Capability of Social Media in Structuring Collective Memory for Future Urban Design Project

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Abstract
This study aims to look at how social media can be used for structuring the collective memory data associated with meaning or perception of urban space. ‘Tugu Pal Putih’ monument and its surrounding historic district in Yogyakarta City, which become part of both the philosophical and structural axis of the city, is used as a case study. Methodologically, first, as a basic step of this research, it will collect data about the tendency of collective memory related to ‘Tugu Pal Putih’ monument (whether as a landmark, open space, or signage) available from social media. Secondly, this research will look at the structure of the information flow and how it narrowing down into several trends of object meanings. Third, as part of verification step, this research confirms the collective memory associated with the city’s population that has been generated previously from social media.

The results of this study indicate that the area of ‘Tugu Pal Putih’ monument became a popular district that has a significant meaning for the various groups of the population because of memory attachment with the object. From the three categories of collective memory, all has a clear structure of how the background of this information comes from the residents of the city. The capability of the social media in this case are large, bulk, easy and valid in presenting the information required for a city area development. Obviously, in terms of method of providing data, the use of social media is very advantageous for designing cities that sensitively accommodate the needs of residents’ memory. The challenge ahead is when these collective memories can be used optimally in an urban design or planning project that is limited by time execution, budgets, and other influenceable factors.

Keywords: social media, collective memory, information/data structure, urban design project, Yogyakarta City.

1. Introduction
In the era of information and communication technology, it is generally believed that social media is one of the powerful research tools for many disciplines including urban design. Social media is able to express the concern of most events experienced by the inhabitants of the earth, either an individual, a group, or a mass.

Collective memory, which is a description and narrative of individuals and groups’ experiences journey in space and time, have been explored abundantly through social media in variety of forms and variations in the data. The collective memories related to urban space are becoming more useful to support how an urban space will be designed so that meaningful for each individual or a group in a more open and accessible way. Nonetheless, the use of the collective memory data for urban planning, design, and development particularly the one, which is iconic and has strong link to many residents memory, is still limited, especially in developing countries like in Indonesia.

According to TechinAsia report in 2016, about 79 million people in Indonesia (30% of the population) are active social media users of which 83% accessed the social media using mobile devices. Facebook (15%), Twitter (11%) and Google+ (12%) are the three tops among many social media used by Indonesian. The data generated from this social network is potential bottom-up information for urban planning and design development. Therefore this study aims to look at how social media can be used for structuring the collective memory data associated with meaning or perception of urban space.

1.1. Collective Memory in Architecture and Urban Design
The concept of collective memory has been discussed from many disciplines by many scholars. From a general definition of collective memory and how it can be reproduced and shared, to its role in a more specific subject like architecture and urban...
In architecture and urban design, Aldo Rossi called the memory as a ‘soul of the city’ and introduced it as a sign of the uniqueness and character of the city (Rossi, 1984). In view of Rossi, there is a significant link between collective memory, an object and a ‘memorable’ place in a city. Meanwhile Christine Boyer (Boyer, 1996) described collective memory in architecture and urban space as a public way or public composes the image of a city.

According to Halbwachs (1992) collective memory is socially constructed through spatial picture of particular events or experiences related to an object, built environment or a landscape through which people feel connected spatially (Dijck, 2007). On the contrary Barry Schwartz (Schwartz, 1982) argues Halbwach’s opinion that construction is the main activity in the formation of collective memory. Rather he mentioned that it is the selection in which one event is more emphasized than others.

### 1.2. Social Media and The Formation of Collective Memory

Various ways and methods has been undertaken to explore the collective memory for sustainable cities, one of them through social media. Twitter (2006) for example, can inform spatial traces of the daily behaviour of the inhabitants and visitors of city space. Sometimes even completed with its geographical location in which the information was delivered. Thus understanding the urban space and its collective memory can be done also through social media. Some social media platform such as Facebook and Twitter have shown sets of data presented spatial and social behaviour in a real time (Batty et al., 2013).

Social media platform also allows users to create, share, exchange content and simultaneously cooperate and participate in virtual communities (Severo, 2015).

### 1.3. Research Methodology

This research used ‘Tugu Pal Putih’ monument and its surrounding historic district in Yogyakarta City as a study case. Social media data from January-May 2016 related to ‘Tugu Pal Putih’ monument in Yogyakarta City was captured from Twitter. At this first step it is intended to see the tendency of collective memory related to the object. Using combination of particular keywords such as ‘landmark’, ‘signage’, ‘open space’, ‘Tugu’, and ‘Yogyakarta’, there were about 4675 tweets captured both as a dataset and pdf files. The dataset consists of 16 items i.e.

<table>
<thead>
<tr>
<th>Username</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tweet</td>
<td>Location</td>
</tr>
<tr>
<td>Time</td>
<td>Web</td>
</tr>
<tr>
<td>Tweet type</td>
<td>Bio</td>
</tr>
<tr>
<td>Retweeted by</td>
<td>Number of tweets</td>
</tr>
<tr>
<td>Number of retweets</td>
<td>Number of followers</td>
</tr>
</tbody>
</table>

Using NVivo we analyzed the content of the tweets, hashtags, and locations. We looked at the structure of the information flow and how it narrowing down into several trends of object meanings such as landmark, open space, and signage.

As part of verification step, we distributed questionnaires to the respondents in the city to confirm the collective memory associated with the city’s population that has been generated previously from social media.

### 2. Results and Discussion

#### 2.1. The Tendency of Collective Memory of ‘Tugu Pal Putih’

In order to find the tendency of collective memory of ‘Tugu Pal Putih’ monument, we analyzed the hashtags used by Twitter users to describe or mention about the object. A hashtag is a type of label or metadata tag used to make easier for users to find messages with a specific theme or content, which can be found in the text messages or in the pictures the users tweeted. However not all pictures and text messages have a hashtag.

Based on the Twitter data, it seems that ‘Tugu’ monument has been recognized as a landmark for most users who previously had interaction with the object (Fig. 1)

![Fig. 1. Tendency of collective memory of Tugu](image)

The meaning of ‘Tugu’ as a landmark is significantly shown in comparison with other meaning such as an open space or a signage. The result was confirmed by the residents of the city through the questionnaire collected from the field survey.

#### 2.2. Structuring Data From Social Media

Having known the tendency of the collective memory of ‘Tugu’, we further analyzed the content of the tweets using coding and nodes in NVivo to find a theme. Below is an example of a tweet about Tugu.
Using codes and nodes, it is found that the content of tweets related to ‘Tugu’ in this study consists of themes about activities types, times when the activity was done, location, and the object meanings. The result shows that the activities mentioned in the tweets can be organized into several groups (Fig. 2). Nighttime seems to be the most favourite time for doing any activities such as remembering (nostalgia), exploring/travelling, relaxing, and gathering/attending a special event.

It is presented from Figure 3 that ‘Tugu’ has different meanings for different type of activities. ‘Tugu’ has a meaning mostly as a landmark when users attended a special event/gathering or when they were nostalgic. ‘Tugu’ has also been perceived generally as an open space for relaxing and culinary activities. Meanwhile travelling and exploring activities recognize ‘Tugu’ mainly as a signage. The information flow from those Twitter data can be summarized in Fig. 4.

It is found from tweets that locations also contribute to the collective memory of ‘Tugu’. However, because of time limitation, we only categorised the locations into 4 groups i.e. Yogyakarta (66%), other cities in Java (23%), other cities in other islands (6%), other countries (2%) and others (3%).

2.3. Verifying Data from Field Survey

We conducted a survey in the city of Yogyakarta using questionnaire to verify the social media data. The questionnaire was divided into several sections i.e. questions related to respondents’ identity (age, origin and length of stay in Yogyakarta City), interaction frequency related to ‘Tugu’ monument, time and activities in the area, function and the position of the monument among other popular places in Yogyakarta, and dissemination of the information related to the monument. The questionnaires were distributed in ‘Tugu’ area as well as in several districts in the city, which total involving 100 respondents.

The result shows that ‘Tugu Pal Putih’ monument has a primary function as the city’s landmark like shown in Fig. 1. It is also found that the length of stay in Yogyakarta city does not influence the respondents’ memory attachment with the object.

Meanwhile the result from the questionnaire also confirms the social media data that most activities related to ‘Tugu’ are done at nighttime although the types of the activities are slightly different (Fig. 5). The activities are also frequently carried out at weekend or days off.

Relaxing/enjoying the atmosphere in ‘Tugu’ area is the most favoured activities for residents of the city, while in social media it is remembering (nostalgia). It is interesting to know from Fig. 5 that ‘Tugu’ has indeed a strategic location in the urban landscape of Yogyakarta as respondents from different corner of the city frequently pass the location in their daily activities from morning till at night (which the peak is between 05.01-10.00).
We also analysed the position of ‘Tugu’ among other iconic and popular places in the city. The result shows that Malioboro street and Sultan Palace are two places that connected with the role and meaning of ‘Tugu Pal Putih’ monument (Fig. 6).

3. Conclusion
The results of this study presents that the area of ‘Tugu Pal Putih’ monument became a popular district that has a significant meaning for the various groups of the population because of memory attachment with the object. Either as a landmark, signage or open space, the three categories of collective memory have a clear structure of how the background of this information comes from the residents of the city.

From the explanation above it seems that social media has capabilities for structuring the collective memory of Yogyakarta city that are large, bulk, easy and valid in presenting the information required for a city area development. Further researches are needed for structuring wider categories of collective memory as well as the urban area covered in a more applicable way for urban development.

However, the challenge ahead is when these collective memories can be used optimally in an urban design or planning project that is limited by time execution, budgets, and other influenceable factors.

4. References


