

OVEREDUCATION IN POLAND. THE GROWING COMPETENCY MISMATCH IN THE LABOUR MARKET

Marta Żywiolek-Szeja

University of Economics in Katowice
Faculty of Economics, Department of Labour Market Forecasting and Analysis
1 Maja Street 47, 40-287 Katowice, Polska
E-mail: marta.zywiolek@edu.uekat.pl

***Abstract:** The article is a discussion on the main current problem of the Polish labour market, which despite the record low unemployment rate, faces the problem of competence mismatch, and in particular one of its forms - the phenomenon of overeducation. The topic of overeducation and an attempt to identify the causes of this phenomenon seems very important and justified mainly due to the dynamically growing population with higher education and the potential negative effects of the phenomenon of overeducation on the labour market. The main research questions are: “what is the characteristic of overeducation?”, “what is the scale and dynamics of overeducation in Poland?”, “what are the reasons for the occurrence of overeducation in Poland?”. The analysis cover the period between 2005 and 2018, the main source of data using in this article is from the Polish GUS. The paper aims to present the phenomenon of overeducation in Poland which seems to grow and occur on a large scale, is permanent and affects mainly young people with higher education.*

***Key words:** overeducation, overqualification, underemployment, competency mismatch*

***JEL codes:** J00, J20, J22, J23*

1. Introduction

Poland reached another record low level of unemployment, as reported by GUS at the end of November 2019. The unemployment rate registered in October 2019 was 5% and has not been so low since 1990. Unfortunately, contrary to appearances, low unemployment is not the only indicator determining the good situation on the Polish labor market - new jobs do not eliminate its main problem, which is the competence mismatch, and in particular - overeducation.

The paper aims to present the phenomenon of overeducation as one of the forms of competency mismatch that occurs in Poland on a large scale, is permanent and affects mainly

young people with higher education. The main research questions are: "what is the characteristic of overeducation?", "what is the scale and dynamics of overeducation in Poland?", "what are the reasons for the occurrence of overeducation in Poland?". The topic of overeducation and an attempt to identify the causes of this phenomenon seem very important and justified mainly due to the dynamically growing population with higher education and the potential negative effects of the phenomenon of overeducation on the labor market.

2. Methodology and Data

The article has a descriptive and analytical character.

The paper consists of a theoretical part developed based on selected English and Polish-language literature. The empirical analysis is based on data from Polish national statistical databases (GUS) including the years 1995 – 2018 (in case of the number of people with higher education) and the years 2009-2018 (in case of demand for work) and data from Polish Occupational Barometer – the forecast for 2019. Also, empirical material used in the paper comes from data collected by other researches who have dealt with overeducation in their works.

3. Results and Discussion

3.1. Literature Review

The phenomenon of overeducation cannot be considered in isolation from the wider phenomenon of underemployment, of which overeducation is a very important part. Underemployment is one of the forms of competency mismatch that forms part of hidden unemployment that is not recorded in official statistical records. Feldman (1996) defines underemployment as a situation where a person is in a part-time job instead of a full-time job, or who has a 'contract' job instead of an employment contract, or has a level of education or qualifications that is too high to the current job. Similarly, according to the definition of the International Labour Organization (ILO, 1998), underemployment can be considered in two categories. Firstly, as an explicit part of the phenomenon, i.e. time-related underemployment, affecting employees who are employed less often than they would like and would be able to work. Secondly - hidden and difficult to define and estimate, i.e. inadequate employment, which affects employees who, despite being employed, would like to work "better" or more "adequately". Bureau Labor Statistics (BLS, 2010) distinguishes two reasons for underemployment - slack work or business at a current firm or an inability to find a full-time

job. Skórska (2018) stresses that although underemployment may take different forms, the two most prevailing of them are an underutilization of skills (invisible underemployment) and underutilization of labor (visible underemployment) - presented in Tab. 1.

Tab. 1 Forms of underemployment

Overqualification, overeducation	Involuntary parttime work
<ul style="list-style-type: none"> • It includes workers with a higher level of education and/or job experience who are employed in occupations that do not require such qualifications. • It also may appear when individuals are employed in a field outside of their area of formal education or expertise whether or not the level of educational attainment is a good match to employment requirements. • It is often called “an invisible underemployment” because the data collection tools do not gather information on the degree of matching between the level of an individual’s skills and the requirements of the job they perform. 	<ul style="list-style-type: none"> • It occurs when workers are willing and able to supply their labor full-time but work in part-time jobs as they could not find full-time employment. • It is often called a “visible underemployment” as many indicators exist to capture this phenomenon.

Source: Skórska (2018), *Youth Underemployment or Unemployment? The Global Challenge in the 21st Century, 19th International Joint Conference Central and Eastern Europe in the Changing Business Environment*, p. 308.

The term overeducation is often used in literature interchangeably with the terms competency mismatch, qualification mismatch, skill mismatch, overqualification, occupational mismatch or overtraining. It might be confusing because different terms are used to describe the same phenomenon, which is the mismatch between the level of education and qualifications of workers and the level of education and qualifications required for their jobs. In this article the term overeducation will be used, as in the opinion of the author as the best reflecting the essence of the phenomenon - too high level of education to the workplace is objectively measurable, however, in contrast to too broadly understood qualifications or competences, which to a large extent are very subjective.

Authors Schierman (1991), Halaby (1994), Groot & Brink (2000), McGuinness (2006), Dolton & Vignoles (2000), Hartog (2000), Chevalier (2003) define overeducation as a situation in which employees find themselves if their skills exceed those required for their job position. Groot and Brink (2000) also point to four ways of defining skill mismatches that can be classified as objective and subjective. The first group of definitions is based on the self-assessment of employees who directly answer the question of whether they are under- or overeducated, or what is the minimum level of education in a given job position (in this case, the required level of education is compared with the actual level of education to determine whether employees are overeducated or not). Objective definitions can also be divided into two groups: in the first, overeducated is defined by comparing the number of years of education of an employee with the average number of years of education of an employee in a given occupation; in the second, it is based on a comparison of the actual education level and the requirements of the employment level. The Hartog (2000) indicates the following 3 ways of measuring this phenomenon: from job-analysis, from worker self-assessment and realized matches.

3.2. Reasons for overeducation

The main reason for the occurrence of overeducation is the imbalance in the labor market and the mismatch between the supply of employees with higher education and demand, i.e. too few jobs for well-educated employees (Nagel, 2016). This is mainly due to a very dynamic increase in the number of people with tertiary education, which does not keep up with the demand for a highly qualified workforce (Groot & Brink, 2000). According to job competition theory (Thurow, 1972), there is increasing competition among graduates since there are too few jobs offered by employers that are adequate for higher education and qualifications. In the recruitment process, employers are guided by the conviction that the better educated and qualified employees, the higher their productivity, and as a consequence, they prefer people with the highest possible education, even if it is not necessary to perform work at a specific position. In the longer term, this will result in these jobs becoming de facto 'highly skilled' jobs, as unskilled workers are unable to get them and they too will be subject to the pressure of even higher education to keep up. As a consequence, there will be a shortage of workers for low-skilled jobs (McDonald, 2011).

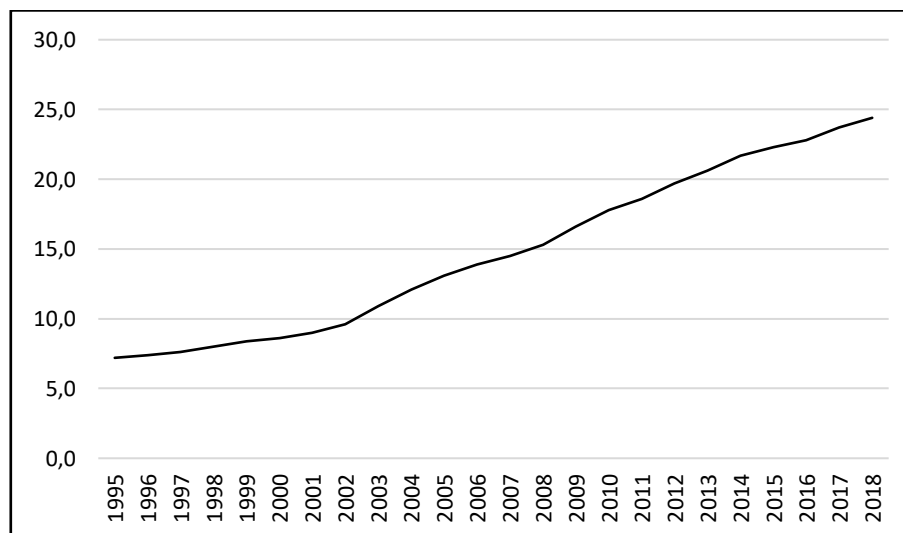
Another reason for the occurrence of the phenomenon of overeducation indicated in the literature is the decline in the quality of educational services through a large number of

universities (especially private ones), which compete with each other and reduce the quality of their offer. As a result, the level of education is diversified, which also leads to the diversification of human capital among graduates. These differences are verified on the labor market, because the skills and opportunities to do the same job and the individual characteristics of graduates with the same level of education may be different. Therefore, it is justified to employ people below their qualifications (Wronowska, 2017).

3.3. Overeducation in Poland

The description of the overeducation phenomenon should be started from the analysis of the share of people with higher education in the total population - the data are presented in Fig. 1. The percentage of people with higher education increased in the whole analyzed period of 1995-2018. In 2018, one-fourth of the population over 15 years of age in Poland had higher education, while in 1995 it was 7%, which means that the population of Poland with higher education tripled.

Fig. 1 Percentage of the population aged 15 and over with higher education in Poland in the years 1995-2018.



Source: own calculations based on data from the Bank Danych Lokalnych (www2).

The reasons for this phenomenon should be seen in particular in the pro-egalitarian orientations of a democratic society, which focused on education, considered to be the main channel of institutionalized social mobility, resulting in education and, in particular, higher education. According to Malewski (2011), it was the political freedom won that enabled the realization of egalitarian aspirations and open articulation of equality claims, as a result of which the limited access to higher education was extended, and today there are no barriers to

obtaining a university diploma. Besides, the rapid growth of the population with higher education was caused by the expansive development of the private sector educational services at the higher level, the desire to have a higher social status and prestige (also the increase in the educational expectations of parents towards children), higher earnings, better work, or the desire to prolong the educational process (Wronowska, 2017).

Analyzing the data concerning the share of people with higher education, one can get the impression that egalitarianism was achieved in education. However, it seems that success in this area would mean equal opportunities for a professional career and the possibility of success, and not only obtaining diplomas. If the increase in the supply of well-educated and qualified young people is not accompanied by an increase in the demand for highly qualified jobs, we can expect academic inflation¹ in addition to overeducation.

There are indications that the Polish labor market has not kept pace with the absorption of the dynamically growing population with higher education. First of all, it results indirectly from the research on labor demand, which has been conducted by the Central Statistical Office since the second half of the 1990s. Part of this research is an analysis of job vacancies created as a result of increased demand for labor. For this article, the results of the research on job vacancies from 2009-2018² were analyzed - the data are presented in Tab. 2.

Tab. 2. Vacancies by selected NACE sections in Poland 2009-2018

Specification (in thousands)	Annual average										Growths	
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Relative	Absolute (%)
TOTAL	65.8	69	59.6	45.9	43.4	56.3	71.6	89.3	122.5	153.4	87.6	133.13
Manufacturing	13.7	16.8	14.6	11.4	9.6	13.7	16.3	22.2	31.4	38.7	25	182.48
Construction	9.9	11.1	9.4	5.1	4.5	5.5	7.3	9.5	19	24.5	14.6	147.47
Trade; repair of motor vehicles	11.3	11.4	10.7	7	7.4	9.5	14.8	16.7	19	26.2	14.9	131.86
Transportation and storage	4	5.3	3.8	3.8	3	4.7	6.4	7.5	10.9	12.9	8.9	222.5

¹ The term academic inflation refers to the inflation of money when too much currency supply causes a decrease in the purchasing power of money. Academic inflation occurs when too many university graduates apply for too few jobs that require titles. This causes an increase in the requirements of employers, which in turn contributes to an increase in competition between university graduates and the need to acquire higher education - postgraduate or doctoral studies even though so far they have not been necessary to gain employment and are not adequate to the type of work performed.

² The analysis of studies from previous years will not be performed due to the impossibility of comparing the results of studies from before and after 2007 - there were changes in PKD classification in 2007.

Accommodation and catering	2.4	2.4	2.1	1.5	1.8	2.9	3.1	4.1	5.1	6.1	3.7	154.17
Information and communication	1.9	2.4	2.6	2.7	3.5	4.1	5	5.7	6.2	7.4	5.5	289.47
Financial and insurance activities	1.6	1.4	1.5	1.9	1.2	1.8	1.9	2.4	3	2.5	0.9	56.25
Real estate activities	-	-	-	-	-	-	-	-	1.3	1.3	1.3	-
Professional, scientific and technical activities	2.4	2.8	2.7	2.4	2.6	3.8	4.3	6.1	6.1	7.7	5.3	220.83
Administrative and support service activities	2.8	3.1	2	1.9	1.9	2	2.8	3.1	5.4	5.7	2.9	103.57
Public administration and defence; compulsory social security	6.1	4.3	3.6	2.9	2.6	2.7	3.2	3.6	4.1	5.5	-0.6	-9.84
Education	1.6	1.3	1	0.7	0.9	1	1.1	1.4	2	3.2	1.6	100
Human health and social work activities	3.5	2.7	2.3	1.8	2.1	1.8	2.5	3.1	4.4	6.2	2.7	77.14
Arts, entertainment and recreation	0.8	0.7	0.5	0.5	0.4	0.5	0.5	0.6	0.8	0.9	0.1	12.5
Other service activities	1.3	1.2	0.9	0.5	0.5	0.7	0.8	1.1	1.8	2.3	1	76.92

Source: own study based on archive data from GUS Demand for labor in the years 2009-2018.

The largest number of vacancies was in the case of entities operating in the field of industrial processing, which created as many as 25% of vacancies. Also, the growth of vacancies in the processing sector was characterized by quite high dynamics - the number of vacancies almost doubled in the analyzed period. A large number of vacancies were also recorded in trade and repair of motor vehicles - 17%, in construction - 16%, as well as in transport and warehouse management - 8%. It follows that more than half of all vacancies are in low-skilled jobs, which means that a further rapid increase in the share of people with higher education in the total workforce may contribute to a significant mismatch with the Polish labor market and perpetuate the phenomenon of overeducation.

Tab. 3. Vacancies in occupations in Poland 2009-2018

Specification (in thousands)	Annual average										Growths	
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Relative	Absolute (%)
TOTAL	65.8	69	59.6	45.9	43.4	56.3	71.6	89.3	122.5	153.4	87.6	133.13
Managers	1.7	1.5	2.4	1.9	1.8	2.1	2.4	3	3.2	3.6	1.9	111.76
Professionals	14.4	13.3	10.5	9.7	9.9	11.8	13.7	16	19.1	24.4	10	69.44
Technicians and associate professionals	7.5	8.9	4.8	1.9	1.8	2.6	6.4	6.6	8	10.1	2.6	34.67
Clerical support workers	6.2	6.6	6.3	4.9	4.5	6.5	8	10.3	11.6	15	8.8	141.94
Service and sales workers	6.9	6.2	7.2	5.8	5.3	6.8	9.3	11.8	15.1	17.8	10.9	157.97
Skilled agricultural, forestry and fishery workers	0.3	0.3	0.1	0.2	0.1	0.1	0.1	0.2	0.3	0.2	-0.1	-33.33
Craft and related trades workers	15.8	16.2	16.4	10.6	9.1	12.5	15.1	21.6	35.8	43.8	28	177.22
Plant and machine operators and assemblers	6.9	7.9	8	6.1	6.3	8.1	11.2	13.5	20.1	25.1	18.2	263.77
Elementary occupations	6.1	8.1	3.9	2.8	2.5	3.5	5.6	6.3	9.4	13.4	7.3	119.67

Source: own study based on archive data from GUS Demand for labor in the years 2009-2018.

Similar conclusions can be drawn by analyzing job vacancies by occupation (Tab. 3). The highest number of job vacancies - over 25% of all offers - in 2018 concerned industrial workers and craftsmen. Demand for workers in this area was constantly growing in the analyzed period and was characterized by quite high growth dynamics - it almost doubled in the last 10 years. The second-largest group of occupations in terms of vacancies were machine operators and assemblers of machinery and equipment. Specialists were ranked third in terms of the number of vacancies, but the number of vacancies for this group did not increase as quickly in the analyzed period as among the groups of occupations requiring low qualifications, and especially among the operators of machine and equipment fitters, where an almost fourfold increase was observed in comparison with 2018 and 2009.

Tab. 4. Employed by the NACE sections in Poland in the years 2010-2019 (%)

PKD	2010	2011	2012	2013	2014	2015	2016	2017	2018
Agriculture, forestry, hunting and related activities	17.3	17.1	17.2	17.1	16.8	16.5	16.0	15.5	15.3
Manufacturing and construction	27.4	27.4	26.8	26.3	26.4	26.4	26.5	26.6	26.8
Trade; repair of motor vehicles; transportation and storage; accommodation and catering; information and communication	24.5	24.4	24.4	24.3	24.4	24.6	25.0	25.3	25.3
Financial and insurance activities; real estate activities	3.9	3.9	3.9	4.0	4.0	3.9	3.8	3.8	3.8
Other services	27.0	27.2	27.6	28.2	28.5	28.6	28.7	28.7	28.8

Source: own study based on data from BDL (www 1).

The pace of changes in the Polish labor market in the last decade can be considered relatively slow - when analyzing employment in 2010-2018, no significant changes in the structure of employment by individual sections were observed (Tab. 4). Also, those working in agriculture, forestry, hunting, and harvesting still account for a relatively high share - in 2018 it was over 15%. In turn, in 2018 nearly 27% of employees were employed in industry and construction. The slow pace of changes makes it possible to have justified fears that the economy will not generate enough jobs for a fast and dynamically growing number of people with higher education.

Having in mind the problem of overeducation, they do not fill with optimism also the data prepared for the Ministry of Labour, Family and Social Policy. Tab. 5 presents the forecast of deficit and surplus occupations for 2019.

Tab. 5 Forecast of deficit and surplus occupations in Poland for 2019

Deficit	Surplus
Concrete mixers	Economists
Bruneurs	
Building carpenters and carpenters	
Confectioners	
Roofers and sheet-metal builders	
Electricians, electromechanics and electrical fitters	
Physiotherapists and massage therapists	
Hairdressers	
Bus drivers	
Drivers of lorries and tractors with semi-trailers	
Beauty cases	
Tailors and garment workers	
Cooks	
Doctors	
Warehousemen	

Mechanics of motor vehicles
Building installation technicians
Bricklayers and plasterers
Earth-moving equipment operators and mechanics
Machine tool operators
Carers of the elderly or disabled person
Bakers
Nurses and midwives
Accounting and bookkeeping staff
Building completion workers
Construction workers
Woodworking workers and carpenters
Independent accountants
Welders
Chefs
Locksmiths

Source: own study based on Occupational Barometer 2019 (www 2).

The low skilled occupations are marked in blue, making it easy to see that they constitute the vast majority of the deficit occupations. As far as highly qualified professions are concerned, these are of course professions related to the health care sector, mainly doctors, which results from the problem of an aging population and the problem of the Polish health care system. I also anticipate a shortage of accountants and employees for accounting and bookkeeping, which results mainly from the dynamic development of the modern business services sector and increased demand for employees of SSC and BPO centers.

3.4. The scale of overeducation in Poland

The fact that Poland is struggling with the problem of overeducation is confirmed by research, which, however, was relatively little undertaken to measure the scale of this phenomenon. The last study was conducted in 2011 and concerned subjective and objective overeducation based on POLPAN data (Kiersztyn, 2011). In these surveys, in 2008, 20% of employees stated that they had too high qualifications for their profession and 8% that they had definitely too high qualifications for their profession. As a result of the survey, a similar percentage of employees objectively performing work below their qualifications was also found - 19%. What is more, the research has been conducted several times since 1988, which allowed concluding the relatively permanent character of the over-abundance of education. The author puts forward a thesis that successive generations of graduates seem to have less and less chance for a job appropriate to the experience gained, and the Polish labor market does not keep up with the changes in the educational structure.

A short analysis of the scale of overeducation in Poland was carried out in 2015 by IBS (www 3). The basic assumption of the research was to assign an appropriate level of education to each profession thanks to the employer's declaration. These results are then projected on the LFS data, which allows calculating how many people with higher education work in occupations that do not require higher education. The analysis unequivocally confirmed that the number of people with higher education in Poland in the years 2006-2014 was growing at a much faster rate than the number of jobs requiring such education. In 2006, the share of overeducated employees in the total population of employed persons amounted to 6.7%, and in 2014 they constituted 12.0% of the total number of employed persons. In 2006, 30% of employed and university graduates worked in professions that did not require higher education, and in 2014 it was already 37%. Young people dominate among the overeducated persons - more than half of the overeducated persons are under 35 years of age.

4. Conclusions

Poland is an example of a country that has experienced an educational boom and a very dynamic increase in the number of people with higher education. Unfortunately, these changes were not accompanied by a sufficient increase in demand for high qualifications, which increased the number of people with competence mismatches, i.e. overeducated. This phenomenon occurs in Poland on a relatively large scale and is permanent. Additionally, the egalitarian character of education and a very large number of private universities causes a decrease in the quality of teaching and inflation of education, as a result of which the pressure on obtaining even higher education and qualifications (e.g. post-graduate studies or III degree studies) increase. Due to the too-small number of jobs offered by employers adequate to having higher education and qualifications, competition among graduates is growing, because, as it results from the conducted research, they are most affected by the problem of overeducation.

References

- Bureau of Labor Statistics, The Nation's underemployed in the "Great Recession" of 2007–09, <http://bls.gov>.
- Chevalier (2003), Measuring Over-education, *Economica*, vol. 70, p. 509–531.
- Feldman D. C., The nature, antecedents and consequences of underemployment, *Journal of Management*, vol. 22, issue 3, 1996, p. 385-407.
- Groot & Brink (2000), Overeducation in the labor market: a meta-analysis, *Economics of education review*, vol. 19, issue 2, p. 149-158.

- Halaby (1994), Overeducation and skill mismatch, *Sociology of Education*, vol. 67, no. 1, p. 47-59
- Hartog (2000), Over-education and earnings: where are we, where should we go?, *Economics of Education Review*, vol. 19, p. 131–147
- International Labour Organization. Bureau of Statistics, International definitions and prospects of Underemployment Statistics, <http://www.ilo.org>.
- Kiersztyn A., Racjonalne inwestycje czy złudne nadzieje: nadwyżka wykształcenia na polskim rynku pracy, *Polityka Społeczna*, nr 1, 2011, s. 7-14.
- Kiersztyn A., Stuck in a mismatch? The persistence of overeducation during twenty years of the post-communist transition in Poland, *Economics of Education Review*, vol. 32, 2013, p. 78-91.
- MacDonald R., Youth transitions, unemployment and underemployment: Plus ça change, plus c'est la même chose?, *Journal of Sociology*, vol. 47, issue 4, 2011.
- Malewski M., Edukacja akademicka w pułapce pozornego egalitaryzmu, *Teraźniejszość Człowiek Edukacja*, nr. 3(55), 2011, s. 109-127.
- McGuinness (2006), Overeducation in the labour market, *Journal of Economic Surveys*, vol. 20, issue 3, p. 387-418
- Nagel (2016), Wybrane mierniki określające niedopasowania kwalifikacji i umiejętności na rynku pracy na przykładzie polski, *Studia Ekonomiczne. Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach*, nr 258, s. 29-40.
- Popyt na pracę, lata 2005-2018, GUS.
- Schierman (1991), Overeducation in the labor-market, *Journal of Labor Economics*, vol. 9, issue 2, p. 101-122.
- Skórska A., Youth Underemployment or Unemployment? The Global Challenge in the 21st Century (in) *19th International Joint Conference Central and Eastern Europe in the Changing Business Environment*, 2019, p. 306-316.
- Thurow (1972), Education and economic equality. *The Public Interest*, 28.
- Wronowska G., Overeducation in the labour market, *Economics and Law*, vol. 16, issue 2, 2017, p. 219-228.

Online sources

- (www 1) <https://bdl.stat.gov.pl/>
- (www 2) <https://barometrzwodow.pl/>
- (www 3) <https://ibs.org.pl/>