CHAPTER 10

Skill Requirements and Employment of Immigrants in Swedish Hospitality

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Introduction

Structural change in labour markets due to migration are characterised by a more diverse workforce in terms of workers' national origin, their reasons for immigration, level of education and qualifications. At the same time, skills requirements for jobs are changing with an increasing share of service sectors jobs, changes exacerbated by the Covid-19 pandemic's effect on physical workplaces, and rapidly expanding online delivery of goods. For many years, the share of permanent jobs has also been in

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decline in most developed countries (Thornley, 2006), making migrant workers more exposed to changes in job content and skills required to handle those jobs. As of 2022, workplaces increasingly require skilled workers to handle more complex and interactive tasks. Employees must have sufficient skills to become a part of labour force within the changing requirements of jobs due to technological change like digitalisation (van Laar et al., 2017).

National labour markets throughout Europe and North America has also become more diverse in terms of workers' national background (Kazlou & Urban, 2023). In this chapter, we study Sweden, where, as of 2022, more than a fifth of the active labour force is born abroad, a vast increase since the 1990s. Furthermore, historically, migration has tended to consist of more homogenous groups arriving in intervals due to host country labour shortages or due to conflicts in a specific country or region. However, migrants are increasingly diverse in terms of country of origin, reasons for immigration, age, gender, level of education and skills (Meissner, 2015). These migrants join the host country labour force as students, as labour migrants, as kin to current residents and as refugees fleeing conflict and persecution in their home countries.

This chapter probes the questions of why and how immigrant employees are overrepresented in the hospitality industry compared to other low-skilled industries. We examine labour market segmentation across immigrant groups compared to native workers in Sweden. We focus on the hospitality sector, which employs an increasing share of the immigrant workforce (Åslund et al., 2014; Přívara & Kiner, 2020; Sönmez et al., 2020). The chapter investigates the sorting of immigrants and natives into jobs with different levels of skill requirements and according to their ethnicity[1] (Ponomareva et al., 2022) within the three comparable low-skill industries: hospitality, retail and construction. Jointly, we examine how different ethnic groups may be sorting into different sectors (Åslund et al., 2014). We also probe how the skill composition of service jobs shape ethnic labour market segmentation among male and female workers as well as foreign-born and natives.

[1]We approximate "ethnicity" with "country of origin" of immigrants. While this is far from identical (any country is likely to have different ethnic groups and simply naturalising into a new country does not change one's self-perceived or societally categorised ethnicity), it comes with the advantages of being fairly generalisable and non-intrusive (Stevens et al., 2011).

This chapter combines detailed data on occupations and workers in the Swedish hospitality, construction and retail sectors matched with data on the skill requirements of these jobs based on standardised measures from the United States, thus providing a unique opportunity to study the sorting of immigrants by skills and ethnicity into different jobs and the increasing stratification of the labour market.

Theory and Prior Research

Job Tasks and Job Skills

Distinguishing between job tasks and job skills allows for a deeper understanding of how workers can fulfil different tasks in different industries applying the same type of skills. A task is defined as "a unit of work activity that produces output (goods and services)" and a skill is a worker's "endowment of capabilities for performing various tasks" (Acemoglu & Autor, 2011, p. 1045). From an economic perspective, one would expect immigrants and natives with similar skills to perform similar tasks equally well and receive wages in the same range, unless statistical or taste-based discrimination is prevalent (Becker, 1964; see further Ahmed et al., 2023, this volume). Demand for routine tasks conducted by manual labour has decreased with the increasing availability and sophistication of computer technologies. This has led to job polarisation as the average earnings in jobs requiring different tasks increase (Acemoglu & Autor, 2011; Autor, 2015). However, such job polarisation may also affect job sorting across industries in distinct ways, whether different categories of workers, such as immigrant vs native workers, or between workers of different countries of origin. Job polarisation may decrease employment and earnings for many low-skilled workers overall (Autor & Dorn, 2013). Further, new technologies are found to primarily benefit workers with high interpersonal skills, especially those working in knowledge-intensive sectors (Deming, 2017). Existing research on skill-biased technological change focuses mostly primarily on manufacturing, even though service sectors are changing as rapidly due to digitalisation. Our study focuses specifically on the service sectors, which is also where stratification by country of origin has increased in most Western European labour markets since the 1990s (Storer et al., 2020).

Job Skills and Ethnic Stratification of Labour Markets

Immigrants who hail from different countries tend to sort into different industries within jobs requiring different skills, not only as a function of their observable human capital (Waldinger & Lichter, 2003; Cortes, 2004) but also by country of origin. Within specific jobs, however, this development often means rising immigrant employment in non-routine-intensive jobs combined with declining employment in routine-intensive jobs (Cortes, 2008; Åslund et al., 2014). Hence, skill-biased technological change may partly explain why immigrants are overrepresented in the hospitality sector, especially for those jobs comprising non-codifiable personalised manual tasks.

These trends are argued to lead to increasing differences in earnings between workers within specific sectors as well as between immigrants and natives (Åberg and Müller, 2018; Heldt Cassel et al., 2018). It is primarily immigrant men in the blue-collar sectors whose job security and wage levels have suffered the most from automation and economic shocks (Autor & Dorn, 2013; Nachemson-Ekwall, 2023, this volume). Highly educated immigrants are found to largely specialise in jobs with high requirements of routine-task analytical skills (Peri & Sparber, 2011) while low-educated immigrants are more often found in jobs requiring manual technical tasks (Peri & Sparber, 2009). At the same time, the service sector is expanding, and manufacturing is in decline in terms of employment shares. As automation is increasingly affecting the service sector, including hospitality, different strata in the labour market may also be increasingly exposed to wage stagnation and substitution by new technologies such as automated booking systems, online delivery of food among restaurants etc. To gauge immigrants' labour market integration among those arriving when the country was "very open" to refugee and labour migrants we next scrutinise labour market stratification of native and migrant workers as well as with respect to migrant workers of different origins across three comparable "low-skilled" sectors.

Ethnic Stratification across Jobs and Industries

Ethnic stratification in the labour market is explained by both economic theories of human capital and taste-based discrimination (cf. Ahmed et al., 2023) as well as theories of embeddedness into social structures of labour market hierarchy (Waldinger & Lichter, 2003; Massey, 2007). From an

economic perspective, employers demand various types of skills that are needed to perform various tasks; individual workers possess various skills based on their education, training and experiences; wages function as the price mechanism that ensures a proper matching of the two (Becker, 1964). In order to be integrated into local labour markets, immigrants must find jobs where their level of skills meets skills requirements, else they must develop those skills. Thus, systematic differences between native workers and various immigrant groups are attributable to variations in their levels of basic and country-specific human capital (Borjas, 1989). Such variation may be attributed to the home country context but also to changing skills requirements at jobs due to processes like digitalisation or economic adjustments as well as to policy changes. The demand for, and supply of, immigrants' skills may also mismatch due to employers' statistical or taste-based discrimination (Becker, 1964; Carlsson & Rooth, 2007). There are different explanations for the process of ethnic sorting into different industries. According to segmented labour market theory, native workers may be unwilling to take on certain jobs not simply because they generate low pay but also because they infer low status (Leontaridi, 1998). Immigrants, however, may be less picky due to a so-called dual frame of reference and limited options in host-country labour markets (Friberg & Midtbøen, 2018). The literature pays less attention to skill- and ethnicity-based sorting into different industries and jobs. Thereby, the allocation of immigrants in host-country labour markets is closely linked to labour market hierarchies reflecting the social structure of the societies within which they are embedded (Waldinger & Lichter, 2003).

However, the social structure also opens opportunities for network-based recruitment in labour market segments that are socio-ethnically segregated. While much previous research on labour market attachment and earnings potential among immigrant and native workers considers immigrants as a homogeneous group, others note segmented employment patterns by country of origin, whereby, for instance, some industries in many Western European economies are dominated by immigrants from Turkey or Asia, while other industries are dominated by immigrants from Eastern Europe. Åslund et al. (2014, p. 405) find that "[w]orkers who share an [national] origin with their managers earn higher wages and have lower [job] separation rates than dissimilar workers, but this pattern is driven by differences in unobserved worker characteristics". The differential in skills requirements might partly represent the previously unobserved characteristics. Employers might also use their employees as referrals and personal

contacts to reduce the costs of finding good matches (Montgomery, 1991). Such origin- and skill-based job sorting cannot readily be explained by job polarisation but can be explained by theories of network-based recruitment and ethnic "niche formations" in labour market segments, whereby immigrants of same origin sort into specific industries (Waldinger, 2000; Friberg & Midtbøen, 2019). The sorting patterns are more likely to be explained by profit-maximizing concerns than by preference-based discrimination (Åslund et al., 2014; Ahmed et al., 2023). Thus, various labour market niches tend to be structured hierarchically in ways that may coincide with the social status of immigrant groups, resulting in divisions of labour following country of origin lines. Employees might also be sorted into different firms based on their language skills. A number of studies (e.g. Wilson & Portes, 1980) indicate that employers prefer to recruit employees who speak the same language. This implies that immigrants will be recruited by firms where fluency in the native language is of less importance or where most of the employees speak their own language.

Labour Market Segmentation of Immigrants and their Wages

Ethnic labour market segmentation may inherently increase earning differentiation among immigrants in different sectors as well as between immigrants and natives (Åberg & Müller, 2018; Heldt Cassel et al., 2018). The demand side of job characteristics predefine sorting of immigrants into the lower tier of less well-paid and more precarious jobs as well as natives into the more well-paid and more stable jobs (Piore, 1983; Boje, 1986; McGovern, 2007). Thus, on the demand side, occupational skill requirements may be considered as an empirical measure for the emergence of more distinct labour market segments among immigrants and natives (Hudson, 2007). The supply side of immigrants into precarious jobs can be partly explained by homogeneous social networks spreading job information among co-ethnics (Waldinger & Lichter, 2003; Meyer & Vasey, 2020) because the information about available jobs and potential recruits circulates in ethnic-homogenous groups, which may lead to homogenisation in perceived and actual skills along ethnic boundaries (Andersson et al., 2014). Related to this is that job training and tacit knowledge transfer within co-ethnic groups contributes more for low-skilled occupations than formal training (Hammarstedt & Miao, 2020). This makes ethnic segmentation in some routine-based industries with high technical skills requirements more likely.

Gender differences within groups of immigrants and natives are also notable. Wages and employment level for men (immigrants and natives alike) are decreasing in low-skill sectors in the United States (Autor & Dorn, 2013). Immigrants also face a greater risk of losing their jobs due to digitalisation or economic turmoil as they are often specialised in jobs with high requirements for routine-task analytical skills (Peri & Sparber, 2011) or in jobs requiring manual technical tasks (Peri & Sparber, 2009). As automation is increasingly affecting the service sectors, including hospitality, different segments in the labour market may also be increasingly exposed to wage stagnation and substitution of immigrant workers by new technologies. We scrutinise these processes in the context of native and migrant workers as well as migrant workers of different countries of origin.

Migrant Workers in Services: The Case of Sweden

Sweden is a suitable case for this study because it is a popular immigration destination country, especially after the country liberalised labour migration in 2008 (Kazlou & Klinthall, 2019). There is also a need to establish a baseline of sort that could then be used to assess labour market outcomes after several immigration waves that peaked in 2015 that could be followed long-term beyond the more recent changes brought about by the Covid-19 pandemic. This makes Sweden an interesting context in which to study the long-term outcomes of immigrants' labour market integration among those arriving when the country was "very open" to refugee and labour migrants (i.e. up until 2015).

This chapter investigates the differences in job sorting among immigrants according to their ethnicity (approximated by country of origin) into jobs and industries requiring different skills. We consider three industries with lower levels of entry barriers in terms of human capital: hospitality, construction and retail (MacKenzie et al., 2010), which are absorbing the largest share of immigrant's workforce (Vershinina et al., 2018). While low-skilled jobs in hospitality in Sweden and other Nordic countries rely heavily on immigrants (Foged & Peri, 2016; Friberg & Midtbøen, 2019), various types of immigrant workers tend to be found in similar types of low-wage jobs. Such ethnic segmentation stemming from workers of different ethnic background sorting into specific sectors is apparent in Sweden and other countries, such as Asian migrants being overrepresented in restaurants and Middle Eastern immigrants in grocery stores (Frank, 2018).

Methods and Data

Using Statistics Sweden's Longitudinal Integrated Database for Health Insurance (LISA) and occupation-education information at the individual level in 2012, we have access to comprehensive information, including the demographics and education of both immigrants and natives in different occupations. By matching the individual data from LISA with data on required skill characteristics for different occupations according to the International Labour Organization (ILO) and O*NET (the Occupational Information Network), we suggest the fundamental premise that skill level requirements differ among jobs. Type of jobs are reported according to the Swedish Standard Classification of Occupations (SSYK), which is fully harmonised with the ILO's occupational classification categories.

Combining data on skills requirements from the O*NET with individual-level data on the entire Swedish population during 2009–2012 allows us to analyse occupational employment as changes in demand for skills and the matched supply of immigrant and native employees. We select three industries that are similar in level of skills and that are generally considered as low- to medium-skilled sectors exhibiting fair entry rates for immigrant workers but differ in structure of specific skill requirements: hospitality, construction, and retail.

Job Skills Requirements

We use O*NET (Occupational Information Network) data traditionally collected based on existing jobs and positions requirements in the United States (Autor et al., 2003; Acemoglu & Autor, 2011). We follow earlier research using this data, which classifies jobs into three groups based on skill types and skill levels: routine work jobs, non-routine manual jobs and non-routine cognitive jobs (Kurer, 2019). The O*NET data also distinguishes between *social* and *technical* skills in specific jobs. Social skills, including coordination, instructing, negotiation, persuasion and social perceptiveness, require deep knowledge of local language and cultural codes and, as such, are not easily fulfilled by immigrants. A set of technical skills including equipment maintenance and selection installation and so forth (see Table 10.3 in Appendix for details) are not related to the same degree to local cultural specificity and, therefore, can be fulfilled by immigrants and natives alike. Nevertheless, jobs requiring high levels of technical skills can often be substituted by machines because these often include elements of routine tasks.

Following Deming (2017), we focus on social and technical skills in our analysis. We compare the immigrants' prevalence in jobs with higher or lower demands for these types of skills, which we compare to native workers and further analyse by gender. The O*NET task measures are often merged with country-specific data sources, subsequently used to calculate the task content of jobs in countries other than the United States (Goos et al., 2014). This approach is common as O*NET offers rich and detailed data on occupations.

The constructed data allow us to examine cross-sectional patterns of labour markets segments with details regarding skills requirements for jobs and compare the skills structure of immigrants and natives in the three low-skilled industries: hospitality, retail and construction. We also distinguish ethnic nuances based on immigrants' country of origin. In our descriptive statistics, we aggregate the level of skills from the job title level to the industry level, weighted by number of people (in the industry) with a specific job. Table 10.1 shows descriptive statistics.

The descriptive statistics in Table 10.1 show that immigrant students are mostly employed in hospitality (28.3%). Hospitality also employed more refugees (18.2%) and family migrants (23.9%) than construction and retail. Only 11.7% of immigrants employed in hospitality arrived in Sweden as labour migrants, in contrast to the construction industry, where a larger share of labour migrants is employed (22.3%). The retail industry employs more students (29.3%) than labour migrants (5.6%).

Wages in hospitality are lower than the other two comparable industries of retail and construction. Immigrants' wages in hospitality are 28% less compared than those of natives. Immigrants also have lower levels of education than natives in hospitality and construction industries, but the same level as natives in the retail sector. Both immigrants and natives in hospitality are, on average, younger (32.6 and 37.7 years, respectively) than employees in the other industries. It is striking that it is mostly native women (73%) and immigrant men (72%) who are employed in the hospitality industry.

Results

Figure 10.1 shows that immigrants in the hospitality industry in Sweden in 2012 had lower wages (log-wages are on the vertical axis on the left box plots in Fig. 10.1) compared to natives, which can partly be explained by the fact that they have lower levels of education (the right box plots in Fig. 10.1).

Table 10.1 Descriptive statistics: natives and immigrants in hospitality, construction and retail in 2012

	Hospitality		*Construction*		*Retail*	
	Natives	*Immigrants*	*Natives*	*Immigrants*	*Natives*	*Immigrants*
	N = 17,551	*N = 7846*	*N = 122,232*	*N = 11,520*	*N = 248,491*	*N = 33,099*
Wage, SEK per year	176,200	126,400	313,800	241,700	258,200	238,000
Education level, number of years	12.1	10.0	11.4	10.6	12.0	11.7
	(1.62)	(3.84)	(1.61)	(4.10)	(1.75)	(3.11)
Social skills level	49.2	43.7	39.3	38.1	49.6	48.9
	(6.49)	(6.52)	(5.81)	(5.57)	(7.16)	(7.92)
Technical skills level	12.7	32.3	28.9	28.7	17.3	18.5
	(10.9)	(19.6)	(9.11)	(8.62)	(12.1)	(12.5)
Age, years	32.6	37.7	40.1	40.4	35.8	38.1
	(10.9)	(9.89)	(11.4)	(10.1)	(11.6)	(10.6)
Gender (male = 1)	27%	72%	92.8%	92.2%	52.8%	52.9%
Reason for residence permit:						
For study		2224		1333		9705
		(28.3%)		(11.6%)		(29.3%)
For family		1876		1696		7116
		(23.9%)		(14.7%)		(21.5%)
Refugee		1429		1433		4285
		(18.2%)		(12.4%)		(12.9%)
For work		916		2565		1838
		(11.7%)		(22.3%)		(5.6%)
Unspecified		1401		4493		10,155
		(17.9%)		(39.0%)		(30.7%)

Note: LISA data defines immigrants based on country of origin

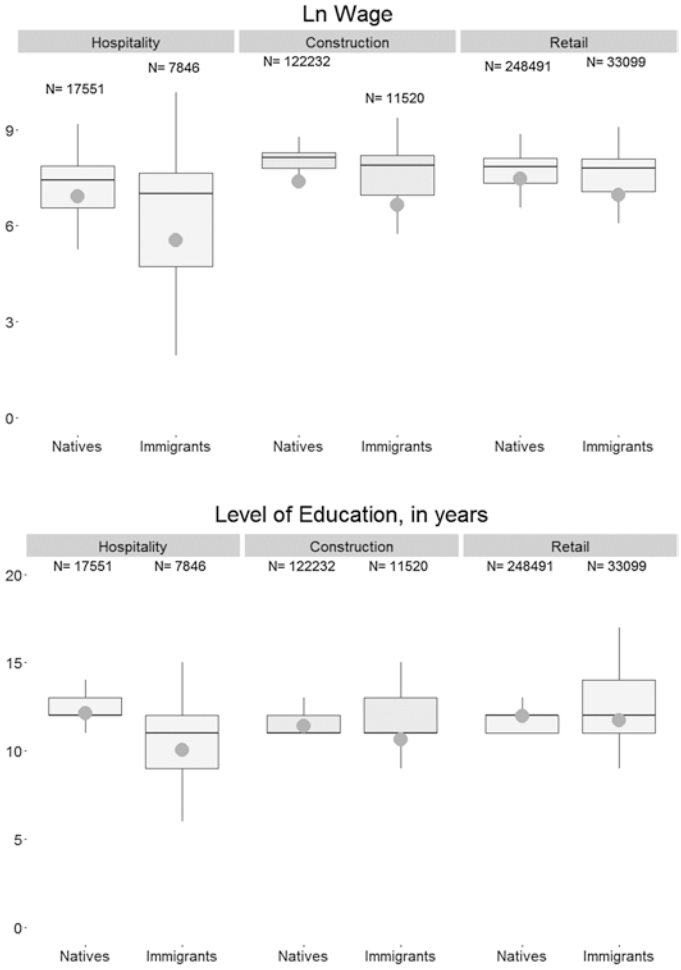

Fig. 10.1 Wages and education: immigrants vs natives in construction, retail and hospitality in 2012. *Note*: in the boxplots the dots indicate average and the horizontal lines mean values, the whiskers indicate minimum and maximum values, respectively, and horizontal boundaries of the box indicate values of the first and the third quartiles

Stark evidence of opposing differences in composite skill levels across individual jobs in hospitality among immigrants and natives is shown in Fig. 10.2. The required level of social skills is much lower while the level of technical skills is much higher for those jobs occupied by immigrants compared to natives. At the same time, skill requirements are equally distributed in the retail and construction industries (Fig. 10.2), with the slight exception of jobs held by native workers in the construction sector having slightly higher requirements for social skills. In comparison to hospitality, neither retail nor construction exhibit such obvious differences among natives and immigrants in sorting to jobs requiring social or technical skills.

Figure 10.3 shows details for selected social (persuasion, negotiation and service orientation) and technical skill requirements for specific jobs by native and immigrant workers (equipment maintenance, equipment selection and installation; see Appendix for definition of the skills). Overall, Fig. 10.3 shows sharp and striking differences in employment patterns among immigrants and natives—immigrant workers are more often employed in jobs requiring lower level of social skills and a higher level of technical skills. These results are interesting and can reveal some risk baring by immigrants due to substitutions of routine tasks by machines within digitalisation (van Laar et al., 2017), while jobs with higher requirements for social skills, frequently highlighted as important in people-to-people interaction and service-intensive work (Clark, 1993; Ivanov, 2020), are increasingly in demand in hospitality. The construction and retail industries do not have such striking differences in the sorting of immigrant and natives by skills.

Together, the graphs in Fig. 10.3 highlight the starkly different ethnically based job segregation in the three sectors studied, where immigrants and natives are found in jobs with very distinct skills requirements in the hospitality sector, but not in the construction or retail sectors.

Table 10.2 shows the sorting of immigrants into the three selected industries by country of origin in 2012. Immigrants from Turkey comprise more than 25% of all immigrants employed in hospitality, followed by individuals from Iraq (13.6%) and Syria (8%) in our sample. Immigrants from Poland are overrepresented in the construction industry (19.7%), followed by representatives from Finland (17.1%) and former Yugoslav countries (8.7%). The retail industry represents a more balanced case, where immigrants from the former Yugoslavia are the largest group (15.7%), followed by immigrants from Iraq (10.3%) and Finland (7.5%).

Figure 10.4 reveals a clear pattern of segmentation by country of origin and gender in the three industries and shows the diversity regarding

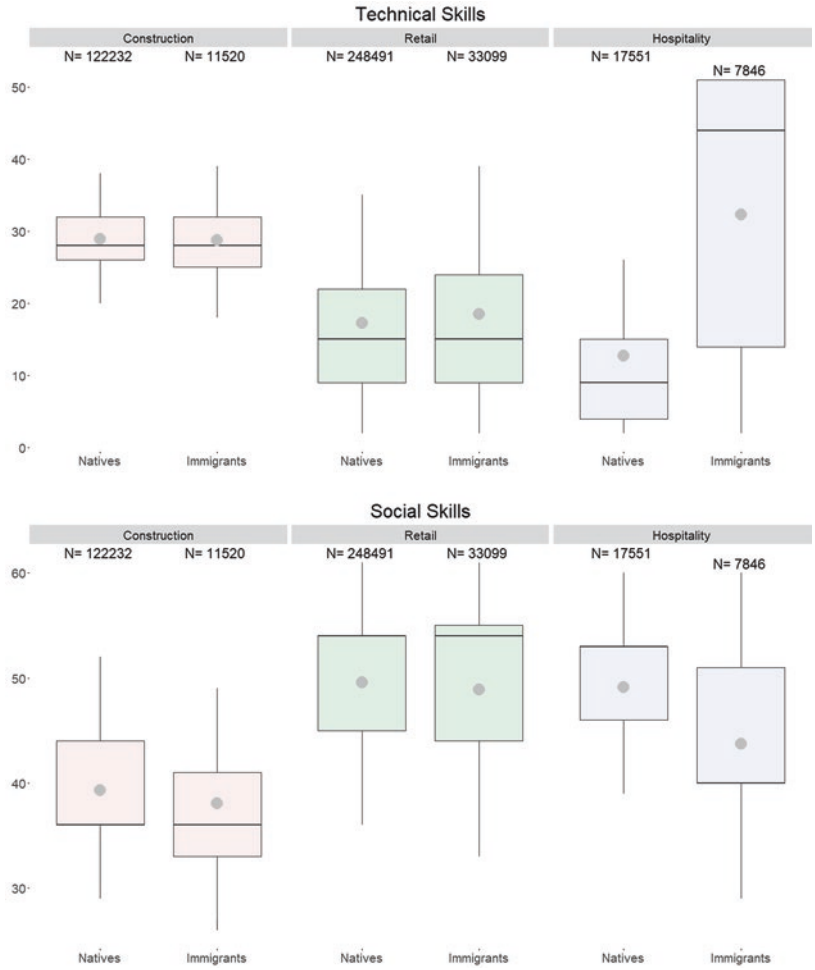

Fig. 10.2 Skill requirements in jobs: immigrants vs natives in construction, retail and hospitality in 2012. *Note*: in the boxplots the dots indicate average and the horizontal lines mean values, the whiskers indicate minimum and maximum values, respectively, and horizontal boundaries of the box indicate values of the first and the third quartiles

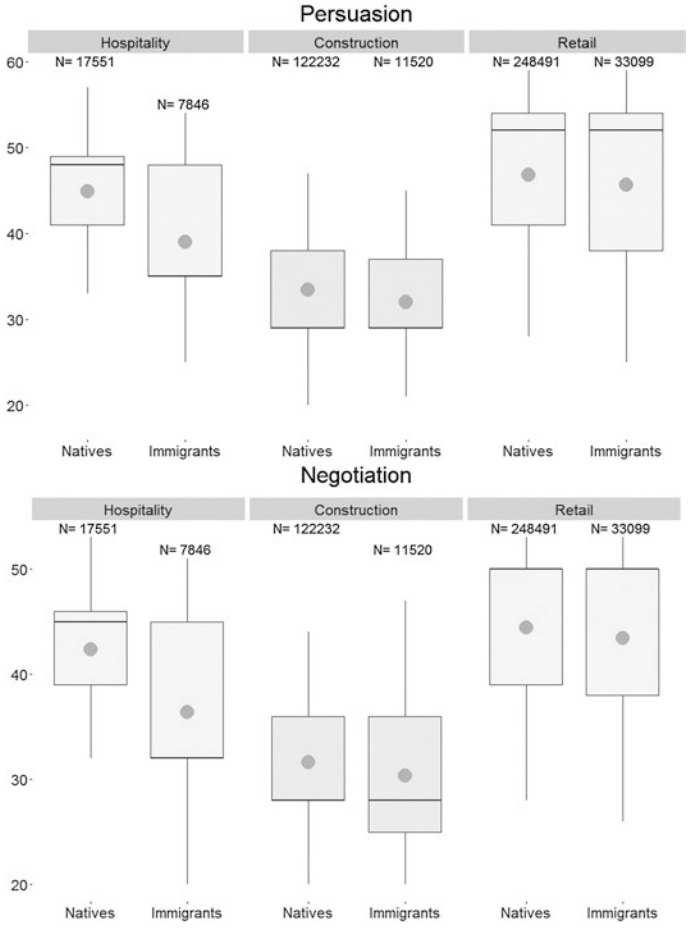

Fig. 10.3 Social skills in jobs: natives vs immigrants in construction, retail and hospitality in 2012. *Note*: in the boxplots the dots indicate average and the horizontal lines mean values, the whiskers indicate minimum and maximum values, respectively, and horizontal boundaries of the box indicate values of the first and the third quartiles

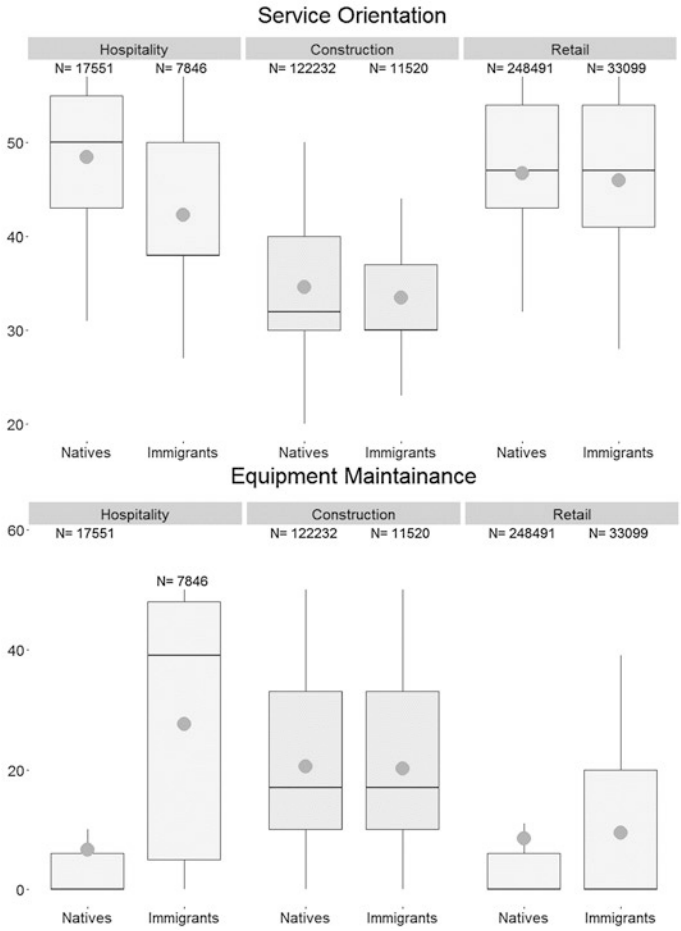

Fig. 10.3 (continued)

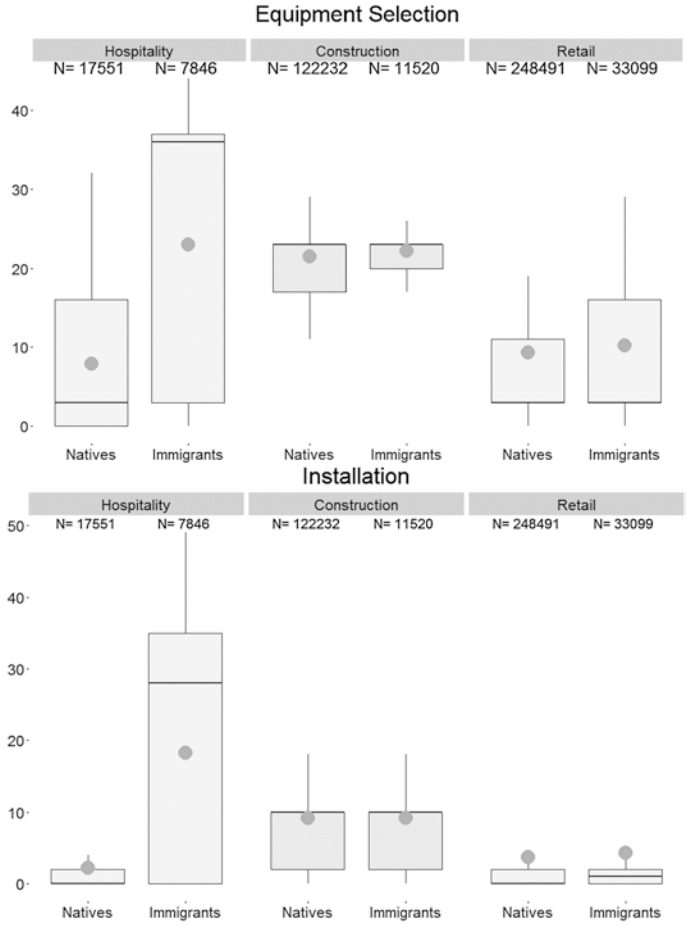

Fig. 10.3 (continued)

Table 10.2 Ethnic composition of immigrants employed in hospitality, retail and construction in 2012

Hospitality			*Construction*			*Retail*		
Country	*N*	*Share in industry*	*Country*	*N*	*Share in industry*	*Country*	*N*	*Share in industry*
Turkey	**1949**	**25.20%**	**Poland**	**2262**	**19.70%**	**F.Yugoslavia**	**5164**	**15.70%**
Study	218		Study	31		Study	3669	
Family	546		Family	233		Family	545	
Refugee	549		Refugee	341		Refugee	437	
Work	346		Work	1207		Work	20	
Unknown	290		Unknown	450		Unknown	493	
Iraq	**1053**	**13.60%**	**Finland**	**1960**	**17.10%**	**Iraq**	**3365**	**10.30%**
Study	629		Study	0		Study	1885	
Family	171		Family	0		Family	900	
Refugee	103		Refugee	0		Refugee	332	
Work	124		Work	0		Work	118	
Unknown	n/a		Unknown	1960		Unknown	130	
Syria	**616**	**8.00%**	**F. Yugoslavia**	**1003**	**8.70%**	**Finland**	**2463**	**7.50%**
Study	270		Study	553		Study	0	
Family	121		Family	148		Family	0	
Refugee	106		Refugee	136		Refugee	0	
Work	76		Work	71		Work	n/a	
Unknown	43		Unknown	95		Unknown	2462	
Lebanon	**482**	**6.20%**	**F.Soviet union**	**453**	**4.00%**	**Iran**	**2130**	**6.50%**
Study	223		Study	78		Study	1141	
Family	96		Family	114		Family	465	
Refugee	65		Refugee	95		Refugee	215	
Work	n/a		Work	148		Work	85	
Unknown	80		Unknown	n/a		Unknown	224	
Iran	**465**	**6.00%**	**Iraq**	**268**	**2.30%**	**Poland**	**1668**	**5.10%**
Study	255		Study	174		Study	n/a	
Family	94		Family	n/a		Family	480	
Refugee	n/a		Refugee	n/a		Refugee	318	
Work	n/a		Work	n/a		Work	301	
Unknown	n/a		Unknown	n/a		Unknown	508	
Total *N*	7745	100%	Total N	11,467	100%	Total *N*	32,794	100%

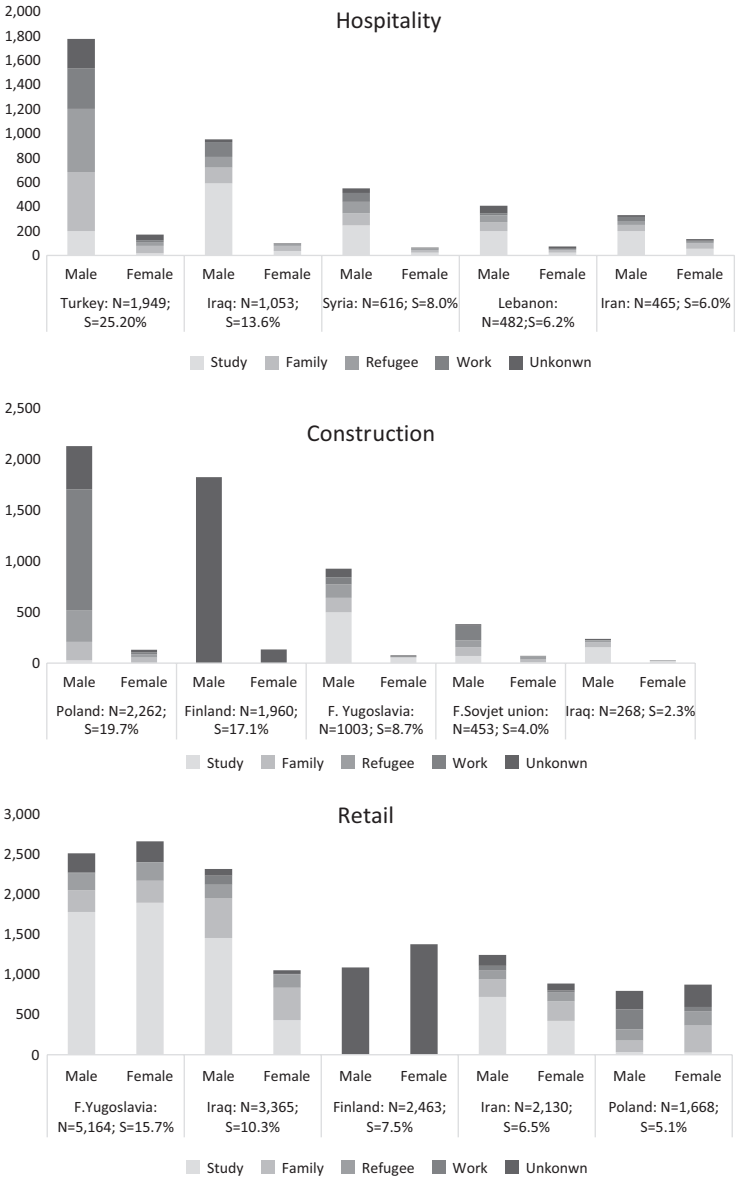

Fig. 10.4 Five overrepresented migrant groups in different industries by gender and residence permit. *Note*: N is the number of observations and S is the share in the sample (the horizontal axis)

residence permit status in Sweden. Figure 10.4 show different ethnic and gender groups within the three industries (on x-axis: N is number of observations for specific ethnic groups, both genders and S are a share of an ethnic group in the total number of employed immigrants in the industry; the y-axis shows the number of observations of immigrants by ethnic group and gender). In the hospitality industry (Fig. 10.4), male immigrants from Turkey, who mostly arrived as refugees or for family reunification reasons, dominate. The group "student male migrants" comprises the largest share of immigrants from the next largest ethnic groups in hospitality (Iraq, Syria, Lebanon and Iran). Surprisingly, we note smaller shares of immigrants employed in hospitality who arrived in Sweden as refugees or for family reunification. A very small share of female immigrants from these countries are employed in hospitality and they arrived in Sweden mainly as students or for family reunification.

Male labour migrants more often work in the construction industry in Sweden (Fig. 10.4). Student migrants from the former Yugoslavia mostly work in Swedish construction. In contrast to the hospitality and construction sectors, immigrants are more balanced by gender in the retail industry. Immigrant students dominate retail.

Overall, our descriptive results indicate that immigrant workers in the service-intensive hospitality sector are overrepresented in jobs requiring hard technical (routine) skills, while native workers in the same sector are more often found in jobs with higher requirements for social skills. Since routine-based technical skills related to machinery operations, monitoring and control are skills highly susceptible to automatisation, it adds vulnerability to immigrants' employment in the hospitality sector.

Discussion and Conclusions

In this chapter we set out to examine why some categories of immigrant workers are more likely to find jobs in hospitality but not in similar low-skilled industries like retail and construction. Using detailed data on the skill characteristics of jobs within the three sectors of hospitality, construction and retail, we probe the extent to which these differences may be driven by differential skill requirements as well as by ethnic sorting into specific jobs and sectors. Our findings suggest that skill-biased change and ethnic segmentation (based on country of birth) provide insights into the patterns of immigrants sorting into jobs and sectors. The fact that mostly native women and immigrant men are employed in hospitality suggests

that more vulnerable groups find employment in this industry. We look deeper into the trend to understand what skills are typically required in hospitality and not in other low-skill industries, finding that immigrants are more often employed in technical skill routine jobs in hospitality. Immigrant men from Turkey and the Middle East have a higher probability to start and be employed in hospitality sector. The hospitality sector also provides jobs for native younger women in jobs requiring social skills even though they commonly earn less than natives in other industries.

After the radical halt of Swedish refugee immigration in 2015 and labour migration on the decline, it is notable to examine the labour market segmentation of migrants occurring during the decades leading up to this shift and what they can mean for the future. The Covid-19 pandemic of 2020 has radically disrupted the working conditions in the hospitality industry with an initial shock of layoffs and workplace closures, a decline in tourism which may be once again on the upturn, and a more long-term shift towards online retail and digital provision of services and food deliveries. Many jobs are moving from in-person service to a background and on-distance work. At the same time, working conditions in hospitality has been noted as unattractive, and employers are struggling to fill vacancies for new positions and (re)recruit staff after the pandemic lockdowns of service establishments have ended. The hospitality sector is a frequent "entry path" for individuals with limited labour market experience and highly dependent on both young workers and migrant workers. The biannual work quality surveys conducted by Statistics Sweden notes that hospitality workers are almost twice as likely to experience risks of lay-offs if they complain about working conditions as workers in retail or construction, and four times as likely to work despite being ill for fear of losing their job (Statistics Sweden, 2022). What can we expect in terms of ethnic segmentation of jobs and shifting jobs tasks in the nearby future? On the one hand, one would expect that shortage of service workers would improve wages and working conditions for those applying to such positions. However, the proliferation of non-regulated and illegal workers and low unionization rates among young workers and immigrant workers in hospitality (Bender, 2023, this volume) means that employees bargaining position is much lower than in other industries. The ongoing digitalisation and closure of workplaces after the pandemic may also lead to increased requirements for technical skills for tasks like operating hotel services and customer service desks and systems. These changes do offer potential for immigrants as it can decrease requirements for communication and

language skills, however, these are also positions that can be readily offshored.

Most likely, the ethnic segmentation of labour is likely to persist, but may shift as work tasks and related skill requirements in jobs change and become more technically oriented. In our study, we find the hospitality sector to be ethnically dominated by immigrants from Turkey and Middle Eastern countries, while the construction sector is dominated by immigrants from Poland, showing clear ethnic sorting between industries. While refugees and family migrants from Turkey more often find jobs in hospitality, surprisingly, more students from other Middle Eastern countries are employed there. The construction industry is dominated by Polish and Finnish male workers, which might create barriers for other ethnic groups looking to find jobs in the industry. Similar ethnic sorting of immigrants is also reported in Norway (Friberg & Midtbøen, 2018, 2019) and in the United Kingdom (Ram & Smallbone, 2002; Thiel, 2010; Vershinina et al., 2018). According to labour market segmentation theory, immigrants are more likely to sort into routine technical skills jobs in hospitality based on their human and social capital characteristics, including unrecognised or lower levels of education, or previous work experience in a similar industry. Immigrants are also prevented from sorting into social skill jobs because of poorer host language abilities (Dustmann, 1999). Further, immigrants who enter specific industries and workplaces often refer co-ethnic workers to job openings via their social networks (Andersson et al., 2014). Ethnic labour market segmentation (Noel, 1968; Esser, 2010; Thiel, 2010; Haller et al., 2016) explains why some ethnic groups of immigrants are overrepresented in specific industries or niches. Native workers may be unwilling to take on certain jobs not simply because they generate low pay but also because they confer low status (Leontaridi, 1998). Immigrants, however, may be less picky due to a so-called dual frame of reference and limited options in host-country labour markets (Friberg & Midtbøen, 2018). This willingness will often be interpreted as a sort of skill or "work ethic" (Piore, 1983). Nevertheless, neither labour market segmentation nor skill-biased technological change theories can individually explain the sorting evidence by skill and ethnicity in the low-skilled industries. Thereby, the allocation of immigrants in host-country labour markets is closely linked to processes also defined in literature as categorical inequality (Massey, 2007), with labour market hierarchies tending to reflect the social structure of the societies within which they are embedded (Waldinger & Lichter, 2003). However, this social structure

also opens opportunities for network-based recruitment in labour market segments that are socio-ethnically segregated. Employers might also use their employees as referrals and personal contacts to reduce the costs of finding good matches (Holzer, 1987; Montgomery, 1991). Employees might also be sorted into different firms based on their language skills; in our case, the Polish language might be a working language in some construction companies in Sweden. Because of language similarities, immigrants from Ukraine and other former Soviet Union countries might join the Polish dominance in the construction industry in the future, a trend we also observe in the data in 2012 (the former Soviet Union group is among the largest five groups in the construction sector). Several existing studies (e.g. Wilson & Portes, 1980; Hellerstein & Neumark, 2008) indicate that employers prefer to recruit employees who speak the same language. This implies that immigrants are recruited by firms where fluency in the native language is of less importance or where many of the employees speak one common languages. For front-line service workers in hospitality and retail, language requirements and communication skills are likely to remain imperative.

Policymakers can benefit from this study by considering nuanced sorting of immigrants with different origin background into jobs with social or technical skills in different industries, which might require adjustments in skill formation and education policy interventions for specific groups of immigrants. Further, supporting the skills of immigrants seeking to establish themselves on the job market should consider facilitating the acquisition of language and interpersonal skills in addition to formal training and education. For these purposes, practical job training in service intensive workplaces may be equally important to formal language training. Authorities should also consider the rapid digitalisation of both retail and services, and the opportunities inherent in equipping prospective service sector workers with training in system operations, database and customers support systems, for better access to better jobs in the future.

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Appendix

Table 10.3 Skills description

*O*NET skill*	*Description*
Social skills	Developed capacities used to work with people to achieve goals.
Technical skills	Developed capacities used to design, set-up, operate and correct malfunctions involving application of machines or technological systems.
Social skills	
Negotiation	Bringing others together and trying to reconcile differences.
Persuasion	Persuading others to change their minds or behaviour.
Service orientation	Actively looking for ways to help people.
Social perceptiveness	Being aware of others' reactions and understanding why they react as they do.
Technical skills	
Equipment maintenance	Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.
Installation	Installing equipment, machines, wiring or programmes to meet specifications.
Operation control	Controlling operations of equipment or systems.
Quality control analysis	Conducting tests and inspections of products, services or processes to evaluate quality or performance.
Repairing	Repairing machines or systems using the needed tools.
Troubleshooting	Determining causes of operating errors and deciding how to fix them.

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