How UK local government actors reacted to 2013 central spending decisions: the #localgov Twitter community

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Abstract

Crowdsourcing has mainly been seen as relevant to citizen-government relationships, however expertise within the government can be an important source of policy innovation and at the same time reflect actual processes of institutional change. This paper presents findings from #localgov, which is a Twitter hashtag mainly used by local government professionals in the UK. From an initial dataset that includes 146,981 tweets from June 2013 to June 2014, we focus the analysis on messages related to service innovation and reform in the context of budget reductions in local government. This includes reactions to the Spending Reviews in June 2013 and December 2013 that announced further cuts. The study points to the importance of endogenous sources of crowdsourcing since we find that informal networking tools like Twitter can accelerate institutional sharing and cross-service interaction. Nevertheless, Twitter discussions reflect a traditionally complicated landscape of intergovernmental relationships in England where the central-local duality remains strong.

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Introduction: social media and government crowdsourcing

One of the most important opportunities of open government is sourcing a large amount of potential solutions to public management problems as part of new models of citizen-government relationships (e.g. Linders 2012; Nam 2012). Activities under government crowdsourcing usually invite a large number of contributions in the form of open innovation platforms like challenge.gov in the USA (Mergel & Desouza 2013) or the UK government's Red Tape Challenge where the public can provide feedback on regulations (Lodge & Wegrich 2014). Evaluations by Mergel and Desouza (2013) and Lodge and Wegrich (2014) find that both forms can provide benefits but do not constitute a major change from current consultation models and are subject to similar institutional constrains.

Another form of government crowdsourcing known as passive or non-moderated is based on aggregating content from many social media channels to inform policy development (Charalabidis et al. 2012; Charalabidis et al. 2014). Although these forms are less institutionalised than crowdsourcing websites or official challenges, they are part of a general trend towards social media monitoring in government (Bekkers et al. 2013). This more ad hoc form of crowdsourcing comes from acting upon public input via social media in the context of specific events or routine government communications (Panagiotopoulos et al. 2014; Picazo-Vela et al. 2012; Criado et al. 2013). As the technical and procedural sophistication of crowdsourcing or social media monitoring exercises are increasing, elected officials often feel strongly about their commitment to listen and engage (Won-soon 2014).

While including citizens using social media remains a critical objective, the focus of current work on citizen-government information flows risks of overlooking some fundamental aspects regarding the composition of the "crowds" who tend to be self-selected professionals and domain experts (e.g. Hill & Ready-Campbell 2011; Brabham 2012; Adams 2013). In the pubic sector, professionals often share insight about the work of government and collectively discuss policy issues on social media. These new information sharing practices can be enabled on permanent (e.g. blogs, LinkedIn groups) or more ad hoc basis (e.g. Twitter hashtags), but in any case seem to exist outside organisational boundaries, hence facilitating informal interactions and the sharing of good practice within the public sector (Mergel 2010).

As Mergel and Bretschneider (2013) explain, it is often the case that informal sharing networks act as a source of innovation in government agencies, for example, by discussing how to ensure top management support for new initiatives. Informal networks on social media can host a variety of useful opinions from public sector professionals and at the same time reflect actual processes of institutional change or forthcoming trends amongst government officials. In this respect, social media communities can be regarded as an important enabler of practices of institutional sharing or the transfer of knowledge through network relationships across institutions (Lowndes 2005). It is therefore important that we can extend our current understanding of government crowdsourcing to consider sources of expertise within governments as well as the role of informal sharing networks.

This paper makes a relevant contribution by presenting findings from the Twitter #localgov community, which is mainly used for topics related to local government in the UK. We focus our exploration on a critical period, from June 2013 to June 2014, which includes discussions and reactions to central government's budgetary decisions. Since the start of the Conservative-Liberal Democrats coalition in 2010, local government in England has been confronted with historical budget cuts. The 2010 Comprehensive Spending Review announced cuts of 27% on local governments' current spending budgets for the period 2011-2015. With the economic recovery being slower than expected, the coalition announced an additional Spending Review in the summer of 2013, covering the first post-election financial year (2015/2016); this review added an additional 2% funding reduction on current budgets.

Our initial dataset includes 146,981 tweets by 26,909 accounts, which are then filtered based on keywords related to the main budgetary events and wider local government debates. By using a combination of content and social networking analysis, we identify a large variety of actors within and outside the government that contribute to policy discussions and illustrate local government issues from their own experiences and local views. Furthermore, we find that #localgov brings together several existing communities across different services. Central government actors are visible in #localgov and often use it to communicate official policies but do not often engage in policy discussions with other actors. As a result, our findings illustrate the importance of endogenous sources of government crowdsourcing while raising limitations about the potential of social media to transcend intergovernmental barriers.

In the next section, we introduce background information about the landscape of policy actors in English local government, central-local relations and the consequences of budget politics for local government during the parliamentary year 2013/14. The paper then outlines the Twitter data collection and analysis methodology before presenting the study findings. We conclude by discussing the findings in the context of government crowdsourcing as well as with respect to intergovernmental relationships.

Background: Local government and the UK budget process 2013-14

Local government in England employs 1.8 million people across 353 authorities (Office for National Statistics 2013). The institutional structure of English local government is diverse with different administrative authorities including districts, counties, Unitary Authorities, and London Boroughs. The authorities have different responsibilities related to transportation, planning, social care, housing and waste management. The institutional diversity of English local government contributes to its complex funding structure. English local authorities are strongly reliant upon central government funding at the levels of 70% on average (OECD 2012, p.153). As a result, budget decisions at the UK central government level have a strong impact on the financial position of English local authorities.

Central-local government relations and the policy actor landscape

Relations between local and central level actors in England have been traditionally portrayed as tense and politicised (Jones & Travers 1994; Jones & Stewart 2002). The system shows a history of central government actors tending to distrust the institutional capacity of the local level, and reserved attitudes of local government towards the centre. At the administrative level, this trend has been aggravated by the gradual transition to more managerially-oriented administration, which eroded the strong professional-based links between central and local level administrators that traditionally provided capacity to overcome intergovernmental tensions (Laffin & Entwistle 2000).

The 2008 financial crisis and its consequences on the wider economy have put significant pressure on UK public finances. Local government expenditure, which constitutes around a quarter of total UK public expenditure, has experienced unprecedented budget cuts under the Conservative-Liberal Democrat coalition government. Compared to average spending cuts across central government of around 8%, local government real expenditure is being reduced by 26% over the period 2011-2015 (HM Treasury 2010). A large body of research on previous cutback periods has demonstrated the substantial interorganisational tensions that cuts might cause (Levine 1978; Levine et al. 1981; Pandey 2010). The complicated institutional structures and diversity of policy actors in the English local government intensifies tensions and make their outcome even more unpredictable. An important factor is the variety of actors who proactively aim to influence policy-making affecting local government, mainly local government representative groups, lobby groups and think tanks.

Since 1997, the Local Government Association (LGA) has been the main official representative body for English local government. Although the foundation of the LGA concluded a period in which three different specialised local government interest groups operated along each other, the predecessor associations of the LGA have remained active within the LGA and still voice their interests (e.g. the County Councils Network representing county councils). Due to their representation of local authorities that share certain characteristics, the specialised groups are able take a more outspoken position in policy questions compared to the LGA. The Core Cities Group and London Councils are the only interest groups that exist outside the LGA, but their members have retained membership with the LGA. Important to note that the LGA has organised the Knowledge Hub, which is a online network that hosts over 1,500 community groups for local government topics.

In addition to the local government interest groups, we can identify several specialised treasury societies, with its members usually coming from treasuries within local authorities. Whereas the interest groups represent local government across all policy dossiers, the treasury societies focus on financial aspects. They have close links with the interest groups and provide regular feedback to policymaking within the interest group. The societies also provide external input in government consultations, mostly of a technical financial nature.

Next to the official representative groups, a range of lobby groups and think tanks are linked to the English local sector. The main organisations are the Centre for Cities, Localis, the Local Government Information Unit (LGiU), and the New Local Government Network

(NLGN). All of them are based in London with diverse resources and objectives. Although all groups emphasise being non-partisan, only the Centre for Cities has not been associated with any of the main political parties. Party political links to the New Labour have been prominent for NLGN, whereas Localis has been a strong supporter of the localism Conservative agenda. LGiU, Localis and NLGN focus on knowledge exchange and innovation enhancement among their member local authorities without identifying themselves as representative groups. However, since their main funding source is membership contributions from local authorities, lobbying towards central government policymakers can be identified in their activities. The Centre for Cities distinguishes itself by operating without any formal membership structure. It receives its main funding from Lord Sainsbury who founded the organisation in 2005.

Finally, several policy actors have been identified with exclusive focus on knowledge exchange without formal connection to local authorities. Most prominent here are the Society of Local Authority Chief Executives and Senior Managers (Solace), which connects senior managers working in local government. Another important network is the Public Leaders and Local Government Professional Network run by the Guardian newspaper.

Local government funding in the UK budget process 2013-14

In the UK parliamentary calendar 2013-14, local government funding was part of three main budget events as shown in figure 1: the Spending Review of June 2013, the Autumn Statement of December 2013 and the Budget presentation of March 2014.
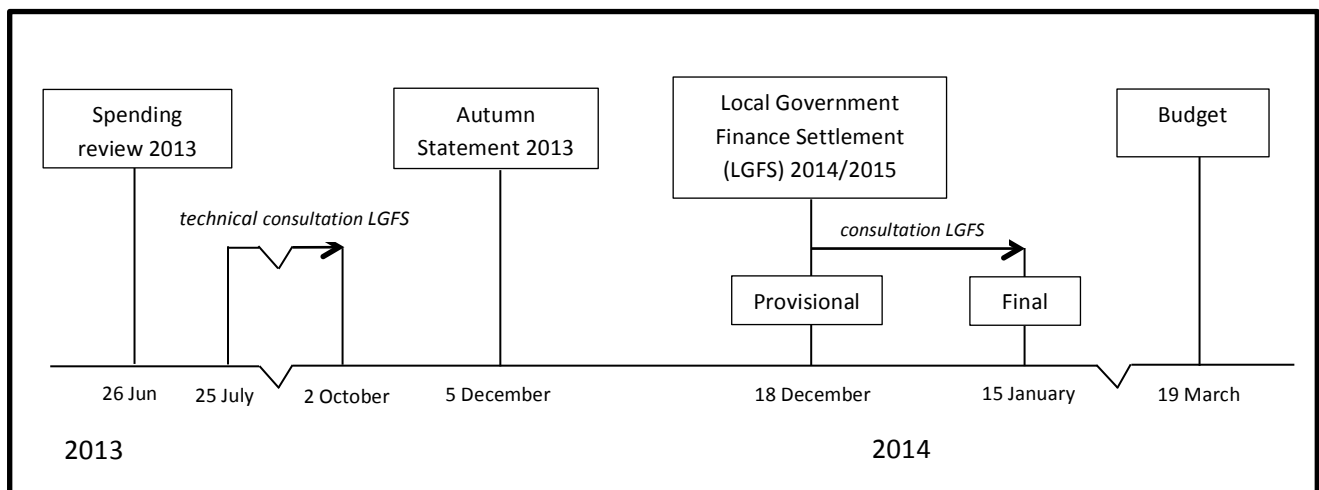

Figure 1: timeline of main central government budget events for English local government finances for the parliamentary year 2013-2014

A specification of the funding central government intends to allocate to the local level is provided in the Provisional Local Government Finance Settlement, within the financial boundaries set by the Spending Review and the Autumn Statement. The Settlement is normally shortly announced by the Secretary of State of the Department of Communities and Local Government (DCLG) after the presentation of the Autumn Statement by the Chancellor

of the Exchequer. As local government is a devolved responsibility within the UK, the Settlement only applies to English local government. The Government's funding plans as announced in the Settlement are provisional until a consultation on the Settlement has concluded with the local government sector. Whitehall departments have a statutory duty to consult the local level in case of changes to the financial arrangements in place at the central level to fund local government. The consultation after the announcement of the Settlement is the second consultation as a few months prior to the Settlement announcement, the Government has normally sought the views of local government actors on more technical issues concerning the planned Settlement.

The technical consultation period for the 2014-15 Settlement ran from 25 July 2013 until 2 October 2013 and resulted in 225 responses. The official local government interest groups participate in the consultations, but the local government lobby groups and think tanks are excluded. Previous outcome analyses suggest that an average of 70 to 80% of local authorities respond to consultations with multiple responses being possible. The technical consultation of July 2013 informed on the local view regarding six planned government policies, including the manner of implementing a 1% reduction to the Local Government Department Expenditure Limit (LG DEL), announced in the 2013 Spending Review, a proposed funding increase in the safety net support mechanism, and changes in the funding of the New Homes Bonus (a financial incentive of central government to encourage councils to welcome new housing). From the six proposed policies included in the consultation, only the transfer of the Council Tax Freeze Compensation received positive endorsement from the majority of the respondents.

Thirteen days after the (late) presentation of the Autumn Statement by the Chancellor on 5 December 2013, the Secretary of State presented the Provisional Local Government Finance Settlement (LGFS) 2014/2015. Based upon the results of the technical consultation, the Government included several but relatively minor changes in the Settlement compared to the Government's initial proposals, such as a reduction of the proposed holdback for the New Homes Bonus. The consultation for the Provisional Settlement ran from 19 December 2012 until 15 January 2013. This short period of only 19 working days was further shortened in practice since the consultation was scheduled over a holiday period and further complicated as the accompanying data files were incomplete and contained several errors.

DCLG has not published an outcome study of the 2013-14 Settlement consultation, but the local government organisations have published their responses. The Settlement consultation only asked for the views of local authorities regarding four specific questions, however it is not uncommon that responding local government organisations use the consultation to ventilate their general discontent with the Settlement and pay only limited attention to the actual questions (e.g. London Councils dedicates 2-pages of its 9-pages long response to the consultation questions). Criticism brought forward across the organisations focuses on the late and incomplete announcement of the Settlement, the further 2% funding reduction for 2014-15 announced on top of the cuts already outlined in the 2010 Spending review, and the supposed risks for local finances of a reform being implemented in the system of local business rates. Despite the wide-spread local discontent with the Settlement, the consultation

process of December 2013 only resulted in minor technical changes to the Settlement (House of Commons 2013, p.2).

The above events confirm the problematic history of intergovernmental interactions between the local and central level in the English system. The consultation process mirrors what has been labelled by Fung and Wright (2003, p.265) as 'participatory window dressing' to describe ineffective governance regimes of participatory collaboration. In this case, the consultation was rather instrumentally employed to fulfil the legal requirement and received only a small number of mainly technical contributions without touching upon the more substantial financial and institutional design questions related to local government funding. However, the central level budget events during the parliamentary year 2013-14 resulted in significant reactions from local government. Policy actors devoted extensive effort to discus the implications of budget reductions. These contributions were not reflected throughout the official process but triggered wider debates about local government reform and ways forward for local authorities.

Data collection and analysis

The events of 2013-14 provide an interesting context to study the role of informal sharing networks of social media as a source of within-government expertise. To investigate the nature of social media interactions, we collected data from #localgov which is the most popular Twitter space used by professionals involved in different aspects of local government in the UK (e.g. policy actors, officers, councillors, service providers, consultants and journalists). Twitter hashtags usually form ad hoc around specific events like national elections, emergencies or popular television shows (Small 2011; Bruns 2012; Highfield et al. 2013). It is common that hashtags can also be established on a more permanent basis around professional topics of interest for Twitter users to share resources, identify other professionals for networking purposes and engage in ad hoc conversations. In a professional networking setting, hashtags can share some of the characteristics of a community of practice (Wenger & Snyder 2000) although the brief nature of Twitter messages facilitates rapid information sharing and links to resources than the exchange of in-depth opinions.

Therefore, our expectation was that messages tagged with #localgov would be indicative of the general sentiment and issues in local government. Since our study is specifically aimed at local government finance and reactions to central budget events, data collection started on 20/6/2013, which is the week before Chancellor Osborne's Spending Review statement on 26/6/2013. To understand the longer term reactions and topics of interest within #localgov, data collection was completed exactly one year later to include the December Autumn statement and Budget 2014 announcement as shown in figure 1. The tweets were captured with the help of Chorus Analytics, which is an analytics suite designed to facilitate social science research using Twitter data (Chorus 2014). Chorus captures data from Twitter's application programming interface that is publicly available to developers.

The initial dataset contained 146,981 tweets by 26,909 different accounts including retweets of original tweets that maintained the hashtag in their post. At the first stage of analysis, we carried out the following steps:

- Structural analysis to identify communication patterns within the tweets including other hashtags, keywords, links to other sources, mentions, retweets, time and tweet location.
- Keyword and co-occurrence analysis to overview the main themes of conversations and interactions within the whole dataset.
- Sentiment analysis using the SentiStrength (2014) methodology and algorithm which is documented by Thelwall et al. (2010; 2011). SentiStrength detects the strength of sentiment by assigning both a negative and positive rating on each tweet between -1 and -5 or +1 and +5 respectively. The classification is a based on a file of English sentiment keywords that have human-level accuracy for most types of tweets. Although SentiStrength cannot reach perfect accuracy for each individual tweet, applying it for a large dataset of tweets around a specific topic can be highly indicative of sentiment fluctuations over time.

At the second stage, we performed a network analysis to understand the ad hoc networks that existed via #localgov by mapping interactions between accounts in the form of mentions or retweets. This was achieved with the help of the network visualization tool Gephi and the methodology for mapping dynamic Twitter networks by Bruns (2012). To ensure that the tweets included in the mapping are relevant to the events of the study, prior to this step we filtered the whole dataset based on a keyword frequency and co-occurrence analysis within the text of the tweets. To achieve this, we identified a lexicon of 63 keywords that established each tweet's relevance to local government finance and service reform (e.g. "funding", "spending", "budget" or "cuts"). This method of keyword filtering ensures that the remaining tweets have at least some relevance to the study even this might also be true for a small number of excluded tweets. The remaining dataset included 75,601 tweets, posted by 17,146 different accounts, which confirms our initial assumption that the main budget events in 2013-14 were the dominant theme of conversation during the period of data collection. We subsequently present the findings.

Findings from the #localgov community

Overview of the dataset

The original dataset contained 146,981 tweets by 26,909 different accounts posted from 20/6/2013 until 20/6/2014. Out of these tweets, 77,869 were original ones excluding RTs without any editing or addition in the initial text. Figures 2 and 3 present an overview of the dataset in terms of volumes of tweets per day, average daily sentiment (positive and negative) and distribution of tweets with or without URLs for each day. Tweets without URLs tend to contain standalone commentaries while tweets with URLs might simply spread information about content. The time periods for the two figures were split in this way only for reasons of diagram visibility.
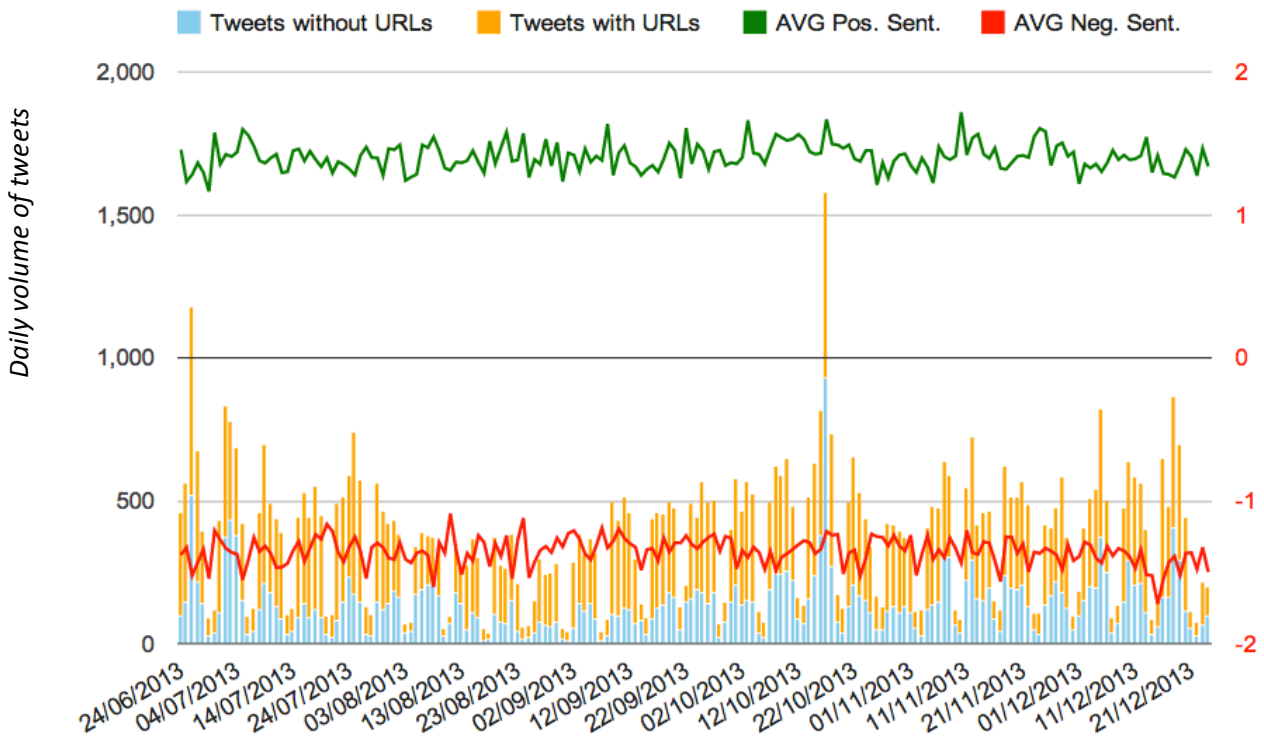
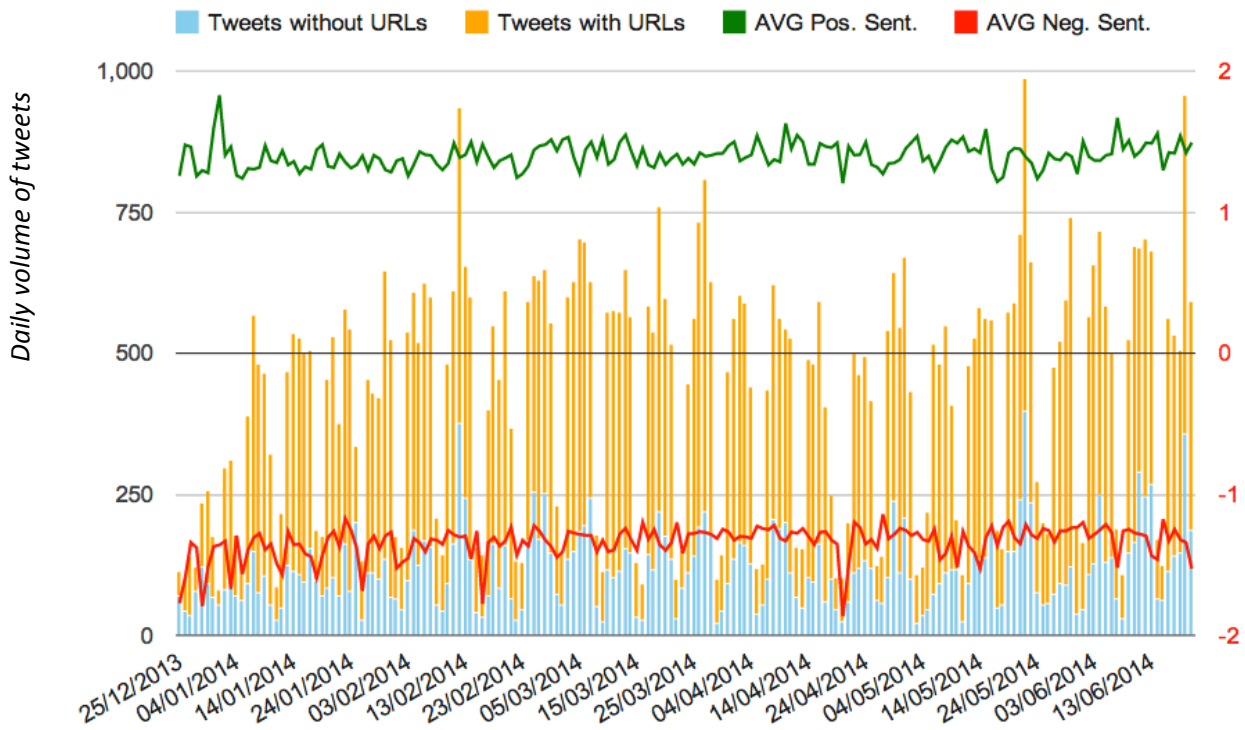*Figure 2: daily volume and average sentiment of tweets for the period 24/6/2013 to 24/12/2013.*

Figure 3: daily volume and average sentiment of tweets for the period 25/12/2013 to 20/6/2014.

In general, the volume of tweets tagged with #localgov peaks during weekdays (at the levels of 400-550 tweets) while weekends generate much fewer tweets (at the levels of 100). About 60-70% of the tweets posted each day are likely to contain URLs to other resources. URLs might point to commentaries, news websites, blogs or other sources with a large proportion of the accompanying tweets being simply informational, ironical, critical or political.

The use of #localgov is not exclusive to local government in the UK and might contain contributions about international or regional issues in other parts of the world. However, we can observe that: (a) most the tweets were posted from accounts located in the UK (when this information is available), (b) most tweets were clearly related to UK-based events and (c) #localgov is part of the account description for the Department of Communities and Local Government (at the time of the study), which gives an official note to its use. The location of the accounts also included posts from Australia, New Zealand, Ireland, USA and Canada. Although an accurate estimation is not possible without a full content analysis, approximately 70-80% of the tweets relate to the UK local government. This is also confirmed by the events that led to daily volume peaks, which are all UK-based (see next section).

In terms of the overall sentiment, we can observe a relative neutrality of the whole dataset due to the professional nature of information exchanged and the presence of many external information sources that are distributed using #localgov. Fluctuations in sentiment during weekends are more common due to the much smaller number of tweets posted but are more random and do not correspond to actual events. Most sentiment fluctuations on a considerable daily volume were observed during the main events of this period, which are discussed next.

Reactions to the budgetary events 2013-2014

During the time of data collection, the highest daily peaks of activity for #localgov included a combination of different events. The record of almost 1,550 tweets was noted on 17/10/2013 due to the Local Government Association's annual Tweetathlon to highlight the work of councils. Those participating were asked to use #OurDay, so only a proportion of tweets appeared on #localgov when both hashtags were used in the same tweet. It is also worth noting that this event sparked the highest daily proportion of tweets without URLs, which was close to 60%. Examples of tweets include the following:

- *"80000 cllrs. 8000 clerks. 9000 parish & town councils. Too often the unsung heroes of #localgov ... http://..."*
- *"As someone who works in #localgov I'm pleased to raise awareness of #OurDay - showing the range of things we do even in straightened times"*

The announcement of the Spending Review on 26/6/2013 generated the second daily highest with 1,178 tweets. This was followed by a New Local Government Network think tank event combined with bad weather on 12/02/2014 (936 tweets), the joint local government and European elections on 22/5/2014 (986 tweets) and a popular petition asking the separation of two local authorities in South East England on 19/6/2013 (958 tweets). The other two budgetary events also generated more than average reaction with 822 tweets on 5/12/2013

during the announcement of the Autumn Statement (see figure 1) and 760 tweets the day of the Budget 2014 announcement on 19/3/2014.

Hence, it seems that the Spending Review was the single most important external event for #localgov throughout the whole year of data collection. Tweets posted during the day followed the course of events, with predictions and previews of key points before the Chancellor's announcement at around 1pm. This was followed by commentaries, official responses and reactions after the details of the Spending Review were revealed. About half of the tweets tagged with #localgov during the day (624) were retweets of popular tweets by important policy actors and journalists, for example:

- *"From budget cuts to council tax freezes we draw together the main points on #localgov from the #SpendingReview http://..."* by the Guardian Local Government Network.
- *"This cut will stretch essential services to breaking point in many areas LGA Chair @Sir_MRC responds to #SR13 announcement"* by the Local Government Association.
- *"This cut will stretch essential services to breaking point: Tory #localgov chief on the #SR2013 crisis: http://..."* and *"The tragedy of these cuts captured brilliantly by @***: In Newcastle libraries and pools shut http://..."* by the editor of society, health and education policy for the Guardian newspaper.

Another interesting group of tweets provided insight from local government officers or councillors who emphasised the impact of the budget cuts and voiced their concerns:

- *"The #csr2013 is a huge hit on the incomes of often low-paid public sector workers. And a huge boost to child poverty: http//..."*
- *"Osborne confirms that #localgov will receive another slash in funding of 10. How much more can frontline services take #SR13"*
- *"Council tax freeze will mean MORE than 10 cut for #localgov"*

Another important theme in tweets were exemplifying the meaning of the cuts at the local level regarding their impact on services and social groups (e.g. social care, education, employment), for example:

- *"By 2017/18 total local gov funding reductions likely to be 502 per person in Yorks & Humber but 352pp London & 256pp south east #localgov"* by a leader of a major city council in the North of England.
- *"#Yorkshire councils expecting to lose further 300m. That's enough to support 1200 libraries or 9000 social workers"*.

A smaller but interesting category of tweets explored ways forward by emphasising the need for transformation and reshaping local services to cope with reduced budgets:

- *"#localgov and #voluntarysector can form alliances to protect serve and speak up for shared communities. My article: http://..."*).
- *"Catch up on our discussion on encouraging innovation in #adultsocialcare #localgov http://..."*

The other two budgetary events generated less attention and critical reaction because they did not contain such strong implications for local government further to the announcement of the initial Spending Review statement. Tweets posted during 5/12/2013, the day of the Autumn Statement, focused on the fact that local government was exempt from further cuts with the expectation to freeze council tax, for example:

- *"The main news for #localgov in #as2013 was all the bad news was used up in June and July."*
- *"#AutumnStatement implications for #localgov Councils exempt from cuts but expected to freeze council tax: http://…"*
- *"Autumn Statement: Local government spared extra cuts - but Osborne expects council tax freeze #localgov #AS2013 http://…"*

A more direct implication of the Autumn Statement was related to council housing and the limited relaxation of the caps on local authority borrowing to finance social housing. Since local authorities, were hoping that this cap would be removed, reactions were mixed:

- *"AS2013: Osborne fails to remove housing borrowing cap http://… #localgov"*
- *"1bn in loans to unblock large housing developments in Leeds Manchester: http://… #localgov #AutumnStatement"*
- *"Did the Chancellor really just say he is going to force councils to sell more social housing #localgov"*
- *"Osborne: Housing revenue account borrowing limit increased by 300m #localgov"*

Finally, the Budget 2014 announcement on 19/3/2014 did not have "any surprises" for local government as identified by many tweets. A few critical tweets focused on the financial implications for local government workers who had either lost their jobs or saw reductions in their salaries. Representative tweets from the Budget 2014 announcement include:

- *Budget 2014: what can councils expect http://… #localgov #Budget2014*
- *Important to put 200m in context of scale of #localgov challenges and funding on roads http://… #Budget2014*
- *#Budget2014 - no surprises for local government http://…*
- *Budget 2014: Budget a double whammy for local government workers - http://… #Budget2014 #localgov*

Tweets that were posted as reactions to the budgetary events might be isolated, sentimental or sporadic from users due to the importance of the events. Some of them are also clearly political to openly criticise the coalition government's austerity agenda. The tweets do however point to a more extensive conversation about local government service reform in the context of budgetary cuts as well as the broad local government agenda to respond to societal challenges (e.g. housing, benefits, shared services). To focus our analysis to this direction, the next step is to filter relevant conversations and map the dynamic relationships between actors that make continuous contributions to #localgov.

Keyword filtering and network analysis

Following the keyword filtering, the remaining dataset included 75,601 tweets, posted by 17,146 different accounts, which included 36,467 retweets by 5,012 accounts. This means that more than half of the tweets in the initial dataset had some relevance to conversations about local government finance and service reform; clearly this has been the most relevant topic for #localgov during the year of data collection. Furthermore, while specific reactions can be noted for the budgetary events in 2013-14, the conversation is ongoing throughout the year since the distribution of filtered tweets follows more or less the distribution of the initial dataset as shown in figures 2 and 3.

Figure 4 shows the network of the 50 most mentioned accounts including retweets – each of the accounts has received at least 120 mentions. This represents only 1.23% of the total graph of mentions. Figure 5 shows the network of the 52 most mentioned accounts excluding retweets – each of these accounts has received at least 20 mentions. This represents 1.95% of the total graph of mentions when retweets are excluded. The graphs are laid out in a way that improves visibility of node names but does not represent different clusters in the network. The graphs are directed with arrows representing the mention/retweet from one account to the other. The strength of the edges represents the times each relationship has occurred.
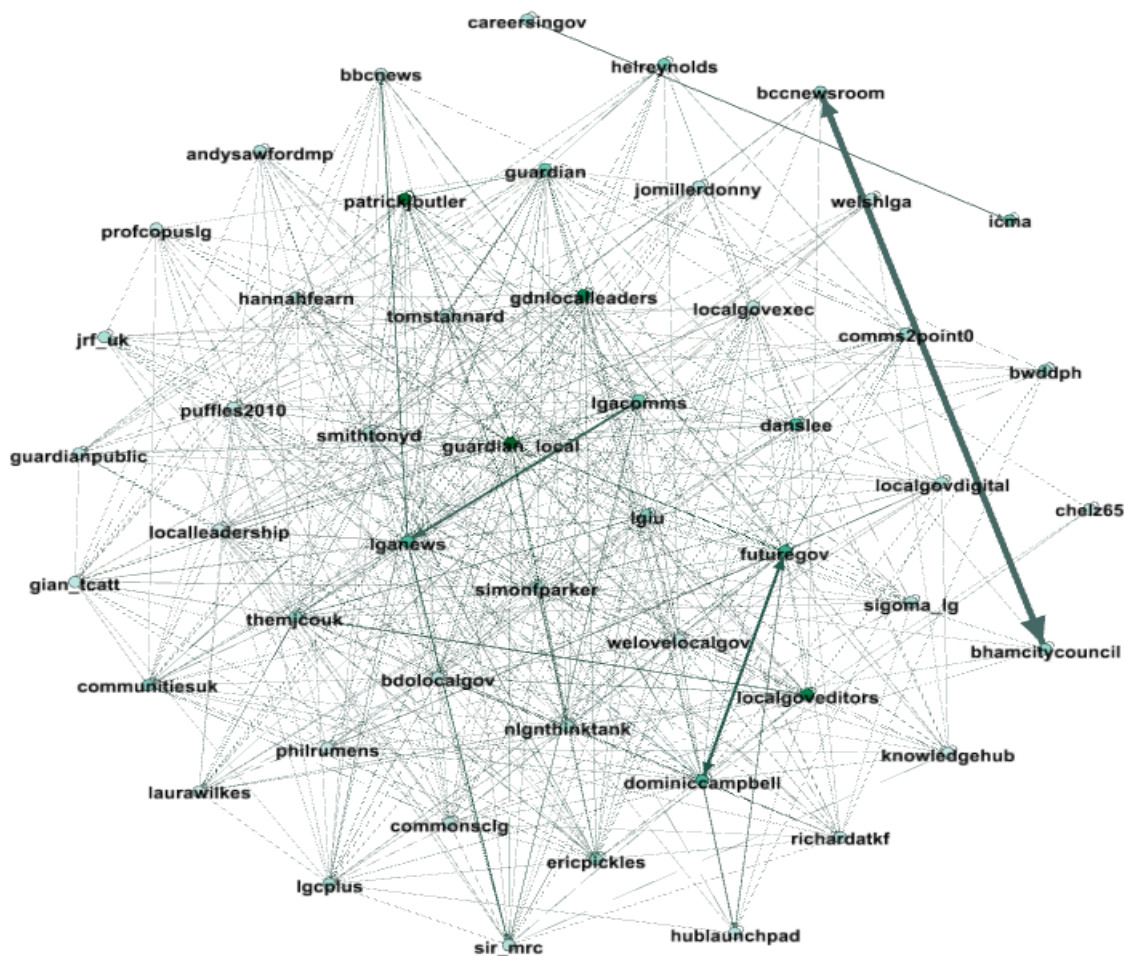

Figure 4: network of 50 most mentioned accounts for filtered tweets including retweets.

Figure 5: network of 52 most mentioned accounts for filtered tweets excluding retweets.

The two accounts from the Birmingham City Council (@bccnewsroom and @bhamcitycouncil) mainly mention each other about local news, which explains the strong relationship between them. Similar is the observation about a few accounts outside the UK that have stronger ties with each other (mainly @careersingov and the Washington DC-based @icma for the International City/County Management Association). The rest of the accounts in the networks mostly represent local government associations (e.g. LGA), lobby groups and think tanks (e.g. New Local Government Network, Localis), consultants, news, media and journalists (e.g. Guardian, Telegraph, Localgov editors, BBC News), communities of practice (e.g. Guardian Local Government Network, Knowledge Hub) and other influential actors in local government.

An interesting difference between figures 4 and 5 is that, when retweets are excluded, the network becomes less informational and more political in its composition as it includes Andy Sawford MP (Shadow Local Government Minister), Ed Miliband and the UK Labour Party. In both networks, notable is the presence of the accounts of the Department of Communities and Local Government (@CommunitiesUK) and Eric Pickles, the Secretary of State for Communities and Local Government. Although the aim of this analysis is not to assess the mentioning preferences of individual accounts, it is important to note that CommunitiesUK

and Eric Pickles received 480 and 595 mentions or retweets respectively from a great variety of different accounts, not all of which are visible in figures 4 and 5.
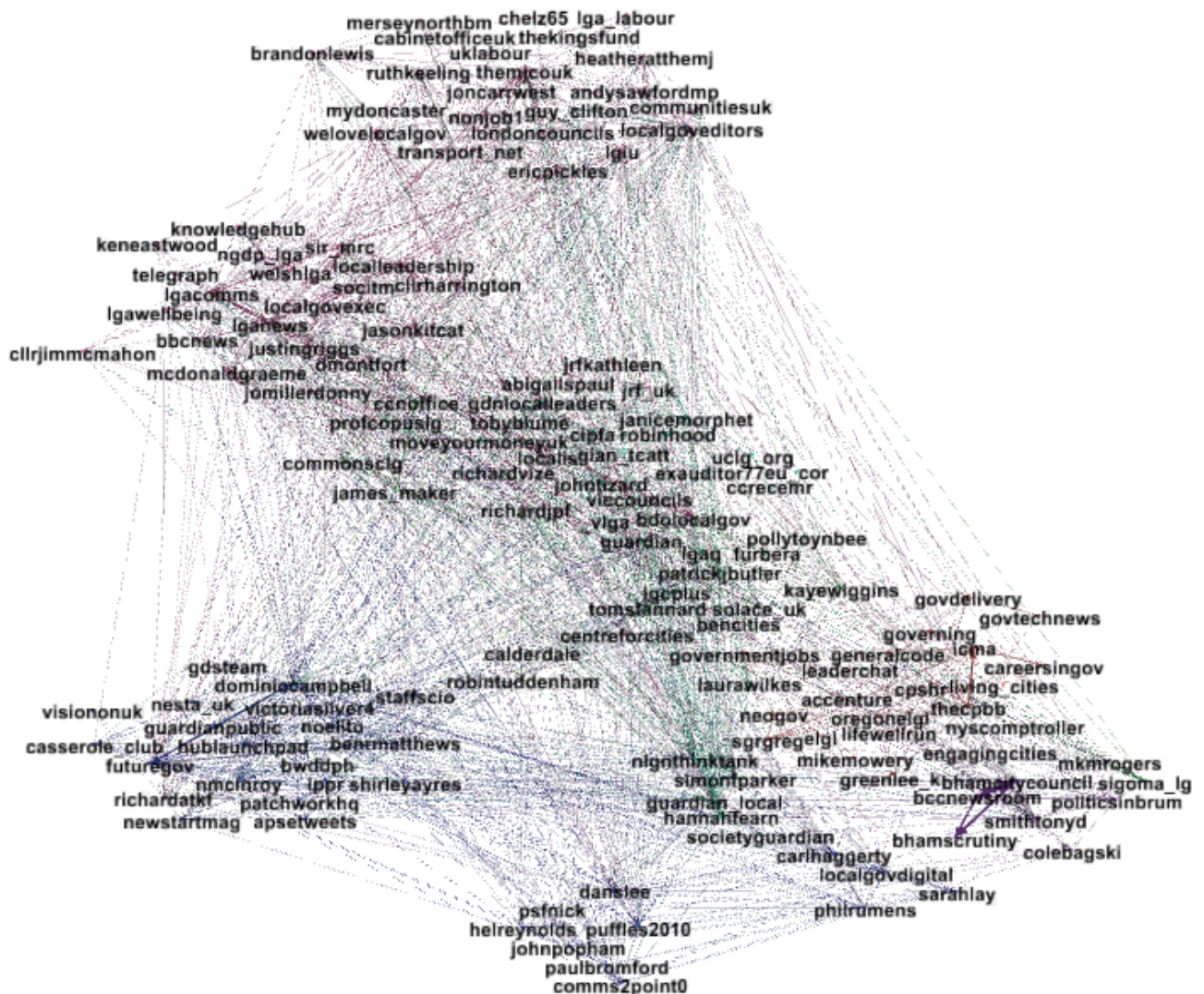

Figure 6: clustered network of 16 7accounts mentioned at least 10 times for filtered tweets excluding retweets.

To elaborate on this finding, the last step is to include more accounts in the network and consider if there are specific groups of accounts that interact with each more than other accounts in the network - a technique known as clustering. Figure 6 shows this clustered graph for 167 accounts that have been mentioned or retweeted at least 10 times. It was produced with the help of Gephi's OpenOrd Layout and clustering technique adopted from Blondel et al. (2008). This network still represents only 7.71% of the possible connections if we include all 5,012 accounts of the filtered dataset excluding retweets. Although the algorithm identified 9 different clusters, we can observe that there are no major isolated components in the network. Some accounts mention others more systematically probably due to the formation of stable relationships ("following"), events or conversations around specific topics. New additions in this expanded network include more influential accounts from local

government actors as well as political actors including the Cabinet Office, Brandon Lewis MP (Minister of State for Planning and Housing), as well as the LGA Labour. As expected from figure 5, one of the expanded clusters involves discussions between accounts outside the UK. Further clustering analyses not reported here confirm that there are no distinct groups within the network and the spreading of information is decentralised.

Discussion and conclusion

The aim of this paper is to consider the role of social media as informal sharing networks that can be a source of expertise within the public sector. The study was motivated by the fact that previous work has been mostly limited to social media in citizen-government information flows. Our findings from #localgov illustrate the importance of expert crowdsourcing and indicate the formation of a network of weak ties based on Twitter's conversational features (hashtags, mentions, retweets). This network brings together different actors with interests in local government who creatively interpret challenges and share insight about their work. Central government budgetary events in the 2013-14 parliamentary year triggered significant activity in this network within the broader context of budget reductions and service reform in local government in England. The analysis described the evolution of this activity over one year and mapped the dynamic interactions between actors in a subset of relevant conversations.

Our study extends current work in two main directions. First, #localgov points to the importance of endogenous sources of government crowdsourcing where discussions about public management problems take place by "experts in the crowds". Our timeline and networking analysis shows that #localgov hosts a policy community that brings together a variety of actors from all the different aspects of local government. Existing local government networks and organisations, news and media accounts act as main hubs in the network but discussions are not centralised around a few key influencers or specific topics. Not all actors are necessarily local government representatives or experts but come from different parts of the civil society and have their own motives to network and share opinions. Many contributors to #localgov are directly employed by a local authority but within the networks of most mentioned accounts, the majority has a broader role in local government with actors from the London area being more represented.

Second, most contributions to #localgov reflect actual processes of change in local government while the effects of the cuts are being processed. Since the official consultation did not include many of these perspectives and changes have been sharp, Twitter seems to be one of tools that facilitate institutional sharing, cross-service interaction, new initiatives and self-organising of local government entrepreneurs to discuss the impact of the cuts and ways forward for local government (Lowndes 2005; Mergel & Bretschneider 2013). Many of the posts tagged with #localgov are informational (e.g. retweeting a news item), but we also find a large amount of direct interactions and exchange of opinions. Although reactions to central budgetary events peaked on the day of their respective announcements, the conversation about service innovation and reform has been the main topic of discussion throughout the

whole year. Importantly, we can also observe that information flows between central and local government remain limited. Central government accounts are visible in the network and receive a lot attention in the form of mentions or retweets but do not engage in open discussions with other policy actors. This seems to reflect the more traditional landscape of central-local relationships in England.

Most of the limitations of this study are inherent to online data sources and the difficulty of assessing the representativeness of Twitter activity to actual events (e.g. González-Bailón 2013). It is important to acknowledge that although #localgov is a widely recognised hashtag for local government topics, it is still part of a self-assigned tagging method for Twitter users and includes most but not all relevant contributions to the topic. As such, it might favour users that intentionally seek to increase the visibility of their tweets. Future work could look at a more systematic mapping of local government actors or other communities of public sector professionals to further investigate the potential of informal sharing networks in the public sector. Our dataset further indicates that future work could elaborate on how discussions about service innovation reflect the dominant conversation theme within the local government community and what have been the main changes resulting from the cuts.

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