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Professional patios, emotional studios: Locating social ties in European art residences

Nikita Basov [a,*], Dafne Muntanyola-Saura [b], Sergi Méndez [c], Oleksandra Nenko [d]

[a] Department of Social Statistics, School of Social Sciences, The University of Manchester, Oxford Rd., Manchester M13 9PR, UK
[b] Centre d'Estudis Sociològics Sobre la Vida Quotidiana i el Treball (QUIT), Institut d'Estudis del Treball, Universitat Autònoma de Barcelona, Spain
[c] Grup Internacional Recerca en Arquitectura i Societat (GIRAS), Escola Tècnica Superior d'Arquitectura de Barcelona (ETSAB), Universitat Politècnica de Catalunya, Spain
[d] Turku Institute for Advanced Studies, University of Turku, Finland

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ABSTRACT

To foster creativity through sociality, residences put artists together. At the same time, in their quest for originality, artists often opt for individualism. Little is known on how physical collocation in residences affects artistic sociality. Addressing this gap, we draw on a combination of interviews, observations, and surveys, analysed with an innovative mixture of abductive coding, computational space analysis, and statistical network modeling. This allows us to unveil how room sharing and object usage relate to friendships and collaborations between residents. Along with explicit individualism of artists, we spot plenty of social ties between them. And these ties are positively related to joint material embeddedness. Simultaneously, the two main types of residential zones – working studios and leisure areas – appear to encourage the types of social ties inverse to our expectations. Our findings inform the practice of artistic residence organising and the proposed approach enables explanatory analysis of the relation between material space and sociality in various settings.

1. Introduction

While the discourse of contemporary art features individualism as one of its cornerstones (Heinich, 2014; Bourdieu, 1984), artistic practice depends on sociality. Artists generate 'artistic gossip', or 'buzz' about concepts and approaches to art, creative techniques, and art market (Oberlin & Gieryn, 2015; Storper & Venables, 2004), which stimulates new ideas, enriches the repertoire of artistic techniques, and broadens their career opportunities. Artists also engage in reciprocal sharing of activities, skills, and resources (Lehman et al., 2018). Furthermore, emotional support received from their peers encourages artists to risk and probe the boundaries of artistic genres as well as to survive the precariousness of their path (Farrell, 2003; Giuffre, 2016).

To gain these benefits, the role of art residences where artists work and live together – apart from saving on the costs of accommodation and tools – is to foster stable patterns of sociality, such as collaborations and friendships. Sharing residential spaces and objects located in these, such as a 3D printer in a shared workshop, or even a kettle in a kitchen, artists regularly encounter each other and, over time, develop routines of informal talk and interaction. These often become the foundation for dyadic (i.e., pairwise) friendship or collaboration ties between the artists, constituting their patterns of sociality.

* Corresponding author.
E-mail address: nikita.basov@manchester.ac.uk (N. Basov).

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Certain spatial zones are likely to afford some types of sociality, but not others. For instance, common leisure zones can be expected to facilitate friendly emotional support rather than professional cooperation. Hence, the architecture and the design of the material space are likely to mold patterns of sociality between the residents, with consequences for artistic practice. This relation is insufficiently investigated in the otherwise vast body of research on social relationships between artists. Aiming to bridge this gap, our paper aims to answer: How is sharing of residential spaces related to artists' sociality? More specifically, we focus on the relation between two types of spatial zones in artistic residences – private working studio rooms and common leisure areas – and the patterns of collaboration and friendship ties between artists.

To explore the complex effect of space on artists' sociality patterns, we developed a mixed-method approach. We started with an ethnography of visual artists in two residences located in Barcelona and Hamburg, featuring a social network survey among the members of each residence, interviews with them, observations of their daily creative practice (including usage of material objects), and collection of information on material configurations of the residences. Subsequent qualitative analysis of ethnographic materials, computational spatial analysis, and statistical network modeling juxtaposed subjective perspectives to statistical regularities in the effects of residential spaces on artists' sociality patterns.

Our results show that while artists reproduce individualistic discourse when speaking about their residential spaces, in practice these spaces mold residents' patterns of sociality. Moreover, we find different types of spatial zones related to different types of social ties between the artists.

In what follows we, firstly, substantiate our argument on the relevance of sociality for art and the relation between spaces and artists' sociality patterns. Then, we present our dataset and methods of analysis. We proceed by introducing the findings and discussing them in the broader context of sociology of arts and creativity literature.

2. Artistic practice, artists' sociality, and residential spaces

2.1. Sociality and artistic practice

Artists' individualism is a shared context for their sociality (Heinich, 2014). However, individualism is not inherent in the creative process as such. Rather, individualism is a powerful myth (Feyerabend, 1987) that emerged with deep historical roots in Europe. In Simmel's (1908) terms, the Enlightenment's rationality and the Romantic ideal of individualism gave way to the path of distinction in the 20th century. The artist has been expected to present (and perceive) themself as a 'lone wolf', a hero whose work is self-sufficient and over-empowering. Nowadays, this individualistic regime is reinforced by the personal construction of a lifestyle that highlights distinction (Bourdieu, 1984). To succeed in the market as producers, artists must be the first to create a novel work that is recognized as such by artistic authorities, intermediaries, patrons, and publics (Becker, 1982; Heinich, 2014).

Contemporary art practice is deeply impregnated by this social doxa. Bourdieu (1984) considers the subjectivity of taste and aesthetic judgment as an expression of contemporary individualism. However, as (Bourdieu 1983, 316) himself also notes:

> One might usefully point to the contribution of Becker (1974, 1976) who, to his credit, constructs artistic production as a collective action, breaking with the naïve vision of the individual creator.

Indeed, while contemporary artists are individualist, their practice depends on sociality. They find pleasure in meeting others with a 'similar eye' (Elsbach, 2009). In the 'buzz' of spontaneous and informal day-to-day encounters, especially during leisure time, artists exchange important information on the art market, creative techniques and materials, as well as the insights on career opportunities (Oberlin & Gieryn, 2015; Storper & Venables, 2004). Furthermore, as Lutter and Weidner (2021) put forward, creativity is not only driven by broad information exchange, but also by trust and experience. This makes crucial regular and continuous interactions in 'creative circles' providing personal warmth, feeling of safety, advising, mentoring, and sense of belonging (Becker, 2014; Farrell, 2003).

Collaboration and friendship dyadic social ties are among the key means of artists' sociality. It is the supportive environment of dyadic relationships (Becker & Useem, 1942) where artists can suggest non-conventional ideas while conducting their uneasy quest for innovation and struggling with the dominant artistic paradigms (Farrell, 2003; White, 1993). In his in-depth study of creative circles, such as the French Impressionists, Farrell (2003, 23) shows that

> it is the paired members that are likely to make the discoveries or to develop the style of the theory […] The moments of discovery […] take place when a pair of friends are so open and trusting with one another that they can share their wildest, most tentatively held ideas. In these moments, new ideas seem to emerge from the dialogue without "belonging" to either of the pair, and afterward they may not be able to say who had the ideas first.

Indeed, not only friendships but also collaboration ties are relevant for creativity. For instance, from 1863 to 1867, most of the trademark ideas of the French Impressionist circle, such as finding colors in shadows or capturing the play of light on the water by combining rapid brushstrokes with unmixed colors, resulted from experiments and discoveries made during side-to-side work of two dyads: Frédéric Bazille and Claude Monet, and Auguste Renoir and Alfred Sisley. Farrell notes that it is not possible to determine who in each dyad originally came up with the new creative combinations. Rather, these combinations were brought about by their dyadic interaction (Ibid., 41):

> They arrived at the vision as they worked alongside one another, commenting on each other's work, experimenting, making mistakes, deciding to include some mistakes, and eventually discovering the effects they preferred. It is not likely that either

> would have arrived at the new style alone, but together they had the courage to go beyond the limits, creating a new synthesis of the elements they had been working with.

Social network ties allow artists not only to propose new creative approaches, but also to confront the effects of their social dispositions, mediating between different positions in their professional fields (Basov, 2020), and even transforming these fields (Basov et al., 2021). Farrell (2003) describes how numerous professional interactions between the French Impressionists – such as discussions of the circle's painting techniques and topics, joint exhibitions, and casual interactions in cafes – over the years enabled establishment of perhaps the most popular painting style in human history, despite strong resistance of their contemporary art scene.

2.2. Artistic residence as the place of artists' sociality

Whereas sociality is fleeting (Simmel, 1908), material space is not. It, therefore, serves as a meeting point (rendezvous) that fixes passing relationships in space and time. Multiple encounters in material contexts, occurring throughout artmaking, hold together "technical objects, material supports, carriers and instruments, but also discourse, practices, performance devices; all which a durable art requires" (Hennion, 1997, 416). Relations between creative professionals are built into the process of art production and therefore molded by its materiality (Roberts & Strandvad, 2023).

For millennia, artists are sharing living and working spaces in communes, ateliers, artistic spaces, studios, and residences – to foster and maintain exchanges, encounters, discussions, and even confrontations (Elfving et al., 2019). An iconic example is the French Impressionists, who often lived and worked in the same spaces, and developed their trademark techniques in the process, while observing each other at work and discussing what they saw on the spot and after (Farrell, 2003). A number of countryside artistic colonies in the 19th and 20th centuries were the places where artists experienced together the sights, colors, sounds, smells, and details of nature as well as each other's company, which led them to develop the plein-air practice (Lübbren, 2001). A more recent example is Andy Warhol's 'Factory' (Jones, 1991). There, making of the silkscreen artworks was 'managed' in a flow-like space with darkened rooms as a collective process. Being together in the same material space allowed Factory artists to join the production of artistic works made by Warhol or participate in the documentation of the art-making process and talks about art. Casual interaction, artistic buzz, and spontaneous performances in numerous corners and hideouts of the factory, which Warhol meticulously documented as a nagging (self)archiver, were inducing creative process (Laing, 2016, Ch. 3).

The contemporary form of collective accommodation for artists is the residence. In contrast to the romantic ideal of solitary privacy, residence is a "practiced place" where the ordered chaos of artistic routines meets the art and the social world (Jacob & Grabner, 2010). Policymakers expect residences to provide artists with opportunities for sociality: develop ideas and connections, professionally network, learn new skills, and increase cultural awareness and competencies (European Commission, 2014). The 'spontaneity' of the material assemblages of people and things that artists encounter in the residences, enables "new networks of relationality through which new identities and redistributed sensibilities can emerge" (Lithgow & Wall, 2017). The material design of contemporary artistic residences aims to accommodate interactive and socially oriented art practice (Badham, 2017). Residences are organized in ways calling for artists to interact and be socially active, and new concepts such as 'collective artist residence' emerge to highlight the interactive nature of residences (Eernstman et al., 2021).

2.3. Artists' sociality across different spatial zones

Following Hillier and Tzortzi (2006), space has its own syntax, that is, its own geometry that shapes the behavior of users. Some spaces are dialogical, and imply some kind of actions, but not others (Muntañola, 2009). Spaces are designed to induce a type of sociability which has diverse chronotopic – space and time – dimensions. According to Pigrum (2007, 293),

> the place 'around about' the artist (i.e., the studio) constitutes for the artist the 'thick of things' and is arranged according to a preference for certain schemas that direct the manner of searching and the possibility of finding, of invention.

Some residences are specifically designed to foster a particular relation between materiality and sociality. For example, remote residences in natural spots following the 'green cube' concept engage all residents into interaction with and about nature, into discussing how to perceive it, how to make an artwork without spoiling the existing aura of the surroundings (Michelkevičius, 2019).

Irrespective of the approach taken, contemporary artistic residences are expected to provide creators with the time and space for original, novel, inspiring experience of interaction and a non-trivial local world, which results in new professional acquirements or artworks even if they remain unfinished (Elfving et al., 2019). Residences are to be the learning environments, where space and time are configured in such a way that artists educate through constant exchange with others and even can recreate their own identities (Serino, 2015). Accordingly, residential spaces are usually organized as an open flow, without strict barriers, with changeable items and elements. The principal openness and momentariness give artists the power to think together of interventions, performances, and rituals they want to establish in the place. For instance, artists from different countries can discuss their national meals and cook them together in the shared kitchen space as a kind of an introductory ritual into each other's culture. Artists often visit each other in their individual working areas (this possibility being part of the material code of the residence, e.g., no doors on locks, 'soft' doors made of cloth), and chat about their daily accomplishments and challenges. Together, they tend to a garden on the roof of the residence where they discuss growing vegetables for their meals, talk about their residential impressions as well as life memories, watching the skyline, and nonverbally communicate with their bodies in the unique rhythm of life in the residence (Basov & Nenko, 2013).

Material features of residences structure artists' sociality. For instance, Motalebi and Parvaneh (2021) show that light, object

design, color, windows, spatial possibilities to interact as well as the existence of personal space impact communication and creative process of the artists in residences. Shared areas of the residence dictate artists certain 'spatial norms' of interaction or ways of making and being together, such as cooking food side by side in the kitchen area during the lunch time, exchanging daily news over the coffee machine where newspapers/TVs are located, or sitting next to each other in the patio during breaks in work for a breath of air.

The norms of interaction vary throughout spaces. Descriptions of artistic residences in the literature usually distinguish between resting/socializing leisure areas and working/manufacturing areas (Badham et al., 2017). For example, residential spaces often have a spacious courtyard to gather artists for social events and feature areas for cooking, eating, and drinking. Such configuration of the residence gives a material substrate for small talk and coffee/tea breaks amidst the working process. There, artists share their personal news as well as career related plans, and valuable insights often occur spontaneously while chatting over coffee.

Meanwhile, studio rooms allow for looking at each other's works, comparing techniques, and discussing the best solutions for using materials and tools. As a result, artists can start employing new materials, or get to develop new techniques, e.g., fascinated by each other's brush strokes. Artists can also talk about the complexities and ways of managing materials which creates a specific "techno intensity" in connections between them (Kontturi, 2018, 76–81).

Material context of spatial zones molds sociality among artists not only via its functional designation, but also by providing shared objects and the rules of their usage. Artists co-located in residences often have access to bigger, more expensive and therefore shared tools (e.g., a 3D printer or a circular saw), as well as stores of materials for creative usage, triggering artists' interaction about and even merely around (Basov & Nenko, 2013). Brief communications take place in the halls or exhibition areas of the residences, to share hands-on and know-how operational knowledge – e.g., how to cut the wood with the saw or how to hang together pictures of different styles on the wall (Farías & Wilkie, 2015). Junior artists or newcomers coming to a residence are usually introduced to the tools by senior or more experienced ones (Lehman, 2017); the former appropriate from the latter the rules of how to use the tool and the schedule of its usage established in the space. Such interactions, enforced by a material object, often lead to construction of power relations between senior and junior, or older and new artists – based on their access to situated knowledge. Simultaneously, individualism and limited shared resources often provoke dialogical exchange of experiences and stimulate collective decision-making on how to organize the usage of objects for the common benefit. Similar processes take place regarding everyday common objects, located in kitchens, dining spaces, and leisure areas.

2.4. Spaces of friendship and collaboration

An artistic residence is a "workshop, lab, factory, sanctum, lounge, home, and social network" (Jacob & Grabner, 2010, xiii). Artistic residences are therefore likely to stimulate both friendships and collaboration dyadic ties. Examples of collaboration ties are joint creation of and/or promotion of artworks, organizing exhibitions together, community engagement, and marketing (Oberlin & Gieryn, 2015). Friendship ties between artists usually involve emotional support, advice, mentoring, or mere hanging out together (Farrell, 2003). When artists live and work under the same roof, surrounded by things needed for creative practice, such as easels, saws, tables for cutting wood or polishing paintings, stands with toolboxes, they tend to ask each other for advice on the better usage of tools, comment on sparing useless items, or request lending. Alongside with creative objects, non-professional items, such as cooking equipment, furniture, and food, would stimulate conversations about organizing everyday life together. Different spatial zones of the residences filled with different types of objects are likely to stimulate different types of social ties.

In particular, tools and materials usually fill studio areas, where work takes place. There, artists can be expected to meet others involved in joint projects, discuss the rules for using and caring for things, and allot materials for work. In such areas, emergence of ideas for collaboration as well as exchange of tools and materials in dyads of artists are likely, especially when studios are private and can be a sanctuary for the dyad to create its original ideas.

Meanwhile, in common recreation spaces such as a kitchen or a patio, where water boilers, fridges, coffee machines, printers, and similar items are located, artists can be expected to negotiate the instructions for food storage, keeping tidiness of the utilities, ordering and sharing consumables. It appears plausible that common areas of leisure and everyday life foster friendly interaction during joint meals, casual conversations, and occasional personal talks, sharing about everyday matters or the emotional challenges of pursuing an artistic career.

Indeed, previous statistical analyses have shown that individual and joint engagements with material objects in shared spaces relate differently to dyadic collaboration and friendship ties between artists (Basov, 2018). However, little is known about the relation between different types of spatial zones (with the corresponding types of objects filling them) and different types of social ties. Further analyses examine how dyadic friendships and collaboration ties between artists are affected by sharing of private studios and engagements with the materiality of common leisure areas.

3. Data and method

This section presents our approach to collection and analysis of the data gathered during autumn 2014 in two European visual art residences located in Barcelona and Hamburg. Sociality of artists can be explained through their personal networks (Comunian, 2017). Our study follows this path and focuses on patterns of social ties among the artists, namely, collaboration and friendship, known as the core domains of social networks (Torlò & Lomi, 2017).

3.1. Research cases

Our empirical inquiry considers artistic residences, members of which live and work in shared material spaces. Each of the spaces includes both private studio rooms, usually accommodating two artists, and common areas of everyday practice, such as kitchens, bars, patios, and courtyards, where all members of the residences can encounter each other. The artists' creative practice consists in creation of visual artworks, such as paintings, drawings, prints, sculptures, installations, or collages. These patterns of material practices and interactions between members unfolding in a shared space are accessible for observation via an ethnographic inquiry. In particular, we studied art residences based in Barcelona and Hamburg, which allowed us to ethnographically track the materiality of the residences operating in different cultural contexts.

The Barcelona residence was founded in 1993. In 2003 it moved to a central neighborhood, and launched a series of educational workshops for children and families in which artists were and still are sometimes involved. Our study focused on 11 core artists who stayed in the residence on a long-term basis and continuously engaged in group work. While all of them were to participate in educational activities, many of the artists also worked on their independent projects ranging from graphics, photography, and filming to design and installations. Some of the residents were responsible for development of the educational program, organizing of educational workshops, and teaching.

The Hamburg residence was established as an association of professional artists back in the 1970-s, to accommodate artistic living, working, exhibiting, and communication under the same roof. The residence, managed by a co-operative society (*Genossenschaft*), at the time of data collection included 13 core members. These individuals worked in various genres and techniques from painting, graphic arts, sculpture, and photography to video and sound art, installations and performances, all in the format of contemporary art. Many of them also worked as curators or artistic projects coordinators.

3.2. Data collection

Our dataset comes from a larger longitudinal ethnographic study conducted from 2014 to 2016. Uniform procedures for each of the art groups were followed. Each of the cases was studied by a team of researchers with backgrounds in sociology or social anthropology.

Following the mixed-method approach in network analysis (Bellotti, 2014), social network survey data were combined with ethnographic data such as interviews, observation data collected by visual tools, and photo elicitations (a visual prompt method collecting participants' comments using photographs of the spaces (Zeitlyn & Banks, 2015)).

Ethnographies and in-depth interviews with video and photo elicitation (Harper, 2002) gathered subjective perspectives on career and biographical trajectories of the members, relations between them, and their identities. These tools also collected information on the usage of residential spaces and material objects in their work-related and everyday activities, allowing us to map relations between individuals and spaces. Firstly, ethnographic data provided the information on which artists shared private studio rooms. Secondly, we used these data to create lists of links between each artist and the shared objects located in the common areas they were regularly using. Triangulating each other across different types of data, these lists were used to create a joint two-mode matrix of relations between individuals and shared objects in each of the residences (for details, see Basov and Kholodova, 2022), providing descriptions of objects and their ways of use as node and link attributes – for subsequent qualitative interpretation.

Social network surveys relied on the roster method supplemented with visual verification. In the first stage, we presented each of research participants with a complete list of other participants. To capture collaboration ties, we asked them to indicate each person who they cooperated with at least once a week over six months prior to the study. To obtain friendship ties, we asked to indicate those who they felt strong emotional attachment to. We preferred to keep the interpretation open-ended and let artists rely on their own understanding of joint work and emotional attachment. This approach increases ecological validity of data collection, as it captures respondents' own perspectives on social ties. At the same time, whenever asked during survey data collection, field researchers offered examples of collaborations and friendships, such as the ones provided in Section 2. After comparing all the answers, we kept the ties confirmed by both artists in each dyad for each type of ties and moved into the second stage.

In the second stage, we showed printed network plots (separately for each type of ties) to the residents asking them to decide on the ties where one resident named another but was not named in return. Comparing pro and con answers for each tie, we resolved controversies in the individual survey reports. When ambiguity remained, the data from observations and interviews were used to confirm whether a tie existed or not. Two binary social network matrices – friendship and collaboration – were the output on each of the residences.

Finally, for each of the residences, social network ties between individuals and their affiliations with objects were combined into a joint socio-material network (Basov, 2018), including attribute information on residents' studio room and gender. These networks contained patterns where artists connected by friendship and/or collaboration ties were sharing objects located in common areas and private studio rooms, thus allowing to capture the effect of space sharing on being connected by social ties.

3.3. Data analysis

We analyzed the data using both quantitative and qualitative techniques. On the qualitative side, based on the grounded theory principles (Corbin & Strauss, 1990), we applied Atlas.ti software to select by abductive coding relevant quotes from the interviewed artists.

To examine the architectural spaces of the residences, we conducted computer simulations using Space Syntax software (Hillier & Tzortzi, 2006). This tool is capable of putting together the spatial configuration with a social interaction predictive model, through

spatial and mathematical integration of space. We applied two analytical techniques: (1) accessibility and visibility analysis, where movement trajectories of individuals are simulated, and (2) possibility for interaction analysis. Accessibility considers 30-cm distances within one floor of the residence, where furniture and other material barriers are considered as the shapers of mobility. Visibility works with a 140-cm distance as an indicator of frontal visual orientation of the residents. For the purposes of interaction analysis, spatial zones of the residence (studios, common areas) are considered as closed polygons, ordered according to their interactive potential.

To examine relations between the two types of sociality and different spatial zones of the residences, we conducted two-layer statistical network analysis combining collaboration and friendship social ties, studio sharing information, and the links representing the usage of objects in common areas. After preliminary descriptive considerations, we applied Multilevel Exponential Random Graph Models, or MERGMs (Wang, 2013). ERGMs estimate parameters associated with the effects of different network configurations on bringing to life and/or maintenance of a specific empirical network. MERGMs, in particular, enable joint modeling of different kinds of relations (here, social ties and object usage) between different types of nodes (here, individuals and objects).

We used network effects proposed by Wang (2013). *Ties* effect captures baseline propensity of individuals to establish social ties. The parameter for this effect is not interpreted in ERGMs. *Star formation* is related to the tendency for some actors to have multiple social ties. *Triadic closure* is the tendency for individuals to form tripartite relationships. *Gender homophily* controls for the tendency to establish social ties between individuals of the same gender. *Private studio ties* effect captures the tendency to establish social ties between individuals who share private studio rooms. *Common area ties* controls for the relation between using material objects filling common areas and having social ties, including the relation between the number of social ties and the number of objects used. *Disjoint common area ties* relates existence of dyadic social ties to dyadic differences in object usage. Finally, *Joint common area ties* stands for the relation between social ties and joint usage of objects filling the common areas.

Separate models were produced for collaboration and friendship ties – to trace differences the two types of sociality have in their relations with space. The two socio-material networks were analyzed in an aggregated fashion, prohibiting ties between the artists in different residences by using the 'structural zeros' approach (Kalish & Luria, 2013). To capture the effects of object usage on social ties but not vice versa, the usage network was 'fixed', i.e., not modelled but accounted for as an exogenous 'variable'. We tested the goodness of fit (GoF) of the models running conventional procedures (Hunter et al., 2008) extended for the multilevel network configurations (Wang, 2013).

4. Findings

Our presentation of findings offered by the different types of analyses corresponds to our mixed-method approach. Namely, it combines ethnographic evidence from interviews and observations, and modeling results obtained using Spatial Syntax and Multilevel Exponential Random Graph Models. We start with an outlook on artists' shared discourse on co-presence in residential spaces. We proceed with the results of computational space analysis supplemented by an analysis of ethnographic observation data, examining their affordances for sociality. Finally, we present the findings of statistical network modeling, on how the opportunities offered by the residential spaces are taken by the patterns of the two types of artists' sociality: collaboration and friendship.

4.1. Artists' perspectives on sociality

In their interviews, artists mostly reported their joint attendance with studio partners to not translate into interaction. For example, Alan repeats the word 'different' four times in the same sentence, generating a distance between his studio partner and himself. They are physically and perceptually very close, but far away in professional terms:

> We have very different ways of working, a different language, a type of research process that is different. We are in two different lines of work, so we get along really well, but maybe there is no feedback, we talk about art but not about our projects. (Alan, male artist, 34)

Other artists even coordinate their schedules to avoid interaction with their studio partners so that only one artist is present at a given moment in time, which is what Ferran points out:

> We spoke a couple of times with Mariona [his studio partner], but we did not share too much, like, the timing. She comes in the morning, I come in the afternoon. (Ferran, male artist, 38)

Artists do not seem interested in benefiting from the socializing opportunities provided by material resources and tools from the studio rooms and purposefully choose the studios that minimize interaction. In the following quote, Jenny describes her creative process in terms of uncertainty. She specifically recalls a situation in the past where sharing her studio with others resulted in damaging her own work. She thus chooses a smaller studio because of the risk of undesired interaction.

> Yes, you are there doing your things [artwork] that you do not know how they will turn out… There are a lot of people… And suddenly, they stain your [sheet of] paper with blue [paint], you know? (Jenny, female artist, 30)

Sociality is portrayed as a risky business, and a source for distraction or a way of wasting time. The artist has individual goals and strives for them. Such individualistic awareness is pervasive across the artists' discourse. In the following quote, Iria adopts a strategic perspective on the market, in accordance with the findings of Heinich (2014) and Becker (1982) on professional artists:

> I come [to the studio], I make myself comfortable, I have my space and they [the organization] make all these contacts available for me, I do not have to think about it. You need… at the end it is like a "business", a place for research… It is WHERE you work, and you also need a physical place. (Iria, female artist, 32)

By claiming the need for "my space" a room of one's own, Iria is highly aware of her place in the art "business". As a result, cooperation is referred to as non-existent, as in the quote from Lluis:

> The gallery opening, this is the only moment of the year that I see here like communion among artists, but no [cooperation], is not too present. (Lluis, male artist, 35)

Sharing a studio seems to be, as Alan puts it, closer to a necessity than a benefit:

> I mean, we are used to sharing apartments, to share cars, to share… [S]o it's obvious that you have to share a space where you work (Alan, male artist, 34).

4.2. *Spaces' affordances, co-presence, and shared objects*

The perspectives expressed by the artists reproduce the discourse of artistic individualism and artistic practices as avoiding interaction. Might this be merely a justification of the lack of opportunities to socialize owing to the architectural structures of the residential spaces, rather than a preference? This section applies computational spatial analysis to examine affordances the residences offer for artists' socialization. The findings of computational analysis are supplemented by analysis of ethnographic observation data.

The Barcelona case (Fig. 1). The Barcelona residence has 300 m^2 and includes several shared areas (patio, kitchen, rooms for exhibitions, presentations, and workshops for children) on the ground floor, surrounded by studios where the members live and work. On the first floor, some members have individual studios, while most share. The members often encounter each other in the corridors and meet for meals, celebrations, and meetings on the patio. The kitchen is mostly attributed to the administrators, who not only eat there but also gather for business meetings.

In Fig. 2 we see on the left the results of computational spatial analysis (accessibility and visibility simulations) of the ground floor, and on the right – that of the upper floor. We see common areas offering more accessibility and visibility, and thus more sociability: the patio on the ground floor and the corridor on the first floor, studio doorways and areas in front of the studios on both floors. In the studios, affordance for interaction is much lower, restricted to the artists who co-occupy rooms.

The Hamburg space, displayed in Fig. 3, includes the main four-story building, where the exhibition space, the bar, most of the studios and some storage areas are located, and a one-story building which houses the rest of the studios and the boiler room. There is also a large yard with a garden and a barbeque space, predominantly used in summertime.

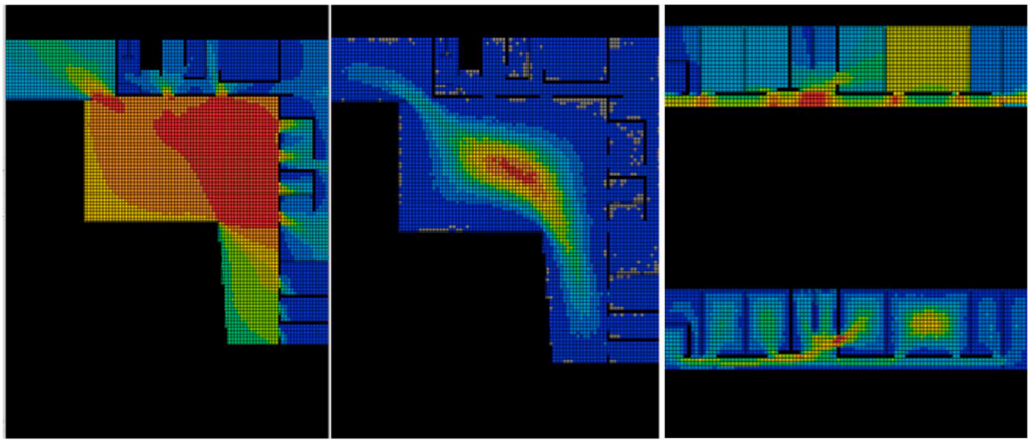
As shown by the spatial analysis presented in Fig. 4, specifically the interactive analysis of regions (panel b), the main staircase affords for the most intense interaction. Indeed, many of the artists describe the staircase as a meeting place in their everyday life. Another meeting place is the entrance area, including the entrance steps and benches. The exhibition space functions as a meeting point during exhibition openings and closings. For example, artists and guests would often have drinks, talk, and chill at the bar. Between exhibitions this space is used for collective events, such as common residential meetings or film screenings.

Artists' studios are occupied by one resident or two, at maximum. Eight of the artists who live in the residence occupy larger studios, whereas smaller ones are purely workplaces. Interaction in studios is restricted to the dyads of artists occupying them, similarly to the Barcelona case.

In both residences, doorways serve as interim zones, affording for some interaction – less than common areas but more than private studios. Correspondingly, doors constitute the boundaries between the private areas of restricted interaction and common areas of open interaction. Doors embody the possibility to avoid interaction, being a rightful means of preventing visibility.

While computational analysis shows that architecture of residences affords for private interaction in studios and open interaction in common areas, ethnographic observations suggest where friendship and collaboration ties could be created/maintained. In particular,

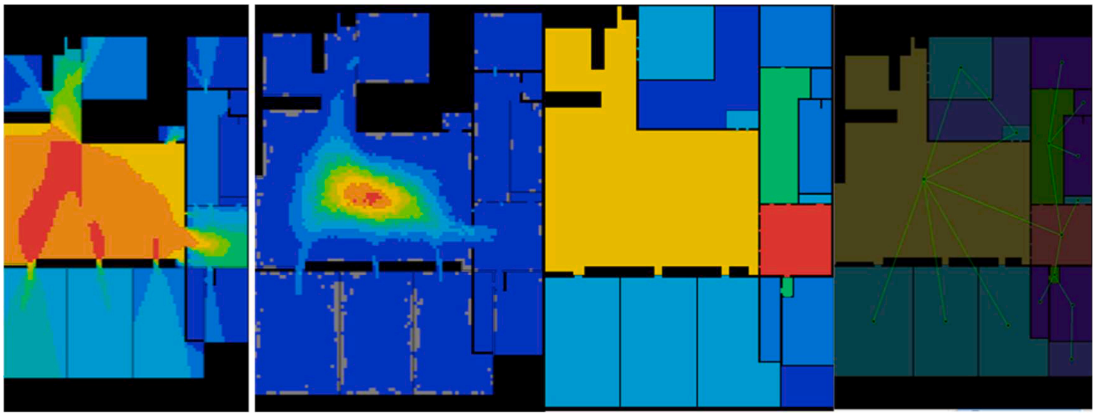
Fig. 1. The patio (left) and the floor plan (right) of the Barcelona residence.



(a) (b)

Fig. 2. Spatial affordances in the Barcelona residence On the ground floor (a), visibility on the left and accessibility on the right; and on the first floor (b), visibility on the top, accessibility at the bottom. From red (higher) to blue (lower).

Fig. 3. The entrance (left) and the patio (right) of the Hamburg residence.



(a) (b)

Fig. 4. Spatial affordances in the Hamburg residence, Visibility and accessibility simulations (a); interaction potential (b), green lines indicate possible interaction. From red (greater) to blue (lower).

Fig. 5. Elements of professional interaction in Barcelona private studios.

Fig. 6. Situations of informal interaction in common areas of the two residences.

private studios where work is conducted often occur to host professional interactions. Fig. 5 presents examples from the Barcelona case. On the left, we see Iria drawing her large format pieces, which – according to our observations – often attract the attention of her studio partner who works in a similar format. On the right, two filmmakers sharing a studio are discussing a film they work on together, displayed on the monitor.

As to the common areas such as kitchens, patios, staircases, and in-house bars, field researchers have, indeed, continuously observed artists in both of the residences having meals and drinks together as a group, during coffee and lunch breaks, as well as after the working hours (see Fig. 6).

To sum up, despite artists' narratives, architectures of the residences do afford for sociality, especially in the common leisure areas. Moreover, artists make use of these affordances. In particular, in line with initial expectations, common areas appear as the places where informal friendship ties between the artists are forged. There is also some evidence suggesting that collaboration happens in private studios.

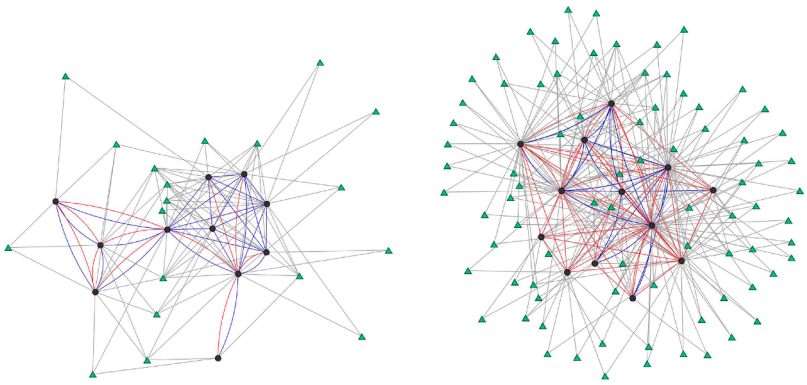
4.3. Statistical regularities

Human eye (both research participant's and researcher's) often fails to recognize the effects of practice occurring across time and contexts, and statistical analysis comes to aid (Basov, 2020; de Nooy, 2009). This section examines the relations between different types of spatial zones – common leisure and private working – and different types of sociality – friendship ties and collaboration ties – by means of statistical network analysis.

Fig. 7 displays social networks of artists and their usage of shared objects (e.g., furniture, printers, dishware, information boards, and so on) filling common areas of the residences. Despite individualistic perspectives and narratives neglecting sociality, there are plenty of social ties between the residents. Artists have, on average, four collaborators (SD=2,52) and five friends (SD=3,27). There are, in total, 48 collaboration ties and 57 friendships. 23 times collaborations and friendships overlap. The densities of dyadic collaboration (0,38 on average) and friendship (0,39 on average) networks are considerable. Five dyads of collaborators and four dyads of friends share studios. Artists have, on average, 13 affiliations with objects (SD=13,27). There are 342 cases of object sharing by collaborators, and 407 – by friends. Based on these descriptives, the effect of space on sociality is not at all unlikely, even though it is not recognized by the residents.

Table 1 presents the results of MERGMs that simultaneously include both the usage of shared objects located in common areas and studio sharing. The model demonstrates good fit (see Appendix), additionally controlling for social ties between individuals practicing similar artistic genre and having similar education.

Parameters for the *Private studio ties* configuration are positive and significant for friendships (2,663 (1,414)) and not significant for collaborations. It indicates that over and above the endogenous structuring mechanisms accounted for by the models (star formation and triadic closure) as well as gender homophily, sharing of a private studio room is related to emergence and/or maintenance of friendships between artists, but not for collaborations between them. Indeed, artists in our cases usually do not create artworks together and hence private professional interaction between collaborators for the sake of securing originality of their joint work is not relevant. Meanwhile, close observation of each other's practice may be undesirable for those who collaborate on joint exhibitions or in



(a) (b)

Fig. 7. Social ties and affiliations with objects in the residences. Barcelona (a) and Hamburg (b). Circles: artists; triangles: objects. Blue lines: collaboration ties; red lines: friendship ties; grey lines: object usages.

marketing of their works, perceived by the individualism-oriented artists as a threat to originality. Meanwhile, sharing of private studio rooms allows for the intimacy needed to develop or maintain emotional attachment. Researchers are unlikely to witness such interactions happening behind closed doors, and artists – to discuss them during the interviews. Therefore, statistical analysis of regularities in co-occurrences of friendship ties and private studio sharing appears the only means of capturing this type of relation between space and sociality.

Table 1
MERGMs on spatial embeddedness of social ties.

Configuration name	Configuration description	Configuration visualization	Collaboration model		Friendship model	
			Parameter	*SD*	*Parameter*	*SD*
Ties[1]	Baseline propensity of individuals to establish social ties		−3,689**	1,253	−2,589**	1,044
Star formation	Distribution of ties between individuals		−0,764	0,504	0,291	0,478
Triadic closure	Triads of socially tied individuals		1,940***	0,520	0,383	0,412
Gender homophily	Social ties between individuals of the same gender	G G	0,187	0,432	−0,379	0,416
Private studio ties	Social ties between individuals sharing a studio room	S S	6,821	13,214	**2,663***	1,414
Common area ties[2]	Individual social ties and engagement with objects in common areas		0,026	0,024	0,003	0,026
Disjoint common area ties[3]	Social ties between individuals engaging with *different* objects in common areas		−0,005**	0,002	0,005*	0,003
Joint common area ties	Social ties between individuals engaging with *same* objects in common areas		**0,328*****	0,107	−0,082	0,105

Note. Unstandardized coefficients. Two-tailed tests reported; ***p<0,01; **p < 0,05; *p<0,1. Circles: individuals. Triangles: objects.
[1] This configuration is always included in ERGMs to control for network density and is not to be interpreted.
[2,3] These are control effects, required to reliably test for the effect of joint common area ties.

In contrast, parameter for *Joint common area ties* is positive and significant in the Collaboration model (0,328 (0,107)), but not in the Friendship model. This reveals a connection between sharing of objects and collaboration ties, but not friendship ties. While emotional attachment relies on the intimacy of private studios, the items of joint attention filling common areas contribute to establishment and/or maintenance of professional relationships. Such objects as decor items, kitchen and professional equipment, discussion boards, timetables, or even food and drinks, located in everyday areas such as entrance halls, corridors, or staircases, are likely to bring about ideas for joint exhibitions, trigger planning of cooperative activities, and facilitate exchanges on the state of affairs in the ongoing collaborative projects. Objects in exhibition areas, where residents show their sketches and trial/final artworks, are likely to trigger talking about the placement of work, the norms (or their absence) about the quality of the artworks at public disposal, and the desired design code of the residence, which is part of its public image.

The results on common area ties are further strengthened by the results on *Disjoint common area ties.* As indicated by the negative and significant (−0,005 (0,002)) model parameter, collaborations are unlikely to accompany usage of different objects. Friendships, on the contrary, are likely to be found between people who engage with materiality of the common areas separately from each other (0,005 (0,003)). Furthermore, the non-significant parameter for *Common area ties* in both of the models indicates that individuals' social ties are not associated with object usage per se, but only with regard to the objects one's friends and collaborators use.

Having presented these key findings, we further comment on the control effects included in the models. *Triadic closure* parameters are positive and significant only in the model for collaboration networks (1,940 (0,520)). It captures a well-known mechanism of network formation that consists in ego's network alters becoming connected themselves. With regard to collaboration ties, it signals that dyads of cooperating individuals tend to engage in joint cooperation with third persons. This result further highlights sociation occurring in the residences, despite artists – who reported social ties but do not have an overall picture of the network and statistical analysis results – largely oversee it. Meanwhile, triadic closure is not a factor of network formation in the friendships network: friends of one's friends do not tend to become friends themselves. Although the friendship network contains a number of triads, these are likely to be a by-product of dyadic private studio sharing, which– unlike triadic closure – is significant in the Friendship model.

The parameters for *Star formation* are not significant in both of the models. Degree distribution plays no important role in structuring of social ties in the residences.

Gender homophily is not a mechanism affecting formation of social ties in the art residences, as indicated by insignificant parameters for the corresponding configuration. Note that in the model for friendship ties, this parameter is even negative (however, still insignificant).

Moreover, results of the Friendships model on endogenous social network configurations and gender homophily suggest that spatiality (studio sharing and usage of different objects) explains friendship ties better than endogenous network processes such as triadic closure or preferential attachment.

5. Discussion and conclusion

This paper examined the effects of artistic residential spaces on social ties between artists. Namely, we sought to find how the two main types of spatial zones in art residences – private studio rooms and common leisure areas – contribute to different types of artists' sociality: collaboration ties and friendship ties. In particular, we expected friendship ties to occur in the common zones of joint recreation and collaboration ties – in the privacy of studios where work is conducted.

To get an in-depth insight into the settings, we started by examining residents' narratives. In contrast to the ideas such as Becker's (2014) – that artistic practices are the professional choices artists make within the framework of the studio architecture – artists' perspectives on the shared residential spaces often appeared to be strongly individualistic. Many artists' reflections reproduced the discourse on artistic individualism (Heinich, 2014), or distinction (Bourdieu, 1984), devaluing the idea of professional cooperation or friendly exchanges. Joining in artistic residences was repetitively related to the precarity of the job market and the lack of resources (Ashton, 2021).

Meanwhile, computational spatial analysis results revealed affordances for dyadic interaction: private in studio rooms and observable – in common areas. This made sense to us that artists striving towards originality would conduct working interactions in private and socialize in public. Subsequent analysis of ethnographic observations offered further support to our initial expectations. Namely, we found elements of professional interaction in private studio rooms, whereas common leisure zones were explicitly the locus of informal friendly interaction.

Statistical network analysis confirmed that, overall, residential spaces foster sociality. Simultaneously, it inverted most of our previous findings and expectations about the relation between the types of spatial zones and the types of sociality. Whereas – in line with our initial assumptions and under the impression of initial analyses – common leisure areas seemed to be for friendly encounters and not for working relationships, these zones turned out to be strongly associated with professional ties. This finding lends further support to the idea of "connective buzz" which is argued to occur in the areas where people co-locate and engage in direct face-to-face interaction, leading to professional ties (Storper & Venables, 2004). While expressing individualistic professional orientations striving for originality, artists turned out to maintain their professional ties not in private studios but in open, commonly accessible areas. Meanwhile, the intimacy of private working studio rooms was rather reserved to maintain emotionally loaded relationships otherwise lacking a place.

While artistic discourse explicitly reproduces individualism, physical co-location in residential spaces implicitly pushes artists towards establishment and maintenance of sociality. This resonates with the findings of social network analysts inspired by the theory of practice (Bourdieu, 1990) and showing that joint material practice enables sociality even if discoursively declared value orientations suggest distancing (Basov, 2020; Basov et al., 2021). Our present results shed further light on the role of practice in stimulating

sociality, illuminating the role of material space, and calling for analyses of the effects of space on sociality across different social positions.

Methodologically, our results lend further support to the argument that statistical analysis of ethnographic data is necessary to capture the implicit effect of practice on social ties (Basov, 2020). Not only our research participants, in line with their professional orientations, were overlooking the effects of residential space sharing on their sociality, but also our own direct ethnographic observations misled us. Indeed, intimate emotional interactions are unlikely to be witnessed by field researchers as well as the establishment of professional understanding, subtle in the buzz of casual encounters around everyday items. Meanwhile, statistical analysis combining separately registered social ties and spatial engagements still captured the regularities that evaded the human eye.

By confirming that materiality of artistic residences contributes to artists' sociality, our findings substantiate the qualitative analyses' findings on artistic residences as dialogical and self-reflexive spaces fostering sociality (Badham, 2017; Lithgow & Wall, 2017; Motalebi & Parvaneh, 2021). For instance, describing 'collective artist residences' Eernstman et al. (2021, 27) reported that the liminal places of the residences, where artists socialize together with the participants of their projects, sustain unplanned collective creation, insights, and ideas. Capdevila (2017) suggested similar effects of the spaces not intended for professional activities with regard to creative professionals aimed at innovation. Moreover, we specified the effects of different types of spaces, showing that private studio rooms accommodate friendship ties between artists and common leisure spaces facilitate professional ties.

We also add to the research agenda calling for robust conceptualization of art residences and collective studios with regard to their social impact and value (proposed, e.g., by Lehman 2017) – by showing that social ties between artists, immediately related to their emotional and professional well-being, benefit from being co-located in residential spaces.

Our findings also suggest some takeaways for the practice of art residence organizing. Despite describing art residences as para-institutional contexts which engage artists in residency into novel forms of interaction, handbooks or professional accounts of the art scholars lack recommendations on how to organize space to stimulate the key types of sociality. While there are some accounts of how the material environment stimulates particular types of knowledge exchange in innovation spaces (Moultrie et al., 2007), artistic residences are largely neglected with this respect. Unveiling the impact of different types of spatial zones on emotional and professional ties, we draw attention to the surplus effect of the leisure liminal shared areas, such as a kitchen or a patio, for establishing and/or maintaining collaboration ties among artists. These areas, therefore, receive more legitimacy for inclusion in the residence design. With this, we empirically substantiate the theoretically informed calls of critical art scholars to organize art residences as specific chronotopes which provide free, open, and changeable places for artists to interact and create more socially-oriented and site-specific projects (Elfving et al., 2019).

Furthermore, the emphasis on the importance of private interaction to foster emotional support between the artists suggests arranging a greater diversity of private interaction zones (in addition to working studios), as well as for offering shared living rooms and studios specifically for dyads of artists.

This study has several limitations that call for further research. Along with materiality of the collective artistic space per se, there is relevance in material, spatial, and environmental features of the area where the residence is located. Place-based resources may be turned into economic advantage by artists and designers (Drake, 2003). Political and cultural geography has a major influence on creative industries (Evans, 2009; Scott, 2000). Localization of artistic residences has also been described as crucial (Gielen, 2019). For instance, contemporary artistic residences are usually located not in the solitude of nature, but in the urban heart of the art world, where an artist-newcomer can find connections to its items – art places, art professionals and their meeting points. The role the materiality of the site surrounding an art residence plays in initiation and maintenance of the different types of sociality between artists can be a subject for further studies.

Furthermore, the results on the lack of association between collaboration ties and studio sharing may be owing to the fact that collaboration ties between our artists almost never involve joint artworks creation. Hence, the artists under study did not need the privacy of studios to secure the originality of jointly created works. Exploring collaboration ties between artists who create artworks jointly could therefore be a subject of further studies.

Finally, owing to the size of the dataset and the present-day limitations of analytical techniques, we examined our cases in an aggregated fashion; besides, we had data on only two residences, both located in Europe. Further work should be done to understand how sociality patterns of artists and their sense of place develop over time and in different cultural contexts.

This paper is merely the first step towards a more profound understanding of how sociality patterns are spatially embedded. We now know that space, often taken for granted or defined strictly from the point of view of phenomenology or physicality, is a contributor to sociality. Space appears to be an 'agent of practice', inducing sociality even when it is not consciously desired or pursued. The corporeality of joint practice in a shared material space is a glue for social space pulled apart by the discourse of distinction.

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CRediT authorship contribution statement

Nikita Basov: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Supervision, Visualization, Writing – original draft, Writing – review & editing. **Dafne Muntanyola-Saura:** Conceptualization, Data curation, Investigation, Methodology, Writing – original draft, Writing – review & editing. **Sergi Méndez:** Formal analysis, Visualization. **Oleksandra Nenko:** Writing – original draft, Writing – review & editing.

Declaration of competing interest

None.

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Appendix. Results of goodness of fit tests for MERGMs

To test how well our models capture the data, we calculated t-values for the parameter values in the models and other effects not included. After a burn-in of 100,000 iterations, we took a sample of 1,000 networks from 1,000,000 of simulations produced using the fitted models. The models' t-ratios are all well below 2,0 for statistics not included in the models, while for the parameterized ones those are close to 01, which is known to indicate a good fit (Wang, 2013).

Collaboration model					Friendship model			
Statistics	Observed	Mean	SD	t-ratio	Observed	Mean	SD	t-ratio
EdgeA	48.000	47.649	7.009	0.050	57.000	56.721	6.654	0.042
Star2A	217.000	211.123	53.659	0.110	337.000	335.188	53.781	0.034
Star3A	307.000	290.206	106.628	0.157	702.000	687.919	147.421	0.096
Star4A	292.000	271.062	137.094	0.153	1097.000	1022.997	284.685	0.260
Star5A	197.000	178.962	127.838	0.141	1311.000	1126.717	400.116	0.461
TriangleA	51.000	47.530	11.976	0.290	71.000	71.844	14.641	−0.058
Cycle4A	125.000	122.290	47.264	0.057	291.000	302.198	88.176	−0.127
IsolatesA	3.000	3.557	1.464	−0.380	2.000	2.182	1.797	−0.101
ASA	117.039	115.912	23.243	0.049	150.742	149.741	20.774	0.048
ASA2	117.039	115.912	23.243	0.049	150.742	149.741	20.774	0.048
ATA	78.250	77.674	14.561	0.040	91.547	90.972	13.109	0.044
A2PA	90.000	5,299,118.286	3,052,319.747	−1.736	160.734	157.367	20.019	0.168
AETA	271.234	250.638	72.633	0.284	401.840	410.172	88.279	−0.094
Gender_MatchA	27.000	26.631	4.583	0.081	26.000	25.836	4.173	0.039
Gender_MismatchA	21.000	21.018	3.903	−0.005	31.000	30.885	4.014	0.029
Education_MatchA	42.000	41.772	6.893	0.033	57.000	55.025	6.157	0.321
Education_MismatchA	6.000	5.877	1.457	0.085	0.000	1.696	1.565	−1.084
Genre_MatchA	7.000	5.431	1.747	0.898	9.000	8.077	1.736	0.532
Genre_MismatchA	41.000	42.218	6.231	−0.195	48.000	48.644	6.183	−0.104
Studio_MatchA	5.000	4.998	0.049	0.049	4.000	4.001	0.804	−0.001
Studio_MismatchA	43.000	42.651	7.008	0.050	53.000	52.720	6.414	0.044
Star2AX	1500.000	1494.197	256.539	0.023	2350.000	2340.494	162.806	0.058
StarAA1X	1884.781	1807.896	451.023	0.170	3480.156	3442.812	296.942	0.126
StarAX1A	2623.694	2611.432	463.708	0.026	4251.247	4234.033	281.279	0.061
StarAXAA	786.452	785.821	27.858	0.023	822.431	821.515	26.405	0.035
TriangleXAX	342.000	340.860	41.974	0.027	407.000	406.619	28.586	0.013
L3XAX	13,221.000	13,176.348	2646.771	0.017	24,993.000	24,949.340	1087.577	0.040
ATXAX	87.736	89.298	12.474	−0.125	102.687	101.393	10.882	0.119
EXTA	2233.000	2128.680	640.167	0.163	5467.000	5499.867	961.455	−0.034
stddev_degreeA	3.244	3.132	0.290	0.384	4.075	4.034	0.287	0.143
skew_degreeA	1.299	1.277	0.112	0.198	1.505	1.481	0.094	0.248
clusteringA	0.705	0.678	0.053	0.515	0.632	0.640	0.045	−0.167

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Dr. Nikita Basov is a Senior Lecturer in Network Analysis at the University of Manchester. He has a PhD in Sociology from St. Petersburg University, 2009. From 2013 to 2022, he led Centre for German and European Studies, St. Petersburg University – Bielefeld University, supported by DAAD (German Academic Exchange Service) as Head of Science/Scientific Manager. In parallel, he worked at the Faculty of Sociology of St. Petersburg University, until leaving in 2022 as Lead researcher. Nikita's main research interest is unveiling the mechanisms of the interplay between social and cultural (symbolic and material) structures. He advances multidimensional socio-semantic and socio-material network analyses, with a particular focus on combining qualitative data/methods with computational natural language processing and statistical network modelling. His papers can be found in such journals as 'Social Networks', 'Poetics', 'American Journal of Cultural Sociology', and 'Applied Network Science'.

Dr. Dafne Muntanyola-Saura is a Tenured Professor at UAB. She has been a postdoctoral researcher in Université de Nice and Universidad Autonoma de Madrid and Fulbright Scholar at the department of Cognitive Science at the University de California, San Diego (UCSD). She explores patterns of distributed decision-making in professional settings such as hospitals and dance, and works with mixed methods including ethnography, social network analysis and video-aided analysis. She published more than 40 papers in several languages. They appeared in *Theory & Psychology, Ethnografia e Ricerca Qualitativa, Revue de Synthèse, Quality & Quantity; Gender, Work & Organization, Journal of Theory of Social Behaviour* among others. She is the member of Sociology of the Arts Board from ESA and enjoys writing book reviews.

Dr. Sergi Méndez is an architect from the School of Architecture of Vallès (2011) and PhD in Architecture from the School of Architecture of Barcelona, Universitat Politècnica de Catalunya (UPC) (2017). He is currently a high school teacher and independent researcher. He is the creator of the digital thinking platform www.repensarcerdanyola.org on the physical and social impact of urbanism in the city of Cerdanyola. His interdisciplinary research and political activism dwells on the problem of urban quality, initiated by the team GIRAS with UNICEF programme Child Friendly Cities. He has participated in numerous international conferences from several disciplines, urbanism, semiotics, environmental psychology and social participation, as an expert on Space Syntax.

Dr. Oleksandra Nenko holds a PhD in Sociology from Taras Shevchenko Kyiv National University. She is currently a collegium member of Turku Institute for Advanced Studies at University of Turku, researcher at Landscape Studies department at UTU, and visiting researcher in University of the Arts in Helsinki (UNIARTS). Oleksandra is a member of the EU Horizon Project "*IN SITU*. Place-based innovation of cultural and creative industries in non-urban areas" (2022–2026). In 2014–2022 Oleksandra served as associate professor in urban studies at the Institute for Design and Urban Studies at ITMO University (St. Petersburg). Her work focuses on subjective perception of urban / non-urban space, emotional mapping and subjective quality of urban life, urban culture and arts in urban space, and art of the displaced.