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Mapping government social media research and moving it forward: A framework and a research agenda

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ABSTRACT

The growing phenomenon of government social media requires better informed and more complex studies, but all beginning with a clearer understanding of the current research. Drawing on a comprehensive review of government social media literature in the e-government, the Information Systems (IS), and the public administration (PA) research fields, we mapped government social media research into the six focus categories of context, user characteristics, user behavior, platform properties, management, and effects. Findings show that 1) research focuses on government, rather than on users; 2) studies focusing on context, management, and users mostly focus on quantitative aspects; 3) the properties of social media platforms are under-investigated; and 4) research on the relationship between constructs of the government social media phenomenon is under-investigated.

Based on our analysis, we propose a framework to frame relationships between the six focus categories. We also identify a four-point research agenda to move government social media research forward, from description to complex impact analysis.

1. Introduction

In the public sector, social media initiatives are booming, with increasing agreement among managers on the importance of using social media platforms to interact with citizens. Such initiatives are taken in response to demands from citizens who, as experienced social media users, have increased and matured expectations towards public agencies in terms of responsiveness, information delivery, and service provision.

The profusion of government presence on social media platforms represents not only a quantitative increase in the array of digital channels of interaction that governments have at their disposal. Social media, defined as “a group of Internet-based technologies that allows users to easily create, edit, evaluate and/or link to content or other creators of content” (Kaplan & Haenlein, 2010, p. 61), feature the key potential for interactivity, collaboration, and government-citizen co-creation, and therefore represent also a potential paradigm shift in the relationship between governments, citizens as users, and commercial organizations (Knox, 2016; Mergel, 2016). Social media enable two-way interactions, transforming the role of the citizens from passive consumer of government services to active co-creator (Bertot, Jaeger, & Hansen, 2012), increasing the smartness of public action (Gil-

Garcia, Zhang, & Puron-Cid, 2016), and reshaping the relationships between public agencies and technology platform providers (Mergel, 2014).

Research on social media in the public sector has tried to keep up with such developments, with all the challenges associated with trying to capture the essence of a rapidly moving target (Criado, Sandoval-Almazan, & Gil-Garcia, 2013). The body of empirical literature drawing on cases of social media adoption by government tackles an array of different aspects of the phenomenon, resulting in diverse and shifting research foci.

However, there is currently a lack of comprehensive efforts to map and systematize research on government social media. The very few existing reviews of research focusing on social media in the public sector are either of limited scope (Boulianne, 2015; Wang, Medaglia, & Sæbø, 2016), or provide non-systematic, time-based accounts (Magro, 2012). The rapidly growing and disparate body of literature on government social media needs to be systematized for several reasons. First, there is a growing need for the e-government research field to ground its theoretical development on an expanding empirical basis (Bannister & Connolly, 2015). Developing an overview of the research foci on government social media can help conceptualize its key processes in a more systematic fashion. Second, research on

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government social media should reflect the novelty of the social media phenomenon, with its richness and complexity. While there are generic literature reviews in the e-government field (Meijer & Bekkers, 2015), they fall short of focusing specifically on the novel and complex changes that social media brings to the relationships between government, citizens, and platform providers. Third, from a practitioner perspective, mapping knowledge of government social media will enable public managers to draw on the research findings to improve practices and offer better services, especially now that public agencies are beginning to progressively embed the affordances of social media in policy and standards (Bretschneider & Parker, 2016; Chen, Xu, Cao, & Zhang, 2016).

This study provides an analysis of research on social media in the public sector, and derives a framework to provide a basis for developing a future research agenda. The study specifically tackles three research questions:

RQ1: What are the current foci and gaps in government social media research?

RQ2: How can we frame relationships between constructs of government social media research?

RQ3: What aspects of government social media should future research focus on?

The mapping of the government social media domain is important for two main reasons: 1) to identify current and past coverage, gaps, and salient issues and impact areas; and 2) to observe the longitudinal change of themes so that the thematic evolution of a field can be observed, and future directions and research agenda can be projected.

The next section discusses the relevance of the government social media phenomenon and argues for the importance of mapping the research scenario. Section 3 presents the methods adopted for selecting and reviewing studies on social media in the public sector in the Information Systems (IS), in the public administration (PA), and in the e-government literature. Section 4 tackles RQ1 by mapping research in the six focus categories of context, management, user characteristics, user behavior, platform properties, and effects. Section 5 tackles RQ2 by identifying the relationships between constructs of government social media and presenting a framework of government social media research. Section 6 tackles RQ3 by presenting a four-point research agenda for studying government social media, and discussing its implications for both research and practice. The conclusion section summarizes our study's contributions, highlights its limitations, and poses related avenues for future research.

2. Background

While government social media can be considered partly as an extension of a long wave of digitization efforts (Bretschneider & Mergel, 2010), there are many strong arguments that support its uniqueness. Besides being another channel of government-citizen communication, social media has been defined as social interaction by its very nature, with its key strengths in the areas of collaboration, participation, empowerment, and real-time interaction (Bertot, Jaeger, & Grimes, 2010). As opposed to other web-based applications, where information provision and service delivery are at the core of the government activities afforded by the technology, social media provides the possibility for content co-production by both citizens and governments (Cormode & Krishnamurthy, 2008; O'Reilly, 2007), citizen-to-citizen interaction, and community building. These key aspects grant a privileged research focus on interactivity and engagement between governments and citizens as “prosumers”.

Another important distinction between traditional e-government services and governments' presence on social media platforms, is that the former are usually hosted on an agency's server, while the latter are mostly owned and controlled by commercial third parties, outside the

direct reach of governments (Mergel, 2013a). This aspect can also be expected to radically change the scenario of interactions, power balance, and negotiations between government and private owners of the social media platforms in defining objectives, strategies, and features of social media management.

As a result, research on government social media can be expected to focus on a number of key aspects of the phenomenon, such as the changes in the role of citizens and the affordances of social media platforms controlled by third parties.

In recent years, there have been a number of efforts to frame the emerging government social media phenomenon. As in the early days of e-government research – when research and practice mostly concerned traditional informatization of the public sector, such as the implementation of intranets, and presentational websites (Hiller & Bélanger, 2001; Layne & Lee, 2001; Moon, 2002) – a number of maturity models have been proposed to conceptualize government social media. A model proposed by Lee and Kwak (2012) focuses on open government policies through social media; it includes five evolutionary levels, from “initial conditions” to “ubiquitous engagement” that public agencies have to progress through in order to increase transparency and openness using social media (Lee & Kwak, 2012). Mergel and Bretschneider (2013) propose a 3-stage model of how government agencies adopt social media over time: a first stage in which agencies experiment; a second stage where they recognize the need for social media policies and regulations; and a third stage where they formalize social media strategies and policies (Mergel & Bretschneider, 2013).

An attempt at categorizing indicators of social media use by governments has also been made. Mergel (2013a) proposes a framework consisting of social media interaction measures – such as the number of likes, and re-tweets – and categorizes them according to the mission they facilitate (e.g., transparency, participation) (Mergel, 2013a).

These attempts at providing an overview of the government social media phenomenon have begun to systematize the complexity of the phenomenon. However, they fall short on two aspects. First, they do not mainly focus on identifying future focus areas for research. The maturity model proposed in Lee and Kwak (2012) and the social media interaction measures proposed in Mergel (2013a) suggest best practices for public managers, but do not directly identify an agenda for the research community; Mergel and Bretschneider (2013) propose a set of testable propositions as a by-product of their adoption stage model, but these propositions focus on the process of adoption of government social media from the perspective of public agencies, leaving other dimensions of the government social media phenomenon, such as the role of users and of platform providers, outside its scope. Second, extant attempts at providing an overview of the government social media phenomenon do not draw on a systematic analysis of existing empirical research. While there is a substantial number of reviews of general e-government research literature at different levels of abstraction (Meijer & Bekkers, 2015), to the best of our knowledge no systematic review of government social media research has been carried out so far. The few exceptions either feature a non-systematic, time-based approach (Magro, 2012), or serve a limited scope, such as providing a quantitative comparison between research disciplines (Wang et al., 2016), or focusing on a very narrow aspect of social media use, such as the relationship between social media use and political participation (Boulianne, 2015). Moreover, there is no existing review of government social media literature that aims at developing a framework for mapping existing research and framing future research efforts.

In order to fill these gaps, and to complement existing efforts for systematizing knowledge on the government social media phenomenon, we carry out a comprehensive review of the research literature, and propose a framework to drive a new research agenda.

3. Method

3.1. Article selection strategy

A thorough and rigorous analysis of a research field requires a systematic and structured literature review (Bandara, Miskon, & Fiel, 2011; Webster & Watson, 2002), and a comprehensive and replicable literature search strategy that includes selecting relevant publication outlets, relevant keywords, and a relevant period of time (Brocke et al., 2009). Following Bandara et al. (2011), this literature review was carried out in two main steps: 1) selecting the relevant sources to be searched, and 2) defining the search strategy in terms of time frame, search terms, and search fields.

We reviewed research on government social media in Information Systems (IS), public administration (PA), and e-government literature by scouting leading journal publications, since they are likely to include the major contributions (Webster & Watson, 2002). To identify leading and high-quality journals, researchers commonly refer to journal rankings (Levy & Ellis, 2006).

Using the EBSCO database, and in line with Baskerville and Myers (2002) and Sidorova, Evangelopoulos, Valacich, and Ramakrishnan (2008), we selected the eight top IS journals indicated by the Senior Scholar's Basket of Journals of the Association for Information Systems (AIS): *Management Information Systems Quarterly (MISQ)*, *Information Systems Research (ISR)*, *European Journal of Information Systems (EJIS)*, *Information Systems Journal (ISJ)*, *Journal of Information Technology (JIT)*, *Journal of the Association for Information Systems (JAIS)*, *Journal of Strategic Information Systems (JSIS)*, and *Journal of Management Information Systems (JMIS)*. Using the latest version of the E-Government Reference Library (EGRL 12.0) – a well-established, comprehensive database of 8181 e-government references, maintained for over a decade at the University of Washington's Information School (Scholl, 2016) – we selected the core journals in the e-government field (Scholl, 2009): *Government Information Quarterly (GIQ)*, *Information Policy (IP)*, *Transforming Government: People, Process, and Policy (TGPPP)*, *The Electronic Journal of E-Government (EJEG)*, *International Journal of Electronic Government Research (IJEGR)*, *International Journal of Public Administration in the Digital Age (IJPADA)*, *Journal of Information Technology & Politics (JITP)*, and *Electronic Government, an International Journal (EGaIJ)*. In line with previous literature review practice in the area of e-government (Meijer & Bekkers, 2015), we also included the top PA journals *American Review of Public Administration*, *Public Administration Review*, *Journal of Public Administration Research and Theory*, *Administration & Society*, *Public Administration*, *International Review of Administrative Sciences*, *Local Government Studies*, *Governance*, and *Public Management Review*, plus *Social Science Computer Review*.

In order to identify all articles dealing with social media, a team of two researchers performed a search of the following keywords in either the title or the abstract: social medium, social media, social network site(s), social networking site(s), and online social network(s). The search had no start date but had an end date of March 2017. This resulted in a total of 264 items.

The main acceptance criteria for inclusion of an academic paper in this review were as follows: the study draws on an empirical data analysis; the term social media or any of the abovementioned terms is used as the core technology analyzed or as part of the core argument (van Osch & Coursaris, 2013); and the study is situated in a public sector context. This second round of selection resulted in 93 unique research articles. While some overlap between the IS and e-government samples was expected – IS history does feature a stream of studies set in a public sector context (Bélanger & Carter, 2012; Kankanhalli & Kohli, 2009) – only one article in the IS sample (Ling, Pan, Ractham, & Kaewkitipong, 2015) dealt with a social media public sector case. Table 1 illustrates the steps followed in carrying out the literature selection.

3.2. Analysis strategy

The resulting 93 articles were analyzed and discussed in their entirety by the research team to identify common themes among the foci of each study. Some studies included only one focus, while others included multiple foci. To cluster recurring patterns within research foci and systematize the foci into consistent categories, we chose a form of qualitative content analysis approach (Berelson, 1952; Silverman, 2011). Content analysis provides “a relatively systematic and comprehensive summary or overview of the dataset as a whole” (Wilkinson, 1997): it operates by observing repeating themes and categorizing them using a coding system. Categories can be elicited in a grounded way (built up from the data) or come from some external source (for example a theoretical model). In this study, we identified common repeating themes in the full text of the 93 selected papers. We grouped them to provide a two-tier classification scheme that was recorded in a tabular form, and used the classification scheme to build a framework of the literature.

At the first level, six focus categories emerged from the analysis:

- *Social media platform properties*, including studies focusing on the features of the social media applications used by government, such as characteristics of the application interfaces, interaction capabilities, and limits to the amount or type of content that can be published daily;
- *Social media management*, including studies focusing on the activities by government on social media (such as levels of social media presence, frequency and type of government-generated content), and government social media strategy (such as the public agencies' social media governance structures, policies, and organizational capacities);
- *User characteristics*, including studies focusing on demographics (e.g., age, gender) and attitudes (e.g., trust propensity) of the users of government social media;
- *User behavior*, including studies focusing on observed behavior of the users of government social media, such as user content generation and users networking with each other;
- *Context*, including studies that focus on factors external to the social media platforms and their government and citizen users, such as the macro-economic characteristics of a country, national policies, and the digital divide;
- *Social media effects*, including studies focusing on impacts of government social media on the external environment or on external actors (not in the role of users of government social media), such as effects on general citizen engagement and on politicians' empowerment.

At the second level of classification, within each of the six categories, all studies were scanned to identify specific topic areas tackled by each article. The topic areas were first inductively drawn from a comparison and grouping of the articles, and then refined to ensure comprehensiveness and mutual exclusivity of the topic areas through discussion between the two authors of this study.

In assigning an article to a topic area and to a category, we looked at each article's main research question and main unit of analysis, and not at the article's intended audience nor its implications for stakeholders. In line with this principle, an article could be categorized in more than one topic area.

4. Findings

4.1. Government social media research foci

The quantitative distribution of the research articles into the six focus categories of management, context, user characteristics, user behavior, effects, and platform properties is illustrated in Fig. 1.

Table 1
Article selection process.

Selection step	Selection criteria	Sum of articles
Step 1: Search in the IS basket-of-eight journals (<i>Management Information Systems Quarterly</i> , <i>Information Systems Research</i> , <i>European Journal of Information Systems</i> , <i>Information Systems Journal</i> , <i>Journal of Information Technology</i> , <i>Journal of AIS</i> , <i>Journal of Strategic Information Systems</i> , <i>Journal of Management Information Systems</i>) using EBSCO, the eight core e-government journals <i>Government Information Quarterly</i> , <i>Information Polity</i> , <i>Transforming Government: People, Process, and Policy</i> , <i>The Electronic Journal of E-Government</i> , <i>International Journal of Electronic Government Research</i> , <i>International Journal of Public Administration in the Digital Age</i> , <i>Journal of Information Technology & Politics</i> , and <i>Electronic Government</i> , an <i>International Journal</i> , using EGRL 12.0 (Scholl, 2016), the top PA journals (Meijer & Bekkers, 2015) (<i>American Review of Public Administration</i> , <i>Public Administration Review</i> , <i>Journal of Public Administration Research and Theory</i> , <i>Administration & Society</i> , <i>Public Administration</i> , <i>International Review of Administrative Sciences</i> , <i>Local Government Studies</i> , <i>Governance</i> , and <i>Public Management Review</i>), and <i>Social Science Computer Review</i>	- Presence of keywords: social medium, social media, social network site (s), social networking site(s), online social network(s) in title and/or abstract	264
Step 2: Select relevant articles on government social media	- Empirical studies - Public sector setting - Social media, defined as “a group of Internet-based technologies that allows users to easily create, edit, evaluate and/or link to content or other creators of content” (Kaplan & Haenlein, 2010, p. 61), and focused on as the core technology analyzed, or as part of the core argument of the studies.	93

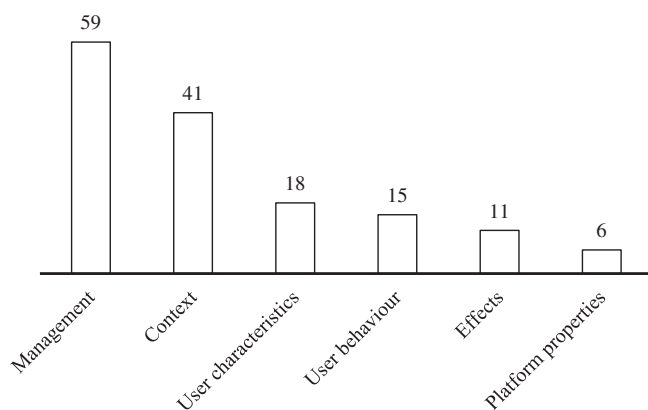


Fig. 1. Article focus distribution by category.

Data shows that most studies on government social media focus on management (59), while the least number focus on social media platforms properties (6). Context is the second most numerous category (41), followed by user characteristics (18), user behavior (15), and government social media effects (11).

Such a skewed distribution across the categories provides a first interesting insight on the state of government social media research. The overwhelmingly dominant research focus is on the “supply side” of the social media phenomenon, as opposed to the “demand side” focus on social media users; research on government social media mostly focuses on how government, rather than on how citizens, use social media. Research articles on user characteristics and user behavior combined, in fact, amount to only a little more than half of those on management.

In order to further unpack the specific characteristics of government social media research, we discuss each focus category and its topics in the following subsections. Please see Table 2 for a summary.

4.1.1. Management

Studies on government social media management tend to focus on the strategies and policies devised by public agencies to use social media, analysing the presence of public agencies on social media platforms, or on content analysis.

Studies focusing on government social media *strategy* aim at

mapping the objectives that public agencies try to achieve using social media. Research focuses on highlighting risk and benefits of social media management strategies as perceived by public agencies (Khan et al., 2014; Landsbergen, 2010; Picazo-Vela et al., 2012; Sivarajah et al., 2015), describing the level of interactivity and engagement sought by government social media (Campbell et al., 2014; Mossberger et al., 2013), and inductively developing higher-level classifications, such as stage models (Lee & Kwak, 2012). Fewer studies focus on the motivations for public agencies to engage in social media management strategies. The motivation is found to reside both internally and externally. Internally, studies identify determining factors of government social media strategy adoption in the distribution of power among the stakeholders involved (Johannessen et al., 2016), in the public agencies' will to improve public relations and customer service (Moss et al., 2015), and in support from top management (Zhang et al., 2017). Externally, studies highlight the role of factors such as international influence and rising citizen participation (Zheng, 2013), and attitudes of the local social environment towards technological innovation and government information transparency (Zhang et al., 2017). Overall, studies on social media management strategies draw on cases from a variety of policy areas, including crisis management (Kavanaugh et al., 2012), public security (Meijer & Thaens, 2013), and public health (Picazo-Vela et al., 2016). Method-wise, most of the studies are based on interviews with government officials (Campbell et al., 2014; Johannessen et al., 2016; Mossberger et al., 2013; Picazo-Vela et al., 2016; Sivarajah et al., 2015; Zhang et al., 2017), and on the analysis of government documents (Johannessen et al., 2016; Meijer & Thaens, 2013), with fewer studies also adopting other data collection strategies, such as workshops (Picazo-Vela et al., 2012), focus groups (Kavanaugh et al., 2012), and participant observation (Landsbergen, 2010).

Studies focusing on social media *governance structure and policies* investigate to what extent and how public agencies devise guidelines for social media use, and what governance structure they put in place to implement them. Social media policies include guidelines to evaluate the impacts of public agencies' social media use, for a suitable degree of social media governance centralization (Ferro et al., 2013), for the identification of interoperability requirements of social media implementation (Ojo et al., 2010), and for social media monitoring activities (Bekkers et al., 2013; Loukis et al., 2017). Studies on social media governance focus on the degree of centralization of government social media use (Meijer & Torenvlied, 2016). Recently, studies have

Table 2
Categories & topics of government social media research.

<i>Management</i>	
Strategy	Campbell, Lambright, & Wells, 2014; Johannessen, Sæbø, & Flak, 2016; Khan, Swar, & Lee, 2014; Kavanaugh et al., 2012; Kokkinakos et al., 2012; Landsbergen, 2010; Lee & Kwak, 2012; Meijer & Thaens, 2013; Moss, Kennedy, Moshonas, & Birchall, 2015; Mossberger, Wu, & Crawford, 2013; Picazo-Vela, Gutierrez-Martinez, & Luna-Reyes, 2012; Picazo-Vela, Fernandez-Haddad, & Luna-Reyes, 2016; Sandoval-Almazán & Gil-Garcia, 2014; Sivarajah, Irani, & Weerakkody, 2015; Vogt, Förster, & Kabst, 2014; Zhang, Zhao, Zhang, Meng, & Tan, 2017; Zheng, 2013
Governance structure and policies	Bekkers, Edwards, & de Kool, 2013; Bretschneider & Parker, 2016; Ferro, Loukis, Charalabidis, & Osella, 2013; Loukis, Charalabidis, & Androutopoulou, 2017; Meijer & Torenvlied, 2016; Mergel, 2016; Ojo, Estevez, & Janowski, 2010; Zhang et al., 2017; Zheng, 2013
IT capacity	Campbell et al., 2014; Oliveira & Welch, 2013; Zhang et al., 2017; Zheng, 2013
Human resources capacity	Campbell et al., 2014; Zheng, 2013
Social media presence	Abdelsalam, Reddick, Gamal, & Al-shaar, 2013; Bonsón, Torres, Royo, & Flores, 2012; Campbell et al., 2014; Ellison & Hardey, 2014; Gandía, Marrahi, & Hugueta, 2016; Gunawong, 2015; Jukic & Merlak, 2017; Mainka, Hartmann, Stock, & Peters, 2015; Mossberger et al., 2013; Sandoval-Almazán, Gil-García, Luna-Reyes, Luna-Reyes, & Díaz-Murillo, 2011; Snead, 2013; Widiyanto, Sandhyaduhita, Hidayanto, & Munajat, 2016; Yildiz, Ocak, Yildirim, Cagiltay, & Babaoglu, 2016
Content generation (e.g., government posts)	Alasem, 2015; Agostino & Arnaboldi, 2016; Bellström, Magnusson, Pettersson, & Thorén, 2016; Bonsón, Royo, & Ratkai, 2015, 2017; Brainard & Edlins, 2015; Edlins & Brainard, 2016; Gunawong, 2015; Hofmann, Beverungen, Räckers, & Becker, 2013; Hong & Kim, 2016; Jukic & Merlak, 2017; Lev-On & Steinfeld, 2015; Lock, Cooke, & Jackson, 2013; Mainka et al., 2015; Meijer & Torenvlied, 2016; Panagiotopoulos, Bigdeli, & Sams, 2014; Pegoraro, Scott, & Burch, 2017; Reddick, Chatfield, & Ojo, 2017; Sobaci & Karkin, 2013; Strauß, Krüikemeier, van der Meulen, & van Noort, 2015; Wukich & Mergel, 2016; Zavattaro, French, & Mohanty, 2015; Zheng & Zheng, 2014
<i>Context</i>	
Community socio-demographics	Bonsón et al., 2017; Cumbie & Kar, 2015; Guillamón, Ríos, Gesuele, & Metallo, 2016; Lev-On & Steinfeld, 2015; Lidén & Larsson, 2016; Ma, 2013, 2014, 2016; Reddick & Jaramillo, 2014; Reddick & Norris, 2013; Sáez-Martín, Haro-de-Rosario, & Caba-Perez, 2014; Srivastava, 2016
E-readiness/digital divide	Bonsón et al., 2012; Bonsón et al., 2017; Lidén & Larsson, 2016; Ma, 2013, 2014; Nomani, Deakins, Dillon, & Vossen, 2016; Reddick & Jaramillo, 2014; Zhang et al., 2017; Zheng, 2013
Institutional/political/legal context	Bonsón et al., 2015; Leston-Bandeira & Bender, 2013; Ma, 2014, 2016; Nomani et al., 2016; Oliveira & Welch, 2013; Reddick & Norris, 2013; Zhang et al., 2017
Benchmarking pressure	Ma, 2013, 2014; Mergel, 2013b; Zheng, 2013
Policy objectives	Bertot et al., 2012; Lidén & Larsson, 2016; Ma, 2016
Community level of citizen participation	Lidén & Larsson, 2016; Zheng, 2013
Community trust in government	Nomani et al., 2016; Zhang et al., 2017; Zheng, 2013
<i>User characteristics</i>	
Age	Karantzeni & Gouscos, 2013; Reddick & Jaramillo, 2014; Sobaci & Karkin, 2013; Warren, Sulaiman, & Jaafar, 2014
Education	Reddick & Jaramillo, 2014; Warren et al., 2014
Race	Reddick & Jaramillo, 2014; Warren et al., 2014
Gender	Reddick & Jaramillo, 2014; Segard & Nielsen, 2013; Sobaci & Karkin, 2013; Warren et al., 2014
Institutional role (e.g., politician/non-politician)	Segard & Nielsen, 2013
Trust propensity	Kavanaugh, Sheetz, Sandoval-Almazán, Tedesco, & Fox, 2016; Lu, Zhang, & Fan, 2016; Park, Kang, Rho, & Lee, 2016; Reddick & Jaramillo, 2014; Warren et al., 2014
<i>User behavior</i>	
Content generation (e.g., user posts and comments)	Abdelsalam et al., 2013; Agostino & Arnaboldi, 2016; Bellström et al., 2016; Brainard & Edlins, 2015; Jukic & Merlak, 2017; Konsti-Laakso, 2017; Lampe, Zube, Lee, Park, & Johnston, 2014; Meijer, Grimmelikhuijsen, & Brandsma, 2012; Pegoraro et al., 2017; Reddick et al., 2017; Snead, 2013
Networking (e.g., re-tweeting)	Agostino & Arnaboldi, 2016; Brainard & Edlins, 2015; Chatfield, Scholl, & Brajawidagda, 2013; Jukic & Merlak, 2017; Hong & Nadler, 2012
<i>Effects</i>	
Citizen engagement	Sandoval-Almazán & Gil-Garcia, 2014; Sumra & Bing, 2016
Politician empowerment	Hong, 2013; Hong & Nadler, 2012
Citizen empowerment	Ling et al., 2015
Trust in government	Feeney & Welch, 2016; Grimmelikhuijsen & Meijer, 2015; Kim, Park, & Rho, 2015; Porumbescu, 2016a, 2016b; Valle-Cruza, Sandoval-Almazán, & Gil-Garcia, 2016
<i>Platform properties</i>	
Platform APIs	Charalabidis & Loukis, 2012; Spiliotopoulou, Charalabidis, Loukis, & Diamantopoulou, 2014; Wandhöfer et al., 2012
Affordances	Chen et al., 2016; Stamati, Papadopoulos, & Anagnostopoulos, 2015
Infrastructure requirements	Porwol, Ojo, & Breslin, 2016

also started to focus on the process of policy establishment, by trying to unpack how and why social media policies are institutionalized over time (Bretschneider & Parker, 2016; Mergel, 2016; Zhang et al., 2017). A handful of studies focus on public agencies' capacities required to implement the strategies, including *IT capacity* (Campbell et al., 2014; Oliveira & Welch, 2013; Zhang et al., 2017; Zheng, 2013), and *Human*

Resources capacity (Campbell et al., 2014; Zheng, 2013).

The vast majority of studies that focus on the “supply side” of government social media either measure the presence of public agencies on social media platforms, or analyze government-produced content. Studies on *social media presence* build on quantitative measures by either counting the number of accounts established by agencies on

different social media sites (Ellison & Hardey, 2014; Gunawong, 2015; Jukic & Merlak, 2017; Mainka et al., 2015; Snead, 2013) or by building more complex indicators (Agostino & Arnaboldi, 2016). These include indicators of usability (Yildiz et al., 2016), and of information quality (Widiyanto et al., 2016), but also composite indicators such as a “sophistication index” (Abdelsalam et al., 2013; Bonsón et al., 2012), a “presence index” (Gandía et al., 2016), or an “interactivity score” (Mossberger et al., 2013). A number of studies use these quantitative metrics to propose social media maturity scales (Abdelsalam et al., 2013; Bonsón et al., 2012; Sandoval-Almazán et al., 2011).

Studies on *content generation* analyze the frequency and type of posts generated by public agencies on social media platforms. Studies on the frequency of government postings mainly adopt a descriptive, exploratory approach, by comparing frequencies and total amounts of postings within a country (Alasem, 2015; Jukic & Merlak, 2017) or between different countries (Bonsón et al., 2017; Mainka et al., 2015). More interestingly, a number of studies focus on analysing the type of content posted by government agencies, to identify the level of interactivity they reflect. In this perspective, content produced by government actors is consistently found to be mainly aimed at self-promotion and political marketing, rather than at increasing transparency, participation and service delivery, regardless of whether the posters are local governments (Bellström et al., 2016; Bonsón et al., 2015; Gunawong, 2015; Hofmann et al., 2013; Reddick et al., 2017; Zheng & Zheng, 2014), embassies (Strauß et al., 2015), police departments (Brainard & Edlins, 2015; Edlins & Brainard, 2016), national committees (Pegoraro et al., 2017), or individual politicians (Sobaci & Karkin, 2013). The tone of content posted by governments on social media is found to be generally formal (Meijer & Torenvlied, 2016), and neutral (Zavattaro et al., 2015), even though occasional manifestations of extreme content is reported, especially among content posted by politicians (Hong & Kim, 2016). Few studies report examples of active engagement of citizens as a response to government posts (Lev-On & Steinfeld, 2015; Reddick et al., 2017). A number of studies on government-posted content focus on analysing postings in emergency situations, such as riots (Lock et al., 2013; Panagiotopoulos et al., 2014). In line with evidence of public agencies' reluctance to directly engage new voices, findings from studies on emergency situations show that governments tend to use social media platforms as a tool to curate third party content relying on a hierarchy of authoritative sources, rather than to produce their own content (Wukich & Mergel, 2016).

4.1.2. Context

Research on contextual factors focuses on elements that frame the phenomenon of government social media, but are not a component of either the social media platforms or the government agencies and the citizens that use them. Contextual factors thus include characteristics of the community in which government social media presence is established (such as the socio-demographics of a geographical region and the overall levels of citizen participation and trust), the characteristics of the institutional and legal context, and top-level government policies.

The majority of articles in the context category deal with the quantitative aspects of the communities in which governments use social media. These studies focus on the *community socio-demographics* (which is mostly at the local level of government), looking at each municipality size (Bonsón et al., 2017; Cumbie & Kar, 2015; Lev-On & Steinfeld, 2015; Lidén & Larsson, 2016; Ma, 2013, 2014; Reddick & Jaramillo, 2014; Srivastava, 2016) and at economic factors, such as GDP (Ma, 2014; Sáez-Martín et al., 2014), household income level (Cumbie & Kar, 2015; Reddick & Jaramillo, 2014; Reddick & Norris, 2013), and indebtedness (Guillamón et al., 2016). Research on *e-readiness* and the *digital divide*, similarly, look into quantitative indicators of the gaps in e.g., internet penetration rates in each country or area where governments carry out social media initiatives (Bonsón et al., 2012; Bonsón et al., 2017; Lidén & Larsson, 2016; Ma, 2013, 2014; Nomani et al., 2016; Reddick & Jaramillo, 2014;

Zheng, 2013), or into how the maturity of IT infrastructure affects the diffusion of government social media (Zhang et al., 2017).

The second most prevalent contextual factor is the *institutional/political/legal context*, pertaining to qualitative and more complex government indicators. Such factors include, on the one hand, the role of formal institutions, such as the form of local government (e.g., mayor-led vs council-led) (Reddick & Norris, 2013), the limits of its jurisdiction (Ma, 2016), the features of the national legislation system (Leston-Bandeira & Bender, 2013; Nomani et al., 2016), and the influence exerted by central and local governments (Ma, 2014; Oliveira & Welch, 2013). More recently, there has been a focus on the institutional environment intended as the set of informal norms that shape the behavior of actors, such as the public administration “style” of a country, comprising attitudes towards transparency, openness, participation, and accountability (Bonsón et al., 2015; Zhang et al., 2017).

Similarly, on the side of government as a context, studies on *policy objectives* look into how a country's policy principles related to e-government social media – such as social inclusion, quality improvements, privacy, and security – frame each public agency' behavior on social media platforms (Bertot et al., 2012; Lidén & Larsson, 2016; Ma, 2016). Studies on *benchmarking pressure* focus on investigating the pressure on public agencies situated in environments that stress the importance of comparing best practices in the use of social media, either within a country (Ma, 2013, 2014; Mergel, 2013b), or internationally (Zheng, 2013). On the side of citizenry as a context, indicators include the general *community levels of trust in government*, such as attitudes towards government transparency (Zhang et al., 2017), and the presence (or absence) of a culture of government criticism and dialogue (Nomani et al., 2016); and the *community levels of citizen participation* of a country (Zheng, 2013), such as levels of voter turnout (Lidén & Larsson, 2016).

4.1.3. User characteristics

The most prevalent user-focused research category concerns user characteristics. Similar to research focusing on the “supply side” (i.e., the government), studies on the “demand side” (i.e., the users) are also dominated by a focus on quantitative aspects. To describe users, the majority of the studies look at *age* (Karantzeni & Gouscos, 2013; Reddick & Jaramillo, 2014; Sobaci & Karkin, 2013; Warren et al., 2014), *gender* (Reddick & Jaramillo, 2014; Seggaard & Nielsen, 2013; Sobaci & Karkin, 2013; Warren et al., 2014), *education levels* and *race* (Reddick & Jaramillo, 2014; Warren et al., 2014). However, a few studies have started looking into more qualitative aspects that describe users of government social media, such as users' social representation of government social media (Lu et al., 2016). These include to what extent users feature *trust propensity* towards public agencies (e.g., to what extent they consider government information reliable) (Kavanaugh et al., 2016; Park et al., 2016; Warren et al., 2014), such as citizens' privacy and security concerns (Reddick & Jaramillo, 2014), and the *institutional role* that users assume (e.g., whether they are politicians or private citizens) (Seggaard & Nielsen, 2013).

4.1.4. User behavior

The second type of user focus in government social media research concerns the analysis of their behavior when using such platforms. Most studies on user behavior focus on quantifying the aggregate amount of *content generation*, including counting of the number of user posts, comments, and likes (Abdelsalam et al., 2013; Agostino & Arnaboldi, 2016; Jukic & Merlak, 2017; Konsti-Laakso, 2017; Snead, 2013), as well as attributing the content of such posts to different content categories (Bellström et al., 2016; Jukic & Merlak, 2017; Meijer et al., 2012; Pegoraro et al., 2017; Reddick et al., 2017). Only one study investigates the qualitative aspect of the content generated by users, by looking at civility and flaming in online discussions (Lampe et al., 2014). Moreover, only three studies investigate *networking* behavior among government social media users, that is how users interact with each other on government social media platforms via e.g., re-tweeting other users'

content (Chatfield et al., 2013; Hong & Nadler, 2012; Jukic & Merlak, 2017).

4.1.5. Effects

Studies on government social media effects deal with the impacts of government social media on the external environment or on external actors (i.e., not on the role of users of government social media). The limited research attention to social media effects is reflected in the sparse findings. On the one hand, government social media is found to be mostly conducive to *politicians' empowerment* (Hong, 2013; Hong & Nadler, 2012); on the other hand, there are some studies linking government social media strategies to levels of citizen engagement in the forms of political activism (Sandoval-Almazán & Gil-Garcia, 2014) and crowdsourcing (Sumra & Bing, 2016), and to *citizen empowerment* (Ling et al., 2015). Recently, government social media has also been analyzed in relation to levels of *trust in government* in a community (Feeney & Welch, 2016; Kim et al., 2015; Porumbescu, 2016a, 2016b), including citizens' perception of how transparent, efficient, or corrupted government is (Grimmelikhuijsen & Meijer, 2015; Valle-Cruza et al., 2016).

4.1.6. Platform properties

Studies in the least focused on category, platform properties, investigate the features of the social media applications used by government. A number of these studies focus on what are considered to be the key general *affordances* of social media – such as communicability, visibility, interactivity, collaborative ability – to investigate their embodiment in government social media initiatives for openness and transparency (Stamati et al., 2015), or to assess to what extent these affordances are implemented in government social media policies (Chen et al., 2016).

Another stream of studies within this category adopts a more technical perspective on platform properties. This includes outlining a number of *infrastructure requirements* for citizen participation through government social media (Porwol et al., 2016), and developing *platform APIs* (Application Programme Interfaces) to enable public agencies to more easily post and monitor user responses across different platforms (Spiliotopoulou et al., 2014; Wandhöfer et al., 2012), and to enhance participatory policy-making (Charalabidis & Loukis, 2012).

4.2. Summary of findings

Mapping of the foci of government social media literature brings out five summary characteristics.

1. *The research overwhelmingly focuses on government, rather than on users.* This dominant focus on the “supply side” of the social media phenomenon (as illustrated in the management category of our review) seems to reflect a government-centric view that still characterizes social media research. In addition, content produced by government actors is consistently found to be mainly aimed at self-promotion and political marketing, rather than at increasing transparency, participation, and service delivery. The dominance of this approach fails to capture the potential novelty introduced by the Web 2.0 phenomenon, i.e., the emergence of the user as the protagonist of social media-enabled interactions.
2. *Research focusing on the government side mostly concentrates on quantitative aspects.* Most studies investigating the presence of governments on social media do so by sheer counting of the number of accessible public accounts or links to social media. These measures are then often translated into stage models of government social media adoption. While there is a well-established tradition of maturity models in e-government research (Andersen & Henriksen, 2006; Hiller & Bélanger, 2001; Layne & Lee, 2001; Lee, 2010; Moon, 2002; Siau & Long, 2005; Valdés et al., 2011), maturity models have increasingly been the subject of well-argued critiques (Bannister,

2007; DeBri & Bannister, 2015; Grönlund, 2009, 2011) that point out their shortcomings in assuming a linear, quantifiable development of IT adoption in the public sector. Our research mapping shows that the popularity of these social media stage models appears to somewhat replicate the popularity of general e-government stage models, which characterized the early days of e-government research.

3. *Research focusing on users mostly concentrates on quantitative aspects,* consisting of either socio-demographic description, or of counting and classifying user posts. Despite the key social media affordances of interactivity and networking, as well as recent authoritative calls for studying social media networking activity (Berger, Klier, Klier, & Probst, 2014; Kane, Alavi, Labianca, & Borgatti, 2014), little focus is given to networking behavior on government social media platforms – which is on how users interact with each other.
4. *Research focusing on context mostly concentrates on quantitative aspects.* Studies analysing the context that frames government social media look at macro-economic variables and demographics. While context factors that frame the phenomenon of government social media include diverse elements – such as institutional norms and culture, the influence of regulatory agencies, and values embedded in the political system – there is a dearth of research focusing on these more complex, qualitative aspects of the context.
5. *The properties of social media platforms are under-investigated.* The least researched aspect of government social media is the features, architecture, and affordances of social media platforms themselves. This finding can be interpreted in two ways. On the one hand, it shows that existing studies are successful in avoiding a technocentric approach in analysing the government social media phenomenon. This is in contrast to what e-government research experienced in its early development, when a focus on describing technical features of websites was predominant (Yildiz, 2007). On the other hand, neglecting the very nature of the social media platforms can result in potentially overlooking the role that social media affordances have in enabling and constraining the behavior that occurs on them.

5. Moving research forward: a framework of government social media research

Given the complexity of the processes involved in government social media, descriptive approaches that narrow in on one category of focus at a time are limited in capturing the wide array of aspects involved in the phenomenon. In particular, understanding government social media requires unpacking the *relationships and impacts* between the different aspects identified in research. For example, once we have shed light on the management strategies that governments implement to use social media, what do we know about the impacts that these strategies have on social media user behavior, or on society at large?

Within the existing body of research on government social media, there are a number of studies that go beyond a descriptive approach and focus on investigating the relationships between the different aspects of social media. We have identified these studies on the basis of the six categories of our mapping. We refer to the six categories as *constructs* capturing the elements of the government social media phenomenon between which relationship is established in research. Fig. 2 illustrates the total number of studies on government social media published over time, and the share of those that focused on relationships between constructs.

As Fig. 2 shows, studies on the relationships between constructs start to appear around 2012, three years after the first studies on government social media. Since 2012, the total number of studies on government social media has continued to grow steadily, while the proportion of those studies that focus on relationship between constructs has not grown at the same pace, stabilizing at around a third of the total number of studies. As of March 2017, there are 33 studies on

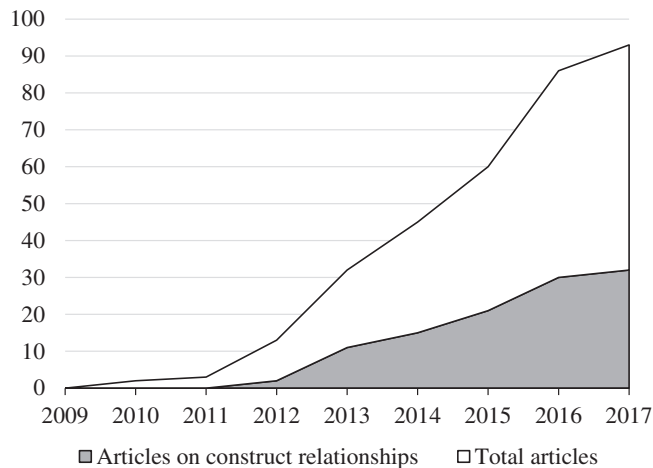


Fig. 2. Cumulative article distribution over time: total articles and articles on relationships between constructs.

the relationships between constructs out of the total body of 93 studies on government social media. This signals an interesting trend since, with the maturation of a research area, one would expect the emergence of a larger share of studies investigating relationships between constructs or, in other words, to move from description to impact analysis and explanation.

To delve into these relationships, we have analyzed and classified the 33 studies that focus on the relationships between the six categories. A list of the classified studies is provided in Table 3, where categories treated as independent variables in each study are listed in the rows, and constructs treated as dependent variables are listed in the columns.

Below we outline the relationships studied in extant research, in decreasing order of focus, from the most investigated to the least investigated ones.

1 – Impact of context on social media management. The most researched relationship by far is the one between context and government social media management. Studies in this category treat the characteristics of context as an independent variable to explain how government devises strategies as well as uses and implements social media. Within this focus, we observe a variety of operationalizations of some context aspects. Besides traditional studies on the impacts of socio-demographic variables on public authorities' social media adoption, there are in fact emerging studies that aim at adopting a more complex view of contextual factors. Instances of the former are studies that find that the larger a local government's population size (Bonsón et al., 2017; Guillamón et al., 2016; Lev-On & Steinfeld, 2015; Lidén & Larsson, 2016; Ma, 2013; Srivastava, 2016), and income level (Cumbie & Kar, 2015), the greater the probability that the municipality will adopt and use social media, and that the higher a country's e-readiness level, the higher is an agency's level of maturity of social media adoption (Bonsón et al., 2012; Ma, 2013; Nomani et al., 2016) – with only one exception interestingly showing a negative correlation (Bonsón et al., 2017). Examples of the latter include studies that investigate the impact of institutional factors: an agency's social media strategy is found to be influenced by the presence of other local and central agencies' best practices (Mergel, 2013b; Oliveira & Welch, 2013), by the limits of a government's jurisdiction (Ma, 2016) and national legislation (Nomani et al., 2016), and to be dependent on the specificity of parliamentary institutions (Leston-Bandeira & Bender, 2013), but not dependent on the form of local government (Reddick & Norris, 2013). A minority of study on context focus on more complex features. These studies found that the success of social media adoption by government is affected by a community's level of trust in government (Zheng,

2013) and by the attitude of the local social environment towards government information transparency (Zhang et al., 2017).

2 – Impact of social media management on user behavior. The second most explored relationship is the impact of social media management on user behavior: how governments' presence and use of social media platforms affect the way users behave on social media. A common focus of these studies is the role of the type of posted content. In general, government-generated posts, in comparison with user-generated ones, are found to trigger higher levels of government social media user engagement (Lev-On & Steinfeld, 2015). Levels of engagement are also found to depend on the topic of government-generated content (e.g., environment, education, housing) (Bonsón et al., 2015), and on the type of medium used in the posts (e.g., text, images, video) (Bonsón et al., 2015; Lev-On & Steinfeld, 2015). An increase in the complexity of the analysis of type of content posted by public agencies and its impacts is observed in few studies. One found that the sentiment and tone of government-generated tweets trigger different levels of involvement in government Twitter users (Zavattaro et al., 2015), and another found that more politically extreme content posted on Twitter by politicians tends to attract more users (Hong & Kim, 2016).

3 – Impact of context on user behavior. Studies on the impact of contextual factors on user behavior link the characteristics of the context with the observed quantity and type of user behavior. The contextual factors include classic macro-economic variables and, more interestingly, the nature of the institutional culture. Examples of the former are studies that find that larger cities and cities in regions with a higher GDP have a larger and more active user base (Lev-On & Steinfeld, 2015; Reddick & Jaramillo, 2014; Sáez-Martín et al., 2014). Examples of the latter include a study that finds that engagement levels by citizens are dependent upon the institutional culture of a country or a region, in the form of the public administration "style" (Bonsón et al., 2015): the Anglo-Saxon, Germanic, and Nordic administrative cultures of transparency, openness, participation and accountability are found to be linked to higher levels of user engagement (Bonsón et al., 2015).

4 – Impact of user characteristics on user behavior. Besides a study that links user socio-demographics characteristics, such as age, gender, education, and income, to levels of government social media involvement (Reddick & Jaramillo, 2014), most of the studies that focus on the impacts of user characteristics on user behavior are, interestingly, not focusing on quantitative aspects. The user characteristics investigated in the relationship with observed user behavior are both institutional (politician role) and value-related (user trust propensity). The studies in this area find that users with a higher level of trust propensity towards government engage in a higher level of online coordination of civic activities (Warren et al., 2014), and that politicians, compared to private citizens, show different user posting and commenting behavior on Twitter (Segaard & Nielsen, 2013).

5 – Impact of user characteristics on social media effects. These studies investigate how different characteristics of social media users affect the external environment or external actors (not in the role of users of government social media). Social media use by politicians is found to only weakly impact public agenda and opinion (Hong & Nadler, 2012), and to reduce the fairness of political fundraising competition (Hong, 2013). In addition, social media user satisfaction is linked to citizen trust in government (Kim et al., 2015).

6 – Impact of user behavior on social media effects. This category captures how the behavior of users of government social media impacts the external environment. A study comparing traditional web presence with social media finds that the frequency of use of government social media is related to increased trust in government in a given community (Porumbescu, 2016a, 2016b), and to slight increases in government legitimacy and perceived effectiveness

Table 3
Studies focusing on relationships between constructs (n = 33).

IV \ DV	Context	User characteristics	User behavior	Management	Effects
Context			Bonsón et al., 2015; Lev-On & Steinfeld, 2015; Reddick & Jaramillo, 2014; Sáez-Martín et al., 2014	Bonsón et al., 2012; Bonsón et al., 2017; Cumbie & Kar, 2015; Guillamón et al., 2016; Leston-Bandeira & Bender, 2013; Lev-On & Steinfeld, 2015; Lidén & Larsson, 2016; Ma, 2013, 2016; Mergel, 2013b; Nomani et al., 2016; Oliveira & Welch, 2013; Reddick & Norris, 2013; Srivastava, 2016; Zhang et al., 2017; Zheng, 2013	
User characteristics			Reddick & Jaramillo, 2014; Segard & Nielsen, 2013; Warren et al., 2014		Hong, 2013; Hong & Nadler, 2012; Kim et al., 2015
User behavior				Chatfield et al., 2013	Grimmelikhuijsen & Meijer, 2015; Porumbescu, 2016a, 2016b
Management			Bonsón et al., 2015, 2017; Hong & Kim, 2016; Lev-On & Steinfeld, 2015; Zavattaro et al., 2015		Feeney & Welch, 2016; Sandoval-Almazán & Gil-García, 2014; Valle-Cruza et al., 2016
Platform properties				Chen et al., 2016	

(Grimmelikhuijsen & Meijer, 2015).

7 – Impact of social media management on effects. The relationship between social media management and effects captures how government strategies and use of social media impact the external environment. We found this area to be surprisingly under-investigated. Few studies analyze the effects of social media strategies, finding that the transformation of social media strategies over time can lead to an increase in citizen engagement in both online and offline political activism (Sandoval-Almazán & Gil-García, 2014), and that interactions by governments with citizens, supported by social media, affect the citizens' perception of government transparency, efficiency, and corruption (Feeney & Welch, 2016; Valle-Cruza et al., 2016).

8 – Impact of user behavior on social media management. There is one study on the impact of user behavior on the strategies of government social media. Investigating the use of Twitter by citizens during a crisis event (such as a natural disaster), it found that citizens' social media use increased the reach of government social media communication strategy (Chatfield et al., 2013).

9 – Impact of social media platform properties on management. This category captures how the features and affordances of social media platforms impact government social media strategies and use. This nascent area of investigation has just recently started to explore to what extent the affordances of social media shape government social media strategies, as reflected in their policy documents (Chen et al.,

2016).

Overall, the nascent body of research on relationship between different constructs of the government social media phenomenon shows that: a) dominant focus is on impacts of context and government management strategies; b) most of the relationships are still covered by very few studies; and c) these scarcely covered relationships are starting to receive attention only recently.

Mapping the relationships between constructs reveals an emerging research area. Most of the relationships embedded in the complex phenomenon of government social media still represent uncharted territories for the research community and therefore, plenty of research opportunities.

In order to frame existing findings and encourage future research efforts in this area, we represent the relationships between the six constructs as a framework of the government social media phenomenon. The framework is illustrated in Fig. 3. The arrows indicate the relationships between constructs that have been tackled by existing government social media studies, and their numbers reflect their ranking in the amount of focus they received, from the most (1) to the least (9) focused on. Missing arrows between constructs indicate that the relationship has not yet been investigated in the current body of government social media research.

We propose this framework as a framing tool to both systematize existing approaches to research on impacts in government social media, and to drive new empirical research on relationships ignited

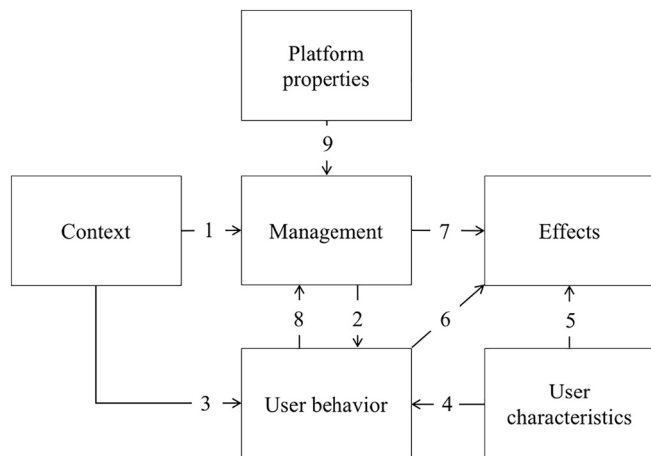


Fig. 3. A government social media research framework: relationships between constructs investigated in current research.

by the government social media phenomenon.

6. Discussion and implications: a research agenda

Mapping extant government social media research, we find that the different focus categories are still investigated mostly in isolation and not in relationship with each other (see Section 4.1). Gaps in existing research also signal the need for focusing on under-investigated areas.

We thus propose a four-point research agenda for the exploration of the relationships between the multiplicity of aspects of the government social media phenomenon, in order to move research forward from isolated categories to impact analysis. The agenda builds on the framework we proposed. The four points, together with their theoretical and practical implications, are discussed below.

1. Increase and refine the focus on user behavior and its impacts. The most important characteristic of government social media is its potential capability to empower users. Social media provides the possibility for content co-production by both citizens and governments (Cormode & Krishnamurthy, 2008; O'Reilly, 2007), by allowing collaboration, participation, empowerment, and real time interaction (Bertot et al., 2010), and thus potentially transforming online users from passive consumers of information to “prosumers”. However, extant research adopts a government-centric perspective, focusing mostly on processes occurring within government. Moreover, most studies focusing on user behavior do so by concentrating on its quantitative aspects.

Looking ahead, future research should first aim to refine indicators of user behavior. The complexity of social media user behavior cannot be captured only by adding the number of observed likes and comments on government social media accounts; there is a need for a deeper understanding driven by more complex indicators.

Considering the behavior of users individually, research on the values and norms embodied in social media user behavior and their impacts is important. Examples of norms and values characterizing user behavior include perceptions of power distance and hierarchy, as well as the importance of informal personal relations. Considering the interaction between users, future research should explore user networking activities occurring on government social media. Examples of research questions related to this focus would be: How and for what purposes do users create groups using social media platforms? What are the styles of interactions in social media-enabled conversations on issues of public interest? How do users form their opinions on discussions on social media? Do users engaging in online interactions converge towards consensus or do they polarize? In a government social media context, these issues are the more

relevant for research, given governments' needs to tackle challenges of an increasingly fragmented community, and avoid user polarization in the public opinion (Medaglia & Zhu, 2017). Our call for further research on user networking echoes the similar call recently formulated within the IS research community (Berger et al., 2014; Kane et al., 2014).

The second area of research is the impacts of user behavior. In particular, impacts of user behavior on government management strategies should be a core focus of government social media research: while there is repeated lip service to the power of social media to establish two-way interactions between governments and citizens, there is little research on how user behavior affects governments. Examples of research questions stemming from this line of enquiry would be: How do increased user demands for information and services affect government social media management practices? What are the consequences of user access to government social media via mobile devices on government channel management strategies? How is flaming in online discussions on government-managed social media tackled by public agencies?

Focusing on these and similar research questions would also have relevance for government practitioners. With increased expectations from citizens using social media for all aspects of their life, public managers have an urgent need to understand user behavior, i.e., what citizens actually do with the platforms they establish, and how to align their policy objectives with observed user behavior. The example of user polarization in online discussions is illustrative in this sense; by capturing the dynamics of user interactions, public managers can devise better policies to stimulate constructive debates using, for example, reactive moderation strategies and providing feedback through content that is relevant to users.

2. Refine the focus on context and its impacts. As our review shows, there is no shortage of studies focusing on the context of government social media. This is in line with the numerous remarks on the importance of context in both research and practice of digital government (Bertot, Estevez, & Janowski, 2016; Nour, AbdelRahman, & Fadlalla, 2008). Context has been conceptualized as the latest stage in digital government evolution (Janowski, 2015), and it has been called to the foreground, for example, in research on lean government and platform-based governance (Janssen & Estevez, 2013).

However, similarly to user behavior, existing research on contextual factors of government social media mostly focuses on quantitative aspects, such as socio-demographic description. This characteristic of studies on context is present also when these studies focus on impacts of the context on, for example, management and user behavior. As a result, while there is no shortage of studies of impacts of context, they mostly consist of correlation studies at a rather high level of abstraction, e.g., between a municipality size and its number of Facebook posts.

Future research should thus refine the indicators used to focus on context, and use them in understanding its impacts. Key contextual variables that should be investigated include the role of regulation at different levels of government (Bertot et al., 2012), the cultural aspects of a country, and the forms of government institutions of a political system. Examples of research questions stemming from these perspectives would be: How do different types of privacy regulations affect the properties of social media platforms and the behavior of users of social media platforms? How does the difference between democratic and non-democratic institutional regimes affect government management of social media? How do users interpret communication provided by government on social media in countries with different cultural attitudes towards authority? Such call for a refined focus on context and its impacts is in line with recent calls for contextualization in IT research (Li, Gao, & Mao, 2014).

Focusing on these and similar research questions would also have

relevance for government practitioners. Public managers can rely on a better understanding of contextual factors in devising social media strategies. The correlation between the popularity of a social media initiative and, for instance, the size of the municipality in which managers operate can be argued to be of little actionable help. Instead, public managers can greatly benefit from understanding, for example, what are the cultural aspects to be considered when establishing social media presence. Moreover, the rapid adoption of social media often outpaces regulatory frameworks related to information, and public managers need to identify and refine the guiding principles behind those regulations (Bertot et al., 2012). Focusing on the role of contextual factor should thus include understanding what are the implications of information policy issues (e.g., security, data management, accessibility, social inclusion) for managers' communication and service plans on social media.

3. Investigate the relationship between platform properties and government social media management. The other key characteristic of the government social media phenomenon, besides the potential for user co-production, is that social media platforms are usually designed, managed, and maintained by commercial third parties, outside the direct control of public agencies (Mergel, 2013a). This can have profound implications on the constraints that governments face in using digital tools to interact with citizens. However, in the current body of research, the relationship between social media platform properties and government management strategies is almost completely unexplored.

Studying the impacts of social media platform properties on social media management should come with some key caveats. On the one hand, there is no reason for adopting a technologically deterministic view of technology in this endeavor, since technology in general, and social media in particular, are characterized by participants' uses and interpretations concurring to shape observable outcomes (Orlikowski & Scott, 2008). On the other hand, however, a socially deterministic view of technology would only stress the role of the social understanding of a technology, with the result of making the technology artefact “disappear” from the analysis (Doherty, Coombs, & Loan-Clarke, 2006; Orlikowski & Iacono, 2001). This seems to be the case in the current body of research, where almost no study pays attention to the role of platform properties on government management strategies.

We thus encourage future research to focus on impacts of social media platform properties on government social media management strategies, with the awareness that social media shape and constrain organizational practices and structures, but that these practices and structures can also have impacts on technology design. The platform properties to be investigated in relation to government social media management strategies can be fruitfully conceptualized as affordances (Treem & Leonardi, 2012), i.e., as sets of capabilities that afford some behavior by public managers, partially based on the government's strategies, and not as immutable features that dictate government behavior.

Furthermore, the ownership of the social media platforms, which are mostly controlled by commercial third parties, raises key questions related to the power balance in the negotiation processes between public agencies and the business organizations that own the platforms. Social media platforms owners are becoming more and more powerful, as their massive user bases consolidate. This gives them unprecedented bargaining powers vis-à-vis the other stakeholders in the government social media phenomenon, i.e., citizens and public agencies.

From a research point of view, issues like these introduce the need to investigate how the interaction between stakeholders (government agencies and commercial platform owners) results in the implementation of the features that enable and constrain government social media management. Appropriate theoretical lenses to study these phenomena would be, for instance, collective action theory

(Constantinides & Barrett, 2014; Eaton, Hedman, & Medaglia, 2017; Olson, 1965), or stakeholder theory (Flak & Rose, 2005; Freeman, 1984).

Overall, examples of research questions on the relationships between social media platform properties and government social media management would include: How do limitations on allowed format and type of content posted affect government social media management strategies? What are the consequences of the presence of commercial advertisement in the social media ecosystem on governments' use of the social media platforms? How is the introduction of new features in the social media platform negotiated between governments and platform owners? What are governments' negotiable and non-negotiable principles in accepting feature limitations on social media platforms?

Focusing on these and similar research questions would also have relevance for government practitioners. In comparison to the first wave of digitalization of government activities, public managers using social media have to deal with features and limitations of platforms they do not control, and thus face unprecedented challenges. Understanding the constraints of social media platforms would facilitate practitioners in achieving their social media goals, instead of merely relying on trial and error. Moreover, research on power balances, and on the interaction processes between public agencies and social media owners, would help public managers devise better strategies for negotiating the required features for their social media management objectives.

4. Investigate the relationship between platform properties and user behavior. The impacts of platform properties on user behavior do not feature in current research, but their relevance should not be underestimated.

Similar to how social media properties can be expected to enable and constrain government social media management strategies, platform properties should also be studied in relation to how they shape user behavior. While, as mentioned above, a technologically deterministic view is to be rejected, social media properties conceptualized as affordances should be analyzed in the relevant role they play in shaping observed user behavior.

For example, third-party social media platforms are designed with the underlying commercial rationales to maximize user traffic and the stickiness of their features, encourage returning users, prolong the time they spend on the platforms, and extend the exposure to paid advertisement content. These features stay unchanged when it is citizens as users of government service that use the platforms, even though the rationale of government services is often at odds with those of commercial platforms. For instance, a government service, such as tax filing, usually aims at minimizing contact with citizen users because increased interactions with public agencies would be considered a measure of failure, not success, of most of the government digital services (Andersen, Medaglia, & Henriksen, 2011, 2012).

This and other key peculiarities of the platform properties over which users interact with public agencies should be studied in future research. Examples of research questions tackling this relationship would include: How do features enabling user-generated content affect the frequency and type of citizen-initiated interactions with public agencies? How do users react to advertising content on government social media platforms? How is the tone of discussions carried out by citizens on social media influenced by the interface of the social media platform?

Focusing on these and similar research questions would also have relevance for government practitioners. One of the central advantages for public managers establishing a presence on social media is the potentially increased ability to monitor and react to user behavior (Bekkers et al., 2013; Loukis et al., 2017; Spiliotopoulou et al., 2014). By shedding light on how user behavior can be expected to be influenced by the characteristics of a given

social media platform, public managers can make better informed decisions on which strategies to adopt in relation to which type of platform they choose, and have a better understanding of what reactions to expect from citizens as users.

7. Conclusion

This study has made three contributions: 1) a comprehensive mapping of research on social media in a public-sector context in the Information Systems (IS), the Public Administration (PA), and the e-government literature; 2) an overview framework of government social media research; and 3) a research agenda for future government social media studies.

As with all studies, ours has its limitations. The first is related to the extent and rigor of the literature review. While we relied on the most authoritative research outlets in the IS, the PA, and the e-government fields to map existing research on government social media, some relevant contributions might have been left out from our sample. Other outlets that published research related to IT in the public sector have been excluded, mainly among conference proceedings, and outlets in languages other than English. While we acknowledge the limitations of selecting only top journal outlets, we are also aware that journal articles have been often preferred to conference proceedings in literature reviews in the e-government field (e.g., Andersen & Henriksen, 2005; Andersen et al., 2010; Dekker & Bekkers, 2015; Kohlborn, 2014; Medaglia, 2012a, 2012b; Meijer & Bekkers, 2015) as they usually feature a higher level of academic rigor; moreover, we have been motivated by the fact that including conference proceedings could have distorted the count of research foci of our review, as often the same study is first presented at a conference, and then at a later time published as a journal article (e.g., Hong & Nadler, 2011, 2012; Kavanaugh, Sheetz, Sandoval-Almazan, Tedesco, & Fox, 2014; Kavanaugh et al., 2016; Lee & Kwak, 2011, 2012; Picazo-Vela, Gutiérrez-Martínez, & Luna-Reyes, 2011; Picazo-Vela et al., 2012). The second limitation concerns the classification of the research literature. We aimed at capturing the relationships between aspects of the government social media phenomenon in a broadly defined way (i.e., context, management, platform properties, user characteristics, user behavior, and effects), in order to make a clear argument and not arrive at an overly complex framework. One of the downsides of this choice is that some nuances of relationships between constructs, such as the causal relationships unfolding *within* a public sector unit, are not completely captured by our framework. For instance, the study by Bretschneider and Parker (2016), which explores the effects of the presence of social media policies and rules on the use of social media inside an organization, is categorized in our analysis as a study on social media management, and not as an impact study on relationships between constructs. While we acknowledge this limitation, we consider it as an inevitable byproduct of our choice to prioritize the focus on social media as a platform that connects the public sector with other stakeholders, such as citizens and private businesses, influencing *external* dimensions.

The third limitation is regarding the proposal of the framework. We acknowledge that the framework does not draw on existing theories, since it was inductively developed based on a review of the literature. The need for theory in e-government research has been repeatedly highlighted. As a response, fruitful uses of established theories in e-government research have been pointed out (Bannister & Connolly, 2015), and meta-theoretical literature reviews have been carried out (Meijer & Bekkers, 2015). While we acknowledge the value of building on existing theories in a cumulative fashion, the nature of our study primarily responds to the necessity of capturing novel foci and relationships between constructs in government social media research, which might not be provided for by the existing established theoretical frameworks in e-government research. We call for future research to integrate our proposed framework with established theories in e-

government research.

In conclusion, our proposed framework calls for further research to investigate the relationships between constructs in different settings, and thus expand the body of knowledge on social media in the public sector in a more systematic fashion. We call for future work on government social media to use, refine, and validate the framework by further exploring relationships among the constructs using empirical cases. Social media can be expected to consolidate its transformative role as an arena of complex confrontation between government, platform stakeholders, and citizens, and as such it requires renewed research efforts by the research community.

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