Title: **'The impact of social networks on participation and placemaking'**

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ABSTRACT

Social networks give structure to our world, are key to building social capital and can form a platform to build-up strength and ability to change; they are, however, often absent from urban studies. In this paper, the authors explored the potential role of social networks during community consultations, both as an engagement tool and as a mechanism for capturing existing placemaking dynamics in neighbourhoods.

A 3-stage method was developed to explore: a) the relevance of social media as a consultation strategy versus traditional methods of engagement; b) the potential of social media as a predictor of existing placemaking capacity in neighbourhoods. The method was applied to four case studies in England, and the results were correlated with contextual variables, such as socio-economic and living conditions. The stages of analysis involved studying virtual network use, citizen participation patterns on traditional and virtual events, and changes within the physical environment appearing on social media activity.

The study revealed that Facebook is the most popular virtual network amongst communities; leadership is the main driver for online activity. Participation modalities (face to face or online) depend on people’s lifestyles. Levels of unemployment and numbers of online memberships are the main correlating variables.

INTRODUCTION

The concept of community has been subject to debate in academia and definitions vary greatly. However, for the study of social resilience, ‘community’ is best interpreted with a socio-ecological approach involving: (a) The people; (b) The place; (c) The connections between people, and with their place (Christensen and Robertson, 1980, cited in: Kirmayer et al., 2009; Jewkes and Murcott, 1996; Hamdi, 2010; p.130; Ginige and Amaratunga, 2013, pp.13-29; Creasy, Gavellin and Potter, 2008, p.37; Rowson, Broome and Jones, 2010, pp.1-6; Colantonio and Dixon, 2012, p.242; Giuffre, 2013, p.20; Ophiyandri, 2013, pp.99-10). A neighbourhood is a residential area shared by various communities and individuals. The notion of neighbourhood can also be uncertain as it can have different meanings to different people (Barton, 2000, pp. 4-5). In this work, the authors suggest an ecological approach, assuming a neighbourhood is composed by a mixture of a (1) physical place with natural environment and infrastructure, (2) a series of communities and individuals with an interest in the locality and (3) the bond between these individuals, and with the place. Social media is one of the tools community have to communicate and create virtual bonds.

Understanding the link between people and place is essential to support and enhance resilience in communities (Haigh and Amaratunga, 2011, pp.4-7), because nothing exists in isolation, only in relation, and therefore people have to be studied in the context of their environment (Nan Ellin, 2013, p.69). Changes in behaviour or adaptation might not be

intrinsic to the individual but they might be a product of the environment, or the mechanisms that connects us to it (Pickett, Cadenasso and McGrath, 2013, pp.7-11). When studying resilience both the individual and its environment need to be viewed as malleable entities (Ingrid Schoon, 2012, pp.143-156), the sum of the progressive and mutual changes involved, called 'developmental adaptation', requires the study of both processes of adaptation simultaneously, in combination, and over time (Ingrid Schoon, 2012, pp.143-156). Social media analysis might reveal some of the relations between place changes and social networks activity and development.

Understanding the mechanisms that link people together is also essential to the study of social resilience. Social institutions and conventions are created to give structure to our world, to help us make sense of opportunities and threats, and these cultural structures are maintained through interactions and connections (Tomassello, 1999, p.216). Studying community network structures is vital to understanding life, since they shape us and we shape them, they can make us feel included or alienated (Giuffre, 2013, pp.1-2). Rowson, Broome and Jones (2010, pp.1-6; and Valdis Krebs and June Holley, 2006, pp.1-3) see social networks as a key component of social capital, important on its own right and worthy of focused analysis. They provide a fundamental structure for developing community capacity and ability to change (Maclean, Cuthill & Ross, 2013, p.1). Using social network analysis gives us a richer understanding of how communities operate (Giuffre, 2013, pp.1-2). Network structural analysis and relational data can bring more light to the understanding communities than isolated human capital determinants such as age, gender or religion (Knoke and Yang, 2008; cited in: Giuffre, 2013, p.3).

In 2003, Heriott-Watt University et al. produced a survey for the Office of the Deputy Prime Minister that noted that society, and the way people embrace governance, had changed, and that the levels of trust in the government had decreased. Also, it recognised that in order to achieve sustainability, consensus between all parties needed to be achieved. The document proposed that “Participation in Planning” had to be replaced by “Participatory Planning” affirming that participation needed to occur at a very early stage in the planning process to take into account every stakeholder’s needs and to avoid disputes and opposition (Townsend and Tull, 2004, p.12). However, Bedford et al. (2002; cited in: Townsend and Tull, 2004, p.13) found that at times, participants were badly informed, that consulted groups were non-representative of the community, and that participation was generally embraced by some sectors of society, primarily white, middle class and well–educated citizens. Although good examples of working with communities started to emerge (Royal Town Planning Institute, 2003; cited in: Townsend and Tull, 2004, p.9), a year later, Townsend and Tull (2004, p.56) reported that: “…some “Community Plans” have little spatial content for “communities” within their area, at least as yet”, and that “the pattern of response clearly varied by social class of area.” Petschow U. (2005, p.47) agreed. He believed that multiple levels of governance would be required in order to address sustainability, seeing governance as the combination of ways in which private and public enterprises might manage their common interests. The practice of community participation in urban regeneration started to become established and growing in popularity, but more 'moderate' approaches started to emerge as ways towards conciliation of contested opinions (Awan, Schneider and Till.

2011, p.78; Bishop and Williams, 2012, p.147). On one hand, empiric analysis started to show that participation was not something people naturally did even if they had the time or will; on the other hand it showed that it was indeed an integral part of designing and planning, and that it could bring a sense of ownership and responsibility which were detrimental to the health of the place and the community (Nabeel Hamdi, 2010, p.xvi). Participation could lead to the transformation of the participants as they learnt from methodology and processes but more importantly, they discovered that everyone had something to offer, resulting in a change of mind-set and therefore in the transformation of relationships and communication patterns (Fuad-Luke, 2009, p.150). Community work and collaboration could be tools to enable education and knowledge transfer and acquisition, for example, through community involvement schemes 'lead by architects and other professionals of the built environment' (Awan, Schneider and Till. 2011, p.78). It was by then clear that involving people in decision making processes and encouraging groups to come together around a common goal had many benefits, such as empowering communities, building up social cohesion and increasing individual skills and self-esteem (Bishop and Williams, 2012, p.139). Bishop and Williams (2012, p.147) stressed that greater community activism had the potential to become increasingly significant in the development of the cities of this century, as it could strengthen social structures and local economies. Pat Dolan (2012, p.361) added that in order to have the capability to act positively in times of crisis it was necessary to build-up a sense of belonging and strengthen social bonding, which could only be achieved with participation.

However, although consultation processes became progressively more relevant lately, implementation is proving difficult and overall outcomes are still contested. In recent years, placemaking started to emerge as a more suitable route to deliver public engagement, active participation and social capital enhancement, but affordable models for easy application in practice are still scarce. The recent introduction of Neighbourhood Plans, part of the decentralisation of power agenda of the Conservative government, facilitated neighbourhood engagement and governance (NPPF, 2014) but there is still work to be done.

Social media involves any online tool from collaborative projects, blogs and social networking sites to virtual game worlds and virtual social worlds. Commonly known applications are Wikipedia, LinkedIn, YouTube, Facebook, Second Life, and Twitter (Kaplan & Heanlein, 2010, pp.59-68). The communication landscape is changing swiftly, specifically with regards to the increasing use of participative internet and social media worldwide, by individuals (Chou et. al, 2010) and by non-profit organisations (Curtis et. al, 2010). It is therefore important to develop a better understanding of these technologies and their social impact (Chou et. al, 2010). Social media can help increasing social capital by allowing members to reinforce their social identity (Harter, 1999), it can strengthen community ties through news and events updates (Park, Kee & Valenzuela, 2009), and it can make people feel connected (Zuniga, Jung & Valenzuela, 2012, pp.319-333). However, although some argue that the use of social media is a positive tool for enabling participation in community processes (Bennett, 2008), others sustain it diverts people from local politics and active engagement (Hodgkinson, 2008). Zuniga, Jung & Valenzuela, (2012, pp.319-333) stated that "…*seeking information via social network sites is a positive and*

significant predictor of people's social capital and civic and political participatory behaviours, online and offline". Nevertheless, there is not sufficient empirical research in relation to how the use of social media might relate to participatory behaviours (also Ellison, Steinfeld & Lampe, 2007; Pasek, More & Romer, 2009; all cited in: Zuniga, Jung & Valenzuela, 2012, pp.319-333). More studies are needed to explore how contextual variables, such as socio-economic and living conditions, might relate to the community use of social media (Zuniga, Jung & Valenzuela, 2012, pp.319-333).

In order to determine neighbourhood patterns of change, its key assets and vulnerabilities need to be unveiled, and the degree to which these have endured, evolved or disappeared also needs to be fully understood (Schumacher, 1973, p.159; Julie Richardson, 2004, p.41; Haigh and Amaratunga, 2011, p.304). Quantitative methods remained the preferred option to study resilience for some time. However, qualitative analysis can help define a historic framework which can facilitate the understanding of the context and its changes, and the discovery of probable patterns of adaptation and human relations. These can then help define neighbourhood-specific approaches and indicators (Monsted, 1995; Crossley, 2009, p.6; cited in: Edwards, 2010, p.23; Gold, 2007, pp.142-150; Stanczak, 2007, pp.1-13; Edwards, 2010, p.2, p.17; Murray K and Zautra A., 2012, p.344).

METHODOLOGY

The aim of the study was to explore:

a) The relevance of social media as a community consultation strategy in comparison with traditional methods of engagement.

b) The potential of social media as a predictor of existing placemaking capacity in neighbourhoods.

The authors designed a methodology structured in 3 stages of analysis:

1. Social Media Analysis

This first stage of analysis aimed to find out how community groups were using each one of the most popular online social media tools in the UK. A general qualitative analysis achieved through an online search and observation of social media activity amongst community groups aimed to reveal patterns of communication within neighbourhood communities in England. The intention was to find out which social media networks were more popular amongst community groups, how different media might become tools for engagement and what type of information these could offer to urban design practitioners.

The investigation was entirely conducted through online engine searches. Two residential areas in close proximity to large cities from each one of the nine English regions (including London) were randomly selected through an online map search.

Once the residential areas were selected, community and social network groups were searched by typing the name of the area in various engines' search boxes. The search confirmed that some platforms were used to share information such as photos and videos, although their use was limited. The most popular examples are: Instagram (photos) and You Tube (videos). LinkedIn did not show activity at a social community level; the platform appeared to be used primarily for professional networking and searching community activities was difficult. Twitter was used to a lesser degree, and mainly to advertise events or links to Facebook pages. Most frequently, groups seemed to post initially on Facebook and only then link to other forms of media for advertising purposes, this was made evident by the date on the posts. Furthermore, all the communications containing key placemaking information were found to have been posted on Facebook groups/pages. For example, conversations relating to maintenance and future visions for neighbourhoods and streets were found. Facebook was by enlarge the platform of choice for community groups, with no groups found to be operating through other media, and therefore the in-depth analysis focused on the use of Facebook.

Four case studies, which were also subject to other studies by the authors (Alvarez, Borsi et al, 2015; Alvarez, Rodrigues et al, 2015; Rodrigues et.al, 2014a; Rodrigues, Alvarez et al, 2014b), served in this in-depth research: The Meadows and Sneinton in Nottingham, and Dronfield and Killamarsh in North East Derbyshire. This allowed the correlation of the results with contextual variables available from other studies, such as socio-economic variables and living conditions.

The authors focused specifically on the number of groups operating online, their interests and the number of memberships these groups had. The information was carefully retrieved through a Facebook search by location. All social groups visible through the search to be operating in each area were accounted for. The number of memberships each group had was noted and groups were classified by interest. Furthermore, the type of activities conducted or promoted by these groups and the number of memberships were subjected to qualitative analysis to highlight any patterns or trends and local politics and interests. Each community interest group was investigated further, groups/pages administrators, conversations and online posts were analysed in order to find out key leaders or potential bridging agents, and to understand potential trends and local politics.

The values obtained were then divided by the number of residents in each area to establish a comparable ratio that overcame the variance in size amongst the four case studies and amongst data sets, as follows:

$$\text{Facebook networks ratio} = \frac{\text{Nº of Facebook groups} \times 1000}{\text{Population*}}$$

Equation 1: Facebook networks ratio
**Data source: ONS 2011 (ONS; 2016)*

$$\text{Facebook membership ratio} = \frac{\text{Nº of Facebook memberships}}{\text{Population*}}$$

Equation 2: Facebook membership ratio
**Data source: ONS 2011 (ONS; 2016)*

2. Citizen Participation

The aim of this part of the study was to find out how online participation compared to more traditional forms of engagement. A series of community consultation events was also organised, this also served a larger study by the authors. The events were tailored to each community's interests and needs, and were broadly advertised through a variety of media to suit each one of the cases. The events were planned in relation to place assets and changes, always arranged with a deliberate intention to achieve the maximum level of participation possible. The data gathered on the events revealed the key residents' interests and visions with regards to the physical aspects of their neighbourhoods, perceived threats to their communities, the reasons for choosing their place of residence, what their priorities were for future redevelopment and what assets were perceived as the most valuable for each community.

During this research, Facebook became an alternative way to advertise events and to encourage residents to participate electronically. The number of online participation instances was measured alongside the number of people participating in events and face-by-face. These values resulted in percentage of population participating in traditional forms and online. The results are shown on Table 1 .

3. Place Change

Identifying how place changes processes are made evident on Facebook was the strategy the authors chose to identify placemaking capacities amongst community groups. This involved a neighbourhood urban analysis in the traditional sense, looking at variables like access, green infrastructure, character, massing, density, use of land, socio-economic variables, activity in public places, and identification of recent patterns of change to the physical structure of the neighbourhoods. The variables were explored through systematic site surveys and observations, geographical mapping analysis and historic research.

An additional Facebook search focused on posts specifically concerned with place transformations, capturing conversations, events and groups with an interest on placemaking. The number of places appearing online was counted and tabled against the total number of place transformations captured using all methods: survey, consultation and online search.

The overall research structure is shown in Figure 1 below.

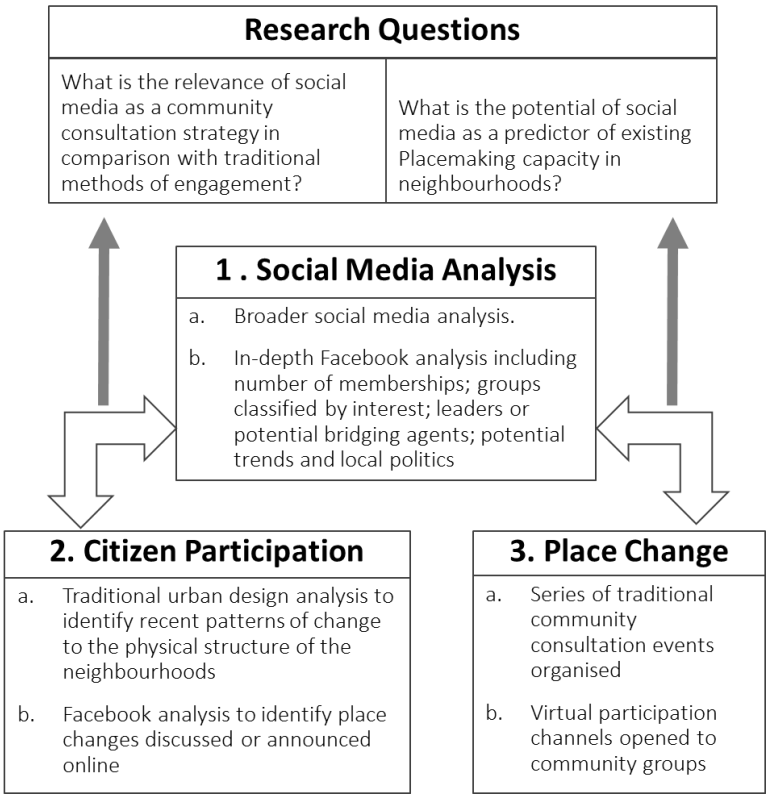

Figure 1: Research structure.

FINDINGS AND ANALYSIS

The findings and the correlation of them are described in the sections below.

a) Relevance of social media as a community consultation strategy in comparison with traditional methods of engagement

The data sets emerging from the three stages of study were correlated and it was found that the relative effectiveness of each one of the participation methods applied depends greatly on the character, culture and behaviours of the communities subject to analysis.

Qualitative analysis of each one of the case studies brought to light some of the reasons behind participation and engagement trend and patterns. Table 1 below shows that participation in The Meadows was strong face to face, both through community events and when the team randomly approached people on the streets. Despite this area having the highest levels of higher education amongst the four case studies, some of the residents participating in events expressed

they did not have access to computers and that this was the case for many residents, who would not know how to use social media sites. During focus groups, participants mentioned that a large proportion of the residents in the area are short term tenants, students and families that had recently arrived from other countries. This was confirmed through ONS 2011 census data analysis, which revealed that The Meadows is the ward with the higher percentage of full-time students and residents not born in the UK.

Table 1: Socio-economic variables in case study areas.

(% of total population)	Socio-economic variables							Participation			
	Non-UK born	**No qualifications**	**Higher education**	**Student**	**Unemployed**	**Employed**	**With dependent children**	**Traditional participation**	**Online participation**	**Overall participation**	**Online participation rate (online*100/traditional)**
The Meadows	**30.60**	19.60	**31.97**	**7.00**	6.02	51.00	8.93	2.83	0.00	2.83	0.00
Sneinton	23.75	**25.60**	20.57	3.81	**7.68**	**55.31**	14.00	**3.49**	0.01	**3.50**	0.29
Dronfield	2.40	17.15	14.51	3.88	1.10	53.89	**56.00**	0.47	0.03	0.50	**6.38**
Killamarsh	1.96	22.46	7.75	4.06	1.60	**55.17**	14.40	1.16	**0.04**	1.20	3.45

Sneinton, despite having the highest percentage of people with basic qualifications and the highest levels of unemployment, also showed extraordinary leadership through a small number of community actors who coordinate a range of long-term activities. Participation rates in Sneinton are exceptionally high due to the unprecedented activity organised by community coordinators, who were brought along and contracted to work on community engagement by one of the community groups: Sneinton Alchemy. The members of this group also lead and administrate the vast majority of the Facebook groups and pages for the neighbourhood. Coordinators have been working in the community for more than four years and have gathered an immense amount of data from residents, a random sample of which was kindly made available to the research team for analysis.

Dronfield was the case study with the lowest level of unemployment and the highest number of households with dependable children. The area also had community members with strong leadership, well connected, organised and keen to pursue community action. Despite the relative lack of attendance to some of the community events organised in Dronfield, the Facebook analysis conducted opened further communication channels. The identification of key stakeholders and leaders within community groups in Facebook enabled good and meaningful participation during the broader study engagement events. Members of the community, contacted through key leaders, participated electronically, providing a range of very valuable information. Residents took the time to write full analytical reports and to tell their life stories and experiences remotely, contacting the research team through Facebook on the first instance and

by email once contact had been established.

Killamarsh was the case with lower levels of higher education qualifications and relatively high levels of employment. In this case the same group of people consistently attended all the community events. These participants collaborated actively providing a huge amount of valuable information. These were key actors and leaders of the community groups in the area, also managers of the Facebook groups. However, the majority of the population approached randomly on the streets refused to participate in the research and came across as frustrated and disinterested.

An interesting finding was that the levels of unemployment had some correlation with participation levels, and an inverse correlation with online participation. Figure 2 below illustrates this point. Another relevant finding was an inverse correlation between the numbers of Facebook community memberships, calculated using the formula on Equation 3 below, and the levels of participation in community events. Figure 3 below illustrates this point.

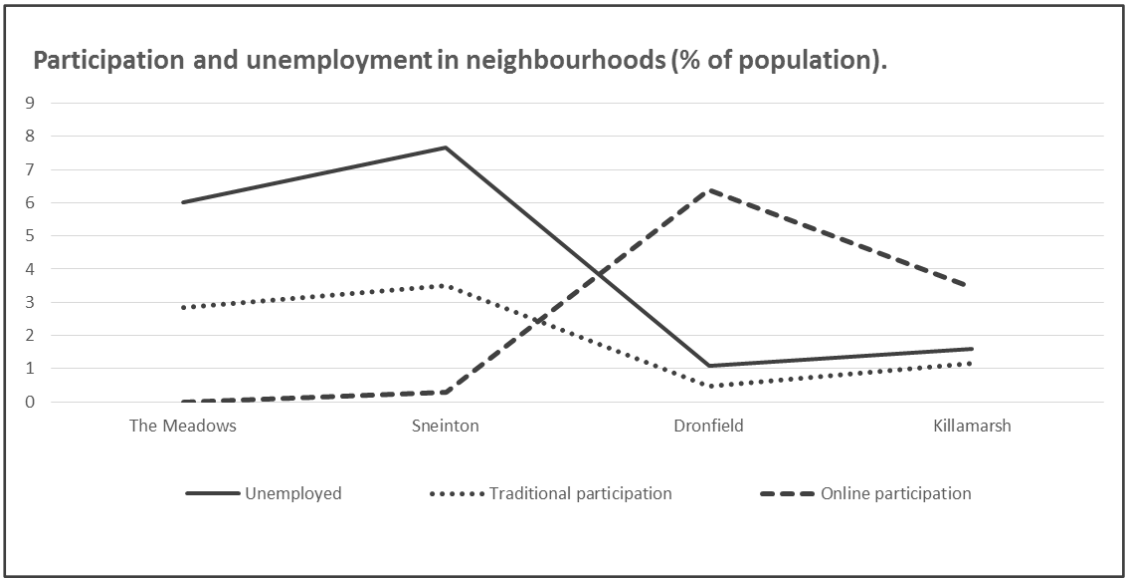

Figure 2: Levels of unemployment and participation in neighbourhoods (% of population).

$$\text{Average number of Facebook network members} = \frac{\text{Facebook membership ratio}}{\text{Facebook networks ratio}} * 100$$

Equation 3: Average number of Facebook members in community groups. Also see equations 1 and 2 above.

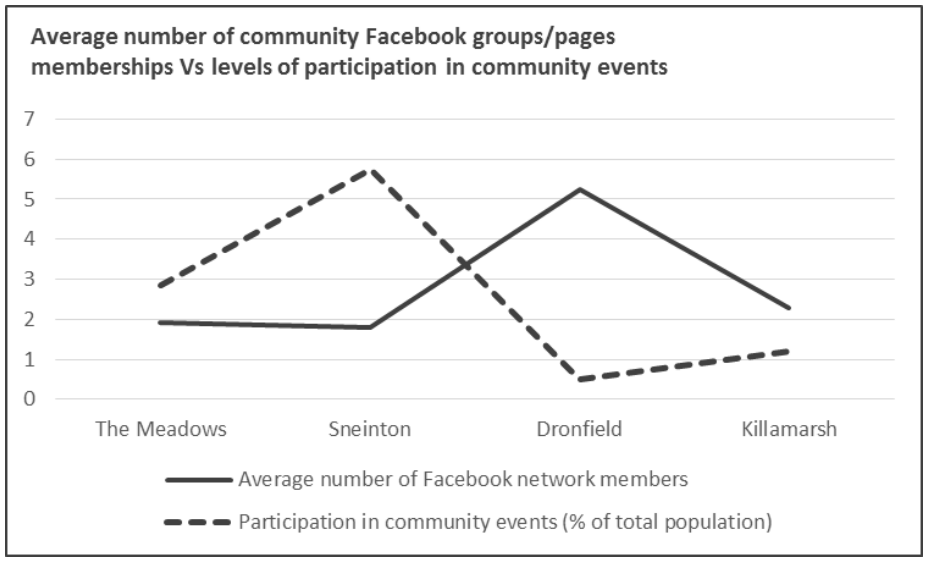

Figure 3: Average number of community Facebook groups/pages memberships Vs levels of participation in community events.

In the case of The Meadows, unlike the rest of the case studies, online participation was poor. This might have been due to the lack of community-based online activity. The fact that some residents did not have access to computers, whilst others were short term residents, students and foreigners, possibly with other networks operating outside the sphere of the neighbourhood, might have had an impact on the lack of success of online analysis tools.

The other three case studies however, show a similar pattern in that leadership seems to be the main driver for community online activity. Also, the form of participation seems to be influenced by people's lifestyles (employment and dependent children primarily) more than socio-economic factors such as level of education.

b) Potential of social media as a predictor of existing placemaking capacity in neighbourhoods

The qualitative analysis of the communications established by neighbours via Facebook did not reveal all of the significant recent changes to the physical structures in the four neighbourhoods subject to analysis, and some of these were found through a combination of traditional urban analysis and consultation programmes. However, a positive correlation was found between the percentages of the local population with Facebook membership to community groups and the percentages of physical interventions in the area evidenced through Facebook analysis (see Figure 4).

It appears that the more Facebook community memberships an area has, the higher the number of physical interventions appearing on Facebook. This is particularly remarkable since the percentage of the population with Facebook network memberships is not an actually accurate quantitative representation. Many people on Facebook are indeed associated to more than one network (therefore multiplying the count) whilst some Facebook members might not be residents in the

area but they might have some other invested interests. This was made particularly evident through the figures obtained for Dronfield, where Facebook memberships were higher than 100% of the population in the locality.

The authors therefore interpret that the higher the relative Facebook activity for a neighbourhood (in relation to its population, the higher the amount of placemaking data available for analysis through Facebook (see figure 4). Exploring in more detail, the study revealed variations in relation to the reasons driving the use of Facebook networks amongst community groups. In all cases a strong correlation between physical neighbourhood structure/assets, and Facebook networks operating in the area was found.

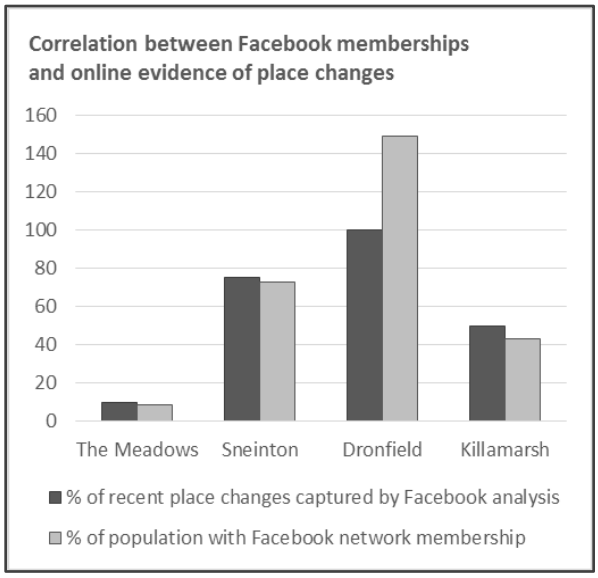

Figure 4: Correlation between Facebook memberships and online evidence of place changes.

An excellent quality sports centre was recently upgraded in the heart of Killamarsh, the facility attracts local users and people from the surrounding towns and parishes. Coincidentally, the majority of the social media sites found for Killamarsh had an interest in sports. Table 2 below show the Facebook network ratios and the Facebook membership ratios by interest in all four case studies (see Equations 1 and 2).

Table 2: Facebook network ratios and the Facebook membership ratios by interest in all four case studies.

	Facebook networks ratio							Facebook membership ratio						
	Sports	Heritage/Art/Culture	Social/community	Education	Religion	Health	TOTAL	Sports	Heritage/Art/Culture	Social/community	Education	Religion	Health	TOTAL
The Meadows	0.00	0.00	0.33	0.00	0.07	0.07	**0.46**	0.00	0.00	0.06	0.00	0.02	0.00	**0.09**
Sneinton	0.06	0.60	**1.27**	0.12	**0.36**	0.06	**2.48**	0.00	0.11	0.23	0.01	**0.08**	0.01	**0.45**
Dronfield	0.51	**0.87**	1.06	**0.28**	0.00	**0.14**	**2.85**	**0.10**	**0.31**	**0.91**	**0.13**	0.00	**0.04**	**1.49**
Killamarsh	**0.74**	0.21	0.42	0.21	0.32	0.00	**1.91**	**0.10**	0.02	0.25	0.05	0.02	0.00	**0.43**

The Facebook network analysis also showed that The Meadows was relatively inactive online in comparison with the other case studies. The primary interest motivating virtual activity in The Meadows was the community sustainable energy group MOZES, accounting for most part of the online activity. Although significant changes to the physical structure of the neighbourhood emerged with the implementation of the neighbourhood regeneration plan led by the Local Authority, these changes were not captured by social media analysis, although they were mentioned during community consultation events. Some of the issues were very significant to residents and caused commotion amongst the community, such as the recent loss of heritage assets and the construction of the new tramline. Positive community activity such as the creation and improvement of Queen's Walk Pavilion - a place for community art, crafts and recreation - was also absent from the Facebook analysis but highlighted during the engagement process.

Sneinton had a relatively large number of networks and memberships, particularly with an interest in community action but also strong in heritage. The most relevant aspects of placemaking were evident through Facebook analysis, such as the transformation of Sneinton Market and the protection and reactivation of Green's Windmill. Other aspects of community action such as urban agriculture, reduction of crime, cycling, artistic and cultural events were also present online. An interesting aspect of the Facebook activity in Sneinton was that most of the groups/pages shared a small number of memberships, which suggested that a small but strong group of residents was leading change in the neighbourhood. This finding supports the existence of placemaking capacity in the neighbourhood.

Dronfield was highly active on Facebook, with the majority of the groups focusing on heritage and community action. In this case there was a larger average number of memberships per network in comparison with the other cases. This might have been due to the action of a group called Dronfield 2gether, created to bridge community groups within the area and to disseminate their work. Particularly interesting was also the high number of groups with a concern about heritage in comparison with the other cases. The place analysis showed that Dronfield is a village-like town with strong character given by period buildings, particularly dating from the Georgian and Victorian periods. Also, at the community events and through virtual participation, residents highlighted "character and historic features" as one of the key reasons for choosing

Dronfield as their place of residence. All areas of research highlighted heritage as one of the key drivers for community action in Dronfield. The most significant recent place transformations in Dronfield were: a) the renovation of the Railway Station; b) the conversion of the Dronfileld Hall Barn; and c) the renovation of the shopping mall The Forge; all led by community action groups. In this case, Facebook analysis could capture the placemaking capacity in the area despite the low levels of participation in more traditional events.

The authors found some limitations associated with this method, primarily with regards to the variety of dynamic models that rule each one of the parameters (physical, socio-economic, virtual). Social media networks naturally can change more rapidly than the demography in a neighbourhood, which in turn, can also transform faster than the physical environment. Furthermore, measures of each parameter require to be taken at specific points in time and not necessarily simultaneously, for example census information is given every decade and might not be synchronised with the social media measuring. Understanding that social processes have multiple complex dynamics and that therefore a significant margin of error is inevitable, is essential to the study of social processes. For this reason, although some quantitative measures can indicate trends, these need to be evaluated alongside qualitative analysis. For this study, the authors used ONS census 2011 (OSN; 2014) data for the socio economic analysis. The urban analysis and social media data sets were captured within the final quarter of the year 2015 for all four case studies.

This type of analysis also needs to contemplate that the physical boundaries of geographical areas rarely correspond to the boundaries of social networks and these might also differ with the ONS census areas. Also, the mental map of a neighbourhood might be different for every resident and therefore their interpretation of boundary might vary. Some people might have an emotional connection with a place through memories and life experiences, others might have an invested interest - and possibly an affiliation - to a community group although they might not live in the area. The authors consider this type of engagement with a physical environment also valid, and worthy of attention whenever possible. Neighbourhoods are not only made by their residents but by everyone participating in the daily life within it. The difficulty of defining the physical boundaries of a study make meaningful quantitative analysis difficult. For this research, the authors considered any member of the public with an invested interest in the area for their Facebook network analysis. For the physical place analysis they adopted the geographical boundaries of local and neighbourhood plans, and the ONS census 2011 boundaries for the population count.

It is important to note that social media analysis can only capture the views, intentions and visions of a proportion of the population, those who have access to - and an interest on - social media. Relying solely on this method to highlight patterns of socio-physical change in neighbourhoods could lead to biased and inaccurate interpretations. Other type of social network analysis must complement this method of study. However, the study of Facebook activity revealed some of the key interests, local politics and social dynamics in neighbourhoods. Community leaders involved in Placemaking processes and key actors bridging groups were identified very quickly within the process. The social networks analysis opened an instant communication channel that help researchers involve sectors of the community which otherwise would

not have participated, either due to the lack of motivation or due to family or work commitments.

CONCLUSIONS

This paper explored the potential role of social networks during community consultations, both as an engagement tool and as a mechanism for capturing existing placemaking dynamics in neighbourhoods. In order to do so, a method was developed that included traditional urban analysis, socio-economic analysis, community engagement and qualitative/quasi-quantitative social media network analysis. The method was applied to four neighbourhoods in England: The Meadows, Sneinton, Dronfield and Killamarsh. The results were correlated with contextual variables, such as socio-economic and living conditions.

Amongst the four case studies analysed, there seemed to be a direct correlation between the levels of unemployment and the levels of traditional face to face participation. Also, an inverse correlation was found between the number of Facebook membership to community groups and the levels of attendance to community engagement events; and between the levels of unemployment and online participation. Furthermore, in communities with higher levels of employment and households with dependent children, people engaged more virtually. Lifestyles seem to have more of an impact in the participation modes than social capital variables. It appears that Facebook network analysis becomes more reliable as a tool to predict placemaking processes and capacities in neighbourhoods, when the Facebook membership rates are relatively high.

During the research process it was found that analysing Facebook sites in communities can open informal communication channels for the researcher or practitioner to engage with residents. Accessing social media tools such as Facebook can help establishing contact with community leaders and stakeholders. Connecting informally with key actors in community groups can be a critical step for the success of placemaking processes. However, traditional forms of bottom-up community engagement were relatively more successful in some cases, especially where residents had poor access to computers and social media. In the case of The Meadows, Facebook analysis was not as relevant as a community consultation strategy in comparison with traditional methods of engagement and social media did not prove to be a predictor of existing placemaking capacity in the neighbourhood, as the community was relatively virtually inactive. However, when community events had poor attendance, for example in Dronfield, Facebook network analysis proved to be fundamental in achieving acceptable levels of participation.

Sneinton was highly virtually active through a small group of community activists who seem to lead neighbourhood change in the area. In this case the politics, activities and dynamics of the community were evident through Facebook analysis. In the case of Dronfield, Facebook analysis proved to be a valuable tool, primarily to understand the community values and interests, and to open communication channels for more active engagement and participation in a broader

study. In Killamarsh, Facebook analysis helped understand the interests and motivations of the community and it highlighted some of the critical local politics involved in placemaking and more specifically some grassroots place protection processes already in place. The results across neighbourhoods were not consistent and depended highly on lifestyles, socio-economic variables and local socio-political dynamics. Only when neighbourhoods had strong leadership and were active online, placemaking capacities and processes were visible on Facebook activities.

Although there were clear limitations in the proposed method, particularly with regards to the multiplicity of physical boundaries of the areas of study and the mutable nature of the variables, this study demonstrated how the use of social media sites, more specifically Facebook, has the potential to become another vehicle for assessing, communicating and delivering placemaking processes in some neighbourhoods when used alongside other methods. For example by allowing the researcher to reveal some of the interests and motivations behind placemaking and place protection, to find some of the politics and interests behind recent physical interventions, and to open communication channels to key actors and community bridging leaders.

Table 3 below summarises the outcome of the research for each neighbourhood.

Table 3: Outcome of the research for each neighbourhood.

	Relevance of social media as a community consultation strategy in comparison with traditional methods of engagement		**Potential of social media as a predictor of existing Placemaking capacity**	
	RESULT	REASON	RESULT	REASON
The Meadows	VERY POOR	Many residents lack access to computers	VERY POOR	Poor community online activity
Sneinton	POOR	Community coordinators employed to achieve face to face consultation	VERY GOOD	Community leaders keeping consistently active record and good communication of neighbourhood activities
Dronfield	VERY GOOD	Residents lifestyles resulted on remote participation being stronger	GOOD	Community leaders engaged in neighbourhood activities often posting events online
Killamarsh	GOOD	Residents lack of trust and disbelieve disrupted face to face consultation	POOR	Online activity fragmented and specific to groups with limited bridging

Based on the findings of this study, the authors suggest that although Facebook analysis can offer some benefits, it is not an alternative tool to traditional engagement and consultation methods but an additional strategy to be used in conjunction with face-to-face engagement. The authors suggest the use of comprehensive neighbourhood place appraisals including both traditional urban design analysis and social network analysis, as Facebook studies can contribute

to the understanding of neighbourhoods and their existing placemaking processes. Both face-to-face events and virtual communication methods can complement each other to capture some of the synergies between social and physical structures, and the trends and patterns of local processes of change and adaptation in neighbourhoods.

This paper has opened a discourse about the relevance of social media analysis on community engagement processes and as a placemaking capacity predictor in English neighbourhoods. Future research will need to include a larger number of case studies and longitudinal data analysis to explore whether clearer and more consistent correlations can be found. Another area of interest for researchers might be exploring possible patterns to predict in which other cases the use of Facebook network analysis could become a useful tool for measuring and delivering placemaking participation.

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