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Nepotism or social reproduction?

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Abstract[1]

Do kinship ties affect one's chances of acquiring a public sector job and do they, in such cases, trump formal qualifications? These questions have been subject to scrutiny by both scholars and policymakers, but to date, mainly as a result of data limitations, the empirical evidence is scarce and unclear. This paper explores the role played by kinship in relation to qualified administrative public sector jobs in the context of Sweden, an egalitarian society and top-ranked meritocracy. The paper examines whether an individual's chance of acquiring a public sector job increases if one of his/her parents are already employed in the same part of the public sector and/or organisation. The analysis employs detailed register data that contain complete information on kinship relations. It focuses on state agencies and municipalities in Sweden between 2001 and 2016 and explores the mechanisms behind the intergenerational transfer of public sector jobs in an egalitarian and low-corruption setting. The results reveal that the probability of acquiring a job in the state sector in general increases by about 5-6 percentage points when a parent is employed in a qualified position at a state agency. A parental effect, although lower, is also found for employment in the less prestigious local government. This parental effect can in part be explained by an increased probability of obtaining employment specifically at the parent's agency and by a higher probability of having acquired valuable work experience prior to graduation.

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Introduction

The principle of meritocratic recruitment – whereby jobs are distributed impartially based on qualifications rather than family or friendship relations – is a cornerstone of modern Weberian-type bureaucracy (Cornell and Lapuente 2014; Dahlström et al. 2012; Evans and Rauch 1999). Meritocracy is further regarded as a necessary antidote to nepotism, i.e., situations in which public officials illicitly exploit their position to favour their own kin (e.g., Lesné and Gauthier 2014). Apart from being genuinely unfair, nepotism risks producing several other detrimental side effects on organisations, including a competence drop (Dahlström et al. 2012), overstaffing (Ragauskas and Valeškaitė 2020) and the development of corruption-tolerant values (Geys 2017).

Despite the existence of explicit laws and policies against nepotism, it is commonly observed even in well-functioning bureaucracies that children of public sector employees are overrepresented in public sector jobs (Ragauskas and Valeškaitė 2020; Scoppa 2009). This type of intergenerational transfer of occupations in the public sector has often been viewed as indicating nepotism. A number of studies have attempted to estimate the prevalence of nepotism in public organisations on the basis of this type of operationalisation (Ragauskas and Valeškaitė 2020; Grilli and Allesina 2017; Allesina 2011; Scoppa 2009). A sense of the 'taintedness' of family ties in the public sector has gained traction both in the media and among policymakers (Nosengo 2017). For instance, in 2010, Italy passed law 240 of 30/12/2010, which prohibits university departments from hiring relatives of faculty members – irrespective of their qualifications. The primary motivation for this bill was to prevent nepotism.

The risk for family-based favouritism trumping meritocracy is an important issue. However, given the far-reaching consequences of many anti-corruption policies, it is also important that policies introduced to reduce nepotism are efficient and proportionate in relation to the problem at hand. As argued by Abramo et al. (2014), laws forbidding family ties at workplaces seriously constrain the career opportunities of some individuals, with no consideration of the individual's own behaviour, competence, or qualifications.

I maintain that the relative importance of the mechanisms underlying intergenerational transfer in the public sector are not yet fully understood. To date, data limitations have constrained analyses on the prevalence of nepotism because large-scale data on kinship ties are rarely available. Most previous studies on the occurrence and frequency of nepotism have therefore made use of either shared surnames (Fafchamps and Labonne 2017; Abramo et al. 2014; Sundell 2014b; Allesina 2011) or self-reported kinship (Scoppa 2009) as proxies for family ties. Both approaches are somewhat limited with regard to internal validity. The use of shared surnames involves a risk for limited precision given the absence of direct information on kinship relations (Ferlazzo and Sdoia 2012), while survey respondents have an incentive to conceal actual kinship ties, which would bias the results.

Besides the methodological limitations in previous research on public sector nepotism, there are also more substantive objections against a strict interpretation of family ties within the public sector as a clear-cut sign of nepotism. What has usually been observed in previous research is not the process that produces the intergenerational transfer of public sector employment, but rather meso or macro patterns of overrepresentation. However, similar patterns of intergenerational transfer of success have been observed for a variety of domains, such as business (Hundley 2006), politics (Folke et al. 2021) and sports (Groothuis and Groothuis 2008). The reason for this could be nepotism, but it could also be caused by other mechanisms

such as the intergenerational transfer of human capital (Adermon et al. 2021; Solon 1992), the inheritance of cultural capital (Hurst 2018; Bathmaker et al. 2013) or inequalities in social capital (Roth 2018; Bihagen et al. 2017; Kramarz and Skans 2014). Hence, overrepresentation in itself does not reveal the mechanism(s) that produce the intergenerational transfer of occupations within the public sector (Ferlazzo and Sdoia 2012). In order to avoid ecological fallacies (Robinson 2009), it is important to understand the underlying causes of the overrepresentation.

Against this backdrop, this paper aims to complement previous research by examining the role of parental ties in the hiring process for public sector jobs using Swedish register data – a high-quality data source that contains anonymised data on (almost) the entire Swedish population. The paper's main hypothesis is that potential employees with kinship relations to employees in public sector agencies will, on average, have a better chance of acquiring public sector jobs. I also examine the mechanisms by which parental ties in the public sector impact the labour market entry of university graduates. The overarching research questions are: 1) Do parental ties affect the chance of acquiring public sector jobs? 2) If an overrepresentation of children is found among hired employees, how can this best be explained?

The analysis focuses on employment in Swedish state agencies and municipalities between 2001 and 2016. The study employs register data that contain information on parent-child relations and employee-employer relations, including individual-level data on employment, occupation, and educational background. The study population comprises individuals who have graduated from university programs in political science, public administration, and sociology. This population is appropriate to the purpose at hand since, as a rule, public sector employment constitutes the main labour market for graduates from these programs. Since the number of qualified, private-sector jobs available to these individuals is limited, their choice of education signals an aspiration for a public sector career. It is therefore relevant to compare their job outcomes.

Ultimately, the analyses reveal that having parents employed in qualified positions at a state agency increases the chance of acquiring a qualified job in the state sector by approximately 5–6 percentage points. The corresponding parental effect for municipal jobs is 2–3 percentage points. These kinship effects are in part explained by an increased probability of obtaining employment from the parent's employer and a higher probability of having acquired valuable work experience prior to graduation. Moreover, the advantage from having a parent employed in the public sector is larger for low-achieving graduates.

The paper's original contribution is threefold. First, the paper applies a design that gauges whether having strategic parental ties in the Swedish public sector provides an advantage in relation to an individual's career. By employing Sweden's detailed and high-quality register data, the study is based on a far more precise identification of parental ties than previous studies in the field, which have predominantly been based on survey data or shared surnames. Second, the paper makes a novel empirical contribution by mapping the actual intergenerational transfer of public sector jobs in a setting that is traditionally viewed as highly meritocratic and low-corrupt. Third, the paper makes a theoretical contribution by bridging the literature on public sector nepotism and the broader field of intergenerational transfer (or social reproduction) in the labour market. I maintain that a cross-fertilisation between these two traditions results in a more nuanced understanding of the significance of parental ties within the public sector, and helps us better distinguish between when nepotism is at play from when other types of less corruption-associated mechanisms are present.

The specific nature of the public sector

This paper bridges two thematically related research fields that, to date, have largely developed in isolation from one another. The first of these fields concerns the role of family ties in relation to recruitment to public sector jobs, a literature that has been dominated by economists and political scientists (e.g., Ragauskas and Valeškaitė 2020; Abramo et al. 2014; Allesina 2011; Scoppa 2009). The second comprises a subfield of (primarily) sociologists that focus on the 'social reproduction' of labour market success (e.g., Breen and Goldthorpe 1997; Erikson et al. 1979). Numerous researchers in political science and related disciplines have taken an interest in how family ties between employees at public organisations may be used as a proxy for family-related nepotism. However, this strand of research has rarely been explicitly linked to research on the intergenerational transfer of occupations in general, despite the fact that parent-child ties within the public sector may be viewed as a special case of this phenomenon. Moreover, the broader sociological literature concerning the intergenerational transfer of occupations has rarely paid any specific attention to intergenerational transfer in the public sector.

The separation of the two fields described above is regrettable for at least two reasons. To begin with, since the public sector is financed collectively, it is reasonable to argue that it ought to be run in accordance with the impartiality principle (Rothstein and Teorell 2008). Recruitment to the public sector should therefore be conducted on meritocratic principles based on transparency and predefined rules and policies. Public sector recruitment should further be free from discrimination or favouritism, and family ties are obviously not valid grounds for employment. This means that some of the mechanisms of social reproduction that are common within the private sector (e.g., hiring someone based on family ties or personal preferences, rather than formal competence) would be considered an abuse of power when they occur in the public sector. Hence, viewing the intergenerational transfer of jobs in the public sector as being on par with the intergenerational transfer private-sector jobs would be to downplay the additional normative dimensions associated with public sector employment.

Further, it is equally regrettable that research on the overrepresentation of family ties among public sector employees is typically undertheorised with regard to the various sociological mechanisms (besides nepotism) that might produce such outcomes. While a relatively high density of family ties within the public sector might be symptomatic of family-based nepotism, such patterns could be due to several other potential factors, such as inequalities in cultural capital or the intergenerational transfer of occupation-specific human capital. The takeaway here is that, given that the intergenerational transfer of jobs may be caused by a number of different mechanisms, alternative explanations for the emergence of 'family dynasties' need to be accounted for before we jump to the conclusion that certain patterns at the meso or macro level are clear-cut signs of nepotism.

Social reproduction theory applied to the public sector

The fact that labour market success and socioeconomic status tend to be 'transferred' across generations within a family has long been a focus of scholarly attention within sociology (e.g., Erikson et al. 1979; Featherman et al. 1975; Lipset and Zetterberg 1958). An overrepresentation of the children of current public sector employees among those recruited to public sector employment might be viewed as an example of what, predominantly in sociology, has been labelled 'micro-class reproduction'. Micro-class reproduction

means that advantages from occupation-specific skills, aspirations, networks, or norms are transferred across generations (Jonsson et al. 2009; Weeden and Grusky 2005).

As with intergenerational transfer in the private sector, having a parent employed in a public sector position may provide aspiring young adults with occupation-specific knowledge, norms and networks that are instrumental to a career in the same profession. Table 1 provides a summary of the potential mechanisms underlying intergenerational transfer that have been highlighted in the literature on micro-class reproduction, and their expected relevance for public sector jobs. The table is my own creation, but it is loosely inspired by the comprehensive overview presented by Jonsson et al. (2009) of the various mechanisms underlying the intergenerational transfer of occupations. As can be seen from Table 1, social capital in the form of occupation-specific networks, cultural capital in the form of norms and aspirations, and human capital in the form of occupation-specific knowledge, are all potential mechanisms when it comes to the intergenerational transfer of occupations. Therefore, it would be premature to interpret an overrepresentation of kinship ties in the public sector as absolute evidence of illicit family-based favouritism, that is, nepotism.

TABLE 1. POTENTIAL MECHANISMS UNDERLYING THE INTERGENERATIONAL TRANSFER OF PUBLIC SECTOR JOBS

Mechanism	Type of capital	Life phase	Increase relevant competence?	Relevance for the public sector?
Aspirations	Cultural capital	Upbringing	Maybe	Yes
Occupation-specific norms	Cultural capital	Upbringing	Yes	Yes
Occupation-specific skills	(Non-formal) Human capital	Upbringing	Yes	Yes
Formal qualifications	(Formal) Human capital	Young adulthood	Yes	Yes
Information related to job search	Social capital	Post-graduation	No	Yes
Favouritism/Nepotism	Social capital	Post-graduation	No	Yes, but less acceptable compared to the private sector
Hired in parent-owned organisation	Economic capital	Post-graduation	No	Not relevant

Formal human capital is one important source of the intergenerational transfer of status and jobs, as educational aspirations and achievements are commonly passed on from older to younger generations (Adermon et al. 2021; Solon 1992). Young adults with educated relatives tend to educate themselves and become qualified for higher-status jobs. Moreover, children are also statistically more likely to choose an education that qualifies them for a profession similar to that of their parents as a result of the inheritance of aspirations. Hence, educational attainment is one important sorting mechanism that can lead to intergenerational transfer.

The intergenerational transfer of human capital via formal education has been covered elsewhere (e.g., Black et al. 2005), and is not the focus of this paper. Instead, my focus is directed at examining the mechanisms

that affect the intergenerational transfer of public sector occupations once an individual has chosen a specific education program. The reproduction of formal education is not the only potential mechanism behind the intergenerational transfer of public sector occupations. While there is clearly an inheritance of aspirations that makes the children of public officials more likely to choose education programs that are suited for jobs within, for instance, the field of public administration, 'connected' children also fare better than 'unconnected' individuals from the same cohort and with the same educational background (Scoppa 2009). Thus, social reproduction is only partly caused by sorting mechanisms related to formal education. Family background, networks and cultural capital are also of significance for a successful transition from graduation to establishment on labour market (Hurst 2018; Boliver 2017). There are various sorting mechanisms related to human capital, cultural capital and social capital that occur following graduation. The mechanisms of micro-class reproduction that occur subsequent to the choice of an education program can be summarised as follows:

- Cultural capital is often defined as an individual's familiarity with a *widely shared, legitimate culture made up of high status cultural signals (attitudes, preferences, behaviours, and goods) used in direct or indirect social and cultural exclusion* (Lamont and Lareau 1988 p. 156, see also Bourdieu 1984).[2] For the purpose of this study, I take a specific interest in the type of cultural capital that can be expected to contribute to the micro-class reproduction of access to public sector jobs. Such occupation-specific cultural capital involves, for instance, values and norms that are associated with a specific profession which are transferred from the parent to the child during the upbringing. One example of this type of occupation-specific cultural capital would be the aspiration to become a public official. Another example of cultural capital is an awareness and internalisation of specific codes of conduct that are important to a career as an official within the public sector.

- Human capital (acquired from the parent). Human capital refers *to the knowledge, skills, and abilities embodied in people* (Crook et al. 2011, p. 444). From the perspective of micro-class reproduction, it is important to note that parents often transfer to their children occupation-specific skills that are rarely learned via formal education. Such occupation-specific human capital can be transferred from parent to child if parents conduct some of their work from home or share work experiences with their children during their upbringing.

- Social capital is commonly defined as *the ability of actors to secure benefits by virtue of membership in social networks or other social structures* (Portes 1998, p. 6). In the present context, social capital relates to resources that an individual can benefit from and access through occupation-specific networks during their job search *ex post* graduation. A child, for example, could inherit network ties from a parent employed in a particular sector. Children could also indirectly benefit from their parents' social networks if the parents' friends or colleagues were to provide them with specific benefits.

[2] Note that while I cite Bourdieu as an originator of the 'cultural capital' concept, this paper does not adhere to Bourdieu's 'grand theory' of social reproduction. Like many other papers in modern sociology, my analysis is based on what Goldthorpe (2007) has referred to as a 'domesticated understanding' of Bourdieu. That is, I cherry-pick concepts from Bourdieu's research when I find them useful and use the (existing) definitions of these concepts that I find the most appropriate for my own applications, even if they deviate from Bourdieu's original definitions. Social capital as a resource at the individual level is another idea and concept found in Bourdieu (1986) that has successfully been refined and applied outside Bourdieu's grand theory (see Portes 1998).

The above-mentioned aspects of social reproduction remain empirically less well-researched than the role of formal education. This is largely a consequence of data limitations. In contrast to formal education, the three mechanisms mentioned above (cultural capital, occupation-specific human capital and social capital) are informal and difficult to measure, which makes it challenging to distinguish them from one another.

We can expect micro-level reproduction in the public sector to share many similarities with corresponding mechanisms in the private sector. However, there are differences between the two domains. In a low-corruption setting, social reproduction would be expected to be less prevalent in the public sector than the private sector for at least two reasons. First, economic capital is less relevant for public sector jobs, since unlike the private sector, where some parents may be the owners of law firms or farms, for example, no individual parent can own a public sector organisation. Hence economic capital is of less importance in relation to public sector jobs, at least in countries that are not characterised by serious systematic corruption. Second, the value of social capital would be expected to be lower in the public sector. While some parents have influential positions in the public sector, hiring one's children on the basis of kinship rather than formal competence would be illegal and viewed as a form of corruption. This does not mean that social capital is expected to be unimportant in the public sectors of low-corruption countries. Networks still provide access to unique information, preferential treatment, and greater opportunities. However, in a setting such as Sweden, regulations and norms can be expected to place constraints on opportunistic favouritism within the public sector.

Given that the empirical data employed in this study are drawn from an administrative register, I will not be fully able to distinguish between the various alternative mechanisms that might impact micro-class reproduction in the Swedish public sector. That said, my primary objective is to distinguish between the effects of social capital, which is linked to the child's and parent's immediate network, and other forms of benefits that may be derived from exposure to a parent working in the public sector, including cultural and human capital. The timing of the exposure to a parent's employment in the public sector is crucial in making this distinction. Social capital refers to benefits obtained through networks, whereas cultural and informal human capital pertain to an individual's innate abilities and characteristics, independent of specific network connections. Therefore, to differentiate between social capital and other forms of capital, I will consider both the current and the previous employment of the parents.

Research setting – public sector jobs in Sweden

This paper focuses on the role of parental ties in relation to employment at state agencies and municipalities in Sweden. Sweden is an egalitarian country and is ranked as one of the world's 'best meritocracies' and is also recurringly ranked as one of the least corrupt countries in the world (e.g., Dahlström and Lapuente 2017). Despite its 'least-corrupt' reputation, for the purposes at hand, Sweden is an interesting case for at least two reasons. *First*, while the problem of petty corruption within the public sector is close to non-existent, researchers and political commentators often raise concerns about nepotism and collusion within friendship networks as 'sophisticated' forms of corruption that are prevalent in countries like Sweden (Andersson 2017; Papakostas 2012; see also Bauhr et al. 2010). However, while previous research has examined the risk for politicised recruitment to the Swedish public sector (Dahlström and Holmgren 2019; Dahlström and Niklasson 2013), to my knowledge, no empirical study of modern Sweden has assessed the risk for kinship-based favouritism in the context of recruitment to the public sector. *Second*, in contrast to for instance France or Spain, Sweden is a so-called open Weberian bureaucracy in which recruitment to

public office is based on open competition rather than formal civil service examinations (Dahlström and Lapuente 2017; Sundell 2014a). The lack of specific formal exams means that in Sweden applicants with different types of degrees and experience commonly compete for the same public sector job. It is not unreasonable to expect that this provides recruiters with some room for discretion. Unsurprisingly, previous research has shown that social and cultural capital are of greater importance in settings where hiring is subject to fewer predefined rules and criteria (Chua and Wellman 2015; McDonald et al. 2012; Chua 2011).

According to Swedish law, public sector positions must be advertised openly, and recruitment decisions should be made on the basis of meritocratic principles. Even though the application process for public sector jobs is formally open to everyone, some types of background are regarded as more relevant than others. Individuals employed as public officials in Sweden typically have a university-level social science degree.

In this paper, the focus is on graduates from programs in public administration, political science and sociology. The first reason for focusing on these programs is that most graduates from these programs end up getting a public sector job. It is therefore reasonable to assume that the lion's share of the students who choose to study political science, public administration or sociology have an interest in public sector employment. Hence, the relative success of these students can be measured by whether or not they acquire qualified jobs within this sector. Another circumstance that makes graduates from political science, public administration, and sociology an appropriate study population is that graduates from these three programs end up working in a wide range of public sector jobs that are subject to varying levels of competition in the hiring process, and that also require varying qualification levels and have varying status. An academic degree in political science, for example, is a minimum requirement for many qualified and analytical jobs within public administration, but it is rarely sufficient for a top job. In line with what has been found in other settings (e.g., Tholen et al. 2013; Rivera 2011), we can expect that Swedish graduates in political science, public administration and sociology will need to complement their academic degrees with other qualifications, characteristics, experiences, and competencies if they are to stand out. The area of the labour market in focus here is a competitive environment in which we might expect strategic parental ties to give an extra edge in terms of both social networks and cultural capital.

The structure of the Swedish public sector

The Swedish public sector employs approximately 28 percent of the country's total workforce (The Swedish Agency for Public Management 2018). It comprises three levels of government: the national (state) level, the regional (county) level and the local (municipal) level. Of these, it is mainly the national and local levels that are of interest to the purposes of the current study, and jobs at the regional (county) level have been excluded from the analysis. Regional authorities at the county level employed 5 percent of the total workforce in 2016 and are primarily responsible for health care and public transport (The Swedish Agency for Public Management 2018). Given these specialisations, the bulk of the public sector staff at the county level are employed in the health care and public transport sectors. The county administrations employ a relatively small number of officials with a background in public administration, political science, or sociology. While job positions relevant to graduates in these subjects do exist in the regions, these positions constitute a minor proportion of the jobs that are of relevance to these student groups.

The state (national-level government) employed 6 percent of the total Swedish workforce and accounted for approximately 18 percent of all public sector employees in 2016. However, the state sector nonetheless

includes central institutions such as the Swedish Tax Agency, the Swedish Public Employment Service, the Social Insurance agency, the Swedish Police Agency, and the Swedish Migration Agency. Since relevant university social science degrees often constitute a mandatory criterion for job positions at state agencies, these organisations also constitute an important labour market for graduates specialised in political science, public administration, and sociology. Further, many agencies employ these graduates as case officers, in addition to their employment in more qualified positions such as specialists, analysts and investigators, and in organisational development roles.

Besides being employed in state agencies, many of the graduates of interest to this paper are employed in the local government sector. In 2016, municipal employees constituted approximately 16 percent of the total workforce and 63 percent of all public sector employees (The Swedish Agency for Public Management 2018). Local government represents the front line of the Swedish welfare state, and its responsibilities include preschool, primary, secondary, and upper-secondary schools, as well as geriatric and disability care. However, many of these welfare services require a large staff of front-line workers engaged in providing direct help to clients, and these positions are not suited to the graduates in my study population. At the local level, the university graduates of interest to this paper are typically employed in administrative roles within the political administration or the central municipal offices.

The differences between jobs at Swedish state agencies and in the local government sector have implications for the study. State agencies are generally viewed as more attractive employers than the municipalities. State agencies often have positions that involve a high degree of specialisation, are relatively well paid, provide better promotion opportunities. In addition, working conditions are typically more generous at the state level (longer holidays, medication is paid for, health care visits can be made during working hours). A state employee is part of a large organisation with numerous potential opportunities for promotion to more specialised and strategic positions. By contrast, the local-government labour market for a political science graduate is horizontal rather than vertical, since the number of qualified specialist administrative positions within a given municipality is smaller. It is therefore reasonable to expect competition to be greater for qualified jobs in the state sector.

Data and methods

The present study examines how having a parent employed in a qualified position in the public sector affects the likelihood of acquiring a qualified position after receiving a university degree. The research design involves comparing the employment outcomes of individuals who have at least one parent employed in the public sector with those of individuals who lack such connections. The analysis employs register data obtained via Mona, a platform used by Statistics Sweden to provide access to microdata. The data include almost complete, and anonymised, information on all individual residents and all organisations located in Sweden during the period 2001–2016. I employ data on university degrees, residence, workplace, and kin relationships, as well as background data on factors such as age and gender. A summary of the databases and variables accessed via Mona is presented in Appendix A.

The study population consists of individuals that had just graduated from university programs for which the public sector constitutes the primary job market. Regarding potential employees, the analysis is restricted to 1) individuals who graduated from a university program in a given year, and 2) an exclusive focus on

university programs for which the public sector constitutes the principal labour market. The study population includes graduate students who received an undergraduate or an advanced-level degree in political science, public administration, or sociology between 2001 and 2016. In cases where a student received a number of degrees (for instance, a bachelor's degree followed by a master's degree), these individuals were only included as a single observation based on the year in which they received the highest of their degrees. The population is also restricted to graduates aged 40 or younger, since graduates who are older than this are less likely to have parents of working age. These criteria resulted in a study population of 17,359 graduates.

The empirical analysis is divided into two parts. In the first, I examine whether having a parent working at a state agency or municipality affects the likelihood of graduates themselves obtaining a qualified job at a state agency or municipality in the year following graduation. This sector-level analysis provides a broad overview of intergenerational transfer, and shows, for example, whether the child of a state agency employee is more likely to obtain a qualified state agency job. However, this analysis is somewhat crude and does not explain the underlying mechanisms that produce the observed outcome. To provide a more detailed understanding of this form of intergenerational transfer, I therefore also examine this issue at the more precise organisational level, which constitutes the second part of the empirical analysis.

This organisational-level analysis examines whether graduates are more likely to obtain employment at a parent's current or previous employer. This analysis, I believe, is better suited to reveal mechanisms than the sector-level analysis. The organisational-level analysis can determine whether graduates tend to get hired by an organisation that is similar to their parent's employer (indicating the transfer of cultural and human capital across generations) or whether they have a higher probability of being hired specifically by their parent's employer (which would indicate a benefit from social capital).

Together, the sector- and organisational-level analyses will provide a comprehensive basis for understanding the intergenerational transfer of public sector jobs among the studied population. Below, the research design for each part of the empirical analysis is explained in more detail.

Sector-level analysis

The sector-level analysis focuses on how having a parent employed in a qualified public sector position affects the likelihood of obtaining a qualified position in the same sector after receiving a university degree (cf. Scoppa 2009). The focus is directed at employment at the state and municipal levels during the period 2001–2016. Given the diversity of occupations found in state agencies and municipalities, my analysis accounts for whether the graduates obtain a position that can be considered 'qualified', given their university degree. I operationalise whether or not occupations are qualified using the International Standard Classification of Occupation (ISCO) codes developed by the International Labour Organisation. I operationalise qualified positions as those represented by ISCO codes that start with a '1', '2' or '3'. ISCO code 1 represents a managerial position, while ISCO codes 2 and 3 represent jobs that require a higher education.

The research design involves comparing the employment outcomes of individuals who have at least one parent employed in a qualified public sector position with those of individuals with no such connections. To this end, linear probability models are estimated in which the outcome is obtaining a qualified job in either a state agency or a municipality. The treatment is having a parent employed in either a state agency or a municipality, and the main independent variables are dummies indicating whether an individual graduate

has a parent with this type of occupation. I conducted separate analyses for jobs in state agencies and municipalities in order to determine whether social networks provide an advantage in the competition for more coveted public sector positions. Hence, I specifically test whether having a parent employed in a qualified position in a state agency increases a graduate's probability of obtaining a qualified job in a state agency. Correspondingly, I also examine whether having a parent employed in a qualified position at a municipality increases a graduate's probability of acquiring a qualified job at a municipality. It is worth noting that in this particular context, positions at state agencies are likely to be considered more prestigious than jobs at the municipality level. This distinction thus allows me to test the specific impact of social networks on the acquisition of more highly coveted positions.

The sector-level models include fixed effects for each unique combination of university, year, and education program – hereafter referred to as 'cohort fixed effects' – to eliminate unobserved heterogeneity between universities and programs (e.g., quality of education, status). Cohort fixed effects also have the advantage of reducing (but not eliminating) unobserved heterogeneity between the graduate students. Students who study the same program at the same university are also expected to be more similar than students who study at different universities. First, students enrolled at the same university tend to have more similar study abilities than those who attend different universities, as universities have varying status and students are admitted based on high school grades or scores on the national university aptitude test. Second, the individual-level choice to study a specific university program at a specific university may be expected to be correlated with personal interests and preferences as well as individual-level characteristics. Cohort fixed effects are therefore used to reduce unobserved heterogeneity that cannot be gauged on the basis of the register data.

The use of cohort fixed effects can help to reduce heterogeneity at the individual level, but it cannot completely eliminate it. In order to account for remaining sources of heterogeneity between graduates, the sector-level analysis also include control variables related to individual characteristics (such as high school grades, age, and previous experience), socioeconomic factors (such as parental income and education), and sociodemographic background (such as place of birth). Detailed descriptions of all variables included in the sector-level analysis are presented in Table 2.

For the sector-level analysis, I estimate the following linear probability models:

$$(1) \quad QS_i = \beta_0 + \varphi TS_i + \sum_{j=1}^{j=n} B_j X_{ij} + C_i + \varepsilon_i$$

$$(2) \quad QM_i = \beta_0 + \varphi TM_i + \sum_{j=1}^{j=n} B_j X_{ij} + C_i + \varepsilon_i$$

where $QS_{i,}$ and QM_i are indicator variables that take the value 1 if individual *i* acquires a qualified job at a state agency or a municipality respectively at time *t + 1*. $TS_{i,}$ and TM_i are indicator variables capturing whether a parent of *i* is employed at a state agency or a municipality respectively during the year in which *i* graduated. φ is the coefficient of interest and measures the effect of having a parent employed in the public sector (at a state agency or municipality) on individual *i*'s probability of acquiring a qualified job. X_{ij} denotes a vector of control variables and B_j denotes their coefficients. C_i is a cohort specific fixed effect that ensures that comparisons are conducted within cohorts rather than between individuals from different cohorts. β_0 is a constant and ε_i is the error term.

TABLE 2. VARIABLES AND DEFINITIONS FOR THE SECTOR-LEVEL ANALYSIS

Dependent variables	
Employed in qualified position at a state agency at *t + 1*	A dummy variable with the value 1 if the graduate is employed at a state agency in an occupation with ISCO code 1, 2 or 3 in November the year following graduation. The dummy otherwise has the value 0.
Employed in qualified position at a municipality at *t + 1*	A dummy variable with the value 1 if the graduate is employed at a municipality in an occupation with ISCO code 1, 2 or 3 in November the year following graduation. The dummy otherwise has the value 0.
Main explanatory variables	
Parent has a qualified position at a state agency	A dummy variable with the value 1 if at least one parent is employed at a state agency in an occupation with ISCO code 1, 2 or 3. The dummy otherwise has the value 0. The parent's employment position is measured during the year in which their child graduates.
Parent has a qualified position in a municipality	A dummy variable with the value 1 if at least one parent is employed at a municipality in an occupation with ISCO code 1, 2 or 3. The dummy otherwise has the value 0. The parent's employment position is measured during the year in which their child graduates.
Control variables	
Previous work experience: state agency	A dummy variable with the value 1 if the graduate had been employed at a state agency one year prior to graduation or earlier, otherwise 0.
Previous work experience: municipality	A dummy variable with the value 1 if the graduate had been employed at a municipality one year prior to graduation or earlier, otherwise 0.
Parents' income	A categorical variable that divides the parents' annual income into four quartiles. For individuals with two living parents, I take their average annual income in the year of graduation.
Parent with university degree	A dummy taking the value 1 if at least one of the parents has a university degree, otherwise 0.
Born in Sweden	A dummy variable that takes the value 1 for graduates who were born in Sweden, otherwise 0.
Born in Stockholm County	A dummy variable taking the value 1 if a graduate was born in Stockholm County, otherwise 0.
Female	A dummy variable that has the value 1 for females, otherwise 0.
The graduating individual's age	A factor variable with categories based on the following age intervals: 20–24, 25–30, 31–35, 36–39.
High school grade dummies	Since the high school grading system has changed over time, direct comparison of grades between different cohorts are impossible. Instead, grades are operationalised using dummy variables indicating that individuals are above the 95th (96-100) and 90th (91-95) percentiles or below the 25th (1-24) percentile compared to their own age cohort.

Organisational-level analysis

In a complementary analysis, I test whether graduates with parents employed in the public sector obtain jobs in the same organisations as their parents. This is achieved by comparing the (anonymised) organisational ID of each graduate's employer at *t +1* with the organisational ID of the parent's employer at year *t*. If these organisational IDs match, it means that a graduate was employed by an organisation in which they had a family tie at the time of graduation. In principle, this analysis will detect, for instance, whether a graduate with a parent employed at the Swedish Tax Agency also obtained employment at the Swedish Tax

Agency. Similarly, this analysis will detect whether a graduate with a parent employed by Stockholm municipality also obtained employment at Stockholm municipality.

This analysis has been inspired by a research design previously employed by Kramarz and Skans (2014), who studied the effect of parental ties on the acquisition of private sector jobs. In order to specify the differential likelihood of graduates being hired by their parents' employers, the analysis contrasts the probabilities of employment for graduates with parental connections of this kind with the corresponding probabilities for graduates with no such connections. A schematic illustration of this research design is depicted in Figure 1.

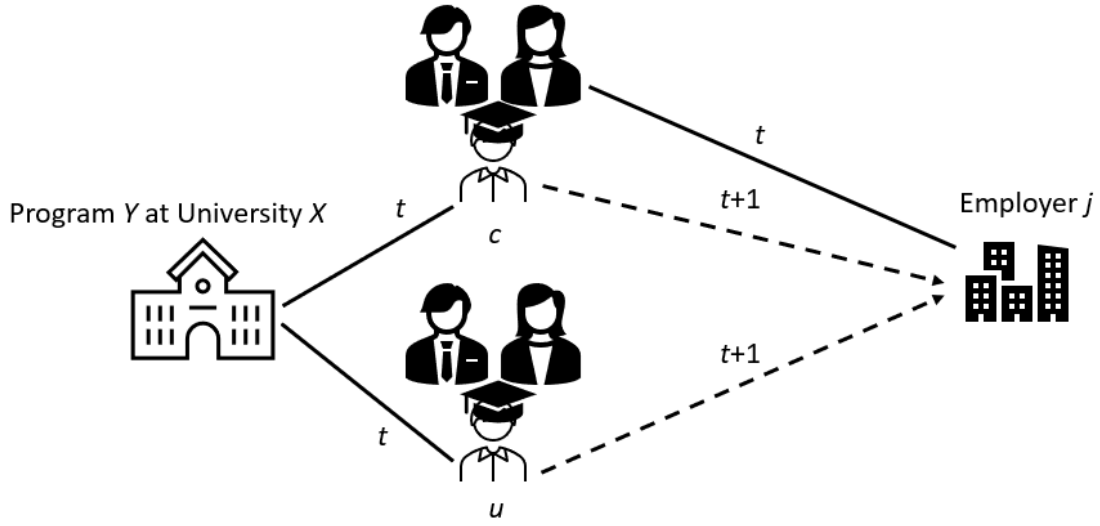

Figure 1. Schematic illustration of the research design for the organisational-level analysis. The analysis is based on comparing the probability of connected graduates and unconnected graduates being employed by a specific employer *j* the year after graduation (year *t* + 1). Connected graduates, indexed by *c* in the upper part of the figure, have a parent who works for the employer at the time of graduation (year *t*). The unconnected graduates (indexed by *u* in the lower part of the figure) come from the same cohorts as the connected graduates but do not have any parental connection at employer j.

To estimate the treatment effect of parental connections, a regression analysis (linear probability model) is conducted using an expanded dataset in which every possible graduate-employer-organisation combination is included as an observation. The advantage with this set-up is that it allows me to estimate the effect of parental connections while also including fixed effects that adjusts for unobserved heterogeneity between universities and employers. Since the analysis is based on within-cohort comparisons, the analysis only includes organisations for which at least one parent of one of the studied graduates was employed during the period examined. The outcome is set to 1 for cases in which the graduate starts working for an employer at year *t +1*, otherwise 0. In line with the sector-level analysis, I only focus on occupations with ISCO codes 1,2 or 3, which can be considered qualified in relation to the studied population. Hence, the outcome is coded as 0 for unqualified jobs. The entire population of 17,359 graduates has been included in this analysis irrespective of whether or not they obtained employment. The outcome variable is thus also coded as 0 for all graduate-employer-organisation combinations for those individuals who did not acquire a *qualified* position in year *t + 1*.

Graduates are operationalised as 'treated' in cases where (at least) one of their parents was employed in a qualified position by the organisation in question at time *t*.[3] I estimate separate treatment effects for state agencies, municipalities and 'other organisations' in order to examine whether the role of parental ties varies between these organisational types. I also include fixed effects that capture the baseline propensity for graduates from a given cohort (all graduates from a specific program at a specific university in a given year) to end up working in a particular organisation – hereafter referred to as 'cohort-organisation fixed effects'. The cohort-organisation fixed effects account for various factors, such as graduates' skills, organisation size and location, which affect the probability that graduates from a given cohort will end up working for a particular employer.

Formally, the main organisational-level analysis utilises the following linear model for the probability that graduate *i* is employed by employer *j*:

$$(3) \qquad H_{i,j} = \beta_{c(i),j} + \varphi_s S_{i,j} + \varphi_m M_{i,j} + \varphi_o O_{i,j} + \varepsilon_{i,j}$$

where $H_{i,j}$ is an indicator variable taking the value 1 if graduate *i* is hired (in a qualified position) by employer *j*. $S_{i,j}$, $M_{i,j}$ and $O_{i,j}$ are indicator variables capturing whether a parent of graduate *i* works (in a qualified position) for employer *j* and whether employer *j* is a state agency, a municipality or some other organisation. φ are the coefficients of interest and measure the effect that having a relative employed at employer *j* has on graduate *i*'s probability of being hired by employer *j*. $\beta_{c(i),j}$ is a fixed effect that captures the propensity that graduates from a given cohort will end up working in a particular organisation. $\varepsilon_{i,j}$ is the error term.

Probing of underlaying mechanisms

In addition to the main model described in Equation 3, I conduct additional organisational-level analyses to investigate underlying mechanisms. These analyses utilise a similar model to that described by Equation 3, but include additional variables to distinguish the effects of social capital related to the parents' current employer from other factors, such as human capital or cultural capital. This is achieved by means of two strategies. My first strategy involves considering the timing of the parent's affiliation with different types of employers. Specifically, I distinguish between the effect of being exposed to a parent who works in the public sector in general and the effect of having a parent working at a specific organisation at the time of graduation. I estimate the probability that graduates will be hired by the following employers: 1) Employers at which one of the graduate's parents was employed in the year of graduation. 2) Previous employers at which one of the graduate's parents was working 1-5 years prior to their child's graduation. 3) Previous employers at which one of the graduate's parents was working 6–10 years prior to their child's graduation. If a large difference in treatment effect is observed between the parents' employers at the graduation year and the parents' previous employers, it suggests that social capital plays a more significant role than alternative mechanisms.

[3] There are instances where the parents of a graduate are both employed by the same public sector organisation. These cases could potentially result in 'complex contagion', with a greater treatment effect compared than those with only one parent employed by a specific organisation. However, these cases are too few (approximately 300) to allow for a meaningful analysis of the specific effect of being 'treated' by both parents. Thus, I do not differentiate between the effect of one or two parents in my analysis. To ensure the robustness of my findings, I have also conducted the same analysis but excluded graduates with two parents working in the same organisation. The overall results remained unchanged.

My second strategy to separate the impact of social capital from that of other, related factors, is based on the idea of organisational similarity. Previous research has shown that recruitment is not only based on qualifications and social capital but also cultural capital. As a rule, employers and managers are more likely to hire individuals who are culturally similar to them (Rivera 2012). Moreover, parents with a career in the state or municipal sector can transfer cultural capital such as occupation-specific norms and values to their children. As a consequence, children of state agency employees, for instance, may be expected to appear as a better 'match' for positions in the state sector than their peers with other backgrounds. Since I am working with register data, I cannot disentangle the relative importance of different types of cultural factors in detail. However, using detailed data on the attributes of employers, it is possible to obtain at least an indication of the potential importance of various forms of cultural capital. If cultural capital (in any form) matters, we would expect graduates to be overrepresented at employers that are similar to their parent's current employer.

In order to measure organisational similarity, I utilise the Swedish Standard Industrial Classification-2002 (SNI 2002, [Standard för svensk näringsgrensindelning in Swedish]). This classification system, developed by Statistics Sweden, is based on the EU's NACE Rev.2 standard, and is used to categorise businesses and workplaces according to the type of activity they engage in. The SNI is identical to NACE Rev.2 for the first four levels but includes an additional level for increased granularity. In my analysis, I utilise the most detailed level of the SNI classification, which includes 5 digits (levels). To operationalise organisational similarity, I use a dummy variable that takes the value 1 for organisations that have the same SNI code as a parent's current employer and 0 for all other organisations. This variable is set to 0 for all parents' current or previous employers to prevent the effect of organisational similarity being confounded with the effect of the parents' social networks.

In addition to the variables mentioned above, I also take account of whether the graduates had previous been employed in each organisation. It is possible that some graduates may have held part-time or summer jobs during their studies, which may increase their chances of employment at these organisations following graduation. To account for this, I include a binary variable that indicates whether a graduate had previously worked for a specific organisation. It is worth noting that part-time and summer jobs of this kind may also function as a mediating factor, since graduates may have obtained these jobs as a result of their parents' social connections. In such cases, work experience would constitute a benefit obtained via the parents' social capital, which will in turn affect the children's job prospects following graduation. To examine this potentially mediating factor, I estimate models both with and without the inclusion of previous work experience.

Results

Descriptive overview

This subsection presents a descriptive overview of the data. Table 3 provides an overview of the number of individuals who have a parent with a qualified job in the public sector. Whether a graduate has a connection to a parent of this kind is measured in the same year as the child's graduation. The total population analysed comprises 17,359 individuals who graduated from university programs in political science, public administration and sociology during the period 2001–2016. Of these, 1,553 (8.9 percent) had a parent with a qualified job position in a state agency in the same year as the study subject's graduation. 3,699 (21.3 percent) had at least one parent in a qualified position at a municipality in the year they graduated.

TABLE 3. THE NUMBER OF INDIVIDUALS WHO HAD A PARENT EMPLOYED IN A QUALIFIED POSITION IN THE PUBLIC SECTOR IN THE YEAR OF THEIR GRADUATION, 2001–2016

	State agency contact	Municipality contact	No connected contact	Full population
Frequency	1,553	3,699	12,405	17,359
Percent	8.9	21.3	71.5	100

Note: A minority of graduates have parental ties both in the state and the municipal sector. Columns 2-4, therefore, sum up to more than 100 percent.

83 percent of the graduates had employment at the end of the year following graduation. Moreover, a majority of those employed (62 %) were hired by some public sector organisation. However not all of these were in qualified occupations. Table 4 provides an overview of the proportion of graduates employed in a qualified position with an ISCO code 1, 2 or 3 in different sectors one year after graduation. The proportions are presented separately for graduates with parents that are either employed at a state agency (first row) or a municipality (second row). The third row shows the proportions for graduates who do not have a parent employed by a state agency or a municipality.

Column 2 in Table 4 shows the proportion of graduates from each group that obtained a qualified job at a state agency within a year of graduation. Employment at state agencies is more common among graduates with parents in this sector. The proportion of graduates with a qualified job in the state sector is 26.7 percent for graduates with connections in the state sector but only 21.1 percent among individuals with parental connections at municipalities. Further, 20.9 percent of the graduates with no parental connections in the public sector obtained qualified employment at a state agency. This indicates that connections do indeed increase the probability of employment at a state agency.

TABLE 4. PROPORTION OF INDIVIDUALS WITH QUALIFIED EMPLOYMENT IN DIFFERENT TYPES OF ORGANISATIONS IN THE YEAR FOLLOWING GRADUATION

	Qualified job: state agency	Qualified job: municipality	Qualified job: other	Any qualified job
State agency contact	26.7	9.3	20.7	56.7
Municipality contact	21.1	14.2	21.6	56.9
No connected contact	20.9	14.0	20.1	55.0

Column 3 in Table 4 reveals that qualified employment at a municipality is more common among graduates with at least one parent employed by a municipality (14.2 percent) than graduates with a parent employed in the state sector (9.3 percent). However, as is shown by the last row of column 3, the probability for employment at a municipality for graduates with no parental connections to either the state sector or a municipality is approximately the same as for graduates with a parental connection in the municipal sector. Hence, while graduates with parents employed in the state sector are underrepresented in municipal jobs, graduates with insider connections at municipalities are not overrepresented with regard to employment in the municipal sector, at least not compared with graduates without parental connections. So far, the descriptive overview indicates that network connections tend first and foremost to have an impact on the probability of employment in state agencies. In the next section, I test whether these differences remain after controlling for potential confounders.

Sector-level analysis of network effects

Table 5 reports results from linear probability models that test the impact of parental connections on the probability of acquiring a qualified job (ISCO codes 1, 2, 3) in state agencies. Model 1 includes a wide range of control variables but does not include cohort fixed effects. The result from Model 1 reveals that having a parent employed in a qualified position at a state agency is associated with a significant increase in the chance of obtaining qualified employment at a state agency, of 6.1 percentage points. This suggests that individuals' parental networks increase the chance of labour market entry into the state sector. In addition, older graduates, and individuals with high school grades above the 95th and 90th percentile also have an increased probability of obtaining employment at a state agency. In contrast, grades below the 25th percentile decrease the same probability. These results indicate that there is competition for state sector jobs and that these jobs are attractive for high-achieving graduates and older individuals with more work experience. In terms of controls, Model 1 shows that family background does not have a significant impact on job market outcomes for the studied population. This is evident as neither the variables for parental income nor for having a parent with a university degree are significant. However, individuals born in Sweden and females are estimated to have a lower likelihood of getting qualified employment at a state agency.

Model 2 includes cohort fixed effects, and treatment effects for this model are estimated as relative probabilities based on deviations from the cohort mean. Hence, the estimations are only based on within-cohort comparisons, which reduces the risk for unobserved heterogeneity. The marginal effect of having a parent employed in a qualified position at a state agency decreases somewhat to 5.1 percentage points in Model 2 but is still highly significant. The positive and significant coefficients for older graduates also remain in Model 2. The marginal effect of having high school grades in the 95th percentile decreases dramatically, from 10 to 3.6 percentage points, but remains significant at the 5 percent level. The other grade variables are insignificant. A likely explanation for the decreased relevance of school grades is that these are relatively similar for students who are enrolled in the same program at the same university. Additionally, the difference between males and females also disappears with cohort fixed effects.

Model 3 examines the role of previous work experience by introducing a dummy variable for whether a graduate has had previous work experience at a state agency. As in Model 2, this model also includes cohort fixed effects. Model 3 reveals that previous work experience at a state agency is highly predictive of obtaining qualified employment at a state agency following graduation. The marginal effect is almost 26 percentage points. Interestingly, the inclusion of this variable also decreases the 'network effect' of having a parent employed at a state agency, from 5.1 in Model 2 to 2.1 in Model 3. This decrease implies that work experience acquired prior to graduation mediates the effect of having a parent employed at a state agency on the likelihood of acquiring a state agency job. One potential mechanism is that having a parent employed at a state agency increases the probability of acquiring a state agency job prior to graduation. Furthermore, work experience at a state agency would in turn increase the probability of acquiring a state agency job following graduation.

Models 4–6 in Table 6 mirror Models 1–3, but in these models, the outcome is having a qualified job at a municipality in the year after graduation, and the main explanatory variable is whether at least one parent is employed in a qualified position at a municipality. Starting with Model 4, a positive effect from parental ties is also found for municipalities. The marginal effect of having a parent in a qualified position at a municipality is 2.5 percentage points. It is thereby considerably weaker than the corresponding effect for state agencies. One potential explanation for this finding is that job positions in the municipal sector are less

attractive, and therefore subject to less competition, and that social networks are therefore not as pivotal to acquiring such positions. Additional evidence of the lower level of competition for municipal jobs is that graduates with high school grades above the 95th and 90th percentiles are less likely to be employed by municipalities. Additionally, graduates with grades below the 25th percentile are more likely to get such employment. Employment in municipalities is also less common among graduates who have at least one parent with a university degree, but more common among females.

TABLE 5. LINEAR PROBABILITY MODELS ESTIMATING THE PROBABILITY OF HAVING A QUALIFIED JOB AT A STATE AGENCY AT THE END OF THE YEAR FOLLOWING GRADUATION

	State agency jobs		
	Model 1	Model 2	Model 3
Network variables			
Parent employed at state agency	0.061***	0.051***	0.021*
	(0.011)	(0.011)	(0.011)
Work experience			
Employed by state agency at least one year before graduation			0.257***
			(0.008)
Other individual-level variables			
Grades above the 95th percentile	0.098***	0.037**	0.032*
	(0.013)	(0.013)	(0.013)
Grades above the 90th percentile	0.030*	-0.010	-0.013
	(0.013)	(0.013)	(0.013)
Grades below the 25th percentile	-0.039**	-0.017	-0.012
	(0.014)	(0.014)	(0.014)
Age 26-30	0.096***	0.061***	0.041***
	(0.008)	(0.008)	(0.008)
Age 31-35	0.127***	0.095***	0.046***
	(0.011)	(0.011)	(0.011)
Age 35-40	0.117***	0.104***	0.049***
	(0.014)	(0.015)	(0.015)
Female	-0.029***	-0.003	0.008
	(0.007)	(0.007)	(0.007)
Born in Sweden	-0.022*	-0.021†	-0.020†
	(0.011)	(0.011)	(0.011)
Born in Stockholm County	0.002	-0.015†	-0.020*
	(0.008)	(0.009)	(0.008)
Family background			
Parent with a university degree	0.006	-0.004	-0.006
	(0.007)	(0.007)	(0.007)
Parental income Q3	-0.008	-0.002	0.001
	(0.009)	(0.009)	(0.009)
Parental income Q2	0.001	0.006	0.014
	(0.010)	(0.010)	(0.010)
Parental income Q1	-0.015	-0.014	-0.004
	(0.011)	(0.011)	(0.010)
Cohort FE	No	Yes	Yes
R2	0.017	0.062	0.115
Observations	17,359	17,359	17,359

Note: Robust standard errors in parentheses. Significance: †P < 0.1, *P < 0.05, **P < 0.01, ***P < 0.001.

TABLE 6. LINEAR PROBABILITY MODELS ESTIMATING THE PROBABILITY OF HAVING A QUALIFIED JOB AT A MUNICIPALITY AT THE END OF THE YEAR FOLLOWING GRADUATION

	Municipal jobs		
	Model 4	**Model 5**	**Model 6**
Network variables			
Parent employed at municipality	0.025***	0.026***	0.016*
	(0.007)	(0.007)	(0.007)
Work experience			
Employed by municipality at least one year before graduation			0.085***
			(0.005)
Other individual-level variables			
Grades above the 95th percentile	-0.054***	-0.005	-0.006
	(0.011)	(0.011)	(0.011)
Grades above the 90th percentile	-0.031**	-0.006	-0.009
	(0.011)	(0.011)	(0.011)
Grades below the 25th percentile	0.038**	0.015	0.011
	(0.012)	(0.012)	(0.012)
Age 26-30	0.001	0.009	-0.003
	(0.007)	(0.007)	(0.007)
Age 31-35	0.025**	0.029**	0.008
	(0.009)	(0.009)	(0.009)
Age 35-40	0.067***	0.047***	0.025*
	(0.012)	(0.012)	(0.012)
Female	0.046***	0.019***	0.011†
	(0.006)	(0.006)	(0.006)
Born in Sweden	0.024**	0.011	0.009
	(0.009)	(0.009)	(0.009)
Born in Stockholm County	-0.080***	-0.037***	-0.028***
	(0.006)	(0.007)	(0.007)
Family background			
Parent with a university degree	-0.039***	-0.017**	-0.017**
	(0.006)	(0.006)	(0.006)
Parental income Q3	0.011	0.001	0.001
	(0.008)	(0.008)	(0.008)
Parental income Q2	0.009	-0.001	0.000
	(0.008)	(0.008)	(0.008)
Parental income Q1	0.011	-0.005	-0.000
	(0.009)	(0.009)	(0.009)
Cohort FE	No	Yes	Yes
R2	0.023	0.103	0.116
Observations	17,359	17,359	17,359

Note: Robust standard errors in parentheses. Significance: †P < 0.1, *P < 0.05, **P < 0.01, ***P < 0.001.

The marginal effect of having ties to a parent employed at a municipality is approximately the same in Model 5, which includes cohort fixed effects. However, in contrast to Model 4, all variables relating to high school grades are insignificant in Model 5. Model 6 further controls for whether the graduate has had previous work experience at a municipality prior to the year of graduation. The coefficient for previous work experience at a municipality is 0.08, indicating that previous work experience increases the marginal effect of obtaining a qualified municipal job following graduation by 8 percentage points. The coefficient for 'Parent

employed at municipality' decreases from 0.025 in Model 5 to 0.016 in Model 6, indicating that previous work experience also functions as a mediating factor in relation to municipal employment.

In sum, the results so far show that children with parents employed in qualified occupations at state agencies or municipalities tend to have an advantage in the competition for jobs at these employers. The effect is stronger for state agencies but is significant for both types of employment.

Organisational-level analysis of network effects

The previous analyses focused on whether graduates ended up working in the same sector as their parent(s). While the existence of such a network effect is clear, these sector-level analyses do not reveal the underlying mechanisms that are at work. In this section, a series of complementary organisational-level analyses are conducted that will show whether graduates have an increased probability of acquiring a job at one of their parent's current or previous employers. The outcome is whether a specific individual obtains employment at a specific employer, and the model specification has been described in detail in the methods section.

The results from the organisational-level regression are presented in Table 7. The effect of parental ties is presented separately for state agencies, municipalities, and other organisations respectively. First, Model 7, shown in the second column of Tabel 7, includes cohort fixed effects which control for each cohort's general tendency to acquire a job but it does not include cohort-organisation fixed effects. The results from Model 7 reveal that graduates have a higher probability of acquiring employment in organisations to which they have parental connections, and this effect is found for all three types of organisations. To begin with, it is worth noting that the intercept is 0.00006, meaning that there is an extremely low baseline probability that a graduate becomes employed by a specific organisation. However, the coefficients related to parental ties reveal that this not is the case for organisations where one of the parents is employed. A graduate has a 3.7 percentage point higher probability of obtaining employment at a specific state agency if his or her parent is already employed there. Hence, the increased probability of graduates staying within the same sector as (one of) their parents is partly explained by an increased probability of obtaining employment at their parent's employer. A positive network effect corresponding to 3.1 percentage points is also found for graduates with parents employed at municipalities.

Additionally, a positive but small marginal effect corresponding to 0.8 percentage points is found for parental ties to 'other organisations'. The much smaller network effect in the latter case is probably explained by the fact that qualified positions in other organisations are less appropriate and relevant to graduates in political science, public administration, and sociology than positions at state agencies and municipalities.

Model 8 is the main model and corresponds to *Equation 3*, which was presented earlier. Cohort-organisation fixed effects are included in this model to decrease the risk of omitted variable bias. The fixed effects account for the fact that graduates from specific university programs are more likely to be employed by certain employers due to various external factors such as distance, the status of universities, program orientation, etc. The coefficients for having a parent employed by a state agency or a municipality decrease somewhat in Model 8 but remain significant. The predicted probability of obtaining employment at a specific state agency where one of the parents is employed decreases from 0.037 in Model 7 to 0.027 in Model 8. Similarly, the coefficient for having a parent employed by a municipality decreases from 0.031 to 0.023. Meanwhile, the coefficient of 'other organisations' is approximately the same as in Model 7.

TABLE 7. ORGANISATIONAL-LEVEL ANALYSIS ON THE ROLE OF PARENTAL TIES

	Model 7	Model 8	Model 9	Model 10
Network variables				
Parent's employer: State agency	0.037*** (0.000)	0.028*** (0.004)	0.027*** (0.004)	0.024*** (0.005)
Parent's employer: Municipality	0.031*** (0.000)	0.023*** (0.003)	0.023*** (0.003)	0.011** (0.004)
Parent's employer: Other	0.008*** (0.000)	0.007*** (0.001)	0.006*** (0.001)	0.000 (0.001)
Parent's previous employer:				
State agency 1-5 years ago			0.007 (0.004)	0.002 (0.005)
State agency 6-10 years ago			0.005 (0.004)	0.001 (0.007)
Municipality 1-5 years ago			0.008** (0.003)	-0.006 (0.004)
Municipality 6-10 years ago			0.001 (0.002)	0.000 (0.003)
Other 1-5 years ago			0.008*** (0.002)	0.007* (0.003)
Other 6-10 years ago			0.007*** (0.002)	-0.000 (0.002)
Organisational similarity				
Same orientation as parent's employer			0.002 (0.001)	-0.007** (0.002)
Graduate's previous employer:				
1 year before graduation				0.278*** (0.005)
2-3 years before graduation				0.028*** (0.004)
(Intercept)	0.00006** (0.000)	0.00006*** (0.000)	0.00006*** (0.000)	0.00004*** (0.000)
Cohort FE	Yes	-	-	-
Cohort-Organisation FE	No	Yes	Yes	Yes
Number of graduates	17,359	17,359	17,359	17,359

Note: Robust standard errors clustered by individual in parentheses. Significance: †P < 0.1, *P < 0.05, **P < 0.01, ***P < 0.001.

A likely explanation for the positive effect of parental ties is that parents use their 'employer-specific social capital' – in the form of networks, influence and information – to improve their children's chance of obtaining employment with their own employer. However, solely based on this result we cannot rule out alternative mechanisms related to cultural capital. For instance, children may prefer to work at employers that are similar to those of their parents due to the inheritance of cultural capital in forms such as occupation-specific norms and values. Second, in theory, children also have an increased chance of inheriting occupation-specific skills that are very specific to their parents' type of employer. This would mean that, on average, they have a competence profile (human capital) that constitutes a better match for their parents' employers than that of peers from their own cohort.

Model 9 in Table 7 retains the organisation-cohort fixed effect and introduces additional variables to probe further into the mechanism underlying the observed network effect. More specifically, I examine the probability that graduates obtain employment at their parent's previous employer, as well as their probability of obtaining employment at an organisation that has a similar orientation to that of their parent's employer.

The estimated probability of acquiring employment at a parent's current employer in Model 9 is very similar to the result found in Model 8. Model 9 further examines whether graduates have an increased probability of being employed by their parents' previous employers. The coefficient estimates for previous workplaces (1-5 years ago) are much smaller and ranges between 0.007 and 0.008, which means that the estimated effects for parents' previous employers are about one-third the size of those found for the parents' employers at the time of graduation. The mentioned coefficients are insignificant for state agencies but significant at the one percent level for municipalities and 'other organisations'. The weak effect for previous employers indicates that the use of social capital stemming from the parents' networks is a more important mechanism in relation to the intergenerational transfer of public sector positions than explanations related to cultural capital. In addition, the probability of being hired by state agencies or municipalities at which a parent previously worked is even lower if the parent's employment was 6-10 years prior to the individual's graduation, as compared to 1-5 years prior to graduation. This difference is particularly pronounced for municipal employment.

As a second test of the potential importance of cultural capital, Model 9 also includes a variable for organisational similarity. If cultural capital matters, graduates should be more likely to start working at organisations similar to their parents' employers, irrespective of whether they have a parent employed there. Thus, a test of whether graduates are more likely to become employed by employers similar to those of their parents will indicate whether 'cultural capital' matters. The comparison reveals that organisational similarity only increases the probability of employment by a negligible and insignificant amount, 0.2 percentage points. Hence, it seems that the advantage of having parents in the public sector is first and foremost linked to the parents' social network rather than cultural factors. This result thus speaks against the notion that the observed intergenerational transfer is caused by the inheritance of cultural capital.

Finally, Model 10 expands on Model 9 by also controlling for whether graduates had been employed by an organisation prior to their graduation year. I include two variables related to previous experience. The first is a dummy variable that captures whether graduates were employed by a specific organisation in the year prior to their graduation. The second dummy variable captures whether graduates were employed by an employer 2-3 years prior to graduation (but not in the year before graduation). As expected, employment at a specific workplace in the year prior to graduation has a substantial impact on the probability that the graduate will obtain employment there following graduation. The coefficient for the graduates' employer in the year before graduation is 0.28, which corresponds to a marginal effect of 28 percentage points. A positive coefficient is also found for employers in the 2-3 years prior to graduation, but here the marginal effect is substantially smaller (2.8 percentage points).

Model 10 also reveals that the inclusion of prior work experience has a mediating effect on other variables. Most of the coefficients related to parents' employers, both at the time of graduation and prior to graduation, decrease in size in Model 10. Notably, the coefficient for having a parent employed in a qualified position at a municipality is reduced by more than half, from 0.023 in Model 9 to 0.011 in Model 10 while the parental effect for other organisations disappears completely. In contrast, the parental effect for state

agencies decreases slightly from 0.027 to 0.024 when previous work experience is accounted for. Moreover, the increased probability of obtaining employment at state agencies or municipalities that had previously employed a parent also almost disappears in Model 9. The latter result may indicate that connected individuals have an increased chance of obtaining employment at their parents' previous employers prior to graduation, and that this in turn provides them with valuable work experience.

To summarise, the analysis presented in this section supports the idea that social capital, rather than cultural capital, plays a significant role in the success of graduates in Sweden's public sector labour market. The evidence for this is the significant difference in the impact of a parent's current and previous employment with a specific employer, which suggests that up-to-date social connections within an organisation constitute the most important mechanisms. In addition, the observation that graduates not are more likely to be employed by organisations similar to their parents' employers also suggests that the intergenerational transfer of public sector jobs is not primarily driven by cultural factors such as inherited aspirations or occupation-specific values.

Parental effects for high- and low-achieving graduates.

The previous analyses have revealed that individuals with at least one parent employed in a qualified position in the public sector have a higher probability of acquiring a job from their parent's employer following graduation. One explanation for this pattern might be that parents use their social capital to influence their employers to hire their children, irrespective of the latter's competence. To examine this possibility, this section will test whether the advantage from parental ties in the public sector is moderated by the ability of the graduates. If the parental effect associated with parental connections is larger for low-achieving graduates this may be a sign of nepotism (cf. Scoppa 2009). As before, I use high school grades as a proxy for individual ability.

TABLE 8. PARENTAL EFFECTS FOR HIGH- AND LOW-ACHIEVING GRADUATES

	Above the 95th percentile		**Below the 40th percentile**	
	Model 11	**Model 12**	**Model 13**	**Model 14**
Parent's employer: State agency	0.027*** (0.005)	0.020*** (0.005)	0.058** (0.020)	0.050* (0.024)
Parent's employer: Municipality	0.025*** (0.004)	0.017*** (0.004)	0.034** (0.011)	0.018 (0.012)
Parent's employer: Other	0.007*** (0.001)	0.006*** (0.001)	0.005† (0.003)	0.004 (0.002)
Intercept	0.00007*** (0.000)	0.00007*** (0.000)	0.00006*** (0.000)	0.00006*** (0.000)
Cohort FE	Yes	-	Yes	-
Cohort-Organisation FE	No	Yes	No	Yes
Number of graduates	8,023	8,023	1,405	1,405

Note: Robust standard errors clustered by individual in parentheses. Significance: †P < 0.1, *P < 0.05, **P < 0.01, ***P < 0.001.

To examine whether the effect of parental ties is moderated by student ability, I re-estimated Models 7 and 8 (see Table 7) for the subsamples of graduates with the highest (above the 95th percentile) and lowest high

school grades (below the 40th percentile). The results are found in Table 8. Notably, the subsample of graduates with high school grades above the 95th percentile is substantially larger than the group with low high school grades. This is due to the fact that students with high study ability are overrepresented at the studied university programs. The result shown in Table 8 reveals that the advantage from parental ties clearly is moderated by the individual ability of the graduates. While the parental effect for the high-achieving students (Models 11 and 12) is lower compared with the pooled result in Models 7 and 8 (but still significant), the parental effect is stronger for low-achieving graduates (Models 13 and 14), especially in the state sector. Strikingly, the parental effect from parental ties in the state sector is about twice as large as for low-achieving graduates compared with high-achieving graduates. This suggests that the parent's social capital is compensatory for low-achieving students when it comes to more prestigious jobs in the state sector. While not being clearcut proof, these results suggest that nepotism is one factor contributing to the intergenerational transfer of public sector jobs.

Conclusions

Historically, public sector employment in Western countries was distributed based on family ties, friendship, and political loyalties. This, in turn, cemented a culture permeated by bad ethics, corruption and inefficiency. This vicious circle was eventually broken in Western countries when nepotism was replaced by meritocratic recruitment based on objectively stipulated criteria (Sundell 2014b). As argued by several scholars, there is much to suggest that meritocracy constitutes an important antidote to both nepotism and other forms of corruption (Meyer-Sahling et al. 2018; Dahlström and Lapuente 2017; Nistotskaya and Cingolani 2016; Dahlström et al. 2012; Evans and Rauch 1999). Given this history, it is understandable that, particularly in mature democracies, family ties at the same public sector workplace have a bad reputation. The underlying fear is that loyalty to family and friends will trump occupational codes of ethics, and ultimately that unqualified and incompetent family members will be employed in conflict with meritocratic principles.

It has repeatedly been observed that children and other relatives of public sector employees are overrepresented in public sector jobs. This pattern has often been problematised through the lens of nepotism (Lesné and Gauthier 2014; Allesina 2011; Scoppa 2009). One legitimate question, however, is whether this concern about nepotism is fully justified, or whether the current overrepresentation of family ties in public sector employment in developed countries has other, far less harmful, explanations. It is important to recognise that the intergenerational transfer of a parent's occupation to the child may have a number of causes, and some of these, such as the transfer of occupation-specific norms or skills, may actually increase the productivity of the connected child.

This paper has focused on this issue in some depth, both theoretically and empirically. Theoretically, a contribution has been made by showing how two separate fields of literature, on nepotism and family ties in the public sector and on intergenerational transfer (or social reproduction) in the labour market, can be combined to develop a more complete and nuanced understanding of the presence of family ties in the public sector. While the political science literature on public sector nepotism contains important normative dimensions that are seldom recognised in sociology, the sociological literature on the intergenerational transfer of occupations provides a refined theoretical framework for understanding how nepotism relates to other alternative explanations for the intergenerational transfer of public sector jobs.

Empirically this paper contributes by examining the impact of strong ties, i.e., of parental networks at the moment of entry into the public sector labour market in Sweden. To examine this, I have used a data set

compiled from various administrative data sources that links information on parents and children. The data also include identifiers for all members of the individual cohorts of students graduating from any university program in political science, public administration, or sociology, and this over a sixteen-year period.

Ultimately, I found that having parents employed in qualified positions at state agencies increased the chance of having a qualified job in the state sector one year after graduation by approximately 5–6 percentage points. Correspondingly, having a parent employed in a qualified position at a municipality increased the probability of having a qualified job at a municipality by 2–3 percentage points. The network effect found for both state agencies and municipalities is in part explained by an increased probability of obtaining employment at the parent's employer and a higher probability of having work experience prior to graduation. Furthermore, the benefit of having family connections for obtaining more prestigious positions in the state sector becomes significantly greater for students with high school grades that fall below the 40th percentile. Hence, the influence of the parent's social capital is stronger for low-achieving graduates than for high-achieving graduates. While alternative explanations, such as informational advantage, are possible, the finding that parental ties benefit low-achieving students more is consistent with the idea that nepotism is one mechanism behind the intergenerational transfer of public sector jobs.

I have also conducted a series of complementary analyses in order to distinguish between effects associated with alternative mechanisms, such as the inheritance of cultural or human capital, and effects associated with social capital. These analyses revealed that the intergenerational transfer of 'advantage' from parents to children is related to social capital rather than cultural capital. Children are foremost more likely to acquire a job at their parent's current employer, indicating that the graduates benefit from their parents' social capital. Moreover, I also found that graduates are not significantly more likely to be employed by organisations with similar orientations as their parents' employers, suggesting that cultural capital plays a minor role in graduates' job market success. Overall, the findings suggest that the graduates' careers are primarily influenced by their parents' social networks, rather than factors such as personal aspirations, values, or occupational-specific cultural capital. These results indicate that employees' children either are treated favourably or that graduates have a preference for their parents' specific employers but not for other employers with a similar orientation.

The nature of the advantage that graduates gain from their parent's social capital is however difficult to assess fully. While the stronger parental effect for low-achieving graduates is consistent with the idea of nepotism, several other potential mechanisms exist related to social capital. For instance, if parents employed by state agencies help their children by providing information about jobs that are being advertised, application documents and a general transfer of organisation-specific knowledge, this, of course, constitutes a legitimate use of networks that does not violate the impartiality principle.

Irrespectively if the result is caused by 'pure nepotism' or alternative mechanisms such as information advantage, it is still worthwhile to reflect on the results' implications for social inequality. The mechanisms found here constitute a form of 'micro-class reproduction' that skews the playing field in favour of individuals with strong socioeconomic backgrounds. Since parental ties to state agencies are more common among graduates from families with highly educated parents, the network effect noted in this study risks aggravating the underrepresentation of socioeconomically weak minorities in the public sector (Baekgaard and George 2018; Hong 2017; Greene et al. 2001). From this perspective, the heart of the problem is not that parents employed in the public sector are helping their children to fulfil their potential as public servants. The

problem would rather be related to the other side of the coin: if other individuals with high potential lack the relevant networks needed to achieve their potential.

It is also relevant to compare the findings here with those of a study by Chua (2011), who examined the role of networks in another meritocratic, low-corruption country: Singapore. Chua's study showed that social networks did not provide an advantage for obtaining jobs in the Singaporean public sector. While Sweden and Singapore have very different administrative traditions, they are regarded as having equally low levels of corruption. One difference, however, is that recruitment to the public sector in Singapore is far more formalised and bureaucratic and is solely based on academic merits. In contrast, recruitment to the public sector in Sweden is more informal and often includes personal interviews. This comparison indicates that social networks play a more important role in informal meritocracies.

This study can be seen as a first step in analysing the role of family ties in the distribution of public sector jobs using large-scale data. Although the population studied in this paper is relatively small – and hence, has a limited impact viewed from a macro perspective – the mechanisms found are likely to be relevant also in other contexts. Similar network effects may be even more widespread when it comes to weaker parental ties, such as having aunts and uncles, or friends of one's parents, employed in the public sector. Future research should expand the analysis conducted here both by looking at more types of ties and by studying a larger population.

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Appendix A: Variable definitions and data sources

TABLE A1. LIST OF VARIABLES, DEFINITIONS, AND SOURCES

Mona variables	Purpose	Source
FödelseAr	Calculate age	Background register
Kon	Identify gender	Background register
LandKod	Identify country of birth	Background register
PeOrgLopNr	Identifies the employers of the parents and the graduates.	LISA register
Sun2000niva	Identify educational level	LISA register
DispInk04, DispInk	Identify income of young adults and parents	LISA register
Ssyk4, Ssyk4_2012, Ssyk_2012_J16	Identify qualification level of occupation	LISA register
JmfTal, Mbet, Genomsnittlig_betygspoäng	Identify grade percentile for each individual. Percentiles are calculated based on graduation year and in comparison, to graduates from the same cohort.	Registers on Students finishing upper-secondary school
Namnare (from Hreg_Exa_HT01-VT12)	Identify type of degree	University/ College/ Higher education registers
Hskod (from Hreg_Exa_HT01-VT12)	Identify university	University/ College/ Higher education registers
Kar (from Hreg_Exa_HT01-VT12)	Year of graduation	University/ College/ Higher education registers
PersonLopNr_Foraldern	Identify parent-child relationships	Multiple generation register

Note: LISA: Longitudinal Integration Database for Health Insurance and Labour Market Studies, GEO: Geographical database [‘Geografidatabasen’].