# Actors, the Actor Network and Their Impact on Public Space Management: Social Network Analysis as a Method

Dahae Lee ⓘD

## Abstract

Public space is an essential element of cities as it offers several benefits. Due to its significance, there is much discussion of its design, development and use. Although equally important, the management of public space lacks attention in academia and policy. This is regrettable given concerns about the quality of public space and calls for substantial changes in public space management. Moreover, while multi-actor involvement in public space management has become popular, its impact has been less studied. This paper attempts to fill the research gap by presenting an empirical study on Görlitzer Park in Berlin, Germany. Thereby, it focuses on multi-actor involvement in public space management. Based on the results of social network analysis, the paper provides a valuable insight into the actors involved, the actor network and their impact on public space management. Most importantly, the paper argues that the structure of the actor network matters for managing public space. This suggests that improving the actor network can be a key to enhancing the quality of public space. The paper also discusses how to improve communication between actors to better manage public space.

**Keywords:** Public space management ▪ park management ▪ social network analysis ▪ network theory

## Akteure, das Akteursnetzwerk und ihr Einfluss auf das Management des öffentlichen Raums: Soziale Netzwerksanalyse als Methode

### Zusammenfassung

Der öffentliche Raum ist ein wesentliches Element von Städten, da er mehrere Vorteile bietet. Wegen seiner Bedeutung wird ausführlich über seine Gestaltung, Entwicklung und Verwendung diskutiert. Obwohl ebenso wichtig, fehlt es dem Management des öffentlichen Raums an Aufmerksamkeit in Wissenschaft und Politik. Das ist bedauerlich angesichts der Bedenken hinsichtlich der Qualität des öffentlichen Raums und der Forderung nach grundlegenden Änderungen bei seinem Management. Darüber hinaus ist die Beteiligung mehrerer Akteure am Management des öffentlichen Raums zwar populär geworden, ihr Einfluss wurde jedoch weniger untersucht. Die hier vorgestellte empirische Studie zum Görlitzer Park in Berlin, Deutschland, ist ein Beitrag, um Forschungslücken zu schließen. Der Fokus liegt auf der Multi-Akteure-Einbeziehung in das Management des öffentlichen Raums. Basierend auf den Ergebnissen der sozialen Netzwerkanalyse gibt der Beitrag wertvolle Hinweise auf beteiligte Akteure, das Akteurnetzwerk und deren Einfluss auf das Management des öffentlichen Raums. Am wichtigsten ist die Argumentation im Beitrag, dass die Struktur des Akteurnetzwerks für das Management des öffentlichen Raums von Bedeutung ist. Dies lässt vermuten, dass die Verbesserung des Akteurnetzwerks ein Schlüssel zur Verbesserung der Qualität des öffentlichen Raums sein kann. Des Weiteren diskutiert der Beitrag, wie die Kommunikation zwischen Stakeholdern verbessert werden kann, um den öffentlichen Raum besser zu managen.

**Schlüsselwörter:** Management des öffentlichen Raums ▪ Parkmanagement ▪ soziale Netzwerkanalyse ▪ Netzwerktheorie

✉ **Dr. Dahae Lee**, Fakultät Raumplanung, Technische Universität Dortmund, August-Schmidt-Straße 6, 44227 Dortmund, Germany
dahae.lee@tu-dortmund.de

# 1 Introduction

Public space management is an important yet neglected topic in urban and regional planning and urban design (Duivenvoorden/Hartmann/Brinkhuijsen et al. 2021: 2). A limited number of studies suggest that multiple actors are increasingly involved in the management of public space (De Magalhães/Carmona 2009; Lee 2022). However, less is known about the impact of multi-actor involvement on public space management. The question arises of whether and how multi-actor involvement helps public space management to be more effective and legitimate. One way to study multi-actor involvement is to use social network analysis, an approach which has been rare so far in this field. This quantitative method analyses and visualises social relations (Krupa/Cenek/Powell et al. 2018: 136) by examining networks that consist of a set of nodes/actors and the ties that link them (Borgatti/Halgin 2011: 1169). In addition to analysing the attributes of individual actors, it examines "the relations among actors, how actors are positioned within a network, and how relations are structured into overall network patterns" (Prell/Hubacek/Reed 2009: 503).

Against this background, the aim of this paper is first, to identify actors involved in public space management; second, to analyse the actor network; and third, to examine the impact of actors and the actor network on public space management. This paper presents the results of an empirical study in Berlin, Germany. Based on the case of Görlitzer Park, it answers five questions: (1) Who are the actors involved in public space management? (2) How do the actors interact? (3) What form does the network structure take? (4) How does the network structure affect public space management? (5) What should be improved? The paper is structured as follows. First, academic research and discourse on public space management and multi-actor involvement are discussed (Section 2). Then the case study is introduced (Section 3), followed by the methodology (Section 4). Research findings which answer the above-mentioned research questions are presented in Section 5.

# 2 Public space management and multi-actor involvement

Public space brings a wide range of benefits. For instance, several studies reveal the positive impact of public space on property values and business (Punter 1990; Luttik 2000; Van Melik 2008). Other empirical evidence suggests that public space encourages social cohesion and improves environmental quality (CABE 2004). More recently, the pandemic showed the vital role of public space in promoting human health and well-being (Cellucci/Di Sivo 2021).

Indeed, the significance of public space is widely recognised, and its design, development and use are widely discussed. However, what is missing in academia and policy is a closer scrutiny of public space management (Duivenvoorden/Hartmann/Brinkhuijsen et al. 2021: 2).

Public space management deserves attention for at least two reasons. First, management is crucial for public space to fulfil its role (De Magalhães/Carmona 2009: 112). Carmona (2010: 123) suggests that most scholars recognise a general decline in public space and that criticism is largely related to management. Thereby, he distinguishes between over-management (e.g. privatised and invented space) and under-management problems (e.g. neglected, invaded and segregated space). In fact, this concern is shared across various countries (Zetter/Butina Watson 2006). Second, the broader societal, technological, political and economic transformations and uncertainties call for substantial changes in public space from production to management (Zamanifard/Alizadeh/Bosman 2018: 155; Duivenvoorden/Hartmann/Brinkhuijsen et al. 2021: 1). A small number of scholars have discussed how best to deliver public space management. Design-led management is an example. It emphasises the importance of public space design as how public spaces are managed relates to how they were designed in the first place (Carmona/De Magalhães/Hammond 2008: 8).

Interestingly, De Magalhães and Carmona (2009: 119), after observing the evolution of public space management in England, suggested three models based on the roles ascribed to the state, to private agents and to user organisations. Each model has its individual advantages: the state-centred model is characterised by clear accountability and a public interest ethos; the market-centred model makes it possible to draw on resources; and lastly, the user-centred model allows user needs to be better addressed. In fact, the management of public space is considered to be beyond the scope of local government services, and the engagement of multiple actors has been documented (Lee 2022). This shift is part of broader changes in governance. The withdrawal of the state and a trend towards the co-production of services have led to calls for a collaborative approach in public space management (De Magalhães/Carmona 2009: 125). Moreover, public space management involves a wide range of activities – from maintenance work to offering programmes to activate space. To manage public spaces more efficiently, certain activities are delivered by a multitude of private contractors and citizens (Carmona/De Magalhães/Hammond 2008: 8). Yet there is a lack of empirical evidence on the impact of multi-actor involvement on public space management.

One way to examine multi-actor involvement in relation to public space management is to study its governance net-

**Fig. 1** Görlitzer Park
The first photo shows a sign by a park runner asking park users to leave the park clean and tidy; the sign on the second photo was hung by a children and youth facility asking park users not to treat it as a toilet and not to leave syringes or drugs in the area.

works by using social network analysis. Governance networks are defined as "sets of autonomous yet independent actors (individuals, groups, organisations) that have developed enduring relationships in governing specific public problems or policy programs" (Klijn/Koppenjan 2014: 61). This helps us understand by whom public spaces are managed and how. Unlike an attribute-based approach, the network view considers "the web of relationships in which actors are embedded that both constrain and provide opportunities" (Borgatti/Ofem 2010: 18). So regarding park management, one can, for instance, not only examine the characteristics of the actor who successfully manages a park, but also the relations the actor has with others. Borgatti and Ofem (2010: 20) further suggest that the actor's structural position in a network influences the opportunities and constraints the actor will encounter. Also, network structure as a whole determines what happens to the network. Hence, the authors distinguish between three different levels of analysis, i.e. the dyad (i.e. properties of pairs of actors), the node (i.e. how and where a node is connected in the network) and the group (i.e. the network as a whole). They also make a distinction based on whether research examines the causes or consequences of the network structure. This research investigates the consequences of a network structure and looks into the node and network level. Each level involves metrics; the ones that are used for this research are explained in the methodology section.

## 3  Görlitzer Park as a case study

In order to analyse the actors involved, the actor network and their impact on public space management, Görlitzer Park was selected as a case study. Görlitzer Park is a public space situated in the district of Friedrichshain-Kreuzberg in Berlin (see Fig. 1). The park was created in the late 1980s on the site of an old train station. The 13-hectare park includes areas for sport, playgrounds and barbecues, as well as other facilities. Like many other parks in Berlin, Görlitzer Park is subject to high pressure of use. Littering and competing usage claims have been an issue. Moreover, due to violent incidents and drug-related crimes, the park has a negative image.

There were several attempts initiated by the district office[1] to improve the situation, including the project "Unser Görli" (in English: our Görli) between 2011 and 2013, which aimed to resolve conflicts regarding use and mainte-

nance of the park through public participation (Bezirksamt Friedrichshain-Kreuzberg von Berlin 2013: 22). More recently, a Görlitzer Park Action Plan was developed by a Görlitzer Park working group. The action plan suggests a number of measures, among others: offering social support and advice for those who need them, activating areas that are less used, construction, and maintenance and cleaning. The plan also contains ideas about a park council and park and neighbourhood runners (hereinafter park runners), who are important actors, as described in the findings section. According to the plan, the measures are to be coordinated by a park and neighbourhood manager (hereinafter park manager). Thereby, communicative measures such as a website are to be used (Bezirksamt Friedrichshain-Kreuzberg von Berlin 2016: 16). Nevertheless, problems remain. According to the statistics, 584 crimes were registered in Görlitzer Park during the first half of 2021 alone, which made it the most dangerous park in Berlin (Gehrke 2021). Due to the multidimensional problems and the subsequent attempts to improve the situation involving multiple actors, Görlitzer Park provides an opportunity to study public space management.

## 4  Methodology

Document analysis focused particularly on documents relevant to the park published by the district office, enhancing understanding of the local situation and allowing relevant actors to be identified. The interviews led to further identification of actors. In total, 64 actors were identified. Actors who were mentioned more than twice (n=51) were contacted by e-mail and telephone for an interview. Ideally, individuals from all organisations/bodies in the network would have been interviewed, but this was not possible given the limited time and capacity. Altogether, 30 structured telephone/zoom interviews with individuals from 27 organisations/bodies were conducted to gather network data that would indicate how actors were related to one another. Thereby, at least one actor was interviewed from each actor category (see Table 1). Where multiple individuals from the same organisation/body responded, the responses were combined. When there was a contrasting answer between two organisations/bodies regarding whether or not they communicated with each other, it was assumed that there was communication. To identify the actor network, the following questions were asked:

– Which role does your organisation/body play in relation to the management of Görlitzer Park?

---

[1] Berlin has a two-level government system: the senate and districts. District offices in Berlin are a relevant decentralised part of the administration of Berlin (Bezirksämter).

**Table 1** Actors identified as relevant for managing Görlitzer Park

| id | Category | Label (Name of organisation/body) | Level | Sector |
|---|---|---|---|---|
| 1 | Coordination and counselling | Bezirksamt Friedrichshain-Kreuzberg von Berlin (District office Friedrichshain-Kreuzberg of Berlin) | district | public |
| 2 | | Netzwerkstelle Wrangelkiez (Network office Wrangelkiez) | district | non-profit |
| 3 | | Parkrat Görlitzer Park (Park council Görlitzer Park) | district | public |
| 4 | | Sozialraumorientierte Planungskoordination (Social space oriented planning coordination) | district | public |
| 5 | | Straßen- und Grünflächenamt (District office for street and green space) | district | public |
| 6 | Security and order | Ordnungsamt (District office of public order) | district | public |
| 7 | | Polizei Berlin (Police) | city | public |
| 8 | | SI hoch 3 (Parkläufer) (Park runner) | city | private |
| 9 | Cleaning and repair | Berliner Stadtreinigungsbetriebe (Berlin city cleaning service) | city | public |
| 10 | | ÖHMI Service GmbH | federal + | private |
| 11 | | Stiftung SPI (Kiezhausmeister) (Neighbourhood caretaker) | federal + | non-profit |
| 12 | | Wall GmbH | federal + | private |
| 13 | Environmental and nature protection | Naturschutzbund Berlin e.V. (Bezirksgruppe Friedrichshain-Kreuzberg) (Nature and biodiversity conservation union) | district | non-profit |
| 14 | | Stiftung Naturschutz Berlin (Stadtnatur-Ranger) (Nature conservation foundation Berlin) | city | non-profit |
| 15 | | Umwelt- und Naturschutzamt (District office of environment and nature conservation) | district | public |

– Do you communicate with anyone from the list on management issues in Görlitzer Park?
– Are there any other actors you would like to add?

Further questions were asked to better understand the actors involved and their opinions about the current network:

– How do you communicate with others?
– What do you like and dislike about the communication with others?
– What do you think should be improved in terms of communication with others?

The resulting data were analysed in Gephi. The metrics chosen for the analysis can be found in Table 2. The first four metrics are measured at the network level, while the rest are measured at the node level.

Although non-response is likely to affect network structure and metric values, the large amount of data gathered (319 connections identified) allows an insightful analysis of

network structure and general communication tendencies. In the following section, the findings are presented.

# 5  Analysis and findings

## 5.1  Who are the actors involved in public space management?

The research identified 64 actors engaged in the management of Görlitzer Park. The actors were put into seven categories based on their activities regarding the park (see Table 1). The categories are: (1) coordination and counselling; (2) safety and order; (3) cleaning and repair; (4) environmental and nature protection; (5) health and social issues; (6) children and youth; and (7) culture, sport and tourism.

Actors within the coordination and counselling category play a crucial role for the park and the neighbourhood. One of the actors is the district office for street and green space (Straßen- und Grünflächenamt). The district of

**Table 1** (Continued)

| id | Category | Label (Name of organisation/body) | Level | Sector |
|---|---|---|---|---|
| 16 | Health and social issues | Africa Center | city | non-profit |
| 17 | | ARIBA e.V. (ReachOut) | city | non-profit |
| 18 | | Bantabaa e.V. | district | non-profit |
| 19 | | Bundesamt für Migration und Flüchtlinge (Federal office for migration and refugees) | federal + | public |
| 20 | | Caritas Berlin | city | non-profit |
| 21 | | EOTO e.V. | federal + | non-profit |
| 22 | | Fixpunkt e.V. | city | non-profit |
| 23 | | Fixpunkt gGmbH | city | non-profit |
| 24 | | Gangway e.V. | district | non-profit |
| 25 | | GEBEWO Soziale Dienste Berlin gGmbH | city | non-profit |
| 26 | | Gesundheitsamt (District office of health) | district | public |
| 27 | | Johanniter Unfallhilfe, Regionalverband Berlin | city | non-profit |
| 28 | | Joliba e.V. | federal + | non-profit |
| 29 | | Kampagne für Opfer rassistischer Polizeigewalt (Campaign for victims of racist police violence) | federal + | non-profit |
| 30 | | Kontakt- und Beratungsstelle für Flüchtlinge und Migrantinnen e.V. (Contact and advice centre for refugees and migrants) | city | non-profit |
| 31 | | Landesamt für Bürger- und Ordnungsangelegenheiten (State office for civil and regulatory affairs) | city | public |
| 32 | | Landesamt für Einwanderung (State office for immigration) | city | public |
| 33 | | Malteser Hilfsdienst e.V. | city | non-profit |
| 34 | | Rechtsanwalt Benjamin Düsberg (lawyer) | city | private |
| 35 | | Rechtsanwalt Dr. Jonathan Burmeister (lawyer) | city | private |
| 36 | | Rechtsanwalt Lukas A. Kliem (lawyer) | city | private |
| 37 | | Senatsverwaltung für Integration, Arbeit und Soziales (Senate department for integration, labour and social affairs) | city | public |
| 38 | | Senatsverwaltung für Justiz, Verbraucherschutz und Antidiskriminierung (Senate department for justice, consumer protection and anti-discrimination) | city | public |
| 39 | | Senatsverwaltung für Wissenschaft, Gesundheit, Pflege und Gleichstellung (Senate department for science, health, nursing and gender equality) | city | public |
| 40 | | Sozialamt (District office of welfare) | district | public |
| 41 | | Staatsanwaltschaft Berlin (Berlin public prosecutor's office) | city | public |
| 42 | | Suchthilfekoordination (Addiction support coordination) | district | public |
| 43 | | UBI KliZ e.V.(Register Friedrichshain-Kreuzberg) | city | non-profit |
| 44 | | Wrangelkiez-United | district | non-profit |

**Table 1** (Continued)

| id | Category | Label (Name of organisation/body) | Level | Sector |
|----|----------|-----------------------------------|-------|--------|
| 45 | Children and youth | Familien- und Nachbarschaftszentrum Kiezanker 36 | district | non-profit |
| 46 | | Jugendamt (District office of youth welfare) | district | public |
| 47 | | KidBike e.V. | city | non-profit |
| 48 | | Kinderbauernhof auf dem Görlitzer e.V. | district | non-profit |
| 49 | | Senatsverwaltung für Bildung, Jugend und Familie (Senate department for education, youth and family) | city | public |
| 50 | | Spielwagen 1035 e.V. | district | non-profit |
| 51 | Culture, sport and tourism | Berlin Tourismus & Kongress GmbH | city | private |
| 52 | | Berliner Verkehrsbetriebe (Berlin transport company) | city | public |
| 53 | | Cabuwazi | city | non-profit |
| 54 | | Deutscher Hotel- und Gaststättenverband (German hotel and restaurant association) | federal + | non-profit |
| 55 | | Freizeit Basketball Liga e.V. | district | non-profit |
| 56 | | FSV Hansa 07 Berlin e.V. | district | non-profit |
| 57 | | Kult e.V. (YAAM) | city | non-profit |
| 58 | | Kulturamt (District office of culture) | district | public |
| 59 | | Senatsverwaltung für Inneres, Digitalisierung und Sport (Senate department for the interior, digitalisation and sport) | city | public |
| 60 | | Senatsverwaltung für Kultur und Europa (Senate department for culture and Europe) | city | public |
| 61 | | Schul- und Sportamt (District office of school and sport) | district | public |
| 62 | | Schwarzlicht Minigolf Berlin | district | private |
| 63 | | Seitenwechsel - Sportverein für FrauenLesbenTrans*Inter* und Mädchen e.V. | city | non-profit |
| 64 | | Sport 365 | city | public |

Note: Actor number does not match interviewee number

**Table 2** Metrics used for social network analysis

| Metrics | Definition |
|---------|-----------|
| Size | Number of actors |
| Diversity | Number of distinctive types of actors |
| Density | Level of connectedness in a network; the score varies between 0 and 1, where 0 means that a network has no ties at all and 1 means that a network is perfectly connected |
| Centralisation | Difference in importance between actors; the score varies between 0 and 1, where 0 means that all actors are equal in importance and 1 means that there is a reliance of actors on one actor |
| Degree centrality | How many others an actor is directly connected to; the higher the score is, the more an actor is connected to others |
| Between centrality | How often an actor is a bridge between other actors; the higher the score is, the more important an actor is in the flow of a network |

Friedrichshain-Kreuzberg managed to create a new division within the Straßen- und Grünflächenamt, i.e. the department of public space, responsible for designing and developing public spaces within the district. Its tasks include "park and neighbourhood management, which takes care of the needs of different users on site and the department is in contact with the various actors in the green spaces and neighbourhoods".[2] In fact, the idea of park and neighbourhood management came from the Görlitzer Park Action

[2] https://www.berlin.de/ba-friedrichshain-kreuzberg/politik-und-verwaltung/aemter/strassen-und-gruenflaechenamt/oeffentlicher-raum/ (05.02.2023).

Plan in 2016. Currently, three park managers are employed for the entire district. The park manager responsible for Görlitzer Park is the first point of contact for any matters related to the park. The park manager acts as a coordinator and mediator while bringing relevant actors together. The restructuring of the district office and the creation of a position of park manager indicate that the district is motivated to better manage the park.

Another important actor in this category is social space-oriented planning coordination (Sozialraumorientierte Planungskoordination), which is one of the coordination offices within the district. It promotes cooperation among all departments and actors in the field of social space. Regarding Görlitzer Park, it works closely with the park manager and organises a regular exchange called the practitioners' round as well as a round table on Görlitzer Park. The network office is another actor that coordinates actors within the neighbourhood. The park council of Görlitzer Park also belongs to this category as it counsels the district office on making decisions related to the park. The park council was newly introduced in 2018 and is composed of 11 citizens.

Actors in the category of safety and order play an important role as they ensure safety within the park and the neighbourhood. The district office of public order (Ordnungsamt), the police and the park runners belong to this category. The park runner is a particularly interesting concept developed in the Görlitzer Park Action Plan and since implemented. The idea is to ensure safety in the park through social monitoring rather than through the presence of the Ordnungsamt and the police. Park runners monitor the park and its uses, communicate rules of conduct where necessary and offer help to those who need it by referring to social facilities and institutions operating in the neighbourhood.[3]

Cleaning and repairing are other important activities, and are included in the management of the park. Here, the actors include the Berlin city cleaning service (Berliner Stadtreinigungsbetrieb) and a neighbourhood caretaker. The fact that the park is cleaned by the Berliner Stadtreinigungsbetrieb is an exceptional situation as this cleaning service is normally responsible for cleaning streets, while parks are cleaned by firms commissioned by the Straßen- und Grünflächenamt.

Actors in the other categories offer programmes that are related to the park. What is striking is the number of actors in the category of health and social issues. Slightly under half of the actors (n=29) are in this category. Due to the social problems in the park and the neighbourhood, a great number of health and social actors are engaged,

including Gangway e.V., Joliba e.V., Fixpunkt e.V. and Fixpunkt gGmbH. There are also many actors in the category of culture, sport and tourism (n=14) as various activities are offered in the park. Actors offering sport courses or programmes include Sport 365 and Cabuwazi. The network also involves six actors in the category of children and youth. Kinderbauernhof, for instance, is an actor on site offering a place where families and children can come into contact with nature and animals. In addition, there are three actors from the category of environmental and nature protection.

## 5.2 How do actors interact?

There are various formats of interaction used which help actors network, share information and collaborate. It is possible to distinguish between inter-organisational and intra-organisational formats. Inter-organisational formats involve two or more organisations while intra-organisational formats refer to communication within the same organisation through regular meetings and personal consultation (Interviewee 7). Some inter-organisational formats allow for exchange between similar actors. For instance, actors in the safety and order category (i.e. Ordnungsamt, the police and park runners) have their own format where they meet and communicate in the park, currently two or three times a month (Interviewee 7). Actors in the children and youth category also have a working group (i.e. Regional AG and Sozialraum AG) covering but not limited to Görlitzer Park (Interviewee 10, 14).

Other inter-organisational formats allow exchange between dissimilar actors. The practitioners' round is a closed group, which facilitates a monthly professional exchange between district offices and a number of institutions (Interviewee 4, 11). Unlike the practitioners' round, the round table Görlitzer Park is open to all; anyone can take part, from local residents to actors in civil society and district offices (Interviewee 11). Indeed, most of the interviewees confirmed that they attended the round table. It takes place every three months and topics are largely related to conflicts concerning the use of the park, including drug use, playgrounds and homelessness (Interviewee 4). The Görlitzer Park working group is another format. It has several subgroups with different themes comprising criminal and judicial measures, operational measures, measures under immigration law, civic measures, social measures and alternative measures (Interviewee 30). The advantage of inter-organisational formats is that they allow potential collaboration. As Interviewee 16 suggested, even though the daily work of his/her organisation has nothing to do with some actors attending the same formats, if there is a need, he/she can easily make contact.

---

[3] https://www.sihoch3.com/ (05.02.2023).

1-5: Coordination and counselling
6-8: Safety and order
9-12: Cleaning and repair
13-15: Environmental and nature protection
16-44: Health and social issues
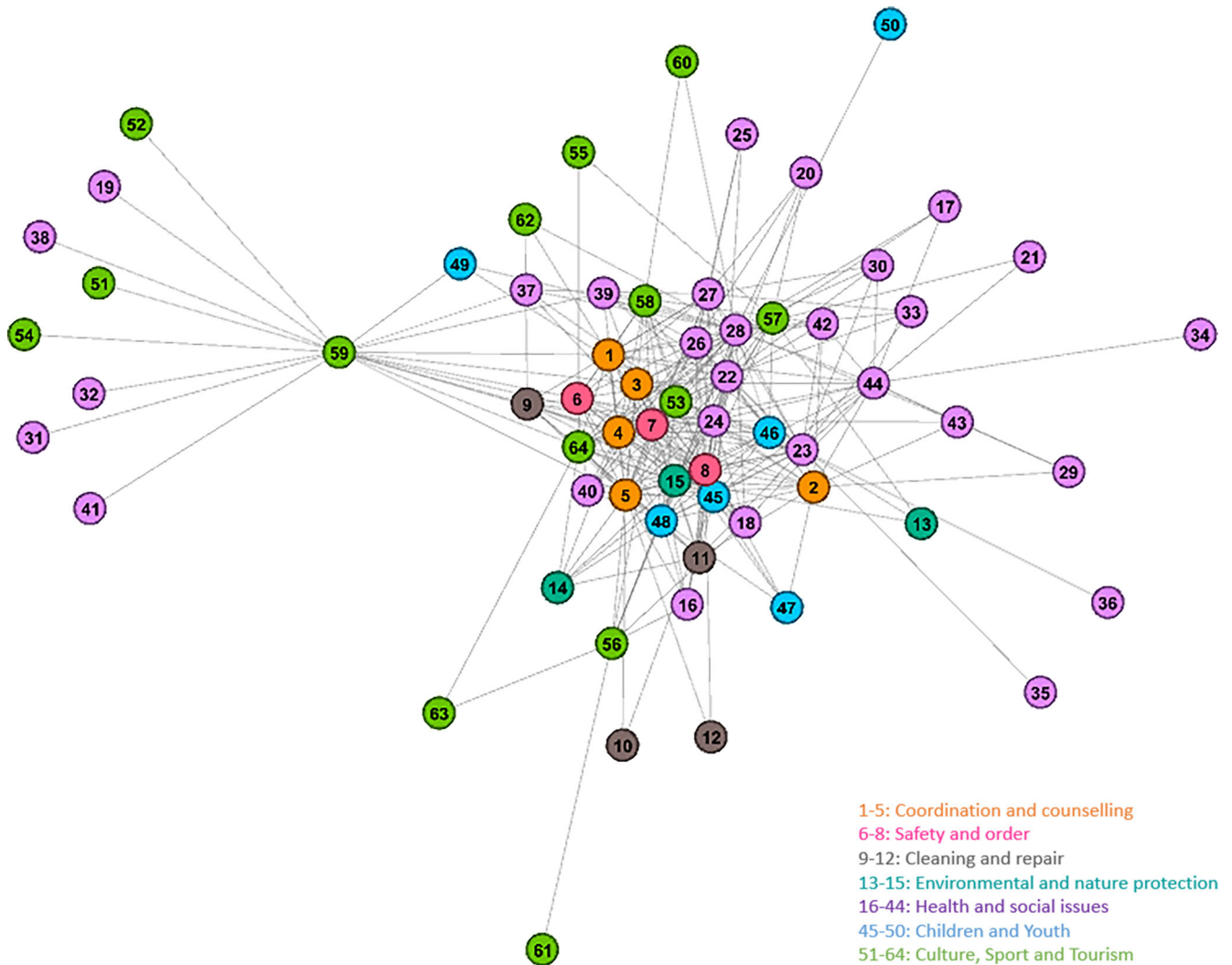45-50: Children and Youth
51-64: Culture, Sport and Tourism

**Fig. 2** Graph based on the actor category

## 5.3 What form does the network structure take?

A range of standard social network analysis metrics were measured, including size, diversity, density, centralisation, degree centrality and betweenness centrality. Network level metrics are presented in Table 3.

In terms of size, the Görlitzer Park management network involves 64 actors. There are various ways to analyse diversity. First, actors are grouped into seven different categories based on their activities (see Fig. 2). When looking at the network structure based on the actor category, it is also noteworthy that all actors in the category of safety and order position themselves in the middle, close to one another. In fact, the three actors are well connected to one another as well as with actors in other categories. The actors in the category of coordination and counselling show a similar

result. Actors in the other categories have mixed results. In general, there is at least one actor from each category who is located in the middle. This actor is well linked with actors in other categories.

Actors can be divided according to the level as well (see Fig. 3) – from district, city and federal levels and beyond. The majority are active at the district (n=23) and city levels (n=33). Only eight actors are from the federal level and beyond. Interestingly, the network structure shows a tendency for actors at the district level to congregate in the middle, while actors at the city level are more dispersed. Actors at the federal level and beyond (n=8) are rather peripheral, except for actors 11 (Stiftung SPI) and 28 (Joliba e.V.). This indicates that actors at the district level play a rather central role in the management of Görlitzer Park.

Actors can be further divided based on the sector (see Fig. 4). A large number of actors are from the public sector
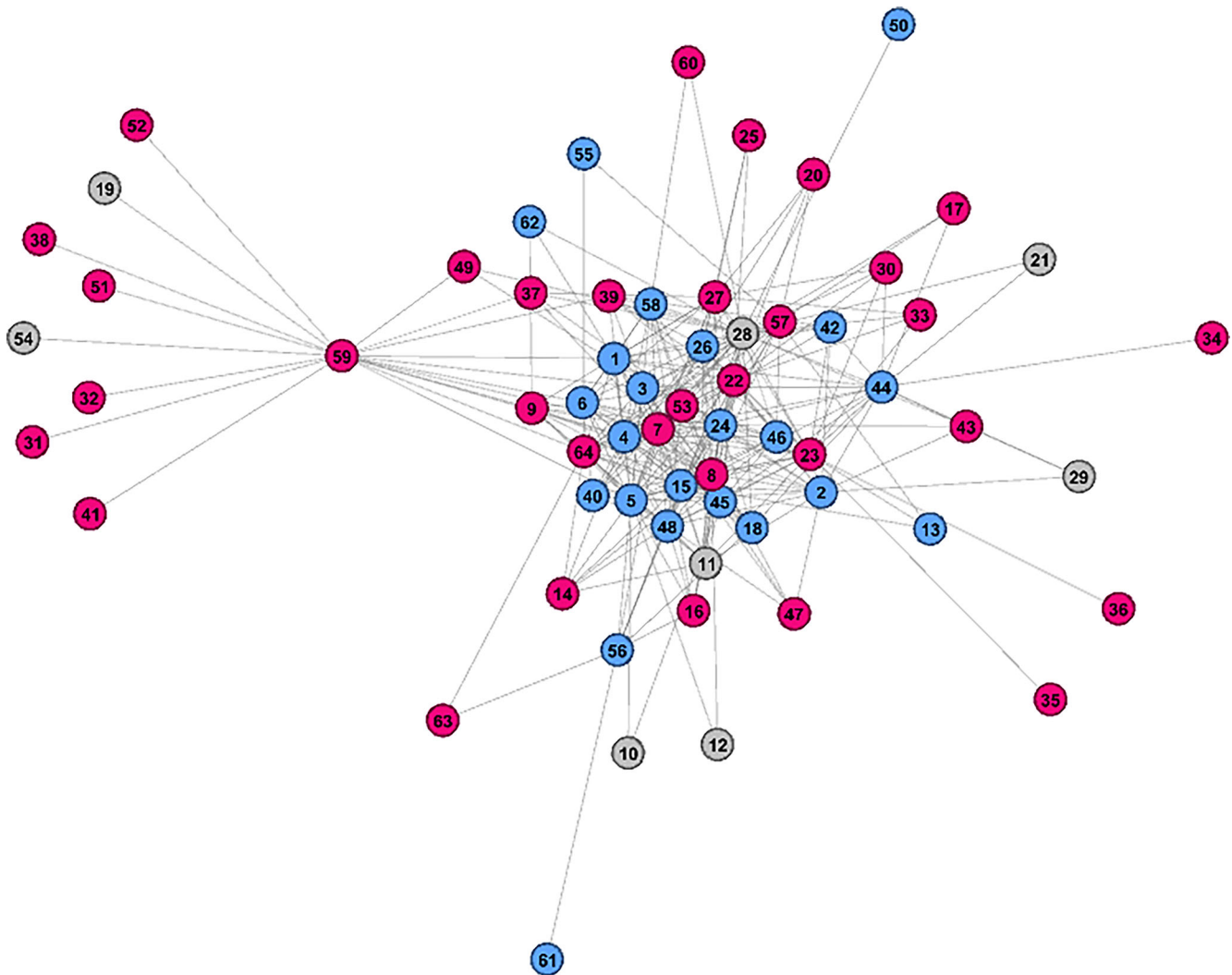
**Fig. 3** Graph based on the level
Note: District in blue; city in pink; federal and above in grey

(n=26) and non-profit sector (n=30). Only eight actors are private actors. The division between the public and non-profit sectors is remarkable in terms of the network structure. While some actors are well connected across different sectors, there seems to be a tendency for actors in the same sectors to be better connected. Interestingly, this is not the case for the actors in the private sector. As Fig. 4 shows, they are poorly connected both internally and externally. The only exception is actor 8 (park runner) situated in the middle of the network.

Actors can be divided into central and peripheral actors as well as based on the degree and betweenness centralities. The high degree and betweenness centralities indicate central actors in the network while the reverse shows peripheral actors. Generally speaking, actors located in the middle have high scores both in the degree and between-

ness centralities. As shown in Fig. 5, the degree scores are divided into three types, i.e. low, medium and high, to better illustrate the results. The top eight actors (in red; number of connections higher than 23) in terms of degree scores are actors in three categories, i.e. coordination and counselling, safety and order, and health and social issues. Four actors out of eight belong to the latter category showing the high engagement of health and social actors in the park. Among 64 actors, 27 have more than 10 ties (above the average), while 13 have only one tie.

The node size indicates the degree of betweenness centrality; the higher the score, the larger the node is. The actor with the highest betweenness centrality is actor 59 (Senate Department for the Interior, Digitalisation and Sport). This department connects the actors who are otherwise disconnected to the Görlitzer Park management network. Actors
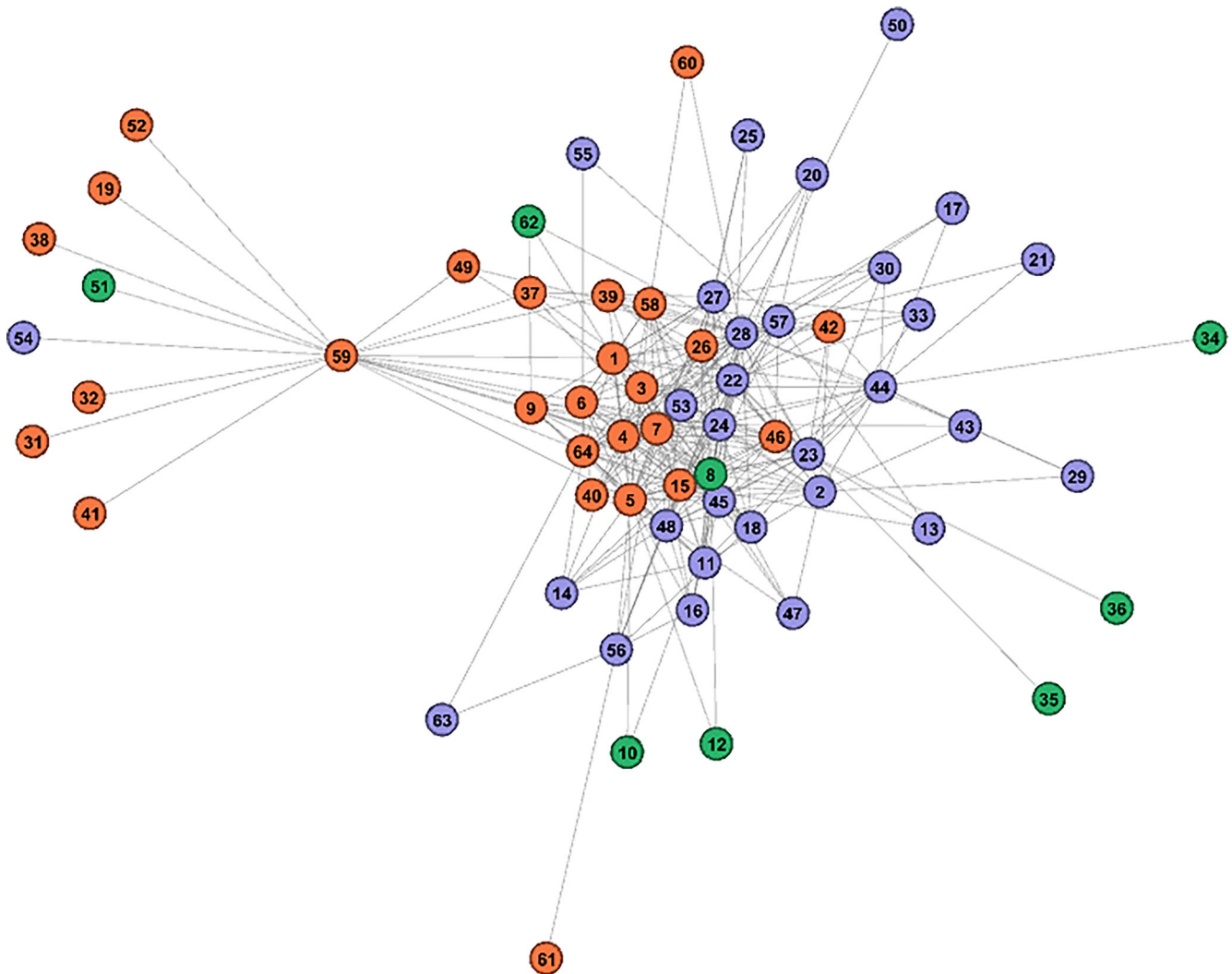
**Fig. 4** Graph based on the sector
Note: Public in orange; private in green; non-profit in purple

with betweenness scores over 100 include seven actors from four categories, i.e. coordination and counselling, safety and order, health and social issues, as well as culture, sport and tourism. Out of 64 actors, 21 have a zero score in betweenness centrality. They are regarded as peripheral actors.

As Fig. 5 shows, actors with high degree scores (dark colour) tend to have high betweenness scores (large size). So for instance, actors 5 (Straßen- und Grünflächenamt) and 7 (police) have high values in degree and betweenness scores, affording them a position in the centre of the Görlitzer Park management network, as their immediate neighbours comprise a diverse mix. However, there are also exceptions, as actor 28 (Joliba e.V.) shows. This actor has the highest value in degree score and the second highest value in betweenness score. Yet a closer look at this actor's neighbours rather reveals homophily (see Fig. 2) as many

of the immediate neighbours comprise actors in the same actor category (i.e. health and social issues).

Density and centralisation were measured in addition to the size, diversity, degree and between centralities. As shown in Table 3, the Görlitzer Park management network is characterised by a low level of density (0.158), i.e. there is low connectivity between actors. Also, the network has a low level of centralisation (0.377), which indicates that actors do not rely on a single central actor.

## 5.4 How does the network structure affect public space management?

Size is a crucial factor when it comes to the management of a park, given the limited resources and capacities each actor has. It is impossible for a single entity to achieve
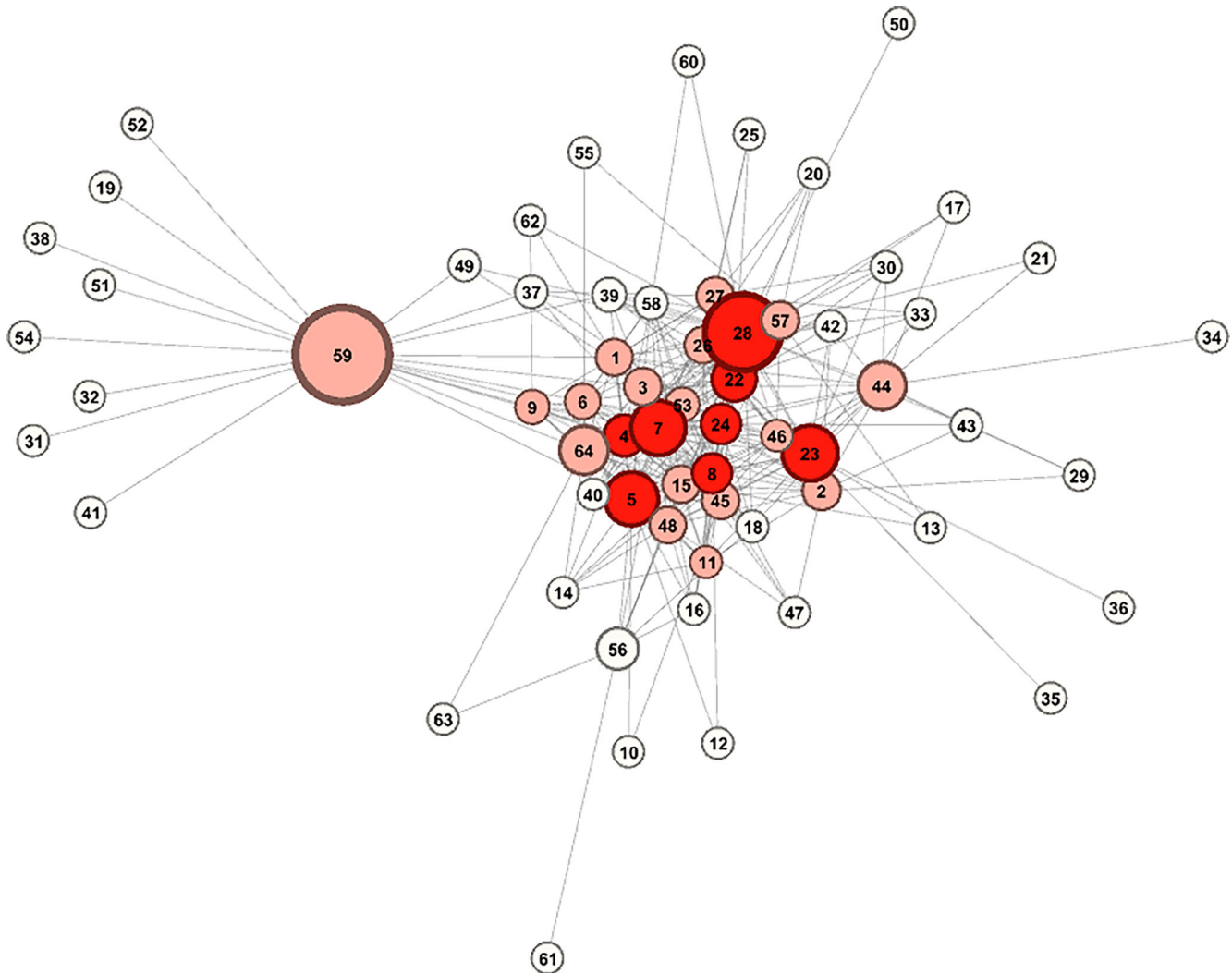
**Fig. 5** Graph based on the degree (colour) and betweenness centralities (size)

a set of goals by working alone. The benefits of having a large network are that common goals can be achieved with synergy effects, and duplication of work can be avoided (Interviewee 30). Yet size also has downsides; for instance, it requires a large coordination effort to ensure the exchange of information between actors: "For this reason, working on the network is often experienced as confusing, ineffective and time-consuming" (Interviewee 30). Also, it is difficult for any actor to know all the others. Indeed, no actor had a complete overview or connections with all other actors. Interviewees were surprised and impressed by the number and range of actors involved. A number of interviewees pointed out the lack of overview in terms of actors and their activities and mentioned that it was sometimes difficult to find the right contact person for certain plans and processes (Interviewee 9, 17). The large network could also lead to slow decision-making and action. Indeed, this was seen as

one of the problems of the management of Görlitzer Park (Interviewee 10).

Diversity is another critical factor for the management of the park, as it needs various ideas, perspectives and forms of expertise (Interviewee 6, 15). The diversity of Görlitzer Park's management network was analysed according to the actor categories, levels and sectors. The result of social network analysis reveals the high diversity of the network, which means more diverse types of contribution and support are readily available. Indeed, the interviewees perceived high diversity as positive and important, as the problems of Görlitzer Park are multidimensional. One of the interviewees used an example to illustrate this: "The police are needed in an emergency case, yet cannot solve the problem alone. It is advantageous that other actors like social organisations are there too" (Interviewee 26).

**Table 3** Network level metrics

| | |
|---|---|
| Number of nodes[a] | 64 |
| Number of ties | 319 |
| Average degree[b] | 9.969 |
| Density | 0.158 |
| Centralisation | 0.377 |

Note: [a] Number of actors in this case; [b] Average number of ties per actor

Others mentioned the difficulty of working with an inter-disciplinary group of people as different actors have different interests. This can lead to misunderstandings and conflicts between actors (Interviewee 15). For example, conflicts emerged within the park council: "The park council is diverse; members have different expectations and interests; it is difficult – at least at first – to work with complete strangers constructively" (Interviewee 1). Some interviewees mentioned a further conflict between the police and users of the park, which is related to the issue of racism and racial profiling (Interviewee 2, 6, 22). Similarly, while referring to the example of measures taken by actors beyond the district level for police operations in the park, Interviewee 14 pointed out that their engagement – without consultation with the actors in the neighbourhood – is not always helpful, as they know less about the local situation.

Centrality indicates how important and influential an actor is to the network as a whole. Among several actors, the Straßen- und Grünflächenamt and its park manager have both high degree and betweenness centralities, indicating good connections with similar and dissimilar others. As a central actor, the Straßen- und Grünflächenamt is responsible for maintaining the Görlitzer Park management network (Interviewee 5). Having a park manager responsible for Görlitzer Park was seen positively by interviewees. Interviewee 14 mentioned that as the Straßen- und Grünflächenamt has become increasingly active, communication and information flow between actors has improved. Other central actors according to the centrality score include social actors, i.e. Joliba e.V. and Fixpunkt gGmbH. Actors in the category of health and social issues tend to have contact with one another. Interviewee 6 confirmed that there is a high degree of solidarity among these actors as they try to tackle the causes of the problems together. The police, another central actor, also have an impact on the park through their presence and operations in the park. In addition, the Senate Department for the Interior, Digitalisation and Sport plays a central role in the flow of the network. By organising the Görlitzer Park working group, it connects actors to the network who are otherwise disconnected. Thus, more actors are added to the network.

Central actors have significance for the network, as the network can break down if they are taken out. The network experienced this to some extent due to changes in those responsible (Interviewee 5): "None of the initiators are there anymore. That is why the cooperation has been difficult" (Interviewee 3).

The Görlitzer Park management network is characterised by low density, meaning there is a low level of connectedness. This has consequences regarding the extent and speed at which information is diffused among the actors. In fact, information does not seem to be transmitted efficiently across the network. One interviewee mentioned that while many good things take place within and around the park, in some of which his/her organisation participated as well, they sometimes lose track as they do not get any feedback (Interviewee 17).

The inefficient spread of information is supported by the relatively low level of centralisation of the network. Indeed, if the network were highly centralised, information flow would be more efficient. While some actors are more central than others, the network as a whole is rather decentralised. This is not necessarily disadvantageous though, as the more long-term goals require a more decentralised structure (Prell/Hubacek/Reed 2009: 504). Moreover, it prevents the breakdown of the network in the case of loss of actors.

## 5.5 What should be improved?

The research reveals that there is a consensus among actors that the actor network is important for managing Görlitzer Park and should be improved. However, there was disagreement on whether to expand the network or not. While some were keen to improve the network by expanding it (Interviewee 7) and thereby promoting the engagement of civil organisations in particular (Interviewee 2), others preferred to improve communication within the existing network: "The more people are involved, the more difficult it is to find a solution" (Interviewee 4). Regardless of whether or not the network should be expanded, the competence of the park manager was regarded as significant as he/she takes the role of coordinator and mediator.

Interviewees made several suggestions about how to improve communication within the existing network. Even though there has been improvement, there is still room for more. For instance, the degree to which the park council was involved by the district in making decisions was questioned. This may be due to insufficient communication between the Straßen- und Grünflächenamt and members of the park council regarding the role of the park council. The number of members of the council has declined, partly because participants' expectations differed and/or they did not feel they were taken seriously (Interviewee 1, 3). In addition, the representativeness of members of the park council

was questioned (Interviewee 2). Furthermore, it seems that better communication may be necessary. One of the ideas was to make changes to the selection process by introducing a quota before the election for certain groups of the population to ensure the diversity and representativeness of members (Interviewee 2). Moreover, members of the park council should be allowed to communicate in foreign languages (e.g. English) (Interviewee 2).

Another point is that some actors, such as Interviewees 18 and 21, wished they had more connections with actors in the network. Others mentioned that continuity in general and in communication in particular has to be improved. Although it seems basic, regular and focused communication has not always been achieved (Interviewees 3, 6, 8), a situation which was even fuelled by the pandemic. Regarding the park council, continuity could also be improved. Currently, members are re-elected every two years. The alternative would be to re-elect half of them every year to prevent a complete change of members: "Things get lost very quickly and you have to start all over again even though all of this has actually been done before" (Interviewee 1). Moreover, commitment from all sides was mentioned as a factor that should be improved. Interviewee 1 emphasised that the public sector actors should contribute if they want to cooperate with civil society. Also, Interviewee 9 stressed the need for more engagement of actors beyond the district, as some tasks simply cannot be done at district level.

It is important to mention that the above-mentioned suggestions require resources. Interviewees often said that there is a lack of financial and human resources to maintain their network and make contributions. Interviewee 13, for instance, said that many organisations are run on a voluntary basis and so they do not have time. For this reason, Interviewee 2 emphasised the need to incentivise certain actors – often the marginalised population – so that they can actually engage. Moreover, some argued that the district does not have enough resources to make real changes in the park (Interviewee 3). Hence, more resources are necessary (Interviewee 3, 7).

A number of suggestions were made regarding the formats of interaction. The current inter-organisational formats were regarded as beneficial, yet interviewees called for more openness (Interviewee 24). The practitioners' round was criticised for being closed; although some actors considered themselves as highly relevant, they were not invited (Interviewee 14). Other formats were suggested as well, including a newsletter or website so that actors could have a better overview of each other's activities (Interviewee 25). Also, information sharing could benefit from a central data storage or cloud which all actors have access to (Interviewee 29). This would allow for more efficient responses if actors

need information regarding Görlitzer Park, for instance, for press inquiries.

## 6 Conclusion

Multi-actor involvement in public space management has become popular, yet there is a lack of empirical evidence on its impact. This paper fills the research gap by studying the governance network of Görlitzer Park using social network analysis, an approach which has been rarely adopted so far in this field. The research reveals that the structure of the actor network matters for managing Görlitzer Park. This suggests that improving the network while enhancing communication between actors can be a key to improving the quality of the park. Yet these actions are not a panacea to the problems of the park. For instance, drug-related problems are related to the country's immigration policy and drug policy (Interviewee 4, 6). They will persist as long as demand remains high and drug dealers do not find alternatives to secure their living (Bezirksamt Friedrichshain-Kreuzberg von Berlin 2016: 50). However, there are actors who are willing to intervene and take action, as evidenced by the large number of actors in the category of health and social issues. Thus, a network between such actors would, at least, mitigate the problems.

Furthermore, as the case of Görlitzer Park illustrates, the roles of park manager and park runner are significant. As other public spaces in Berlin, especially parks, have also shown signs of congestion and use conflict due to their intensive use[4], in 2019, funds were made available to initiate a pilot project in 46 parks across the city. These parks are either of significance to the public or are characterised by specific problems such as intensive use, trash and vandalism, noise, drug selling and use, or homelessness.[5] As the pilot project received positive responses, it has been expanded. Hence, the idea of park managers and park runners has been implemented across Berlin.

The paper concludes by providing some reflections on using social network analysis as a method. One of the difficulties of this type of analysis lies in data collection. A high response rate is desirable to acquire complete knowledge of the actors involved and their connections. To increase response rates, actors were contacted several times, yet some actors still did not respond, or were interested in participating in the interview but did not have enough time or capacity

---

[4] https://www.berlin.de/sen/uvk/natur-und-gruen/charta-stadtgruen/pilotprojekt-parkbetreuung/ (05.02.2023).

[5] https://www.berlin.de/sen/uvk/natur-und-gruen/charta-stadtgruen/pilotprojekt-parkbetreuung/ (05.02.2023).

to do so. Nevertheless, the findings of the research provide a valuable insight into the relevant actors, actor networks, and their impact on public space management. For Görlitzer Park specifically, the results can be used to increase the connectedness between actors, which is an important aspect of improving management of the park.

It should be noted that this research focused on the current state of the actor network only. As the network evolves over time, it would be interesting to find out how and why this happens, and whether and to what extent this change has an impact on the park management. Moreover, given that there are various types of public space, it would be interesting to study the actors involved, the actor network and their impact on the management of different types of public spaces.

## References

Bezirksamt Friedrichshain-Kreuzberg von Berlin (2013): Integratives Parkmanagement 2011-2013. Görlitzer Park. Berlin.

Bezirksamt Friedrichshain-Kreuzberg von Berlin (2016): Handlungskonzept Görlitzer Park. Berlin.

Borgatti, S.P.; Halgin, D.S. (2011): On network theory. In: Organization Science 22, 5, 1168–1181. https://doi.org/10.2139/ssrn.2260993

Borgatti, S.P.; Ofem, B. (2010): Overview: Social network theory and analysis. In: Daly, A.J. (ed.): Social network theory and educational change. Cambridge, 17–29.

CABE – Commission for Architecture and the Built Environment (2004): The value of public space. How high quality parks and public spaces create economic, social and environmental value. London.

Carmona, M. (2010): Contemporary public space: critique and classification. Part one: Critique. In: Journal of Urban Design 15, 1, 123–148. https://doi.org/10.1080/13574800903435651

Carmona, M.; De Magalhães, C.; Hammond, L. (2008): Public space: The management dimension. London.

Cellucci, C.; Di Sivo, M. (2021): Post-pandemic public space. The challenges for the promotion of well-being and public health in the post-covid city. In: Charytonow-

icz, J.; Maciejko, A.; Falcão, C.S. (eds.): Advances in human factors in architecture, sustainable urban planning and infrastructure. Cham, 181–189. https://doi.org/10.1007/978-3-030-80710-8_22

De Magalhães, C.; Carmona, M. (2009). Dimensions and models of contemporary public space management in England. In: Journal of Environmental Planning and Management 52, 1, 111–129. https://doi.org/10.1080/09640560802504704

Duivenvoorden, E.; Hartmann, T.; Brinkhuijsen, M.; Hesselmans, T. (2021): Managing public space – A blind spot of urban planning and design. In: Cities 109, 103032. https://doi.org/10.1016/j.cities.2020.103032

Gehrke, C. (2021): Polizei-Statistik: Das sind die gefährlichsten Parks in Berlin. In: Berliner Zeitung vom 19. Juli 2021. https://www.berliner-zeitung.de/news/polizeibericht-berlin/statistik-das-sind-die-gefaehrlichsten-parks-in-berlin-li.171833 (19.01.2023).

Klijn, E.H.; Koppenjan, J.F.M. (2014): Complexity in governance network theory. In: Complexity, Governance and Networks 1, 1, 61–70. https://doi.org/10.7564/14-CGN8

Krupa, M.; Cenek, M.; Powell, J.; Tammell, E.J. (2018): Mapping the stakeholders: Using social network analysis to increase the legitimacy and transparency of participatory scenario planning. In: Society and Natural Resources 31, 1, 136–141. https://doi.org/10.1080/08941920.2017.1376140

Lee, D. (2022): Public space in transition. Co-production and co-management of privately owned public space in Seoul and Berlin. Bielefeld.

Luttik, J. (2000). The value of trees, water and open spaces as reflected by house prices in the Netherlands. In: Landscape and Urban Planning 48, 3-4, 161–167. https://doi.org/10.1016/S0169-2046(00)00039-6

Prell, C.; Hubacek, K.; Reed, M. (2009). Stakeholder analysis and social network analysis in natural resource management. In: Society and Natural Resources 22, 6, 501–518. https://doi.org/10.1080/08941920802199202

Punter, J.V. (1990): The privatisation of the public realm. In: Planning Practice and Research 5, 3, 9–16. https://doi.org/10.1080/02697459008722771

Van Melik, R.G. (2008): Changing public space: The recent redevelopment of Dutch city squares. Utrecht.

Zamanifard, H.; Alizadeh, T.; Bosman, C. (2018). Towards a framework of public space governance. In: Cities 78, 155–165. https://doi.org/10.1016/j.cities.2018.02.010

Zetter, R.; Butina Watson, G. (2006). Designing sustainable cities in the developing world. Oxford.