



Research Article

Why conversations constitute neighbourhood cohesion: A mixed-methods approach to substantiating cause and effect

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ABSTRACT

Communicating is a meaningful practice for building neighbourhood cohesion by fostering a sense of connection, mutual support and belonging among residents of a geographically defined neighbourhood. In our paper, we highlight the role of regular contact and conversations with neighbours for generating neighbourhood cohesion. Following a mixed-methods approach, we combine qualitative instruments from two case studies focusing on neighbourhoods in Hanover with quantitative data from a panel survey conducted in Hanover and Magdeburg, Germany. The residents' statements clearly show that talking to each other influences their socio-spatial orientation towards the neighbourhood as a point of reference, thus promoting attitudes and practices to strengthen neighbourhood cohesion. Based on these results, the causal model confirms the effect of conversations on neighbourhood cohesion, which is mediated by the factor of trust. Combining the two types of data helps to understand and explain why neighbourhoods are relevant for peaceful coexistence: they enable low-threshold interaction and thus the experience of belonging and integration. It remains open whether and to what extent neighbourhood cohesion can be scaled up, which requires comparisons with other cities and city types as well as different neighbourhoods to identify regional and international differences.

1. Introduction

In contemporary urban studies, a wide variety of research efforts focus on the interplay between neighbourhoods and social cohesion (Bwalya & Seethal, 2016; Campbell et al., 2022; Forrest & Kearns, 2001; Ho & Chua, 2018; Wickes et al., 2019; Zanjari et al., 2022). A key finding of this internationally recognised research is that neighbourhoods form the “nucleus” (Forrest & Kearns, 2001; Ho & Chua, 2018) and serve as the principal scale (van der Meer & Tolsma, 2014) for building social cohesion (Baffoe, 2019). The term social cohesion refers to “the internal bonding of a social system” (van Marissing et al., 2006, p. 281) which becomes comprehensible and tangible through its localisation in a family, group or neighbourhood (van Marissing et al., 2006). Social cohesion can generally be understood as mutual trust combined with actual or perceived reciprocal support and a sense of belonging to a geographical community among its residents (Hartl & Mayer, 2026). In this paper, we therefore define neighbourhood cohesion as mutual trust, perceived support, social interaction and a sense of belonging to a neighbourhood (Buckner, 1988). Although manageable contexts such as neighbourhoods enable individuals to easily and repeatedly encounter someone, neighbourhood settings are not automatically

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perceived and practised without conflict. For example, Mouratidis and Poortinga (2020) show a negative correlation between dense, highly interactive neighbourhoods and cohesion. In contrast, fleeting encounters in the urban public sphere can create situational contexts (Dirksmeier & Helbrecht, 2015; Wilson, 2017) for “meaningful contact” (Valentine, 2008), which can in turn develop into cohesion. Focusing on the given configurations, some neighbourhoods appear more or less cohesive – in an experienced or imagined sense – to their residents (Buckner, 1988). Neighbourhoods are therefore inherently contradictory with contingent opportunities for building cohesion. Hence, neighbourhoods form arenas for the formation of (cohesive) conflicts and (conflictual) cohesion (Wickes et al., 2019). Concentrating on this paradox, the influence of conversations and communication in the neighbourhood on social cohesion is still an open question (Blokland et al., 2023).

The aim of this paper is to determine the causal contribution of communication practices between neighbours to the development of neighbourhood cohesion as a place-based form of a sense of connection, mutual support and belonging among residents. The reciprocity generated through interactions leads to a potential for social capital, which has a strong positive impact on the emergence of social cohesion in general and in compact settings like urban neighbourhoods in particular (Campbell et al., 2022). We use a set of factors constituting neighbourhood cohesion that are present in regular and repeatable contacts in the sense of “categoric knowing” (Lofland, 1973) to place and relate residents to one another. Because urban neighbourhoods are characterised by increasing diversity, plurality and segregation, making a shared set of values and trust in others less likely, questions about how to shape and strengthen neighbourhood cohesion – as a reciprocal commitment to cooperate – are becoming more pressing (Sturgis et al., 2014; van der Meer & Tolsma, 2014; Koopmans & Schaeffer, 2016). The theoretical development of our paper consists of integrating the literature on neighbourhoods, social cohesion and interaction, which has accumulated over more than 120 years, into a coherent, causally explicit framework model, and formalising this as a directed acyclic graph (DAG). The theoretical assumptions regarding directions of causality, mediating and confounding factors, and contextual conditions are thus made transparent. Competing explanations are synthesised, and from this we derive precise, empirically testable hypotheses and identification strategies. The paper adopts a mixed-methods approach based on explorative interviews with residents in two contrasting case studies in Hanover, complemented with a survey in the two German cities of Hanover and Magdeburg (Sackmann, Dirksmeier, Göb, et al., 2024, Sackmann, Dirksmeier, Rees, & Vogel, 2024). We start from the assumption that macro-structural developments, such as the globalisation of markets, privatisation of public services as well as government policies, need to be addressed and acted upon at the local level, as these give rise to conflicts regarding participation both between and within neighbourhoods. To respond to dis cohesive tendencies, neighbourhoods function as a frame for functional communication and resolving antagonism (Jacobs, 1992; Mouratidis & Poortinga, 2020) through (in-)formal rules and norms of regular contact in co-presence. Conflicts, as a form of socialisation, foster relationships between those involved – as they have an integrative effect and thus contribute to neighbourhood cohesion – unless the parties cause each other harm, i.e. as long as the conflict does not escalate into verbal or physical aggression and overt violence. The paper qualitatively and quantitatively scrutinises the causal relationship between conversations between neighbours and neighbourhood cohesion, which is relevant for peaceful coexistence in the urban environment. In the following section, we outline the state of socio-geographical research concerning the connections between neighbourhoods, conversations and neighbourhood cohesion. The third section presents the research design and methods used to combine the qualitative and quantitative data. Section four presents the analysis of the influence of neighbourly conversations on neighbourhood cohesion. The discussion in the fifth section brings together the empirical findings with the theoretical literature and concludes by identifying research desiderata.

2. Neighbourhoods, conversations and neighbourhood cohesion

Neighbourhoods are a specific form of settlement structure, which can vary spatially (Gulick, 1973), characterised by an idiosyncratic composition of people, places and their practices in the built environment (Blokland et al., 2023). As socio-spatial units (Baffoe, 2019), neighbourhoods form living environments that are accessible through everyday routines – in villages as well as cities. As locally homogeneous areas (Galster, 2001), they are locally (re)produced and differ from one another in terms of doing everyday geography (Martin, 2003). As they are composed of similarities and differences regarding the type of infrastructure, green spaces and buildings, access to jobs and services, demographic and social composition, and emotional attachment (Lewicka, 2011), they are understood as pluralistic and, in a normative sense, as something “good”. Neighbourhoods are therefore idealisations that emphasise the socially integrative function of the local in a globalised world of interregional interdependence (Martin, 2003). Although in constant transformation, neighbourhoods provide ontological security (Giddens, 1990) to the self and identity by fostering trust in the continuity and stability of the surrounding social and material environment. As such, neighbourhoods are socially and spatially expectable. They enable residents to cope with uncertainties by establishing order and legitimacy. Their (un)conscious norms include a willingness to interact with others under certain conditions of conflict negotiation (Blokland et al., 2023; Mann, 1954).

It is assumed that daily contact within neighbourhoods promotes neighbourhood cohesion (Blokland & Nast, 2014). However, perceptions of and experiences within neighbourhoods can vary greatly depending on the length of residence and frequency of use, as well as on age, life stage, occupation, mobility limitations, and financial and time resources (Galster, 2012). “Organised encounters” (Wilson, 2017, p. 462) for example, can help to facilitate intergroup contact (Pettigrew & Tropp, 2006) using social infrastructures (Browning & Calder, 2017; Latham & Layton, 2019) that build up the lasting performance of society (van Marissing et al., 2006). Neighbourhoods enable sustainable encounters that arise in everyday life when the same people are seen again and again. In this respect, predictable encounters underpin neighbourly contact, which is characterised by repeatability and continuity (Schütz & Luckmann, 1973) and is capable of generating weak and strong ties (Granovetter, 1973). The result is neighbourhood cohesion, which manifests itself in a sense of community, a sense of belonging to one's place of residence, and social interactions with neighbours living in close vicinity (Hao & Chen, 2025). As a place-based resource that can be drawn upon, neighbourhood cohesion fosters cooperation

as a practice of collective efficacy to solve local problems and intervene on behalf of others (Wickes et al., 2019). Participation in neighbourhood life, i.e. involvement in the social shaping of the space, strengthens the sense of belonging to the neighbourhood (Dirksmeier, 2025) and simultaneously increases the likelihood of developing a bond with the people living there (Blokland et al., 2023). This ultimately latent and abstract concept of neighbourhood cohesion, in turn, has manifest, empirically verifiable effects such as a reduction in mortality rates (Jiang et al., 2023) or an increase in well-being, particularly among older people (Hao & Chen, 2025). Neighbourhoods are therefore crucial for spatial socialisation as well as for learning and experiencing neighbourhood cohesion, which can be transferred to social cohesion in society in the form of functional cooperation (Baffoe, 2019; Ho & Chua, 2018). For empirical approaches, it is essential not to confuse problems in the neighbourhood with problems of the neighbourhood (Slater, 2021) and to distinguish between a normatively neutral, theorised concept and an idealised notion of neighbourhood cohesion.

Neighbourhood cohesion begins with interactions and conversations at a local level. Much like the neighbourhood itself, the concept traverses various spatial scales; i.e. a cohesive neighbourhood is not equivalent to a cohesive urban society and vice versa (Maloutas & Pantelidou Malouta, 2004). During communication processes, reference is made to place-based knowledge and about others that creates socio-spatial orientation. Communicative action is thus social action and requires reciprocity. Consequently, supportive cohabitation in neighbourhoods has a cross-generational and cross-cultural effect. Greater neighbourhood cohesion is associated, for example, with fewer symptoms of anxiety across ethnic groups (Albrecht Soto & Santos-Lozada, 2025), although the empirical measurement of neighbourhood cohesion should in turn be conducted in an ethnically specific manner (Villodas et al., 2023). The generations living together locally engage in cohesive actions to varying degrees, meaning that older people in particular can be both promoters and beneficiaries of neighbourhood cohesion (Bwalya & Seethal, 2016; Jiang et al., 2023). Neighbourhood cohesion promotes intergenerational and close-knit coexistence within a neighbourhood (Mo et al., 2026). A hinge function between age and commitment to cohesion is assumed by identification with the place (Novy et al., 2012), which is important for promoting neighbourhood cohesion (Miciukiewicz et al., 2012). These findings are also confirmed in highly ethnically diverse and arrival neighbourhoods (Sturgis et al., 2014). Here, neighbourhood cohesion has a positive effect on national identification among immigrants through more intensive interactions between groups (Ziller et al., 2023).

However, recent empirical studies on neighbourhood cohesion highlight the importance of the role played by families and their scope for action, as well as local activities (Campbell et al., 2022). There is also empirical evidence to suggest that, among higher-income groups, the reputation of the place of residence is more important than neighbourhood cohesion (Ortiz-Vilches & Ramond, 2026). At the same time, among poorer groups, there is greater neighbourhood cohesion but less sense of belonging (Señoret et al., 2026). Even if freedom from conflict is attributed to idealised neighbourhoods (Ho & Chua, 2018), disputes are to be expected in dense, heterogeneous living contexts. In modern societies in particular, social conflicts possess a special integrative power, as they can foster neighbourhood cohesion (Phillips et al., 2014) – not through shared values, but through collectively applied forms of conflict resolution (Baldassarri & Abascal, 2020; Simmel, 1908). Divergent social values are an integral part of democratic societies and are necessary to bring about social change. For this reason, the public creates a fundamental baseline for discourse and democracy (Thrift, 2005), learned in interactions between neighbours. Neighbourhood cohesion is based on the pillars of identification with routines and intergenerational effects, and forms a complex network that requires further in-depth research. In this paper, we consider the mediating element – conversations as social interaction through contact – to be fundamental to establishing neighbourhood cohesion, while not ignoring that contact can also cause conflict.

3. Method and analytical strategy

The research design follows a mixed-methods approach (Creswell and Plano Clark, 2011; Creswell & Creswell, 2018) by synthesising qualitative data from two case studies in Hanover (Germany) with quantitative data from a panel survey in Hanover and Magdeburg (Sackmann, Dirksmeier, Göb, et al., 2024). The methodologically innovative aspect of our approach lies in a sequential-exploratory mixed-methods design, which first identifies, through qualitative analysis, the mechanism by which conversations influence neighbourhood cohesion. The qualitative findings are then operationalised in a context-specific manner and tested against survey data within a quantitative causal model, thereby closely integrating theory development, measurement construction, contextual validity and causal inference. Data were collected for the panel in a mixed-mode survey with online and postal paper questionnaires. Hanover and Magdeburg were considered to provide a complementary view of neighbourhood cohesion under urban conditions in eastern and western Germany. Both are large cities, which, although they are state capitals with universities, cannot be considered international metropolises. They offer big-city life without extremely globalised areas characterised by large fluctuations in a highly mobile international population. Table 1 shows the distribution and calculated response rate.

Data were collected in 2021 using a one-phase parallel design with overlapping periods. The field phase of the panel study lasted

Table 1
Sample size and response rate for Hanover and Magdeburg (adjusted).

Site	Population (31/01/2023)	Gross sample	Online response	Paper response	Total response	Response rate (%)
Hanover (LS)	535,932	6,600	1,073	423	1,496	22.7
Magdeburg (SA)	236,188	6,600	1,193	550	1,743	26.4
Total	772,120	13,200	2,266	973	3,239	24.5

Data sources: Sackmann, Dirksmeier, Göb, et al. (2024), German Federal Statistical Office, (LS = Lower Saxony; SA = Saxony-Anhalt)

from January to May. The qualitative research phase was divided into case-related time slots from April to August and from September to November. Data analysis was carried out sequentially (two-phase) using an exploratory design (Creswell and Plano Clark, 2011, 69; 151). This was followed by the merging of the data sets, i.e. combining them in a complementary way to gain a holistic understanding of the research subject. Fig. 1 illustrates the research design.

The preliminary qualitative interpretation aims to identify characteristics that have a relevant impact on neighbourhood cohesion and to uncover conditions conducive to cohabitation. The case studies selected were Linden-Süd and Sahlkamp in Hanover, which are characterised by relatively high proportions of residents with a migration background, unemployed people and recipients of transfer payments, single parents and families with more than three children. The contrasting attributes of the two districts, which differ in terms of their location in the urban area, their historical development and their building structure, are particularly instructive for the comparative analysis. Explorative interviews (Honer, 1994) supplemented by participatory observations via “go-alongs” (Kusenbach, 2003) and field visits were conducted with 28 residents of the case study areas. The conversations lasted between 20 min and 120 min. The go-alongs varied in length from 30 min to 3 h and were mapped by GPS, but due to data protection requirements not fully recorded. The perspective of 26 local actors, including politicians, liaison officers, street as well as community workers and others, enriched these impressions. Gatekeepers and people actively involved in managing the social infrastructure of the neighbourhood assisted in recruiting the sample, which was designed to reflect the heterogeneity of the two case study areas in terms of age, gender, length of residence, type of housing as well as migration background. For the Linden-Süd district, the sample consisted of 22 residents who participated in one-on-one interviews, four of whom were accompanied by a translator, an assistant for people with disabilities or their spouse. At the request of the participants, only group discussions (14) were held in Sahlkamp, each of which included between three and seven people. The process of analysing the qualitative data was based on the documentary method (Nohl, 2017). After the formulating interpretation to highlight the ‘what’, i.e. the description of the terms ‘neighbourhood’ and ‘social cohesion’ by means of communicative knowledge (immanent meaning), the second step is to use reflective interpretation to show the ‘how’, the specific realm of experience of a shared world of meaning (documentary meaning).

Our hypotheses to be tested are derived from the qualitative findings on the role of conversations for neighbourhood cohesion. We estimate the causal effect of regular conversations with neighbours (treatment) on neighbourhood cohesion. We test the following causal hypotheses to estimate the average treatment effect (ATE). a) *Neighbourhood cohesion is stronger when people regularly talk to their neighbours compared to when they do not.* In causal analyses, the average treatment effect of the treated unit (ATET) is the target value of interest for precisely indicating the causal effect for the group in question (Gangl, 2010). With regard to the ATET, the causal hypothesis is then: b) *Neighbourhood cohesion is stronger among people who regularly talk to their neighbours.*

With reference to Gangl (2010, p. 37), we assume that causal statements can be made on the basis of non-experimental data. Our identification strategy of specifying the reciprocal effects of the relevant variables (Keele et al., 2020) is based on results obtained in the qualitative study and assumptions extracted from the literature that map the network of relationships between the factors using a directed acyclic graph (DAG). This enables the causal effect to be isolated by closing all backdoor paths (Keele et al., 2020). We refer to selection-on-observables:

$$(Y1, Y0) \perp D \mid X$$

to estimate the causal effect of D on Y by adjusting X. Selection-on-observables is given due to the extensive data set, i.e. whether someone receives “treatment”, in this case talks to their neighbours, no longer depends on the potential outcomes after controlling for observable covariates (Brand et al., 2023). We use propensity score kernel matching to estimate the causal effect of conversations on neighbourhood cohesion (Sekhon, 2009). The propensity score indicates the probability of a person falling into the treatment group, i.e. regularly talking to neighbours (Rosenbaum & Rubin, 1983). The propensity score is calculated as a multilevel logistic regression

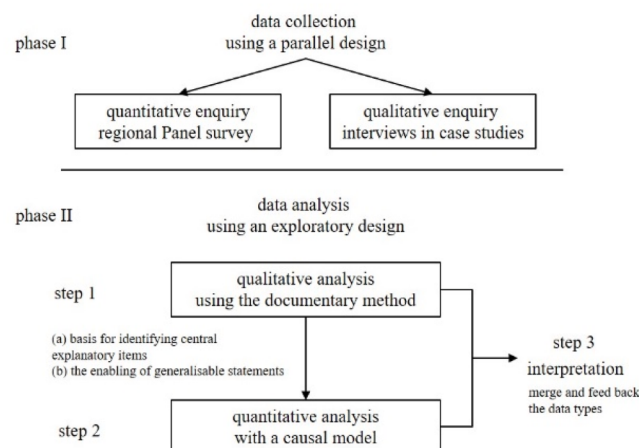


Fig. 1. Mixed-methods structure of the research design.

Source: Authors' illustration

model in which the dependent variable is the treatment variable (treated vs. not treated) and the independent variables are the observed covariates at the individual and neighbourhood level that are needed to close all backdoor paths. The matching procedure searches for pairs of treated and untreated individuals with similar propensity scores in a given range (caliper). Due to the rapid increase in matching inaccuracy shown in simulation studies, the caliper width is set to 0.1 (Austin, 2011; Wang et al., 2013). Potential confounders not integrated into the model were tested using a formal Rosenbaum bounds sensitivity test (DiPrete & Gangl, 2004). As robustness checks, we calculate several placebo tests using random variables. We use a random treatment variable with the same treatment proportion as the treatment variable A (80%). We also generate a normally distributed random variable with the same mean (2.7324) and standard deviation (0.8396) as the outcome variable B. Finally, we calculate ATE and ATET for xenophobia as a measured but theoretically uncorrelated outcome variable with A. Results are presented in the appendix. Since treatment and outcome are randomly associated in the placebo cases, the results of the respective models must not be significant (Sekhon, 2009).

We use capital letters for the variables to represent the relationships as a DAG. The outcome variable, neighbourhood cohesion (B), is operationalised using factor analysis based on polychoric correlations (Kolenikov & Angeles, 2004) of five statements on a five-point Likert scale (see Table A1). Two statements are taken from a scale on neighbourly trust and cohesion by Sampson et al. (1997) and Browning and Calder (2017). These items were supplemented with three statements on belonging by Blokland and Nast (2014). These items are included, in a modified form, in Buckner's (1988) classic neighbourhood cohesion scale. The items were slightly modified for use in the German context and are shown in Table A1. An exploratory factor analysis is calculated from the polychoric correlation matrix using the principal component factor method, which includes all 2843 respondents who answered all statements. The rotated (promax) solution yields one factor with an eigenvalue of 3.687. Verification using Horn's parallel analysis for principal components (Finch, 2020; Horn, 1965) based on 5000 iterations, using the p95 estimate, confirms the one-factor solution with an adjusted eigenvalue of 3.298 (see Figure A1 in the appendix). The reliability of the scale shows very good values of 0.877 for McDonald's Omega, 0.895 for Cronbach's alpha, and 0.910 for polychoric alpha. Lin's concordance correlation coefficient (Lin, 1989) between the factor variable and the total score of the scale shows no interchangeability with $\rho = 0.888$ (CI 0.883–0.893). We therefore use the more accurate polychoric factor variable as the outcome (B).

The treatment variable conversations (A) is based on the question of whether respondents talk to their neighbours, with answers on a four-point scale from 3 (often) to 0 (never). The exact question is: "I regularly stop and chat with neighbours" (Buckner, 1988). This wording covers every form of (non-)verbal contact from greetings up to longer conversations, including the possibility of discussing controversial topics or becoming a source of conflict. The categories 'often' and 'occasionally' are combined to form group 1 (conversations). 'Rarely' and 'never' are summarised as group 0 (no conversations). The number of keys to their flat that Ego entrusts to the neighbours (max. 3) measures trust (C). This operationalisation is behaviour-based and less susceptible to social desirability. Trust is understood as a "willingness to be vulnerable" (Mayer et al., 1995, p. 729) and thus as real vulnerability with potential harm. This has proven itself in statistical analyses (Dirksmeier, 2025). The variable 'Participation in local decisions' (D), which refers to Ego being involved in consultations on local projects, which by their nature are not ongoing but only occasional, is measured using a four-point scale from often (3) to never (0). The variable 'length of residence' (F) is measured in years as studies have shown that this covariate correlates with cohesion (Ye et al., 2025). Gender (female/other) (J) and age (in years) (H) are included as socio-demographic variables. Migration background (L), i.e. Ego or at least one of Ego's parents was born in a country other than Germany, is included as a dummy (yes/no). The highest vocational training and school education qualification controls for the influence of education (E) on neighbourhood cohesion, measured on a five-point scale from 0 (no school-leaving qualification) to 4 (A-levels). The variable 'regional information [regional media use]' (I) was extracted from a six-part battery of questions on media use by means of exploratory factor analysis calculated from the polychoric correlation matrix using the principal component factor method with promax rotation. The rotated solution yields two factors with eigenvalues of 1.625 and 1.392. Verification using Horn's parallel analysis for principal components (Finch, 2020; Horn, 1965) based on 5000 iterations, using the p95 estimate, confirms the two-factor solution with adjusted eigenvalues of 1.489 and 1.116. The information sources regional daily newspapers, regional public radio stations and regional public television stations loaded highly on the first factor, while regional advertising papers as information sources loaded less strongly. Finally, as the qualitative data emphasise the importance of residents' plurality and diversity, the proportion of people with a migration background in the district (X1) is included as a proxy for heterogeneity/ethnic diversity at the neighbourhood level. Table 2 shows the descriptive statistics of the analytical sample.

Table 2
Descriptive statistics of the analytical sample.

	obs.	mean	std. dev.	iqr.	min.	max.
neighbourhood cohesion (B)	2,407	3.190	0.975	1.393	0	4.655
conversations with neighbours (A)	2,407	0.849		0	0	1
trust (C)	2,332	1.453	0.780	1	0	3
local decisions (D)	2,407	0.612	0.800	1	0	3
length of residence (F)	2,407	15.814	14.082	17	0	85
education (E)	2,407	3.036	1.067	2	0	4
gender (J)	2,407	0.519		1	0	1
age (H)	2,407	53.005	17.121	27	17	91
migration background (L)	2,407	0.247		0	0	1
regional information (I)	2,211	2.508	1.040	1.637	−0.113	3.985
proportion of people with a migration background in district (X1)	2,407	0.284	0.150	0.243	0.006	0.777

Data source: Sackmann, Dirksmeier, Göb, et al. (2024); Landeshauptstadt Hannover; Landeshauptstadt Magdeburg

4. Findings

We will focus on talking as the semantic aspect (formulating interpretation/‘what’) and, consequently, analyse its connotations (reflecting interpretation/‘how’). The interviews with the residents of the neighbourhoods studied show that contact as a communicative act contributes to socio-spatial orientation and thus represents an essential feature in the formation of neighbourhood cohesion. When talking, people interact with each other and their surroundings, and become (un-)consciously integrated – even if not completely, at least partially, with reference to the neighbourhood context. The aspects of communication that constitute and sustain neighbourhood cohesion – as an attitude and a practice – will be outlined below. The three modes of conversation that we identified are inductively derived from the empirical data. These types of conversation are characterised by a gradual intensification of communicative contact and differ in terms of their quality and distinctiveness.

4.1. The cascade effect: talking in the mode of knowing

Contact becomes physical in communicative presence – particularly in the context of neighbourly coexistence. As a practice of doing, talking requires and results in a willingness to talk. If you see someone in your everyday life again and again, it becomes almost impossible not to notice and act upon each other. *‘If you see [the neighbours] often enough, you’ll end up having a conversation’* (LS_B12). It is a norm of courtesy and coercion that arises from knowing each other from sight. Greeting, nodding and smiling are light forms of communication that prepare the ground for more ritualised forms of conversation and the formation of social relationships. Similarly, greeting offers legitimate distancing, since the gesture nevertheless refers to each other. Talking as a norm of reciprocity is facilitated by regular contact in limited socio-spatial contexts such as neighbourhoods. *‘We know some people in the neighbourhood, whom we run into from time to time and strike up conversations with. [...] So, we know the faces, and can recognise the people here – even the crazy ones who greet you with a friendly “hello”’* (LS_B2).

The normalisation of daily contact – also with marginalised individuals – enables the process of incorporating everyone into the fabric of the neighbourhood. In this respect, ‘the other’ becomes familiar and can no longer be regarded as a stranger. *‘I know all of our drug addicts here [on the street]. [...] I see them four times a day, at least’* (LS_B10). *‘The group of drinkers sitting on the corner is known to me. [...] I didn’t worry about leaving my bike with the trailer there, because I think, these drinkers know it’s mine. They’ll take care of it’* (LS_B3). The possibility of categorising the others in shared surroundings as neighbours creates certainty even if the contact remains superficial. *‘It’s just about saying “hello”. But that’s okay’* (SK_G1). *‘A “good morning” and “how are you?” is normal and that’s it. That’s how it works in cities’* (SK_P1).

However, repeatedly and continuously coming into contact with the same people in the neighbourhood generates habit and meaning and leads to a place-based knowledge (about others and the environment). *‘I benefit enormously from the contacts and knowledge about others, and I’m glad about that. [...] It’s about the relationships here in the local area. That’s what neighbourhood actually means to me’* (LS_B12). ‘Knowing about’ can give rise to a ‘knowing’ that goes further: *‘When you know [...] the people better, you can start asking questions that really interest you. You can go beyond the surface, get more intimate’* (LS_B3). Accordingly, neighbourly togetherness then requires a balancing of the right distance. This arrangement can change depending on the situation or the duration of residence, but also on the neighbours’ time resources. *‘I don’t even know how we met. I think it was because of the installation of the cable/internet connection. We’ve known each other since then and sometimes we drink tea together. It just developed from there’* (LS_B12). The stages of knowing develop gradually, without the residents being aware of it. The initial contact usually cannot be remembered accurately and is not relevant for the assessment of the status quo. At this point, it seems that everything is ‘right’, and this impression leads to an extrapolation of this feeling to the entire neighbourhood, which is characterised as ‘good’. *‘We know each other’* (LS_B7) is a phrase that all residents bring up in conversation. In this statement, it becomes obvious that even in urban areas, one’s own perception is transferred to the neighbours. ‘Knowing’ summarises and reflects the expectations directed at others in the neighbourhood. Roles and functions are (re-)produced, which are given in practical doings on the ground – in the form of neighbourhood cohesion.

Regular contact and communication creates and develops knowledge about others and the place, and finally, ontological security. Despite the potential for making contact, it remains crucial for neighbourly coexistence that interactions – predominantly performed as communication – with neighbours remain non-binding and optional. The expectations regarding neighbours and life in the neighbourhood are expressed within the framework of generalising perspectives. Neighbourhood cohesion seems to be inherent to small-scale environments and, as a consequence of contact and the associated communication, a quasi-natural occurrence – albeit politely distanced in accordance with norms.

4.2. The mediating function: talking in the mode of trust

Generalised trust is an important social resource and characterises a specific quality of relationship that manifests itself in neighbourhoods through communicative interaction as a figuration of repeatability and continuity. Trust is practised as follows: *‘I just got the key from the neighbour for watering the flowers. But I also receive parcels. That’s standard [...] to support each other ...’* (LS_B3). *‘If I need a little help, I just ask the neighbours and they always help me – not least because I’m alone [and old]’* (LS_B11). *‘If parents don’t speak German well [...] they support each other: with Google Translate or [...] asking a neighbour who can interpret’* (LS_B3). Emergency assistance is considered obligatory as a manifest form of neighbourliness, a practice of neighbouring. The intervention is conditionally oriented towards a purpose (call for help), to ensure that the involvement does not violate the distance norm and is thus perceived as intrusive. It must also be ascertained that no substitute or counter-performance is required. But there are also some residents who go beyond this and engage in the community, who *‘know where the fire is and where they can participate’* (SK_B1, SK_B4) to provide (in-)

formal support to neighbours in different situations and with different problems. But normally ‘you end up talking to the neighbours [in the hallway], without forming any close friendships, but you can trust them and that’s worth a lot’ (LS_B2). In the definition of neighbourhood, it becomes central ‘that you can rely on each other’ (LS_B7), ‘that you can identify with the neighbourhood, that you also have regular interaction with neighbours who feel comfortable here, too’ (LS_B2). Personal well-being to some extent depends on the neighbourhood. In addition to a high-quality environment and adequate housing, the (quality of the) relationship to and with neighbours is also important. ‘The neighbourhood is quite caring. People know what’s going on with you [and in the neighbourhood]’ (SK_B4). ‘Situations like that [where we just chat] are the ones that make up a neighbourhood where I feel comfortable’ (LS_B12). Trust means cooperating and is both a requirement and a result of a successful (latent and manifest) neighbourliness, i.e. through mindfulness and kindness, care and support. Trust develops from communication and mediates the building of neighbourhood cohesion by a practised willingness to engage with others.

4.3. The conflictual contacts: talking in the mode of resolving

Diverse neighbourhoods are not only perceived as cultural and ethnic enrichment, but also as a source of irritation or disruption. But different backgrounds are not the only cause of conflict. Particularly in heterogeneous neighbourhoods, conflictual confrontations between generations, milieus and cultures as well as individual interests and usages are to be expected. ‘You really have to be afraid [on the playground] if you take out a box of biscuits. [...] It sounds pejorative, but it’s because of these ‘vogue environmentalists’ with their water bottles and their homemade biscuits’ (LS_B8). Reservations about other lifestyles are articulated in the same way as prejudices against marginalised groups or fear of deviance: ‘I’m really scared [...] when the drug dealers are loitering on our doorstep’ (SK_B3).

It is the behaviour of ‘others’ that causes problems, including young people improperly using and littering playgrounds (LS_B1; LS_B5; LS_B7). Vandalism and refuse are major issues in these neighbourhoods and can exacerbate the subjective feeling of insecurity or fear of crime experienced by many residents. ‘Rubbish is a real thing here. [...] If someone were to ask me what I really hate about my neighbourhood, it would be the rubbish’ (LS_B3). Those who are always there, the neighbours, tend to become a nuisance – whether in public on the street, or in semi-private settings like apartment buildings and regardless of whether they are drunk and rioting, or playing loud music or making rude comments (LS_B7; LS_B11; SK_B2). ‘It’s nice to live here in the neighbourhood, but there are a lot of problems. Every day the police show up because of troublemakers’ (SK_B1). In addition to social control, which is practised (in-)directly through complaints to the regulatory authority or in person, established place-based norms or house rules are intended to manage civility in the neighbourhood. These internal regulations are often developed collectively by the users themselves and are reflected in mission statements (‘We live diversity’ in Linden-Süd) and declarations (Sahlkamp Charta). These jointly negotiated ‘guiding principles’ embody shared values and goals for a peaceful coexistence.

Yet, conflicts enable collective learning processes and the joint search for solutions to problems in the debate on normative notions. They are generally considered to be socially integrative because they bring people into interaction – via communication. But when conflicts escalate into verbal and physical violence, becoming destructive and thus dis cohesive, communication based on civilised rules and regulations of conflict resolution is no longer feasible. Instead of interaction, people withdraw; instead of public discourse, social isolation and privatisation take hold. For this reason, neighbourhood disputes need to be anticipated. Against this backdrop, the role of community workers and other local stakeholders, acting as neutral third parties, is of great significance. Mediating the conflict is a means of reintegrating conflicts into joint dialogue, negotiation and resolution, thereby generating social order and strengthening social as well as spatial identification and empowerment. When conflicts are managed appropriately, they function as a fundamental form of socialisation (Simmel, 1908) and act as a “safety-valve” that serves to maintain a communicative relationship by preventing withdrawal through non-communication (Coser, 1956, p. 47; Offer, 2021, p. 189). ‘If neighbours respect each other, they can live together comfortably’ (LS_B10). So, conflict is a normal, quasi-natural part of communication with the potential to positively affect the formation of neighbourhood cohesion via rationalising its resolution – the learning and application of communication rules (Collins, 1975; Mouffe, 2005). The willingness to engage in conversation and the practice of talking constitute the basis for neighbourhood cohesion in the form of mutual help, trust in each other and a sense of belonging. Conversation is the key aspect in perceiving the neighbourhood as socially cohesive – conveyed through building trust, getting to know each other more intensively over time, resolving non-violent conflicts as a normal and inherent part of living together locally and through social integration.

4.4. The causal effect of conversations: talking for cohesion

Neighbourhood cohesion is crucially based on social interaction in the environmental context (Wan et al., 2021), because this is where opportunity structures for contact and communication are integrated into daily actions (van der Meer & Tolsma, 2014). Letki (2008), in contrast, emphasises that the erosion of interactions between neighbours also has an eroding effect on cohesion. As Giesen (1991) elaborates, the root of the perpetuated importance of neighbourhood contacts in Germany dates back to the Middle Ages when the immediate surroundings were essential for survival and supra-regional relationships were out of reach.

The effect of conversations with neighbours (A) on neighbourhood cohesion (B) shown in the qualitative data and in the literature is mediated by trust (C). According to Sampson et al. (1997), solidarity and trust are essential for achieving neighbourhood cohesion. Hardyns et al. (2019) also found this effect for Ghent in Belgium, originally empirically determined for Chicago by Sampson et al. (1997). As a visible sign of this trust between neighbours who interact cohesively with each other, Bousset (2006) identifies key exchanges between neighbours in rural France, which go hand in hand with mutual caretaking during periods of absence. Conversations (A) therefore have a direct effect on neighbourhood cohesion (B), but also via the mediator variable trust (C) (see Fig. 2).

We assume an unobserved personality structure variable (U), which, depending on gender (J), is essential for whether one can

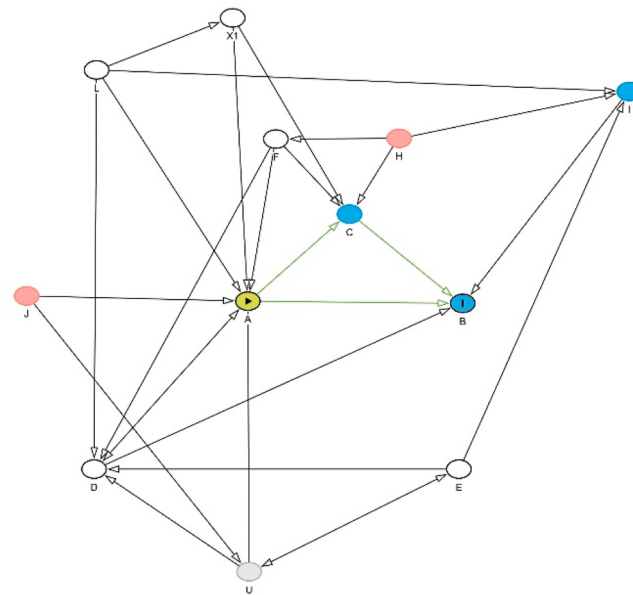


Fig. 2. DAG for the identification of the total causal effect of A on B, mediated by C (in green)

U is unobserved (in grey), C and I are ancestors of outcome (in blue), J and H are ancestors of exposure and outcome (in red), figure drawn with the internet tool *dagitty.net* (Textor et al., 2016). (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

easily enter into conversations with others (A). This personality structure (U) is correlated with education (E) and is responsible for participating in local decisions (D). Gender (J) also has an influence on conversations (A). However, this influence is only weak and not biologically based, as Mehl et al. (2007) were able to show. Empirical evidence shows that interest in local/regional media (I) increases with age (H) (Merkel & Wormer, 2014). Age (H) has a causal effect on trust (C). People trust more with increasing age (Schilke et al., 2021) due to the fact that trust is a learnt relationship that is constantly repeated throughout life (Luhmann, 2009). With increasing age, the duration of residence in one location also increases (F). According to Sturgis et al. (2014), length of residence (F) is associated with greater social cohesion. The longer the duration of residence (F), the closer the bond (Um & Crompton, 1987). However, Blokland et al. (2023) show that this effect is moderated by trust (C). Length of residence (F) is an important explanatory variable for trust (C), particularly in the USA (Abascal & Baldassarri, 2015). Length of residence (F) also has an effect on conversations (A) as local social capital increases (Nisic & Petermann, 2013). It enables greater social cohesion (Ye et al., 2025), as Scott and Hogg (2015) explain with reference to Winston Parva. Interest in regional information (I) is associated with a slightly lower level of education (E) (Merkel & Wormer, 2014). Furthermore, people with a higher level of education are overrepresented in local decision-making processes and civic participation (D) (Zhu, 2015).

Citizen participation processes and participation programmes for local decision-making (D) are often criticised for being rituals that follow normative guidelines (Innes & Booher, 2004). Using Staal's, 1979 ritual theory, the self-referential normative performance of participation rituals can then be seen as the actual goal of local participation processes (D). Nevertheless, participation (D) in civic processes has a clear effect on social cohesion (Innes & Booher, 2004). Neighbourhood cohesion emerges locally from the political life of the community and its strength depends on local participation (D) (Gannett, Jr., 2003). With regard to conversations, the direction of impact cannot be clearly determined here. Hoeckstra and Dahlvik (2018) find in their study that local neighbourhood contacts have an effect on civic participation (D). People with higher levels of social capital show a tendency to participate. In the same way, participation generates exchange and local social capital (Zhu, 2015). (A) and (D) are therefore causally linked in both directions. Empirical research also shows that participation varies between ethnic groups (Togeby, 2004) and that cultural differences between groups further complicate participation processes in planning decisions (Umemoto, 2001). Boehm (2007) therefore concludes that participation by migrants in local decision-making (D) processes is generally lower. A migrant background (L) thus has an effect on participation in local decision-making processes (D). The influence of ethnic diversity in the neighbourhood on cohesion is assessed ambivalently (Baldassarri & Abascal, 2020) and therefore included (X1). People seek to live in ethnically diverse neighbourhoods. However, they do not seek interaction with other ethnic groups (Neal & Vincent, 2013). Just living in a neighbourhood does not lead to conversations (A) between ethnically diverse group members (Dovidio et al., 2010; Wessel, 2009), nor to trust (C). In fact, there is early empirical evidence from the USA that encapsulation occurs between ethnic groups without conversation (Merry, 1981). Smets and Kreuk (2008) explain the preference for conversations only within one's own ethnic group with the desire to communicate in one's own language. From this it can be deduced that ethnic diversity (X1) and migration background (L) have an effect on conversations (A), and that diversity also has effect on trust (C). With regard to media use, Krtalic and Simon (2022) found that migrants make significantly greater use of regional media (I) offerings. The authors explain migrants' stronger demand for regional information (I) because it

strengthens migrants' sense of belonging to society (Krtalic & Simon, 2022). Migration background (L) therefore has an effect on receiving regional information (I).

We use propensity score kernel matching to estimate the causal effect of conversations (A) on neighbourhood cohesion (B). Conversations (A) are, on the one hand, a confounder for the causal relationship between trust (C) and the outcome (B). On the other hand, trust (C) is a mediator in the causal relationship between conversations (A) and the outcome (B) (Sivaraj et al., 2024). The propensity score makes the two groups in (A) comparable with regard to the observed covariates and consequently reduces distorting influences of these covariates. To fulfil the backdoor criterion according to Pearl (1995) and to exclude confounding bias, we condition on the individual-level variables (D), (E), (F), (L) and the context level variable (X1). The inclusion of these five variables in calculating the propensity score excludes all backdoor paths that lead from (A) to (B) and are not causal. We calculate the propensity score for each person using a multilevel logistic regression model with (A) as the dependent variable and (D), (E), (F), (L) and (X1) as independent variables (see Table 3). We then use caliper matching to calculate the ATE and ATET.

Table 4 shows the average causal effect of (A) on (B). The estimation, which calculates the expected treatment effects by using propensity score matching with caliper matching with a width of 0.1 (Austin, 2011), that means the most similar unit of the control group, included 2407 observations. The robustness checks using random variables for calculating several placebo tests (Sekhon, 2009) are all inconspicuous. This indicates a robust result of the matching estimation procedure. The results of the robustness checks are presented in the appendix (Tables A5–A8). To exclude unobserved confounders, we recalculate the model using 1:1 nearest neighbour matching (Morgan & Harding, 2006). We calculate the pairwise difference and apply Rosenbaum bounds (Wilcoxon signed rank sensitivity) to it (DiPrete & Gangl, 2004). The test is based on pairwise differences for 360 pairs in the data for the ATET (Table A4). The upper bound p-values are below the significance threshold of 0.05 up to $\Gamma \approx 5.1$. The confidence intervals only include zero from approximately $\Gamma \approx 4.9$ onwards. Ultimately, an unobserved confounder would have to distort the odds within a pair by about five times for statistical significance to disappear. We interpret this as high robustness to unobserved confounding as well as evidence for the validity of our DAG and our causal estimate.

Fig. 3 and Table A2 in the appendix show the quality of the matches for the propensity score variables. All variables in the propensity score show a good match between the treatment and control groups. The variance ratios of the control variables in the propensity score and the standardised mean differences are shown in Tables A2 and A3 in the appendix. The closer the ratios are to one, the better. The range from 0.890 to 1.288 indicates a very successful match (Caliendo & Kopeinig, 2008). The closer the means are to zero, the better. Fig. 3 and Tables A2 and A3 show an excellent match. Only D (participating in local decisions) deviates slightly here, but the matching parameters are still good.

The ATE shows the estimated average effect of conversations (A) (yes vs. no) on neighbourhood cohesion (B). The coefficient shows

Table 3

Multilevel logistic regression on A (treatment) for estimating the propensity score (robust standard errors in parentheses).

	Model 0 (rSE)	Model PS (rSE)
constant	1.498*** (0.073)	1.634*** (0.222)
D		0.566*** (0.083)
E		−0.090 (0.050)
F		0.037*** (0.006)
L		0.021 (0.143)
X1		−1.897*** (0.367)
Variance component		
intercept	0.163* (0.047)	0.049* (0.031)
Wald χ^2		128.86
Prob > χ^2		0.000
Log likelihood	−1581.73	−1183.74
ICC	0.047	0.015
obs (level 1)	3,239	2,700
obs (level 2)	82	82

Data source: Sackmann, Dirksmeier, Göb, et al. (2024); Landeshauptstadt Hannover; Landeshauptstadt Magdeburg

Table 4

Propensity score matching coefficients of the causal effects of (A) on (B).

B	Coefficient	Std. err.	t-statistics	P> t
ATE	1.146	0.062	18.61	0.000
Y0 (ATE)	2.214	0.059	37.80	0.000
ATET	1.148	0.064	17.88	0.000
Y0 (ATET)	2.229	0.061	36.31	0.000
ATC	1.132	0.053	21.19	0.000
Y0 (ATC)	2.124	0.048	43.85	0.000

Data source: Sackmann, Dirksmeier, Göb, et al. (2024), N = 2,407

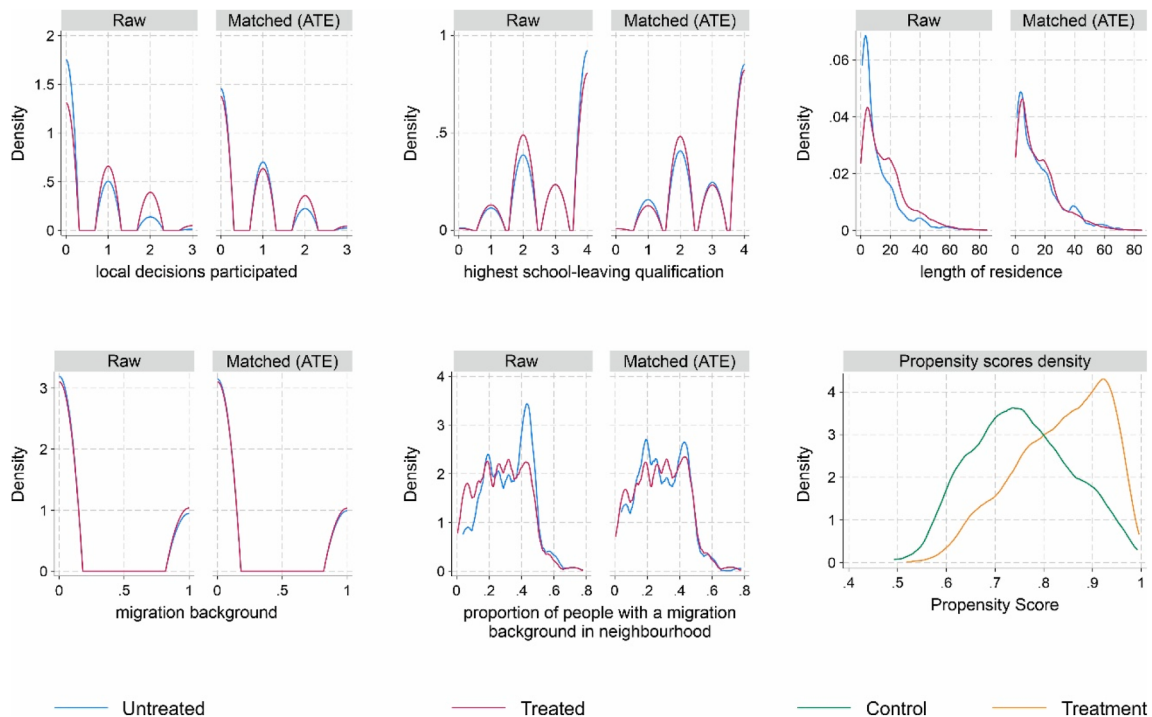


Fig. 3. Matching qualities of propensity score variables and density.

Data source: Sackmann, Dirksmeier, Göb, et al. (2024); Landeshauptstadt Hannover; Landeshauptstadt Magdeburg

that regular conversations with neighbours increase neighbourhood cohesion by 1.146 scale points, which corresponds to more than one fifth of the scale. The estimated mean value of neighbourhood cohesion for the group of people who do not talk to their neighbours is around 2.214, which is with 0.976 well below the mean value of 3.190 on the neighbourhood cohesion scale. At 1.148, the ATET is slightly higher than the ATE. People who actually talk to their neighbours regularly perceive slightly more neighbourhood cohesion. As a result, the great importance of regular conversations between neighbours for perceiving neighbourhood cohesion remains clearly recognisable. This effect amounts to around a fifth of the neighbourhood cohesion scale value. Without conversations, not even the mean/median of the neighbourhood cohesion scale is reached as no value of any potential outcome mean reached two. Conversations are an essential aspect of perceived neighbourhood cohesion and have a strong causal effect.

5. Discussion – the role of conversation for neighbourhood cohesion

The clear effect of communicative interactions between neighbours on neighbourhood cohesion identified in the qualitative analysis is confirmed in the statistical causal analysis using propensity score kernel matching. The causal effect (ATE) of conversations on neighbourhood cohesion is with 1.146 around one fifth of the total neighbourhood cohesion scale. This confirms hypothesis one. In contrast, the ATET of 1.148 differs only marginally; hypothesis two can be rejected. The effect indicates that people who do not talk to their neighbours would benefit more from conversations in terms of neighbourhood cohesion than people who do, but only to a very limited extent.

The quantitative and qualitative empirical analyses clearly show the mutual interconnectedness of neighbourhood cohesion and conversations with neighbours. Especially in the two heterogeneous neighbourhoods studied in Hanover, conversations are meaningful for the formation of neighbourhood cohesion and as a fundamental practice of neighbouring. The causal effect reveals that neighbourhood cohesion is rooted in mundane interactions that are often overlooked and usually considered irrelevant. This clear role of neighbourhood conversations for neighbourhood cohesion, even with the addition of relevant social factors, supports the thesis of Petrović et al. (2019) who see the neighbourhood as a social-interactive mechanism. Empirical evidence for this relationship is also found in older sociological analyses from the Global South, which show that living together in extreme proximity promotes contact and subsequently social cohesion (Bopegamage, 1957). Social cohesion emerges locally and in interaction, as Bruch and Mare (2006) also emphasise for face-to-face actions at the urban aggregate level. But socially cohesive contacts can be formed elsewhere, e.g. at work or school, during activities or through elective bonds (Pinkster, 2016), and manifest themselves regionally in a cohesive neighbourhood network (Drever, 2004). Neighbourhood is thus essential for the formation of community orientations, which in turn requires diverse opportunity structures for interactions that build neighbourhood cohesion via trust (Marschall & Stolle, 2004). Trust develops between people and through familiarity (Blokland & Nast, 2014) or routines based on regular and recurring encounters, i.e. personal contact. This in turn explains the significant correlation between neighbourhood cohesion and lasting communication, as neighbourhoods

provide diverse opportunities and social infrastructure for people to come into contact with each other (Wickes et al., 2019).

The idealisation and geographical imagination of neighbourhoods expressed in the respondents' statements highlights the importance of everyday encounters and expectations. When Forrest and Kearns consider the essential role of the neighbourhood in the establishment of social cohesion as "an important arena for the development and maintenance of weak ties" (2001, 2133), then both the qualitative and quantitative results presented here support this finding. Conversations are the decisive impetus because they create neighbourly connections and neighbourhood cohesion that can be accessed and built upon. The surveyed residents have no difficulty linking conversations directly to neighbourhood cohesion in their immediate surroundings, the neighbourhood. Likewise, the causal effect of conversations on the neighbourhood cohesion scale indicates this direct reciprocity. People with contacts in the neighbourhood form the social basis for neighbourhood cohesion. Ultimately, the empirical findings of our study on the interplay between neighbourhood cohesion in Hanover and Magdeburg, Germany, lead back to the 'black box' effect of the neighbourhood (Mayer & Jencks, 1989). The analyses reveal the causal mechanism for two relatively similar large cities in Germany. Although not equal in population size, the case studies show that where there are similarities in terms of social indicators and infrastructure, i.e. where participation in the neighbourhood is generally possible, similar practices of neighbourhood cohesion are found. The selection of case studies thus appears to reflect the random selection of participants for the quantitative study, which does not mean that there are no major differences between the city districts regarding cohesion practices in neighbourhoods. However, the strength of the effect of the mediator variable trust may vary depending on the spatial context. Neighbourhoods in rural villages or in globally oriented cities could have different effect sizes or mediator variables. Therefore, it seems extremely worthwhile for future research to focus on globalised metropolises such as Berlin or Frankfurt for the German context, or to repeat comparable analyses in a city with a different historical and socio-cultural structure, for example in Southern or Eastern Europe.

To further extend our knowledge, research could focus on the systematic social effects of neighbours, e.g. mimetic behaviour in terms of social control (Mayer & Jencks, 1989). This would open up trajectories for policies that allow local society to develop into a more cohesive but heterogeneous entity for the benefit of all. Cities should specifically create situations, places and occasions that make casual conversations more likely. These opportunities must be easily accessible, free of charge, safe and inclusive in order to strengthen social contact and cohesion. Urban planning could promote conversations between neighbours, particularly through the design of public spaces, transitions between houses with common rooms/shared spaces and backyards as well as via community management in funding programmes such as 'social cohesion in neighbourhoods' which promote not only structural improvement but also events, empowerment strategies and community life in the local area, thus directly influencing neighbourhood cohesion. Simple approaches would include places where people can linger casually instead of just passing through. Uncomplicated approaches that encourage people to engage in conversation are apparent in the furniture used, such as movable/foldable chairs, 'chat benches' and the multiple uses of window sills.

One limitation of the study, and an unresolved question, concerns the generalisability of the causal effect observed beyond the two German cities examined. Some of the research studies included in the design of the underlying DAG are international and were conducted in Europe, the Commonwealth realms, Asia and the US. Extending the research approach to other cities in the Global North therefore appears to be unproblematic. However, the role of neighbourhoods as generators of cohesion would benefit from the inclusion of studies from the Global South as well as from further qualitative participatory research that compares different cities and their neighbourhoods. Since neighbourhoods with certain images and characteristics, socio-demographics and infrastructure often appear similar between cities – as in Hanover and Magdeburg – the focus should be placed on researching different cities with regard to their own idiosyncrasy. The development of a medium-range theory of neighbourhood cohesion with a global explanatory claim needs to include the aspects presented here to a greater extent. Furthermore, future studies should place greater emphasis on behavioural measures in constructing the dependent variable in order to more accurately capture actual helping behaviours and interaction patterns within neighbourhoods. Like other neighbourhood studies (Blokland & Nast, 2014; Buckner, 1988; Sampson et al., 1997), our study focuses on neighbourhood cohesion in practice in the Global North, which may, however, differ significantly from neighbourhood cohesion experienced and enacted in everyday life in the megacities of the Global South. Despite these limitations mentioned, our empirical findings highlight the central importance of public-interest work and social work for neighbourhood cohesion. This requires institutionalised feedback loops through which the needs of the urban community – particularly those of disadvantaged neighbourhoods – are systematically communicated to the city administration in order to trigger appropriate measures. At the same time, people should be involved in specific issues and mobilised to work together on implementation at a local level, so that participation leads to a co-production between the administration and civil society in strengthening neighbourhood cohesion. Conversation is the key to this.

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CRedit authorship contribution statement

Peter Dirksmeier: Writing – review & editing, Writing – original draft, Project administration, Methodology, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Angelina Göb:** Writing – review & editing, Writing – original draft, Visualization, Methodology, Formal analysis, Data curation, Conceptualization.

Declaration of competing interest

The author reports there are no competing interests to declare.

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Appendix

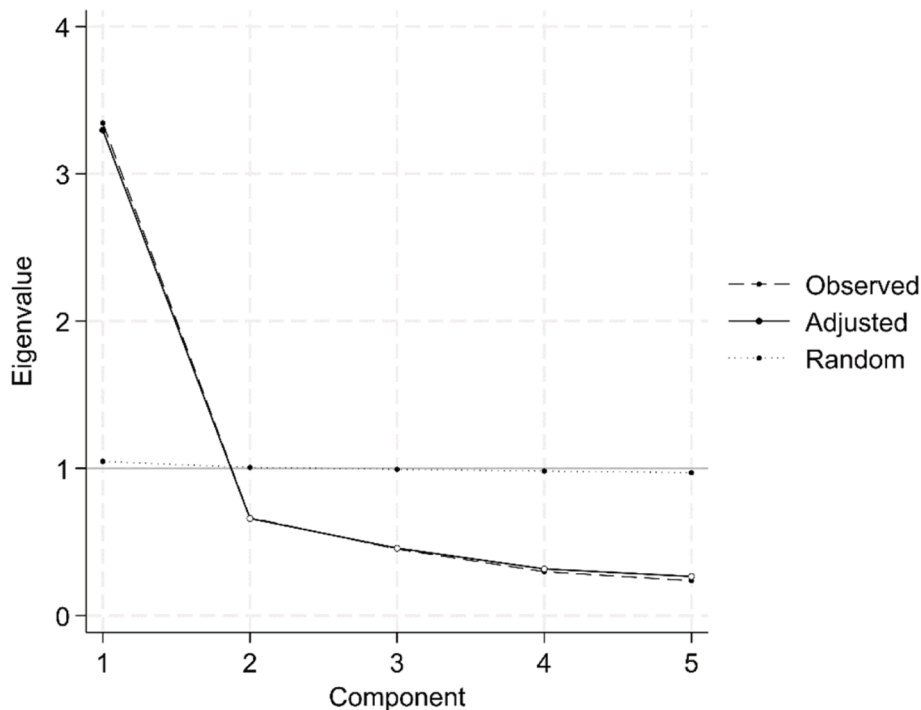


Fig. A1. Horn's parallel analysis for principal components based on 5000 iterations, using the p95 estimate for perceived cohesion in the neighbourhood (B).

Table A1

Question wording and agreement/polarisation of the items of the outcome variable (B)

Cohesion Items	Valid	Agreement A (van der Eijk, 2001)
This is a close-knit neighbourhood	3,095	0.66
People in this neighbourhood are willing to help each other	3,097	0.75
I feel at home in my neighbourhood	3,163	0.74
I feel like a stranger in my neighbourhood (reverse)	3,103	0.84
I am firmly rooted in my neighbourhood	3,088	0.61

Sources: [Sackmann, Dirksmeier, Göb, et al. \(2024\)](#); [Sampson et al. \(1997\)](#); [Browning and Calder \(2017\)](#); [Blokland and Nast \(2014\)](#).

The values of A can theoretically lie between 0 (absolute polarisation) and 1 (absolute agreement), with 0.5 indicating an equal distribution ([van der Eijk, 2001](#)).

Table A2

Variance ratio of control variables (propensity score)

Variances	Raw			Matched (ATE)		
	Treated	Untreated	Ratio	Treated	Untreated	Ratio
D	0.673	0.375	1.796	0.643	0.499	1.288
E	1.141	1.111	1.028	1.133	1.181	0.959
F	201.515	154.281	1.306	189.152	212.497	0.890
L	0.188	0.177	1.062	0.188	0.183	1.027
X1	0.023	0.020	1.100	0.022	0.021	1.059

Data source: Sackmann, Dirksmeier, Göb, et al. (2024); Landeshauptstadt Hannover; Landeshauptstadt Magdeburg

Table A3

Standardised mean differences of control variables (propensity score)

Means	Raw			Matched (ATE)		
	Treated	Untreated	Std. Dif.	Treated	Untreated	Std. Dif.
D	0.660	0.342	0.440	0.615	0.509	0.146
E	3.015	3.157	−0.134	3.034	3.059	−0.024
F	16.655	11.077	0.418	15.776	15.628	0.011
L	0.250	0.229	0.051	0.250	0.240	0.024
X1	0.278	0.318	−0.273	0.284	0.286	−0.015

Data source: Sackmann, Dirksmeier, Göb, et al. (2024); Landeshauptstadt Hannover; Landeshauptstadt Magdeburg

Table A4

Rosenbaum bounds test (Wilcoxon signed rank sensitivity) for unobserved confounding

Γ	Hodges–Lehmann estimator			
	sig+	t-hat+	t-hat−	CI
1	0	1.0347	1.0347	0.847141–1.15881
2	< 0.0001	0.5969	1.3958	0.470865–1.52134
3	< 0.0001	0.3807	1.6235	0.239073–1.74958
4	0.0011	0.2413	1.7492	0.112308–1.88196
5	0.0356	0.1280	1.8644	−0.004252–1.99744
5.2	0.0562	0.1214	1.8690	−0.011137–2.07692

Data source: Sackmann, Dirksmeier, Göb, et al. (2024).

Robustness tests.**Table A5**

Placebo test with randomly generated A and B variables with equal distribution to the original data and original propensity score (width 0.1)

	Coefficient	Std. err.	t-statistics	P> t
ATE	0.040	0.045	0.90	0.368
YO (ATE)	2.683	0.041	65.320	0.000
ATET	0.040	0.045	0.88	0.379
YO (ATET)	2.683	0.041	65.109	0.000

Data source: Sackmann, Dirksmeier, Göb, et al. (2024), N = 2,700

Table A6

Placebo test with randomly generated treatment variable with equal distribution to the original data and original propensity score and dependent variable (B) (width 0.1)

	Coefficient	Std. err.	t-statistics	P> t
ATE	0.108	0.052	2.08	0.038
YO (ATE)	3.102	0.047	65.94	0.000
ATET	0.107	0.052	2.06	0.040
YO (ATET)	2.740	0.040	69.38	0.000

Data source: Sackmann, Dirksmeier, Göb, et al. (2024), N = 2,407

Table A7

Placebo test with randomly generated outcome variable with equal distribution to the original data and original propensity score and treatment variable (A) (width 0.1)

	Coefficient	Std. err.	t-statistics	P> t
ATE	−0.050	0.049	−1.02	0.307
YO (ATE)	2.755	0.045	60.95	0.000
ATET	−0.048	0.051	−0.94	0.347
YO (ATET)	2.756	0.048	57.29	0.000

Data source: Sackmann, Dirksmeier, Göb, et al. (2024), N = 2,700

Table A8

Placebo test with treatment variable (A) and xenophobia derived from the data set (scale; mean = 3.780) as outcome (width 0.1)

	Coefficient	Std. err.	t-statistics	P> t
ATE	0.049	0.073	0.66	0.507
YO (ATE)	3.774	0.069	54.99	0.000
ATET	0.063	0.077	0.82	0.411
YO (ATET)	3.746	0.073	51.50	0.000

Data source: Sackmann, Dirksmeier, Göb, et al. (2024), N = 2,460

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