# Systematic mapping on social media and its relation to business

Carolina Nicolas Alarcón [a,*], Angélica Urrutia Sepúlveda [b], Leslier Valenzuela-Fernández [c], Jaime Gil-Lafuente [d]

[a] *Santo Tomás University, Escuela de Ingeniería Comercial, Facultad de Economía y Negocios, Av. Ejercito 146, 8370003 Santiago, Chile*
[b] *Catholic University of Maule, Facultad de Ciencias de la Ingeniería, Casilla 617, 3480112 Talca, Chile*
[c] *University of Chile, Departamento de Administración, Facultad de Economía y Negocios, 6510015 Santiago, Chile*
[d] *University of Barcelona, Facultad de Economía y Empresa, Av. Diagonal, 690-696, 08034 Barcelona, Spain*

## ARTICLE INFO

## ABSTRACT

The aim of this study is to analyse the reach of existing investigation on *social media* and its relation to companies throughout 2014–2015. To achieve the proposed, the study proceeds in classifying such information and identifying methods to study *social media* and it's relation with different marketing associated topics. The research uses a mapping process that uses the database generated from references of Web of Science's publications during 2014–2015, amounting to 185 articles. The results found that the initial method is a descriptive analysis on the usage of *social media* as a tool for marketing. Nevertheless, during the past years studies have proposed that *social media* is becoming more an instrument for marketing and business management.

## 1. Introduction

The appearance of the Web 2.0 gave rise to *social media*, a phenomenon that changed the way how software developers and end-users started to use and view the World Wide Web. This is best exemplified by one of the characteristics of *social media* where its contents and applications are created and published by all types of users, whom continuously participate in modifying (improving and/or personalize) them in a collaborative manner (Domínguez, López, & Ortega, 2016; Kaplan & Haenlein, 2010).

*Social media* is best understood as links that connect the Internet with channels of instant communication where people can express thoughts and share it collectively. Moreover, authors mention that social media has evolved rapidly and that its growth has been spurred by communicational advances, such as the present day mass availability of mobile portable devices (such as iPhones, iPads, among others) and the introduction of 3G surfing speed in 2007. According to Yamaki (2016), *social media* is an aggregation of mutual interactions composed by a relational structure of actors and their respective relationships. Thus, *social media* covers a wide array of different forms of online communication which include blogs, discussion forums, company sponsored chatrooms, mails, websites (created by users and companies), news sites, download sites, commerce-oriented communities that offer goods and services (eBay, Amazon.com), collaborative sites (Wikipedia), *social media* sites (Facebook, MySpace, etc.), business networks (LinkedIn), networks that focus on shared content (YouTube), photo-oriented sites (Instagram, Flickr), microblogging (Twitter), and much more (Study: Statista, 2016).

From Earth's 7.39 billion inhabitants, 3.4 billion have Internet access (with a 10% annual growth) from which 2.3 billion use *social media* regularly (over 10% growth since January 2015). It is also important to note that approximately 3.8 billion people use mobile phones (an increase of 4% per year) and almost 2 billion people access *social media* through them (Study: We Are Social, 2016).

Currently, the Internet and *social media* have become relevant tools to manage brand experience and consumer loyalty, as these platforms allow consumers to express their identity, thus reinforcing their individuality through personalization and adaptation. Furthermore, through these, consumers can satisfy their social needs by exchanging and sharing their consumption related experiences of goods and services (Christodoulides, 2009).

* Corresponding author.
*E-mail addresses:* cnicolas@santotomas.cl (C. Nicolas Alarcón), aurrutia@ucm.cl (A. Urrutia Sepúlveda), lvalenzuela@unegocios.cl, lvalenzu@fen.uchile.cl (L. Valenzuela-Fernández), j.gil@ub.edu (J. Gil-Lafuente).

As an effect, companies use *social media* (Azorín-Richarte, Orduna-Malea, & Ontalba-Ruipérez, 2016) to support the creation and development of brand-oriented communities (Kaplan & Haenlein, 2010). Brands such as Jeep, which has a famous offline brand community (Schau, Muniz, & Arnould, 2009), actively connect with their clients and fans (strengthening said community) through the use of *social media* platforms such as MySpace and Facebook. Companies are measuring their online positioning with cybermetric (Orduna-Malea & Alonso-Arroyo, 2017).

This modern emphasis on the digital interactions between the Corporate and the Private is an effect from *social media's* ability to empower consumers in voicing their complaints with less physical and mental effort, allowing them to share such opinions with a large number of other consumers (Lee, 2005). This is a complex subject for companies as they no longer are capable of controlling directly the communications between their consumers. Nevertheless, firms can influence these conversations and discussions in different ways such as: by providing a *social media* platform themselves, by using blogs and other *social media* tools to attract clients, by using traditional promotional tools and online media, by providing information on *social media* platforms, by providing exclusivity, by designing products based on conversations held with clients, and by supporting causes that are important for consumers, among others (Mangold & Faulds, 2011).

Taking into consideration the paradigm's speed of change, in relation to the importance of consumer communication towards a brand and/or company, the impact of their opinions through *social media* can be assessed. This exploratory investigation Paper contributes to that by developing a comparative analysis on empirical studies conducted on *social media*, specifically Twitter. By applying systematic mapping, which defines a process as well as a uniform structure, published results can be categorized in a specific determined area. The analysis is based on previous research, and although the number of case studies is low, its objective is to determine the scope of the carried out research on a specific topic to classify knowledge (Petersen, Feldt, Mujtaba, & Mattsson, 2008).

Thus, the purpose of the study is to determine the reach of the investigation conducted on *social medi*a and its relation with the decision-making process on businesses or marketing during 2014 and 2015. Furthermore, this study aims to not only classify such information and identifying the main approximations on the subject, but also to analyse the strengths and weaknesses and to detect and identify topics and gaps where it's necessary to reinforce to contribute to scientific knowledge.

The following section presents the applied methodology on the study, describing the steps taken when conducting systematic mapping. The subsequent sections present the results and the discussion on this study, concluding the limitations on this research.

## 2. Research background

*Social media* has influenced consumer behaviour from *purchasing information* up to *purchasing behaviour*, such as being unsatisfied on Twitter. This has been determined by studies that analyse the patterns of internet usage (Mangold & Faulds, 2011; Ross et al., 2009), where the main difference is that investigators consider *social media* communication as a distinct area of study (Hu & Kettinger, 2008; Mangold & Faulds, 2011). Considering that the first function of *social media* communication is consistent with traditional marketing that uses integrated communication tools, companies can use *social media* to interact with their clients through the available platforms such as Facebook, Twitter, and such (Mangold & Faulds, 2011). A second function of *social media* is that clients can use the platform to communicate among

themselves without going through the companies. This is related to the colloquial "word of mouth" function.

From the various *social media*, we have selected Twitter as it has been studied in B2B and B2C as a communicational strategy as it has proven to be an effective platform to obtain information as a resource (Bollena, Maoa, & Zeng, 2011; Dunbar, Arnaboldi, Conti, & Passarella, 2015; Kaplan & Haenlein, 2010; Kietzmann, Hermkens, McCarthy, & Silvestre, 2011; Swani, Brown, & Milne, 2014). This is due to its simplicity and ease of use for micro-blogging, a push-and-pull communication format (Kaplan & Haenlein, 2010) that attracts different user profiles, thus having greater impact on businesses (Webster, 2010).

Social networks like Twitter are recommended as a tool to develop a communication channel regarding corporate social responsibility (Reilly & Hynan, 2014). Furthermore, movements in social networks, like Twitter, affect the prices of a company's shares (Paniagua & Sapena, 2014), these authors affirm that there is a link between social networks and businesses. Fischer and Reuber (2014) as the maximum extension of 140 words per Tweet allows for brief information flows that give the messages the particular ability to reduce uncertainty, hence improving the perception of a company in the eyes of the consumers.

## 3. Methodology

The study uses systematic mapping of existing literature (on previous investigations) to build classifications and conduct themed-based analysis on the effects obtained from a visual map on the existing knowledge within a broader topic (Petersen et al., 2008).
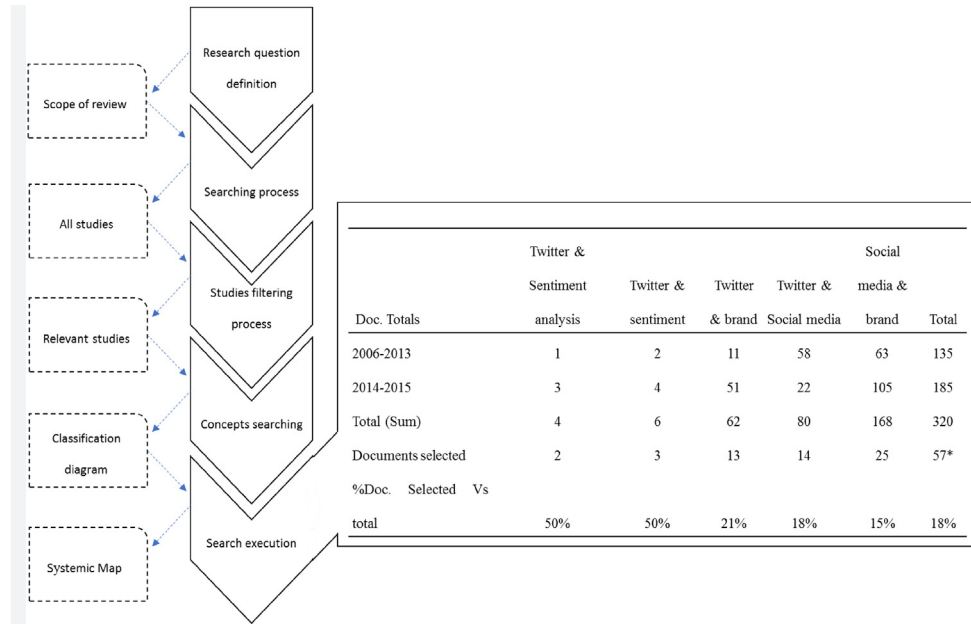
As previously mentioned, systematic mapping defines a process as well as a uniform structure, where published results can be categorized in a specific determined area. The objective of systematic mapping lies on classification, and is therefore directed towards a themed-based analysis and the identification of main publication forums pertaining to the topic (Petersen et al., 2008), thus allowing a proper response to generic questions such as: '*What has been done in the field X?*'. The systematic mapping process consists of the following stages: (a) defining the investigation questions, (b) revision scope, (c) search execution, (d) selection of studies, (e) filtering the studies, (f) classification scheme, (g) data extraction and mapping process, and (h) systematic mapping.

To obtain the necessary knowledge, the data will be analysed by classifying the results found and aggregating the publication frequency within each category to determine the coverage scope of each distinct area of investigation. The application of this methodology allows for the identification of topics where different primary studies exist to conduct systematic revisions. Furthermore, the study will also be able to identify topics where more primary studies need to be conducted (Kitchenham, Budgen, & Brereton, 2011).

The study takes into account the results obtained from the Web of Science (WoS), based on Merigó's proposed methodology (Merigó, Mas-Tur, Roig-Tierno, & Ribeiro-Soriano, 2015). This is important as it is considered to be one of the main academic databases for the study of research contributions (Blanco-Mesa, Merigó, & Gil-Lafuente, 2017; Merigó et al., 2015), specifically from the Core Collection publications between the years 2014 and 2015. The document types used (database) range from: Articles, Reviews, Letters, and Notes; following the sample proposals from other studies (Merigó et al., 2015; Yu, Li, Merigó, & Fang, 2016).

By doing a comprehensive search and filtering process on the documents found in the database, the study was able to obtain 41 relevant articles (see Table 4). For details on the systematic mapping process applied throughout the study, see Table 1.

**Table 1**
Systematic mapping process and search execution.



| Doc. Totals | Twitter & Sentiment analysis | Twitter & sentiment | Twitter & brand | Twitter & Social media | Social media & brand | Total |
|---|---|---|---|---|---|---|
| 2006-2013 | 1 | 2 | 11 | 58 | 63 | 135 |
| 2014-2015 | 3 | 4 | 51 | 22 | 105 | 185 |
| Total (Sum) | 4 | 6 | 62 | 80 | 168 | 320 |
| Documents selected | 2 | 3 | 13 | 14 | 25 | 57* |
| %Doc. Selected Vs total | 50% | 50% | 21% | 18% | 15% | 18% |

[*] It is to define well the search in the database.

The following sections provide a description of the levels conducted for this study: (a) defining investigation questions, (b) revision ambient, (c) search execution, (e) filtering documentation, (f) classification scheme on the documents, and (g) data extraction and the systematic mapping process.

### 3.1. Systematic mapping of paradigms on social media networks and the relation to marketing

By applying the methodology of systematic mapping and the research questions posed in point 2.1.a) give an answer to the type of methodology that have been used to analyse the themes: (Usefulness of "Tweet", Marketing tool in social networks, Creating Segments, Usefulness of social networks, Perception of brand in social networks); Leaving evidence that we should still investigate how Twitter contributes to business management. Also, I can identify the current gaps in research where other authors can contribute to the development of this tool.

#### a) Defining the questions for this investigation

According to the mentioned techniques in Kitchenham and Charters (2007), whilst following the objectives of recompiling the necessary information in order to execute this investigation, the following questions (QI) were defined:

QI.1: Which methods are currently being applied to investigate marketing and social media?
QI.2: To which topics of Marketing does the study on social media comprise?

According to the study conducted by Kitchenham and Charters (2007), the scope on *social media* and its relation to marketing is defined based on the following: (a) Population, a set of articles that describe the studies conducted on *social media* and its relation to marketing. (b) Intervention, articles pertaining to the Web of Science database that comply with the criteria selection, based on the paradigms for *social media* and its relation to marketing. (c) Study design, experiments, case studies and essay based on experiences,

the action of investigation and the marketing effect. (d) Results, quantity and type of evidence relative to the associated topics to QI-1 and QI-2.

#### b) Revision scope

The *social media* platforms more commonly used by organizations are Twitter, Facebook and Instagram, among others. The focus of this study is Twitter as a marketing tool as it allows immediate submission of opinions on a specific topic and has a well-defined market segment. Furthermore, Twitter is considered to be a more powerful tool to enhance business performance than Facebook (Paniagua & Sapena, 2014; Swani et al., 2014).

The database used for the analysis was Web of Science (WoS) – Core Collection dated 2014–2015. WoS (Blanco-Mesa et al., 2017; Merigó et al., 2015). For the search options the following keywords were applied as criteria in the main collection: (i) Twitter and Sentiment Analysis, (ii) Twitter and Brand, (iii) Twitter and Sentiment, (iv) Twitter and Social Media and (v) Brand and Social media. These keywords were selected due to the study's focus on seeking to select all articles related to *social media* (text analysis). In addition, these documents are also all related to marketing which deepens the scope of the investigation.

The study also included the documents found in the area of "business" (specified by Web of Science) to the 2014–2015 period. The actors of the selection criteria and revision of publications found are: academics and thesis students of under- and-postgraduate levels, whom have been involved throughout the execution of the methodology.

#### c) Search execution

Considering that Twitter was founded in 2006, the initial search investigated documents and information for the years 2006 till 2015. From this, the study was able to identify the period that contains the minimum of 50% of the studies (see Table 1), leaving the number of publications to be extracted from the 2014–2015 segment. The source material came from the Web of Science (Core

**Table 2**
Number of revised documents.

| Criteria | No. documents | Valid documents |
|---|---|---|
| Twitter and sentiment analysis | 3 | 2 |
| Twitter and sentiment | 4 | 3 |
| Twitter and brand | 51 | 13 |
| Twitter and social media | 22 | 14 |
| Brand and social media | 105 | 25 |

*Source*: Own elaboration. Based on information extracted from Web of Science.

Collection) which considers Articles, Reviews, and Letters and Notes (Merigó et al., 2015; Yu et al., 2016).

Subsequently after each search, all documents relating to the investigation area of "business" were selected. This allowed the study to avoid documents with irrelevant information as presented by the questions in section a).

d) Study selection

To select the investigation, an initial instance criteria of inclusion and exclusion was applied. Table 2 presents the number of articles according to the search chain and applied filters for the 2014–2015 period.

The inclusion criteria considers an analysis on the title, summary, and keywords, thus obtaining the largest number of studies that significantly contribute to the *social media* paradigms and their relation to marketing. It is important to note that the article was a read-only when the information was unclear in the summary.

Exclusion Criteria: (1) Studies on *social media* that are not related to business or marketing. (2) Studies that are focused on *social media* and their relation to business or marketing but that do not show a relevant methodology. The exclusion criteria are focused mainly on the summary, introduction and conclusions, analysing a bit further the studies that require it to assure that they are relevant to the field of this study. (3) Having an existing download link, with the objective to observe the quality of the information within the presented documents.

*Note*: It must be considered that some articles have been assigned in more than one criteria, these are considered as different cases.

e) Filtering the studies

The selection process to obtain the results in Table 2 are as follows: all the documents whose main topics were not related to marketing, business and/or *social media* (more specifically Twitter) mentioned directly or indirectly have been manually excluded (possible extrapolation of documents to marketing, business and *social media*). Thus, a second revision was conducted with further

depth to verify that the topics are valid for the study. Finally, the articles with possible download links have been considered as it is necessary to corroborate the quality and contributions that each document provides.

By subtracting repeated documents in each criterion, we obtain 41 total documents, 21 for 2015 and 20 for 2014. From this total, only 22% are considered valid for the study as results were aggregated (without duplicity).

Finally, three reviewers (Academics, Undergraduate student, postgraduate student) conducted the iterations. For the first iteration, each reviewer applied the inclusion and exclusion criteria on the title, summary and keywords on 20 randomly selected documents. A reliability of 83% was obtained using Kappa de Fleiss Index proposed by Gwet (2002). For the second iteration, each reviewer applied the same criteria in a set of articles that were assigned; now including introduction and conclusion. Throughout the third iteration the reviewers proceeded to analyse the dubious documents in their totality. Thus, the exercise produced a total of 41 relevant documents for the subsequent systematic mapping.

f) Document classification scheme

Upon the selection of the relevant article, the following classification has been presented based on the study's objectives and investigation questions: methodology, level of difficulty, conclusions and information utility. Table 3 demonstrates the topics applied to each case.

Together with the investigations selected, the methodologies applied have been recompiled and "labels" have been used to group them, generating a number of homogeneous sets. These labels were selected because they appear more in the reviewed documents and act as a "macro" term to collect them. The labels applied were: comparative analysis, text analysis, descriptive study, alternate method, and experimental study.

In reference to the conclusions of the selected articles, the same methodology was applied, where the labels used were: Utility of the "tweet" (documents that explain what the Tweet is for the internal importance of companies), tools of marketing for social media (documents that seek endorsement or approval of twitter being a tool of marketing), segment creation (documents referring to *social media* as a creator of segments), utility of *social media* for marketing (documents that explain how and why twitter can occupy specific areas of marketing) and Brand perception in *social media* (documents that explain how *social media* influence Brand perception of consumers and stakeholders).

This investigation proceeded to evaluate the difficulty of replicating the applied methods as well as the utility of the information for the study. The classification used to define the difficulty of the method has been evaluated from "1" to "3", where: "1" is the

**Table 3**
Classification scheme.



*Source*: Own elaboration.

**Table 4**
Articles analysed in the study.

| Title | Authors | Journal | Year |
|---|---|---|---|
| Employee voice: Untapped resource or social media time bomb? | Miles, S.J.; Mangold, W.G. | Business Horizons | 2014 |
| Clear, conspicuous, and concise: Disclosures and Twitter word-of-mouth | Burkhalter, J.N.; Wood, N.T.; Tryce, S.A. | Business Horizons | 2014 |
| Business performance and social media: Love or hate? | Paniagua, J.; Sapena, J. | Business Horizons | 2014 |
| Corporate communication, sustainability, and social media: It's not easy (really) being green | Reilly, A.H.; Hynan, K.A. | Business Horizons | 2014 |
| Jumpstarting the use of social technologies in your organization | Guinan, P.J.; Parise, S.; Rollag, K. | Business Horizons | 2014 |
| Customer loyalty through social networks: Lessons from Zara on Facebook | Gamboa, A.M.; Goncalves, H.M. | Business Horizons | 2014 |
| Fan-centric social media: The Xiaomi phenomenon in China | Shih, C.C.; Lin, T.M.Y.; Luarn, P. | Business Horizons | 2014 |
| Re-branding brand genericide | Cova, B. | Business Horizons | 2015 |
| Consumer brand engagement in social media: Conceptualization, scale development and validation | Hollebeek, L.D.; Glynn, M.S.; Brodie, R.J. | Business Horizons | 2014 |
| A marketing communications approach for the digital era: Managerial guidelines for social media integration | Killian, G.; McManus, K. | Business Horizons | 2015 |
| Designing branded mobile apps: Fundamentals and recommendations | Zhao, Z.Z.; Balague, C. | Business Horizons | 2015 |
| Entifying your brand among Twitter-using millennials | Sashittal, H.C.; Hodis, M.; Sriramachandramurthy, R. | Business Horizons | 2015 |
| The real-time power of Twitter: Crisis management and leadership in an age of social media | Gruber, D.A.; Smerek, R.E.; Thomas-Hunt, M.C.; James, E.H. | Business Horizons | 2015 |
| The role of social media in affective trust building in customer–supplier relationships | Calefato, F.; Lanubile, F.; Novielli, N. | Electronic Commerce Research | 2015 |
| Using a consumer socialization framework to understand electronic word-of-mouth (eWOM) group membership among brand followers on Twitter | Chu, S.C.; Sung, Y. | Electronic Commerce Research and Applications | 2015 |
| Factors influencing popularity of branded content in Facebook fan pages | Sabate, F.; Berbegal-Mirabent, J.; Canabate, A.; Lebherz, P.R. | European Management J. | 2014 |
| Should tweets differ for B2B and B2C? An analysis of Fortune 500 companies' Twitter communications | Swani, K.; Brown, B.P.; Milne, G.R. | Industrial Marketing Management | 2014 |
| Brand innovation and social media: Knowledge acquisition from social media, market orientation, and the moderating role of social media strategic capability | Nguyen, B.; Yu, X.Y.; Melewar, T.C.; Chen, J.S. | Industrial Marketing Management | 2015 |
| Twitter for two: investigating the effects of dialogue with customers in social media | Colliander, J.; Dahlen, M.; Modig, E. | International J. of Advertising | 2015 |
| Investigating marketing managers' perspectives on social media in Chile | Bianchi, C.; Andrews, L. | J. of Business Research | 2015 |
| Online entrepreneurial communication: Mitigating uncertainty and increasing differentiation via Twitter | Fischer, E.; Reuber, A.R. | J. of Business Venturing | 2014 |
| What we know and don't know about online word-of-mouth: A review and synthesis of the literature | King, R.A.; Racherla, P.; Bush, V.D. | J. of Interactive Marketing | 2014 |
| GOSIP in cyberspace: Conceptualization and scale development for general online social interaction propensit | Blazevic, V.; Wiertz, C.; Cotte, J.; de Ruyter, K.; Keeling, D.I. | J. of Interactive Marketing | 2014 |
| Fostering consumer–brand relationships in social media environments: The role of parasocial interaction | Labrecque, L.I. | Journal of Interactive Marketing | 2014 |
| Let users generate your video ads? The impact of video source and quality on consumers' perceptions and intended behaviors | Hautz, J.; Fuller, J.; Hutter, K.; Thurridl, C. | Journal of Interactive Marketing | 2014 |
| Does a virtual like cause actual liking? How following a brand's Facebook updates enhances brand evaluations and purchase intention | Beukeboom, C.J.; Kerkhof, P.; De Vries, M. | J. of Interactive Marketing | 2015 |
| Leaving the home turf: How brands can use webcare on consumer-generated platforms to increase positive consumer engagement | Schamari, J.; Schaefers, T. | J. of Interactive Marketing | 2015 |
| Of "Likes" and "Pins": The effects of consumers' attachment to social media | VanMeter, R.A.; Grisaffe, D.B.; Chonko, L.B. | J. of Interactive Marketing | 2015 |
| Do social media tools impact the development phase? An exploratory study | Marion, T.J.; Barczak, G.; Hultink, E.J. | J. of Product Innovation Management | 2014 |
| Initiating dialogue on social media: An investigation of athletes' use of dialogic principles and structural features of Twitter | Watkins, B.; Lewis, R. | Public Relations Review | 2014 |
| Dialogic communication in the health care context: A case study of Kaiser Permanente's social media practices | Hether, H.J. | Public Relations Review | 2014 |
| Social Media Newsrooms in public relations: A conceptual framework and corporate practices in three countries | Zerfass, A.; Schramm, D.M. | Public Relations Review | 2014 |
| Public relations activity in the new media in Israel 2012: Changing relationships | Lahav, T. | Public Relations Review | 2014 |
| Infusing social media with humanity: Corporate character, public engagement, and relational outcomes | Men, L.R.; Tsai, W.H.S. | Public Relations Review | 2015 |
| Handling complaints on social network sites – An analysis of complaints and complaint responses on Facebook and Twitter pages of large US companies | Einwiller, S.A.; Steilen, S. | Public Relations Review | 2015 |
| The online presence of Turkish banks: Communicating the softer side of corporate identity | Ozdora-Aksak, E.; Atakan-Duman, S. | Public Relations Review | 2015 |
| Using Twitter as a means of coping with emotions and uncontrollable crises | Brummette, J.; Sisco, H.F. | Public Relations Review | 2015 |
| Data, technology & social media: Their invasive role in contemporary marketing | Vel, K.P.; Brobbey, C.A.; Salih, A.; Jaheer, H. | Revista Brasileira De Marketing | 2015 |
| Iam happy because: Gross National Happiness through Twitter analysis and big data | Durahim, A.O.; Coskun, M. | Technological Forecasting and Social Change | 2015 |
| Comparing Twitter and You Tube networks in information diffusion: The case of the "Occupy Wall Street" movement | Park, S.J.; Lim, Y.S.; Park, H.W. | Technological Forecasting and Social Change | 2015 |
| Detecting tension in online communities with computational Twitter analysis | Burnap, P.; Rana, O.F.; Avis, N.; Williams, M.; Housley, W.; Edwards, A.; Morgan, J.; Sloan, L. | Technological Forecasting and Social Change | 2015 |

*Source*: Web of Science. Thomson Reuters, ISI Web of Knowledge.

G Model
IEDEEN-35; No. of Pages 10

ARTICLE IN PRESS
6                C. Nicolas Alarcón et al. / European Research on Management and Business Economics xxx (2017) xxx–xxx

easiest methodology to replicate for readers, "2" is a methodology that has a certain degree of difficulty to be replicated (yet this value is not very high due to previous knowledge on the matter, and elevated costs, among others), "3" is the methodology that is very difficult to replicate (due mainly because it is its own document which presents a lot of requisites, and has high costs that are not accessible to any reader, among others).

The utility of the information was classified on a scale from "1" to "4", where: "1" is considered as low information in which even though there are mentions of *social media*, no useful information is provided to respond to the presented questions (documents that explore *social media* on a superficial manner, or that have been created for a specific reason and cannot be extrapolated to all *social media* platforms in the world), "2" labelled as "regular", there are documents that not necessarily have an objective related to all social media but that some of their conclusions help respond the questions of this investigation, "3" labelled as "high" are documents that their information and conclusions help immensely in responding to the questions of the investigation (regardless that the objectives of said documents are related to all the presented questions), "4" labelled as "very high" are documents in which the objectives are aligned completely with the objectives presented in the study, and the conclusions respond in a very satisfactory manner to the investigation questions.

g) Data extraction and systematic mapping processes

After defining the classification system, the last stage of the systematic mapping process is the extraction of data and the process of mapping of different dimensions.

## 4. Results: comparative analysis and discussion

The results of this stage can be observed in Figs. 1 and 2, where the methodology applied and its level of difficulty is presented through visualizations, corresponding to the years 2014 and 2015 respectively.

Fig. 1 shows a 'bubble diagram' where it can be observed that throughout the year 2014, the investigations focused in the application of descriptive methodologies. From these, the majority represent easy methods of replication for other future investigations. Furthermore, it can be observed that most of the documents search "to validate social media as a tool for marketing and its utility for the company"; emptiness in the development of investigation regarding the creation of segments and the utility of Tweet can be observed.

Fig. 2 shows a 'bubble diagram' of 2015 where the investigation focused on the application of descriptive methodologies; nevertheless, one can appreciate an increase in the development of methodologies of regular difficulty to be replicated by peer
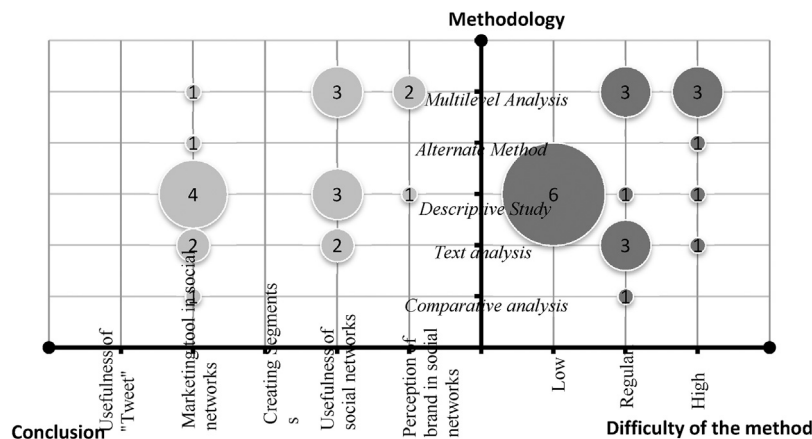


**Fig. 1.** Systematic mapping 2014 to difficulty of the method.
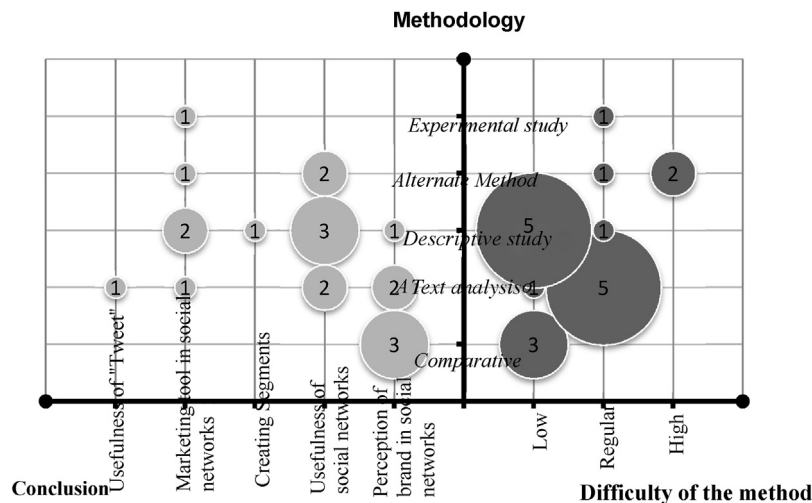
*Source: Own elaboration.*



**Fig. 2.** Systematic mapping 2015 to difficulty of the method.

*Source: Own elaboration.*

investigators. Currently this year, this investigation focused on both, the validation of *social media* as a marketing tool, and the utility of the company whilst considering its brand perception in *social media* (this year the investigation analysed the utility of the tweet).

The analysis of both years simultaneously can be seen in Fig. 3 where a 'bubble diagram' clearly visualizes the methodologies employed, the utility of the information, and the proposed conclusions within the documents to provide an answer to the questions presented at the start of the investigation. Consequently, it can clearly be observed that most of the documents are focused on finding the utility of *social media* for relatable purposes with marketing and its tools in *social media*.

Furthermore, it can be observed that in its majority the documents provide information with either regular or high utility to answer the investigation's questions. Henceforth, it can be seen that the methodology most frequently used for investigating marketing phenomenon is the descriptive study. Which tend to methods of regular utility of the information to respond to the questions of this study.

Fig. 4 shows that when presenting a visualization of both years (2014 and 2015), the descriptive studies reach a larger participation with a higher level of difficulty (mainly "low"). Moreover, the results present a high frequency method on "text analysis" with a difficulty level leaning towards "regular". When analysing the conclusions to which the studies highlight the topics "marketing tools in social media" and "utility of social media", it clearly shows that there is a need to further investigate marketing within *social media*.

None of the investigations discuss the brand experience and the consequence of the value deliver, for example.

Finally, Fig. 5 presents visualization of systematic mapping in relation to the conclusions of the articles and the utility of information for this study. It can be observed that the documents with conclusions are directly related to marketing and tend to have useful information to respond to the question of this investigation. Nevertheless, the group "segment creation" even though it is a very important branch of marketing, no investigations of sufficient quality respond the questions presented.

The following section provides the answers to the questions formulated for this study considering the knowledge acquired.

*QI-1 which methods are currently being applied to investigate marketing and social media?*

In relation to the methods currently applied to investigate marketing or business strategies in *social media*, it can be observed that the selected studies follow the following methodologies: comparative analysis, text analysis, descriptive studies, alternate method, experimental study, multilevel analysis.

It is important to observe that the tendency to apply descriptive studies reached 38%, forming part of the low difficulty level.

Observing that the tendency of applying descriptive studies reach 38%, focusing on the low difficulty level when analysing the years in 2014–2015. One of every five articles achieved a high level of difficulty (see Fig. 4). Another important observation that can be inferred from this study is that in the year 2015 one can
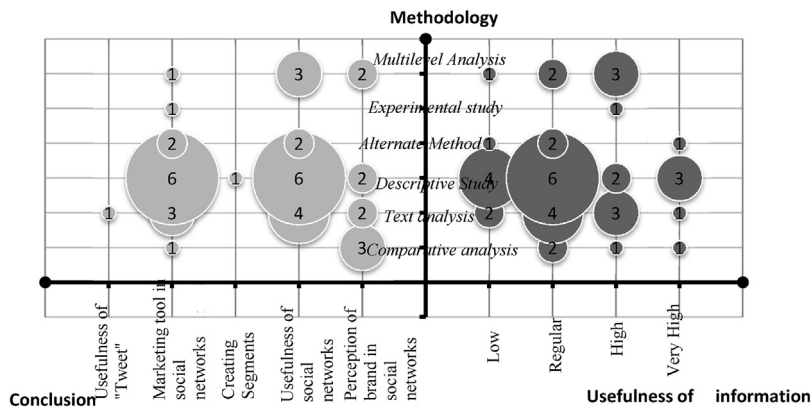


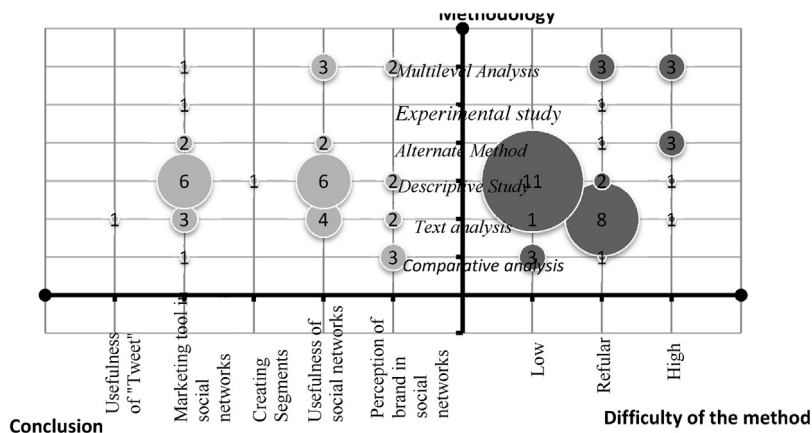**Fig. 3.** Systematic mapping 2014–2015 to usefulness of information.

*Source: Own elaboration.*



**Fig. 4.** Systematic mapping 2014–2015 to difficulty of the method.
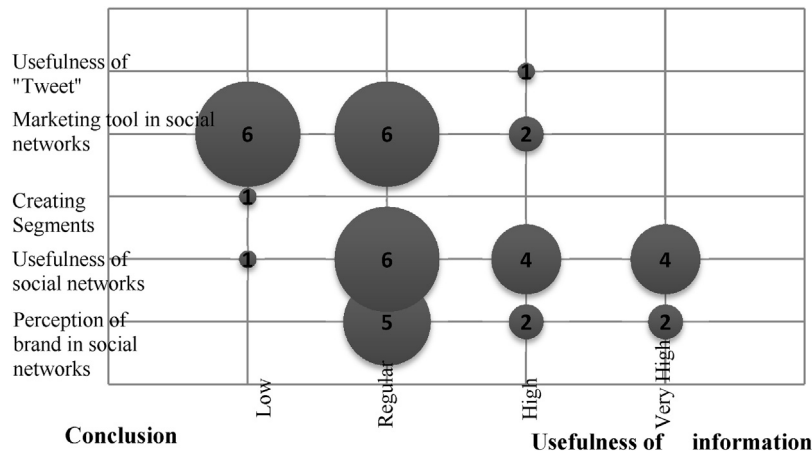
*Source: Own elaboration.*

**Fig. 5.** Global systematic mapping 2014–2015.

Source: Own elaboration.

appreciate a level of maturity in the investigations. The documents do not only endorse *social media* as a marketing or business tool, but also propose it as a main tool to solve dilemmas in marketing and/or business topics.

*QI-2 To which topics of Marketing does the study on social media comprise?*

The studies on *social media* consider the topics of "creation of segmentation" and "Brand perception", see Fig. 5. The presence of investigations that combine these topics are still low, as one in every four has a direct relationship to marketing, only standing out in two areas, which makes us consider the possibility of developing new investigations that imply a superior development of the different online marketing tools.

An interesting reflexion that made us think of the presented work is that this methodology allows us to identify the investigations that have focused on the studied topic, given that the previous results presented a sample of 185 (for the period 2014–2015). Of these, only 41 were really focused on the lack of the information proposed throughout this study.

## 5. Discussion

Social media has had a substantial impact in the business world. Yet, we ask ourselves if in the field of scientific research there is a relevant number of active (and/or finished) studies present.

Foremost, we question the methodology employed to study them. This allows us to determine the level of difficulty of a research topic to thus identify the most effective methods and to better understand which fields can still be further developed. By working with the Web of Science database, we can rest assured with the quality of work that is being produced. Hence, we have managed to distinguish that the larger percentage of research has only been descriptive studies, leaving the field open for fresh opportunities for research in the sector.

The second part that requires research pertains to marketing topics that link to various other research. In this we can identify two topics: "Segment creation" and "Brand perception". Furthermore, it is evident that one out of every four articles from the sample is directly related to marketing, which again grants ample opportunity for researchers in the field.

For database creation, we used systematic mapping methodology that allows to identify the papers that are really focused on the area uof study, leaving substantial evidence on how

rigorous it should be when identifying the papers related to the topic under study, given that of the 185 that the computer system of the database delivered, only 41 really form part of the focus of the topic under study. Although, manual review is still necessary to confirm that manuscript belongs to the topic under study.

It is important to consider the limitation in these studies as they do not consider the quality of the involved works, but instead prioritize answering the research questions. It is advisable to extend the study to other databases, such as, for example, Google Scholar or SCOPUS. Expanding the databases under study could lead to new findings.

## 6. Conclusion and future applications

Considering that it was an experimental study that focused on identifying the research areas covered by the different researchers in marketing and social networks, specifically twitter, the study presents important points where its information can contribute to Knowledge.

The findings of this study show that the main methods applied were through descriptive analyses over the use of *social media* as a marketing tool. Nevertheless, since 2015, several studies appear to go beyond the descriptive analysis and propose *social media* as a main tool to solve marketing dilemmas like for example the creation of segments and Brand perceptions of products.

In addition, there is limited research on strategic marketing dimensions through segmentation and online positioning.

Along with research to evaluate the client's online experience, the evolution of an online management channel with proposed variables are crucial to understand the e-reputation that is obtained (or lost) depending how users comment online.

Moreover, it can be observed that the documents with conclusions directly related to marketing or business tend to contain useful information to answer the questions proposed throughout the investigation. Nevertheless, the group "segment creation" (regardless of being an important branch for marketing), has no sufficient or qualitative investigations that answers the to the proposed questions.

Further, future investigations should focus on applying more complex methodologies that lead to conclude relations or inferences between variables, as can be seen in models of covariance structures. Furthermore, tools allow the measurement of the evolution of actions between user communities and company communities.

Another interesting methodology to further develop is text analysis, as it has been used repeatedly in various documents in the study. However, due to *social media* tools (specifically Twitter), studies could focus more on linguistic information that allows management to take decisions proposing indicators based on qualitative information.

## Acknowledgments

## References

Azorín-Richarte, D., Orduna-Malea, E., & Ontalba-Ruipérez, J. A. (2016). Redes de conectividad entre empresas tecnológicas a través de un análisis métrico longitudinal de menciones de usuario en Twitter. *Revista Española de Documentación Científica*, 39(3), 140.

Beukeboom, C. J., Kerkhof, P., & De Vries, M. (2015). Does a virtual like cause actual liking? How following a brand's Facebook updates enhances brand evaluations and purchase intention. *Journal of Interactive Marketing*, 32, 26–36.

Bianchi, C., & Andrews, L. (2015). Investigating marketing managers' perspectives on social media in Chile. *Journal of Business Research*, 68(12), 2552–2559.

Blanco-Mesa, F., Merigó, J. M., & Gil-Lafuente, A. M. (2017). Fuzzy decision making: A bibliometric-based review. *Journal of Intelligent & Fuzzy Systems*, 32, 2033–2050.

Blazevic, V., Wiertz, C., Cotte, J., de Ruyter, K., & Keeling, D. I. (2014). GOSIP in cyberspace: Conceptualization and scale development for general online social interaction propensit. *Journal of Interactive Marketing*, 28(2), 87–100.

Bollena, J., Maoa, H., & Zeng, X. (2011). Twitter mood predicts the stock market. *Journal of Computational Science*, 2(1), 1–8.

Brummette, J., & Sisco, H. F. (2015). Using Twitter as a means of coping with emotions and uncontrollable crises. *Public Relations Review*, 41(1), 89–96.

Burkhalter, J. N., Wood, N. T., & Tryce, S. A. (2014). Clear, conspicuous, and concise: Disclosures and Twitter word-of-mouth. *Business Horizons*, 57(3), 319–328.

Burnap, P., Rana, O. F., Avis, N., Williams, M., Housley, W., Edwards, A., et al. (2015). Detecting tension in online communities with computational Twitter analysis. *Technological Forecasting and Social Change*, 95, 96–108.

Calefato, F., Lanubile, F., & Novielli, N. (2015). The role of social media in affective trust building in customer–supplier relationships. *Electronic Commerce Research*, 15(74), 453–482.

Christodoulides, G. (2009). Branding in the post-internet era. *Marketing Theory*, 9(1), 141–144.

Chu, S. C., & Sung, Y. (2015). Using a consumer socialization framework to understand electronic word-of-mouth (eWOM) group membership among brand followers on Twitter. *Electronic Commerce Research and Applications*, 14(4), 251–260.

Colliander, J., Dahlen, M., & Modig, E. (2015). Twitter for two: Investigating the effects of dialogue with customers in social media. *International Journal of Advertising*, 34(2), 181–194.

Cova, B. (2015). Re-branding brand genericide. *Business Horizons*, 57(3), 359–369.

Domínguez, F., López, R., & Ortega, J. C. (2016). "Hagan un grupo de Facebook para esta clase". ¿De qué hablamos cuando hablamos de redes sociales? *Revista Interamericana de Educación de Adultos*, 38(2), 117–126.

Dunbar, R. I. M., Arnaboldi, V., Conti, M., & Passarella, A. (2015). The structure of online social networks mirrors those in the offline world. *Social Networks*, 43, 39–47.

Durahim, A. O., & Coskun, M. (2015). #iamhappybecause: Gross National Happiness through Twitter analysis and big data. *Technological Forecasting and Social Change*, 99, 92–105.

Einwiller, S. A., & Steilen, S. (2015). Handling complaints on social network sites – An analysis of complaints and complaint responses on Facebook and Twitter pages of large US companies. *Public Relations Review*, 41(2), 195–204.

Fischer, E., & Reuber, A. R. (2014). Online entrepreneurial communication: Mitigating uncertainty and increasing differentiation via Twitter. *Journal of Business Venturing*, 29(4), 565–583.

Gamboa, A. M., & Goncalves, H. M. (2014). Customer loyalty through social networks: Lessons from Zara on Facebook. *Business Horizons*, 57(6), 709–717.

Gruber, D. A., Smerek, R. E., Thomas-Hunt, M. C., & James, E. H. (2015). The real-time power of Twitter: Crisis management and leadership in an age of social media. *Business Horizons*, 58(2), 163–172.

Guinan, P. J., Parise, S., & Rollag, K. (2014). Jumpstarting the use of social technologies in your organization. *Business Horizons*, 57(3), 337–357.

Gwet, K. (2002). Inter-rater reliability: Dependency on trait prevalence and marginal homogeneity. *Statistical Methods for Inter-Rater Reliability Assessment Series*, 2, 1–9.

Hautz, J., Fuller, J., Hutter, K., & Thurridl, C. (2014). Let users generate your video ads? The impact of video source and quality on consumers' perceptions and intended behaviors. *Journal of Interactive Marketing*, 28(1), 1–15.

Hether, H. J. (2014). Dialogic communication in the health care context: A case study of Kaiser Permanente's social media practices. *Public Relations Review*, 40(5), 856–858.

Hollebeek, L. D., Glynn, M. S., & Brodie, R. J. (2014). Consumer brand engagement in social media: Conceptualization, scale development and validation. *Business Horizons*, 28(2), 149–165.

Hu, T., & Kettinger, W. J. (2008). Why people continue to use social networking services: Developing a comprehensive model. In *Proceedings, 29th International Conference on Information Systems*.

Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of social media. *Business Horizons*, 53, 59–68.

Kietzmann, J. H., Hermkens, K., McCarthy, I. P., & Silvestre, B. S. (2011). Social media? Get serious! Understanding the functional building blocks of social media. *Business Horizons*, 54(3), 241–251.

Killian, G., & McManus, K. (2015). A marketing communications approach for the digital era: Managerial guidelines for social media integration. *Business Horizons*, 58(5), 539–549.

King, R. A., Racherla, P., & Bush, V. D. (2014). What we know and don't know about online word-of-mouth: A review and synthesis of the literature. *Journal of Interactive Marketing*, 28(3), 167–183.

Kitchenham, B., Budgen, D., & Brereton, O. P. (2011). Using mapping studies as the basis for further research – A participant-observer case study. *Information and Software Technology*, 53(6), 638–651.

Kitchenham, B., & Charters, S. (2007). Guidelines for performing systematic literature reviews in software engineering. In *Technical report EBSE'07*.

Labrecque, L. I. (2014). Fostering consumer–brand relationships in social media environments: The role of parasocial interaction. *Journal of Interactive Marketing*, 28(2), 134–148.

Lahav, T. (2014). Public relations activity in the new media in Israel 2012: Changing relationships. *Public Relations Review*, 40(1), 25–32.

Lee, F. L. F. (2005). Ordinary political conversation and public opinion expression: The conditioning impact of discord and information. *Journalism & Mass Communication Quarterly*, 82, 891–909.

Mangold, W. G., & Faulds, D. J. (2011). Social media: The new hybrid element of the promotion mix. *Business Horizons*, 52(4), 357–365.

Marion, T. J., Barczak, G., & Hultink, E. J. (2014). Do social media tools impact the development phase? An exploratory study. *Journal of Product Innovation Management*, 31, 18–29.

Men, L. R., & Tsai, W. H. S. (2015). Infusing social media with humanity: Corporate character, public engagement, and relational outcomes. *Public Relations Review*, 41(3), 395–403.

Merigó, J. M., Mas-Tur, A., Roig-Tierno, N., & Ribeiro-Soriano, D. (2015). A bibliometric overview of the Journal of Business Research between 1973 and 2014. *Journal of Business Research*, 68, 2645–2653.

Nguyen, B., Yu, X. Y., Melewar, T. C., & Chen, J. S. (2015). Brand innovation and social media: Knowledge acquisition from social media, market orientation, and the moderating role of social media strategic capability. *Industrial Marketing Management*, 51, 11–25.

Orduna-Malea, E., & Alonso-Arroyo, A. (2017). *Cybermetric techniques to evaluate organizations using web-based data*. Cambridge, MA: Elsevier.

Ozdora-Aksak, E., & Atakan-Duman, S. (2015). The online presence of Turkish banks: Communicating the softer side of corporate identity. *Public Relations Review*, 41(1), 119–128.

Paniagua, J., & Sapena, J. (2014). Business performance and social media: Love or hate? *Business Horizons*, 57(6), 719–728.

Park, S. J., Lim, Y. S., & Park, H. W. (2015). Comparing Twitter and You Tube networks in information diffusion: The case of the "Occupy Wall Street" movement. *Technological Forecasting and Social Change*, 95, 208–217.

Petersen, K. R., Feldt, R., Mujtaba, S., & Mattsson, M. (2008). Systematic mapping studies in software engineering. In *EASE'08. Proceedings of the 12th international conference on Evaluation and Assessment in Software Engineering* (pp. 68–77). Swinton: British Computer Society.

Reilly, A. H., & Hynan, K. A. (2014). Corporate communication, sustainability, and social media: It's not easy (really) being green. *Business Horizons*, 57(6), 747–758.

Ross, C., Orr, E. S., Sisic, M., Arseneault, J. M., Simmering, M. G., & Orr, R. (2009). Personality and motivations associated with Facebook use. *Computers in Human Behavior*, 25(2), 578–586.

Sabate, F., Berbegal-Mirabent, J., Canabate, A., & Lebherz, P. R. (2014). Factors influencing popularity of branded content in Facebook fan pages. *European Management Journal*, 32(6), 1001–1011.

Sashittal, H. C., Hodis, M., & Sriramachandramurthy, R. (2015). Entifying your brand among Twitter-using millennials. *Business Horizons*, 58(3), 325–333.

Schamari, J., & Schaefers, T. (2015). Leaving the home turf: How brands can use webcare on consumer-generated platforms to increase positive consumer engagement. *Journal of Interactive Marketing*, 30, 20–33.

Schau, J. H., Muniz, M. A., & Arnould, J. E. (2009). How brand community practices create value. *Journal of Marketing*, 73(5), 30–51.

Shih, C. C., Lin, T. M. Y., & Luarn, P. (2014). Fan-centric social media: The Xiaomi phenomenon in China. *Business Horizons*, 57(3), 349–358.

Statista. (2016). *Visible body: Statista.*. https://es.statista.com/estadisticas/512920/numero-mundial-usuarios-redes-sociales/

Swani, K., Brown, B. P., & Milne, G. R. (2014). Should tweets differ for B2B and B2C? An analysis of Fortune 500 companies' Twitter communications. *Industrial Marketing Management*, 43(5), 873–881.

*C. Nicolas Alarcón et al. / European Research on Management and Business Economics xxx (2017) xxx–xxx*

VanMeter, R. A., Grisaffe, D. B., & Chonko, L. B. (2015). Of "Likes" and "Pins": The effects of consumers' attachment to social media. *Journal of Interactive Marketing, 32,* 70–88.

Vel, K. P., Brobbey, C. A., Salih, A., & Jaheer, H. (2015). Data, technology & social media: Their invasive role in contemporary marketing. *Revista Brasileira de Marketing, 14*(4), 421–437.

Watkins, B., & Lewis, R. (2014). Initiating dialogue on social media: An investigation of athletes' use of dialogic principles and structural features of Twitter. *Public Relations Review, 40*(5), 853–855.

We Are Social. (2016). *Visible body..* http://wearesocial.com/uk/social-thinking

Webster, T. (2010). *Twitter usage in America: 2010. The Edison Research/Arbitron Internet and multimedia study.* Somerville, NJ: Edison Research.

Yamaki, K. (2016). Role of social networks in urban forest management collaboration: A case study in northern Japan. *Urban Forestry & Urban Greening, 18,* 212–220.

Yu, D., Li, D. F., Merigó, J. M., & Fang, L. (2016). Mapping development of linguistic decision making studies. *Journal of Intelligent & Fuzzy Systems, 30*(5), 2727–2736.

Zerfass, A., & Schramm, D. M. (2014). Social Media Newsrooms in public relations: A conceptual framework and corporate practices in three countries. *Public Relations Review, 40*(1), 79–91.

Zhao, Z. Z., & Balague, C. (2015). Designing branded mobile apps: Fundamentals and recommendations. *Business Horizons, 58*(3), 305–315.