Government Information Quarterly xxx (xxxx) xxx–xxx

Contents lists available at ScienceDirect

Government Information Quarterly

journal homepage: www.elsevier.com/locate/govinf

The value of social media data: Integrating crowd capabilities in evidence-based policy

Panos Panagiotopoulos[a,*], Frances Bowen[a], Phillip Brooker[b]

[a] School of Business and Management, Queen Mary University of London, Francis Bancroft Building, Mile End E1 4NS, UK
[b] Department of Sociology, Social Policy and Criminology, Eleanor Rathbone Building, Bedford St South, Liverpool L69 7ZA, UK

ARTICLE INFO

Keywords:
Policy crowdsourcing
Environment and farming
Absorptive capacity
Big data
Case study

ABSTRACT

Social media have been widely embraced by governments for information dissemination and engagement but less is known about their value as information sources. Crowdsourced content from social media can improve inclusivity in policy development but it is not always clear how it can form part of policy evidence. The paper builds on the conceptual framework of crowd capabilities to examine the value of social media data in evidence-based policy. Acquisition and assimilation – the two elements of crowd capabilities – drive our exploratory case analysis in the context of agricultural policies in the UK. The study combined qualitative data from interviews and workshops with an analysis of networks of farmers on Twitter. Policy makers were broadly positive about the immediacy, cost-effectiveness and diversity of useful input that can be sourced from online sources. Limitations were identified in terms of representation and inclusion of participants in large datasets that are sourced from open platforms. We compare social media data to traditional sources of evidence and further reflect on the new capabilities that can support the needs of policy makers in this endeavor.

1. Introduction

Governments are increasingly integrating data from digital interactions in new approaches to policy and regulation. Social media users broadcast information about their personal and professional activities, provide feedback on policy topics or engage in discussions that can potentially inform policy development. As a result, there are increasing signals about tools being used in the public sector to source, aggregate, filter, analyze and visualize content from social media (Bekkers, Edwards, & de Kool, 2013; Panagiotopoulos, Shan, Barnett, Regan, & McConnon, 2015; Williams et al., 2013).

Social media monitoring or simply social monitoring is gaining significant attention as organizations are learning how to harness and exploit contributions from social media users (Benthaus, Risius, & Beck, 2016; Culnan, McHugh, & Zubillaga, 2010; Dong & Wu, 2015; Katona & Sarvary, 2014). Due to the technical and organizational complexities involved in social monitoring, such practices can be considered as a more ad hoc form of policy crowdsourcing (Prpić, Taeihagh, & Melton, 2015). Compared to active crowdsourcing platforms, contributions sourced from social media spaces have usually been posted with different original intentions and without an explicit purpose to contribute to a policy topic.

Whether labeled as crowdsourcing or social monitoring, progress with understanding and harnessing the value of social media data in policy has been rather limited. Government departments have been focusing on managing their digital media presence, disseminating information to their respective audiences and, to a varying extent, considering how to stimulate and manage interactions. Academic studies have respectively outlined the strategic and operational benefits (Criado, Sandoval-Almazan, & Gil-Garcia, 2013), developed models to map these new types of interactions (Mergel, 2013) or looked at how social media adoption processes are unfolding within government agencies (Mergel & Bretschneider, 2013).

When social media data are collected and visualized, such exercises are likely to take place using monitoring platforms that are based on content metrics developed to assist decisions in a commercial communications context (Mergel, 2012). Monitoring trends and collecting reactions can be useful for tasks like emergency management but might not align with the needs of policy makers to develop evidence-based approaches (Cartwright & Hardie, 2012; Head, 2008; Parsons, 2002; Sanderson, 2002). This is because, despite being a plentiful source, social media data differ from current sources of public and stakeholder evidence such as surveys and consultations. Furthermore, harnessing the value of social media data might require new capabilities for policy makers to address challenges such as understanding of how social conversations evolve and who the key stakeholders are (Castelló,

* Corresponding author.
E-mail addresses: P.Panagiotopoulos@qmul.ac.uk (P. Panagiotopoulos), F.Bowen@qmul.ac.uk (F. Bowen), P.D.Brooker@liverpool.ac.uk (P. Brooker).

https://doi.org/10.1016/j.giq.2017.10.009
Received 1 July 2016; Received in revised form 26 October 2017; Accepted 31 October 2017

Morsing, & Schultz, 2013; Janssen & Helbig, 2016).

Given these trends and perspectives, this paper aims to explore:

(1) How do policy makers perceive the value of social media data as policy evidence?
(2) Which capabilities can support the needs of policy makers to integrate input from social media?

To address these questions, we draw on the conceptual framework of crowd capabilities by Prpić, Taeihagh, et al. (2015) that is based on broader work on absorptive capacities (e.g. Culnan et al., 2010; Zahra & George, 2002). Crowd capability refers to an organization's ability to source a large amount of contributions from an unknown digital audience (acquisition) and develop appropriate internal information flows to transform and exploit this content to meet organizational aims (assimilation). By understanding how policy makers perceive the acquisition and assimilation potential of social media data, we establish the link between absorptive capacities and the value of social media data as policy evidence.

We conducted an exploratory study with policy-making teams in the UK Department for Environment, Food and Rural Affairs (DEFRA). The study shows that there is good scope for sourcing social media content as long as: (1) it is appropriately summarized and (2) includes useful information about the composition of digital audiences and the context in which the data have been produced. The more these conditions were met the more policy makers could recognize social media data as a useful source of evidence. Despite the potential to broaden the diversity of input from the public, there were important technical and methodological limitations (e.g. lack of network-feedback tools, inclusion and representation of social media users). The paper concludes by discussing the challenges of integrating social media data in evidence-based policy using the lens of crowd capabilities.

2. Conceptual background

Social media include a large ecosystem of networking and information sharing platforms with diverse functionalities (Kietzmann, Hermkens, McCarthy, & Silvestre, 2011). Inevitably, there is a level of audience fragmentation and distribution of activities across platforms. Advanced social media users in organizations need to manage social interactions across platforms, devices and multiple users as well as find useful ways to monitor content. These needs have led to the development of social media management and monitoring tools with features like administration and oversight of multiple accounts, scheduling and planning content (e.g. updating blogs), audience engagement indicators (e.g. number of retweets or likes), real-time monitoring of trends, searches based on keywords (e.g. product feedback), reporting and exporting options, dashboards and other visualizations that help users navigate and filter information.[1]

These features can offer powerful support to an organization's ability to promote content, monitor and engage, including public sector organizations that also face challenges in managing digital interactions. Nevertheless, these features and their underlying interfaces have been mostly developed and optimized for brand engagement, reputation-based applications and other business decisions where counting social impressions is important (e.g. Benthaus et al., 2016; Fan & Gordon, 2014; Hoffman & Fodor, 2010; Schniederjans, Cao, & Schniederjans, 2013). The needs of policy makers are likely to extend beyond snapshots of public opinion though popularity measures.

[1] Although a review of commercial monitoring tools is outside the scope of this research, an indicative list of applications would include: HootSuite, Topsy, Radian6, SproutSocial, Social360, Pulsar, Brandwatch, Engagor, Trackur, Sysomos, Nielsen BuzzMetrics, Buzzient, Social Radar, Social Mention, Klout, Seesmic and many others.

2.1. Social media data in government

Social monitoring in government has been driven by two important trends. First, policy makers are seeking alternative, more cost effective and less direct means of developing policy while adhering to higher standards of openness and transparency (Obama, 2009; UK Government, 2015). Crowdsourcing and digital engagement activities can support this agenda, although traditional challenges like procedural fairness and feedback-outcome links remain. For example, this was the case with the UK government's Red Tape Challenge that crowdsourced regulatory input between 2010 and 2012 (Lodge & Wegrich, 2014). Second, there have been significant advances in the areas of analytics and big data research both in terms of technical capabilities and awareness about the importance of data in society (Janssen & Helbig, 2016; Schintler & Kulkarni, 2014).

On the empirical side, related work has focused on intelligence gathering during emergency events or policing (e.g. Sutton, 2009; Williams et al., 2013). Another stream has looked at the predictive and preventive ability of social monitoring in public health (e.g. Brownstein, Freifeld, & Madoff, 2009; Kostkova, Szomszor, & St. Louis, 2014). A study by Bekkers et al. (2013) in the Netherlands suggests that organizations with established surveillance mechanisms like the police are more willing to consider social media sources in comparison to policy teams in other departments that prefer the monitoring of closed spaces (e.g. forums). In the UK, there is some indication of social monitoring taking place to proactively identify conversations of interest in incidents of food safety and campaigns about food hygiene (Panagiotopoulos et al., 2015). Charalabidis, Loukis, Androutsopoulou, Karkaletsis, and Triantafillou (2014) examine the functional and policy requirements of social monitoring platforms for policy makers. Ferro, Loukis, Charalabidis, and Osella (2013) evaluate such a platform that visualizes content from multiple social media sources – insights were found to be meaningful mainly when cross-examined with traditional forms of data like surveys.

Alongside their potential value, social media data raise a series of ethical, privacy and risk management issues beyond the ones summarized by Picazo-Vela et al. (2012, p. 508) for the broader use of social media in the public sector. Bekkers et al. (2013) identify strategic dilemmas involved in social monitoring by agencies when it comes to balancing responsiveness and surveillance. They suggest that social media sources can be insightful as policy input and even to proactively address citizen's concerns. Transparency is highly advised by the authors, especially for forums that their users would perceive as private. These are indeed some of the main complexities of social media data: (1) users' contributions are usually posted with different intentions and target audiences and (2) it is not feasible to seek every individual user's consent when aggregating large amounts of publicly available contributions (Boyd & Crawford, 2012). In their guidelines on addressing such issues in social media research, Evans, Ginnis, and Bartlett (2015) suggest that ethical considerations and good practice have to be continually reviewed to meet changes in technology, legislation and user expectations.

Notwithstanding these challenges, there is a lot more to know about the value of social media data as part of the policy making cycle and evidence gathering exercises. It is important to look further into these aspects because social media can generate large amounts of data that do not resemble traditional sources (e.g. administrative or public engagement data) and can contain new insights on how groups of the public think about policy topics. We now discuss social media data alongside the principles of evidence-based policy.

2.2. Evidence-based policy, public engagement and social media data

Evidence-based policy refers to the systematic use of evidence to inform public policy decisions; an approach that originates from evidence-based medicine (Howlett, 2009; Marston & Watts, 2003;Parsons,