



Using locative social media and urban cartographies to identify and locate successful urban *plazas*



Pablo Martí *, Leticia Serrano-Estrada, Almudena Nolasco-Cirugeda

University of Alicante, Building Sciences and Urbanism Department, Carretera San Vicente del Raspeig s/n., 03690 San Vicente del Raspeig, Alicante, Spain.

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ABSTRACT

Locative social media networks as open sources of data allow researchers and professionals to acknowledge which city places are preferred, used and livable. Following this hypothesis, this paper proposes a methodology to identify successful public spaces – *plazas* – through the location-based social media network Foursquare and to analyze their urban position using morphological and historical cartographies.

The overall methodology comprises three stages. First, the most important cities of the province of Alicante were selected. Second, the most relevant *plaza* of each city was identified using data retrieved from the social network Foursquare. Finally, the location of each *plaza* is analyzed in relation to the historic center and the main axes of the city. Possible correlations between their urban location and their vibrant character were subsequently identified. Two findings have emerged from this study: (a) a strong spatial relationship exists between the most successful *plazas* and the historic city center, which reinforces their traditional social character; and (b) all *plazas* share two similar traits, their location within the urban network and their proximity to the main axes of the city.

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1. Introduction

City spaces have traditionally functioned as places for social interaction and cultural representation. However, with the relatively recent introduction of new technologies, people interact differently with and within urban public spaces. Social networks greatly affect individual's willingness to socialize and take part in public gatherings. This fact along with others such as reduced opportunities for pedestrianism as a form of transport, due to the limited space, noise, pollution, obstacles, etc. (Gehl, 2010), have led to an increasing wave of online socialization. Thus, face-to-face encounters among strangers and friends are highly dependent on online relationships (Gaspar & Glaeser, 1996; Moss, 1998).

This situation urges the recognition of socially accepted public spaces as a crucial matter for urban planners and designers. Why some places are more socially successful than others is a key question whose answer may lead to an understanding of the local population's social dynamics and the reasons behind the preference for some places over others. These preferences have traditionally been explored by means of quantitative and qualitative field studies. However, given that there is ample information available online, it is now possible to identify which spaces are preferred over others and study their characteristics with a view to learning from them. This will aid the assessment

of future decision-making processes related to urban systems (Agrzykov, Martí, Tortosa, & Vicent, 2016; Calabrese, Ferrari, & Blondel, 2014; Ruiz Sánchez, 2012).

The preference of one space over others has to do with many factors – location in relation to the city, proportion of the space, sense of containment, etc. – which have been broadly theorized by authors like Bosselmann (2008), Carmona, Tiesdell, Heath and Oc (2010), Gehl (2010) and Whyte (1980). The identification of the most successful public spaces of a city is an endeavor which may lead to interesting studies about their physical configuration. This could provide important clues as to what a local community appreciates in a public space.

Given that a city's open spaces are varied in terms of size, features and shape, this study adopts the definition of *plaza* as a Mediterranean square, described in the Spanish Glossary of Urbanism as “the urban element par excellence, which from antiquity has supported public activity – religious, commercial, administrative, leisure, etc.” (Blasco, Alonso, & Piñón, 1991a,b). Although the origin of this term comes from the Latin language – *platea* – the Spanish word was introduced in the English language in 1683 (Merriam-Webster, 2016). Nowadays one of the four English meanings of the word *plaza* refers to a public square or open area while the other three are related to traffic spaces and shopping centers (Merriam-Webster, 2016). Therefore, in this paper *plaza* appears in italics so as to maintain the original Spanish meaning of the word and distinguish it from the aforementioned English definitions.

However, given the frequent use of the term *plaza* in different contexts, it is necessary to clarify the three ways the term appears: a) in

* Corresponding author.

E-mail addresses: pablo.marti@ua.es (P. Martí), leticia.serrano@ua.es (L. Serrano-Estrada), almudena.nolasco@ua.es (A. Nolasco-Cirugeda).

italics – *plaza*, when referring to the Spanish concept of public space; b) in normal font – Plaza, when it is part of the official name of a square; and c) in quotations – “plaza”, when it refers to one of the standardized subcategories that social network Foursquare establishes for open spaces.

The term “successful” in this paper, when referring to the analyzed public spaces, is in accordance with the meaning attributed to it by scholars such as Jacobs (1995), Gehl, Svarre, Press and Steenhard (2013), Carmona et al. (2010), Mehta (2014), Sircus (2001), Lang (2005), among others. This term is broadly used to refer to livable, sociable, highly frequented public spaces. It is an indicator of the quality of the spaces: attractiveness (Carmona et al., 2010, p. 10); animatedness –the coming and going of people–; accessibility; comfortableness; liveliness; and safety (Lang, 2005, p. 278). A successful place “engages us actively in an emotional experience orchestrated and organised to communicate purpose and story” (Sircus, 2001, p. 126). Specifically, “successful” is used hereafter to refer to a high degree of social relevance and livability of *plazas*: “open to the public, where people are present throughout the day and week, engaged – individually or in groups – in a variety of active or passive social behaviours that are predominantly stationary and sustained in nature” (Mehta, 2014, p. 23).

With the above considerations, this research presents a twofold objective: First, to identify the most successful public *plazas* across the province of Alicante; and second, to analyze their location in relation to the city structure.

In order to obtain a ranking of preferred public spaces in a city, data were retrieved from the location-based social network Foursquare. Once the most relevant urban public *plazas* were identified, we validated this method by studying their historic development and their special relationship to the city structure.

The research is structured as follows: first, a theoretical approach involves a revision of the scholarly literature on the use of user-generated data retrieved from social media as a source of information for urban analysis. Second, a methodology is proposed for identifying successful urban public *plazas* and for studying their location. Finally, the results obtained are followed by a final discussion and conclusion.

2. Social media and the study of public spaces

The technological advances – telephone, television, video and computers – have introduced new models of recreational and social activities that have substituted those that previously occurred spontaneously in the urban public space. Consequently, the physical configuration of contemporary cities has been strongly influenced by emerging information and communication technology (Carmona et al., 2010; Moss, 1998). But apart from this physical consideration, the focus on human encounters and where and how they take place in the urban environment is crucial for the design of cities (Bentley, Cramer, & Müller, 2015).

Much recent qualitative research about urban public spaces addresses the lack of vibrant urban environments that are capable of generating socially active communities (Giampino, Picone, & Schilleci, 2012). Likewise, attractive and livable urban spaces are studied with a rather generalized approach that overlooks the fact that, even when livable, some public spaces are more visited than others, and better accepted for activities such as, citizen gathering, political demonstrations or festivity celebration.

Specifically, *plazas* as urban elements, are spaces contained and framed by buildings where social encounters have traditionally taken place. *Plazas*, in the context of urban studies, are open spaces that provide the opportunity for different kinds of activities. Whether they are designed for civic prestige – grandeur, or to exhibit a particular building, or for informal public life (Carmona et al., 2010) these spaces are of specific interest in this study. Recognizing which public *plazas* are

socially successful and their location within the city structure may shed light on why these spaces are preferred over others.

There is an important debate surrounding the influence of social media over physical interaction. Authors such as Aurigi (2005) have previously acknowledged a strong concern over whether the virtuality of social relationships is replacing the face-to-face social encounters that traditionally occurred in the public space. One of the reasons for this reasoning is that “digital communication provides alternatives to physical travel between locations” and, in some cases, renders it unnecessary (Carmona et al., 2010). The opposite school of thought argues that telecommunications “may be a complement, or at least not a strong substitute for cities and face-to-face interactions” (Catalán, Saurí, & Serra, 2008; Foster, 2013; Gaspar & Glaeser, 1996; Low & Smith, 2006). This paper is inclined towards the second approach, with the understanding that the interaction happening in social networks mirrors that in the physical reality.

The data tracking of these online relationships is publicly available in the form of easily accessible data through social networks and social media APIs (Application Programming Interface). These traces leave evidence of the citizen's preferences and usage patterns over some urban spaces (Serrano-Estrada, Nolasco-Cirugeda, & Martí, 2016). Moreover, data from a variety of social networks such as Foursquare, Twitter and Instagram are georeferenced (Beltrán López, 2012; Noulas, Scellato, Mascolo, & Pontil, 2010), thus the traces of social activity happening in public spaces are, to some extent, measurable and can be analyzed from the urban studies' perspective (Agryzkov et al., 2015; Agryzkov et al., 2016; Cranshaw, Schwartz, Hong, & Sadeh, 2012; Shen & Karimi, 2016). Previous studies have confirmed this and affirmed that Location Based Social Networks are powerful tools to analyze human behavior in space and time (Roick & Heuser, 2013). Some of these studies have their primary focus on the visualization and representation of bulk data in relation to social interaction in city spaces (Agryzkov, Álvarez, Serrano-Estrada, Tortosa, & Vicent, 2015; Fujita, 2013). Other focus on user personality (Chorley, Colombo, Allen, & Whitaker, 2013); perceptual information analysis where user visits and preference patterns are analyzed (Cerrone, 2015; Chorley et al., 2013; Dunkel, 2015); and event detection using geo-referenced photos (Chen & Roy, 2009), among many others.

The approach taken by this study is the use of Foursquare to identify user preferences of city public *plazas* in order to analyze their location within the urban structure.

3. Social media users and Foursquare

The use of social networks by online adults has risen consistently in the last decade. By November 2016, social networking sites are used by: 86% of adults aged 18–29 years; 80% of adults aged 30–49 years; 64% of adults aged 50–64 years; and 34% of those aged over 65 years (Pew Research Center, 2017). In Europe alone, during the period between 2006 and 2016, a 485.2% internet penetration growth rate has been registered (Miniwatts Marketing Group, 2016) and an increasing tendency is foreseen.

Spain has over 75% penetration rate of internet users (IAB Spain Research, 2014; Miniwatts Marketing Group, 2016) and 81% of them use social networks (IAB Spain Research, 2016).

Foursquare is a social networking service based on location sharing. Users check in a venue to broadcast their presence, preference and/or opinion of the place. All physical places that have a reference in Foursquare are called “venues” (Li, Steiner, Wang, Zhang, & Bao, 2013) and each venue has associated information: geographical location, total check-ins, total visitors, user-shared pictures, tips, and likes. In other words, this social network consists of user-generated data comprising georeferenced venues that include business and points of interest in a city (Reed, 2011). The app turns anybody's phone into a scanner that “senses the meaningful bits of urban life” in its surroundings (Townsend, 2013, p. 144).

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