

Where do Immigrants Fare Worse? Modeling Workplace Wage Gap Variation with Linked Employer-
Employee Data

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Abstract

We use relational inequality theorizing to propose a strategy for observing and explaining workplace variance in categorical inequality. Using economy wide Swedish employer-employee panel data, we implement that strategy through an examination of workplace wage inequalities between native Swedes and non-Western immigrants to Sweden. Relational inequality theory predicts substantial local heterogeneity in inequality regimes. We find that immigrant-native wage gaps vary dramatically across workplaces. In some workplaces immigrants actually have higher wages than native Swedes, even net of strong human capital controls. We also find that, net of observed and fixed effect controls for individual traits, workplace immigrant-native wage gaps decline with increased immigrant employment and managerial representation and expand when immigrants are occupationally segregated from natives. These effects are stronger in high inequality workplaces and for white collar employees, organizational contexts in which we expect status based claims on organizational resources, the central causal mechanism identified by relational inequality theory, to be most robust.

Sociologists have long recognized that workplaces are the primary site for the generation and distribution of earnings inequalities (Baron and Bielby 1980). Most prior research on earnings distributions, however, have been limited to survey based observations of individuals abstracted from workplaces and as a result have continued to utilize human capital theory from labor economics or status attainment sociology as a baseline model of the underlying processes (Tomaskovic-Devey et al. 2005). Recently as matched employer-employee and other organizational data have become more widely available, observing and explaining workplace variation in inequality outcomes has become more empirically tractable (e.g. Avent-Holt and Tomaskovic-Devey 2012; Cohen and Huffman 2003; Lazear and Shaw 2009; Petersen and Morgan 1995). In this paper we make use of remarkable Swedish panel data of workers matched to their workplaces, allowing us to develop dynamic models of the processes that generate workplace variation in inequality outcomes.

While we increasingly can observe variation in wage inequality between and within workplaces, we are only now developing coherent explanatory models and empirical strategies. Research in the 'new structuralist' tradition identified a variety of mechanisms that might generate workplace inequality, including worker power over the distribution of organizational resources (Kalleberg, Wallace and Althauser 1981), organizational divisions of labor (Fernandez 2001), managerial leadership (Baron 1991), and status based segregation (Bielby and Baron 1986). Concurrently, the labor process literature, although not focused on earnings processes, made clear that organizational practices are typically the product of social negotiations and power struggles between actors over the division of labor, relative autonomy and both material and status rewards (Vallas 1993; Hodson 2001).

The new structuralist and labor process literatures are now combining into a more general relational model of inequality that places primacy on social relations within contextually embedded workplaces. This model adopts the focus on divisions of labor, status segregation, and relative power among actors from new structuralism, but like the labor process literatures locates the proximate

inequality generating dynamics inside workplaces themselves, rather than in occupational structures or external labor markets.

This paper makes three primary contributions to the literature. First, it uses relational inequality theory to develop expectations about variance in workplace inequality and shows how the relational inequality perspective also makes strong predictions as to the institutional contexts in which relational mechanisms should be more or less robust. Second, it develops a dynamic analytic strategy for the exploration of a relational approach to inequality, while incorporating the potential influence of individual level attributes. And finally, it provides insights into immigrant-native wage dynamics across organizational contexts in contemporary Sweden, and by extension to similarly situated contexts elsewhere. The case is particularly relevant in this historical moment, when anti-immigrant sentiment is spreading throughout Western Europe but is not yet deeply institutionalized in organizational routines.

Relational Inequality

Tilly's *Durable Inequality* (1998) is typically referred to as the modern genesis of the relational inequality model, but there is a strong influence in the earlier work of Frank Parkin (1979) on social closure, Arne Kalleberg and colleagues (1981) on worker power, Peter Blau (1977) on consolidated status distinctions, and race/class/gender theorists, such as Patricia Hill Collins (1999) and Evelyn Nakano Glenn (2002), on the historically embedded intersection of status based inequalities.

In the relational model inequality generation is described as a process in which actors contend over the distribution of organizational value. Tilly (1998) identified two primary inequality generating mechanisms: exploitation, where actors extract value from the work efforts of others; and opportunity hoarding, where actors monopolize valuable positions for themselves and similar others.² Both exploitation and opportunity hoarding are described as operating through a process of claims-making in

² Opportunity hoarding is also referred to as social closure in much of this literature (e.g. Parkin 1979; Weber 1968; Weeden 2002).

which categorically distinct actors attempt to secure claims on valuable resources such as respect, starting salary, jobs, promotions and pay raises. These claims can be explicit, such as a job application or request for a raise or promotion, or implicit, such as the taken for granted wage differences attached to job titles and the subtle status hierarchies that develop in interaction. Claims that are ratified by other, particularly powerful, actors direct the flow of resources and thus generate inequality. Status distinctions organized around categorical traits influence the persuasiveness of claims. Once ratified, claims tend to become more or less permanently associated with individuals or positions.

Actors can be either individuals or social groups. As individuals, actors can negotiate directly with supervisors over their pay, making claims through individual interaction. For individuals we imagine productivity, personal relationships with supervisors, social capital, and personality traits to enable successful explicit claims. Categorical distinctions associated with locally valuable symbolic capital (Tatli and Özbilgin 2011), othering (Schwalbe et al. 2000), status expectations (Ridgeway 1997), stereotyping (Gorman 2005) and cognitive biases in information processing (Nozek et al. 2007) are expected to be influential in determining the frequency of claims and their legitimacy. Low status individuals and groups will make fewer claims on resources and their claims are less likely to be ratified by powerful actors. Social groups, such as unions, professional associations, departments, and spontaneously organized networks of employees, collectively approach employers to negotiate and make wage claims. Intra-group networks, relative power over resources, capital ownership and control, and status hierarchies are likely to influence the persuasiveness of group level claims-making.

Central to a relational inequality approach is the notion that categorical differences between actors increase the likelihood of installing inequality (Tilly 1998). The notion that actors create and use categorical distinctions to pursue individual and collective agendas and reproduce inequality is widespread in social theory: in addition to Tilly (1998) on categorical inequality, see Bourdieu (Bourdieu and Wacquant 1992) on classification struggles, Abbott (2005) on jurisdictional claims, and Lamont and Fournier (1992) on boundary work. Salient social distinctions are the lens through which we observe

worthiness and thus these distinctions legitimate both exploitation and opportunity hoarding (Schwalbe et al. 2000). Some categorical distinctions will be organic to the organization. Specific divisions of labor produce unique jobs whose content and meaning is defined within the labor process. Other categorical distinctions will be imported into the organization. Citizen, race, class, gender, ethnicity, and educational credentials are among the distinctions that are most typically produced outside the organization but can become internally salient.

Mapping imported categorical distinctions onto internal divisions of labor magnifies the inequality that either alone would produce (Blau 1977; Tilly 1998). While inequalities are installed categorically, real actors/jobs stand in relation to other actors/jobs in the organization and will inhabit multiple categorical distinctions simultaneously and in historically specific interactional contexts (Collins 1990; Glenn 2002). Thus, a key prediction is that when multiple salient categorical distinctions reinforce each other (e.g. immigrant worker facing native Swedish manager) inequalities will be exaggerated. In addition, because each workplace has a more or less unique intersection of categorical distinctions inequality regimes are largely produced locally. The intersection of immigrant and native status with other salient categorical distinctions such as education, job, and authority will produce local status hierarchies and variation across workplaces in inequality regimes.

In many workplaces claims that are linked directly to productivity (e.g. output quantity or quality) or provide signals of productivity (e.g. human capital or occupational rank) are likely to be particularly salient. Most workplaces value productivity and meritocracy, either for economic or legal-rational reasons (Nee and Swedberg 2007). But any categorical distinction that influences the perceptions of individual or group competence (Ridgeway 1997) and worthiness (Schwalbe et al. 2000) may influence the effectiveness of claims. Thus, in a relational inequality framework the human capital differences in the standard wage model operate as social distinctions, as do race, gender, class, or any other salient status distinction between people. Gender, citizenship, skills and training are resources for actors to use in

claiming organizational rewards or opportunities. Employers select on both competence and social similarity, often valuing cultural matching over competence (Rivera 2012).

Categorical distinctions and their attached wage claims become institutionalized within organizations. Pay rates generated from past rounds of active claims-making become institutionalized in positions, which then become the basis for opportunity hoarding.³ The current wage attached to a job is the result of earlier rounds of exploitation of value streams. Since most wage inequality is produced by the matching of people to jobs, it is opportunity hoarding of high wage jobs which for most actors is the key mechanism in access to higher earnings. Jobs typically come to be associated with particular credentials, genders, ethnic groups or local friendship networks. These typical statuses serve to limit opportunities for out-groups while preserving them for incumbents and socially similar individuals.

We observe exploitation in an organization when we see shifts in income between actors. The classic case, of course is shifts in income between capital and labor, but in our view all actors in organizations are potential beneficiaries or losers in a claims making process over organizational value. The most common example in the contemporary literature is the undervaluing of typically female occupations or jobs (Ridgeway 1997).

The relational power of actors has typically been observed as the relative standing of categorically distinct groups within workplaces. In past research differences in the status composition of work groups helps explain organizational variation in class linked wage gaps (Tomaskovic-Devey et al. 2009), bullying and sexual harassment among workers (Chamberlain et al. 2008; Hodson, Roscigno, and Lopez 2006), merit evaluation processes (Castilla 2008; DiTomaso et al. 2007), the relative autonomy of workers in the labor process (Choi, Leiter, and Tomaskovic-Devey 2008), and sex and race discrimination within workplaces (Kalev 2009, Roscigno, Garcia, and Bobbitt-Zeher 2007). Importantly, there is also

³ Opportunity hoarding at the state or national level in terms of control over certification and licensure is an additional, extra-workplace source of opportunity hoarding associated with some occupations (Weeden 2002).

recognition of intersectional processes in this research; when status distinctions such as authority and gender (or race, language group, education, job skill level, temporary employment status) reinforce each other inequality between positions increases (Avent-Holt and Tomaskovic-Devey 2010, 2012; Hultin and Szulkin 1999, 2003).

The basic predictions we will be making shortly are that the immigrant-native wage gap will fall in workplaces where immigrants are highly educated relative to native Swedes, where job segregation is low, and where immigrants have greater interactional power as a function of larger representation in the workforce and in managerial positions. That is we expect that the social meaning of immigrant status will be contingent on these workplace level attributes.

Contextual Variation

Relational inequality approaches to inequality have also stressed the importance of historical and institutional context for ratifying, exaggerating, or muting status based claims on organizational resources (Avent-Holt and Tomaskovic-Devey 2012; Kalev 2009). Actor's claims are successful to the extent that others in the organization accept them as a legitimate. Legitimacy is an attribute of the organizational field, and can be expected to vary from workplace to workplace as well as across industries, space and time (Emirbayer and Johnson 2008; Tatli and Özbilgin 2011).

Thus, categorical distinctions should not be expected to uniformly generate legitimate claims. The opportunity hoarding and exploitation mechanisms are about the allocation and generation of inequality, but not the salience of any particular categorical distinction. Some distinctions, such as those associated with human capital differences among workers are probably fairly salient across all or most contemporary workplaces; others like Swedish immigrant-native distinction may be less uniformly institutionalized and so can be expected to vary in intensity depending on context. Specific organizational practices may mute or exaggerate the meanings associated with a categorical distinction in the culture more generally.

The salience of particular categorical distinctions for employment inequalities has been shown to vary as a function of national labor market institutions (Avent-Holt and Tomaskovic-Devey 2012), the formalization of personnel policy (Tomaskovic-Devey et al. 2009), managerial accountability (Kalev et al. 2006), local vs. centralized wage setting (Avent-Holt and Tomaskovic-Devey 2010; Castilla 2008; Hultin and Szulkin 1999, 2003), product market competition (Avent-Holt and Tomaskovic-Devey 2010), team vs hierarchical labor process organization (Kalev 2009), and organizational orientation toward merit based compensation (Castilla and Benard 2010). The general result in this research is that non-productivity related status distinctions, such as gender or race, operate more powerfully when wage setting is more strongly influenced by supervisor's decision making and that productivity linked attributes are more influential when firms face market competition pressures or use bureaucratic wage setting practices. Castilla and Benard (2010) show that non-productivity related bias processes ironically emerged when organizations make verbal, but not practical, commitments to merit based decision making, thus relieving actors of the need to guard against biases in evaluation. Consistently, Kalev et al. (2006) show that active practical commitments to monitoring equal opportunity progress encourages gender and racial integration.

Two Alternative Explanations: Human Capital and Statistical Discrimination

The most plausible alternative to the relational inequality approach is obviously human capital theory. In human capital theory wages reflect individual differences in productivity, skill and training. The conventional human capital objection to relational accounts of wage inequality is that statistical models typically have inadequate controls for individual skills and behaviors that employers can easily observe. We take this objection seriously and later in this paper we introduce a model that simultaneously observes workplace wages changes and controls for unobserved individual traits.

Statistical discrimination theory provides another plausible alternative to the relational inequality model. Statistical discrimination models place primacy on the point of hire in understanding status

inequalities. In this model employers attempt to avoid hiring less productive workers and to the extent that they believe lower-status groups are less productive they will be less likely to hire them (Aigner and Cain 1977). In statistical discrimination theory there are real average productivity differences between status groups, and therefore the statistical discrimination model does not describe a biased employer, but simply one trying to avoid a bad job match. The key contrast with the relational theory is where in the process we are likely to observe the emergence of wage inequality. Rather than wage inequality being generated by within workplace wage negotiations as in the relational model, statistical discriminations points to the moment of hire as central.

Immigration to Sweden

The focus of our empirical investigation is variation in immigrant-native wage inequality across Swedish workplaces. The foreign born now make up twelve percent of the Swedish labor market and both workplace and job segregation between immigrants and native Swedes is high (Åslund and Skans 2010). As a case for examining the value added by a relational approach to workplace inequality Swedish native-nonwestern immigrant earnings inequalities provide a fairly restrictive test. Swedish earnings inequalities are low and union coordinated wage bargains common. Hence, we expect workplace wage bargaining to be at best moderate or small, at least compared to other countries. Previous research using a relational inequality frame (reviewed above) primarily focused on countries with high inequality, more decentralized wage setting and status attributes like class, education and gender that are probably more universally salient.

There is, however, good reason to expect that *non-Western* immigrants are treated as categorically subordinate to native Swedes in the Swedish labor market (le Grand and Szulkin 2002).⁴ Non-western

⁴ Net of differences in individual traits such as human capital and family status there is little difference between native Swedes and *Western* immigrants in terms of labor market integration and earnings (le

immigrant's levels of employment are well below the native average, even seven years after immigration (Nekby 2002). In comparative perspective, employment rates are very low among recently arrived immigrants to Sweden (le Grand et al. 2012). There is also evidence of discrimination in the job hiring process against non-western immigrants (Bursell 2007; Carlsson and Rooth 2007). While employed, non-western immigrants face substantially higher unemployment risks (Arai and Vilhelmsson 2004), earn lower wages (le Grand and Szulkin 2002), and tend to be segregated into lower ranked jobs than natives (Åslund and Skans 2010).

On the other hand, the gaps in employment outcomes between *childhood immigrants* with Swedish schooling and natives are generally small and converging over time (Böhlmark 2009). Finally, once stably employed earnings differences between native Swedes and childhood immigrants are relatively small (Hällsten and Szulkin 2009). Thus while, non-western immigrants are categorically distinct from native Swedes there is also evidence that this status distinction is not strongly institutionalized.

The Swedish Labor Market Context

There are two dimensions of the Swedish labor market that may influence the incidence of organizational wage bargaining, and so the applicability of relational inequality theorizing. First, is the distinction between white-collar and blue-collar work, and its relationship to the historically important Swedish solidaristic wage bargaining model. The second is the low level of income inequality in Sweden and the growing decentralization of wage bargains in contemporary Sweden.

The Swedish labor market has historically been strongly influenced by collective bargaining. The pre-1983 Swedish ("Rehn-Meidner") wage model emphasized solidaristic wage bargaining, where all wages were centrally negotiated with reference to occupational skill level, not individual productivity or bargaining power. Wage negotiations tended to favor the lowest paid, and wage distributions were as a

Grand and Szulkin 2002). Thus it makes little sense to think of this as a potential inequality generating categorical distinction

consequence heavily compressed (Alexopoulos and Cohen 2003). The abandonment of central wage bargaining in 1983 has meant that bargaining has increasingly been brought back into the workplace. The key exception is that minimum wage bargaining for blue collar jobs is still to a large extent done on the industry level (Korpi and Tåhlin forthcoming). For white collar workers individual workplace level wage bargaining is now widespread in both the public and private sectors. Since 1983 workplace wage inequality has risen dramatically for white collar workers, but the wages of blue-collar workers are still quite compressed (Lundborg 2007). Thus, we expect that the within workplace wage bargaining mechanisms identified by the relational inequality approach should be stronger for white collar workers.

The second important element of the Swedish labor market is its comparatively low level of inequality. Certainly compared to the U.S., but also compared to other industrialized capitalist democracies in the West, Sweden has among the lowest levels of measured income inequality. This overall low level of inequality has the effect of reducing wage inequality associated with categorical distinctions at the national level (Blau and Kahn 1992). In low inequality contexts higher status groups have less social space to hoard or appropriate from lower status groups (Mayhew and Schollaert 1980). We apply this national level reasoning to the workplace level, predicting that higher levels of overall workplace inequality increase the influence of local wage bargaining mechanisms.

Sample, Measures and Hypotheses

We use Swedish registry tax data combined with workplace registers of all permanent resident employed individuals in the Swedish economy for the years 1990-2007 linked to their workplaces. For computational and sampling reasons our core models are restricted to observations in 2001, 2004 and 2007. Individuals are matched to the workplace in which they derived the largest proportion of their income in the observation year. To calculate attributes of workplaces we use data on all employees in a workplace in a specific year.

Workplaces are defined as distinct establishments with distinct locations defined by the postal address of the workplace. Workplaces are where people work. They are not the same as the employing firm, except in the case of single establishment firms. We use the terms workplace and establishment interchangeably (the same unit is sometimes referred to as a plant, Lazear and Shaw 2009). In order to observe earnings variance within workplaces and to produce stable measures of establishment characteristics we limit our sample to workplaces with twenty or more employees.

Workplace Variation in Immigrants' Relative Earnings

We measure earnings as yearly earnings from the workplace, including work related social transfers (sick leave, parental leave), but excluding other transfers (e.g. unemployment benefits, social assistance). We restrict our analyses to individuals who earn at least 120,000 SEK per year, pre-tax. This is 10,000 SEK per months, about half of the median wage in 2003. There is no information on hours of work so we use this wage cut-off as a proxy for full-time work, because it produces a wage distribution which approximates that of the population of full-time workers in Sweden (Antelius and Björklund 2000). It can also be shown that our wage proxy correlates $>.85$ with time-adjusted monthly wages from a truncated sample of 2.2 million annual wage records from Statistics Sweden's earnings structure data base, and that estimates of the return on education from the two data sources are very similar (Antelius and Björklund 2000). While we have access to that wage data, we do not use it because it includes independent annual samples of smaller private firms that make the implementation of panel data methods impractical.

We focus on explaining the variance across workplaces in the wage gap associated with being a first generation *non-western* immigrant rather than a native Swede. Immigrants to Sweden are quite heterogeneous in their origins and integration into the Swedish labor market. Immigrants that arrive from Africa, Asia, Latin America and the Middle East appear to experience more discrimination and bias in the labor market, and we therefore divided this subpopulation into a western (Europe, United States, Australia

and New Zealand) and non-western group, each represented by their own dummy variable. First generation non-western immigrants include all permanent residents of Sweden who were born outside of Sweden in non-Western countries.

< Figure 1 about here >

One of the key insights of the relational inequality approach is that because workplaces develop unique intersections of categorical distinctions and the associated symbolic capital of actors there should be substantial variation across workplaces in the inequalities associated with any particular categorical distinction. Figure 1 shows that net of human capital and family status the immigrant-native wage gap varies considerably across workplaces.⁵ The average native workplace wage advantage is around 6% in the years we study, but there are many organizations with much more and much less inequality. In many workplaces, even net of observed human capital, non-western immigrants are actually paid more than native Swedes. One must remember that our research design is aimed at workplaces and *the stably employed*, excluding immigrants at the verge of the labor market, where discrimination in Sweden is most likely (Bursell 2007; Åslund and Skans 2010). Hence, what we observe is differences in wage outcomes given that an individual already has secured a strong foothold in the labor market.

Workplace Bargaining Measures

Under a relational inequality model, the variance in workplace wage gaps displayed in Figure 1 should reflect in part the bargaining position of immigrants as status groups relative to native Swedes in particular workplaces. The theory focuses on relative bargaining power as central to successful claims-making over wages. The notion that bargaining power associated with status characteristics varies across workplaces leads us to ask how might such bargaining power be observed? We see the literature as

⁵ This figure is based on a random coefficient model estimated only to visualize heterogeneity in the non-western effect. For our own research question, we use a fixed effect model which employs fewer assumptions and has better control for unobserved heterogeneity.

providing four places to look for empirical direction in the data at hand: immigrant composition in the workplace, immigrant composition in management, occupational rank segregation in the workplace, and within-workplace immigrant–native differences in human capital. Table 1 summarizes our measures and associated hypotheses, but we provide more detailed rationales below. Table 2 provides descriptive statistics which are computed uniquely for each workplace-year observation.⁶

<Table 1 about here>

< Table 2 about here >

We hypothesize that as the percent of immigrants in a workplace increases the wage gap between immigrant and native workers will decline. We reason that in Sweden more immigrants in a workplace is an indicator of the lower salience of immigrant as a subordinate status. As the negative salience of immigrant status declines the power of native workers to claim higher wages relative to immigrant workers will also diminish. As well, the power of immigrant workers to effectively counter native claims against them should increase as their collective voice is enhanced. This interpretation is consistent with the Becker model that discrimination is produced by differences in employer taste (Becker 1971), sociological models of stereotyping and token based bias (Kanter 1977), and psychological predictions that increased equal status cross-group contact reduces prejudice (Pettigrew and Tropp 2006).⁷

⁶ Since we make a strong institutional distinction between white and blue collar work we also experimented with computing workplace characteristics *within* the blue and white collar distinctions when workplaces had 20 or more employees in each class. All models reported in Tables 4-7 were also estimated with these class specific workplace measures and results were largely equivalent to those reported below (available on request).

⁷ We see this proposition as limited to social contexts where a categorical distinction is not strongly institutionalized. The opposite prediction has been made for race (Blalock 1967) and gender (Avent-Holt and Tomaskovic-Devey 2012) when and where those categorical distinctions were strongly institutionalized and so inclusion in a workplace is consistent with discrimination.

Hypothesis 1: Net of individual traits, as the percent non-western immigrant in a workplace increases the immigrant-native wage gap will decline.

We also hypothesize that as the percentage of managers that are immigrants rises the wage gap between immigrants and natives will decline. We again reason that when immigrant managerial representation increases, the salience of immigrants as a subordinate status declines. There is substantial empirical support for the proposition that as the proportion female managers increases that the hiring of women into managerial and non-managerial jobs, gender wage gaps and gender segregation decline (see the summary in Stainback, Tomaskovic-Devey and Skaggs, 2010, for evidence in Sweden see Hultin and Szulkin 1999, 2003). Consistently, Åslund and Skans (2010) find that in Sweden an increase in immigrants in managerial positions leads to increased immigrant hiring. We also suspect this will legitimate immigrant wage claims by giving them allies in managerial positions. Having such allies should increase their relative power in claims-making.

Hypothesis 2: Net of individual traits, as the percent non-western immigrant managers in a workplace increases the immigrant-native wage gap will decline.

The most basic prediction of the relational inequality approach is that the matching of external status characteristics to jobs influences the relative power of both jobs and people (Tilly 1998). We expect that segregation of immigrants into less desirable jobs will reduce the bargaining power of all immigrants in those workplaces. Our measure of workplace job segregation is the within workplace difference between non-western immigrant and natives on the rank of their respective occupations. We do not have information on the precise job titles used in the workplace, but information on the three digit ISCO-88(com) occupation for each person-job match is available from 2001 and onwards (and this defines the beginning of our workplace panel). We treat occupation as a proxy for the internal job structure of workplaces.⁸

⁸ Because these are employer reports they are likely to be closer conceptually to job titles than self-reports of occupation in surveys of individuals. Large employers report yearly and small employers are sampled

In order to convert what is essentially a set of nominal distinctions (occupation codes) into a measure of job quality consistent with status based sorting we created a measure of occupational rank. This required arraying occupations on a continuous dimension, independent of any particular workplace. We use information on average national earnings associated with occupations to produce this ranking. To accomplish this, we first regress log earnings (above 120,000 SEK) on year, non-western and western immigrant background, gender, marriage (includes cohabitation) and the presence of children in the household, and the interaction between gender and marriage and gender and children. We then aggregate the residuals into 3 digit ISCO occupations (113 categories). The average of the residuals produces an occupational rank that is constant across years and not influenced by labor supply or discriminatory wage setting associated with occupational immigrant, gender, or family composition. The ranks are computed as the cumulative distribution function of the occupation average of residuals, and thus for each occupation it is the proportion of occupations ranked below that occupation. This measure correlates .85 with the international SEI scale of socio-economic status and .87 with Treiman' standard international occupational prestige scale of occupational prestige, but is superior to both as it is purged of any gender or immigrant based status devaluation process. Under an opportunity hoarding mechanism, sorting of individuals into jobs of different ranks is the primary process through which immigrant-native wage gaps are expected to be created.

To capture how job segregation influences the relative status of immigrants we measure the average immigrant-native distance between occupation ranks for each workplace year.⁹ We hypothesize

on a rotational basis. Eighty-two percent of occupation codes are for the observation year, 91% are within one year of the observation, and 97% are within three years. The residual three percent are last know occupation for recent labor market entrants and for people whose employers did not return the survey.

⁹ We estimated similar models based on the Spearman correlation between occupational rank and non-western immigrant and substantive results were uniformly equivalent to the difference measure we employ here. We also experiment with alternative segregation measures including the Index of

that as immigrant occupational rank rises relative to natives, the workplace-level wage gap between immigrants and native Swedes will decline. Non-western immigrants tend to be sorted into lower ranked jobs than native Swedes and this difference is larger in workplaces with more immigrants. As Table 3 reveals, the average occupation rank of non-western immigrants is well below that of the majority population (.39 vs. .54). Following the insight that intersecting status characteristics install larger inequalities we hypothesize that net of individual level characteristics increases in workplace rank segregation will be associated with growing immigrant-native wage gaps.

Hypothesis 3. Net of individual traits, as workplace non-western immigrant-native workplace rank segregation increases, the non-western immigrant-native wage gap will increase as well.

Credentialists have long argued that education is more than simply an indicator of productivity and skill-level, but is also a basis for opportunity hoarding and wage claims (Collins 1979; Berg 1970). Educational credentials may be influencing wages beyond their individual productivity and sorting effect by influencing the relative status of actors or groups (Blau 1977). Prior research has shown that the workplace level intersection of education and class (Tomaskovic-Devey et al. 2009) and education and gender (Avent-Holt and Tomaskovic-Devey 2012) exaggerate class and gender linked wage inequalities. To capture this intersection we measure workplace difference in average education between natives and immigrants.^{10,11} Following the insight that intersecting status characteristics install larger inequalities we

Dissimilarity (Duncan and Duncan 1955), Charles and Grusky's A (2004) and the square root index (Hutchens 2004). Results tended to be similar, but less stable across model specifications. While the segregation measures are less conceptually appropriate because they ignore rank, they are also less robust measures in the presence of sparse data across people-occupation cells.

¹⁰ We also experimented with an immigrant-native difference human capital scale, but it was heavily loaded on education and produced the same substantive results as below.

¹¹ Following Tomaskovic-Devey et al. (2009) and Avent-Holt and Tomaskovic-Devey (2010) we use difference measures. In alternative specifications we also observed this concept as the Spearman

hypothesize that increases in the relative difference between native and immigrant education will produce larger wage gaps between native Swedes and immigrants.¹²

Hypothesis 4. Net of individual traits, as the average difference in education between natives and non-western immigrants rises in a workplace, the non-western immigrant-native wage gap will increase as well.

Most importantly our measures of immigrant potential bargaining power vary tremendously across workplaces. In a large proportion of workplaces immigrants have on average higher education and higher occupational rank than do native Swedes. There are even some workplaces where non-Western immigrants are a majority of all workers and managers. None of these measures are highly correlated with each other, confirming our assertion that immigrant-native status distinctions are not highly institutionalized and that they represent distinct attributes of the social relations within workplaces.¹³

Controls for Individual Skills and Labor Supply

correlation between non-western status and education and an immigrant-native difference human capital scale, and found substantive results were in all cases equivalent.

¹² In contrast to the relational inequality argument, if a statistical discrimination process was in play we would expect that when hired immigrants will tend to be overqualified relative to their native counterparts. If this process was occurring we would expect that net of observed human capital, the immigrant-native wage gap would actually be larger when immigrants have higher levels of human capital than natives.

¹³ The highest correlation is .35 between occupational rank segregation and educational difference, both of which are essentially not correlated with workplace composition. The two composition measures are correlated at .31. In a society where status distinctions are highly institutionalized, such as they were for gender in the middle of the twentieth century in most countries, or race in the US or South Africa before their race based social movements, we might expect strong correlations across dimensions (Blau 1977).

In the conventional human capital model the sorting of individuals into workplaces and jobs should be governed by differences in labor supply as well as observed and unobserved human capital. We employ a fairly standard set of observed characteristics as controls for individual skills, labor market opportunities and labor supply. These include education, labor market experience prior to hire in the current workplace, workplace tenure, sex, marital status, presence of children aged 0-15 in the home, and self-employment.¹⁴ We do not have exact information on labor market entry or time in/out of work and so we have defined experience as age-7-years of education.

Some may worry that there exist strong individual level selection processes that leave these observed variables open to criticism about unobserved individual productivity traits that might be associated with both selection into workplaces, wage dynamics and the immigrant bargaining resources we examine. To address this concern we control for individual selection with a fixed effect estimate of individual labor market value prior to the observation period. We directly follow Hensvik (2011), who in turn developed her estimation approach from Abowd et al. (1999), in estimating this model:

$$\log(w)_{iwt} = \delta_{it}Age + \delta_{it}Age^2 + \theta_i + \varphi_{w(i,t)} + \varphi_t + \epsilon_{ijt}$$

Where θ_i is an individual fixed effect, estimated net of age and workplace $\varphi_{w(i,t)}$ and time φ_t fixed effects. It is important to purge the individual fixed effect of workplace effects since careers tend to reflect not only individual traits but also cumulative advantages and disadvantages based on prior employment (DiPrete and Eirich 2006) and because recent research suggests that stable individual and workplace wages are only weakly associated (Abowd et al. 2009). This model is estimated on 1990-2000 earnings. θ_i is thus an estimate of the labor market value of individual traits up to 2000. $\hat{\theta}_i$ captures both

¹⁴ This measure is based on the relation between self-employment earnings and earnings from labor. We use a 50 percent threshold. Given that our sample is restricted to workplaces, this measure does not reflect self-employment in a traditional sense, but rather consulting salaries and the like (i.e., individuals owning large firms often employ themselves and thus get labor earnings).

prior productivity linked traits and prior cumulative (dis)advantage. We include $\hat{\theta}_i$ as a control in all models. The advantage of using a predicted $\hat{\theta}_i$ instead of a simultaneously estimated θ_i is that the latter requires movement across firms to be identified (in a two way fixed effects model), which may be non-random, and $\hat{\theta}_i$ is primarily exogenous to the model because it is based on labor market experience before the analysis period.¹⁵

This approach reduced our sample to those who were in the Swedish labor market prior to 2000. Table 2 shows that the sample is not strongly influenced by this restriction, although not-surprisingly the positive selection on non-western immigrants is strengthened by this sampling constraint.

< Table 3 about here >

Table 3 describes individual measures and their distributions for Swedes, Non-western immigrants and Western immigrants. Full time employed non-Western immigrants earn about fourteen percent less per year than native Swedes. They are also more likely to be men, married, and parents. The latter two traits tend to be associated with higher earnings among men, and lower earnings among women. Non-Western immigrants have about a third less of a year of schooling, but also higher variance in education levels than Swedes. Not surprisingly, the biggest differences are labor force experience (3.5 years) and tenure (2.3 years). The literature is clear that gaining access to full-time work is very difficult for non-Western immigrants to Sweden. This is also evident in the high proportion of Non-western immigrants excluded by our focus on full-time workers (34.1%, compared to about 17.9% for Native Swedes and Western immigrants). The predicted individual fixed effect, which is constrained to average zero in the

¹⁵ Strict exogeneity applies only to *new hires*, and not for those who worked in the same establishment in the estimation period and in the pre-estimation period (since the workplace processes that generated the individuals wage in the pre-estimation period is the same as in the estimation period). In the latter case, however, we are over-controlling and our estimates are conservative. As we show below, our identification strategy is largely driven by new hires, and so therefore this issue is of less importance.

underlying estimation sample is .08 log units above zero in our estimation sample, which indicates a positive selection of the entire sample. This positive selection exists both for non-western immigrants and natives, although not surprisingly non-western immigrants have a lower level of prior earnings than native Swedes and western immigrants.

Modeling Strategy

We employ a dynamic workplace fixed effect model, thus stable unobserved workplace compositional, meritocratic or bias tendencies are leveled out. When we estimate models with establishment fixed effects we are also controlling for other stable unobserved differences across industries and firms, leaving *within* workplace variance to be explained. Our basic modeling strategy is to observe the influence of *changes* in workplace bargaining resources on *changes* in the immigrant-native wage gap net of observed individual level differences between persons. These changes are induced by *new hires*, determining percent immigrant overall and in management and immigrant-native difference in education and occupation rank. The latter factor is also influenced by immigrant-native differences in within workplace mobility. We use three years of data with a three year gap between each observation year to reduce sample size and computational burden. Around 15 percent of workers change workplace between years, and across three years the figure is 35 percent. Including every three years in the sample creates a rough balance between movers and stayers at the workplace level. Labor mobility is a requirement for the within-workplace model to identify employment and education compositional effects. The model is written as follows:

$$\log(w)_{iwt} = \delta_0 + \delta NWI_i + \delta X_{wt} + \delta NWI * X_{wt} + \delta X_{it} + \hat{\theta}_i + \varphi_{w(i,t)} + \varphi_t + \epsilon_{ijt}$$

Where δNWI_i indexes non-western immigrant status, δX_{wt} a vector of workplace characteristics, $\delta NWI * X$ the interaction between immigrant status and workplace bargaining indicators (percent immigrant, percent managers immigrant, immigrant-native rank segregation, and immigrant-native educational differences), $\delta X_{it} + \hat{\theta}_i$ represent observed and unobserved individual traits, and $\varphi_{w(i,t)} + \varphi_t$

are workplace and temporal fixed effects. The hypotheses in Table 1 refer to the estimated coefficients $\delta NWI * X_{wt}$. Standard errors of all estimates are adjusted for within person clustering. The correlation between individual and workplace fixed effects for the whole sample is .21, suggesting a moderate amount of positive selection of high productivity people into high wage workplaces.

This model estimates the influence of change in bargaining power measures on change in the immigrant native wage gap, with a strict set of controls for stable unobserved individual and workplace characteristics. We focus on the interaction between bargaining resources and immigrant status in order to observe their influence on shifts in the within workplace immigrant-native wage gap.

Observing Opportunity Hoarding and Exploitation Mechanisms

Tilly (1998) argues that local inequalities are produced via two basic mechanisms: opportunity hoarding and exploitation. Opportunity hoarding typically happens through social closure processes around desirable jobs within workplaces. A simple way to test if opportunity hoarding is the mechanism through which these processes operate is to add to a model a control for individual's current occupation. Since our models represent wage changes within workplaces, occupational controls are effectively indicators of shifts in jobs (e.g. promotions or shifts in jobs between workplaces) generating wage changes. Since we employ models with strong controls for individual productivity linked traits, to the extent that the four workplace bargaining resources effects on workplace wage gaps are mediated by the inclusion of these occupational controls it will be consistent with an opportunity hoarding mechanism. After controls for individual occupation, residual effects represent immigrant-native difference in individual salary increments. We treat these residuals as evidence of contemporary exploitation (income transfers between actors).

Institutional Distinctions

Two institutional distinctions in the Swedish case stand out as central for relational inequality theorizing: the blue-collar/white-collar distinction and workplace levels of inequality. The institutional account of Swedish wage setting suggests that it is for white collar work that wage bargaining is most prevalent. Blue collar workers have lower wage inequality and starting wages are more likely to be negotiated as part of industry wide wage bargains. Thus local claims making processes should be stronger for white collar jobs, leading to stronger effects of our bargaining measures on the native-immigrant wage gap in white-collar settings. As income transfers between actors are easier and more likely when inequalities are large, it is in high inequality workplaces that local wage bargaining should be particularly prevalent. We nest our estimates of relational inequality in workplaces that vary in their degree of earnings inequality (defined by quartiles of workplace coefficient of variation in earnings), and by whether it is blue-collar or white-collar job. These institutional distinctions then generate results in a series of 3x4 tables in which we observe the hypothesized processes separately for low to high inequality workplaces first for all workers, and then making the further distinction between white and blue collar workers.¹⁶

Results

We report results for each hypothesis nested within class and inequality contexts. The full models are shown in the appendix (tables A1 to A3), with the same indexing of models. Cells first present the estimated influence of workplace bargaining proxies on the non-western immigrant-native Swede wage gap and then the degree to which this effect is mediated by the sorting of immigrants and Swedes into different jobs (by controlling for individual's occupation rank). To the extent estimates of the workplace

¹⁶ We also repeated the workplace fixed effects estimates for workplaces of different sizes and sectors and the economy wide model was largely replicated, thus the class and inequality results we display below are not proxies for organizational size or sector.

bargaining measures are attenuated by occupation controls we infer that the mechanism is closure from desirable jobs.

Table 4 reports the estimated effects of workplace immigrant and immigrant-management composition on immigrant-native wage inequality. As hypothesized increased immigrant density leads to increased immigrant wages relative to native Swedes (thus a declining wage gap). While this effect is present in the models for all workers, it is clear when distinguishing blue and white collar workers that this effect is only robust among blue collar workers. In contrast, increased immigrant representation in managerial jobs leads to higher wages for immigrants (and thus lower wage gaps) for white collar workers only.¹⁷ Thus Hypothesis 1 turns out to be confirmed only for working class jobs and Hypothesis 2 is supported only for white collar work. On the whole both sets of results are stronger in higher inequality workplaces, though for white collar workers the very highest inequality workplaces produce a slight attenuation of the management composition effect. Taking these findings together it appears that as the social space for local wage bargaining expands and the opportunities for higher wage gains emerge so does native-immigrant inequality.

<Table 4 about here>

Controlling for individual job rank only slightly erodes the positive effects of immigrant composition upon the wage gap, but it does so consistently in almost all models with the only exception being for white collar work in high inequality workplaces. Thus, opportunity hoarding mechanisms are at least part of the claims making process indexed by immigrant composition.

Not surprisingly occupational rank is strongly associated with wages in its own right. Importantly for white, but not blue, collar workers the estimated effect of job on wages rises dramatically with inequality. Thus for white collar workers the influence of occupation is not simply in its general skill

¹⁷ A significant effect is found for blue-collar workers in workplaces with modestly high inequality, but the effect is in the wrong direction, increasing the wage gap. As this result is not found in other settings and is not in the theoretically expected direction we treat it as a random occurrence.

levels but also in its persuasiveness in local claims making. It is not surprising that this effect is absent for blue-collar workers since their industry wage bargains tend to center around occupational skill distinctions, leaving little room for local wage claims on this dimension. White collar workers, on the other hand, bargain locally for wages. They convert occupation rank to higher wages at twice the rate of blue collar workers in low inequality workplaces and 3.5 times the rate in high inequality workplaces.

<Table 5 about here>

Table 5 explores the linkage between rank segregation and the workplace immigrant-native wage gap. Consistent with Hypothesis 3 as immigrant's average occupational rank relative to natives rises so too do their relative wages. The segregation effect is confirmed for all class*inequality contexts, however, consistent with our institutional expectations the influence of segregation on wages is higher for white collar workers and in high inequality workplaces. This effect is quite large among white collar-high inequality settings as a ten percentile difference in occupational rank yields a wage difference of around 4 percent ($.380 \times .10 \approx .04$). Controlling for individual level occupational sorting reduces the influence of segregation on wage gaps in most contexts. In low inequality workplaces essentially all of the segregation effect on wages is mediated by occupational sorting. For blue collar work in high inequality workplaces, controlling individual job does not reduce the estimated influence of occupational rank segregation on the workplace wage gap. Among white collar workers most, but not all, changes in the wage gap associated with rank segregation is explained by individual occupational sorting.

Regardless of class in high inequality workplaces segregation is associated with higher immigrant native wage gaps even after controlling for individual's occupation. This could be evaluated as evidence for exploitation, the lower bargaining power of all immigrants produced by segregation, leads to lower bargaining power even within the same job and a transfer of income to native Swedes. It is also possible that our measure of occupation is not sufficiently precise and that there are unobserved within occupation job shifts producing these results.

<Table 6 about here>

From a relational inequality perspective we predicted that increased education gaps would produce a reduction in immigrant bargaining power similar to segregation. We also raised the possibility in footnote 12 that the strong positive selection of immigrants into the labor force produced by a statistical discrimination process might produce the opposite result. Our estimates are generally consistent with the statistical discrimination prediction. Net of individual human capital, as immigrant education rises relative to natives in workplaces, relative immigrant wages fall among white collar workers in all but the lowest inequality workplaces. Controlling for individual occupation rank and heterogeneous returns to human capital reduces these coefficients to effectively zero. Thus statistical discrimination sorts non-western immigrants into lower quality jobs than they are qualified for and leads to lower initial returns to human capital.¹⁸

<Table 7 about here>

In some versions of the statistical discrimination model employers are expected to mistakenly undervalue immigrant productivity (Tomaskovic-Devey and Skaggs 1999). Presumably this would be discovered after hire. Thus, if employers did not have a taste for discrimination and in the presence of stereotype based statistical discrimination, we might expect immigrants to have higher within workplace returns to human capital than native Swedes. Table 7 confirms that immigrants received higher income returns to education than native Swedes among both white and blue collar workers after hire. This is good evidence that the strong positive selection of immigrants into the labor market associated with statistical discrimination at hire is discovered by the average employer post-hire and to some extent remedied via steeper returns to education.

The same cannot be said about wage gains within occupations. Immigrants, especially in blue collar work, received lower income returns to occupational rank than do native Swedes. Since these are within workplace wage changes, this result is consistent with a process in which occupational skill is

¹⁸ Only for blue collar workers in low inequality contexts, exactly where we expect the theory to be least applicable, is the relational inequality hypothesis (H4) supported.

devalued when associated with immigrants. This pattern has been documented for gender in many studies and is a central prediction of the relational inequality perspective (Tilly 1998). Since these are dynamic estimates of wage changes they also suggest an exploitation mechanism in which occupations are devalued when non-western immigrants enter them.

Discussion

We began this paper by proposing that relational inequality theory might help us understand the organizational processes that shape workplace inequality distributions. To empirically assess the phenomenon we examined Swedish employer-employee panel data and immigrant-native workplace wage gaps. These data allow us to develop reasonably strong causal models of workplace wage dynamics with equally strong controls for the conventional human capital and unobserved heterogeneity explanations. While studying Swedish immigrant-native inequality clearly provides data advantages, it is also a difficult test case for the theory as Sweden has historically utilized centralized bargaining to set wages across organizations, is a relatively low inequality country, and immigrant-native status distinctions are not strongly institutionalized.

Consistent with relational inequality theory, net of human capital endowments at the individual level the immigrant-native wage gap shows large systematic variation across Swedish workplaces. Further, changes in immigrant composition of the workplace and among managers as well as in job rank segregation all influence changes in the workplace level wage gap between immigrants and native Swedes.

Relational inequality theory proposes two primary mechanisms to explain this variation, opportunity hoarding and exploitation. In the opportunity hoarding mechanism more powerful actors monopolize valuable resources. In the exploitation mechanism there are income transfers from one group to another as a function of their claims making resources. In Sweden immigrant-native job segregation is high. There is strong evidence that as job segregation rises, so too does the immigrant-native wage gap.

Importantly, this result is net of individual human capital and family characteristics and despite the strong positive selection of immigrants into workplaces. Since we see the wage structure attached to jobs as the historical product of past rounds of wage claims as well as the object of contemporary opportunity hoarding, we expected this segregation effect to largely be mediated by individual job allocation. This is the case in all but the most unequal workplaces. In the latter there is a fairly large residual, even after controls for differences in individual returns (results not shown). This suggests that in the highest inequality workplaces there is also a contemporary transfer of income from immigrants to natives, produced through the weakened claims making power of immigrants in highly segregated workplaces. There is also direct evidence of exploitation in the devaluing of jobs as immigrants enter them. Of course, this is empirically the same as an increased value of jobs as native Swedes enter.

Conclusion

We have long known that wages tend to rise with human capital endowments and tend to lag for people with subordinate status attributes. The conventional model explains these results in terms of two conflicting mechanisms, returns to individual productivity and discrimination. The relational inequality model explains both outcomes as a function of status mediated claims making in workplaces. The conventional productivity model is not clear as to the interactional mechanisms that produce wage distributions, referring abstractly to labor market pricing or meritocratic values. In the relational inequality model both labor markets and meritocratic values may operate as contexts that influence the claims making processes, but wage setting is described as governed by the same set of interactional mechanisms as any other set of social relationships. In the conventional model individual traits are treated as causally fundamental. In the relational model social relations embedded in particular organizational contexts are central.

Does the relational inequality model add any theoretical value? We think so. First, by focusing on claims making in particular institutional contexts relational inequality provides a theory that can explain

workplace variation in wage setting processes. It is particularly useful for understanding the recently discovered substantial independence of workplace wage setting from individual human capital (see Lazear and Shaw 2009 and Abowd et al. 2009). Second, rather than treating status based deviations from a market model as anomalies requiring new theories of wage setting or to be explained within the dominant model as unobserved productivity differences, it treats all wage setting as embedded in a common interactional process of relational claims making. In this way it treats wage setting as organized by the same interactional processes as other social exchanges. We see this theory as not only advantaged by its parsimony and empirical utility, but also by its consistency with general social psychological and sociological models of inequality production. Beyond the support for the generic relational model, we think this paper makes three contributions to the literature. The first two are specific to relational inequality theory, while the latter generates insights into the process of immigrant-native wage gaps in Sweden.

Institutional Distinctions and Relational Theory

Relational inequality theory is sensitive to the institutional distinctions that mediate social relationships and the claims that emerge out of them within workplaces. We expect that generic processes of relational inequality are always contextually moderated by both the internal organizational field and environmental influences on practices and the salience of particular status distinctions. Thus, relational inequality approaches suggest that we should expect variation associated with institutional contexts in both the salience of status characteristics and their implications for claims making. In this paper we find strong support for this assumption in terms of Swedish class specific wage setting practices (blue-collar vs. white-collar) and the level of workplace inequality.

The analyses suggest that for blue collar workers wage gaps drop as firms employ more immigrants. About half of this effect is associated with differences in returns to individual human capital and to occupation (results not reported, but available from authors). For white collar workers the same

outcome is produced by increased managerial employment, but none of it is linked to either job segregation or differences in human capital returns, suggesting a more direct weakening of claims by non-western immigrant white collar *individuals* in the absence of immigrant managers.

For both blue and white collar workers increased native-immigrant job segregation leads to growing wage gaps. The dominant mechanism producing these results is job closure, although there is additional evidence that in high inequality workplaces both between and within jobs income is being transferred from non-western immigrants to natives.

Consistently the model was empirically most robust in high inequality settings and for white collar workers. Bargaining proxies, with the exception of relative education, behaved as predicted and results were generally robust to organizational context. All of which suggest that this model is worth further development and exploration in other nations and for other status distinctions.

An Analytic Strategy for Relational Theory

Our second contribution is to develop a statistical model for relational inequality theory that more explicitly addresses both the over-time dynamics of relational claims-making and controls for the supply-demand processes of human capital theory. This paper strengthens relational inequality models with fixed effects controls at both the individual and workplace level. Most prior research has been cross-sectional and so not well equipped to control for selection effects into workplaces. Compared to earlier work on relational inequality these models are strong improvements. All previous work, except for Castilla (2008) and Kalev (2009), were cross-sectional. Most lacked strong controls for individual characteristics. Because there was substantial positive selection of immigrants into full-time work and all models controlled for individual portable skills prior to our observation period, the normal caveat about unobserved individual heterogeneity is substantially weakened in our analyses.

We have also developed a methodological approach that enables us to distinguish between opportunity hoarding and exploitation mechanisms. After adding occupation to the model any drop in the

effect of our bargaining proxies indicates that the claims-making is operating through occupational closure processes. And since our models are over time any remaining effect of the bargaining proxies is a function of contemporary exploitation.

This modeling strategy builds on existing work that uses multilevel models to tease out such effects (e.g. Avent-Holt and Tomaskovic-Devey 2012), but captures a broader array of human capital indicators and through its longitudinal nature can more effectively capture causal relationships. In this way our strategy enables researchers to develop causal accounts of the changes in exploitation and opportunity hoarding within workplaces over time.

The primary attraction of models of the type employed here is to provide relatively strong evidence of workplace wage setting processes in the process of strong controls for unobserved individual and workplace traits. Such models impose great data requirements, we essentially used information on all employees and all workplaces in Sweden from 1990-2007. There is a more general analytic strategy employed in this model, which does not require such comprehensive data. That strategy is to investigate the impact of status characteristics on inequality generation in their specific institutional and workplace contexts. Qualitative, historically embedded case studies have been the dominant example of this approach in past research (e.g. Hodson 2001; Glenn 2001; Kanter 1977; Reskin and Padavic 1988; Rivera 2012). We think that one of the great strengths of relational inequality theorizing is that it provides a strategy for quantitative researches to pay close attention to the historical and institutional contexts in which inequalities are generated.

Native-Immigrant Wages Gaps in Sweden

Our substantive contribution is to the empirical literature on non-western immigration to Sweden. We have shown that there is substantial workplace level variation in native-immigrant wage gaps in Sweden. We expect that this is also the case in other countries with large and heterogeneous immigrant populations. Stereotypes and nativism in immigrant receiving countries often leads to the perception that

immigrants are universally disadvantaged. In Sweden this is clearly not the case. In some workplaces non-western immigrants are advantaged relative to native Swedes. Importantly, in Sweden hiring more immigrant workers and immigrant managers and reducing occupational segregation all lead to lower wage gaps in contemporary Sweden.

There is good evidence that Sweden is not developing a highly segregated society between native Swedes and non-western immigrants when both these groups are active in the labor market. As we pointed out earlier the correlations among our four indicators of workplace bargaining power are low. This is a good indicator that ethnic distinctions are not durable in Tilly's (1998) or institutionalized in Blau's (1977) sense. In addition, inequalities between child immigrants and native Swedes are relatively low (Böhlmark 2009), as are inequalities among the stably employed (Hällsten and Szulkin 2009). Even in workplaces that appear to be practicing statistical discrimination our models suggest that non-western immigrants have steeper returns to education than native Swedes, suggesting that individual level discrimination tends to decline in Sweden with longer workplace tenure. On the other hand, as we discussed above, non-western migrants to Sweden have large difficulties finding stable employment.

We are not arguing that all immigrant receiving countries will show similar patterns of incorporation of non-western immigrants that we observe in Sweden. We do think that our orientation toward both the degree to which a status distinction is institutionalized and sensitivity to contextual and organizational variation might be useful in identifying which countries risk developing stable ethnic distinctions and which are unlikely to do so. Importantly analyses such as ours, which emphasize contextual variation in discrimination processes, also point to the contexts in which discrimination is most likely to occur. In Sweden this appears to be in high inequality, high segregation workplaces and for white collar workers. Policy attention to these contexts is warranted.

The finding that immigrant-native education differences seemed to be produced by a hiring process is a useful reminder that internal workplace wage setting processes are likely to be influenced by external labor market processes. In this case the process seems to have been statistical discrimination in

the context of an insider-outside labor market leading to over education relative to job requirements for non-western immigrants.

We think future development on the influence of labor market context will be important for evaluating the utility of the relational inequality model. Conventional labor market theory leads us to expect that skill specific supply/demand ratios in local labor markets are likely to influence the claims making power of groups. In a relational inequality framework we would expect such labor market forces to be more powerful in contexts where market competition is stronger.

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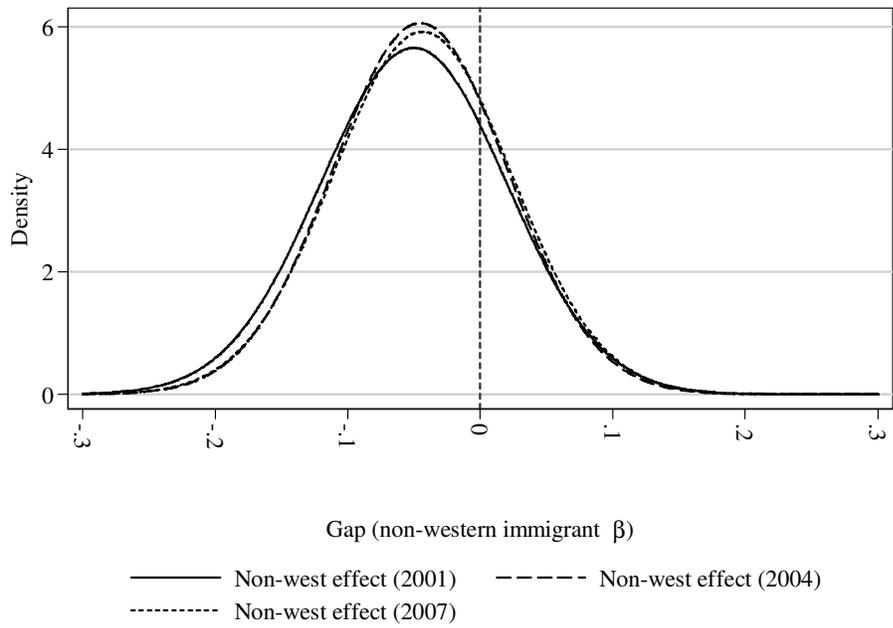


Figure 1. Distribution of non-Western immigrant earnings coefficients across Swedish workplaces for 2001, 2004 and 2007.

Note: the figure describes predicted random coefficients for a mixed model of lnearnings on individual controls (see table 1 for an overview). The model is specified as $\ln Y = a + \mathbf{X}\mathbf{B} + \text{Non-western immigrant} \times (\mathbf{B} + u_1) + u_0 + e$, where u_0 and $u_1 \sim N(0, \sigma)$, $\text{Cov}(u_0, u_1) = \rho$, and $\text{Cov}(\mathbf{u}, \mathbf{X})=0$, $\text{Cov}(\mathbf{u}, e)=0$

Table 1. Measures and Hypothesized Relationship to Immigrant-Native Workplace Wage Gaps.

Workplace Measure	Immigrant-Native Wage Gap
<i>Relational Inequality</i>	
H1. Percent Immigrant	Decreases
H2. Percent Immigrant Managers	Decreases
H3. Native-Immigrant Rank Segregation	Increases
H4. Native-Immigrant Education Differences	Increases
<i>Institutional Context</i>	
H5. Blue vs. White Collar	Effects of H1-H4 Muted
H6. High vs. Low Inequality Workplace	Effects of H1-H4 Strengthened

Table 2. Description of workplace level variables, all workplace variables computed on all employees, 2001, 2004, and 2007.

	Effective sample ^a		All employees	
	All	At least 1 non-western immigrant	All	At least 1 non-western immigrant
Percent female	0.487 (0.313)	0.54 (0.297)	0.484 (0.311)	0.538 (0.296)
Percent white collar	0.522 (0.362)	0.529 (0.360)	0.503 (0.361)	0.505 (0.359)
Average education years	11.979 (1.484)	12.203 (1.498)	11.964 (1.449)	12.157 (1.464)
Average occupation rank (within)	0.498 (0.263)	0.495 (0.267)	0.479 (0.266)	0.47 (0.271)
Average seniority	6.226 (3.063)	6.033 (2.865)	5.957 (3.047)	5.761 (2.846)
% non-Western immigrants = 0	0.548 (0.498)	0.002 (0.049)	0.531 (0.499)	0.003 (0.056)
% non-Western immigrants	0.03 (0.064)	0.067 (0.083)	0.035 (0.075)	0.077 (0.099)
% non-Western in management	0.005 (0.050)	0.011 (0.076)	0.007 (0.064)	0.014 (0.094)
Occupational rank difference	-0.025 (0.109)	-0.062 (0.165)	-0.025 (0.107)	-0.061 (0.162)
Education difference	0.054 (1.273)	0.104 (1.882)	0.039 (1.280)	0.069 (1.856)
Ln firm size	5.976 (2.324)	6.525 (2.301)	5.856 (2.324)	6.408 (2.319)
Entrepreneurial firm	0.113 (0.317)	0.082 (0.275)	0.134 (0.341)	0.101 (0.301)
N	100,856	40,876	135,341	54,666

Table 3. Description of Individual Level variables, 2001, 2004, and 2007.

	Effective sample ^a			All employees		
	All	Non-western	Native	All	Non-western	Native
Non-western imm.	0.026 (0.160)			0.037 (0.188)		
European immigrant	0.065 (0.246)			0.07 (0.255)		
Predicted individual fixed effect (1990-2000) ^b	0.083 (0.325)	0.023 (0.301)	0.09 (0.325)			
Earnings (2003 prices)	303.002 (187.081)	271.858 (126.890)	304.92 (190.712)	291.779 (178.261)	251.612 (119.691)	294.495 (181.899)
Female gender	0.488 (0.500)	0.443 (0.497)	0.487 (0.500)	0.491 (0.500)	0.464 (0.499)	0.49 (0.500)
Married status (incl. cohab.)	0.513 (0.500)	0.571 (0.495)	0.509 (0.500)	0.473 (0.499)	0.541 (0.498)	0.465 (0.499)
Female gender × Married status (incl. cohab.)	0.257 (0.437)	0.245 (0.430)	0.256 (0.436)	0.241 (0.428)	0.251 (0.433)	0.238 (0.426)
Children 0-15 yrs in HH	0.384 (0.486)	0.507 (0.500)	0.382 (0.486)	0.372 (0.483)	0.493 (0.500)	0.367 (0.482)
Female gender × Children 0-15 yrs in HH	0.194 (0.395)	0.234 (0.424)	0.193 (0.395)	0.192 (0.394)	0.249 (0.432)	0.19 (0.392)
Years of education	12.249 (2.587)	12.088 (2.925)	12.28 (2.554)	12.305 (2.548)	12.08 (2.876)	12.333 (2.508)
Workplace tenure (since 1985)	7.545 (6.453)	5.641 (5.218)	7.637 (6.498)	6.74 (6.312)	4.519 (4.787)	6.894 (6.381)
Workplace tenure ²	98.563 (129.703)	59.055 (91.251)	100.54 (131.116)	85.268 (123.848)	43.333 (79.138)	88.252 (125.983)
Potential experience	25.71 (11.119)	22.817 (9.619)	25.678 (11.168)	23.539 (12.142)	19.984 (10.242)	23.598 (12.223)
Potential experience Sq.	784.62 (588.806)	613.136 (467.129)	784.087 (590.483)	701.531 (598.388)	504.262 (452.449)	706.266 (602.257)
Self-employed	0.006 (0.077)	0.004 (0.059)	0.006 (0.079)	0.006 (0.079)	0.004 (0.062)	0.007 (0.081)
Occupation rank	0.548 (0.284)	0.419 (0.293)	0.556 (0.282)	0.53 (0.287)	0.385 (0.287)	0.541 (0.285)
Management	0.058 (0.234)	0.016 (0.124)	0.062 (0.240)	0.052 (0.222)	0.013 (0.112)	0.056 (0.229)
N	5,964,151	156,829	5,250,362	7,183,424	258,052	6,213,190

Notes: ^a effective sample refers to sample with predicted individuals earnings in 1990-2000. ^b Predicted fixed effect expressed in units of log earnings with mean equal zero in estimation sample.

Table 4. Effect of Immigrant Density among Staff and Managers on Earnings 2001, 2004, and 2007 by level of Workplace Earnings Inequality (CoV)

	min-Q ₁		Q ₁ -Q ₂		Q ₂ -Q ₃		Q ₃ -max	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
All workers								
Non-western imm. × % non-Western immigrants	0.042*** (4.063)	0.026* (2.478)	0.046*** (4.891)	0.018 (1.875)	0.066*** (5.847)	0.028* (2.386)	0.046 (1.913)	0.031 (1.320)
Non-western imm. × % non-Western in management	0.013 (1.017)	0.019 (1.563)	0.059*** (4.256)	0.061*** (4.494)	0.047** (2.927)	0.049** (3.168)	0.054 (1.560)	0.062 (1.903)
Occupation rank		0.311*** (168.665)		0.366*** (217.013)		0.407*** (231.719)		0.543*** (238.122)
Blue collar workers ^a								
Non-western imm. × % non-Western immigrants	0.059*** (5.391)	0.049*** (4.258)	0.054*** (5.012)	0.044*** (3.915)	0.111*** (8.539)	0.090*** (6.513)	0.118*** (4.064)	0.107*** (3.671)
Non-western imm. × % non-Western in management	-0.024 (-1.682)	-0.018 (-1.271)	-0.023 (-1.321)	-0.023 (-1.304)	-0.046* (-2.410)	-0.047* (-2.464)	-0.046 (-0.967)	-0.043 (-0.916)
Occupation rank		0.146*** (49.821)		0.177*** (54.637)		0.157*** (40.878)		0.156*** (25.333)
White collar workers ^a								
Non-western imm. × % non-Western immigrants	-0.039 (-1.298)	-0.037 (-1.236)	0.021 (1.042)	0.031 (1.595)	-0.025 (-1.026)	-0.032 (-1.307)	0.022 (0.472)	0.011 (0.253)
Non-western imm. × % non-Western in management	0.098*** (4.197)	0.073** (3.256)	0.139*** (6.181)	0.116*** (5.327)	0.180*** (5.943)	0.159*** (5.585)	0.094* (2.179)	0.098* (2.406)
Occupation rank		0.343*** (147.149)		0.386*** (195.517)		0.417*** (210.547)		0.533*** (216.614)
Predicted Individual Fixed Effect 1990-2000	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Workplace Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Interactions human capital × non-Western immigrants		Yes		Yes		Yes		Yes

Note: Ln Earnings restricted to earnings above 120' SEK (a proxy for full time employees). *** p<0.001, ** p<0.01, * p<0.05 based on individual cluster-robust standard errors, t-statistics in parenthesis. Equations contain controls for variables shown in tables 2 and 3. ^a workplace characteristics computed with white and blue collar pooled. Coefficients refer to models 1 and 2 in Appendix Tables A1 to A3.

Table 5. Effect of Occupation Rank Segregation on Earnings 2001, 2004, and 2007 by level of Workplace Earnings Inequality (CoV)

	min-Q ₁		Q ₁ -Q ₂		Q ₂ -Q ₃		Q ₃ -max	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
All workers								
Non-western imm. × Occupation rank difference	0.054*** (4.058)	-0.027 (-1.937)	0.054*** (4.122)	-0.005 (-0.394)	0.094*** (6.977)	0.011 (0.754)	0.351*** (21.064)	0.132*** (7.733)
Occupation rank		0.311*** (168.665)		0.366*** (217.013)		0.407*** (231.719)		0.543*** (238.122)
Blue collar workers ^a								
Non-western imm. × Occupation rank difference	0.067*** (4.055)	0.033 (1.930)	0.064*** (3.694)	0.050** (2.789)	0.055** (3.125)	0.058** (3.090)	0.086*** (3.807)	0.087*** (3.759)
Occupation rank		0.146*** (49.821)		0.177*** (54.637)		0.157*** (40.878)		0.156*** (25.333)
White collar workers ^a								
Non-western imm. × Occupation rank difference	0.092*** (3.753)	-0.057* (-2.213)	0.144*** (6.637)	-0.015 (-0.674)	0.189*** (8.732)	0.011 (0.501)	0.380*** (16.484)	0.077** (3.243)
Occupation rank		0.343*** (147.149)		0.386*** (195.517)		0.417*** (210.547)		0.533*** (216.614)
Predicted Individual Fixed Effect 1990-2000	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Workplace Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Interactions human capital × non-Western immigrants		Yes		Yes		Yes		Yes

Note: Ln Earnings restricted to earnings above 120' SEK (a proxy for full time employees). *** p<0.001, ** p<0.01, * p<0.05 based on individual cluster-robust standard errors, t-statistics in parenthesis. Equations contain controls for variables shown in tables 2 and 3. ^a workplace characteristics computed with white and blue collar pooled. Coefficients refer to models 1 and 2 in Appendix Tables A1 to A3.

Table 6. Effect of Education Segregation on Earnings 2001, 2004, and 2007 by level of Workplace Earnings Inequality (CoV)

	min-Q ₁		Q ₁ -Q ₂		Q ₂ -Q ₃		Q ₃ -max	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
All workers								
Non-western imm. × Education difference	0 (-0.454)	0.003*** (3.423)	-0.005*** (-4.724)	0.001 (1.050)	-0.008*** (-6.668)	-0.001 (-0.958)	-0.013*** (-7.397)	-0.004* (-2.199)
Occupation rank		0.311*** (168.665)		0.366*** (217.013)		0.407*** (231.719)		0.543*** (238.122)
Blue collar workers ^a								
Non-western imm. × Education difference	0.002* (2.007)	0.001 (1.087)	0 (-0.243)	-0.001 (-1.014)	-0.002 (-1.077)	-0.004** (-2.577)	-0.004 (-1.563)	-0.006* (-2.426)
Occupation rank		0.146*** (49.821)		0.177*** (54.637)		0.157*** (40.878)		0.156*** (25.333)
White collar workers ^a								
Non-western imm. × Education difference	0 (-0.116)	0.004 (1.943)	-0.005** (-2.929)	0.001 (0.795)	-0.004* (-1.978)	0.001 (0.370)	-0.008*** (-3.356)	0 (-0.139)
Occupation rank		0.343*** (147.149)		0.386*** (195.517)		0.417*** (210.547)		0.533*** (216.614)
Predicted Individual Fixed Effect 1990-2000	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Workplace Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Interactions human capital × non-Western immigrants		Yes		Yes		Yes		Yes

Note: Ln Earnings restricted to earnings above 120' SEK (a proxy for full time employees). *** p<0.001, ** p<0.01, * p<0.05 based on individual cluster-robust standard errors, t-statistics in parenthesis. Equations contain controls for variables shown in tables 2 and 3. ^a workplace characteristics computed with white and blue collar pooled. Coefficients refer to models 1 and 2 in Appendix Tables A1 to A3.

Table 7. Heterogeneous Returns of Human capital by level of Workplace Earnings Inequality (CoV)

	min-Q ₁	Q ₁ -Q ₂	Q ₂ -Q ₃	Q ₃ -max
All workers				
Occupation rank	0.311*** (168.665)	0.366*** (217.013)	0.407*** (231.719)	0.543*** (238.122)
Non-western imm. × Years of education	0.001 (1.073)	0 (0.105)	0.001 (1.881)	0.004*** (4.794)
Non-western imm. × Occupation rank	-0.031*** (-4.692)	-0.057*** (-9.127)	-0.049*** (-7.506)	-0.006 (-0.826)
Non-western imm. × Workplace tenure (since 1985)	0 (0.700)	0 (0.246)	0.002* (2.223)	0.002* (2.094)
Non-western imm. × Workplace tenure ²	0 (-1.700)	0 (-0.509)	-0.000*** (-3.799)	-0.000*** (-3.085)
Non-western imm. × Potential experience	0.001*** (5.757)	0.001*** (4.332)	0.001*** (6.834)	0.001*** (3.839)
Blue collar workers				
Occupation rank	0.146*** (49.821)	0.177*** (54.637)	0.157*** (40.878)	0.156*** (25.333)
Non-western imm. × Years of education	0.004*** (5.655)	0.004*** (6.727)	0.006*** (7.261)	0.004** (3.284)
Non-western imm. × Occupation rank	-0.021* (-2.131)	-0.027** (-2.653)	-0.031* (-2.422)	-0.032* (-2.193)
Non-western imm. × Workplace tenure (since 1985)	0 (0.180)	-0.001 (-1.594)	0 (-0.232)	0.002 (1.324)
Non-western imm. × Workplace tenure ²	0 (-1.144)	0 (1.096)	0 (-1.713)	-0.000* (-2.321)
Non-western imm. × Potential experience	0.001*** (7.115)	0.001*** (6.953)	0.001*** (6.882)	0 (-0.002)
White collar workers				
Occupation rank	0.343*** (147.149)	0.386*** (195.517)	0.417*** (210.547)	0.533*** (216.614)
Non-western imm. × Years of education	0.006*** (4.175)	0.003** (3.064)	0.005*** (5.416)	0.008*** (6.831)
Non-western imm. × Occupation rank	-0.021 (-1.319)	-0.074*** (-5.974)	-0.075*** (-5.968)	0.027 (1.723)
Non-western imm. × Workplace tenure (since 1985)	0.001 (0.766)	0.001 (1.007)	0.001 (1.231)	0.002 (1.288)
Non-western imm. × Workplace tenure ²	0 (-0.785)	0 (-1.252)	0 (-0.839)	0 (-1.707)
Non-western imm. × Potential experience	0 (1.092)	0 (-1.642)	0 (-0.562)	0 (-0.219)
Predicted Individual Fixed Effect 1990-2000	Yes	Yes	Yes	Yes
Workplace Fixed Effect	Yes	Yes	Yes	Yes

Note: Ln Earnings restricted to earnings above 120' SEK (a proxy for full time employees). *** p<0.001, ** p<0.01, * p<0.05 based on individual cluster-robust standard errors, t-statistics in parenthesis. Equations contain controls for variables shown in tables 2 and 3. Outcome is earnings in 2001, 2004, and 2007, coefficients refer to model 2 in Tables 4-6 and Appendix Tables A1 to A3.