

# Twitter in Local Government: a Study of Greater London Authorities

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**Panagiotis Panagiotopoulos**

Brunel University  
Uxbridge, Middlesex, UB8 3PH, UK  
[Panagiotis.Panagiotopoulos@brunel.ac.uk](mailto:Panagiotis.Panagiotopoulos@brunel.ac.uk)

**Steven Sams**

Brunel University  
Uxbridge, Middlesex, UB8 3PH, UK  
[Steven.Sams@brunel.ac.uk](mailto:Steven.Sams@brunel.ac.uk)

## Abstract

Microblogging services are considered an emerging opportunity for authorities seeking to establish new communication channels with their public. Potential benefits evolve around enhancing transparency and interactivity, as well as sharing information regularly or during emergency events. The purpose of this exploratory study is to advance our empirical understanding of microblogging in local government. In particular, we reflect on online data collected to profile the use of Twitter by 29 Greater London local authorities (LAs). The study shows that London LAs have been accumulating significant experience with Twitter mainly over the past two years. In fact, many of them appear to incorporate conversational characteristics in their Tweets other than simply disseminating information. Furthermore, an analysis of Tweets during the August 2011 riots in England indicates the usefulness of the medium for responsibly informing the public and preventing rumours. Nevertheless, the study also identifies several points of improvement in the way public authorities are building their online networks; for example, in terms of connecting with each other and exploiting even more the conversational characteristics of Twitter.

## Keywords

EParticipation, Social media, Web 2.0, Twitter, Microblogging, Online research, Local government.

## Introduction

Since its launch in 2006, Twitter has become the flagship of microblogging which involves sending brief online updates to large audiences via the web or mobile devices. Twitter's membership base now exceeds 200 million with Barack Obama being one of the most followed users (more than 10 million followers) (Mashable 2011). Despite criticisms such as the one that they might assist in rapidly spreading misleading information, microblogging services are indisputably gaining interest among Internet users along with the whole range of social media applications. The most important distinctive characteristic of microblogging seems to be its immediacy and pace of updating with new content.

One of the most important contexts in which Twitter has been used is in political activities such as campaigning, deliberation and information sharing by elected representatives (e.g. Golbeck et al., 2010, Larsson, Moe 2011, Vergeer et al. 2011). Twitter has been emerging as one of the most promising tools to fulfil expectations of increased public sector transparency, openness and interactivity with the help of technical means (Bertot et al. 2010). Such expectations follow suggestions that public authorities need to find citizens where they already are online, hence in social media, and engage with them in new ways (e.g. Macintosh et al. 2009, Rose, Saebo 2010).

Despite the promise of microblogging tools in democratic processes, there is little or sporadic knowledge about how public sector organisations are actually using them. In the UK, there is a well developed Twitter experience with about 200 local authorities maintaining accounts on which they Tweet about local

issues of general interest (according to the official Twitter list @Directgov/ukcouncils). Seeking to advance the empirical knowledge, we address the following exploratory question:

- *To what extent and how are local government authorities using Twitter?*

In particular, this paper focuses on data collected from the public Twitter database with regards to the use of Twitter by London local authorities (LAs) or London Boroughs. The Greater London administrative area consists of 32 Boroughs with an average population of about 245,000 residents. Most of those LAs have been using Twitter for more than two years. Many of them also relied on Twitter during the August 2011 riots in order to inform the public, prevent rumours and engage in post-riot activities (e.g. cleaning the streets).

To examine how those LAs have been using Twitter, we analysed Tweets produced by 29 accounts with important variations in the numbers of followers, posts and use of conversational elements such as direct replies to queries. An overall conclusion is that, despite certain limitations, microblogging on Twitter is an established form of communication for those authorities. The next two sections introduce how Twitter works and the way it is being used in different contexts, before elaborating on the study methodology and results in the subsequent sections.

## How Twitter works

Twitter messages are restricted to 140 characters and they are usually publicly available by default. Messages might come with additional content such as links to websites, photos or videos. A Twitter user can choose to follow another user, but this connection is not necessarily reciprocal. For example, Barack Obama follows back about 688,000 of his 10 million followers, but for many users a reverse ratio of following and followers might be applicable.

Users can directly address other users or refer to them in conversations using the symbol “@” accompanied by the name of the user. A detailed study by Honey and Herring (2009) shows that this form of addressivity, supported by the “@” symbol, seems to have become an essential element of conversation among Twitter users. It also seems to be increasing coherence between the different discussions, as well as informal collaborations. Honey and Herring (2009) predict that due to this feature Twitter is attracting more use as a collaboration medium even though this was not its original intention. In an earlier study, Java et al. (2007) found that about one eighth of all posts (12.5%) include the symbol “@”.

Republishing someone’s message is another conversational aspect of Twitter known as retweeting. It might even involve some small modification or commenting on the original message. In a study of retweeting practices, Boyd et al. (2010) found that 36% of a large random dataset of Tweets mentions a particular user. Furthermore, they concluded that there are many reasons why users might retweet messages; examples include publicly agreeing (or not) with someone, supporting a cause by spreading a message, helping an interesting message reach new audiences or even attempting to gain personal status.

Finally, another Twitter convention aiming to categorise posts into useful topics is the use of hashtags indicated by the “#” symbol. Examples of popular hashtags are: *#tsunami*, containing updates for the Japanese tsunami, *#London2012* concerning London’s 2012 Olympic Games or the *#graysanatomy* for the relevant television series. Hashtags can also be broad or even vague in their topic, such as *#politics*, *#future*, *#children* or *#sports*. In their large dataset, Boyd et al. (2010) observed that 5% of those Tweets contained hashtags.

## How Twitter is being used

Research in microblogging and Twitter has resulted in a plethora of contributions around multiple topics. For example, Jansen et al. (2009) found that Twitter is an important tool for customer word of mouth communications and marketing efforts. Due to its extensive and diverse membership base, Twitter can also be a useful platform for mining public sentiment and reaction around popular events (Thelwall et al. 2011). Furthermore, Twitter can be helpful even in enterprise microblogging activities in terms of coordinating loosely related individual tasks (Riemer et al. 2011).

For the scope of this research, it is interesting to consider related work on Twitter in political activities. Campaigning by politicians and their parties during or after elections is certainly gaining widespread attention with a growing number of studies demonstrating the relevance (Larsson, Moe 2011, e.g. Vergeer et al. 2011, Tumasjan et al. in press). More specifically, joint conclusions by Larsson and Moe (2011) and Vergeer et al. (2011) indicate that politicians devote limited attention on the conversational elements of Twitter, they tend to use the medium asymmetrically during and after elections and are also likely to draw an audience with elitist characteristics, e.g. established journalists. Variations in terms of political affiliation and audience seem to be highly contextual from one political system to the other.

Beyond campaigning, Twitter content by elected representatives does not seem to meet the requirements of deliberative discourse. As Saebo (2011) found, not only Tweets by Norwegian politicians were dominated by simple dissemination of information to a general audience, but they were also likely to broadcast content with which everyone agrees, e.g. support to national athletes. Complementary, the study by Golbeck et al. (2010) reveals that members of the USA Congress are mainly using Twitter for self-promotion purposes (e.g. links to their blogs or articles about themselves). Effectively, they have not been able to improve transparency or inform the public with new insights about legislative processes.

The fact that Twitter might be used as a simple extension of traditional media coordinated by press offices is also supported by the study of Heverin and Zach (2010) with city police departments in large USA cities. Although most of those police authorities were sharing information about crime and related incidents, some others found ways to interact with the public either through direct conversations or by being mentioned by citizens. Further to police incidents, another interesting use of microblogging relates to crisis and extreme events. The immediacy that Twitter can provide as a communication channel certainly makes it a promising tool for timely official updates by authorities in unexpected conditions (Sinnappan et al. 2010). In fact, Oh et al. (2010) suggest that authorities can control the high levels of anxiety at the early stages of emergency events by rapidly spreading credible information and positive energy. Authorities also have the opportunity to monitor the reactions of the public, as well as identify and prevent ongoing rumours.

An overall conclusion from those studies for public sector organisations is that being interactive, transparent and conversational are the real challenges and promises of Twitter. In contrast, simply pushing information through another online channel seems to be somehow useful, but of limited added value. The study presented in this paper seems rather encouraging in terms of what microblogging can achieve. The research methodology is explained in the next section.

## **Research approach**

A study on the adoption of Twitter by local government authorities could find fruitful grounds in the UK where a lot of interest has been generated over social media. For example, institutional sharing of relevant experiences is well-known with the support of an online Community of Practice administrated by the Department of Communities and Local Government. Before conducting this study, there were indications that the use of Twitter was common.

To identify which LAs in the UK are using Twitter, we consulted the official list @Directgov/ukcouncils. In this paper, we report on the first phase of an ongoing project which focuses on the LAs composing the Greater London administrative area. This area can provide useful insights as a large, but also bounded geographic context, where Twitter seems to be an established tool. This choice of LAs also offers the opportunity to examine the role of Twitter in the August 2011 riots. During those events, social media were at the same time blamed for assisting rioters and praised for the innovative ways in which some LAs used them.

The data used in this study were collected in September 2011 using the Twitter developers' database (<http://dev.twitter.com/>) which is also available for academic research. The 29 accounts maintained by London LAs returned a total of 21,911 Tweets. This is since the London Borough of Barnet started an account in May 2008 and was followed by most others in the middle of 2009. A few LAs have additionally or even exclusively been using specialised accounts for local services such as libraries or housing. Our focus here is only on general accounts which cover the whole range of local topics.

Large volumes of data, although more or less difficult to analyse, are useful in reducing bias and providing outline conclusions. For the analysis part, we looked at several network characteristics (e.g. number of common followers), as well as how those LAs are exploiting the specific Twitter conventions, for example, in terms of using forms of addressivity, hashtags, retweeting or having their messages retweeted. We also looked at how those patterns of communication are correlated with authority population and date of joining Twitter. All correlations mentioned in the next section are significant at least for  $p < 0.05$ .

Furthermore, we distinguished Tweets posted in August 2011 concerning the events of the riots. The riots cover the period of 6-12 August 2011 when several London Boroughs and a few other cities across England suffered from rioting, looting and disorder. A total of 555 Tweets referring to those events were analysed and classified in three categories: general updates, responses to citizen queries and post-riot activities such as cleaning the streets and identifying suspects.

## Findings

According to their account descriptions, LAs use Tweets to post updates about all issues concerning local life. Many Tweets inform about events, link to other news on the authority's website or invite residents for some activities. Examples of Tweets include:

- *"Free family fun at Hillingdon's medieval festival this weekend: <http://t.co/NqkNqlq>"* (by Hillingdon)
- *"Turnout in Greenwich was 33% and the 'No' vote polled 32 039 votes against 20 618 'Yes' votes. More at: <http://tiny.cc/8kfjy>"* (by Greenwich)
- *"Wildlife lovers! We're looking for a family to interview on conservation in Camden. Help us preserve our biodiversity. Please RT!"* (by Camden)
- *"Still time to have your say on what the future should hold for libraries in #Lambeth <http://ow.ly/5Olm5>"* (by Lambeth)

Other Tweets reproduce updates from the London Metropolitan police or other organisations. For example:

- *"RT @metpoliceuk: Ealing Borough Police have released a reassurance and advice message for the local community. <http://bit.ly/oQocFA>"* (by Ealing)

Table 1 provides an overview of the study results for the 29 London LAs. There seems to be significant diversity in terms of Tweets, followers, following and the ratio of followers and following.

## Network characteristics

Most of the accounts were created in the first six months of 2009 and have produced an average of 734 Tweets since then. LAs with higher populations created their Twitter accounts earlier, but there is no correlation between population and number of Tweets or followers. It is normal to observe that earlier adopters have produced more Tweets and, interestingly, those with more followers also Tweet more.

LAs with most followers exceed 3000, but they don't necessarily follow them back. For example, Camden has 3444 followers and only 110 following, but Lambeth has 4541 followers and follows 3490 (the highest in both categories). However, there is a positive relationship between following others and having more followers. It is also interesting to look at how many mutual followers those authorities have. The relevant column in table 1 shows the average number of mutual followers with the rest of authorities. In many cases, there are more than 400 mutual followers on average. The highest is between Lewisham and Lambeth which share 1297 followers. Those two Boroughs are located close to each other, but there are cases where many followers are shared without geographic proximity, e.g. Hillingdon and Lambeth have 1000 mutual followers although they are located in separate regions of the city. A closer look into the accounts of those mutual followers indicates that they are mostly commercial, media, governmental, nonprofit or other types of organisations instead of individuals.

**Table 1. Overview of the study results**

<i>London Boroughs</i>	<i>Tweets</i>	<i>Followers</i>	<i>Following</i>	<i>Ratio</i>	<i>Created</i>	<i># (%)</i>	<i>@ (%)</i>	<i>Average retweet count</i>	<i>Average mutual followers</i>	<i>Direct replies (%)</i>	<i>Retweets (%)</i>
<i>Camden</i>	2374	3444	110	31.31	01/2009	25	44	0.79	340	19	16
<i>Greenwich</i>	2067	3047	1199	2.54	07/2009	03	52	1.27	286	42	03
<i>Hackney</i>	297	1399	303	4.62	10/2010	04	23	2	31	03	20
<i>Hammersmith &amp; Fulham</i>	520	1935	67	28.88	05/2009	28	27	1.10	312	17	07
<i>Islington</i>	787	1646	60	27.43	02/2009	36	19	0.88	202	04	12
<i>Kensington &amp; Chelsea</i>	926	903	99	9.12	02/2009	23	38	1.32	100	04	31
<i>Lambeth</i>	733	4541	3490	1.30	03/2009	28	11	0.77	459	08	0
<i>Lewisham</i>	1439	3702	913	4.05	10/2008	51	24	0.70	480	17	05
<i>Southwark</i>	767	3162	47	67.28	12/2008	09	09	0.91	451	04	02
<i>Tower Hamlets</i>	236	1334	27	49.41	03/2010	06	39	1.83	133	24	11
<i>Wandsworth</i>	1379	2960	152	19.47	12/2008	01	09	0.58	419	05	03
<i>Westminster</i>	750	3366	593	5.68	04/2009	15	42	1.25	446	16	17
<i>Barking &amp; Dagenham</i>	45	184	0	N/A	08/2011	16	02	0.64	9	02	0
<i>Barnet</i>	800	2173	414	5.25	05/2008	01	09	0.19	349	06	0
<i>Bexley</i>	307	198	63	3.14	03/2009	03	25	0.89	13	06	18
<i>Brent</i>	906	1993	82	24.30	03/2009	41	19	0.42	422	07	11
<i>Bromley</i>	295	1230	4	307.5	07/2009	01	03	0.82	151	02	01
<i>Croydon</i>	104	440	232	1.90	06/2009	01	06	0.04	46	03	0
<i>Ealing</i>	426	1065	359	2.97	11/2008	23	51	2.88	108	20	17
<i>Enfield</i>	318	881	3	293.67	04/2009	03	01	0.29	115	0	0
<i>Harrow</i>	483	679	51	13.31	07/2009	01	04	0.22	129	01	02
<i>Havering</i>	99	270	64	4.22	07/2011	27	34	1.06	16	14	14
<i>Hillingdon</i>	1838	3095	1317	2.35	06/2008	08	40	0.67	427	25	09
<i>Hounslow</i>	355	627	40	15.67	09/2010	08	45	0.45	41	21	02
<i>Kingston</i>	80	127	70	1.81	09/2009	80	28	0.41	3	10	06
<i>Merton</i>	568	1082	404	2.68	08/2009	13	16	0.72	159	08	02
<i>Redbridge</i>	426	1778	58	30.65	02/2009	82	06	0.44	377	02	03
<i>Richmond</i>	1216	1134	81	14	10/2009	05	06	0.38	124	02	03
<i>Sutton</i>	1370	2374	112	21.20	03/2009	05	15	1.94	351	02	12

**Table 1. Overview of the study results (continued)**

	<i>Tweets</i>	<i>Followers</i>	<i>Following</i>	<i>Ratio</i>	<i>Created</i>	<i># (%)</i>	<i>@ (%)</i>	<i>Average retweet count</i>	<i>Average mutual followers</i>	<i>Direct replies (%)</i>	<i>Retweets (%)</i>
<b><i>Average</i></b>	734	1701	349	34.47	-	19	22	0.89	224	10.24	7.76
<b><i>S. D.</i></b>	612	1232	685	75.38	-	22	16	0.63	167	9.8	7.6

It is also quite surprising that those 29 LAs do not principally follow each other. Out of the 1012 possible non-reciprocal connections only 154 have been established. Each LA follows another 5 on average, a figure which spans from 0 to 14. Naturally, this figure suggests that there have been limited retweets of messages between the authorities. In fact, only 2 out of those 21,911 messages are retweets from other London LAs.

### ***Twitter during the August 2011 riots***

The impact of Twitter on the events of the August 2011 riots in London has been apparent, also supported by the many popular hashtags such as *#LondonRiots*, *#riots*, *#UKRiots* or *#riotcleanup*. Table 2 shows a summary of the posts made by London LAs during the period 6-12 August 2011. It only includes the 14 LAs which made more than 10 posts relevant to the riots. In total, this concerns 555 Tweets or 20 on average for each LA (s.d. 27). The figure rises to 35 for the LAs shown in table 2. Many of those Tweets were posted in the middle of the night or from mobile devices (source information was available), for example:

- *“Last night most #riots rumours #sutton were untrue. To provide reliable info tonight we’ll be tweeting verified info from the local police”* (by Sutton)

Most of the general announcements were related to official updates or clarifications about rumours. They contained links to further information on council websites or the metropolitan police. In many cases, residents were asked explicitly not to retweet rumours. For example, the account from Hounslow retweeted a message from a local fire fighter who reported that everything was calm. Before this it was stated that:

- *“If people only tweet what they actually see as opposed to what they have heard in #hounslow then we will have a clear picture”*

Most replies to citizen queries also tended to clarify misleading information or inform about specific issues asked. Messages related to post-riot activities involved publicly cleaning the streets, helping the police identify suspects or informing that those convicted are likely to lose benefits. Examples include:

- *“If you have any information about people who were involved in criminal acts we would encourage you to speak to the Police”* (by Greenwich)
- *“Clean-up well underway. Thank you so much to all those for their offers of help and their great attitude: <http://bit.ly/qzzw3i>”* (by Ealing, retweeted 101 times).

<i>London Boroughs</i>	<i>Tweets during 6-12 Aug 2011</i>	<i>Tweets relevant to the riots</i>	<i>General announcements</i>	<i>Replies to citizen queries</i>	<i>Post riot activities (e.g. cleaning or assisting police investigations)</i>
<i>Camden</i>	20	16	9	4	3
<i>Greenwich</i>	82	74	26	40	7
<i>Hammersmith &amp; Fulham</i>	41	31	20	7	4
<i>Lambeth</i>	14	9	3	2	4
<i>Southwark</i>	42	24	11	8	5
<i>Tower Hamlets</i>	11	8	5	2	1
<i>Wandsworth</i>	37	29	9	10	10
<i>Westminster</i>	27	9	1	2	6
<i>Barking &amp; Dagenham</i>	24	21	15	-	6
<i>Ealing</i>	36	33	12	13	8
<i>Hillingdon</i>	150	122	42	80	-
<i>Hounslow</i>	49	38	11	26	1
<i>Merton</i>	18	12	12	-	-
<i>Sutton</i>	90	63	44	11	8

As shown in table 2, the Hillingdon account posted 122 messages during those days. This can seem surprising considering the fact that Hillingdon was one of the areas not affected by riots, on the contrary to many areas not shown in table 2 which were indeed affected. Most of those were written in a friendly and conversational tone, not resembling formal public announcements, e.g.:

- *“Officers at the Civic Centre will get in touch with us this evening if needs be so we can keep you updated via Twitter the web & Facebook”*
- *“Colleague at meeting with police confirms nothing of note has happened in the borough. We and police will continue to keep our eyes open.”*

## **Concluding discussion**

This paper has presented exploratory findings of an overview study on the adoption and use of Twitter in the UK local government. The findings show that London LAs have to a large extent seized the opportunity of microblogging and Twitter. This is indicated both by the level of adoption and the use of deliberative Twitter conventions such as hashtags, replies and addressing other users. The latter seems unusual compared to previous studies with political candidates, elected representatives and police authorities. Furthermore, the quantity and content of messages posted by some of those LAs during the riots draws the conclusion that Twitter is being distinguished from traditional top-down communication means and can have a key role in such events. Therefore, to a certain degree, Twitter seems to match the promise of supporting new forms of citizen-government interactions in ways which have not been previously reported in the empirical literature. In fact, its widespread adoption and way of use in this context implies decisions of strategic priority in most cases, rather than ad hoc innovation in the form of experimentations by local government officers.

Certainly, despite positive findings, LAs still have important lessons to learn about using social media, microblogging and Twitter. This study found that online collaboration between LAs is limited in terms of following each other's accounts and retweeting messages. Furthermore, in line with previous work, the networks that those LAs have created include large numbers of users with elitist characteristics (e.g. politicians, journalists) and commercial organisations other than local citizens. Also, high asymmetries between followers and following other users back questions the extent to which those LAs have been able to listen and learn from other Twitter users. Following other users back is not only a matter of courtesy and Twitter etiquette, but also an opportunity to come across important updates and increase interactivity with citizens. In this direction, officers administrating Twitter accounts can build even more upon their institutional role and the visibility of their accounts with online networks.

This study has certain limitations, mainly with regards to questions that inevitably remain open. The study focuses only on Twitter and the use of the general council accounts. LAs have different priorities in their engagement strategies with Twitter being only one dimension of them even within the whole range of potential social media applications. LAs are also constrained by variables within their local environment such as resources and skills. Looking at some overview characteristics of their Twitter accounts cannot provide definite conclusions about online engagement intentions, particularly since the content of those Tweets was not systematically analysed. Respectively, important information is missing about who is actually following those accounts and their motivation. For example, for local citizens who do so, does this improve their perceptions of local democratic processes? Can such forms of participation via social media be meaningful in ways that more traditional Internet tools have not succeeded? Finally, future work could explore more Twitter accounts with other types of local authorities or at different levels of government. London LAs tend to belong to those which are rather well resourced with central positions and influence in national affairs. Consequently, their involvement in new concepts such as social media tends to be leading.

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