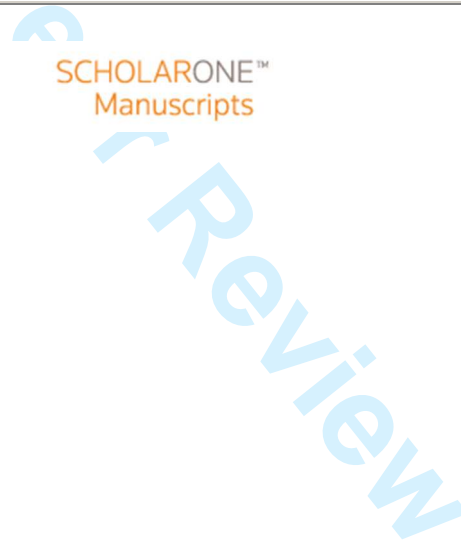




Social network analysis and festival cities: an exploration of concepts, literature and methods

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Introduction and background to social network analysis

This conceptual paper discusses the development of social network analysis (SNA), its application in a range of fields of enquiry, and potential as a focus of future research into **the workings of social networks in festival cities**. With twentieth century roots across a range of disciplines, social network analysis has developed into a research framework that is now being applied in many varied situations (Butts, 2009; Christakis & Fowler, 2010). To this end it is appropriate **to examine the potential contributions and particularities of SNA when applied to festivals and events networks**; to try to capture what has been termed the 'structure' and 'form' of social relations, considering the 'outsider' and 'insider' perspectives of a networked community (Edwards, 2010, p. 5). **Many city destinations around the world have a portfolio of festivals and events where networks could be seen in operation in light of SNA**. Destinations such as Scotland's capital Edinburgh play host to mature festival economies that involve a range of stakeholders, and the paper concludes with an **illustrative** outline for **potential future research work in the case of this city's festival organisations**. Examples of existing work are drawn from a wide range of fields, with particular attention paid to social network analysis methods as applied in tourism research.

The history of SNA's development reveals somewhat discrete antecedents, combining sociometric analysis, interpersonal relations and anthropological research into communities (Scott, 2000). Work by the 'Harvard group' of the 1960s and 1970s brought a step change which saw SNA emerge as a 'method of structural analysis', typified by papers such as Granovetter's work on 'weak ties' (Granovetter, 1973; Scott, 2000, pp. 33-36). A delineated history of social network analysis is now identifiable, with a heritage of research methods and data analysis frameworks that are coalescing around some defining characteristics (Scott, 2000). In the later 20th century proponents of a 'relational sociology' pitched SNA as the basis of a new theoretical framework. Scott identifies Emirbayer as one such advocate, seeking a means of combining 'culture and meaning' with 'exchange or rational choice theories' (Scott, 2000, pp. 36-37). The emphasis remains on structures within societies, with analysis focusing on the methods open to researchers and the extent to which they might be deployed in a variety of situations and contexts (Scott, 2013).

SNA is a means to understanding the influence social actors have on each other, both the influences they are aware of and those they are not (Ormerod, 2012). It asks what effect our decisions have on our friends, family and colleagues and through them to their friends and their friends' friends (Christakis & Fowler, 2010). Partly through network effects people have a tendency to copy others, to emulate their views and imitate their actions (Ormerod, 2012). *Connection* and *contagion* are the complementary concepts on which this science is built. However, these are broad terms that mask a wealth of complexity. Connections may be committed bonds maintained for years, or they could be momentary chance encounters. Contagion – the act of passing something across a network – could be as tangible as presenting a gift or more abstract as when passing on news (Christakis & Fowler, 2010). Unlike the pioneers of SNA, we now inhabit a world where the previously hidden maps of our connections are readily accessible through new forms of social media (boyd¹ & Ellison, 2008). The enigma of 'small world' encounters between apparent strangers loses its mystery in the presence of software designed to encourage, even manipulate, our social interactions and the impacts they

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2
3 facilitate (Shirky, 2009, pp. 212-213).
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6 SNA's breadth of applications, key terms and the presentation of network data 7

8 As the tools available to social network analysts have developed and become more accessible over time, so
9 there has been an appetite for applying them to a greater range of subjects (Crossley, 2010; Edwards, 2010;
10 Heath *et al.*, 2009). This has included health (Valente, 2008) and library and information science (Cooke &
11 Hall, 2013) of late, to understand structure, form, contagion, insiders and outsiders. This expansion of SNA's
12 working parameters suggests its suitability for pioneering and exploratory research though established
13 practitioners are conscious of pitfalls that may occur (Butts, 2009; Scott, 2000). **Such limitations may
14 include, but are not limited to, the tendency to capture only snapshots of dynamic relationships and a
15 resource intensive preference for datasets that capture complete populations. A lack of expertise among
16 researchers potentially risks invalidating their analysis if research fails to capture its intended data: a
17 neglect to recognise differences between professional and private relationships, for example.** To this end
18 authors often take time explain the key terms being used, while establishing their own interpretation of the
19 science (Butts, 2009; Crossley, 2010; Granovetter, 1973). Bringing such methods to bear on festivals and
20 events is an attractive proposition; however, even identifying a social network is not straightforward. Heath *et*
21 *al* point to two approaches, namely 'realist' and 'nominalist' (Heath *et al.*, 2009, pp. 650-654). In the former,
22 the subjects themselves ('egos') identify their network according to whom they deem important. The latter,
23 nominalist approach relies on the researcher to set inclusion and exclusion criteria.
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27 Whether at the local, micro level of workplace connections, or in pursuit of a global macro picture, social
28 network analysis is underpinned by shared, generally agreed, terms and definitions (Hanneman & Riddle,
29 2005). Case studies and examples from the SNA literature encompass sports and global finance, the viral
30 spread of online videos and other ephemera (Christakis & Fowler, 2010; Ormerod, 2012; Shirky, 2009), and
31 the building of research networks (for example, Cooke & Hall, 2013). In all these cases, though SNA is
32 interested in the attributes of individual participants, it is fundamentally concerned with their relationships
33 and connections. The methods used to gather this information need not extend beyond those regularly
34 employed by social science researchers, such as questionnaire surveys, observations and conversations
35 (Bryman & Bell, 2011). Once gathered, however, these data are described and discussed through the
36 language of 'nodes' (individual actors, such as people or places) and 'ties' or 'edges' (the relationships
37 between the nodes, or lack thereof) (Hanneman & Riddle, 2005, pp. ch.1). The breadth of applications to
38 which these approaches appear suited is indicative of the flexibility of these basic ingredients. Once a
39 population has been identified, or a class of node defined, work can begin to map the network and calculate
40 its properties. Here it is argued that an analysis of the staff of festival **organisations** in a given city, along
41 with their key stakeholders, would lend itself to such research.
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45 The use of a sociogram to represent relational data is one of the defining characteristics of social network
46 analysis. This provides an abstracted visualisation of nodes and the ties that may or may not bind them (Scott,
47 2000). It is through such graphs that observers can peer beyond the experiences and perceptions of individual
48 actors, and are able to view the paths by which activity in one part of a network has a calculable influence on
49 others at several degrees of distance (Shirky, 2009). The passing on of gossip, or word of mouth news about
50 job vacancies, funding opportunities, or indeed the next great festival show takes advantage of these ties
51 through a process of 'hyperdyadic spread' (Christakis & Fowler, 2010, pp. 22-24). Network effects pass from
52 person to person, beyond the visible horizon of any individual's perceived social graph to the wider network
53 (Christakis & Fowler, 2010, p. 22; Ormerod, 2012). Sociograms contribute to the presentation of such
54 information. They contextualise the position of a single actor and reveal aspects of a more complicated
55 picture. The process of creating such graphs is however an abstraction, the results a snapshot of the dynamic
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phenomena they represent (Clark, 2007). Complex systems in a state of flux are thus reduced to the presence or absence of a tie between two nodes based on specific criteria (Crossley, 2010; Edwards, 2010). That said, the use of a sociogram to illustrate and define the nature of a **festival related social network** can be a visually arresting contribution to a piece of research about **festivals' networks**.

Small world networks, weak ties and close-knit communities

In a festival city network such as that of Edinburgh the strategic collaboration of stakeholder organisations is made possible thanks to those who can facilitate effective connections between them. Shirky positions these 'efficient and robust' small world social networks between the 'unbuildable' (large scale networks where everyone knows everyone else) and the 'unusable' (large scale networks with few connections such that the distance between two points is too great) (Shirky, 2009, p. 216). In network terms these are 'dense communities or neighborhoods that are loosely connected by boundary spanners' (Tsvetovat & Kouznetsov, 2011, p. 38). Gladwell believes 'their ability to span many different worlds is a function of something intrinsic to their personality, some combination of curiosity, self-confidence, sociability, and energy' (Gladwell, 2000, p. 49). Other terms used include 'connectors' (from Gladwell) (Tsvetovat & Kouznetsov, 2011, p. 38); a 'funnelling' effect of higher network activity through particular nodes (from Milgram) (Clark, 2007, p. 11); and 'short cuts' (Watts & Strogatz, 1998, p. 440). These are people who know people, and on this evidence their role within and between organisations in a small world network is vital. Festival directors, or people who hold positions of influence thanks to their role in key stakeholder organisations, may undertake this role in the context of the city of Edinburgh. In addition, the flows of information and influence between box offices, press offices and other management networks should not be overlooked.

The above terms reflect the concept of 'transivity' as an assessment of how embedded a node is within a network: if a person's contacts tend not to know each other this reflects low transivity, and an opportunity for that person to act as a bridge between higher density groups (Christakis & Fowler, 2010, p. 19). Key characteristics of small world social networks are 'high transivity' for the majority (so most of their contacts know each other) and a 'low average path length' (where few connections are required for people to reach each other) (Christakis & Fowler, 2010, p. 162). What makes this a "small world" is that a few ties, via some well-connected people, hold dispersed groups of contacts together. Low average path length is viable because it is not necessary for everyone in one group to know someone in another: they just need to find a way to one another through the connector. The Edinburgh Festival Fringe's venue map reveals the clustering of temporary venues around geographic hubs, suggesting that small world architecture might be present here as well (edfringe.com, 2012). The efficiencies of high transivity within a cluster of people or venues can be enjoyed without the group being cut off, so long as it has a connection to the wider network. Efficient small world networks offer the best of both worlds: they operate at a large scale by linking tighter sub-networks together, achieved by connecting one cluster of nodes to another (Shirky, 2009).

Whether viewed from a small world perspective or not, some social relationships are stronger than others, and have built up over a period of time and been maintained for mutual and collective benefit. A dense network of strong ties is likely to allow close friends or colleagues to share information and resources with ease. However, networks are rarely formed of strong ties alone. This increases the vital importance of other connections, and has been termed the 'strength of weak ties' (Granovetter, 1973; Granovetter, 1983). A weak tie could be an acquaintance from a previous events industry job, a fellow delegate at a conference or a rarely used connection through a social media platform (boyd & Ellison, 2008). Festival economies provide numerous opportunities to build these connections, not least because the fluidity of the labour market and the 'pulsating' nature of each festival's human resource requirements lend themselves to their creation. To the individual, however, the importance of their weaker ties is often hidden from view. Only by viewing the

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network at a macro scale can these vital connections be identified: the weak ties that facilitate the spread of information, resources and influence from person to person (Wellman, 2002). If a community relies on strong ties, it will experience 'social fragmentation' because there is a limit to the size of group that can be sustained in this way (Clark, 2007, p. 12). Weak ties do not require the same investment, yet their importance to individuals, organisations and whole networks cannot be underestimated.

'Subgraphs' and 'components' can also be identified within a social network and point towards real world groups and communities (Tsvetovat & Kouznetsov, 2011, pp. 61-92). Each term has a specific meaning in social network analysis. A subgraph is a group of nodes within the network, plus all their corresponding ties, and components are subgraphs that are not connected to a larger network (Tsvetovat & Kouznetsov, 2011). Clusters are identified due to their 'contiguity' within a network and their 'separation' from other clusters; they are patches of relatively high density, often visibly apparent in sociograms and calculable through appropriate software (Scott, 2000, pp. 126-127). When a cluster reaches maximal density and each node is directly adjacent to all others it may be described as a 'clique' (Burt, 1992). Cliques are often characterised as having very strong ties and a cohesive group identity. As such they are typical habitats for the development of 'bonding' social capital, which can engender trust, security and other benefits (Putnam, 1995; Wilks, 2009). However, from a network perspective, cliques tend to be poor at encouraging the wider diffusion of ideas. Valuable information can be circulated quickly between actors, but breaking out to the larger network is an altogether more demanding task (Granovetter, 1973). The use of sociograms to illustrate these network characteristics has opened up the social world to new forms of analysis and understanding **of network intensity, even** bringing statistical approaches to bear on otherwise poorly-defined relationships.

Social networks and social media

Since the turn of the century a proliferation of online platforms has brought the social network into mainstream culture, and there is an appetite among their users to know more about how their connections affect them. We can now 'peer beyond our social horizons' and observe our places in a vast web of ties (Christakis & Fowler, 2010, p. 256). Hundreds of millions of people explicitly engage with their social networks on a daily basis, presenting researchers with a trove of data (**on the originator, the recipient, the intensity, content and dynamics of the exchange**) from which to understand these connected lives (boyd & Ellison, 2008). Analysis which takes advantage of these sources is accompanied by particular ethical considerations, where even the term 'public' requires qualification in this context (Tsvetovat & Kouznetsov, 2011). While the disciplined interrogation of these media is yielding considerable information about social phenomena, it should ultimately be made intelligible to those networked individuals being studied.

The growth of social media, while not negating any of the more established features of the festival city's networks, has been welcomed in as a supplementary layer of connections available to those in the festival network. This raises questions of its own:

- **How do they perceive the networks of which they are a part?**
- What impact do these tools have on the experience of individual people?
- To what extent has the number of strong or weak ties changed thanks to social media, and (if so) what does that mean for the spread of information and competition for resources?

For some researchers and festival contributors it may be more straightforward, relevant or important to seek access to social and virtual festival networks than the formalised structures of institutions and stakeholders.

Network based tourism research

Tourism Studies has shown more of an appetite than Events academics for social network analysis. However, references to its limited application in the former are still found (for example, Baggio *et al*, 2010; Mackellar, 2006; Pforr, 2006; Timur & Getz, 2008). Published material from the discipline tends to reflect upon the history of network analysis as a tool and its relevance to multiple fields of enquiry, suggesting a desire to demonstrate the value of these novel approaches (Baggio & Cooper, 2010; Baggio *et al*, 2010). This section of the current paper appraises the SNA data collection, analysis and presentation methods found within tourism research. With event studies having emerged as a critical sector of research it is appropriate that literature from the more established field of Tourism Studies should be considered in this context (Getz, 2012).

Case studies are prevalent in the literature. This is not uncommon in exploratory research. Shih (2006) reveals the geographical routes of self-drive tourists visiting a range of attractions in Taiwan, while Larson (2002) focuses on the political aspects of relationship marketing around a Swedish festival. From an Australian perspective SNA has shown the impact of introducing a convention element to an existing agricultural festival (Mackellar, 2006): greater cooperation between stakeholders was noted, alongside regional economic development, increased innovation and audience development. Regional tourism networks in four parts of the same country are also compared and contrasted, resulting in an analysis which recognises the advantages of breaking from a need to set geographical boundaries when conducting such research (Scott *et al*, 2008). In the Taiwanese example highlighted above reference is made to the 'relatively isolated' nature of the area under consideration, even though it received over seven million visitors in 2004, 'almost 13 times its own population' (Shih, 2006, p. 1033). Isolation can be beneficial in SNA as it aids the identification of the network, its boundaries and means of gathering data (Baggio *et al*, 2010). Such advantages can be transferred to the analysis of festival network cases, where geographical isolation is enhanced by the temporally bounded nature of the phenomena being observed. The examples examined here are of a local or regional scale, again suggesting that their methods may be transferable to festivals and events.

Surveys, interviews and published information are popular forms of data collection in tourism SNA research. Lists of stakeholders are obtained by some, either from local destination marketing organisations (DMOs) (Timur & Getz, 2008) or 'publicly available documents such as membership lists for associations and consortia, commercial publications, ownership and board of directors' records' (Baggio *et al*, 2010, p. 814). Armed with this information it is not uncommon to find that key stakeholders are contacted by researchers to help establish the validity of such lists, leaving open the opportunity for additional organisations to be added, a form of snowball sampling (Timur & Getz, 2008). At times further sampling is used to reduce the number of stakeholders approached with an ensuing survey, from 180 to 54 in an analysis of Australia's Northern Territory and the development of its tourism master plan (Pforr 2006). 35 of those 54 surveys were returned, including nine that were not completed due to reasons such as participants having moved away or died. In Taiwan, Shih's survey was carried out through a randomised trawl of the country's phone directory, which resulted in some 2,142 phone calls over a two week period in early 2005 (Shih, 2006). A mixture of approaches is therefore apparent, supporting the view that SNA methods can here be adapted as required.

Social network analysis carried out by Tribe on the nature of 'territories and tribes of tourism studies' reflects on the development of the subject itself as its early pioneers are succeeded by a new generation (Tribe, 2010, p. 7). 16 in-depth interviews were carried out, 22 emailed surveys returned and 29 published biographical accounts identified, analysed by a researcher with a 'long period of participant observation in the field' (Tribe, 2010, p. 9). This paper is unique among those reviewed with its focus on the academy, yet it is also able to cast a uniquely longitudinal eye over networks in 'constant flux', rather than capturing a potentially misleading snapshot of an otherwise dynamic system (Tribe, 2010, p. 23). On a different scale altogether,

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international tourist arrivals data from the World Tourism Organisation have also been analyzed using network science methods: some 763 million arrivals in 2004 (Miguéns & Mendes, 2008). Identifying the key airports from network analysis was achieved through measures of node centrality, to the extent that key departure and arrival destinations became apparent. As a reflection of the efficiencies of the global tourism system this analysis offers similar insights to those drawn in Taiwan in the search for how best to support both central and peripheral elements of the network. One asks where should hub airport investment should go, the other where drive tourism destinations should establish entry points and what facilities they should offer (Miguéns & Mendes, 2008; Shih, 2006).

Across these papers the data analysed is presented in a range of forms, from sociograms (Baggio *et al*, 2010; Mackellar, 2006; Miguéns & Mendes, 2008; Pforr, 2006), to tables of statistical information (Baggio & Cooper, 2010; Pforr, 2006; Scott, *et al* 2008), and sometimes the extensive use of quotations (Tribe, 2010). There is also a tendency to provide extensive background on the statistical methods and tools used (Baggio *et al*, 2010; Miguéns & Mendes, 2008; Shih, 2006). Just as Tribe identified overlapping networks of tourism researchers, approaching the subject from different perspectives, so SNA offers an array of presentational styles and statistical results to suit the data and the context under examination (Tribe, 2010).

The papers are generally positive about the opportunities SNA affords to those seeking to describe and analyse complex social relations and other relational data. It is advantageous that the industry stakeholders in question can begin interpret the results for themselves, particularly when they are presented in sociograms and other models (Scott *et al*, 2008). Some challenges are identified, from the data-hungry nature of the research to the evolution of networks over time (Scott *et al*, 2008). Each paper is careful not to overstate the generalisability of its findings, although it is noted that these methods can provide important corroboration for existing analysis of politicised stakeholder relations in a destination (Pforr, 2006). Perhaps the most pertinent contribution of all features in Tribe's analysis of the development of tourism studies where he describes the impact of a single meeting in 1974, in Mexico City, which did 'the most to introduce the social sciences and tourism to one another' (Tribe, 2010, p. 24). This is pertinent because it is recognised as having kick-started the academy's interest in tourism, and demonstrating the impact an event can have on a network and thus the benefits to be had from understanding how and why these phenomena influence each other.

Social network analysis of The Festival City: the case of Edinburgh

Two categories of potential benefits to those studying and producing festivals are apparent from this analysis: firstly the conception of festivals and festival cities as networks; secondly the availability of analytical tools to aid further understanding of that network. SNA tools are undoubtedly relevant in the pursuit of understanding and insight into both intra- and inter-festival relationships (Richards & Palmer, 2010). Such analysis has the potential to reveal a different picture from that provided through established stakeholder analysis as the former emphasises personal relationships, rather than the institutionalised frameworks which stakeholder maps tend to deliver (Bryson, 2004; Prell *et al*, 2009). In this regard an understanding of stakeholder relationships is seen as a starting point, a platform on which to build for both the employee and the researcher. In a typical scenario, a festival venue employee may have numerous local connections within the organisation, but if that venue is on the fringes of the wider network its staff will not enjoy much global centrality. The relatively peripheral festival venue, lacking the stronger ties that others may possess, still has connections to the wider network via intermediaries and brokers. Quite who those brokers are and which parts of the organisation they are connected to will vary, **and presentational tools such as sociograms help to reveal this information**. There may also be opportunities to cultivate connections with people in more central positions. Specialist suppliers, such as box office providers, may be well placed in this regard: their influence can be substantial, yet not immediately obvious as they go about developing connections across the

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city. Such situations hold out the prospect of novel research that has implications for festival producers, venue managers and their employees.

Thanks to the scale and maturity of its festival economy, the city of Edinburgh in Scotland presents an appropriate environment in which to test these concepts and to explore the importance of social networks in festival communities. Edinburgh is not a particularly populous destination, yet it is one that supports a disproportionately large number of arts and cultural festivals. Its Festival Strategy of 2001 helped the city take stock of over fifty years of annual celebrations, recognising that particular attributes were working in its favour. These included 'an integrated culture (or industry) with people, ideas and skills moving between different festivals' (Graham Devlin Associates, 2001, p. 14). In 2006 the Thundering Hooves report compared the city to a range of international competitors, many of them bigger in size. It noted the advantages of their relative scale as expressed through public funding, visitor numbers and the overall festival offering (AEA Consulting, 2006). Yet Edinburgh is recognised as possessing a collection of high profile festivals that strive to work together, whether formally through institutions and joint projects, or in the informal 'integrated culture' noted above. Thundering Hooves advocated yet closer and more strategic collaboration between these organisations, resulting in twelve now acting together in key areas under the 'Festivals Edinburgh' umbrella (AEA Consulting, 2006; Festivals Edinburgh, 2012). This has implications for trust and understanding between organisations and individuals, it helps to retain knowledge and experience within the local economy, facilitates shared identities and understandings, and supports numerous careers (Crossley, 2010, p. 7).

The transient and peripatetic nature of festival career paths is a fundamental characteristic of Edinburgh's diverse cultural networks. Employees move from office to office, sharing knowledge and experience through the annual festive cycle. The periods of each festival provide peaks of activity within the calendar, injections of energy as new ties are formed and acquaintances reaffirmed. Between festivals, during lulls that provide time and space to consolidate relationships, a tighter, smaller network emerges: the festival village of close connections and higher transivity where everyone seemingly knows each other and cliques can form. This paper therefore uses the Edinburgh festivals as a suitable destination context in which to apply SNA methods. It does so in line with **Jarman & Theodoraki (2012)** who utilised the case of Edinburgh's Festival City Theatres Trust, managers of two main festival venues, to explore the application of strategic analysis in the study of cultural venue related organisational growth. The festivals concerned here include the sprawling and decentralised Festival Fringe, responsible for 45,464 performances in 2013 across 271 venues and overlapping with several others in the congested weeks of August (Edinburgh Festival Fringe Society, 2013:4). Conversely the Edinburgh International Science Festival is centrally programmed and managed, taking place over Easter in relative isolation within the festival calendar. The remainder of this paper outlines a research methodology proposal with the potential to be applied across these different examples, drawing on aspects of studies mentioned above.

Once one or more key festival organisations have been identified it is proposed that research will be conducted with paid employees to record their existing person-to-person connections on the eve of a festival (Pforr, 2006; Timur & Getz, 2008). A coded list of all festival staff should be drawn up, akin to the lists of stakeholders used elsewhere (Pforr, 2006; Timur & Getz, 2008), as the basis of a paper survey for data collection. Staff members would identify the people most important to their festival work and/or their application to join the organisation, forming the nodes and ties of the resulting network graphs in later stages of the research. From the resulting sociograms a picture will emerge of the density of that organisation's existing pre-festival network helping to identify those actors with greatest centrality and those on the network's periphery. These data could also establish the extent to which the organisation is embedded in a larger network of festival workers, who move from event to event. There is a tacit understanding in many festival economies that in order to build a career in this environment it helps to know the right people and be

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adaptable and flexible; this research methodology aims to examine and provide insights into such assumptions.

A mixed methods approach is recommended to further explore such festival networks. Initially this could include interviews with key people, as identified from the network analysis and the organisation's structure. The experience of holding either a central or peripheral position in the network can therefore be explored, including varying access to resources and any opportunities to exploit a better-connected position. A follow-up survey could be implemented at a later date, using the same staff list and questions but with a sample of the original set. This would help to reveal the impact of the festival period on the network's characteristics and density. Structural changes in the network over time can be examined, seeking to identify the people or circumstances that stimulate such activity and whether it can be effectively directed to the festival's advantage. It is in these elements of the proposed research that the greatest benefits of this work would become apparent to both researchers and festival managements.

This paper therefore advocates the employment of social network analysis methods to contemporary festivals and events, as a complement to the more formalised structures inherent in established stakeholder analysis (Bryson, 2004). Indeed, Prell *et al* (2009) use SNA to inform stakeholder analysis. The authors are aware of the particularities of the different Edinburgh festivals, however the methods outlined above would be appropriate across the range of their management structures and programming processes. Some festivals experience relative isolation in the calendar and this could facilitate cleaner identification of their network, and the impacts of the festival on that network. However a more crowded time of year, such as in August when Edinburgh hosts six international festivals over four weeks, could highlight the degree to which an organisation is embedded in its broader festival economy. Limitations of social network analysis have been discussed, alongside its many opportunities as a research methodology. A greater understanding of intra- and inter-festival networks will benefit festival producers, academic researchers and ultimately those seeking to build careers within the networked festival environment, both in Edinburgh and in other festival cities around the world.

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