

# Overeducation Among Academic Degree Holders in Israel

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## Taub Center for Social Policy Studies in Israel

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## 1. Introduction and objectives

The last few decades have seen a substantial rise in the educational level of individuals, both globally and in Israel (OECD, 2018). The standard view is that investment in higher education increases innovation, employment, productivity, and wages, which in turn boosts economic growth (Hanushek, 2016). It is also a pivotal contributor to a wide set of social benefits, from improved health, higher participation in elections and political awareness in general, to lower levels of crime, poverty, and reliance on government support (Münich & Psacharopoulos, 2018; OECD, 2018). Set against this singularly positive view is a more sober assessment, which suggests that the expansion of higher education can, and has in many countries including Israel, led to overeducation, a situation in which a worker's acquired education level exceeds that required for the job. According to the terminology of labor economics, this is considered a vertical mismatch, as opposed to horizontal mismatches where workers are choosing jobs with requirements outside the scope of their field of study. Research on this topic goes back at least to Freeman's (1976) *The Overeducated American*, who argue that the increased supply of graduates was characterized with a significant reduction in returns to higher education.

On an individual level, as documented below, overeducation is associated with earning losses, relatively low job satisfaction and motivation which can be expressed in more frequent absenteeism and higher job turnovers. These adverse consequences may affect employee's productivity and thereby reduce an organization's aggregate output (Quintini, 2011). In a broader sense, overeducation is potentially costly to the economy as a whole since it points to a waste of educational resources, and to the fact that employers do not fully utilize the full productive capacity and capabilities of their employees.

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Estimates of overeducation reported in different studies (based on a variety of measurements) vary widely (ILO, 2014). According to the OECD definition, the rate of overeducation in Israel **for the entire population** stands at 32 percent, and ranges from 10 to 33 percent in the other countries.

This study looks at overeducation among Israeli **workers with an academic degree whose jobs do not generally require a degree**. As described below, one of the main determinants of overeducation is field of study. The aim of this paper is to bring attention to other important determinants of overeducation in Israel, which have not as yet been thoroughly examined:

- A. Hebrew proficiency – the lack of Hebrew language proficiency has a large influence on overeducation among immigrants.
- B. Age and tenure – the incidence of overeducation is related to age, in particular for workers with low job tenure. The problem is particularly acute for workers who change jobs at a later age since many of them experience a period of temporary unemployment.
- C. Spatial flexibility – Worker mobility, as measured by the length of time a worker is willing to commute to work and the availability of a private car, may affect the matching of workers' educational characteristics and employers' preferences.

The current paper is organized as follows. Section 2 presents a brief literature review. Section 3 describes the methodology behind the definition of overeducation. Section 4 then addresses, in order, each of the three contributing factors of overeducation in Israel mentioned above. A multivariate analysis of overeducation is presented in Section 5, and the paper concludes with a summary and discussion.

## 2. Literature review

In the economics literature, a number of explanations for overeducation are posited.<sup>1</sup> According to human capital theory, investment in both formal education and experience acquired through on-the-job training (OJT) provided

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1 There are somewhat different theories of overeducation (and its causes) in research in other social sciences. In sociology, for example, it is usually framed as a social stratification problem, making it part of larger debates about intergenerational mobility (Torche, 2013; Capsada-Munsech, 2017).

at the workplace (whether that training is specific to the job or more general) increases worker productivity, and therefore the wages in the marketplace (Becker, 1962). Within this framework, overeducation occurs when there is a temporary mismatch. In career mobility theory, this is framed as a temporary mismatch resulting from worker anticipation of acquiring useful skills through OJT as a career investment (Sicherman & Galor, 1990).

Signaling theory offers yet a different perspective on overeducation. It views education as a worker's signal to potential employers of latent or unobserved abilities (such as motivation, higher learning skills, etc.) (Spence, 1973). Due to the asymmetry in information regarding a worker's traits, employers set educational minimums as a way of sorting candidates (Weiss, 1995).

An important distinction between human capital theory and signaling theories relates to the role of investing in higher education and its effect on worker productivity. Human capital theory views higher education as an essential component of human capital that increases worker productivity. On the other hand, in Spence's signaling theory model, an investment in higher education does not change worker productivity, and so all higher education is overeducation, and is a waste of resources from a social perspective.

Contextual factors, in particular related to spatial location, can also play a role in the appearance of the overeducation phenomenon. Some workers find themselves in less-than-desirable jobs in a particular geographic location as the result of family responsibilities. An early version of the spatial-based explanation for overeducation was introduced by Frank (1978) in the context of coupled households. He asserted that the job seeking process of the partner with the highest earning capabilities is carried out in a larger geographical area (global market) while the secondary wage earner is limited to seeking employment within a smaller geographical area (local market). As a result, the secondary earner may accept employment with lower educational requirements in order to remain closer to home. Büchel and van Ham (2003) present a more general framework for a spatial-based explanation for overeducation that takes into consideration all workers, that is, not just coupled households (discussed in Section 4). Over the years, an extensive body of literature has developed that links the phenomenon of overeducation with variables such as spatial characteristics (e.g., job dispersion relative to residential location), commuting time and distance, and the availability of a car for commuting (Jauhiainen, 2010; Devillanova, 2012; Ramos & Sanroma, 2011).

In addition, overeducation can be a short-term phenomenon although in certain circumstances it may be a long term situation. Sicherman's research (1991), for example, finds that overeducated workers tend to have lower job tenure on average. This is consistent with workers' self-reports and their recognition that there is a poor match between their job and their education level. On the face of it, on the job training which is of use in the worker's career, is likely to improve occupational mobility. But the findings show that overeducation — and its implications on wage levels — tends to be a more long-term phenomenon. Büchel and Mertens (2004), for example, found that overeducated workers in Germany experienced less upward occupational mobility (relative to well-matched counterparts), and their wage growth rates were not above the average.

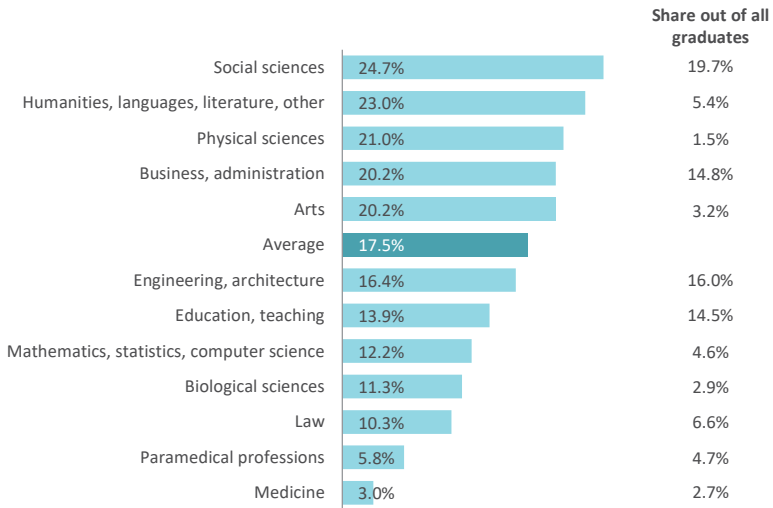
What is clear throughout the literature is that overeducation affects employees and employers negatively. While overeducated workers tend to earn more than well-matched colleagues in the same job, they earn less than workers of the same educational level who have jobs that match their education level (Quintini, 2011; ILO, 2014; McGuinness & Pouliakas, 2016). Likewise, organizations that cannot offer their "graduates in non-graduate occupations" career opportunities may end up with an uncommitted staff (Blenkinsopp & Scurry, 2007). Hersch (1991) takes this one step further, showing that while both overeducated men and women are less satisfied with their jobs than properly matched employees, men articulate clearer intentions to leave their positions. In the same research, Hersch shows that overeducated workers get less OJT. At least some of this, she argues, is driven by employers' expectations that overeducated workers see their job mismatch as temporary and intend to leave the workplace within a relatively short period of time.

### **Overeducation in Israel**

There has been some research on both the determinants and consequences of overeducation in Israel. In terms of determinants, overeducation in Israel varies significantly by field of study (Romanov, Eizman & Tur-Sinai, 2008; Katz, 2017; Lipiner, Rosenfeld & Zussman, 2019). Subject to the definition of overeducation used in this work (as will be clarified below), a basic breakdown can be seen in Figure 1. Broadly speaking, individuals who studied humanities and social sciences are more likely to be overeducated. On the other end, graduates from medical studies, law faculties, mathematics, statistics and computer sciences are associated with the lowest rates of overeducation.

**Figure 1. Overeducation and field of study, 2017–2019**

Academic degree holders ages 25–64



Note: The percentages are the relative shares of each field of study out of all degree holders ages 25–64. Data for graduates in agriculture do not appear in the figure because of their small sample size. Source: Haim Bleikh, Taub Center | Data: CBS, Social Survey 2017–2019

Regarding the implications of overeducation, Romanov, Tur-Sinai and Eizman (2008) analyzed graduates who received their first degree between 2001 and 2002. They found that wages of overeducated workers were 11 percent lower and the pace of their wage increases was slower than for adequately matched workers. They interpret that result as evidence that the wage effects of overeducation are long-lasting.

Lazarus and Miaari (2015) linked education and employment incompatibility to wage gaps among different groups based on ethnic identity (Ashkenazi, Mizrahi, immigrants from the former Soviet Union (FSU), and Arab Israelis). They conclude that occupational mismatch due to overeducation and undereducation is one component of the mechanism that explains wage gaps among the groups.

Katz (2017) examines the implications of the expansion of higher education in Israel. He finds that, relative to other countries, there is a surplus of academically educated individuals in Israel who do not find work commensurate with their level of education (even when new immigrants are excluded from the analysis). Katz argues that this is partly driven by an inflationary process in higher education that results in a devaluation of academic degrees. The resulting tendency of young graduates to work in occupations that do not match their education represents a serious issue for the economy since significant resources are invested in acquiring what ultimately proves to be non-productive education (at least as measured by labor market outcomes).

A recently released study by the Bank of Israel examines the probability of overeducation and mismatch when workers choose jobs with requirements outside of their chosen field of study (Lipiner et al., 2019). The authors analyze its implications for earnings among graduates born between 1978 and 1985. A major contribution of this work is that it examines differences among graduates from a variety of higher education institutions: public colleges, private colleges, and universities. The study finds that levels of overeducation are the highest among graduates from public colleges, followed by universities, and the lowest among graduates of private colleges. This ranking remains even when the sample is limited to fields of study that are more relevant for the labor market.

### 3. Measuring overeducation

The empirical literature includes both objective and subjective measures of overeducation, though the former are more common.<sup>2</sup> Objective measures are based on an assumed correspondence between occupations and education level, as determined by criteria set by job analysts or statistical measures conducted by researchers.<sup>3</sup> Use can also be made of the International Standard Classification of Occupations (ISCO) developed by the International Labour Organization (ILO). The assumption is that each occupation requires a specific level of education, and that anyone working in that occupation with a higher level of education than required is designated as overeducated. A second

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2 For a more extensive discussion of methods and use of various measures of overeducation see Alpin, Shackleton and Walsh, 1998; Quintini, 2011; and ILO, 2014.

3 An example: *The Dictionary of Occupational Titles* in the US, created as a collaboration between the National Academy of Sciences and the US Bureau of Labor, details the requirements of various types of jobs in the labor market.



objective measure is based on the distribution of education levels in a given occupation. Workers are defined as overeducated if their years of schooling are above the mean (mode) education level of workers in their occupation by more than some ad-hoc value, usually one standard deviation.

The subjective approach to measuring overeducation is based on workers' self-reported match between their education level and their job. This approach may also ask the workers for an assessment of how much education is necessary to get the job and to do the job.

Each of these approaches to measuring overeducation, the objective and the subjective, has advantages and disadvantages. For example, the first objective approach assumes homogeneity in skills and ignores the possibility that workers with the same or similar job title might do very different jobs. The second objective approach, which is based on the distribution of occupational levels in any given occupation, is relatively easy to implement due to data availability. The downside of this method is its arbitrary nature, and its susceptibility to the influence of a rapid expansion of higher education within a given age group (the cohort effect), without a significant change in job requirements.

The subjective approach also has the potential for bias. For example, respondents may overstate their job requirements in order to inflate the status of their position. Job requirements are also likely to be influenced by changes in hiring standards (e.g., a requirement of a higher level of schooling without changes in the position itself). On the other hand, self-reporting has the advantage that it takes into account all of the most up-to-date information about the job, or at least, the most up-to-date information known to the worker.

What is clear is that there is no single, universally accepted measurement tool for overeducation and each method yields different estimates of the phenomenon. Many times, the choice of methodology is based on data availability.

### **Data and methods for defining overeducation**

This study uses data collected from the 2015 to 2019 Israel Social Survey (ISS) conducted by the Central Bureau of Statistics (CBS). The analysis is restricted to respondents with academic degrees between the ages of 25 and 64. Based on this selection procedure, the sample includes 8,186 observations.

The significant advantage of the ISS is that it includes a wide range of data including personal characteristics, employment history, commuting patterns, language skills, and more. In addition, the use of ISS for this analysis enables

identification of individuals who are overeducated for their jobs through a combination of both objective (correspondence between occupations and education level) and subjective criteria, and it does this for a representative sample of university and college graduates.<sup>4</sup>

In the first step of the study, occupations are separated into three groups: those that usually require an academic degree (graduate jobs), jobs that do not usually require a degree (non-graduate jobs), and a third group that has some of both.<sup>5</sup> Graduate jobs include managers and academic professionals (74.2 percent of graduate workers based on data from 2017 to 2019), and workers in these occupations are not considered overeducated. The non-graduate jobs include clerical workers, skilled workers in manufacturing, construction, and other sectors, agents, sales and service workers, and unskilled workers (13.8 percent of graduate workers). Graduates in all of these occupations are considered overeducated. The final, mixed group work as “professionals, technicians or associate professionals” (12.0 percent of graduate workers). Overeducation within this group is assessed using the subjective criterion of the self-reported match between the worker’s field of studies and their job.<sup>6</sup> For example, a response that there is no relation at all between the job and the respondent’s fields of study, assumes that the workplace does not require an academic degree. Using this criterion, an additional 3.6 percent of graduates are identified as overeducated. For this reason, regression analyses were performed with and without this third (subjectively-defined) group. Inclusion or exclusion of the third group does not change the results either substantively or statistically. It is important to emphasize that using self-assessment in this way allows us to control to some extent for both workers’ skill and occupational heterogeneity. This is important because job requirements are often dynamic and subject to changes in the labor market and the advent of new technologies.

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4 Chevalier (2003) also uses a mixed approach.

5 About 30 percent of workers from this group hold an academic degree.

6 The question used to identify this subjective match is: To what extent is your work in the main workplace related to your academic or post-secondary studies? Respondents are given four possible answers: *Yes, to a large extent*; *Yes, to some extent*; *Not so much*; *Not at all*.

It should be stressed that this question is meant to identify mismatches in general. In other words, there is little way to distinguish between cases of overeducation, undereducation, or work that is simply outside the respondent’s field of study.

To sum up, this study identifies overeducated graduates as those employed in an occupation that typically does not require an academic degrees — 13.8 percent of degree holders between 2017 and 2019 (using the objective measure of overeducation); those employed in the occupational group of associate professionals, technicians and agents as well as supporting occupations who reported a mismatch between their level of education and their work — 3.6 percent between 2017 and 2019 (using a subjective measure of overeducation). Based on this combined definition, between 2017 and 2019, about 17.5 percent of workers in Israel with academic degrees were overeducated.

## 4. Causes of overeducation in Israel

### Language proficiency

Language skills are the basis of everyday communication. As such, they are a vital component of human capital and are considered critical to social and economic integration (Yao & van Ours, 2015). Individuals with good language skills can be more effective in their job searches, and so have increased chances of finding lucrative and suitable jobs that matches their skills. In contrast, a lack of adequate language skills can hinder integration into suitable employment and is likely to be a severe obstacle to career success.

The research literature points to several main factors that ultimately influence immigrant proficiency in the host language (Chiswick, 1998). Probably the most decisive factor is the age of arrival in the host country. The level of exposure to the host language is also central. Exposure levels are influenced by several factors:

- Language spoken at home and the level of mix of different languages. These two factors are among the most influential in determining the speed of language acquisition.
- Exposure to language content in the media, written literature, television, etc. in the host language.
- Geographic distribution of immigrants. The more immigrants there are in the neighborhood, the more interaction there will be in the mother tongue rather than in the host language.
- “Mixed marriages” versus marriage within the immigrant community.

The “tribal reality” of Israeli society is reflected in different cultural, political, and socioeconomic characteristics. While the largest share of the Arab Israeli population reside in separate Arab Israeli localities, new immigrants are dispersed throughout the country, though there are certain areas with larger concentrations of immigrants. Even 25 years after the large wave of immigration from the former Soviet Union, many immigrants continue to live in areas with large concentrations of immigrants — something that stands out even more when examined at the statistical area level.<sup>7</sup> These residential patterns have implications for language exposure and the speed of language acquisition.

Figure 2 shows the relationship between language skills and age for individuals with an academic degree. The vertical axis indicates the percent of those who responded that their level of proficiency in Hebrew is either good or very good (their combined score of self-reported proficiency in reading, writing, and speaking). It is important to note that immigrants who arrived in Israel after 1990 are divided into only two groups due to data limitations: those who arrived between 1990 and 1995 and those arriving from 1996 onwards (more detailed immigration data are not available). As can be seen, the Hebrew language proficiency of immigrants who arrive before adolescence (younger cohorts arriving before 1996) is almost equal to that of native speakers. For older immigrants, the process of language acquisition is more complicated. It depends on a host of factors including investment of effort, time, as well as personal abilities. For adults, investing resources in learning a language may also come at the expense of earning a living. It is important to remember that there is marked difference between generations: most of the younger immigrants have acquired their higher education in Israel, while their parents (the older generation) are much more likely to have immigrated to Israel with a certificate of higher education from their country of origin.<sup>8</sup>

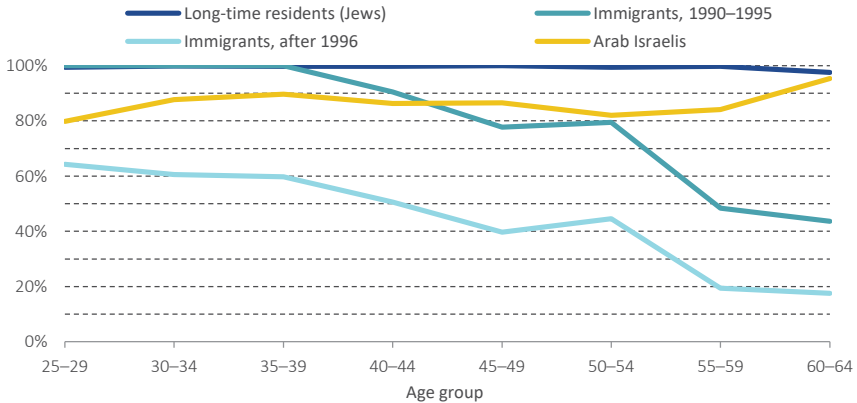
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7 According to the CBS, the statistical areas are relatively small and homogeneous, and can be used to reflect the unique characteristics of areas within the locality. A statistical area usually numbers 3,000–5,000 residents.

8 For example, between the years 2017 and 2019, among immigrants ages 25–29, the percent of those holding an academic degree in Israel stood at about 75 percent, compared with 29 percent in the 45–49 age group, and much lower in older age groups.

**Figure 2. Hebrew proficiency at the good or very good level, 2017–2019**

Academic degree holders



Note: Data are for all academic degree holders including those who do not work.

Source: Haim Bleikh, Taub Center | Data: CBS, Social Survey 2017–2019

A similar phenomenon can be found among Arab Israelis, among whom almost a fifth of graduates received their degrees abroad. For those who studied abroad, their levels of Hebrew proficiency are significantly lower compared to those who studied in Israel.<sup>9</sup> Hebrew language proficiency is very important for those wishing to continue on to higher education in Israel. At the same time, higher education acquired in Israeli institutions may be a vital element for improving proficiency in the Hebrew language. In either case, having Hebrew skills broadens labor market opportunities that further augment mastery of Hebrew (in the form of on-the-job training and the accumulation of human capital) since it brings contact with Hebrew speakers. In contrast, working exclusively in Arab Israeli localities (where little Hebrew is spoken) affects Hebrew language proficiency and restricts labor market prospects in the future.<sup>10</sup>

9 Between 2017 and 2019, 93 percent of Arab Israeli academic degree holders who received their degree in Israel responded that their level of proficiency in Hebrew is either good or very good. The corresponding number of graduates who received their degree abroad is only 74 percent.

10 This is more likely a problem for Arab Israeli women's employment prospects than men's. Most Arab Israeli women in the geographic "triangle" area and in the North work in exclusively Arab Israeli localities (Bleikh, 2017, p.22).

In the context of overeducation, the lack of Hebrew language proficiency can be an obstacle to optimal integration into the labor market. This can be seen in Table 1, which shows the percent of those who are overeducated by level of Hebrew proficiency, sector/immigration status, and age group. Overall, high proficiency in Hebrew is associated with substantially lower rates of overeducation for almost all population groups. Among younger workers, in particular, there are very minor differences between immigrants and native-born Israelis — Jewish and Arab Israelis — when the level of Hebrew proficiency is high. In contrast, much higher rates of overeducation can be seen among younger and older immigrants with poor language skills who came to Israel after 1996. For working-age adults with poor Hebrew skills, overeducation levels differ between population groups and are highest among immigrants from both immigration waves (immigrants between 1990 and 1995 and those who have arrived since 1996). Of course, there are additional factors that are likely to contribute to differences in the levels of overeducation between these population groups, so an adequate level of Hebrew proficiency may be a necessary but not sufficient condition for matching education levels and jobs.

**Table 1. Level of overeducation by Hebrew proficiency, population group, and age**

	Hebrew proficiency <i>Less than good</i>	Hebrew proficiency <i>Good or Excellent</i>	Total
<b>Ages 25–64</b>			
Veteran Jews	—	13%	14%
Immigrants 1990–1995	44%	13%	20%
Immigrants after 1996	62%	27%	45%
Arab Israelis	31%	18%	20%
<b>Total</b>	<b>52%</b>	<b>15%</b>	<b>18%</b>
<b>Ages 25–44</b>			
Veteran Jews	—	14%	14%
Immigrants 1990–1995	—	12%	12%
Immigrants after 1996	55%	26%	37%
Arab Israelis	—	21%	23%
<b>Total</b>	<b>46%</b>	<b>16%</b>	<b>17%</b>
<b>Ages 45–64</b>			
Veteran Jews	—	12%	12%
Immigrants 1990–1995	46%	15%	27%
Immigrants after 1996	67%	29%	55%
Arab Israelis	—	10%	11%
<b>Total</b>	<b>56%</b>	<b>13%</b>	<b>19%</b>

Note: Some of the cells have no data due to small sample size.

Source: Haim Bleikh, Taub Center | Data: CBS, Social Survey 2017–2019

### Age and job tenure

There is general agreement that overeducation is more common among younger people in entry level positions in the labor market due to their lack of suitable professional experience. By taking jobs for which they are overeducated they may be avoiding unemployment scarring, that is, the negative long-term effect that unemployment has on future labor prospects, since many employers consider periods of unemployment a sign of low productivity (Lockwood, 1991). However, with time, workers are expected to

improve their job match (Sicherman & Galor, 1990) although, as discussed previously, there is evidence that shows that overeducation has continuous negative effects on earnings (Romanov et al., 2008).

Other explanations for overeducation include labor market conditions as well as personal circumstances, such as periods of unemployment, family responsibilities (including childcare), decisions to migrate, and geographical restrictions (or mobility issues). All of these factors may push some individuals to voluntarily accept positions for which they are overeducated. Other workers may compromise on less desirable jobs due to fierce competition among highly educated candidates — a direct result of rising education levels across successive cohorts entering the labor market. Each of these factors may also interact with age, including workers nearing retirement, as some people choose to modify their labor patterns in efforts to improve their quality of life (for example, to devote more time their family).

Figure 3a shows the level of overeducation across age groups, and length of current job tenure: those with tenure of 4 years or more (high tenure) and those with less than 4 years (low tenure). Overall, the data display a non-monotonic relationship between overeducation and age. Notably, this is true also after excluding immigrants from the sample (Figure 3b), for whom the risk of overeducation is naturally higher in older age groups. It should be noted that the data presented here describe a sample of individuals at a single point in time (cross-sectional data) which makes it difficult to say how much of this relationship is a product of variables like age, the timing of the survey, or cohort effects.<sup>11</sup> Having said that, the non-monotonic relationship between age and overeducation has been documented in previous research (Alpin et al., 1998; Farooq, 2016). As for the data that do not include immigrants (Figure 3b), among younger individuals (up to age 40), the prevalence of overeducation appears to be higher relative to older age groups. This is possible evidence that overeducation is higher for younger people at the very early stages of their career trajectory, but, as time passes, workers on average improve their job match. On the other hand, for workers who change jobs

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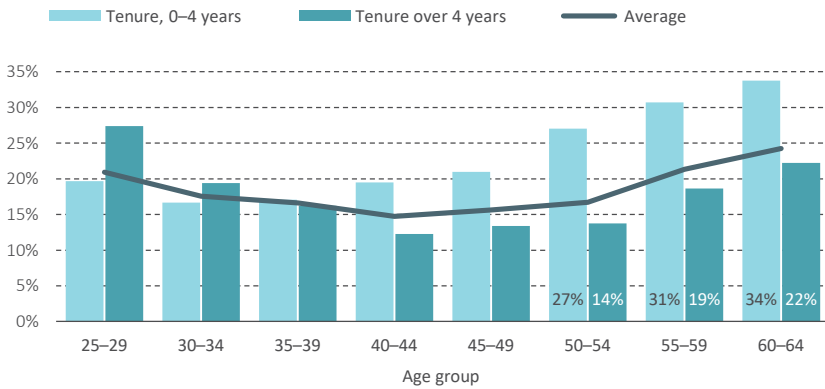
11 Briefly, age effects are linked to changes in individuals' characteristics over their lifetime; period effects describe changes caused by something that occurs at a specific period of time (e.g. economic crisis, economic reforms, etc.); cohort effects describe changes that result from differences between age groups. Under certain circumstances, and dependent upon data availability, these variables can be controlled for (Yang, 2004; Powers, 2012).



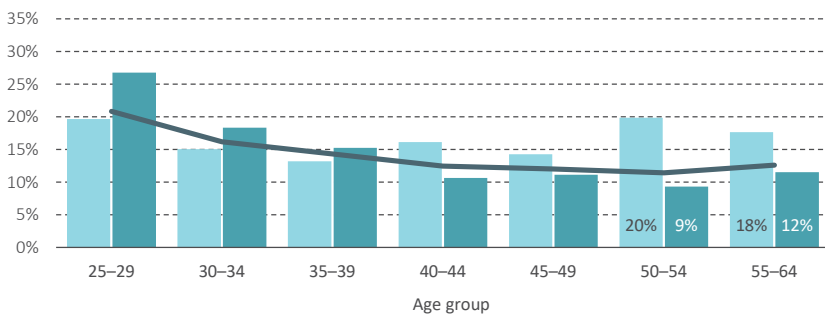
after the age of 45, the likelihood of being overeducated increases with age. It is plausible that skills obsolescence is more pronounced at older ages due to the intense pace of technological changes, a lack of up-to-date knowledge of new skill requirements and a lack of appropriate training. An additional factor contributing to overeducation levels is likely to be ageism, that is, employment discrimination on the basis of age. All of these factors are likely to lead workers to accept employment that is not commensurate with their level of education.<sup>12</sup>

**Figure 3. Overeducation by age and job tenure, 2017–2019**

**a. With immigrants**



**b. Without immigrants**



Note: Age groups 55–59 and 60–64 are combined in Figure 3b due to small sample sizes.

Source: Haim Bleikh, Taub Center | Data: CBS, Social Survey 2017–2019

12 For more details, see Cedefop, 2010; 2012.

## Spatial flexibility

A spatially-based explanation for overeducation was originally proposed by Frank (1978) in the context of coupled households. A more general framework for all workers in the labor market was examined in research by Buchel and van Ham (2003). Generally speaking, commuting costs, and especially time spent commuting, can also explain overeducation since job-seeking behavior is affected by two main factors: the spatial distribution of jobs relative to place of residence, and the individual's spatial flexibility, that is, the willingness to relocate or their commuting tolerance. A worker who is willing to relocate or who has a high tolerance level for commuting is less likely to be overeducated than someone who has neither of these traits. In other words, when individuals search for a job, they likely face one of three possible scenarios: a) unemployment (i.e., continuing the job search); b) employment closer to home with the risk of being overeducated; c) longer commutes or relocation in order to find employment that matches their abilities.

Table 2 describes the relation between overeducation and commuting time. The table shows this relationship separately for different modes of transportation. Overall, there is a negative relationship between commuting time and overeducation. The rates of overeducation are substantially lower among workers who travel to work by car or train whereas among users of public buses, overeducation rates are the highest. The increased use of cars for commuting suggests that it improves the spatial mobility of individuals. In particular, for jobseekers, this allows an increased "search radius" of potential workplaces.

**Table 2. Overeducation and commuting patterns**

By commuting mode and commute time

	Car	Bus	Train	Organized transportation	By foot/bicycle	Other motorized vehicle
Up to 1/2 hour	17%	34%	—	—	23%	19%
30–45 minutes	13%	38%	—	—	—	17%
45–60 minutes	9%	16%	—	—	—	11%
Over an hour	8%	22%	9%	—	—	12%
<b>Average</b>	<b>14%</b>	<b>28%</b>	<b>15%</b>	<b>28%</b>	<b>26%</b>	<b>16%</b>
<b>Relative size of grouping</b>	75%	11%	4%	3%	8%	100%

Note: For workers employed outside of the home. Empty cells reflect small sample size.

Source: Haim Bleikh, Taub Center | Data: CBS, Social Survey 2017–2019

The relationship between commuting patterns and overeducation is complex and multidimensional. Table 3 shows the relationship from an additional perspective, and adds information about the measure of worker satisfaction with commuting time, income, and place of employment. As can be seen, those who are overeducated are less satisfied with their place of employment as well as their income relative to workers with education levels commensurate with their employment. In contrast, commute-time satisfaction of those who are overeducated is greater than those who are not overeducated. This suggests that for some workers who are overeducated, there is a trade-off between job satisfaction (including income) and commuting costs. This is an additional perspective to the central explanation which states that distance or long commute times are likely to be an obstacle to workers in their job search.

**Table 3. Satisfaction with time spent commuting, income from work and workplace**

	Car	Bus	Train	Organized transportation	By foot/ bicycle	Total
<b>Satisfied with the commute time</b>						
Job/education match	60%	41%	34%	56%	98%	<b>60%</b>
Overeducation	71%	60%	—	—	100%	<b>71%</b>
<b>Total</b>	<b>61%</b>	<b>46%</b>	<b>32%</b>	<b>61%</b>	<b>98%</b>	<b>62%</b>
<b>Satisfied with income from work</b>						
Job/education match	69%	60%	75%	70%	71%	<b>68%</b>
Overeducation	57%	38%	—	—	42%	<b>52%</b>
<b>Total</b>	<b>67%</b>	<b>54%</b>	<b>72%</b>	<b>63%</b>	<b>64%</b>	<b>65%</b>
<b>Satisfied with workplace</b>						
Job/education match	93%	91%	95%	88%	94%	<b>93%</b>
Overeducation	88%	77%	—	—	84%	<b>85%</b>
<b>Total</b>	<b>92%</b>	<b>87%</b>	<b>93%</b>	<b>85%</b>	<b>91%</b>	<b>91%</b>

Note: Empty cells reflect small sample size.

Source: Haim Bleikh, Taub Center | Data: CBS, Social Survey 2017–2019

## 5. Multivariate analysis

To this point, the analysis has focused on the relationship between key explanatory variables and overeducation. This section examines the combined impact of these variables through multivariate regressions. To those variables already discussed (Hebrew language proficiency, age, job tenure, commute time, and means of transportation to work) were added variables known to influence labor market behavior and demographic variables. These variables include gender, academic major, employment sector, residential sub-district, marital status, and disability status.

It is important to note that the data may be subject to a sample selection bias: overeducation is only observed for those who work, while some individuals may choose unemployment rather than accept an occupational mismatch. In such a case, a standard regression analysis would underestimate overeducation. In contrast, other workers may choose employment despite their overeducation with the anticipation of acquiring useful skills through on-the-job training, and view it as an investment in their careers. This would make the measure an overestimate. In order to avoid such biases a Probit regression with correction for sample selection is used (Van de Ven & Van Praag, 1981).<sup>13</sup> Regression results are presented in Appendix Table 1. Examination of the data reveals that in some equations it is subject to a selection bias, and hence the use of this statistical procedure ensures more accurate estimates.

A number of key points stand out from the multivariate analysis:

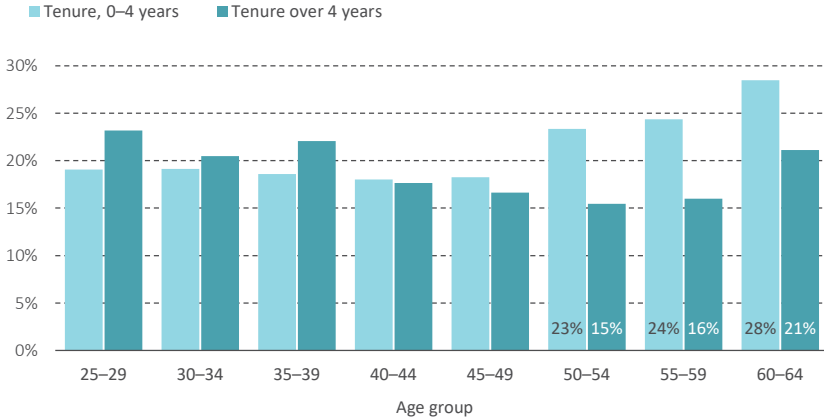
**Age and job tenure.** Figures 4a and 4b present the results for the total population and for the sample that excludes new immigrants, respectively. The regression results are in Appendix Table 2. As can be seen, the “timing” of switching jobs is an important variable. From the figures it can be concluded that switching jobs after age 45 increases the chance of being in a situation of overeducation.<sup>14</sup> This is also the case among the population that does not

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- 13 The procedure includes estimating two equations: an employment equation (i.e., the selection equation) and an overeducation equation. To properly identify the model, it is necessary to find a variable that has an influence on the employment status (i.e., the selection equation) but can be excluded from the overeducation equation. Finding such a variable is difficult because most variables affect both employment and overeducation. The variable selected in this study includes the interaction between gender and the dummy variable for children up to age 5 in the household.
  - 14 In the framework of this study, separate calculations were done for men and women and the results were very similar. The results do not appear in this work.

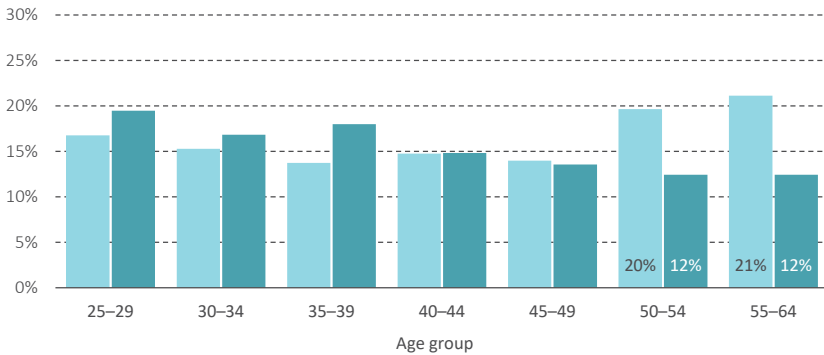
include the new immigrants, although the rates of overeducation among those age 45+ in this population are lower than those of the general population.

**Figure 4. Overeducation by age and job tenure, expected probabilities**

**a. With immigrants**



**b. Without immigrants**



Note: For Figure 4a: The calculation is based on the interaction between age and job tenure in the last place of work. The remaining variables that are controlled for appear in column 1 of Appendix Table 1. The differences between the light and darker columns for the age groups 50 to 64 are statistically significant.

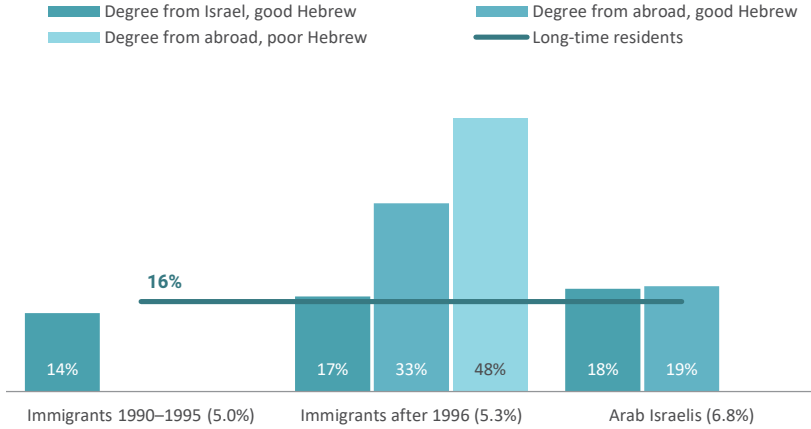
For Figure 4b: The calculation is based on the interaction between age and job tenure in the last place of work. Age groups 55-59 and 60-64 are combined due to small sample sizes. The remaining variables that are controlled for appear in column 7 of Appendix Table 1. The differences between the light and darker columns for the age groups 50 to 64 are statistically significant.

Source: Haim Bleikh, Taub Center | Data: CBS, Social Survey 2015-2019

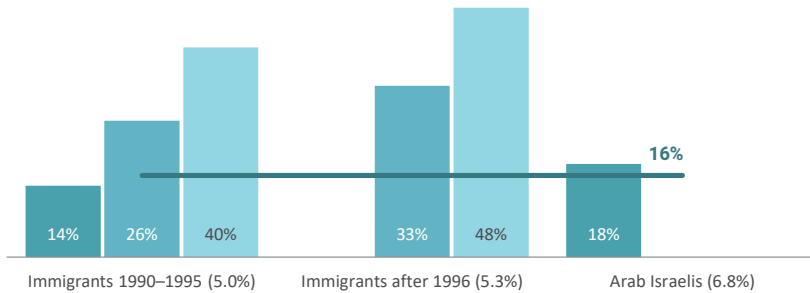
**Language skills and country of higher education.** Figures 5a and 5b divide workers from different population groups by language proficiency, the country where their degree was earned, and age group. The regression results are in Appendix Table 3. Missing groups in the table reflect small sample sizes. The veteran Jewish population group is the reference group marked by the horizontal line. Unlike new immigrants and Arab Israelis, only a negligible share of veteran Jews received their education abroad and there are no issues regarding their language proficiency (as shown in Figure 2). As can be seen, low Hebrew proficiency levels are associated with higher rates of overeducation among immigrants. Immigrants who were educated abroad and do not have a good knowledge of Hebrew have the highest rates of overeducation. This is the case for all older immigrants and for young immigrants who arrived after 1996. The rates of overeducation among the Arab Israeli population are not different from those of the veteran Jewish population. Another prominent group is the group of new immigrants who have good Hebrew language skills and earned their degree abroad. The rate of overeducation among this group is lower than that of foreign-degree recipients with poor Hebrew, but significantly higher than those who acquired their education in Israel with a good knowledge of the language. This result is valid for both older immigrants and younger immigrants who arrived after 1996. This figure actually reflects two influences: the influence of language and the influence of having a foreign degree. It is possible that some of the workers in this group, despite their good knowledge of Hebrew, work in a workplace that does not match their level of education because their academic degrees are not recognized in Israel. Other employees in this group are individuals who were accepted into the workplace after showing good proficiency in Hebrew. Overeducation that is influenced by poor Hebrew proficiency sounds logical when it comes to immigrants who have come to Israel at a relatively older age, but the data show that this phenomenon also exists among young age groups who have many years of work ahead of them. The fairly constant flow of immigrants to Israel highlights the importance of this finding that language skills are crucial for both entering the Israeli labor market and for competing successfully in it.

**Figure 5. Overeducation, Hebrew proficiency, and country where academic degree was earned, expected probabilities**

**a. Ages 25–44**



**b. Ages 45–64**



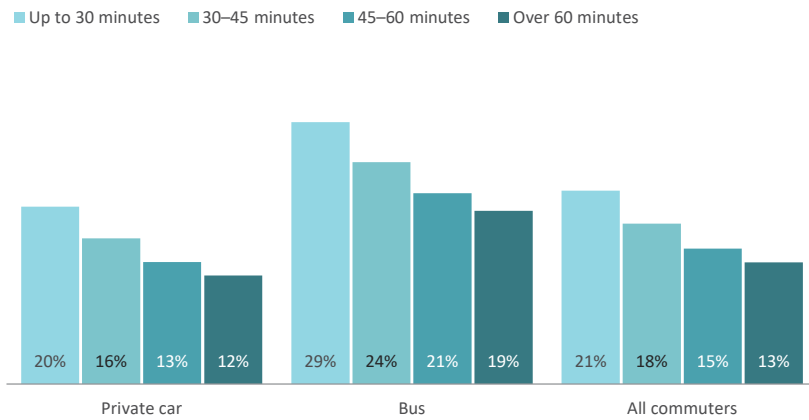
Note: The calculations are based on the interaction between dummy variables of the population group and country where the academic degree was earned. In place of a dummy variable for age groups, a dummy variable for two age groups (25–44 and 45–64) was used. The remaining variables that are controlled for appear in column 1 of Appendix Table 1.

In parentheses, the relative share of the population group out of all salaried employees with an academic degree between the ages of 25 and 64. The share of long-time residents in the younger age group (25–44) out of all employees with an academic degree is 45 percent and their share in the older age group (45–64) it is 26.2 percent. Missing groups reflects a small number of observations.

Source: Haim Bleikh, Taub Center | Data: CBS, Social Survey 2015–2019

**Spatially-based determinants.** The data presented in Figure 6 are for car and bus users: groups for which the number of observations is large enough to allow this analysis. As expected, access to a car for commuting purposes increases the spatial mobility of workers and, as a result, contributes to a reduction in overeducation levels. In addition, workers with shorter commute times are more likely to experience overeducation. This result indicates that the costs of spatial mobility (especially commuting time) is another potential explanation for overeducation.

**Figure 6. The relation between overeducation and commute time, expected probabilities, 2015–2019**



Note: The calculation is based on the regression coefficients from column 1 of Appendix Table 1.  
Source: Haim Bleikh, Taub Center | Data: CBS, Social Survey 2015–2019

**Gender.** Overeducation levels are higher among women. There is a gap of about 3 percentage points, both for a sample that includes the entire population and without new immigrants. This result can be explained by the fact that women may attribute more weight to occupational characteristics that allow for a better combination of work and activities related to household management. For example, 61 percent of married women with an academic degree work within a half-hour drive of the place of residence, compared to 49 percent of men.



## 6. Conclusion

The rise in higher education levels in Israel has any number of social and economic implications. The advantage is that people with more education are generally healthier and have higher employment rates as well as higher incomes. From an economic perspective, an investment in higher education is counted among the factors that contribute to increased labor productivity as well as economic growth. Nevertheless, in Israel, in the past few years, about 17.5 percent of those with an academic degree are classified as overeducated, that is, employed in a position that does not require a higher degree. This means that private and public resources are invested in earning and accessing higher education which is not later used optimally in the labor market, actually decreasing the return on investment.

Following the notable rise in education levels in the past decades, the issue of overeducation has become more and more relevant in public discourse especially surrounding the issue of study majors and the implications for future graduates. This study, however, focuses on three other explanations for the phenomenon. The following is a brief review of the study findings.

Hebrew language proficiency is of critical importance to employment as well as entrance and optimal integration into the labor market. Israel is particularly aware of this issue since the country constantly welcomes new immigrants. This research focuses on younger immigrants (ages 25–44) who arrive in Israel with a foreign degree. The findings indicate that overeducation among young immigrants arriving with a higher degree and good Hebrew language skills is expected to be about 15 percentage points lower than for those with poor language skills. This is a particularly important finding since immigrants arriving at a young age to Israel can expect to work for many years.

Changing jobs after the age of 45 substantially increases the likelihood of overeducation in this population group. This is the case even after immigrants arriving to Israel in the 1990s are removed from the sample. It is likely that the intensive pace of technological changes, as well as the lack of new skills and continuing training, cause some of these individuals to take positions that are not commensurate with their education levels. An additional factor contributing to overeducation levels is likely to be ageism, that is, discrimination on the basis of age.

Accessibility to employment opportunities is dependent to a large extent on spatial matching between suitable employment and residential location and the spatial flexibility of workers (that is, whether an individual is willing to relocate or spend more time commuting). This study examines the relationship between overeducation and commuting characteristics. The results indicate that the level of overeducation decreases with a rise in commuting time. For those using private cars, the level of overeducation is the lowest. The increased use of private cars shows that this mode of transportation improves the spatial mobility of individuals increasing the radius of the job search and improving the likelihood of finding employment that requires an education level that matches those seeking employment.

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## Appendix

**Appendix Table 1. Regression analysis: Factors affecting overeducation and employment**

Probit model with correction for sample selection

	Overeducation equation, all workers (1)	Selection equation, all workers (2)	Overeducation equation, men (3)	Selection equation, men (4)	Overeducation equation, women (5)	Selection equation, women (6)	Overeducation equation, without immigrants (7)	Selection equation, without immigrants (8)
<b>Age (Base: 25–29)</b>								
30–34	-0.0093	0.436***	-0.117	0.696***	0.0167	0.278**	-0.0747	0.465***
35–39	0.033	0.436***	-0.0337	0.814***	0.0307	0.175	-0.0715	0.505***
40–44	-0.0917	0.595***	-0.166	0.789***	-0.0514	0.438***	-0.142	0.649***
45–49	-0.0963	0.670***	-0.22	0.828***	0.0349	0.510***	-0.185*	0.654***
50–54	-0.0458	0.723***	-0.206	0.667***	0.172	0.765***	-0.121	0.722***
55–59	0.0101	0.497***	-0.216	0.652***	0.290**	0.332**	-0.17	0.482***
60–64	0.260**	-0.0204	0.232	0.106	0.364**	-0.256	-0.00117	-0.0631
<b>Population group (Base: Long-time residents)</b>								
Immigrants 1990–1995	0.0314	0.403***	0.0249	0.495***	0.04	0.357***		
Immigrants from 1996	0.349***	0.284**	0.450***	0.0382	0.346***	0.414***		
Arab Israelis	0.132	-0.15	0.213*	0.178	-0.0215	-0.424***	0.224**	-0.103
<b>Women</b>	0.171***						0.154***	
<b>Married</b>	-0.0902	-0.359***	-0.291***	0.0565	-0.0326	-0.597***	-0.159**	-0.357***

**Appendix Table 1 (continued). Regression analysis**

	Overeducation equation, all workers (1)	Selection equation, all workers (2)	Overeducation equation, men (3)	Selection equation, men (4)	Overeducation equation, women (5)	Selection equation, women (6)	Overeducation equation, without immigrants (7)	Selection equation, without immigrants (8)
<b>With disabilities</b>	0.205**	-0.581***	0.396***	-0.893***	0.0352	-0.390***	0.273**	-0.584***
Full-time employment	-0.271***		-0.260*		-0.289***		-0.266***	
Employee	0.0628		-0.072		0.14		-0.00851	
<b>Job tenure (Base: Less than 1 year)</b>								
1–4 years	-0.0258		0.0201		-0.0174		0.00565	
5–9 years	-0.0382		-0.00661		-0.0494		0.0102	
10–14 years	-0.00187		0.143		-0.118		0.0454	
15–19 years	-0.0672		-0.0472		-0.114		0.0618	
20–24 years	-0.17		-0.0387		-0.312**		-0.0666	
25 years or more	-0.353***		-0.317*		-0.424**		-0.232	
<b>Academic degree (Base: BA)</b>								
MA	-0.568***	0.158***	-0.540***	0.0972	-0.560***	0.187**	-0.683***	0.126*
PhD	-0.982***	0.537***	-1.107***	0.374*	-0.932***	0.612**	-0.822***	0.716***
<b>Degree earned abroad</b>	0.364***	-0.526***	0.311***	-0.622***	0.347***	-0.461***	0.103	-0.470***
<b>Hebrew proficiency good or excellent</b>	-0.593***	0.175*	-0.734***	-0.0751	-0.462***	0.305**	-0.328*	0.526***

**Appendix Table 1 (continued). Regression analysis**

	Overeducation equation, all workers (1)	Selection equation, all workers (2)	Overeducation equation, men (3)	Selection equation, men (4)	Overeducation equation, women (5)	Selection equation, women (6)	Overeducation equation, without immigrants (7)	Selection equation, without immigrants (8)
<b>Additional wage earners in household (Base: no wage earners)</b>								
1	-0.155*	1.592***	-0.235***	0.886***	0.104	2.041***	-0.0277	1.613***
2+	0.0531	0.164**	-0.00149	-0.0787	0.197*	0.222***	0.0413	0.236***
<b>Commute time (Base: Up to 30 minutes)</b>								
30–44 minutes	-0.188***		-0.146*		-0.222***		-0.166**	
45–59 minutes	-0.345***		-0.453***		-0.220**		-0.285***	
60+ minutes	-0.443***		-0.371***		-0.593***		-0.360***	
<b>Mode of transportation (Base: car)</b>								
Bus	0.419***		0.377***		0.441***		0.341***	
Train	0.231*		0.409**		0.112		0.317**	
Organized transportation	0.260**		0.314**		0.128		0.0139	
By foot/bicycle	0.216***		0.260**		0.242**		0.0872	
<b>Academic field of study (Base: Humanities, languages, literature, other)</b>								
Education and teaching	-0.359***	0.313***	-0.669***	-0.19	-0.207*	0.436***	-0.353***	0.326***
Arts	-0.592***	0.096	-0.719***	-0.423	-0.489***	0.305	-0.618***	0.0978
Social sciences	-0.231**	-0.0484	-0.316**	-0.34	-0.158	0.0362	-0.236**	-0.0123



**Appendix Table 1 (continued). Regression analysis**

	Overeducation equation, all workers (1)	Selection equation, all workers (2)	Overeducation equation, men (3)	Selection equation, men (4)	Overeducation equation, women (5)	Selection equation, women (6)	Overeducation equation, without immigrants (7)	Selection equation, without immigrants (8)
Business, administration	-0.435***	0.128	-0.532***	-0.126	-0.311**	0.15	-0.435***	0.191
Law	-0.700***	0.011	-0.556***	-0.136	-0.888***	-0.0364	-0.830***	0.0258
Medicine	-1.319***	0.226	-1.575***	0.149	-1.203***	0.256	-1.541***	0.0748
Paramedical professions	-1.120***	0.504***	-1.328***	0.434	-1.019***	0.545***	-0.913***	0.453***
<b>Academic field of study (Base: Humanities, languages, literature, other)</b>								
Mathematics, statistics, computer science	-0.575***	-0.0156	-0.731***	-0.375	-0.457**	0.215	-0.664***	-0.104
Physical sciences	-0.341*	0.0133	-0.613**	-0.133	-0.0697	0.0441	-0.342	-0.124
Biological sciences	-0.133	0.0339	0.0111	-0.48	-0.223	0.203	-0.0296	0.0218
Engineering, architecture	-0.640***	0.258**	-0.783***	0.113	-0.526***	0.201	-0.829***	0.303**
<b>Industry (Base: Manufacturing)</b>								
Wholesale/Retail trade; vehicle repair	0.549***		0.535***		0.507***		0.477***	
Information, communication	-0.911***		-0.782***		-1.088***		-0.872***	
Financial and insurance services	0.332***		0.179		0.373***		0.304***	
Professional services, science and technicians	-0.930***		-1.169***		-0.817***		-0.948***	
Local administration, public administration and security; National insurance Institute	0.328***		0.603***		0.027		0.337***	

**Appendix Table 1 (continued). Regression analysis**

	Overeducation equation, all workers (1)	Selection equation, all workers (2)	Overeducation equation, men (3)	Selection equation, men (4)	Overeducation equation, women (5)	Selection equation, women (6)	Overeducation equation, without immigrants (7)	Selection equation, without immigrants (8)
Education	-1.164***		-1.060***		-1.292***		-1.184***	
Healthcare and welfare services	-0.569***		-0.345**		-0.731***		-0.726***	
Other	0.450***		0.573***		0.249**		0.461***	
<b>District (Base: Jerusalem district)</b>								
Safed, Kinneret, Golan	0.0139	0.358*	-0.0465	0.247	0.0356	0.453*	-0.149	0.234
Jezreel	0.0611	-0.032	0.00247	-0.169	0.0844	0.0215	-0.0522	-0.174
Acco	-0.00685	-0.186	-0.0203	-0.262	-0.0186	-0.112	-0.224	-0.273
Haifa	0.168*	0.034	-0.00751	0.313	0.263**	-0.13	0.0463	-0.0966
Hadera	0.213*	-0.103	0.131	0.0126	0.239	-0.224	0.107	-0.234
The Sharon	0.0104	-0.0816	-0.0316	-0.101	0.0394	-0.128	-0.0917	-0.194
Petah Tikvah	0.0722	0.00094	0.108	0.173	-0.0102	-0.0966	0.0331	-0.0583
Ramla	-0.0571	-0.00521	-0.125	0.126	0.0157	-0.167	-0.172	-0.174
Rehovot	0.01	-0.00339	0.136	0.181	-0.0883	-0.107	-0.0694	-0.141
Tel Aviv	-0.137	-0.0489	-0.231*	0.168	-0.105	-0.199	-0.231**	-0.162
Ashkelon	0.0619	0.062	0.176	0.0673	-0.0184	0.054	-0.0726	0.0572
Be'er Sheva	0.00413	-0.00727	0.137	-0.166	-0.116	0.191	-0.119	-0.199
Judea, Samaria	0.0739	-0.0593	0.166	-0.272	0.00702	0.0728	0.0475	-0.0816

**Appendix Table 1 (continued). Regression analysis**

	Overeducation equation, all workers (1)	Selection equation, all workers (2)	Overeducation equation, men (3)	Selection equation, men (4)	Overeducation equation, women (5)	Selection equation, women (6)	Overeducation equation, without immigrants (7)	Selection equation, without immigrants (8)
<b>Survey year (Base: 2015)</b>								
2016	0.0938	-0.0579	0.0184	0.187	0.136	-0.201**	0.0904	-0.0449
2017	0.0177	-0.0908	-0.167*	0.0626	0.145*	-0.213**	0.0156	-0.101
2018	-0.0302	7.143***	-0.135	7.302***	0.0636	7.262***	-0.0484	6.988***
2109	-0.0147	0.00271	-0.156*	0.117	0.0658	-0.0593	-0.0216	-0.0147
<b>Selection variable</b>								
Women		-0.233***						-0.272***
With children under age 5		0.533***		0.272**		-0.229**		0.548***
Women x children under age 5		-0.792***						-0.756***
<b>Constant</b>	0.652***	0.361*	1.304***	0.568*	0.284	0.238	0.601**	0.0844
<b>rho (p)</b>	-0.336*		-0.645***		0.057			-0.185
<b>Number of observations</b>	8,186		3,525		4,661		6,465	

Note: Significance levels: \* p < 0.1; \*\* p < 0.05; \*\*\* p < 0.01.

Source: Haim Bleikh, Taub Center | Data: CBS, Social Survey 2015–2019

**Appendix Table 2. The influence of timing of job change on overeducation:  
The interaction between job tenure and age**

Overall population		
	Low tenure (up to 4 years)	-0.201
Age	30–34	-0.130
	35–39	-0.0519
	40–44	-0.278*
	45–49	-0.335**
	50–54	-0.403**
	55–59	-0.372**
	60–64	-0.0972
Interaction	Low tenure x 30–34	0.132
	Low tenure x 35–59	0.0256
	Low tenure x 40–44	0.223
	Low tenure x 45–49	0.292
	Low tenure x 50–54	0.613***
	Low tenure x 55–59	0.629***
	Low tenure x 60–64	0.532**
Number of observations		8,186
Without immigrants		
	Low tenure (up to 4 years)	-0.140
Age	30–34	-0.136
	35–39	-0.0741
	40–44	-0.247
	45–49	-0.324*
	50–54	-0.394**
	55–64	-0.395**
	Interaction	Low tenure x 30–34
Low tenure x 35–39		-0.0981
Low tenure x 40–44		0.135
Low tenure x 45–49		0.166
Low tenure x 50–54		0.543**
Low tenure x 55–64		0.614***
Number of observations		6,465

Note: Controlled variables as per the model in Appendix Table 1, columns 1 and 7.

Significance levels: \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .

Source: Haim Bleikh, Taub Center | Data: CBS, Social Survey 2015–2019

**Appendix Table 3. The influence of Hebrew language proficiency and country where academic degree was earned on overeducation**

<b>Hebrew proficiency</b>	Good or excellent	-0.526***
<b>Academic degree</b>	Earned abroad	0.0604
<b>Immigrant status</b>	Immigrants 1990–1995	-0.0446
	Immigrants after 1996	0.12
	Arab Israelis	0.188**
<b>Interaction</b>	Immigrants 1990–1995 x Degree abroad	0.550***
	Immigrants after 1996 x Degree abroad	0.648***
	Arab Israelis x Degree abroad	-0.0371
<b>Number of observations</b>		8,186

Note: Controlled variables as per the model in Appendix Table 1, column 1.

Significance levels: \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .

Source: Haim Bleikh, Taub Center | CBS, Social Survey 2015–2109

**Appendix Table 4. Research variables: Descriptive statistics among degree holders, ages 25–64**

	Relative frequency (%)	Number of observations
<b>Gender</b>		
Men	44.9	3,504
Women	55.1	4,306
<b>Age group</b>		
25–29	10.3	801
30–34	17.7	1,384
35–39	16.8	1,314
40–44	16.4	1,278
45–49	13.1	1,025
50–54	9.9	775
55–59	8.8	688
60–64	7.0	545
<b>Population group</b>		
Long-time residents	69.4	5,421
Immigrants 1990–1995	11.2	875
Immigrants after 1996	9.4	733
Arab Israelis	10.0	781

**Appendix Table 4 (continued). Research variables: Descriptive statistics**

	Relative frequency (%)	Number of observations
<b>Family status</b>		
Married	76.5	5,975
Unmarried	23.5	1,835
<b>Physical limitations or disabilities</b>		
No disabilities	95.6	7,463
With disabilities	4.4	347
<b>Employment status</b>		
Full-time position	85.4	6,594
Part-time position	14.6	1,126
<b>Employment status</b>		
Employee	86.0	6,715
Self-employed	14.0	1,092
<b>Tenure at current place of employment</b>		
Less than a year	9.1	707
1–4 years	34.2	2,665
5–9 years	20.8	1,623
10–14 years	13.1	1,023
15–19 years	8.8	686
20–24 years	7.1	553
Over 25 years	6.8	532
<b>Academic degree</b>		
BA	62.3	4,867
MA	34.5	2,692
PhD	3.2	251
<b>Country where academic degree was earned</b>		
Israel	83.3	6,422
Abroad	16.7	1,286
<b>Hebrew language proficiency</b>		
Good or excellent	91.2	7,121
Less than good	8.8	689
<b>Wage earners in household</b>		
No wage earners	21.2	1,653
1	67.1	5,243
2+	11.7	914
<b>Commute time to work</b>		
Up to 30 minutes	52.0	4,040

**Appendix Table 4 (continued). Descriptive statistics**

	Relative frequency (%)	Number of observations
30–44 minutes	17.3	1,343
45–59 minutes	13.0	1,012
Over 60 minutes	10.9	844
Work from home, no set amount of time	6.9	537
<b>Mode of transportation to work</b>		
Car	71.0	5,519
Bus	10.6	822
Train	3.3	259
Organized transportation	3.1	238
By foot/bicycle	7.3	564
Other, work from home	4.9	377
<b>Academic field of study</b>		
Social sciences	18.8	1,449
Humanities, languages, literature other	5.9	454
Physical sciences	1.9	144
Business administration	14.9	1,145
Arts	3.4	262
Engineering, architecture	16.1	1,240
Education, teaching	14.5	1,117
Mathematics, statistics, computer science	5.0	383
Biological sciences	3.1	236
Law	6.4	494
Paramedical professions	4.9	376
Medicine	2.9	226
<b>Industry</b>		
Manufacturing	9.6	739
Wholesale/Retail trade; vehicle repair	6.7	511
Information and communication	8.6	663
Financial and insurances services	5.6	427
Professional services, science and technicians	13.5	1,039
Local/public administration/security; NII	6.4	493
Education	21.7	1,668
Healthcare and welfare services	14.3	1,097
Other	13.6	1,048

Source: Haim Bleikh, Taub Center | Data: CBS, Social Survey 2015–2019