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Neighbourhood Embeddedness in Six European Cities: Differences Between Types of Neighbourhoods and Immigrant Background

Abstract: This paper analyses neighbourhood embeddedness of immigrant and non-immigrant populations in six European cities. We define neighbourhood embeddedness as an individual level concept and distinguish two main dimensions: place and network embeddedness. The neighbourhood embeddedness concept provides us with the possibility to study attitudinal and behavioural aspects of individuals related to the place of living. Using data from the 'Generating Interethnic Tolerance and Neighbourhood Integration in European Urban Spaces' (GEITONIES) project, we explore communalities and differences in the degree of embeddedness and its underlying mechanisms for immigrant and non-immigrant residents across a set of different neighbourhood types. Our findings suggest that neighbourhoods are still important focal points of social life. But immigrants are characterized by higher levels of neighbourhood embeddedness than native residents which are mostly related to the strong link between perceived feelings of attachment to the people in the neighbourhood and the place as such.

Keywords: embeddedness, GEITONIES, immigrants, neighbourhood, social ties

Introduction

Concerns with neighbourhood and community cohesion have a long history in urban sociology. These issues have been a central theme of the Chicago School sociologists at the beginning of the 20th century who were essentially concerned with increasing anonymity and individualism through new forms of urbanized life cycles at the expense of social order, traditional bonds of close kinship ties and shared moral values (Burgess 1926; Park 1925). Empirical research on the status and significance of neighbourhoods has been increasing ever since. Some theorists point to a gradual deterioration of neighbourhood importance and detached interactions from localized contexts due to increasing human mobility, new communication and information technologies (for a review see Chaskin 1997). Less sceptical voices argue that neighbourhoods are still the site for mundane routines in everyday lives. Just as the role of family, work and other aspects of social life are being transformed, so is the role of

the neighbourhood (e.g. Phillipson et al. 1999). But it might be still the neighbourhood level where 'strategies of adaption, resistance and coping develop in a situation where globalising processes collide with distinct and diverse urban demographics, labour market, policy histories and organisation form' (Kennett and Forrest 2006: 713) which increase the perception that the neighbourhood is something that still matters. From this perspective, neighbourhoods remain vital sites for engaging in social interactions, for generating a sense of common purposes and social solidarity (Lee and Campbell 1999; Woldoff 2002), and thus for fostering social cohesion in larger entities, such as the city (Putnam 1998).

Cohesion is often regarded as an aggregated concept in which the quality of social integration at the neighbourhood level determines social cohesion at higher levels (Forrest and Kearns 2001; Friedkin 2004; Morrison 2003). Recent theoretical and empirical studies have primarily focused on social cohesion through attitudinal measures. Some studies investigate the social meaning of neighbourhoods, including attachment or (dis-)satisfaction (Goudy 1982; Parkes et al. 2002; Sampson 1988). Others focus more on the relevance of spatial aspects in the formation of sentiments and the bonds between residents and space, labelled as place identity (Lalli 1992), place attachment (Low and Altman 1992; Smaldone 2006; Williams et al. 1992), or sense of place (Hay 1998). Social capital theorists finally focus on trust among residents in urban neighbourhoods which reinforces social cohesion at the aggregated level (Putnam 2007).

In this paper we argue that these single edged perspectives on various forms of social cohesion produce evidence which is inconclusive. Firstly, social cohesion is oftentimes seen as the equivalent of some sort of attachment but remains 'ill-defined' (Dekker and Bolt 2005: 2448) because it is assumed that everybody knows what is being referred to. Secondly, from an empirical point of view, most studies ask respondents to report perceived cohesion of others in the locale. But these statements require to assess information to which they may not always have accurate access (Hipp and Perrin 2006). What is missing in the concept and debate about social cohesion is an individual level perspective on the connectedness to the locale which includes attitudes and own feelings of cohesion as well as a behavioural dimensions, such as social interactions with neighbours (Campbell and Lee 1992).

The first aim of this paper is to partially correct this research gap. We introduce the (new) notion of 'neighbourhood embeddedness' which we define as a multidimensional and individual level concept. We depart from Granovetter's concept of embeddedness (Granovetter 1985) and draw on applied work by Hess (2004) to define two main dimensions of neighbourhood embeddedness: Place and network embeddedness.

Secondly, we aim at exploring empirically variations in the degree of neighbourhood embeddedness across different types of neighbourhoods. Most of the previous studies related to neighbourhood attachment and networks are limited to single neighbourhoods (e.g. Greif 2009; Hipp and Perrin 2006). The few comparative studies that exists tend to focus almost exclusively on disadvantaged neighbourhoods (Corcoran 2002; Dekker 2007; Friedrichs and Blasius 2003), making it difficult to map similarities and differences in predicting neighbourhood embeddedness across varying local con-

texts and to study variations in the mechanisms of neighbourhood embeddedness. Recently, Kennett and Forrest (2006) claimed that comparative studies should ‘embrace a wider set of neighbourhood types to provide a more balanced and comprehensive understanding of the social life in neighbourhoods in the contemporary European city and to provide a fully account of inter-neighbourhood relations’ (Kennett and Forrest 2006: 716). We address the question of variations in neighbourhood embeddedness and their underlying mechanisms on the basis of a survey in six European cities and 18 neighbourhoods which characterise specific types of neighbourhoods in these cities.

The third aim of this contribution is to investigate differences in neighbourhood embeddedness by immigrant background. Previous research has uncovered that dimensions of neighbourhood embeddedness, such as attachment to place, vary within neighbourhoods among immigrant and non-immigrant populations (Harris 1999; Taylor 1997). But the nature of these disparities still remains unclear (Greif 2009). An empirical examination of how immigrant and non-immigrant groups are embedded in various types of urban neighbourhoods is also vital to an understanding of everyday life in local environments that are increasingly multi-ethnic and super-diverse (Vertovec 2007).

Introducing the Notion of Neighbourhood Embeddedness

Within this section, we introduce the notion of neighbourhood embeddedness as an alternative framework to the oftentimes applied aggregated concept of social cohesion. The embeddedness concept has gained much prominence in economic sociology and geography over the last two decades (e.g. Amin 1999; DiMaggio 1990) but it has not yet been applied to the study of individual level processes in the neighbourhood. Our neighbourhood embeddedness concept departs from Granovetter’s definition of embeddedness which stresses ‘the role of concrete personal relations and structures (or networks) of such relations in generating trust and discouraging malfeasance’ (Granovetter 1985: 490). Granovetter’s definition of embeddedness emphasises individual agencies and the analytical scales of individual actors and interpersonal networks.

Since the early 1990s, the new economic geography has adopted the concept of embeddedness and argues that social relations and economic action are inherently spatial (e.g. Martin 1994). Hess (2004) defined two major dimensions of what comprises embeddedness and who is embedded in what: Network and territorial (or place) embeddedness. *Network embeddedness* describes the network of actors a person is involved in, i.e. ‘the structure of relationships among a set of individuals’ (Hess 2004: 177). This dimension comprises the structure of networks, the durability and stability of contacts and relations. The second major dimension is *place embeddedness* which considers the extent to which an actor is ‘anchored in particular territories or places’ (Hess 2004: 177).¹

¹ Hess (2004) defined a third dimension, called societal embeddedness. This dimension is of less interest to us within this study which is why we do not investigate this third dimension further.

In this study, we take Granovetter's and Hess' definition of embeddedness a step further. We use Granovetter's analytical scale of individual actors and Hess's distinction of place and network embeddedness and apply them to the setting of neighbourhoods and their residents. By doing so, we obtain an individual level concept that allows for a description of how residents are 'anchored' in certain neighbourhoods (place embeddedness) and describes the structure of relationships at the locale in which residents participate (network embeddedness).

Our first dimension, *place embeddedness*, refers to attitudes towards places and the ties that people have not only with other people but with the immediate living environment. People attach social values to their neighbourhoods which are based on perceived feelings of belonging to their neighbourhood of living. The bonds between people and places and the role spatial aspects have in the formation of sentiments may be called 'neighbourhood attachment' or 'sense of place' (Hay 1998; Low and Altman 1992; Williams et al. 1992). It also contains individual identification with the place (Lalli 1992) which might create 'imagined communities' (Blokland 2003).

Our second dimension, *network embeddedness*, describes the structure of relationships and social ties among residents in neighbourhoods. While place embeddedness is merely measured through attitudes, social ties describe behavioural aspect of embeddedness and the connectedness to the locale (Guest et al. 2006; Sampson 1988; Woldoff 2002). The focus on social ties evaluates embeddedness through intimates and the frequency of contacts with neighbours, the overall knowledge of one's neighbours by name and place of living, numbers of small talks on the street, occasional visits and the number of close friends in the neighbourhood (Wirth 1956).

By exploring neighbourhood embeddedness, we understand *neighbourhood* not only as a territorially bounded entity in which people live together and to which they develop sentiments, but also as a series of overlapping social networks. The residentially based ties are an important component of everyday lives and a basic building block of neighbourhoods. Thus, we define neighbourhoods in line with Blokland's definition as 'a geographically circumstanced, built environment that people use practically and symbolically' (Blokland 2003: 213).

Determinants of Neighbourhood Embeddedness and Expected Variations

What factors are related to our concept of neighbourhood embeddedness? Individual level determinants have been explored in previous studies as predictors of neighbourhood attitudes and social networks and some of these factors are likely to contribute to place and network embeddedness simultaneously. To begin with, personal and household characteristics might be influential factors for neighbourhood embeddedness. With respect to *age* it is likely that older people show greater levels of place embeddedness because they might have had the chance to fulfil their housing preference and have ended up in the neighbourhood they like (Völker et al. 2007). They are also likely to spend more time in the neighbourhood and have higher probabilities to get into contact with their neighbours. A similar line of argumentation applies to *length of*

residence which has been found to have a positive effect on neighbourhood attitudes and social networks in the neighbourhood. A longer time of residence increases the chances to get to know the neighbourhood better and to establish closer contacts with its residents (Lee and Campbell 1999). Moreover, residents with a longer length of residence are usually not expected to move in the short term. Household composition, such as living with a partner or having school aged children are additional factors positively stimulating the formation of social ties in and attitudes towards the neighbourhood (Woolever 1992).

Professional status is another important determinant of how people are embedded in their neighbourhood. Previous studies show that economically inactive people do not have the need to leave the neighbourhood on a regular basis and are therefore more likely to concentrate their networks in the neighbourhood (e.g. Blasius et al. 2009). Vice versa, economically active residents are expected to establish their networks partially through colleagues which might be living somewhere else. But whether daily occupation (being economically active) is expected to in- or decrease positive attitudes towards the neighbourhood is uncertain.

Education has been found among the strongest determinants for affecting the size and characteristics of social ties and networks (Dekker and Bolt 2005; Fischer 1982; Wirth 1956; Woolever 1992). The higher people are educated, the larger the size of the network and the wider the geographical range. Although education might have a negative effect on social ties in neighbourhoods, it has been found to increase positive attitudes, such as attachment, to the place of living (Woolever 1992).

With regard to *ethnicity*, no clear direction on place and network embeddedness has been observed. Although some (mainly US) studies point to higher levels of neighbourhood attachment and satisfaction as well as behavioural aspects by immigrants (Lee and Campbell 1999; Lee et al. 1991), others uncover the opposite patterns making the nature of these disparities unclear (Greif 2009). In Europe, Dekker and Bolt (2005) found that ethnic minorities in Dutch post-war estates have stronger ties than native Dutch people in the neighbourhood and that they additionally show greater levels of attachment towards the neighbourhood.

But all these individual level determinants of neighbourhood embeddedness might vary across contexts. Most studies investigate patterns of (what we call) neighbourhood embeddedness predominately within single or similar neighbourhoods. For example, the positive effect of ethnicity on neighbourhood networks and attachment in the Dutch study by Dekker and Bolt (2005) might be a result of their neighbourhood choices which were characterised through an ethnic mix. Because immigrants have been generally found to prefer ethnically mixed neighbourhoods, albeit with a substantial co-ethnic presence (Charles 2003), they show greater levels of neighbourhood attachment and networks. Similar variations with other individual level predictors might appear once various contextual characteristics of neighbourhoods are considered. For example, the linear development model of neighbourhoods (Wirth 1956) predicts that increasing population size, density and heterogeneity lead to individual psychic overload and anomie and thus to a lesser degree of place embeddedness. The systematic model (Kasarda and Janowitz 1974) suggests that the length of res-

Table 1

**Overview of Expected Impacts by Individual, Household and Neighbourhood Characteristics
and Relationship Between Neighbourhood Embeddedness Dimensions**

| | Neighbourhood embeddedness | |
|-------------------------------|----------------------------|---------|
| | Place | Network |
| Age | + | + |
| Length of residence | + | + |
| Household composition | | |
| Living with partner | + | + |
| Having school-aged children | + | + |
| Economically inactive | ? | + |
| Economically active | ? | — |
| Education | + | — |
| Immigrant background | ? | ? |
| Neighbourhood characteristics | ? | ? |
| Network embeddedness | + | |

idence and neighbourhood stability create more complete neighbourhood networks and results in increasing attachment to the neighbourhood. More recent studies on neighbourhood effects (Blasius et al. 2009) show that restricted opportunity structures in neighbourhoods clearly affect attitudes towards and behaviour within the neighbourhood. Although these studies hint at variations across certain European neighbourhood types with different characteristics, the degree and the concrete influence on neighbourhood embeddedness and its underlying mechanisms are not yet clear.

Finally, an examination of the interrelatedness of the main dimensions of neighbourhood embeddedness (network and place) and the extent to which it differs across types of neighbourhoods and between immigrant and non-immigrant populations will be conducted. Social ties and networks have been found to correlate with feelings of home or feelings of safety in the place of living (Charles 2003) and others have shown that neighbourhood networks affect neighbourhood attachment (Hipp and Perrin 2006). Thus, we expect a positive influence of network embeddedness on place embeddedness.

Data and Measurement

We use data from the 2010 ‘Generating Interethnic Tolerance and Neighbourhood Integration in European Urban Spaces’ (GEITONIES) project to investigate our research questions. The survey was conducted in 18 neighbourhoods in six European cities. These cities are Bilbao (Spain), Lisbon (Portugal), Rotterdam (the Netherlands), Thessaloniki (Greece), Vienna (Austria) and Warsaw (Poland).

Within each city, three neighbourhoods were selected on a common set of criteria, such as a clear structure without internal barriers, breaks or other major non-residen-

tial areas. The selected neighbourhoods represent compact and homogeneous living areas displaying specific neighbourhood types for each city.

Based on an inventory of all addresses, a stratified random sample was generated aiming at including 100 immigrants and 100 native born persons in the final sample. In some neighbourhoods the targeted number of interviews ($N = 100$ per group) was slightly enlarged. The sample used in this article contains some missing values in our (in-)dependent variables of interest and we dealt with this through listwise deletion leading to a total sample size of $N = 3,533$ out of which 1,617 are immigrants.

Interviews were conducted with the person whose birthday was last in the household and all respondents were aged 25 years and older. The questionnaires were distributed and collected in person and, where appropriated, translated questionnaires were used for interviewing immigrant respondents.

Dependent Variables

'*Place embeddedness*', our first dependent variable, is an attitudinal index made up of five indicators: 'I feel attached to this place', 'I would not move away from here with pleasure', 'I care about my neighbourhood', 'I am proud about my neighbourhood', 'I feel that I belong to this neighbourhood' (Cronbach's alpha: 0.79). All items used to identify this dimension are likert-scale survey questions with answer categories ranging from 'disagree strongly' to 'agree strongly'.

Our second dependent variable, '*network embeddedness*', is measured through three sub-dimensions which constitute different types of contacts with various levels of intimacy²:

First, respondents were asked to state how many of their closest contacts with whom they 'spend free time', 'who they have asked for an advice' and 'whom have helped them out in a substantive way during the last three years' are living in the same neighbourhood. Seven answer categories were provided, ranging from 'none of them' up to 'all of them'. This indicator measures the availability of 'intimate contacts' in the neighbourhood of living and had a reliability coefficient of 0.86.

Secondly, 'interactions with and knowledge of neighbours' is measured by one index which includes the following information: The number of neighbours with whom respondents had exchanged 'small talks with' and 'visited/ welcomed' them at home within the last three month, as well as whether they 'know their neighbours by name and place of living' and if they have 'a clue who their neighbours are' (Cronbach's alpha: 0.67).

Finally, general 'feelings of attachment towards the people in the neighbourhood' are captured by using the following survey items: 'I would miss the people in my neighbourhood when I moved out', 'People in my neighbourhood do not annoy me' and 'My neighbours are important to me' (Cronbach's alpha: 0.69).

Mean values and standard deviations of all four dependent variables are displayed in table 2.

² The differentiation of our network embeddedness variable into three sub-dimensions was confirmed by principal component factor analysis.

Independent Variables

Table 2 illustrates further the independent variables included in the regression models and provides descriptive statistics on each variable. The outcomes are presented separately for each neighbourhood type. *Immigrant background* is a dummy variable dividing the neighbourhood population into natives and immigrants. The definition of 'migration background' in the GEITONIES survey is based on the birthplace of the parents: If mother and/or father of the respondent had been born abroad, the person is classified as an immigrant. To measure the socioeconomic status, we use the *level of education* and *professional status*. We distinguish the former as higher education (beyond upper secondary) and other levels of education, while the latter measure distinguishes between residents with a daily occupation and without (unemployed, disabled, retired and housewives). There is also a set of 'socio-demographic' variables containing four measures: dichotomous variables for *gender* (1 = male) and *household composition* (1 = lives with children; 1 = lives with partner), and a categorical variable for the respondents' *age* (1 = under age 35; 2 = aged 35–49, 3 = aged 50–64, 4 = aged 65 and older). Finally, we use a variable with four categories to measure the *length of residence*: (1) moved in between 1–5 years, (2) moved in between 6–10 years ago, and (3) moved in more than 10 years ago and (4) ever lived there.

Neighbourhood Types

In this paper we expect neighbourhood embeddedness to vary across specific types of neighbourhoods. The 18 neighbourhoods investigated in this study vary along some structural characteristics. We classify the 18 neighbourhoods into distinct types along a number of indicators that describe specific structural characteristics and social qualities of these neighbourhoods. These indicators can be grouped into the four categories of contextual neighbourhood measures defined by Galster (2012): The *geographical* aspect of neighbourhoods is measured by using the size of the neighbourhood (absolute number of inhabitants) and the distance to the city centre (in kilometres). *Institutional* features of neighbourhoods are measured through an additive index summing up the availability of important institutions, e.g. schools, health care centers, associations, community centers, parks, play areas. This information was provided by each GEITONIES city research team through a common reporting scheme. The *social and socio-economic* composition is measured by including the average ISEI score and the unemployment rate within each neighbourhood. Next, our measures for *environmental* aspects of neighbourhoods include the construction period (in years) to capture physical aspects of the neighbourhood, the residential stability (average number of processions), the average length of residence (in years) and perceptions of safety in the neighbourhood. In addition to the four categories presented by Galster (2012), we add a fifth category called *immigration* since this factor has been highlighted as an important contextual characteristic (Vervoort et al. 2011; Völker et al. 2007). We measure aspects of immigration by including the share

Table 2

Descriptive Statistics for Variables Used in Regression Analysis, by Neighbourhood Type

| | Type 1 | | Type 2 | | Type 3 | |
|---|--------|--------|--------|--------|--------|--------|
| | Mean | sd | Mean | sd | Mean | sd |
| <i>Dependent Variables (ratio scale)</i> | | | | | | |
| Place attachment (1–5) | 3.40 | (1.01) | 3.60 | (0.88) | 3.90 | (0.82) |
| Intimate contacts (1–7) | 3.00 | (2.10) | 3.10 | (2.10) | 3.00 | (2.10) |
| Interaction and Knowledge (1–5) | 2.70 | (0.89) | 2.90 | (0.84) | 2.60 | (0.84) |
| Feelings of attachment to people (1–5) | 3.00 | (0.85) | 3.10 | (0.78) | 3.30 | (0.72) |
| <i>Independent Variables</i> | | | | | | |
| <i>Gender</i> | | | | | | |
| Male | 0.44 | | 0.44 | | 0.47 | |
| Female # | 0.56 | | 0.56 | | 0.53 | |
| <i>Age</i> | | | | | | |
| Under 35 # | 0.28 | | 0.24 | | 0.37 | |
| 35–49 | 0.34 | | 0.37 | | 0.26 | |
| 50–64 | 0.20 | | 0.24 | | 0.22 | |
| 65 and older | 0.18 | | 0.15 | | 0.15 | |
| <i>Ethnicity</i> | | | | | | |
| Native # | 0.48 | | 0.52 | | 0.62 | |
| Immigrant | 0.52 | | 0.48 | | 0.38 | |
| <i>Education</i> | | | | | | |
| Lower-average education # | 0.44 | | 0.39 | | 0.19 | |
| Higher education | 0.56 | | 0.61 | | 0.81 | |
| <i>Professional status</i> | | | | | | |
| Inactive (unemployed, retired, housewife) | 0.50 | | 0.42 | | 0.39 | |
| Active (work or education) # | 0.50 | | 0.58 | | 0.61 | |
| <i>Household composition</i> | | | | | | |
| Household with children | 0.67 | | 0.61 | | 0.72 | |
| Household without children # | 0.33 | | 0.39 | | 0.28 | |
| Household with partner | 0.48 | | 0.48 | | 0.34 | |
| Household without partner # | 0.52 | | 0.52 | | 0.66 | |
| <i>Length of residence in neighbourhood</i> | | | | | | |
| Moved in bet. 1–5 years ago # | 0.30 | | 0.25 | | 0.29 | |
| Moved in bet. 6–10 years ago | 0.20 | | 0.22 | | 0.16 | |
| Moved in 10 or more years ago | 0.33 | | 0.39 | | 0.34 | |
| Ever lived there | 0.17 | | 0.15 | | 0.21 | |

Source: Geitonies Survey 2010. Notes: # denotes the reference category in the regression analysis.

of immigrants living in the neighbourhood and the immigration experience of the neighbourhood (in years)³ which was provided by the GEITONIES city teams.

A hierarchical cluster analysis was applied which defined three clusters of neighbourhoods on the basis of communalities in structural characteristics and social qual-

³ The information on the socio-economic composition, residential stability, length of residence and perceptions of safety are derived by aggregation from the GEITONIES database, taking into account the stratified sample design by weighting the outcomes in the neighbourhood for the actual ratio of immigrants and natives (derived from available municipal data).

Table 3

Clusters of Neighbourhoods and Their Characterisation

| | Type 1 | Type 2 | Type 3 |
|--------------------------------|--|---|---|
| % | 32.35 | 33.17 | 34.47 |
| Nr. of respondents | 1,143 | 1,172 | 1,218 |
| Nr. of neighbourhoods per type | 6 | 6 | 6 |
| <i>Geographic</i> | Small to medium size; Bordering location | Medium size; Outskirt location | Large size; Inner city location |
| <i>Institutional</i> | Medium availability | Medium availability | High availability |
| <i>Environmental</i> | Medium safety; Medium stability; Long length of residence; Old construction | Medium safety; Medium stability; Short length of residence; New construction | Medium safety; Low stability; Medium length of residence; Medium aged construction |
| <i>Socio-economic</i> | Low SES; High unemployment rate | Medium SES; Average unemployment rate | High SES; Average unemployment rate |
| <i>Immigration</i> | High share of immigrants; Long experience of immigration | Medium share of immigrants; Short experience of immigration | Low share of immigrants; Medium experience of immigration |

Source: Geitonies Survey 2010.

Notes: Characterisation of neighbourhood types is based on mean comparison of the 11 indicators which entered the cluster analysis. SES = Socio-economic status.

ities (see table 2).⁴ The first neighbourhood type comprises 32,35 per cent of the total sample and is mainly characterised by its bordering location to the city center, old construction period (on average 60 years ago), low socio-economic make-up of its population and a high share of immigrants (on average 60 per cent) as well as a long immigration experience (around 30 years). The second observed type represents neighbourhoods with a greater distance to the city center. These neighbourhoods are of medium size and have been constructed on average 30 years ago. Consequently, they have a short immigration experience, while the current size of the immigrant population is medium (around 30 per cent). This neighbourhood type consists of around 33 per cent of our sample. Finally, the last neighbourhood type is defined by its inner city location, high socio-economic status of its residents and a low share of immigrants living in the neighbourhood (on average around 11 per cent).

⁴ Investigating the mean distribution of each indicator per cluster provides us with a description of each observed neighbourhood type. The mean values are not shown in table 2 but are available upon request.

Results

Descriptive Findings: Network and Place Embeddedness

In this section, we explore descriptively variations in *network* and *place embeddedness* across neighbourhood types and by immigrant and non-immigrant groups within each neighbourhood type. We begin by looking at the three sub-dimensions which altogether constitute 'network embeddedness'. Perceived attachment to the people in the neighbourhood is highest in the better-off inner city neighbourhoods (see neighbourhood Type 3 in figure 1), followed by outskirts locations. It is lowest in the neighbourhoods bordering the inner city with high unemployment rates and high shares of immigrants. However, the average attachment to the people in the neighbourhood is always higher for immigrants than for non-immigrant residents in all three neighbourhood types (although, not significantly in the bordering neighbourhoods).

When turning to concrete interactions with and knowledge of neighbours (right side of figure 1), we observe that this dimension of network embeddedness is least common in the inner city neighbourhoods. Here, residents are less often found to exchange with their neighbours nor do they frequently know who their neighbours are and where they live. Moreover, it is worth noting that this applies in particular to immigrants within these inner city neighbourhoods. The average level of exchange with and knowledge of their neighbours increases slightly with the distance to the city center: The further away the location of the neighbourhood, the higher the exchange with and knowledge of neighbours among its residents. Thus, less central locations seem to provide greater opportunities to get to know ones neighbours.

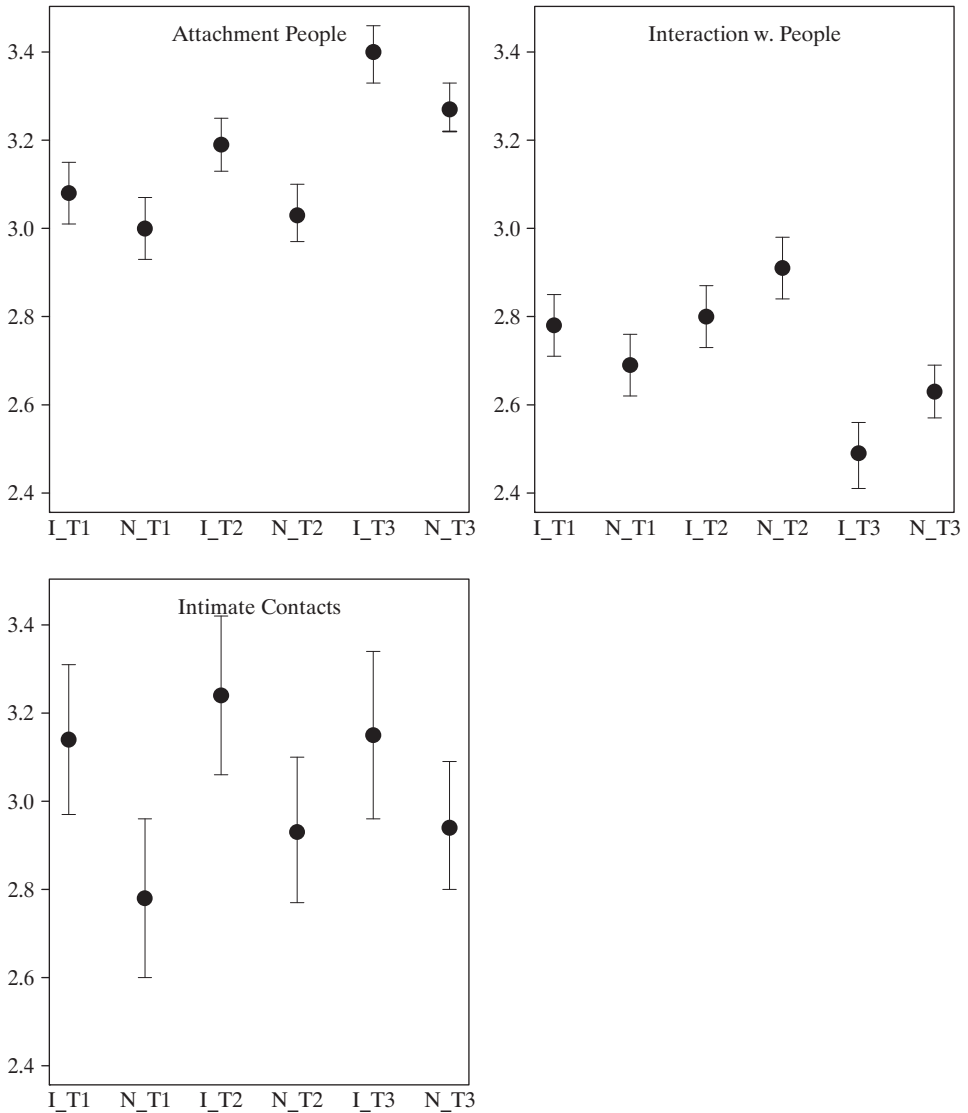
Our last dimension covers the availability and overall size of close contacts within the neighbourhood of living. With regard to these intimate contacts, one clear result appears: Immigrants are having on average more intimate contacts within the area of living, irrespective of the neighbourhood type. But the group differences are only statistically significant within neighbourhoods with long immigration experiences and high shares of immigrants (Type 1).

Figure 2 displays the mean comparison of our 'place embeddedness' indicator, separately for immigrants and natives as well as across the three types of neighbourhoods. Already at a first glance we observe a clear ranking across neighbourhood types: Residents living in small to medium sized locations bordering the inner city with high unemployment rates are on average less attached to their place of living (Neighbourhood Type 1, left side of figure 2). The degree of place embeddedness is on average slightly higher in medium sized outskirts neighbourhoods (Neighbourhood Type 2, middle of figure 2) while it is highest in the inner city locations (Neighbourhood Type 3, right side of figure 2).

Immigrant and non-immigrant residents do not differ significantly in their place attachment within the inner city and bordering neighbourhoods. But they clearly vary in their degree of place embeddedness within neighbourhoods that are mainly characterised by their location in the outskirts as well as their average unemployment rate, medium share of immigrants and generally low experience of immigration.

Figure 1

Sub-dimensions of Network Embeddedness, by Group and Neighbourhood Type

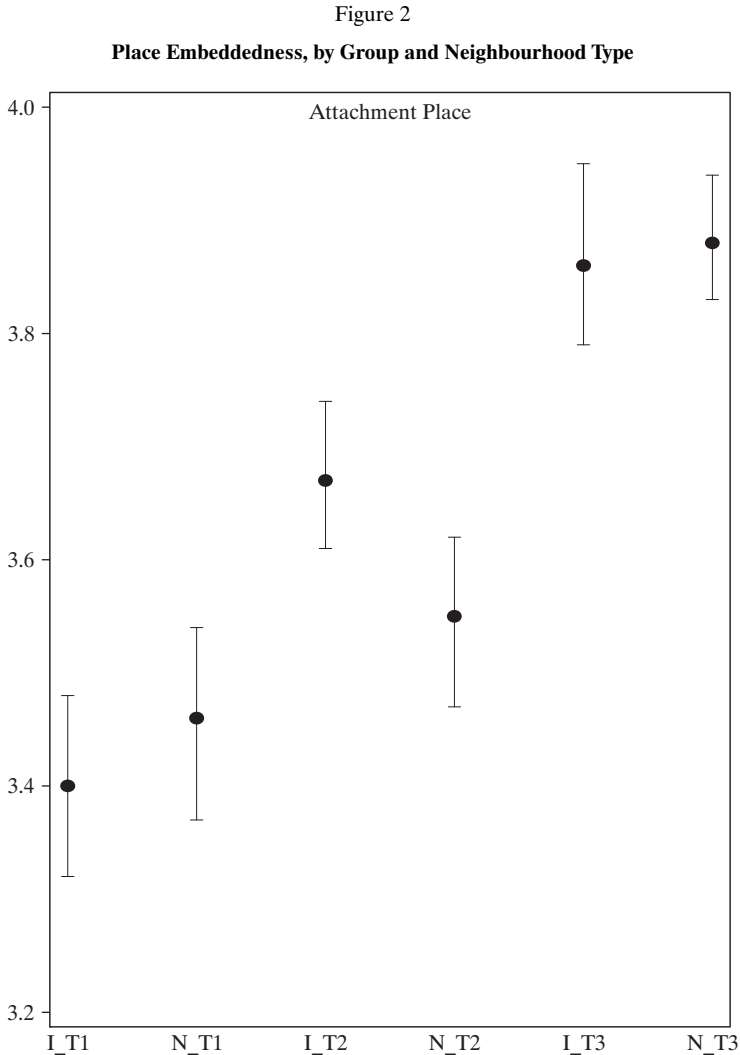


Note: Mean scores on ratio scales of network embeddedness, by group and neighbourhood type. Circles show mean estimates; lines show 95 percent confidence intervals. I = Immigrants, N = Natives. T1 = Neighbourhood type 1, T2 = Neighbourhood type 2; T3 = Neighbourhood type 3.

Source: Geitonies Survey 2010.

Within these settings, immigrants are on average significantly more attached to the place of living than their native neighbours.

Although many studies in the literature report a gradual deterioration of the importance of neighbourhoods, our first glance on place and network embeddedness



Note: Mean scores of place attachment, by group and neighbourhood type. Circles show mean estimates; lines show 95 percent confidence intervals. I = Immigrants, N = Natives. T1 = Neighbourhood type 1, T2 = Neighbourhood type 2; T3 = Neighbourhood type 3.

Source: Geitonies Survey 2010.

shows that most people have weak and strong ties located in the neighbourhood and additionally feel attached to the people and the place of living.

Multivariate findings

We now turn to the question on what makes people being more (or less) embedded in their neighbourhood and whether the mechanisms that determine network and place embeddedness vary between different neighbourhood types. In order to explore sim-

ilarities and differences in predicting neighbourhood embeddedness across varying local contexts, we estimate a series of multiple regression equations on each occasion with a different indicator of place and network embeddedness as the dependent variable and with all covariates described in the previous section (see table 2). We begin by exploring associations for the three sub-dimensions of network embeddedness (table 4). The figures displayed in table 4 show that *intimate contacts* in the neighbourhood are most common among residents that ever lived in the neighbourhood. They might have been growing up with most of their neighbours and established their contacts a long time ago. Interestingly, this applies to older as well as younger people in all three neighbourhoods.⁵ A second similarity is that immigrants are more likely to have intimate contacts in their neighbourhood than native residents. The group differences are particularly strong in the non-inner city neighbourhoods (Type 1 and 2). We further expected that a higher level of education has a negative impact on local networks and in particular on closest friends. Higher educated people have larger sized networks with a wider geographical range and this expectation is reflected in two out of three neighbourhood types. Only in the neighbourhoods located in the outskirts, higher educated residents do not differ from lower educated people in the size and availability of intimate contacts in the neighbourhood (although the coefficient is negative as well).

The analysis of the degree of *interactions* with and knowledge of one's neighbours shows that the length of residence contributes positively to the likelihood of having interactions in the neighbourhood in all three different types of settings. Immigrant background has also a positive effect on neighbouring behaviour in places with greater shares of immigrants, longer immigration experience and on average low socio-economic statuses (Type 1). As stated before, people tend to form networks with neighbours that share similar characteristics which seem to be most common in this neighbourhood type. Moreover, immigrants have more intimate contacts in these neighbourhoods which might also increase the likelihood to have small talks and visits and to know ones neighbours better. Interactions in the neighbourhood are also increased by certain household characteristics. Living with a partner raises the chances to get in touch with neighbours through the network channels of the partner. Additionally, living with school-aged children correlates positively with having interactions with neighbours in neighbourhoods which are bordering the city center. Surprisingly, age is not significantly associated with interactions in outskirts neighbourhoods while it is an important determinant in the two remaining local settings. In the descriptive findings we observed on average the highest rates of interactions in this less central neighbourhood type and this location seems to increase neighbouring behaviour and the formation of social ties across all ages, socio-economic statuses, immigrant background or gender.

The last empirical investigation of network embeddedness explores the extent to which individual characteristics are related to the *attachment towards the people* in

⁵ To control for multicollinearity between age and length of residence, we performed a sensitivity analysis for all models presented here (VIF command in Stata 11). This analysis showed that our estimates are not affected by multicollinearity.

Table 4
Multiple Regression Analysis on 'Intimate Contacts', 'Interactions in the Neighbourhood' and 'Attachment to the People in the Neighbourhood'
 (Network Embeddedness)

| | Intimate social ties in the neighbourhood | | | Interactions in the neighbourhood | | | Attachment to people in the neighbourhood | | |
|-------------------------------|---|---------|----------|-----------------------------------|---------|---------|---|----------|---------|
| | Type1 | Type2 | Type3 | Type1 | Type2 | Type3 | Type1 | Type2 | Type3 |
| 35-49 | 0.15 | 0.09 | -0.13 | 0.17* | 0.03 | 0.16* | 0.11 | 0.08 | 0.02 |
| 50-64 | -0.04 | -0.03 | 0.06 | 0.19* | 0.05 | 0.22** | 0.21** | 0.05 | 0.25*** |
| 65 and older | -0.23 | 0.11 | 0.22 | 0.21* | 0.19 | 0.32*** | 0.29** | 0.29** | 0.34*** |
| Male | -0.01 | 0.21 | 0.00 | -0.08 | -0.01 | -0.05 | -0.01 | -0.05 | -0.05 |
| Immigrant background | 0.54*** | 0.65*** | 0.32* | 0.18*** | 0.05 | 0.10 | 0.17** | 0.25*** | 0.27*** |
| High Educated | -0.31* | -0.24 | -0.54*** | -0.06 | 0.01 | 0.04 | -0.05 | -0.17*** | 0.02 |
| Inactive | 0.14 | 0.33* | -0.13 | -0.04 | 0.02 | -0.02 | -0.02 | -0.05 | -0.06 |
| Is living with partner in HH | 0.36** | 0.13 | 0.25 | 0.11* | 0.22*** | 0.13* | 0.08 | 0.08 | 0.03 |
| Is living with child in HH | 0.15 | 0.11 | 0.15 | 0.32*** | 0.05 | -0.04 | 0.13* | -0.05 | 0.00 |
| Moved in bet. 6-10 years ago | 0.36* | -0.26 | -0.33 | 0.28*** | 0.18* | 0.24*** | 0.24*** | 0.06 | 0.12 |
| Moved in 10 or more years ago | 0.73*** | 0.42* | -0.16 | 0.34*** | 0.28*** | 0.38*** | 0.16* | -0.01 | 0.08 |
| Ever lived there | 1.55*** | 1.29*** | 0.94*** | 0.70*** | 0.63*** | 0.63*** | 0.39*** | 0.32*** | 0.31*** |
| Constant | 1.98*** | 2.22*** | 3.12*** | 2.15*** | 2.37*** | 2.05*** | 2.63*** | 2.97*** | 3.01*** |
| R2 | 0.087 | 0.066 | 0.061 | 0.138 | 0.068 | 0.110 | 0.058 | 0.053 | 0.059 |
| p | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| N | 1,143 | 1,172 | 1,218 | 1,143 | 1,172 | 1,218 | 1,143 | 1,172 | 1,218 |

Source: Geittonies Survey 2010.

Notes: * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$.

the neighbourhood. Again, old aged people and those who ever lived in the neighbourhood show the greatest levels of attachment towards their neighbours. A second communality is that immigrants are more attached towards the people in the neighbourhood in all three settings. We observe significantly lower attachments to the people in the neighbourhood by higher educated residents in the outskirts neighbourhoods. Thus, higher educated people feel less attached to the people in the place, while interestingly we could not find such a (significant) negative correlation for intimate contacts or daily interactions in the neighbourhood.

The question we consider next is the extent to which specific individual and household characteristics account for *place embeddedness* and whether these determinants vary within each neighbourhood type. Table 5 shows the results of a multiple regression on place embeddedness, separately for neighbourhood types (see Model 1, left side of table 5). Turning to the outcomes, two similarities across all three neighbourhood types are observable: Older people and those with longer length of residence in the neighbourhood show greater levels of attachment to the place of living. They had consequently more time to establish positive attitudes towards their residential area. This is particularly the case in the outskirts neighbourhoods which have been built more recently and in which processions are on average more common. Here, those who either ever lived there or moved in more than 10 years ago show the greatest degrees of place embeddedness.

Compared to the descriptive outcomes, we now find immigrants in all three settings significantly more attached to the place of living than native residents (holding all independent variables constant). The magnitude of the immigrant background variable is strongest in the outskirts neighbourhoods. Interestingly, it is within these outskirts neighbourhoods in which higher educated people show significantly weaker levels of place embeddedness. Although we expected higher education to be positively related to attitudes, such as place attachment, it might be the case that when residents within the same neighbourhood type are compared, it is likely that people with a higher social status feel less attached to the neighbourhood because they feel more uncomfortable and misplaced in an underclass dominated area and hope that they will find another dwelling in a more suitable neighbourhood in due time (Dekker and Bolt 2005).

In a last step, we test for the expected positive influence of network embeddedness on place embeddedness. As stated earlier, we assume that residents who are stronger embedded in local networks will show greater levels of place embeddedness. To test for this assumption, we insert the three sub-dimensions of network embeddedness (intimate contacts, interactions and perceived attachment to the people in the neighbourhood) into the regression model on place embeddedness (Model 2, right side of table 5). Our results highlight one similarity across all types of neighbourhoods: Perceived attachments to the people in the neighbourhood significantly increase the place embeddedness of residents, irrespective of the type of neighbourhood. In other words, the more residents feel attached towards the people in the neighbourhood or would miss them when moving out, the greater are their levels of attachment and feelings of belonging. Further, immigrants in neighbourhood type 1 and 3 are not

Table 5
Multiple Regression Analysis on 'Place Embeddedness'

| | Model 1 | | | Model 2 | | |
|---|---------|----------|---------|---------|---------|---------|
| | Type 1 | Type 2 | Type 3 | Type 1 | Type 2 | Type 3 |
| | B | B | B | B | B | B |
| 35-49 | 0.27*** | 0.12 | 0.17** | 0.17*** | 0.06 | 0.15** |
| 50-64 | 0.26** | 0.11 | 0.34*** | 0.09 | 0.07 | 0.16** |
| 65 and older | 0.44*** | 0.51*** | 0.63*** | 0.20* | 0.31*** | 0.39*** |
| Male | -0.08 | 0.00 | -0.01 | -0.08 | 0.03 | 0.02 |
| Immigrant background | 0.15* | 0.34*** | 0.26*** | 0.02 | 0.17*** | 0.07 |
| High Educated | -0.12 | -0.22*** | 0.13 | -0.07 | -0.11** | 0.11 |
| Inactive | -0.08 | -0.12* | -0.07 | -0.05 | -0.09* | -0.02 |
| Is living with partner in HH | 0.06 | 0.08 | -0.05 | -0.00 | 0.02 | -0.06 |
| Is living with child in HH | -0.00 | -0.09 | 0.03 | -0.09 | -0.06 | 0.03 |
| Moved in bet. 6-10 years ago | 0.33*** | 0.09 | 0.34*** | 0.13* | 0.04 | 0.25*** |
| Moved in 10 or more years ago | 0.42*** | 0.16* | 0.36*** | 0.28*** | 0.15* | 0.29*** |
| Ever lived there | 0.82*** | 0.62*** | 0.56*** | 0.48*** | 0.36*** | 0.35*** |
| Interactions in the neighbourhood | | | | 0.08** | 0.04 | 0.00 |
| Intimate networks in the neighbourhood | | | | 0.01 | 0.01 | 0.01 |
| Attachment to people in the neighbourhood | | | | 0.73*** | 0.63*** | 0.70*** |
| Constant | 2.90*** | 3.30*** | 3.21*** | 0.79*** | 3.30*** | 3.21*** |
| N | 1143 | 1172 | 1218 | 1143 | 1172 | 1218 |
| p | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| R2 | 0.121 | 0.095 | 0.124 | 0.505 | 0.408 | 0.480 |

Source: Geitonies Survey 2010. Notes: * p < 0.05 ** p < 0.01 *** p < 0.001.

showing higher levels of place embeddedness anymore, once we hold our measures of network embeddedness constant. Their higher likelihood of being more attached to the place of living (see results in Model 1) is due to their stronger social ties with and attachments to the people living in this neighbourhood. Only in the outskirts locations, immigrants are still showing significantly greater feelings of place embeddedness (albeit substantially reduced in Model 2). In these neighbourhoods, immigrants are not only having more intimate social ties and higher perceived feelings of attachment to the people, but also still larger levels of place embeddedness.⁶

Summary and Conclusion

This study analysed neighbourhood embeddedness within six European cities and 18 neighbourhoods. We defined neighbourhood embeddedness as an individual level concept and distinguished two main dimensions: place and network embeddedness. We introduced this new notion of neighbourhood embeddedness for four reasons: First, previous studies oftentimes used concepts such as social cohesion but these concepts are ill-defined and are conceptualized differently from one study to the other. Secondly, empirical investigations examine social cohesion frequently as a mixture of residents' own feelings and perceived feelings of others. Especially the latter requires information to which residents may not always have accurate access. Thirdly, most of the concepts are merely based on attitudinal measures, such as attachment or satisfaction. Behavioural aspects of neighbouring are either neglected or studied separately. Our alternative concept of neighbourhood embeddedness provided the possibility to study attitudinal and behavioural aspects of individuals related to the place of living.

By focusing on place and network embeddedness, we explored differences in the degree of embeddedness across certain types of neighbourhoods. Most of the previous studies are limited to disadvantaged neighbourhoods making it difficult to map similarities and differences in predicting neighbourhood embeddedness across varying local contexts. Within this study we embraced a wider set of neighbourhood types to provide a more balanced and comprehensive understanding of the social life in neighbourhoods in contemporary European cities. We have addressed the question of variations in neighbourhood embeddedness and their underlying mechanisms on the basis of the GEITONIES-survey in which we classified 18 neighbourhoods into three distinct neighbourhood types.

Although the impression given in the literature is ambivalent and it was often proved empirically that neighbourhoods have lost some of their importance as the focal point of social life, our findings highlight the opposite: On average and across all three types of neighbourhoods, we observed relatively high levels of place and network embeddedness of their residents. Besides this general trend, variations across types

⁶ We further tested for interactions between immigrant background and the sub-dimensions of network embeddedness in Model 2. None of these interaction terms was significant indicating that the relation between network and place embeddedness works similarly for immigrant and non-immigrant populations.

of neighbourhoods appeared. The greatest levels of network embeddedness were found in outskirts areas which have been constructed more recently. Due to their less centralized location, social ties with neighbours seem to gain more importance than in other neighbourhood types. Vice versa, attachment to and identification with the place of living (place embeddedness) has been found to be highest within inner city and better-off neighbourhoods.

We were further interested in whether neighbourhood embeddedness varies for immigrant and non-immigrant residents within and across the three types of neighbourhoods. Our findings show that immigrants are characterized by higher levels of neighbourhood embeddedness than native residents. This applies to almost all of our place and network embeddedness indicators. This finding is in line with previous studies (e.g. Dekker and Bolt 2005) which indicated stronger ties in the neighbourhood and greater levels of attachment to place for ethnic minorities. But these studies were limited to single or similar local settings and oftentimes to one city within countries. We overcame this limitation by exploring patterns of neighbourhood embeddedness in different neighbourhood types across six European cities, making this finding more generalizable. Most studies assume that ethnic minorities are strongly orientated towards their own group making it possible to maintain stronger ties in the neighbourhood. In addition, it has been claimed that immigrants tend to feel more comfortable within an ethnically mixed residential population than do native residents. But our findings show that immigrants have greater levels of place and network embeddedness irrespective of the share of immigrants in the neighbourhood.

Our findings highlighted further that there is a strong link between the perceived feelings of attachment to the people in the neighbourhood and the place as such. In particular, because immigrants show higher levels of attachment to the people explains why they also report greater degrees of place embeddedness.

Of course, our analysis does not come without limitations. The extent of embeddedness might differ among ethnic groups within the immigrant populations and future research should investigate this. Moreover, whether greater levels of neighbourhood embeddedness by immigrants are a 'trap' or 'source' for socio-economic mobility remains beyond the scope of this paper. Examining these aspects will shed light on the phenomenon and consequences of neighbourhood embeddedness, which is not settled yet.

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Appendix

Table A1

N per Neighbourhood, Group and Type of Neighbourhood (According to Cluster Analysis)

| | Natives (N) | Immigrants (N) | Total N | Neighbourhood Type |
|-------------------------|----------------|-------------------|------------|-----------------------|
| <i>Lisbon</i> | | | | |
| Costa de Caparica | 97 | 99 | 196 | 2 |
| Monte Abraão | 99 | 97 | 196 | 2 |
| Mouraria / Martim Moniz | 98 | 93 | 191 | 1 |
| <i>Bilbao</i> | | | | |
| Deusto | 99 | 97 | 196 | 3 |
| San Francisco | 100 | 96 | 196 | 1 |
| Rekalde | 101 | 99 | 200 | 2 |
| <i>Rotterdam</i> | | | | |
| Schiemond | 70 | 96 | 166 | 1 |
| Afrikaanderwijk | 82 | 112 | 194 | 1 |
| Westpunt | 117 | 67 | 184 | 2 |
| <i>Vienna</i> | | | | |
| Laudongasse | 99 | 100 | 199 | 3 |
| Am Schöpfwerk | 100 | 98 | 198 | 2 |
| Ludo-Hartmann-Platz | 100 | 99 | 199 | 1 |
| <i>Thessaloniki</i> | | | | |
| Chinatown | 101 | 97 | 198 | 3 |
| Nikopoli | 97 | 100 | 197 | 1 |
| Peraia | 100 | 98 | 198 | 2 |
| <i>Warsaw</i> | | | | |
| Szczęśliwice | 153 | 59 | 212 | 3 |
| Wilanów | 149 | 54 | 203 | 3 |
| Żelazna Brama | 154 | 56 | 210 | 3 |
| Total N | 1,916 | 1,617 | 3,533 | |

Source: Geitonies Survey 2010.

Note: Missing values on (in-) dependent variables are excluded from total N's.