Place, kinship, and employment

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Abstract
This study explores the magnitude and composition of kinship ties at Swedish workplaces. By analysing official register data and illustrating findings from interviews with HR personnel at different workplaces, the following questions are discussed: How much kinship concentration is there today on the labour market in a modern Western society such as Sweden? How is the kin-based selection of workplace members structured by place? The study is based on an analysis of individually connected register information on all workplaces in Sweden in 2012. The number of individual links between relatives and couples at an average workplace amounts to 14% of the number of employees as derived from 310,000 couples and pairs of relatives among 4.3 million workers. So, even today in Sweden, kinship is a common phenomenon observable for most workers at most workplaces. Of all such connected pairs of kin at workplaces, more than a third contain counterparts living in the same household. A non-linear individual-level regression reveals that population density in the vicinity of the workplace is substantially related to kin density. Large agglomerations seem to coexist with low kin density workplaces. Although some level of kin membership is unavoidable especially at workplaces in sparsely populated places, removing this part still reveals that kinship above an unavoidable level seems to exist. The study contributes to the discussion of kinship in workplaces by examining the magnitude and composition of kinship ties in the whole work force and complementing findings with interviews.

KEYWORDS
kinship bias, kinship density, kinship ties, workplace

1 | INTRODUCTION

Kinship is a main social force, geographically structuring people into places of living and working in the past as well as today. Hunter/gatherer tribes confined the original ancient social arenas for the selection, distribution, learning, and performance of skills and tasks. In medieval and feudal societies, the extended family—the clan—largely framed activities into something given rather than something chosen. In the Renaissance era, popes and other clergy appointed their "nephews" to high positions in the Church regardless of their qualifications (Abdalla, Maghrabi, & Raggad, 1998). Today, meritocracy and transparency in recruitment processes are promoted as principles guiding decision agents' selection. Anti-nepotism policies are in place in the private and public sectors in many countries, emphasising formal merits rather than kinship (e.g., Jones & Stout, 2015; Masuda & Visio, 2012). In a country such as Sweden, such ideas would seem to have deeply penetrated society, given the country's extreme cultural position regarding "secular-rational values" and "self-expression values" (Inglehart & Welzel, 2010), and the relative weakness of family ties in Northern Europe more generally (Alesina & Giuliano, 2010; Höllinger & Haller, 1990). Nevertheless, kinship ties at workplaces remain (e.g., Anderson & Reeb, 2003; Dick & Morgan, 1987; Kramarz & Nordström Skans, 2010). In fact, the use of family networks to access jobs actually seems to have increased in advanced societies during the latter part of the 20th century (Bellow, 2003; Ioannides & Datcher, 2004). It can even be difficult to avoid kinship ties in certain contexts, particularly within large workplaces in small labour markets (Adjei, Eriksson, & Lindgren, 2016). A study of all Swedish workplaces concluded that kinship ties...
are more prevalent in small regions than in larger ones (ibid.) because large regions have a diversity of worker competence and more workplaces, and therefore better matching opportunities. Employers in rural and remote regions face different (and more) problems in attracting and retaining professionals because of a limited supply of highly skilled labour (Hemphill & Kulik, 2011).

This study explores the magnitude and composition of kinship ties at Swedish workplaces. Although many characteristics, such as labour market policies and social welfare systems, are country-specific, Sweden serves as an example of a modern Western society. By analysing register data and illustrating findings from informant interviews, the following questions are discussed:

- How much kinship concentration is there today on the labour market in Sweden?
- How is the kin-based selection of workplace members structured by place?

Nepotism is a term used to describe favouring family connections when employing staff or in daily work life. It can be defined as "actual or perceived preferences given by one family member to another" (Jones & Stout, 2015, p. 2) or "a variety of practices related to favouritism in hiring one’s own family members (by blood or marriage) or advancing unqualified or under-favouritism in hiring one’s own family members (by blood or marriage) or advancing unqualified or under-qualified family members simply on the basis of family relationship" (Chavdarova, 2015, p. 154). However, because "nepotism" has a negative connotation, and implies that family ties go before merits and competence (e.g. Fu, 2015; Padgett & Morris, 2005), in many studies it is replaced with a softer term such as "kinship ties" or "family ties." As kinship ties at workplaces often occur unintentionally or by chance, we avoid the term nepotism—which implies a conscious action—the terms kinship and family ties are used in this paper.

Through the availability of comprehensive data on all Swedish workplaces, the study contributes to the literature and discussion on both extent and composition of family ties. Further, the relative importance of individuals' characteristics in relation to geographic setting are analysed. Interviews with HR managers serve as illustrations of the descriptive patterns.

2 LITERATURE REVIEW

Over time, people accumulate place-specific advantages, for example, work-oriented insider advantages such as opportunities and career benefits through, for example, network referrals for jobs (Fischer, Holm, Malmberg, & Straubhaar, 2000; Fischer & Malmberg, 2001). Social capital in terms of the value of social networks is enhanced by having family close by (Putnam, 1995), and insider advantages are fairly easily transferred within the family. The place of residence contains social networks that are place-specific and thus cannot be transferred if one migrates. Place attachment increases over time, adding to the place-specific advantages (Lewicka, 2010; Westin, 2016) that are particularly important for persons with weak labour market attachment.

Previous research has found that informal referrals in the job search process vary across and within countries (the European Union states and the United States (US)), and methods for job search to vary across locations on the intra-urban level (Ioannides & Datcher, 2004; Pellizzari, 2010). Informal processes based on referrals play a key part for workers to find employment and for organisations to recruit staff (Pellizzari, 2010), and the importance of these practices has increased over time (Ioannides & Datcher, 2004). According to Van Hooy and Lievens (2009, p. 341), this is the "reality of job seeking where social actors (e.g., family, friends, acquaintances) are often consulted about potential jobs". The importance of social networks for acquiring a job has been emphasized in many studies (Calvó-Armengol & Zenou, 2005; Granovetter, 1973; Kramarz & Nordström, 2014; Pellizzari, 2010). However, these processes vary according to differences in the characteristics of the workers and their contacts (Ioannides & Datcher, 2004). For instance, Granovetter (1973) argued that weak ties (e.g., acquaintances), as opposed to strong ties (family or close friends), are important in finding a job because they provide more information about vacancies. However, several studies have shown that strong ties can be crucial for finding a first job, especially for low-educated young people (e.g., Kramarz & Nordström, 2014; Stone, Gray, & Hughes, 2003). Strong ties facilitate getting a job (often at a parent’s workplace) faster compared to weak or no ties. Workers who have found their job through strong ties are also more likely to stay at this job, partly as they expect better wage growth than other entrants, and feel obliged to the peers who recommended them to stay. From the employer's perspective, a rationale for hiring the children of well-performing employees is that the "quality" of the parent is seen as a good indicator of the performance of his or her offspring (Haugen & Westin, 2016; Kramarz & Nordström, 2014), and that this is a way of transmitting work-related knowledge from one generation to the next (Van Hooff & Stout, 2012). More generally from an employer's perspective, relying on the contacts of the incumbent staff in recruitment can be a way of raising the chances that applicants with certain unobserved characteristics are chosen. This is because people's social networks tend to include other similar persons (Montgomery, 1991; Pellizzari, 2010), that is, people sort into social networks with others in "similar social and occupational positions" (Lin, 2001 cited in Ioannides & Datcher, 2004, p. 1064).

Some industries may be more accepting of kinship recruitment than others. Farming is such an example (Vinton, 1998), as is the service sector, including the tourism and hospitality industries (Arasli, Bavik, & Ekiz, 2006). These are labour-intensive industries, often with low salaries, and recruiting family can sometimes be the only option due to a limited labour pool. Even in the "creative" industries, which demand high-educated, specialised staff, kinship is not uncommon (Eikhof & Warhurst, 2013); this is also the case in lines of business such as finance (Abrahams, 2016). Abrahams (2016) suggests that an increasing number of high-educated people is not matched by an increase in suitable jobs. The competition for top jobs therefore tightens, and using personal connections and social capital represents a way to improve one's chances.

Partner relationships at workplaces are not uncommon (see e.g., Hyatt, 2015). They can be the result of simultaneous or delayed dual recruitment, but often develop among incumbent employees. A survey from the US revealed that almost a third of all romances start at the workplace, which is likely related to a sharing of similar backgrounds, skills, and interests, that is, assortative mating (Kalmijn, 1994; Karl &
Sutton, 2000; Schwartz, 2013). From an employer perspective, a dilemma associated with the presence of couples at a workplace is the need to balance the employees’ right to privacy and the company's need to maintain morale (Ertug, Hedström, & Kotha, 2014; Haugen & Westin, 2016). There are also positive aspects of couples working at the same workplace; it may make their lives easier with an integration of work and family (Haugen & Westin, 2016; Masuda & Visio, 2012), it signals "familiness,” and there is an understanding of each other's work obligations (Haugen & Westin, 2016; Zellweger, Eddleston, & Kellemans, 2010). Having partner relationships at a workplace can also be a conscious decision through dual recruitment, which can be a strategy for hiring the best qualified person. Not least when accepting a job offer entails geographic relocation, a potential employee’s willingness to accept a job that involves moving can be linked to his or her spouse's employment possibilities (Masuda & Visio, 2012).

3 | DATA AND METHODS

3.1 | Data

Official register data covering all workplaces, workers, and their relatives in Sweden for the year 2012 are used to assess the magnitude and composition of in-house kinship ties. The data are drawn from the ASTRID database, which contain geo-referenced information for each individual in the population. "Kin” is operationalised as a person’s partner, siblings, parents, children, cousins, aunts, uncles, and grandparents. Core attributes of individuals and workplaces in this analysis are age (1 year, 0–100+), sex (male, female), education level (seven levels), profession (351 professions), places of residence and work (100 m resolution coordinates and 290 municipalities), income of work and capital (100 SEK unit), privately/publicly owned firm/workplace (binary), and belonging to manufacturing sector (binary) as well as pointers to individual family, workplace, mother, and father (other relatives, such as siblings, are derived through linked pointers, individuals with the same mother and father, etc.). The place of work is in the register data localised with X- and Y-coordinates as attributes and a pointer to the firm it belongs to. It is pointed at by each one of its individual workers. A firm can contain several workplaces and additional attributes common to their workplaces but no coordinates.

To illustrate the findings, we draw on qualitative material consisting of 40 open-ended, semi-structured informant interviews with 44 human resources managers and/or executives responsible for recruitment and staff issues at different Swedish workplaces. The fieldwork was conducted in 2014–2015. The informants represent organisations within the private and public sectors, and organisations within the primary, secondary, tertiary, and quaternary sectors. The organisations, varying in size from micro-sized to large, were located in varying geographical settings ranging from rural areas to metropolitan regions (Haugen & Westin, 2016). A heterogeneous group of interviewees generates prerequisites for richness and nuance in the collected data. In this paper, the interview material is used as an additional data source that serves to illustrate and provide examples of the findings of the register data study. In-depth qualitative analysis based on the interviews is reported in Haugen and Westin (2016).

3.2 | Measuring kinship prevalence

What is an adequate measure of kin prevalence at a workplace? The classical measure of social network density relates the number of observed links to the number of potential links among the same set of persons. Between n workers, there are n(n-1)/2 potential links. Often, the potential is constrained to a smaller subset of workers relevant for a specific question (e.g., Hayton, Carnabuci, & Eisenberger, 2012). If a workplace with ten workers has three such links (i.e., a father and his son, a pair of siblings and a married couple), then the classical density becomes 6.6% of the potential 45 links. In the example that percentage is produced by a prevalence of six kin related persons out of all ten workers at the workplace, 60%. Expanding the example workplace to a hundred workers while also assuming 10 times as many pairwise kinship links among them, 30, reduces the classical density measure to one tenth, to 0.6% of the 4,950 potential links, while the 60 kin related persons in the expanded example still amounts to 60% of the hundred workers. Instead, keeping 6.6% density with the classical measure also on the 100 worker workplace would require 330 kin links among the 100 workers compared to three in the ten worker workplace.

So, what measure gives the best descriptive understanding of prevalence of kinship relations at a workplace? Would an observer prefer the statement, based on the classical measure, that kinship density at the larger workplace is one tenth of the level at the smaller workplace despite that the same proportion of workers are kin related at both? Or would an observer rather regard kin density at the 10 and 100 worker workplaces as equally large in the examples with 3 and 30 links (involving 60% of the labour force in each case)?

Neither measure is ideal. The classical measure gives an unintuitive low density, especially for large workplaces. The number of potential links based only on squared number of workers then seems to exaggerate the potential, that is, because the actual potential is constrained both by the size of the workplace and the size of the workers’ (much smaller) extended families. Instead, relating number of links just to number of workers gives a measure that exceeds 100% in the rare case when the number of directed kin links is larger than the number of workers. Still, a large workplace in a sparse region gives opportunity for more kin per capita compared to a small workplace. That can as well be interpreted as an actual characteristic of such a workplace as a size induced measurement level bias (see Figure 4).

In order to enable a range of interpretation, both measures will be employed in this study: The first one is an index, simply labelled kinship density and is defined as the total number of directed individual kinship links at a workplace per worker. Each observed link produces two individual link connections in the index (i.e., one for the mother to her son and one for the son to his mother). The second one is labelled classical kinship density and is defined close to the classical social network density presented above.

Workers with a certain education, profession, and place of residence might have difficulty avoiding workplaces within commuting distance containing relatives without moving or changing education and/or profession. This is the case especially in low population density places with few alternative suitable workplaces. Under such circumstances, even a random ("non-kinship-biased") choice would result in a workplace with some relatives. To calculate a non-kinship-biased
level, each employee was given an alternative, randomly selected observed workplace within a distance from home not longer than their current distance to the workplace plus 10 km (still a modest total distance for the majority and a small relative increase for long distance commuters) with approximatively the same mix of educational and professional properties as their current one. If no such workplace was found for a worker, the current one was kept but counted as non-kinship-biased. The count of their own relatives was tallied on both the current and alternative workplaces.

Many work tasks are specialised also within a profession, a specialisation not necessarily found in the selected alternative workplace. Commuting distances are, for some workers, shorter than the distance to their assigned twin workplace. Median as the crow flies distance between home and workplace 2012 for all Swedish workers was 6.1 km, for less than 8% (including unknown work location), the distance was longer than 50 km (source ASTRID database). For some workers, an added distance of 10 km (see note 4) might be too much, the selected alternative workplace might be located outside their personal reach and so produce an overestimate of the bias. Removing the added distance, on the other hand, might exclude alternative workplaces perfectly suitable for other workers, and by that produce an underestimate of the bias. For such reasons, the applied procedure to find an alternative non-kinship-biased workplace within reach for each worker might produce an erroneous (exaggerated) level of kinship bias for some individuals and in total.

Parents, children, siblings, grandparents, uncles, aunts, and cousins are lifetime kin. Wives, husbands, and partners, however, are kin only as long as they stay married or co-habiting, and the kinship ties can arise or disappear. Therefore, not all couples at a workplace were formed before recruitment. Although "internally" created couples might have a similar impact on workplace culture and performance as the previously created ones, they are excluded from the count of kinship-biased recruitments.

### 3.3 | Analysis of associations

In order to estimate factors associated with kinship density, an individual-level, least square, non-linear cross-sectional regression with kinship density at the individual workplace as the target variable was performed. Eleven indicators were chosen as covariates (Table 2). Most chosen covariates reflect hypotheses or observations about average or partial impact on workplace kinship density found in the cited literature, in descriptive data, or in the interviews (population density —, manufacturing +, education level —, private sector +, age +/—, workplace size +/—, earnings +, size of profession — etc.).

The choice of this specific non-linear expression is based firstly on the assumption that these covariates basically have a multiplicative, proportional impact on the target rather than an additive one. Secondly, the partial association with workplace size and an employee’s individual age is obviously descriptively non-linear and that is modelled by help of including quadratic factors, increasing the number of drivers from 11 to 13. Thirdly, the partial impact of size-related indicators (population within 50 km, number of employees at the workplace, number of employees nationwide in own profession, and earnings) are supposed to be proportional to relative rather than absolute size (and still multiplicative relative other drivers). The choice and format of covariates in the regression analysis is based on the hypothetical relationships stated above (not "curve fitting" efforts on a small number of observations). The model estimation (done with STATA’s NL procedure) covers 33% of the individual variance in kinship density between the workers workplaces, 10 times more, compared to the result with a linear ordinary least squares regression on the same covariates except the two quadratic factors. Each coefficient deviates highly significant from zero, due mainly to the large number of observations. Because of the variable transformations, it is hard to directly interpret the original coefficients. Therefore, Table 2 also, for each variable, contains a difference quotient relating a change with a chosen amount in the variable to the corresponding change in kinship density at average of all other variables in the equation. The analysis results do not necessarily reveal more than partial correlations exposing necessary but not sufficient conditions for causality, mainly because the study is based on one cross-section 2012, the data available for the study, whereas, that is, a longitudinal fixed or random effects analysis might have revealed relations closer to directed causality. The aim of the presented analysis is, however, just to give an extended description revealing some factors seemingly more or less associated with kinship density.

### 4 | RESULTS

#### 4.1 | Kinship density

The kinship density at an average Swedish workplace amounts to 14% of the number of employees at the same workplace. However, the majority of workers with relatives at the workplace have only one relative there. Counting number of workers with one or more kin at the workplace per worker gives 11%. Constraining the analysis to households with at least two working members—and where the likelihood of kinship ties at work thus is larger—increases the figure to 19%.

The average classical kinship density on Swedish workplaces is just 1.4%. The classical kinship density decreases from 1.4% to 0.11% if all workers (one at a time) were to move to their alternative “twin” workplace without other than random occurrences of own relatives or partners. Compared to the average, the "non-biased" level is higher in sparsely populated places (0.52%) and lower in the three largest cities (0.03%).

The informants had no problem relating to the presence of kinship ties at the workplace. Even when initially declaring that kinship was not acceptable because it was associated with various perceived problems and risks (e.g., related to consequences for the social work environment), most informants when reflecting upon present conditions found existing kinship ties among their employees. Most informants could also recollect situations when employees had put forward relatives for a temporary or permanent position.

[^1]: Holm et al. 2012, the data available for the study, whereas, that is, a longitudinal fixed or random effects analysis might have revealed relations closer to directed causality.

[^2]: The classical kinship density decreases from 1.4% to 0.11% if all workers (one at a time) were to move to their alternative “twin” workplace without other than random occurrences of own relatives or partners. Compared to the average, the "non-biased" level is higher in sparsely populated places (0.52%) and lower in the three largest cities (0.03%).

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4.2 | Types of kin

Out of all (14%) direct connected pairs of kin at workplaces, more than one third contains counterparts also living in the same household (see Figure 1). This sub-group (dominated by married/cohabiting, 3.5%) can certainly be regarded as bearers of strong ties. Children, parents, and siblings present at the workplace but living in different households could also be added to this group. If so, the “strong ties” group increases to cover almost all workplace relatives, 12.7%. The remaining part (1.3%) consisting of cousins, aunts, uncles, and grandparents at the workplace but not in the household might rather represent “weak ties” despite being “blood relatives.”

The interviews reveal how kinship ties within workplaces can be related to the role of upbringing and family. Children can be influenced by their parents’ professional orientation and replicate these, sometimes resulting in occupational dynasties. This tendency to “walk in one’s parents” footsteps is interpreted by the informants as related to, for example, conversation “around the family dinner table” and other forms of intra-family social interaction. This is not unique for informants in family firms. These processes may transmit work related knowledge, stimulate interest in certain educational and professional fields, and influence the development of individual predispositions. However, the weight of the social inheritance may have lessened over time, making the occupational choice less deterministic.

*In the past [more than today] /.../ people [remained] within their guilds, so to speak. So that if you were a doctor’s child you would become a doctor yourself /.../ and in the ship yards or in the industry I think that it could easily happen that you would end up in the same track. [#22; metropolitan; municipal administration]*

In the interviews, accounts about couple formation were dominated by stories of co-workers falling in love while working together in the same workplace, and also of co-worker couples originating from prior contexts such as professional training. The informants tended to describe couple formation as a common aspect of the social interactions at workplaces. This could be particularly pronounced in lines of business and local labour markets where the professional options are limited (cf. Karl & Sutton, 2000).

4.3 | Kinship and place

The place concept used is the 290 Swedish municipalities, enough to cover substantial variation in kinship density and small enough not to contain more than one local labour market. Most workplaces within a municipality are reachable on a daily basis for most inhabitants living in the municipality.

Figure 2 reveals the cumulative distribution over municipalities of the classical and the (alternative) kinship density. One small municipality with 0.1% of all Swedish employees has an average kinship density of 47%—the highest value for any of all 290 municipalities. Another equally small municipality has the highest classical kinship density, 4.4%. Ninety-two municipalities, which together have a tenth of all employees, have a kinship density above 21%. Ninety-three partly different municipalities, also with a tenth of all employees have a classical kinship density above 2.3%. At the other end, 10 municipalities with 30% of all employees have a kinship density below 11%, whereas 11 municipalities with the same share of all employees have a classical kinship density below 0.99%. The municipality of Solna, within the Stockholm local labour market, contains 2% of all employees and has the lowest kinship density at 7% and also the lowest classical density, 0.5%. In broad terms, the two measures conveys a similar kinship density distribution over municipalities, albeit the classical measure seems somewhat less steep and in the details some municipalities scores high on one measure and low on the other.

The description above reveals that there is substantial variation across municipalities. A step towards discovering potential place-related reasons for the observed kinship level involves mapping. The left map in Figure 3 displays the kinship level per municipality in normal Gaussian projection with the map size of municipalities proportional to their physical area. The map reveals that municipalities with the highest level of kinship density (18% and above; red) dominate.

*FIGURE 1* Mean kinship density by kinship type at Swedish workplaces in 2012. (Data source: ASTRID database)

*FIGURE 2* Swedish municipalities ranked by classical and alternative kinship density at workplaces in 2012. The circle area represents the number of employees in each municipality. (Data source: ASTRID database)
Together, these 155 municipalities cover 65% of all land (Table 1). However, they concurrently only contain 20% of the domestic workers’ workplaces. The lower end of the mapped scale (10% kinship density and below; light pink) contains 10 municipalities, including the three core cities of Sweden and some of their suburbs. They contain 30% of all workers’ workplaces in Sweden, but together, only cover 0.4% of the land area. So, information for almost a third of the workforce is hardly visible on this kind of map.

Comparing the two maps reveal further spatial variation. The high kinship density in some northern interior municipalities only applies to a tiny fraction of the population, while a broad belt of high kinship density municipalities, starting south of Gothenburg and traversing from west to east over the country, together contain a substantial share of the population. Largely, this belt coincides with a belt of unusually high employment rates: “the diligent belt” (Holm, Karlsson, Strömgren, & Westin, 2013).

4.4 | Kinship and population density

A core place attribute of the workplace is the size and density of population in its surroundings. Mediated through urbanisation economics, it could be expected that kinship density would be low where the population density is high, as shown in Figure 3. In Figure 4, kinship level is related to population density in terms of number of inhabitants within 50 km and size of workplace. The observed kinship level is twice as high in the low population density end (<50,000 persons) as in the high population density end (>2 million persons). The classical kinship density decreases almost as much relatively.

Smallness, in terms of town and/or narrow labour market size, is the main recurrent theme in the interviews. Some informants even talk about in-house kinship ties as “natural” in such a context:

Well of course, at a really large workplace like this is, it ([family ties] is hard to avoid; you can’t demand that people don’t have any points of contact … [#5; large city; technical industry]

### Table 1

Number of municipalities, percent employment, and land area in map classes. (Data source: ASTRID database)

<table>
<thead>
<tr>
<th>Kinship density</th>
<th>No. municipalities</th>
<th>% of employment</th>
<th>% of land area</th>
</tr>
</thead>
<tbody>
<tr>
<td>7–10</td>
<td>10</td>
<td>30.6</td>
<td>0.4</td>
</tr>
<tr>
<td>11–13</td>
<td>33</td>
<td>23.8</td>
<td>6.8</td>
</tr>
<tr>
<td>14–17</td>
<td>92</td>
<td>25.7</td>
<td>27.7</td>
</tr>
<tr>
<td>18–47</td>
<td>155</td>
<td>19.9</td>
<td>65.2</td>
</tr>
<tr>
<td>Total</td>
<td>290</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>
A narrow local labour market means that there are few jobs people can apply for and a limited pool of labour for employers to choose from in the local area. This narrowness in both supply and demand for work, perhaps combined with a socially close-knit local community, provides fertile ground for the emergence of in-house kinship ties:

[At my previous job], I would travel a lot. In the smaller towns there was more, a clearer tendency to recruit acquaintances and relatives compared to larger towns. And this can be related to accessibility too. Here, we get more applications. It's larger, the selection is wider. In small towns the selection can be, well, scant. So you're dependent on these processes. [#17; metropolitan; transport services]

In particular, large employers in small local labour markets are thought to have a substantial extent of in-house family ties, and it is not uncommon for several family members to make their livelihood from the same source. A particular type of this situation is "mill communities," where children grow up with work at "the mill" as a dominant employer and more or less given occupational choice.

Only a few informants considered large cities to be more prone to workplace kinship, for instance because employers can expect to receive a high number of applications that require processing, and may wish to take shortcuts through, for example, referral recruitment within their staff's social and family networks. Diversity in the workforce is also suggested to be potentially important and to interplay with the family dimension, particularly in metropolitan areas.

4.5 | Kinship and workplace size

As suggested in the interviews, another more local place-related scale indicator is the size of the workplace itself. Small and large workplaces have, with the alternative measure, on average, higher kinship density than medium-sized ones (Figure 5). Two opposite processes can hypothetically explain this non-linear relation. At small workplaces, for example, family firms, the first kinship link (owner-partner) alone inevitably contains a large fraction of all workers. This effect decreases with size. A large workplace is often the only of its kind, especially in low population density areas, and is therefore the main alternative for a large fraction of the local, often heavily kin-related, population. This effect increases with workplace size as revealed by Figure 5. Workers having just one kin each at the workplace dominates and increases with size as much as does those having more than one kin. However, when measuring kinship density with the classical density

![Figure 4](image1.png)

**FIGURE 4** Mean alternative (left) and classical (right) kinship density in 2012 by population density and size of workplace. (Data source: ASTRID database)

![Figure 5](image2.png)

**FIGURE 5** Mean kinship density at workplaces in 2012 by size of workplace. (Data source: ASTRID database)
measure, the increase with size disappears. Workplace size is the one characteristic substantially discriminating between the two measures. Relating number of individual links not to the number of workers but to the square of number workers has a much stronger effect for larger workplaces compared to the eventual effect of it being one of its kind locally. Figure 4 demonstrates that both measures decreases with population density for most sizes of workplaces, but that variation with workplace size is much larger. As expected, kinship density at large workplaces in sparsely populated areas is high. The alternative measure gives 77 individual links/100 workers at the largest workplaces in such remote areas, while the classical measure gives a density of 0.05% for the same group. In order to avoid the implicit size assumption embedded in the classical measure and to present a descriptively more comprehensible measure, we frequently use the alternative measure in order to stay closer to what is actually observed, the number of kin links and just relate that to number of workers to get an average for individuals at the workplace.

4.6 | Kinship and education

Kinship density decreases systematically with rising education level (Figure 6), and workers with low education are overrepresented at workplaces with high kinship density. On average, those with a basic education work at workplaces with a kinship density of 20%. The corresponding figure for those with Bachelor’s degree or higher is 10%. In the same interval, the classical kinship density decreases somewhat steeper, from 2.5% to 0.5%.

The interviews revealed that “pragmatic” shortcuts are sometimes taken to avoid formal and structured recruitment processes, thus simplifying hiring and saving time. Some informants argued that, particularly concerning unqualified jobs, distinguishing among candidates is superfluous. In such situations, recruitment processes are characterised by an unsystematic “do-it-yourself” approach. This is a way of solving staff needs in the shorter term without paying attention to the potential (longer term) consequences for the employees and the organisation:

> The recruitment process becomes so much simpler because you don’t have to collect all this information and screen away everything that’s uninteresting and maybe spend loads of time on an interview process which, well, for a dishwasher job... [#31; large city; restaurant]

4.7 | Kinship and profession

There are large differences in kinship density between the workplaces of workers in different professions. A tenth of all workers have professions situated at workplaces with a kinship density of 5% or less, for example, economists, judges, high civil servants, politicians, and preschool teachers. At the same time, a tenth have professions at workplaces with a kinship density of 25% or more (e.g., engineers, or workers in the mining, paper, shoe, and leather industries).

The interview informants argued that, for some people, the job represents part of their personal identity and provides a sense of community with professional colleagues. Given this social cohesion, individuals’ social lives can also tend to become directed largely “inwards” at others within their professional group, and there is substantial overlap between the work and private domains. The close-knit social relations within the professional networks are also conducive to the emergence of family ties (through, for instance, couple formation or intergenerational social inheritance). This seems to occur particularly in creative professions and lines of business that require employees to adapt to a certain lifestyle (e.g., working hours other than the conventional “nine to five”). Such conditions—perhaps particularly when combined with a narrow line of business or a small town setting—can generate an internally oriented social environment:

> If you’re an architect then you’re really [precisely] that; as part of your identity, it’s not just a job. You’re passionate about it outside of work also, and it’s part of yourself, and your hobbies and things like that are characterized by it. / .../ And then I think that if it’s such a big part of, of your personality then I can, then maybe it’s only natural that you’re drawn to people who, with whom you have that in common. And find your, your partner this way. [#30; metropolitan: KIBS]

4.8 | Kinship and distance to work

As noted in the methods description, the 50 km commuting range surrounding the place of living used for measuring population density and the 10 km extension of observed work distance allowed for the twin workplace, gives a crude approximation of the actually accessible labour market for many workers because distances to work for most of them are quite short. Figure 7 directly explores the eventual association observed as the crow flies distances in kilometres between home and work and kinship density at the chosen workplace.

For all workers, the work distance related deviations around the average 14% kinship density level are minor (Figure 7); a slight peak at 20–30 km distances followed by somewhat lower kinship levels at larger distances. Separating out workers living in the two extreme population density ends of Figure 4 tells the same story. Average differences in kinship density at place of work between those living in places with low and

![Figure 6](image-url) Mean kinship density at workplaces in 2012 by the employees’ education level. (Data source: ASTRID database)
high surrounding population density, respectively, are much larger than the variation associated with commuting distances. A slight tendency for those living in sparsely populated places to end up in workplaces with lower kinship density if they commute longer distances can be discerned. The opposite seems to hold for workers living in dense places but anyway commuting to more distant workplaces.

4.9 | Analysis of factors related to kinship density

Descriptive observations give a hint of how kinship density varies with population density, workplace size, education level, and profession, but provide almost no information about the relative strength of association between kinship density and different factors.

One important factor associated with kinship density is the population density within 50 km from the person’s workplace (Table 2). As indicated in Figure 4, high population density corresponds to low kinship density. Increasing the population number by 10% (from average) corresponds to 0.2% decrease in kinship density on the margin, a 100% increase corresponds to 1.4% decrease. The difference in population density between the extremes (from <50000 to >2 million people within 50 km) corresponds to 9.6% decrease in estimated kinship density, close to the observed average difference between the extremes in

![FIGURE 7 Kinship density and distance to work. (Data source: ASTRID database)](image)

**TABLE 2** Individual-level, non-linear cross-sectional regression of kinship density at the individual’s workplace. (Data source: ASTRID database)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. error</th>
<th>T</th>
<th>Δ Kinship density / Δ ref. unit</th>
<th>Reference unit</th>
<th>Δ Reference unit</th>
<th>Mean variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>7.07813</td>
<td>0.0213991</td>
<td>330.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population within 50 km of wp</td>
<td>-0.24953</td>
<td>0.000842</td>
<td>-296.4</td>
<td>-0.20596</td>
<td>Mean var.</td>
<td>+0.1*mean</td>
<td>779132</td>
</tr>
<tr>
<td>Population within 50 km of wp</td>
<td>-1.42322</td>
<td></td>
<td></td>
<td></td>
<td>Mean var.</td>
<td>+1.0*mean</td>
<td></td>
</tr>
<tr>
<td>Population within 50 km of wp</td>
<td>-9.55409</td>
<td></td>
<td></td>
<td></td>
<td>Remote(50th)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturing sector</td>
<td>0.68638</td>
<td>0.00263</td>
<td>260.6</td>
<td>7.14598</td>
<td>Not manuf.</td>
<td></td>
<td>0.1500</td>
</tr>
<tr>
<td>Education level</td>
<td>-0.19166</td>
<td>0.00087</td>
<td>-221.2</td>
<td>-1.56717</td>
<td>Mean var. + 1 level (of 7)</td>
<td></td>
<td>4.2192</td>
</tr>
<tr>
<td>Private sector</td>
<td>0.79517</td>
<td>0.00386</td>
<td>206.0</td>
<td>6.40766</td>
<td>Public</td>
<td></td>
<td>0.3314</td>
</tr>
<tr>
<td>No. workers at workplace</td>
<td>-0.02406</td>
<td>0.00163</td>
<td>-14.8</td>
<td>0.13794</td>
<td>Mean var. +0.1*mean</td>
<td></td>
<td>411.88</td>
</tr>
<tr>
<td>No. workers at workp., squared</td>
<td>0.01556</td>
<td>0.00017</td>
<td>90.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age, squared</td>
<td>-0.04433</td>
<td>0.00057</td>
<td>-77.9</td>
<td>-0.27039</td>
<td>Mean var. +0.1*mean</td>
<td></td>
<td>43.35</td>
</tr>
<tr>
<td>Income</td>
<td>0.12612</td>
<td>0.00221</td>
<td>57.0</td>
<td>0.10540</td>
<td>Mean var. +1*mean (100 SEK)</td>
<td></td>
<td>3360.916</td>
</tr>
<tr>
<td>Born in Sweden</td>
<td>0.07249</td>
<td>0.00338</td>
<td>21.5</td>
<td>0.62146</td>
<td>Foreign born</td>
<td>SweBorn(1)–ForBorn(0)</td>
<td>0.1340</td>
</tr>
<tr>
<td>No. workers in profession</td>
<td>-0.01829</td>
<td>0.00094</td>
<td>-19.6</td>
<td>-0.01521</td>
<td>Mean var. +0.1*mean</td>
<td></td>
<td>44168</td>
</tr>
<tr>
<td>Income of capital</td>
<td>4.50E-07</td>
<td>7.540E-08</td>
<td>6.0</td>
<td>0.00002</td>
<td>Mean var. +0.1*mean (100 SEK)</td>
<td></td>
<td>45.0542</td>
</tr>
<tr>
<td>Sex</td>
<td>-0.01281</td>
<td>0.00241</td>
<td>-5.3</td>
<td>-0.11184</td>
<td>Males</td>
<td>Female(2)–Male(1)</td>
<td>1.4793</td>
</tr>
<tr>
<td>No. of observations = 4,036,430</td>
<td>R-square = 0.3257</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Figure 4. This simple agglomeration economics indicator on the margin seems to contain substantial information "by itself" also when contributing, correlated information contained in the other 10 covariates is removed. It seems like urbanisation and population density in many places transforms the composition and size of populations and workplaces in a direction coinciding with low kinship density.

Working in the manufacturing sector, education level, and working in private sector each also reveals a substantial partial association with kinship density. Comparing a person working in a manufacturing with a similar person working elsewhere corresponds to 7.1% larger kinship density at the workplace for the manufacturing worker even when all other indicators, including population density, are controlled for. Workers with a long education are often found at workplaces with low kinship density, given the level of all other indicators. One level higher education corresponds to 1.6% lower kinship density at the workplace. This partial correlation comes in addition to the significance of their large presence in cities. Together, these and other direct and indirect partial correlations produce the descriptive observed relation between kinship density and education level (Figure 5). Also related to kinship density is whether or not the workplace belongs to private sector. On average, workers at workplaces of privately owned firm's faces 6.4% higher kinship density compared to otherwise similar workers at public workplaces. Also for workplace size, partial coefficients are highly significant. Not only descriptively (Figure 5), but also on the margin, given the correlations with all other indicators, kinship density is non-linearly related to workplace size. Small and large workplaces have higher kinship density than middle-sized ones (possible reasons are discussed in Section 3 and in the comments to Figures 4 and 5). Almost as significant for kinship density is the worker's age. Age is also non-linearly related to kinship density, given the correlations to all other drivers. Young and old workers are more often found at workplaces with high kinship density than are middle-aged workers. High-income earners are more often found at workplaces with high kinship density. The remaining drivers all have a significant, albeit considerably smaller, partial correlation with kinship density.

5 | DISCUSSION

This paper contributes to the discussion of in-house family ties, quantifying the phenomenon and scrutinising factors associated with kinship ties. In doing so, a number of issues can be recognised. First, is it possible to say whether the observed level of kinship density is high or low? Compared to archaic times when virtually everything was organised around kin, the level is certainly low. But, in absolute numbers, the kinship density of 14% corresponds to 620,000 in-house kinship partners at Swedish workplaces. This makes it a phenomenon observable at most workplaces. If it has any impact—whoever negative or positive—the effect is not negligible. However, the dominant type of kinship links at Swedish workplaces are pairs of two persons linked to each other as relatives or as a couple, but not linked to any other worker at the workplace. So, the image of the prevalence of kin-dense family businesses with more than two members present from the same "clan" represents an exception.

Is the observed level of kinship density at workplaces heavily influenced by the presence of couples created at the workplace rather than before recruitment? Of all kinship links at the workplace, almost only the partner links can have originated there. The remaining links between blood relatives are created before and independent of their becoming members of the current workplace. Such remaining links among relatives amount to 10.5% of the workers, whereas all kinship links at workplaces amount to 14%. A substantial part of the remaining partner links (3.5%), however, are created at the workplace. If, for instance, something such as the US findings (Karl & Sutton, 2000) that almost a third of all romances start at the workplace also holds for Sweden, then this figure should be reduced to 2.3%. If so, almost 12 of the observed 14% kinship links at an average workplace were created before recruitment. So, the answer to this question is that only a fraction of the total level of kinship density at workplaces consists of couples created at the workplace.

Does the observed level of kinship density indicate a kin-based bias in recruitment? The answer is based on a fragile simulation so, a cautious answer, is that the difference between observed and simulated non-biased kinship level indicates that a substantial part of the observed kinship density is biased through the existence of one or more relatives at the chosen workplace. If you observe a pair of kin at a workplace, often one of them has influenced the recruitment of the other.

6 | CONCLUSION

I think: the smaller the place, the more [kinship ties] you'll find. That's what I think. It's just natural. [#20; metropolitan; technical industry]

This study contributes to linking prevalence of kinship density to place-related factors. In remote, sparsely populated places, the observed kinship level is considerably larger than the simulated non-biased level. In large cities, the observed level is half of that, but nevertheless, much larger compared to the non-biased level for these cities. So, the observed kinship density level seems to "exaggerate" the "necessity" somewhat, especially in dense places. In other words, it seems as if the co-location of kin at the same workplace is not only contingent on structural conditions such as population density and few locally available alternative workplaces.

In addition to plain population density, most of the other studied factors are localised to their own specific spatial contexts, related to kinship density, and often but not always correlated to population density. The location of manufacturing, private/public sector, large or small workplaces has long historical roots, shaped partly by the location of natural resources and partly by population distribution. Kinship density at workplaces is directly related to the composition of age, sex, education, income, and the size (in number of employed) of the workers' professions. The current footprint of people with a composition of characteristics correlated to kinship density is the result of long-term selective migration—in turn driven by localised place attractions—places with traditional production as well as places with work and amenities created by agglomeration economics, that is, density. For a
geographer, it is reasonable to include and label the result of such selection processes into the sphere of localised conditions and conclude that, among tested indicators, kinship density is often associated with place-related factors.

So, what about place and kinship? Most individual, and some municipal, variation in kinship density is not captured by the analysis presented, and the question remains as to what extent unobserved factors behind this variation are place-related or not. The maps offer one hint. Especially within the class of high kinship density municipalities, a clear pattern of agglomerated high kinship density regions is visible, including the west-east band in southern Sweden and municipalities in an old industrial region. Such deviations, only partly related to the tested indicators, are obviously place-related. So, this observation does not contradict the hypothesis that a large part of the remaining background conditions for kinship density are also place-related. This is a theme for further research.

FUNDING
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ENDNOTES
1 In this study we refer to kinship ties as the bond or relationship between family members and relatives. This includes kin relations based on birth (blood relations)—e.g., siblings, grandparents, cousins, uncles—and those based on marriage, that is, one’s partner. Further, it is used synonymously with the term “family ties,” which is frequent in many other studies.

2 ASTRID is an individual, geo-referenced longitudinal official register database covering the entire Swedish population. Economic and social attributes are available for all individuals. The data are compiled by Statistics Sweden.

3 The represented lines of business include: “Industry (technical; wood; food), primary, retail, tourism, restaurant, hotel, financial services, architecture, communication, life sciences, cleaning services, transportation, logistics, public services, state authority/public utility, municipal administration” (Haugen & Westin, 2016, p. 70).

4 On the other hand, in the extreme case when all workers at the workplaces are kin related to another worker—when the network is completely connected, then the classical measure becomes 100% in each example corresponding to 4.5 links per worker in the 10 worker workplace and 49 links per worker in the hundred worker workplace.

5 KD(i) = KD(wp) = \frac{1}{n} \sum_{j} \sum_{i} link(i;j)KD(i) = Kinship density for worker i at workplace wpKD(wp) = Average kinship density for workers at workplace wp = no. workers at workplace wp \times link(i;j) = 1 if worker i is kin related to worker j and vice versa, otherwise 0

6 CKD(i) = KD(i)/n = \frac{1}{n} \sum_{j} \sum_{i} link(i;j)CKD(i) = Classical kinship density for worker i at workplace wp. For simplicity, the potential is just the square of no. workers (not n-1).

7 The following criteria were employed when searching for a twin workplace (v) to the current one (a), for each worker: 1. Distance to v < current distance to a + 10 km. 2. Firms containing a and v belongs to the same industrial sector (10 groups). 3. At least as many employed in the workers profession (3-digit level, 100 professions) at v as at a. 4. 0.5*no. workers(a) < no. workers(v) < 2* no. workers(a). 5. At least as many employed with the workers education level (7 levels) at v as at a. 6. At least as many employed with the workers sex at v as at a. The three first criteria were always used, if more than one candidate workplace remained, criteria 4–6 was successively employed. If more than one remained after 6 steps, one was randomly selected. If none remained after three steps, the worker kept the current workplace but was counted as non-blinded.

8 KD = 2^7(7.078 – 0.2495 \ln(\text{Pop500Km}) + 0.6863 \ln(\text{CapitalIncome}) – 0.1917 \ln(\text{EdcLevel}) + 0.7952 \ln(\text{PrivateSector}) – 0.0241 \ln(\text{WorkPlaceSize}) + 0.01556 \ln(\text{WorkPlaceSize})^2 – 0.04433 \ln(\text{Age}) + 0.000408 \ln(\text{Income}) + 0.07255 \ln(\text{ProfSize}) – 0.01829 \ln(\text{ProfSize}) + 0.0000045 \ln(\text{Capitalln}) – 0.012815 \ln(\text{Sex}))

9 For simplicity expressed as a percentage but actually no. directed links per worker.

10 Knowledge-intensive business services

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REFERENCES


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