogliser, Moss, & Mahoney, 2010).

Other studies have centred their bibliometric reviews not in one specific journal, but on specific institutions or countries (Cancino, Merigó, & Coronado, 2017; Linton, 2004). A good example of bibliometric research applying a country analysis is the study by Merigó, Cancino, Coronado, and Urbano (2016) on innovation, published in *Scientometrics*.

The most common bibliometric analysis approach focuses on a specific topic (Mcdonnell, Collings, Mellahi, & Schuler, 2017). In this case, the systematic review requires that articles on a specific topic are searched from one or more databases by searching for the topic in the article title, abstract or keywords. Additional search criteria may be used. After the primary selection, more filters and content analyses are developed in order to discard those papers that are not within the scope of the study (Bornmann, 2014). This results in a subset of papers which are highly aligned with the topic—their most common characteristics and features are then analysed. Normally, this kind of analyses shows an increasing trend because systematic literature reviews are frequently applied to topics that become popular and has a significant growth in the last years (Mcdonnell et al., 2017).

Other interesting analyses relate to statistics on the top journals, their quartiles and impact factors, trending authors, the number of papers per author (Calma & Davies, 2016), and how authors from different universities and institutions collaborate. The analysis of authorship may include citation counts to determine the most influential authors in a field, as well as the analysis of the authors' H index, a metric for a scholar's scientific research output derived by comparing papers and citations, (Hirsch, 2005). In addition, co-authorship is one of the most tangible form of scientific collaboration and networking in research and takes into account the authors' nationalities or affiliations (Merigó et al., 2016; Niñerola, Sánchez-Rebull, & Hernández-Lara, 2019). Systematic reviews frequently include a geographic analysis which includes data such as the location of the journals publishing on a specific topic, the region where the data were collected, or an author's country of affiliation (Niñerola et al., 2019). Although the findings vary depending on the topic under research, it is quite frequent that most of the papers considered were written in Anglophone countries, and especially in North America, although the last few decades have seen an increasing number of research studies originating in Asia (Chatha, Butt, Jajja, & Arshad, 2018; Dragos, Dinu, Pop, & Dabija, 2014).

Keywords analyses are also frequent. When keywords are studied, it is important to conduct not only frequency analysis, but also the proximity and the relationship between them. Keyword co-occurrences identify research hot spots by locating the keywords that frequently appear in different articles on the same topic (Niñerola et al., 2019). Similar analyses can be applied to other research features, such as citations and references. Co-citations measure the frequency with which two different documents are cited together in other works (Small, 1973)—this shows that contributions of co-cited authors are likely to be related (Nerur, Rasheed & Natarajan, 2008), and illustrates the intellectual structure of a discipline (Pilkington & Meredith, 2009). Co-citation analysis is common for authors, journals, and documents (Nerur, Rasheed, & Natarajan, 2008; Pilkington & Meredith, 2009).

The goal of systematic reviews is to retrieve, appraise and summarise all the available evidence, information and characteristics relating to a specific research topic, in an attempt to reach conclusions on the state of the art in the area.

Few systematic literature reviews have been conducted in the sharing economy and collaborative consumption field. One example is Arcidiacono et al. (2018) who focused on the sociological perspective of sharing. That study found that papers were being produced at an increasing rate (most of them in an Anglo-American context). Most of the articles analysed were studying the sharing economy from a generic economical perspective, rather than focusing on a specific topic. Another paper which analysed the sharing economy literature was (Ranjbari et al., 2018) which was based on a theoretical/conceptual approach and focused on the definition of the term (Görög, 2018; Curtis & Lehner, 2019), without paying attention to the trends and characteristics of the papers analysed. Finally, there are systematic reviews on the sharing economy many of which use content and co-citation analysis to undercover the theoretical foundations and key topics in the field—these, however, are centred on specific sectors, for example, the tourism and hospitality sector (Cheng, 2016), or computing (Dillahunt et al., 2017). So, it seems that arriving at a better understanding

of recent changes in the volume and content in the field's literature would help fill an important research gap.

2.2. Citation analysis

The methodology of citation analysis was first developed by Eugene Garfield in 1955 (Garfield 1955) when he published *the Science Citation Index (SCI),* in order to track citations in the scientific literature. Since then, many authors have used citation analysis as a bibliometric method for assessing research impact, productivity, and quality (Hamrick et al., 2010; Moed, 2006). Citations are used as sources of information, to acknowledge prior relevant research, and to substantiate claims. As such, citation analysis plays a key role in the evolution of knowledge and is widely used to quantify the impact of papers, scholars, journals, and even nations (Hamrick et al., 2010; Moed, 2006).

Usually, citation analysis is carried out focusing on a specific activity or industry (e.g., Chatha, Butt, and Tariq (2015) for the manufacturing sector; Calma and Davies (2015) for higher education), or focusing on a specific journal or database (e.g., Calma and Davies (2016) on the *Academy of Management Journal*; Antonakis, Bastardoz, Liu, & Schriesheim (2014) on *Leadership Quarterly*).

Many authors interested in analysing the characteristics that makes the papers more cited (Aksnes, 2003; Antonakis, Bastardoz, Liu, & Schriesheim, 2014; Calma & Davies, 2016; Chatha et al., 2015), work primarily with the total numbers of citations and the citations per year. Characteristics frequently used in systematic literature reviews are the number of authors per paper and the most cited authors, the number of citations, the region, specific topics within the research area, the approaches and methods used.

There are around 150 studies on citation analysis in relation to management and business studies (Calma & Davies, 2016), however to the authors' best knowledge, none of them has been done on the sharing economy and/or collaborative consumption.

When analysing the specific characteristics that make a certain article being more cited, the citation literature has reached some consensus regarding some of these characteristics. Focusing on the issue of the authorship, it has been shown that highly cited articles tend to be authored by many researchers and are typically the result of international collaboration (Aksnes, 2003). Papers with many authors will benefit from enhanced dissemination throughout the research communities through the personal networks and interactions of each author (and perhaps from hypothetical self-citers). Furthermore, some studies have found that collaboration increases the quality of the research and so the number of cites received (Aksnes, 2003).

Regarding the approach and methods used, Antonakis et al. (2014) found that qualitative articles were less cited than quantitative ones, and Bergh, Perry, & Hanke, 2006 found that papers with a higher methodological rigor produce results that are more valid and are cited more often. Thus, studies that are based on dominant and well-validated theories, as well as best methodological practices, would be expected to attract more attention from other scholars.

Another important factor is the year of publication, as older articles are cited more than more recent ones simply because of the time factor (Bergh et al., 2006; Judge, Cable, Colbert, & Rynes, 2007). Hence, many of the studies consider the number of cites per year as a dependent variable also in order to eliminate the effect of time.

Since the sharing economy and collaborative consumption constitute quite new research areas, but ones with promising growth expectations, we took the opportunity to conduct a systematic review and citation analyses on the field, with a view to answering two main research questions. Firstly, which are the main characteristics of the papers published in sharing economy? Secondly, which features characterise the most cited papers?

3. Methodology

3.1. Data collection

The process of systematic review and citation analysis involves documenting all procedures carried out to perform the search. In this work, for example, three steps were followed to identify relevant papers on the sharing economy.

First, the databases in which to search for information were chosen. In this case, we chose Scopus because it has a wider coverage of journals than does the Web of Science (Meho & Yang, 2007), which means that we have a broader measure of citation impact. Also, Scopus has an efficient author finder that can group articles attributed to a particular author name to a common affiliation (which improves the accuracy of citation and publication data at the author level) for their relevance, prestige and functionality when setting criteria (Antonakis et al., 2014).

Second, we identified the keywords related to the topic, that is 'sharing economy' and 'collaborative consumption' and we searched the articles that have one of these concepts in their tittle. Our systematic review analyses the articles published from the initial appearance of the term 'sharing economy' in the academic field, so it takes into account the articles published from 2007 to 2018 (the search being conducted on January 2nd, 2019). The result was 763 publications that included articles, editorials, reviews, meetings, and errata. From these, we considered only articles published in journals. Also, articles with no citations were discarded; since we are interested in the citation determinants there is no need to analyse articles without citations. Moreover, most of the articles with no citations were the articles published in 2018 (elapsed time factor). This reduce the final number of articles considered to 367.

The articles were briefly analysed by reading the abstracts to exclude those not related to the sharing economy or collaborative consumption issues; duplicated articles were eliminated. Thus, a further 154 were discarded, resulting in 212 articles for analysis. The following variables were recorded for each paper: title, author, keywords, number of references and publication year.

Finally, the 212 articles were read in more depth in order to classify them by different variables including their approach, field, data collection, unit of analysis, methodology, region, and data analysis. These are discussed in more detail later.

3.2. Measurement of variables

With regard to the *dependent variables* of this study, two related to the academic impact of publications were considered: *articles citations* and *articles citations per year*. Chatha et al. (2015) performed a similar citation analysis focusing on the most cited articles in the manufacturing industry using the same dependent variables.

To avoid any bias provoked by the influence of time on the impact of publication, because older papers have more time to be cited, we decided to include a second dependent variable, measured through the division of the total number of citations by the number of years since the paper was published (hereafter, tenure), thus obtaining the citations per year of each publication.

The *independent variables* used to determine the type of research that generates more interest by academics were the following:

The articles' *approach* was coded using a dummy variable with two levels, theoretical or empirical articles. If articles made contributions both to theory and empirically, either quantitatively or qualitatively, they were coded as empirical; if articles were both a review and also made propositions for a theoretical contribution, we coded them as theory. We coded articles that explained or reviewed methods and previous literature as theory.

The articles' *field* was determined through eight categories (economy, management, regulation, sociology, sustainability, technology, tourism and transportation) assigned to the area and the analysed topic of the articles.

Data collection was also considered as an independent variable, measured by a dummy variable with five levels (questionnaires, interview, experiment, secondary sources and observation) depending on how the data and information for the articles were retrieved.

The *unit of analysis*, considered as the object called to be researched, was measured using a dummy variable with three levels: previous research or articles (to basically determine theoretical works in which a literature review is conducted), firms or companies, and customers or users.

The *methodology* was determined through a dummy variable with three levels. We classified the articles having a quantitative and/or qualitative methodology. If an article used both qualitative and quantitative data, it was considered as 'both'; we included meta-analyses as quantitative research.

Finally, the *data analysis* was considered as an independent variable with 8 levels: content analysis (basically applied in qualitative research), case studies, descriptive analyses (including correlation, factorial, and analyses of variance), structural equation modelling, mixed methods, ordinary least square regressions, other kind of regression analyses (like probit, logit or panel data), and simulation.

Besides the dependent and independent variables, other information was retrieved to characterise the papers. For example, for each paper, we recorded its title, year of publication, age or tenure (i.e., 2019 minus year of publication), journal, authors, number of authors, keywords, and region (that is, the location where data was collected).

4. Results

In this study we carried out statistical analyses to describe the main characteristics of papers published on the field, and also to explore differences in the impact of publications depending on their characteristics or features. All statistical analyses were conducted using RStudio, Version1.0.136 (R Core Team, 2015).

4.1. Systematic literature review

In order to describe the main characteristics of papers in the field of the sharing economy and collaborative consumption, the primary analytical method applied was content analysis, in line with earlier works such as that of Chatha et al. (2018). In our study, the change over time of the research on the chosen topics is shown in Figure 1. Although the search was conducted considering the period 2007–2018, after processing all the articles initially found, the only years with articles to consider were from 2012 to 2018.

Figure 1 clearly shows the growth of academic research on topics related to the sharing economy, which reaches a peak in 2017 (with 94 articles), followed by a decrease in 2018 (with 58 articles). The average number of papers per year during the period is 30.3.

If we had not discarded the articles with no citations, the sample would have consisted of 294 articles. That means that 27.9% of the papers received no citations at all. Considering all these 294 papers the growth over the years is maintained, reaching the peak in 2018 (with 117) articles, followed by 2017 (with 106 articles). However, the growth rate from 2017 to 2018 (10.4%) is very much lower than the previous rate (152.4% from 2016 to 2017). Over the course of time, we will see how the growth rate evolves—it is possible that when the topic becomes mature, the number of papers published tends to flatten out or even decrease.

The geographical scope of these publications covers a large number of countries. We were able to identify a total of 62. However, five countries appeared most frequently in these publications: the USA (12 publications), China (9 publications),
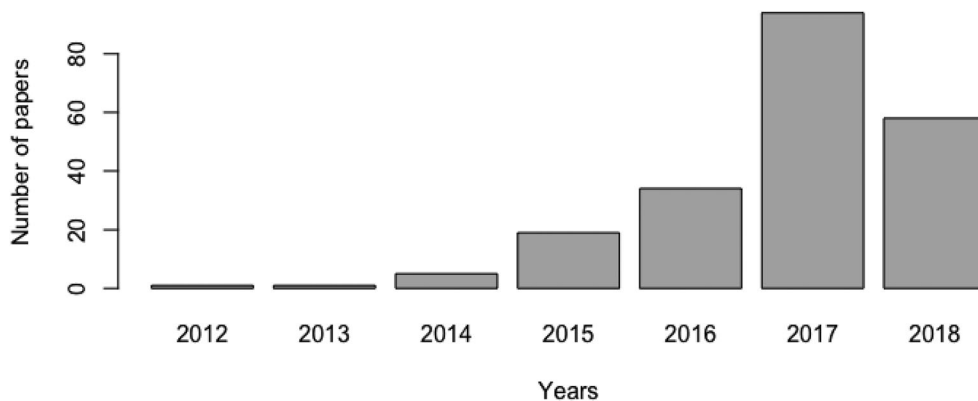

Figure 1. Publications per year. *Source*: Own elaboration.

Korea (5 publications), Sweden (4 publications) and Germany (3 publications). This shows the prominence of the United States and some Asian countries in the field.

With regards to authorship, the set of authors with academic contributions in the field is very large. The papers have from one to five authors, the mean number being 2.4, and the median 2. Only 11 papers had the maximum five authors. The most productive authors during the period were Martin, C.J. with 4 publications as first author; and Cheng, M. and Schor, J.B. each with 3 publications as first authors. Upham, P. also published 3 papers, but as second author (in all of them Martin, C.J. was the first author). Cheng, M. mostly published alone, while Schor shared co-authorship with different scholars. In conclusion, the novelty of this research field seems to point to there being relatively few consolidated authors and little strong and durable collaborations between them. Also, when we look for the authors who appear in third, fourth or fifth positions, we notice that mostly they only have one academic contribution in the field.

In terms of the publications with highest impact, the results show that six publications have obtained above 100 citations (mean of citations 16.96, and standard deviation 42.7). The most cited publication is Belk, R. (2014) paper entitled: 'You are what you can access: Sharing and collaborative consumption online', published at the *Journal of Business Research*, which has 435 citations. This paper compares the sharing economy and collaborative consumption concepts, analysing which of them is more popular in the literature and finds that both were contemporaneously growing in popularity. In second position is the Hamari, J., Sjöklint, M. & Ukkonen, A. (2016) paper entitled: 'The sharing economy: Why people participate in collaborative consumption' published in the *Journal of the Association for Information Science and Technology*, with 307 citations. This paper investigates people's motivations for participating in collaborative consumption—the empirical results show that this participation is motivated by many factors such as its sustainability, the enjoyment of the activity, and economic gains.

However, as we noted in the methodology section, the total number of citations is biased by the papers' tenure. Therefore, considering the citations per year instead of the total number of citations (mean of citations per year 6.28, and standard deviation 11.48), the results are slightly different. For example, the work with the highest number citations per year (102.33), is that of Hamari, Sjöklint, and Ukkonen (2016), which was placed in the second position in terms of the total number of citations, while that in the first position, the work of Belk (2014) now occupies the second place with 87 citations. This confirms the academic relevance of both works, although after removing the time effect, the impact of the work of Hamari et al. (2016) is higher.

With regards to the main topics, reflected through the keywords used, our findings in Table 1 shows, confirm that 'sharing economy', 'collaborative consumption', 'Airbnb', 'sharing' (referred to alone or specifying the object of sharing, for example 'car sharing' or 'bike sharing'), 'sustainability', 'collaborative economy', 'trust', 'consumer behaviour', 'value', 'the Internet', and 'community' are the most recurrent keywords.

Table 1. Keywords.

Keywords	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10	Total
Sharing economy	16	20	16	26	31	19	4	1	1		134
Collaborative consumption	30	24									54
Airbnb	19	3									22
Sharing	3			4	5	1	1				14
Sustainability				3	2	3	2		2		12
Collaborative economy	4	4	2								10
Trust					4		1			1	6
Consumer behaviour			3								3
Value						2				1	3
Internet			3								3
Community			2								2

By columns keywords and their position (K1 first keyword; K2 second keyword, etc.).
Source: Own elaboration

Some interested conclusions emerge from Table 1. For example, it is not surprising that the sharing economy and collaborative consumption appear as the most frequent keywords in these academic works because they describe the field of interest for this research. However, the major frequency of 'sharing' in comparison with 'collaborative' points out the term that has found a greater consensus among. Also, keywords like Airbnb and "car "or "bike" sharing demonstrate in which sectors the sharing economy is strongest, this would appear to be tourism, housing, or accommodation and transportation. Finally, the principles behind the sharing economy also strongly appear, with keywords such as sustainability, trust, value, and a sense of community.

The frequency distributions for the other categorical variables of this study, referring to the academic features or characteristics of publications, can be observed in Table 2.

Table 2 has some missing data that prohibits us determining all the academic features of the works analysed. Nevertheless, the available data allows us to reach some interesting conclusions. For example, regarding the approach, most of the papers used an empirical approach (67%) and belonged mostly to the economy (23.1%) or management fields (20.8%). Previous research used different ways of collecting data, but the most frequent were observation (29.2%), and the use of questionnaires (15.1%) and interviews (10.4%). Also, regarding the unit of analysis, the most frequent option was to retrieve information from customers or users (42.5%). Only a few papers mixed qualitative and quantitative methodologies, the rest were split almost equally between the two methodologies. There were 33% of papers where the data analysis could not be determined, however the data available show that most of previous studies used content analysis (24%) or case studies (11.8%), as well as different explicative techniques based on regression (ordinary least square, logit, probit, panel data, structural equation modelling, etc.), each technique representing a small percentage of the whole set of papers.

4.2. Citation analysis

Having described the main characteristics of the research, we now focus analyses on the features of the more highly cited papers. Together, these realise the objective of the present work.

Table 2. Frequency of academic features.

Categorical variables	Levels	Frequency (%)
Approach	Theoretical	0.330
	Empirical	0.670
Field	Economy	0.231
	Management	0.208
	Regulation	0.057
	Sociology	0.156
	Sustainability	0.118
	Technology	0.080
	Tourism	0.100
	Transportation	0.052
Data collection	Questionnaire	0.151
	Interview	0.104
	Experiment	0.024
	Secondary sources	0.099
	Observation	0.292
Unit of analysis	Previous research	0.024
	Firms	0.217
	Customers	0.425
Methodology	Qualitative	0.302
	Quantitative	0.344
	Both	0.024
Data analysis	Content analysis	0.240
	Case study	0.118
	Descriptive	0.042
	Structural equation modelling	0.094
	Mixed	0.038
	OLS	0.056
	Regression	0.038
	Simulation	0.042

Source: Own elaboration

Table 3. Mean comparison by 'approach' of previous research.

Levels / Variables		Citations	Citations per year
Theoretical	mean	15.23	5.302
	sd	52.50	11.10
Empirical	mean	17.81	6.762
	sd	37.12	11.68
U Mann-Whitney test W		5371.5	5768.5*

H0: mean ranks do not differ between groups - H1: mean ranks differ between groups ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; +$p < 0.1$.
Source: Own elaboration

Neither dependent variable, citations or citations per year, are normally distributed. The Shapiro test confirms this in both cases (W = 0.35, *p*-value < 0.001 for citations; W = 0.46, *p*-value < 0.001 for citations per year), which implies the use of non-parametric tests to conduct mean comparisons between the levels of the different categorical variables.

For the categorical variable 'approach', with two levels, theoretical and empirical studies, we used the Mann-Whitney U test that determines if two independent samples are selected from populations with the same distribution. The results are displayed in

In Table 3, we observe that the mean value of citations per year is significantly higher for empirical research than for theoretical research. With regards to the categorical variable 'field', with eight levels, the non-parametric Kruskal–Wallis one-way analysis of variance was conducted with the same aim. The results in Table 4 show

Table 4. Mean comparison by 'field' of previous research.

Levels / Variables		Citations	Citations per year
Economy	mean	17.53	6.141
	sd	50.17	15.87
Management	mean	23.48	7.314
	sd	65.82	13.36
Regulation	mean	7.42	4.098
	sd	6.40	3.14
Sociology	mean	10.39	4.568
	sd	15.20	5.75
Sustainability	mean	18.48	6.976
	sd	29.53	9.28
Technology	mean	8.71	4.628
	sd	6.69	3.28
Tourism	mean	22.05	9.199
	sd	35.64	13.47
Transportation	mean	18	5.682
	sd	40.67	7.62
Kruskal-Wallis χ^2 test		13,503+	14.023*

H0: mean ranks do not differ between groups - H1: mean ranks differ between groups ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; +$p < 0.1$.
Source: Own elaboration

Table 5. Mean comparison by 'data collection' of previous research.

Levels / Variables		Citations	Citations per year
Questionnaire	mean	24.06	8.602
	sd	60.78	18.90
Interview	mean	19.82	6.443
	sd	19.63	5.18
Experiment	mean	6.8	3.9
	sd	4.44	1.88
Secondary sources	mean	20.57	9.81
	sd	36.91	14.09
Observation	mean	13.27	4.850
	sd	25.87	6.94
Kruskal-Wallis χ^2 test		3.6414	4.8661

H0: mean ranks do not differ between groups - H1: mean ranks differ between groups ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; +$p < 0.1$.
Source: Own elaboration

that the higher citations are in the fields of management and tourism. The average number of citations per year was highest in the case of tourism, followed by management and sustainability.

The Kruskal-Wallis test in Table 4 shows that some significant differences exist between the fields when compared in terms of citations and citations per year, but only in the case of sustainability and economy. That means that citations are significantly higher in sustainability than in economy, but not in the other fields when they are compared against each other. This is evidenced by the pairwise comparisons from the Wilcoxon rank sum test.

The categorical variable 'data collection' has five levels, so again the non-parametric Kruskal–Wallis one-way analysis of variance test was conducted. The results (Table 5) show that there are higher citations for secondary sources and questionnaires; however, the differences in the mean values of these categories were not significant as per the Kruskal-Wallis tests (with p values above 0.1).

The variable 'unit of analysis' has three levels, and the comparisons between them are shown in Table 6.

Table 6. Mean comparison by 'unit of analysis' of previous research.

Levels / Variables		Citations	Citations per year
Previous research	mean	70.2	18.67
	sd	64.68	17.13
Firms	mean	10.61	4.451
	sd	12.07	4.30
Customers	mean	18.73	7.313
	sd	41.67	13.5
Kruskal-Wallis χ^2 test		5.786*	7.2036*

H0: mean ranks do not differ between groups - H1: mean ranks differ between groups ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; +$p < 0.1$.
Source: Own elaboration

Table 7. Mean comparison by 'methodology' of previous research.

Levels / Variables		Citations	Citations per year
Qualitative	mean	15.44	5.156
	sd	26.24	7.011
Quantitative	mean	18.71	7.47
	sd	43.06	13.99
Both (mixed methodology)	mean	35	12.93
	sd	62.11	19.99
Kruskal-Wallis χ^2 test		1.0049	3.361

H0: mean ranks do not differ between groups - H1: mean ranks differ between groups ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; +$p < 0.1$.
Source: Own elaboration

The results point out that the papers with highest number of citations and citations per year are those that use previous research as the unit of analysis. Papers that analyse customers obtain also a high mean value in citations and citations per year, higher than papers using the firms' point of view. The Kruskal-Wallis test indicates that the differences are statistically significant for both citations and for citations per year. The pairwise comparison using Wilcoxon rank sum test demonstrates that the differences arise from the divergence between citations of papers using previous research and customers as unit of analysis respectively.

With regards to the methodology used, three categories were detected, as displayed in Table 7.

The results indicate that both the highest citations and citations per year are for papers using mixed methods, mixing qualitative and quantitative research, followed by quantitative studies, qualitative research occupying the last position. These differences are not however statistically significant.

Finally, the analysis conducted on the categorical variable data analysis, with 8 levels, is shown in Table 8.

The results of Table 8 state that the data analyses that received greater attention by researchers are mixed methods, structural equation modelling, and ordinary least square regressions (OLS). Those receiving least attention are case studies, descriptive analyses and simulations. These results hold for both the total number of citations and the number of citations per year, independently of the measure of the dependent variable. The Kruskal-Wallis test in Table 8 shows that some significant differences can be observed between the types of data analyses when they are compared, but these differences mainly arise from the divergence in the number of citations and citations per year of mixed methods in comparison with case studies and descriptive

Table 8. Mean comparison by 'data analysis' of previous research.

Levels / Variables		Citations	Citations per year
Content analysis	mean	17.78	6.186
	sd	28.42	7.65
Case study	mean	7.4	3.006
	sd	9.30	2.57
Descriptive analysis	mean	6.11	3.167
	sd	5.88	2.84
Structural equation modelling	mean	28.05	9.942
	sd	75.39	23.52
Mixed methods	mean	41.12	12.36
	sd	51.43	15.75
OLS	mean	22.42	11.28
	sd	29.59	13.99
Regression	mean	16.25	6.97
	sd	21.15	6.11
Simulation	mean	10.33	5.814
	sd	11.53	5.23
Kruskal-Wallis χ^2 test		10.591+	10.89+

H0: mean ranks do not differ between groups - H1: mean ranks differ between groups ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; +$p < 0.1$.
Source: Own elaboration

analyses, as it is evidenced by the pairwise comparison using Wilcoxon rank sum test.

5. Discussion and conclusions

In this study, we carried out exploratory research to describe the academic field of the sharing economy and collaborative consumption, conducting a systematic review of the field and a citation analysis to determine the characteristics that lead to a higher publication impact.

With regards to the main findings obtained from the systematic review conducted on our final sample of 212 articles, it is important to remark on the growth of the academic research on the topics related to the sharing economy. The maximum number of papers per year was observed in 2018 (with 117 articles), although the growth rate was lower in 2017 and 2018 as compared to earlier years. This result agrees with others obtained in similar literature reviews on other topics, as frequently this kind of systematic analysis on research are conducted when the interest and popularity of certain topics are first noticed (Mcdonnell et al., 2017). A flattening in the growth rate of the number of publications in a field will determine when it may be considered mature.

The sharing economy is not very different from other academic fields in geographical terms. Our data confirm the predominance the United States and some Asian countries, just as do studies on different research fields that highlight North America and Asia (in the last decades) as the most popular regions to retrieve information (Chatha et al., 2018; Dragos et al., 2014). This result is also similar to that of Arcidiacono et al. (2018) who found an increasing evolution in the number of papers on sharing economy, mainly in an Anglo-American context.

With regards to authorship, our findings confirm the large number of authors with academic contributions in the field. The mean number of authors per paper is

2.4, although most of the papers are co-authored by only two. This differs a little from the field of business and management, where three or four authors are quite frequent. Also, the relative newness of the field may be responsible for there being few consolidated authors, or strong and durable collaborations among them.

The analysis of the most frequent keywords in the field evidences the major frequency of the term 'sharing' rather than 'collaborative', which shows the preference in the field. The relevance of tourism, housing and accommodation or transportation as main activities and sectors to develop sharing economy or collaborative consumption also emerged from the keywords. The main values in the field as motivators of sharing and collaboration, like sustainability, trust, value and the sense of community, were also evident.

The study of the characteristics of the academic papers, in terms of their approach, field, data collection, unit of analysis, methodology and their data analysis, reveals that most of the papers used an empirical approach and belonged to the economy and management fields. Observation was the most frequent way of collecting data, especially from customers or users. Qualitative and quantitative methodologies were equally frequent, with only a few studies mixing methods, while content analysis (especially applied in qualitative research), case studies and different regression techniques for explanatory studies were the most used data analysis methods in this field.

The citation analysis conducted to determine the characteristics that lead to higher impact of publications indicated that the citations vary in terms of the approach, field, unit of analysis, and the data analyses used in the literature. Our findings demonstrate that empirical studies have higher impact than theoretical ones.

Our results evidence that, in this field, papers relating to tourism, management, sustainability, and the economy have the highest impact. Arcidiacono et al. (2018) reached similar results, confirming the prominence of economics in the area. We observe that sustainability has statistically significant higher citations than does economy but that, for other fields, the differences in citations numbers between them were not significant.

Our findings regarding the unit of analysis with confirm that, for our data set, the higher citations were for papers using previous research and customers as the unit of analysis, rather than those using companies or firms.

Although previous research in other areas shows that quantitative and method articles received significantly more citations than did qualitative articles (Antonakis et al., 2014), the results in our data were not so clear-cut. The highest citations were for those papers using mixed methods, mixing qualitative and quantitative research, followed by quantitative studies, with qualitative research occupying the last position, but no significant differences were found between the different categories.

Within the empirical studies, previous research showed more recent ones were employing more varied and advanced statistical techniques of greater computational complexity. Our results show that the data analyses methods receiving the greatest attention by researchers were mixed methods, structural equation modelling and ordinary least square regressions (OLS); those receiving least attention were case studies, descriptive analyses and simulations. These results are consistent with previous work—Blanca, Alarcón, and Bono (2018), for example, suggesting that the use of

structural equation modelling, confirmatory factor analysis, and hierarchical linear modelling is being more used and cited.

In summary, the academic impact of publications is associated with their academic features, the more cited papers being those using an empirical approach, especially in the sustainability, tourism and management fields. A possible reason for this is that, in the current economic context, the large resource consumption of the consumer society is of increasing concern. Hence, ensuring sustainable economic activity becomes a cornerstone in managing economic activity and its growth and sharing and collaborating become fundamental tools in guaranteeing such sustainability. There are also sectors, such as tourism, which have been especially notable inn applying collaborative practices, thus providing a variety of useful examples for research.

Higher impact was also found for papers using previous studies and customers as unit of analysis, and advanced and rigorous statistical techniques. In addition, some journals stood out for the high impact of some of their published papers on the sharing economy and collaborative consumption. This is especially the case for the *Journal of Business Research* and the *Journal of the Association for Information Science and Technology*, where the works of Belk (2014) and Hamari et al. (2016) have received the highest number both of citations and citations per year. The high impact of these works may be explained by their focus on controversial topics, such as the differentiation between the sharing economy and collaborative consumption and the motivators and determinants of behaviours in the field.

Our findings carry some implications for practitioners, guiding authors when deciding the research design that might lead to obtain a higher impact in their works, and the fields in which these topics are most valued. In addition, our research shows that the field is not yet mature and is still growing, which points out the need for scholars and institutions to continue building networks and collaborations. Studies on regions other than the Anglo-American or the Asian ones, will cover a relevant gap and will allow to researchers to conduct comparisons at a regional or cultural level. Finally, although tourism, housing, accommodation and transportation are relevant activities and sectors to be explored, the new movement of sharing and collaborating could well be applied to less studied activities and sectors, such as health or education.

Although citation analysis has received some degree of criticism for its concentration on citations, a mere metric that may sometimes differ from the actual the research contribution of a paper (Hamrick et al., 2010), its use is quite general and it is accepted as a proxy for research quality and impact. This results in citations attracting more citations, serving finally as a good indicator of where, and on what topics, new research is indicated.

Despite the contributions of the current work, some of its limitations should be also noticed. Firstly, we analysed the most frequent keywords in the field as part of the systematic literature review, but we did not include keywords as an element in differentiating the more cited publications. The exploratory nature of this study suggests using comparison analyses to conduct the citation analysis. Other explanatory methodologies could also be applied, including a larger number of variables such as

the number of references in each paper and also the keywords, together with the academic characteristics and features included in this study. Addressing these limitations would be useful further steps in research on academic impact within the field of the sharing economy and collaborative consumption.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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