Twitter data for urban policy making: an analysis on four European cities

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The project

• ESPON Feasibility Study on Analytical Tools based on Big Data
  Partners: Université Paris Diderot, Université de Lille 3, University of Amsterdam

• The ESPON 2020 Programme aims at promoting and fostering a European territorial dimension in development and cooperation by providing evidence, knowledge transfer and policy learning to public authorities and other policy actors at all levels. Primary target groups are European and national policymakers
The objective

The main objective was to assess the feasibility to use open source data, including the so-called Big Data, together with official (authoritative) data from ESPON and other statistical institutes (in particular EUROSTAT) in European territorial analysis.
## Follow up of the city on Twitter

<table>
<thead>
<tr>
<th>Tweets including the name of the city</th>
<th>Tweets geo-tagged in the metropolitan areas</th>
<th>Tweets of city’s influencers</th>
</tr>
</thead>
<tbody>
<tr>
<td>International recognition of the city</td>
<td>Elements of city branding at local level</td>
<td>Real-time follow up of the governance of the city</td>
</tr>
</tbody>
</table>

Sample: Marseille, Bologna, Edinburgh, Brussels  
Period: 2 June – 29 June 2014
The data collect

• **DMI-TCAT**: Digital Methods Initiative - Twitter Capture and Analysis Toolset

Issue 1: the variety of uses of Twitter

Figure 12. Time series of tweets mentioning the city from 2\textsuperscript{nd} June to 29\textsuperscript{th} June 2014
Issue 2:
small amount of geo-tagged tweets

C. Gerlitz & B. Rieder, 2013

Geographical distribution of all geo-tagged tweets extracted from 1% of twitter data (854000 tweets). June 2014
1) Tweets about the city: internationalisation

Level of internationalisation:

Geographical distribution of over-quotations of the four cities at global and at European level
1) Tweets about the city: internationalisation

Distribution of hashtag in tweets mentioning Bologna between the 2\textsuperscript{nd} and the 29\textsuperscript{th} June 2014

14 categories: crime, culture, economics, politics (national/local), international politics, social affairs, transport, urban planning and life, sport, tourism, food, fun, weather and places (other places mentioned in the same tweet with the city)

299 hashtags used at least 50 times in 92797 tweets
1) Tweets about the city: internationalisation
2) Tweets inside the city: local follow up

Geographical distribution of tweets inside the city and of tweets per capita
2) Tweets inside the city: local follow up

Number of tweets* by statistical zones in Bologna

Tweets per capita by census area in Bologna

Sources: MediaLAB Amsterdam / Comune di Bologna / Calcius GIS-CIST, 2014

*All geolocated tweets collected from 2th to 26th June, 2014

*Geolocated tweets collected from 2 to 29 June, 2014
2) Tweets inside the city: local follow up
3) Influencers of the city: real-time follow up

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Figure 32. Time series of tweets sent by influencers in the four cities between the 1\textsuperscript{st} July 2013 and the 30\textsuperscript{th} June 2014
3) Influencers of the city: real-time follow up

Top hashtags (excluding sport) per month in tweets of Bologna’s influencers
3) Influencers of the city: real-time follow up

Word cloud of tweets of Bologna influencers mentioning “crisi” and “austerity”. The terms “crisi”, “austerity” and”bologna” have been excluded from the representation.
3) Influencers of the city: real-time follow up

Cohashtag network related to the hashtag #brand
Further research

• 8 months of data (the same period of the 3 samples)
• Topic model analysis
• New insights on geotagged data
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