Study
of Human Capital
in Poland

2012

Competencies as the key to the development of Poland

The report concluding the second round of the Study of Human Capital in Poland conducted in 2011

Edited by
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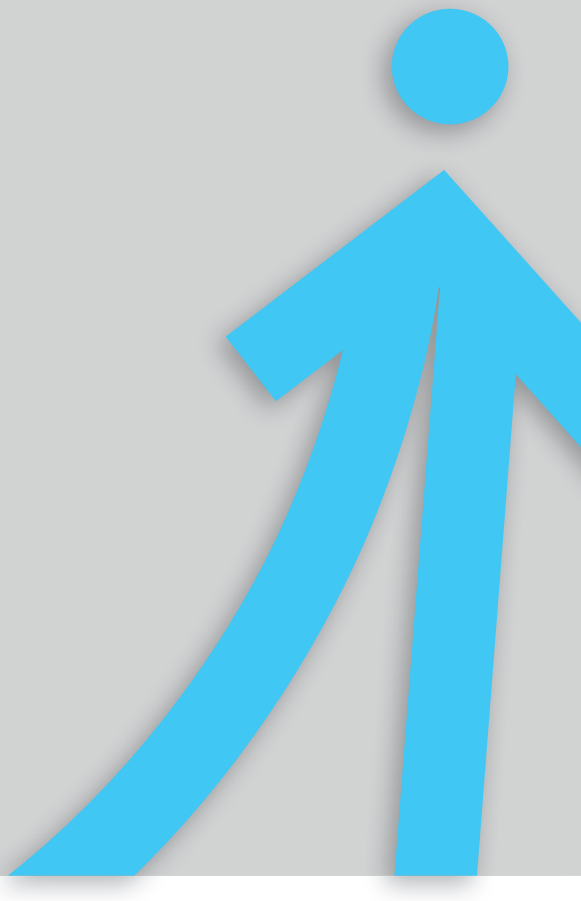

HUMAN CAPITAL
NATIONAL COHESION STRATEGY

PARP

JAGIELLONIAN UNIVERSITY IN KRAKOW

EUROPEAN UNION
EUROPEAN SOCIAL FUND

The publication was developed as part of the Study of Human Capital in Poland research project conducted jointly by the Polish Agency for Enterprise Development and the Jagiellonian University (Centre for Evaluation and Analysis of Public Policies)

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Publisher:

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The views and opinions presented in this publication do not reflect the position of the Polish Agency for Enterprise Development but only the views of the authors

ISBN 978–83–7633–109–6

Publication co-financed by the European Union from European Social Fund

This publication is free of charge

The publication is available from: **www.bkl.parp.gov.pl**

1st edition

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Foreword

Ladies and Gentlemen,

we have the pleasure to deliver the second of the Study of Human Capital in Poland (BKL) reports. Prepared on the grounds of the results of the largest study of the labour market conducted in Central and Eastern Europe as part of the Study of Human Capital in Poland research project. The analyses presented in this publication were based on the results of studies conducted in the first half of 2011 among employers, general population, and training institutions. The object of the studies were also the job offers and courses offered at institutions of higher education and schools above the lower secondary level. All this to present you with a complex picture of the situation in the Polish labour market, and to present a Poland-unique balance of competency demand and supply.

The BKL is a project conducted by a partnership of the Polish Agency for Enterprise Development (PARP) and the Centre for Evaluation and Analysis of Public Policies at the Jagiellonian University (CEiAPP UJ). What PARP contributed to the project is the experience in conducting projects co-financed from the European Social Fund (EFS) and know-how resulting from many years of collaboration with Polish businesses. The contribution of CEiAPP UJ is the practical and theoretical knowledge of conducting big policy research and studies. Such a combination of knowledge and skills is a significant forte of the project.

More than two years of experience gained while conducting the BKL project corroborates our belief that the project is an important source of information, not only for public administration but also for the Polish business. Presenting the results, at every stage, we take into consideration the expectations and needs of representatives of the labour market and the media: consulting the results, preparing new comparisons, comments, and additional analyses. Our openness to collaboration and sharing the results attracts vast interest that the reports published in 2011 enjoyed, much like the seminars and conferences. The lively reaction of the media, not infrequently indifferent to hardly sensational social and economic problems, is another powerful impulse to further work that we have.

We hope that the second report prepared as part of the BKL project will feed the current debate on the challenges for the social and economic development of our country with solid data concerning the labour market. The debate begins already on the pages of this publication, and includes representatives of the institutions that the BKL Programme Council is composed of. Here, we thank them for extremely interesting and precious comments, and encourage all the readers to join the discussion concerning the development of Poland, and the role that the competences of the Polish people play in it.

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Introduction

Already now, the human capital is a factor that – in its quantitative aspect – is among Poland's key developmental assets. It is thanks to the expansion of education that the picture of innovativeness of Polish economy become somewhat brighter, although used to be painted in rather dark colours. Poland takes its place already in the group of moderate innovators, even though there is little between us and the lowest ranks. The indicators concerning the formal level of education, however, render primarily the quantitative aspect of education as a factor in innovative development. Here we have been successful. Have we, however, been successful also quality-wise? An answer to such a question is always relative. It can be referred to the current demand of the employers for employees with specific competences, which we do in the Study of Human Capital in Poland reports, you can also analyse the developmental paths of various countries and – although history does not repeat its details – draw from them information concerning future development scenarios.

A good example here is Japan, formerly Poland's favourite touchstone in development. A country which – much like Poland today – went through the phase of catching up with highly developed economies. The Polish economy is still carried on the wave of that phase of catching up, that can be compared to the assembling-based phase, mentioned by Ozawa in the case of Japan, which is accompanied by consumerism as the dominant type of attitude motivating activity in the society (Ozawa 2005). The first vestiges of the new phase – based on research and development – also appear, yet they concern primarily such dimensions as characteristic of human resources in the categories of formal education, the general level of GDP per capita, and the export expansiveness of economy, which are however not accompanied by a sufficient development in other dimensions of innovation (EU Enterprise 2011). A reason for concern is not only the low level of indicators that are characteristic of innovation, but also the slow pace of their change. The development mechanism of Poland contains certain features characteristic of the development of Japan in the three post-war decades, yet at the same time, it is different, and has certain unique features. Much like the United States for Japan, the European Union became the provider of capital and, at the same time, the recipient of production in the case of Poland, which allowed an economic growth not as high as that of Japan in the best time of its catching-up, yet at quite a decent level. Poland did not have to rebuilt its factories from wartime destruction, yet the level of the decapitalisation of production facilities after the long-lasting depression was dramatic. What has definitely been a difference since the late 1970s is that the reconstruction of economy in Japan was conducted under the banners and brands of national corporations, while in Poland, plenty of large businesses were taken over in the process of privatisation by global corporations. Nevertheless, a class of managers who took managerial positions also in companies based on international capital took shape quickly also in Poland. Poland used the period of prosperity, which ended in the convulsions of world finance caused by the expansive policies of commercial banks, and the furthering of development financing through deficit on the side of governments.

In the case of Japan, the move to the new phase of development based on research and innovation was accompanied by a boom in education. It even caused a deficit of human resources early in the 1960s,

when the country's economy was strongly based on the highly labour consuming production of light industry and – to a certain degree – on the heavy industry, which at the time did not yet require higher education. Established during the post-war modernisation in Japan were 55 new universities (one in each of prefecture), which caused an expansion of the number of students resulting in a drop in the proportion of secondary school graduates entering the labour market: from 38.6% in 1960 to 18.7% in 1969. Even though this caused short-term problems in companies, the highly educated human resources soon helped the economy to move to a new level, based on research and development (Ozawa 2005, p. 41). The situation in Poland is only partially comparable, as for a long time – during the leaps in education ratio indicators, the development of education in the fields of technology and natural sciences was insufficient, bringing back the examinations in mathematics during the upper secondary school final examinations (matura) was postponed, and education in natural science, technical subjects, and sciences was neglected in primary and secondary education. Despite these, the general growth of the level of education of the society prepares Poland to further development better. The dominant type of education favours – as yet – the development of what is generally understood as the services sector, including content building and handling business processes, rather than a technical revolution, yet visible in the recent years has been a shift of interest in studying these areas (which is analysed in the report); this is favoured by the eventually launched state intervention policy (e.g. commissioned courses).

Can Poland find this part of the development and cope with the new challenges that it faces? The mechanism of the social and economic development of Poland must function so that Polish economy could be capable of relatively high pace of economic growth for a longer time. For we are still an economy that is catching up with others, more highly developed, which – to protect itself from global marginalisation of the people involved in it must pass to the phase of development based on knowledge, innovation, and networking. High growth is an expression of a competitive edge. To maintain it, conditions with maximum productivity of both labour and capital resources must be produced.

The role of education being the key factor in the mechanisms of development is very significant. The history of development leaps in the countries that performed them in the 20th century (Japan, South Korea, Singapore, Taiwan) and the ones that take place now (China), and the role of investments in education is well-known and unquestioned.

Let us add that the role of education in development mechanisms is not limited to the last century only. Published recently were a number of publications that revise the claim of Max Webber concerning the role of the Protestant religion in the development of capitalism. Generally, the claim of these new, empirically well-argued mental processes is as follows: it was not the ethical dimension of Protestantism that provided the causative factor in the development of a capitalist economy of the West, as it was the development of general education among the Protestants connected, among others to the command to read the Bible, and its popularisation in vernacular languages, with education, naturally, quickly moving behind the learning to read. Observed also today are higher remunerations of Protestants as compared to Catholics in similar conditions, which is explained by the differences in the level of education (Becker et al. 2007; Becker et al. 2010; Schaltegger, Torgler 2009; Cantoni 2009; Spenkuch 2010). It goes without saying that while considering the mechanisms for social and economic development, the key role needs to be assigned to education.

The need to increase the productivity of human resources in developed countries results also from demographic trends. As far as in the second half of the 20th century, the number of people of working age grew in OECD countries by 76%, the growth prognosticated for the first half of the 21st century will amount to only 4%. In Poland, after the demographic high of the people born in 1950s moving into the post-productive age, the demographic pressure will manifest itself with full force. Which is why the high level of human capital will be the condition for the economic growth.

The public debate frequently addresses the claim about the too high number of academic graduates in Poland. Probably, many jobs held today by university graduates could be held by graduates of secondary schools, yet the phenomenon of the upward mobility of educational standards is not distinctive for Poland. Additionally, the education gained has broader, positive impact on the level of civilisation of the society and general economic situation. The eagerness to obtain higher education results from the eager-

ness to increase the probability of success in the labour market. So far, this has been a strategy that has been empirically corroborated: in the previous years, people with higher education have been touched with unemployment to the least degree, and it is still so. This report includes also proofs of this claim in the chapter by Szymon Czarnik and Konrad Turek, which is devoted to the significance of the level of education in the labour market. On the one hand, the employer is more eager to employ graduates of institutions of higher education to the posts that do not require such education, as in their case, they expect the lowest costs of preparing them to work at the positions to which they are recruited. On the other hand, knowing this strategy, young personnel compete primarily with the level of formal education and not with the reduction of expected remunerations. This effect in Poland is reinforced by the relatively significant function of the academic diploma, which is recognised as a state document, and is treated as a certain, introductory and general information about the candidate's potential. This sets the educational machine into motion. Between the cogs of this machine, individuals have a tendency to invest in their education more than is required by the post that they are going to hold, which leads to the incomplete use of the resources, and lowering the revenue from education.

Is what we deal with, therefore, an overly educated society? As we wrote in the first BKL report, the share of people with higher education among the unemployed is higher, even decidedly higher in many OECD countries than in Poland. There are countries with even higher education ratio indicators at higher education level. It is not necessarily so that the number of people graduating from higher education also in those countries does not exceed the actual needs of their economies. Yet it can be said that Poland will need a certain "educational provision or reserve" i.e. an excess over the current needs, which will be the factor providing impetus to growth. For development begins in the mind.

Education of staff, even to a certain degree excessive and anticipating the needs of economy is a condition to pass to a higher level of development. There are no doubts about it in the countries that decided for such a developmental leap; with China recently being a perfect example. In 2009, more than 6 million people enlisted to first-degree studies in China, which is equivalent to EU, the United States, and Japan, together. China doubled that number in seven years (Innovation Union 2011). Education of the society also has a general civilisation building value, which is difficult to assign directly to specific business projects. It increases the quality of life and builds general conditions for further development. For a country with still limited capital resources of citizens, which Poland is, an investment in education is the key to success.

Moreover, it is important to improve the quality of education – and to do so from the earliest, preschool level – and not to block the development of mathematical skills of the students at the level of primary education, which is suggested in the precise analyses contained in the Chapter 9 of Społeczeństwo w drodze do wiedzy. Raport o stanie edukacji 2010 [The society on its path to knowledge. Report on education 2010] of the Educational Research Institute (IBE). Investments need to be made in the development of the teaching staff, give challenges to teachers and reward for the results, as teacher quality is the key to education quality. At the level of primary, lower secondary, and upper secondary school, attention must be paid to the good level of education in mathematics and introduction to the world of achievements of science and technology. Needed is a renaissance of high-class secondary vocational education that would not close the potential path to further education. Various initiatives concerning the development of such schools – furnished with modern educational facilities and modernised teaching curricula corresponding to the contemporary level of technology – have already turned up, yet this stream is still narrow. It is very important that the graduates of institutions of higher education are prepared to design products, technical devices and technologies, and to develop creatively business and social enterprises, becoming also involved in creativity in culture and art. Important are general competencies, including the ability to organise own work, the skill to collaborate in project teams, and interpersonal communication. Knowledge should be organised around the problem-solving skills and not reproduction of coursebook knowledge.

Analysing the results of the Study of Human Capital in Poland, we perceive also a significant phenomenon: the long observed tendency of professional deactivation after 50 is preceded by a tendency to cease educational activity 10 years earlier. What results is that to counteract the premature professional deactivation, public interventions aimed at delaying it by investing in the human capital must be focused on the 40+

and not the 50+ group. People of 50+ carry out the results of decisions made actually earlier, which is signalled by a drop in educational activity.

Poland is at a turning point of its development. To ensure a stable economic growth in the long term, it must be based on innovation and creativity. In that, the potential allowing the development of state-of-the-art industrial production and high information technologies, and highest quality services must not be neglected. This needs perfectly well educated people. Poland cannot compete with capital resources, yet these will come to Poland, if high-class labour resources are here.

The report concluding the second round of research covered by the BKL project portrays the significance of competencies for the functioning of the labour market in the light of the study. Hence the title. Yet it comes also from our intention to focus the attention on the importance of good education, being the key factor for development. "Good" education does not have to be tantamount to "ever longer", yet primarily higher. Good education should take place also at the earliest stages. Outlay on education is a good long-term investment. This conviction we share with the team of Minister Michał Boni, whose first report paid attention correctly to the key importance of intellectual capital in development. The human capital is one of its components. Also, the latest report Poland 2030 – the third wave of modernity assumes the position that – to build new grounds for competitiveness of Poland – it is necessary to combine investments in the development of human capital with the "digital impetus" – the leap in the area of infrastructure and the way of using its to the spearhead of modernity. Without the development of the human capital, this cannot succeed.

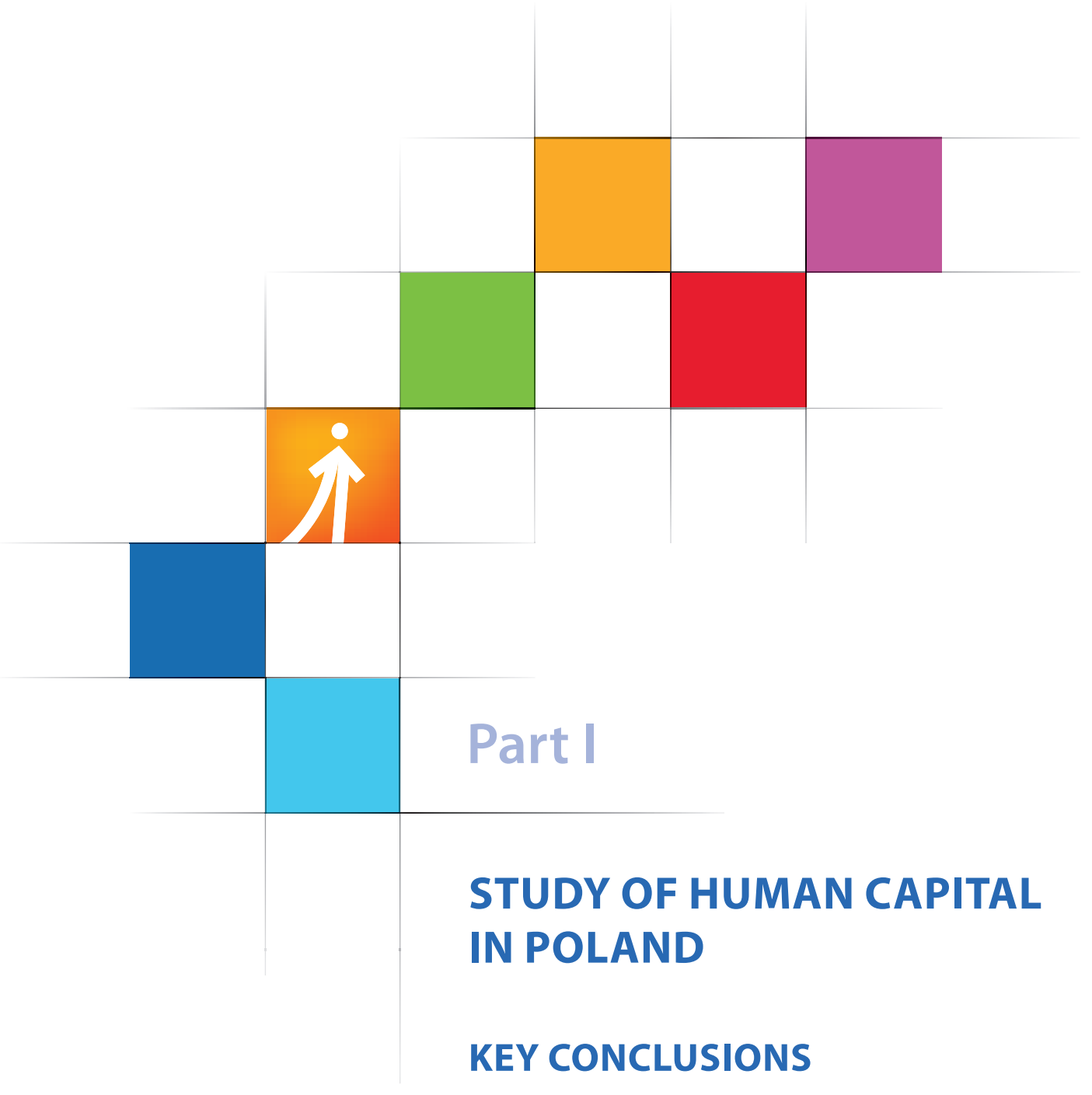
We allow ourselves set the tone of this introduction to that of a programme essay. Yet the report is based on meticulously analysed facts gathered during the studies conducted. A detailed description of their methodology is contained in the report from the first round. Now it has been repeated, even though a smaller number of modules have been completed. The study has covered employers – 16,159 entities, people of working age – 17,782 respondents, and training firms, where the study was conducted on a sample of 4500 out of the 18,007 businesses listed in the BKL Study. Moreover, a study of 20,000 job offers from a single day was covered. The data was coded and analysed from the angle of the information needs of the project. The data from these large and demanding samples were gathered with the tools provided by Millward Brown SMG/KRC. The descriptions of individual studies, together with a review of the results are contained in the individual reports accompanying this publication, available from the website of the project.

The chapters in this report, as a rule, combine information from various studies to answer the problems set in those. The first chapter presents the balance between competency demand and supply, based on the analysis of the data from the studies of employers and population. The readers of the report from the first round of the study will find in this chapter the same type of analysis, yet expanded with new data and presented through comparison. Nevertheless, besides the balance tables, the chapter features new, interesting analyses of factors that make a company seek staff, and profiles of features required from candidates The second chapter concerns an important and discussed problem of graduates in the labour market. The media debates call contemporary young graduates "the lost generation", finding it difficult to find a job based on "junk contracts". What is the situation in the light of our studies? It is worthwhile to read. The third chapter speaks of education of adults in the training market. A subject we find traditionally of interest. We present how the situation has changed from the previous round of the study. The fourth chapter presents the results of analyses conducted on the grounds of data from administration sources. Here, we analysed choices made by students, while deciding about the school they are going to choose. The analysis covers the dynamics of changes in institutions of secondary and higher education.

The report closes in a presentation of key challenges concerning the development of human capital, which Poland faces: it is an auteur selection, even though based on the analyses run by the team and the debates conducted around it in a number of milieus, the Council of the Study of Human Capital in Poland included. We asked also the members of the Council to express their opinions concerning what they believe to be the most important problems and challenges in the area. The text boxes accompanying the presentations

of key challenges include quotations from their answers. In this case, we aim at starting a discussion on the direction of the development of labour market and education policies in the area of shaping and using human capital. Such a debate is needed and inscribed in the discussions on the strategy of development of human capital conducted in the context of work on medium- and long-term development strategy of the country, and is to serve a better preparation of concepts of using structural funds in the following programming period. This is why, in this part of the report, we clearly pointed to strategic priorities, as they – if approved – will decide about the strategy, and in consequence – about the shape of public policies.

The BKL project team representing the Polish Agency for Enterprise Development and the Jagiellonian University hope that the results of the Study of Human Capital in Poland will also this time provide grounds for an important debate and help both in the planning of individual career paths and in the shaping of public policies concerning building human capital in Poland.



Part I

STUDY OF HUMAN CAPITAL IN POLAND

KEY CONCLUSIONS FROM THE SECOND ROUND OF RESEARCH

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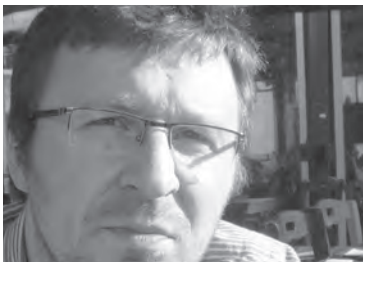

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Main conclusions

Employees sought

- Both in autumn 2010 and in spring 2011, relatively few employers sought new hands: correspondingly 16% and 17%. The probability of readiness to employ depended on the size of the firm (those seeking staff were usually employees from larger businesses), the development level of enterprise (the developing ones were more likely to seek staff), and the level of satisfaction with competencies of the staff employed (the unsatisfied employers sought for new employees more often). Moreover, the type of business influenced the probability of readiness to employ new people – more often, these were entrepreneurs in construction business.
- Despite the seasonal works beginning in the spring of 2011, the demand for labour increased insignificantly, by 30,000 people, which amounted to a growth by 5%, compared to autumn 2010. Still, employers, as a rule, sought people in the following occupations:
  - **skilled workers, assemblers and operators** – demand for human resources in this area increased from 40% in 2010 to 50% in 2011 (percentage of employers seeking employees, and ready to employ in these occupations)
  - **professionals** – the interest in this group dropped from 40% in 2010 to 25% in 2011 (including business and administration associate professionals, as without this category, only 15% of employers sought such people)
  - **service workers** – an increase in the interest from 20% in 2010 to 25% in 2011.
- The structure of demand for specific staff clearly shows an increase in the demand for seasonal workers in spring and summer. At that period, there is need for far more workers (especially in construction), then professionals.

Employee demand and supply balance

- Juxtaposing the demand for people to work in specific occupations with the availability of such staff, in spring 2011 the worst deficit was seen among skilled workers, which was caused by a much higher demand for them submitted at the time by employers. Compared to autumn 2010, the demand and supply of professionals actually came at par, which was caused by the smaller demand for such staff.

Competency shortages and mismatch

- Three in four employers seeking employees paid attention to difficulties in finding appropriate people to work. The main reason behind the problems was the fact that the candidates failed to meet the requirements, primarily concerning their competencies and the lack of appropriate occupational experience. The question of experience at work was more often emphasised by employers of larger labour forces.

Main conclusions

- Candidates to work lacked usually three types of competencies:
  - **occupational**: related to working in the given occupation, and specific for it
  - **interpersonal**: contacts with other people, and cooperation in a group
  - **self-organisational**: independence, decision-making, entrepreneurship, proving initiative, resilience to stress, and – generally – motivation to work.
- Assessing the competencies of the employed, employers usually pointed to deficiencies in these three types of competencies, and recognised the need for additional training in the area.
- Comparison of expectations of employers concerning the levels of competencies and the self-assessment of the competencies made by the people seeking work proves that the worst mismatch concerned also the self-organisational and interpersonal competencies.

Work for profit while studying

- Nearly every other final grade student worked for profit (mostly on the power of civil and legal contracts), yet this work as a rule was not related to their education, and was of temporary nature.
- 62% of students who started work claim that the knowledge acquired at the studies was immaterial for that work. For two in three students, the work they performed was not the work they intended to start after the studies.
- Every fourth student claimed that studies did not teach him or her to employ the knowledge acquired.

Process of moving from the system of formal education to the labour market and situation of graduates of various types of schools

- The level of education significantly influences employment opportunities – both in the initial stages of the career and in a longer time perspective; it is also translated into the level of remuneration.
- In the last five years, 2.5 million people below 30, who finished formal education and did not continue education entered the labour market. Of that number 43% were graduates of institutions of higher education, 30% – of secondary schools, ending in matura exam, and 19% – of schools not awarding such a certificate.
- The ratio of occupational activity is highest among the graduates with higher education, while the unemployment rate is the lowest. They assess the conditions of work, certainty of employment, and opportunities of development most highly; and are most satisfied from the type of work they perform. The position of holders of matura in the labour market is less favourable, even though it is better than the situation of the people who – having completed education at the primary or lower secondary level – did not continue education.
- Nearly 80% of working graduates have job contracts. Working on the power of freelance agreements and commission contracts during the last year were only 13% of the graduates.
- Every third graduate from higher education started work as a professional, which is usually in line with the education obtained. Further came the occupations that did not necessarily require higher education (e.g. clerical and sales occupations), yet the higher education diploma could be an additional advantage while competing for employment.
- People with better education far more often participate in courses and training improving their competencies in the later stages of occupational life.
- Visible is the connection between the extending of the period of education and the moments of becoming married and the first childbirth. People with higher education have children later, less often, and usually in smaller numbers.
- Analysis of data for the graduates up to 5 years after the completing of formal education proves that the birth of a child differentiates the occupational situation of women and men: the percentage of the employed among the fathers is significantly higher as compared to childless men, while among mothers – significantly lower compared to childless women.
- Being married or in an informal union increases opportunity of employment among the graduates. This effect is illustrated by a process parallel to the transfer from the system of education to

the labour market, namely, the process of stabilisation of life and starting a family. The married, frequently beginning independent life and moving out from family homes at that time, have a higher motivation to find work.

Significance of education in a longer time perspective

- Following a radical growth of the proportion of people who completed higher education in the younger generations, in certain occupational categories we see an increase of education related demands. Secondary education does not provide a major opportunity for employment in the categories of technicians and associate professionals, and clerical support workers.
- In the youngest generation, people with secondary education radically more often than is the case among older echelons, perform clerical works, which suggests that the "excess" of people with higher education is to a great extent absorbed by the administration sector, incessantly expanding since 1990.
- Comparing people who are similar to one another in many areas related to market opportunities, yet different in education, clearly shows that gaining both a secondary school completion certificate and diploma of higher education entails higher revenues. People with higher levels of education have greater opportunity to make it to the better paid occupational categories, and also to be better remunerated within a specific category. It must be remembered that there is no determinism of any form here: a telling example comes from a comparison of drivers and teachers: categories radically differing in the average level of education, yet acquiring very similar remuneration.
- Being married and having children differentiates the occupational situation of women and men. Especially characteristic is the fact that married men earn more than singles, while married women earn less than single ones.

Who develops their competencies, and who does not?

- Indicators concerning learning among adult Poles have remained at a very low level for many years. A lack of changes in the area was corroborated by BKL Study in 2011: according to its data only 20% of Poles aged 18-64 (approximately 5,000,000 people) improved their competencies in any way (by independent learning or participation in courses and training). Learning independently were less than 12% (2.8 million citizens). Participating in courses and training in the last year were only 14% of all the respondents. The market of training services covered thus altogether approximately 3.4 million clients in the year preceding the second round of the BKL Study. Participating in the courses and training were 18% of working Poles aged 18-64 (approximately 2.6 million employees) and 12% of the unemployed (approximately 290,000 unemployed). Decidedly least often such education was acquired by people occupationally inactive, with only 6% participating in courses and training. 80% of Poles did not improve their skills in the previous year (i.e. 2011) in any way, not even through self-education.
- Participating most often in courses and training were well-educated, young or middle-aged people, who are occupationally active, and work in the following occupations (currently, or, in the case of the unemployed, in the past): managerial, professional, and technical and associate professional; and living in cities. The elderly were definitely a group that was passive in respect of training. In the group of unemployed aged from 50 to 64, 88% did not learn in any way, while among the working the percentage was 78%.

How and in what areas do the Polish people develop their competencies?

- The most popular subjects range of courses and training selected by Poles was construction industry, and also medicine, social work related, psychology, and first aid. Trained in each of these fields were approximately 400,000 Poles (with some of these courses being, however, obligatory). Not much smaller number of people – approximately 322,000 (every 10th participant in the courses and training) – took part in courses of foreign languages. Predominant was the English language (213,000), with the German language (43,000) coming second.

Main conclusions

- The most popular form of training courses were intramural studies. They attracted the participation of 67% of the trainees, that is approximately 2.3 million Poles. Ranking below was training at the worksite (20%) with participation of 680,000 employees.
- More than every other training with the recent participation of the working respondents was financed entirely by the employer. Among the unemployed, nearly 2/3 of the courses and training was financed by another firm/institution; as can be guessed – the Employment Office.

What renders an increase of training activity of adult Poles difficult?

- The respondents treated education primarily in the categories of actions improving opportunities in the labour market or occupational competencies. It seems that the main barrier in the growth of the level of training activity was the low demand for higher competencies in firms and institutions where Poles work, and lack of motivation to develop, probably strongly related to the above. Most people who did not participate in training did not feel any need to improve their competencies.
- Among the employees, the reluctance to train was caused mostly by the sense of the lack of need to improve their qualifications at their current post, which was declared by 82% of the employed. In other words, they did not treat courses and training as sufficiently valuable or useful for professional work. In turn, the reason for education in the form of courses and training named most often was the readiness to improve occupational qualifications (67%) or obtaining such qualifications (36%). For 28%, motivation was the development of their own interests, and in 20% of cases – only a requirement of the employer.
- In the case of the unemployed, lack of activity in the area of learning can be explained in two ways. On the one hand, it can be primarily interpreted as a lack of faith in the sense and significance of such activity in the aspect of improving employment opportunities. Yet, on the other hand, some unemployed pointed to the external barriers including costs, lack of access to interesting courses and training, and formal requirements related to participation in such forms of education.
- In the 50+ group, the reason for lack of activity in the area pointed to significantly more often was the conviction that at this age learning does not make sense. Similarly, in the oldest age groups the significance of limitations caused by the health condition increased.

Employee investments in human resources

- Throughout 2010, only every other employer (54%) embarked on any intentional activities aimed at the development of qualifications and skills of current employees. This means that the estimated number of 850,000 employees invested in their staff in 2010.
- At the same time, activity in the area is strongly differentiated in various groups of businesses: training was most often the case in large, developing businesses, relatively satisfied with competencies of their human resources, yet perceiving the need to improve them, applying recruitment strategies, requiring further training of staff, and operating in fields more strongly related to the so-called new economy.
- In recruitment, employers generally prefer the "sieve strategy" to "investment strategy". This means that they want to acquire from the labour market the best candidate, furnished with the required competencies, and not necessarily to invest in the candidate later. Despite such an approach being dominant among all types of firms, differences in the HR policy applied can be pointed to, depending on the assessment of company development. The developing businesses decide to employee staff, requiring high or even complete training more often than stagnating ones. In turn, the latter in most cases want to employ the best candidate from the labour market, fully equipped with the required competencies.
- The results of the study point also to the weakness of the strategic approach to the training of human resources among the employers. The application of more "holistic" instruments and ones requiring a long-term involvement of the employer, e.g. the system of evaluation of employee competencies and individual development plans, is not widespread among the employers. They were more often the domain of large businesses and the better developing

enterprises. These very categories of businesses disposed at the same time of a far broader range of tools used in the development of their human resources.

- Attention should be paid to the fact that among the reasons for lack of investment in the development of HR competencies, the cost of training ranked only as second among the barriers. It was not the most important factor in the lack of activity in the area, which is of non-insignificant importance. Faced with the major involvement of public funds, which in the recent years were assigned to the improvement of the human capital quality, and yet did not cause the expected increase in the indicators mentioned above, one could expect that we are dealing with the effect of substitution, i.e. replacement of private funds that would have been used for that purpose with public ones.

Training institutions and firms

- Characteristic of the training market in Poland is the high churn of businesses operating within it. No fewer than 8% of training firms and institutions that participated in the first round of the study in 2010, either have ceased to exist or no longer provide training services. The rate may in fact be somewhat lower, due to the difficulties with the unambiguous definition of training institutions. Nevertheless, this points beyond doubt to the high variety in the sector and vulnerability to fluctuations of the economic situation.
- Found in the training market are most often courses in personal development and development of general competencies, medical subjects, social work and psychology, information technologies and computers, driving licence (categories other than A and B) and licences for drivers, personal services, hairdressing and beautician services, and business management. Courses, training, and consulting in the area are offered by more than every fifth training business.
- The services offered by training firms and institutions are dominated by classical forms of education: most popular are courses and training, proposed by over 80% of the respondents. It is worth, however, paying attention to the fact that an increasing number of training firms and institutions offer courses and training over the Internet and coaching – no fewer than 25% of respondents stated that their offer includes each of these forms of education.
- An increasing number of training firms and institutions inform about being accredited or certified for quality: now such a statement was delivered by representatives of 38% of training businesses covered by the study, a result by two percentage points higher than in 2010. These, seemingly positive, processes are accompanied by concerns regarding the low quality of training financed from public funds expressed by representatives of the sector. Much like in 2010, most training firms and institutions covered by the study claimed that the most significant barrier rendering the development of the training market in Poland difficult are the tendering procedures promoting low price and not quality, and enforcing destructive competition in the market.
- 77% of firms and institutions researched promised expanding activity during the 12 months following the study. Compared to 2010, the number of businesses, declaring general expansion of activity grew by 12 percentage points. Nevertheless, when the specific ways of expanding this activity were mentioned, drops were recorded, which can prove a decrease in the level of optimism in the sector. Especially significant is the lower number of businesses declaring increase of employment, expansion of promotional activity, and expansion of the range of training offered.
- In the opinions of representatives of the training sector, the barriers in the development of the training market services are in the sector's environment and not in the sector itself. They include the earlier mentioned formal and administrative limitations (form of tendering procedures), low level of investment in human resources in businesses (related to the lack of funds for training among the employers and the low awareness of the need to develop human resources), and the low level of interest in own development among Poles. Following the declarations of representatives of the training sector, its development is not hampered by the factors including lack of trainers with appropriate competencies, and the lack of appropriate infrastructure or equipment. Thus, the statements of the representatives of the sector suggest that – after the liquidation or reduction of the external barriers – it is capable of flexible

reaction to the demands of the market, and of providing services of appropriate quality. The question of innovativeness and responsiveness of the training sector requires, however, broader and deeper studies.

Upper secondary schools during a demographic low

- Lack of major changes in the number of upper secondary schools in 2009 – 2011.
- The proportion of students learning in general secondary schools and technical secondary schools increased insignificantly, and which is in line with the ministerial assumption about the need to emphasise general education more strongly.
- The drop in the number of students caused by the demographic low concerns to the greatest degree the supplementary secondary schools (both technical and general) and post-secondary schools. The most stable situation in the area is observed in technical and general secondary schools, specialised secondary schools, and artistic schools.
- Irrespective of the type of school, the demographic low hits predominantly the small schools, while in the larger units it does not cause major changes in the count of students.
- In vocational education, the most popular courses of education are the ones that award the title of a "technician".
- The increase of the relative number of students in the courses of education counted to the "business and administration associate professionals" occupational category is relatively stable.

Institutions of higher education during the demographic low

- In 2010, the number of students admitted to the first year of studies diminished, both in the case of intramural and extramural studies. Schools of economics (mostly non-public) and the so-called other schools (higher schools of vocational education the and non-public institutions of higher education being the dominant here) lost the largest number of students.
- The schools not affected negatively by the demographic low are ones with narrow specialisation (national defence, internal affairs and administration, medical academies). A small growth was also recorded in technical schools.
- A demographic low poses a decidedly greater threat to extramural studies than to regular ones. In this way, it favours the assumption of a specific strategy of action by public schools, one that can be referred to as the "strategy of shifting costs". Public institutions tried to compensate the drop of the number of candidates to extramural studies by increasing the enrolment (frequently combined with the development of the range of education offered) in regular studies.
- Analysing that aspect of enrolment, schools fall into three main groups:
  1. schools that were successful in enrolment, mostly thanks to the extramural courses (developing the extramural offer): non-public schools of average size, with seats in main academic centres or other major cities
  2. schools that were successful in enrolment, mostly thanks to the regular courses (developing the regular offer): these are both major public institutions (universities), with seats in main academic centres, and institutions of higher education of average size
  3. schools that lose students (the so-called regressive profile).
- Preferences of candidates are fairly stable, even though in 2010, as compared to 2009, the interest in courses in humanities and social sciences diminished. Moreover, visible is a slow growth of interest in technical courses, including Construction, Managing and engineering production, Mechanical engineering and machine building, Geodesy and cartography, and Automatics and robotics.
- The trend in enrolment to individual courses in regular and extramural courses is very similar. Growing most significantly were the enrolments (measured in % of growth) in the following subgroups: mathematics and statistics, security services, artistic, and medical and veterinary.
- The largest increases in the number of first-year students were recorded in the case of the following courses: medical (extramural), engineering and technical (regular), and security services (regular and extramural).

- Expressed in percentages, the increase in enrolment is usually highest in regular courses, and the drop – in extramural courses (apart from to specific groups of courses, in whose case, the growth trend is stronger in extramural courses: mathematics and statistics, and medicine).
- The largest drops (in %), both at regular and extramural courses are visible in pedagogy, and agriculture, forestry and fishery subgroups of courses.
- Such falls in extramural studies, combined with stabilisation or a small drop in the number of day students are characteristic of the following groups: humanities, social, economy and administration, journalism and information, biology, physical science, personal services, and environmental protection.

Employee needs vs. availability of labour resources. An attempt at a balance

The analyses conducted prove that employers point to a deficit of professionals and skilled workers. Present here are also fairly characteristic competency shortages and misalignments, concerning mostly the specific occupational competencies needed for the specific job, and more general self-organisational and interpersonal competencies.

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Employee needs vs. availability of labour resources. An attempt at a balance

Education is beyond doubt, a factor that favours the development of the country. Nevertheless, to speed it up, it is not enough to ensure an appropriate number of people with good education. It is more important to define what good education is to mean. Referring to the school criteria, a good level of education would mean the best results in education measured with various educational indicators. Yet it must be remembered that one of the main goals of education at every level is to furnish young people in specific competency resources and qualifications that let them find their place in the labour market. In this context, good education is one that will increase their market opportunity and assure a beneficial development of their occupational career.

The labour market consists of two sides: demand and supply. The demand for human resources is generated by businesses, both private and public. While the supply of labour is the effect of the people's effort to find satisfactory employment. In result, an appropriate (i.e.: good) education is to help people seeking employment meet the expectations of the employers and gain employment that is satisfactory for both sides of this market.[1] Understood this way, education as a development mechanism must be considered in three dimensions: of the occupation learned (i.e. educational profile), its quality measured with the resources of competencies acquired, and the level at which this education was obtained (primary, basic vocational, secondary or higher).[2] Following the education construed and described in this way, definition of whether Poles are appropriately educated will require finding answers to a number of questions:

1. How many and what employees are sought by the employers, and how large the supply of these employers is?
2. What competency-related requirements are given the candidates in a specific occupation, and whether potential employees have them to an appropriate degree?
3. What level of education is required to work in a given occupation?

The first question is related to the simplest type of balance in the labour market, namely, pointing whether the needs of employers concerning the employment of specific people can be satisfied with the availability of appropriate staff in the market. These employees may be both people who are already active in the labour market (i.e. already working) and potential participants in the market: graduates of various levels of schools, the unemployed, and occupationally inactive. Answering the first question, such a listing of the demand of employees for people to work in specific occupations and availability of people to various work

[1] Appropriate education is also one of the factors influencing the decision about starting own business, which indirectly lies on the demand side of this simplified scheme of the labour market.

[2] Formally, this means lower secondary, upper secondary, and higher (bachelor and master's degree) education.

will be presented. Presented through this will be the potentially threatened areas related to the shortages of people to work in certain occupations. Identification of excess and deficit occupations[3] will allow making potential steps concerning changes in training people in specific occupations, which in turn will make it possible to influence more effectively the shaping of education as a developmental mechanism.

As employers seek people to specific work, they have specific expectations towards the candidates. If there are no people meeting these requirements, skill shortages emerge (McGuinness, Bennett 2006, pp. 256-279), which partially answers the second question asked.

Another dimension, in which labour market should reach balance is the appropriate level of competency and qualifications. In the design of the BKL Study, it was assumed that competencies are knowledge, practical skills, and attitudes related to the performance of specific occupational activities.[4] It does not matter in what ways they were acquired and whether they are corroborated with a validation procedure. Qualifications, in turn, include the knowledge and skills that have been corroborated in the process of formal validation procedure and proved with an appropriate diploma or certificate. For example, qualifications include a specific category of a driving licence and language proficiency certificate. On the other hand, the general skill of driving vehicles and being furnished with specific language talents are certain competencies. Seeking people to work in a given occupation is always related to a specific level of required competencies. Appropriate functioning of enterprises and institutions requires people capable of efficient performance of specific activities related to specific posts. This is why employers want to employ candidates meeting expectations concerning competencies, at least to a minimum degree while seeking people to work. Should they not find such people, the aforementioned problem of skill gap or skill mismatch emerges (Hogarth, Wilson 2001). Such a problem emerges when the candidates (or people already employed) to work in the given occupation have competencies that are too low, compared to the requirements of employers, or are of a type different than those expected by employers from people holding these positions. Mismatch of competencies concerns also those already in employment, and may be the result of insufficient competencies, when – due to the lack of people with required competencies – employers are forced to employ people with lower competency resources.

To answer the second question, we will show the balance of employer demand for specific competencies in various occupations and competency resources held by the current and potential employees. Pointing to competency gaps and shortages on the grounds of such a balance will make it possible, on the one hand, to make decisions concerning changes of educational policy at various levels of education, and on the other – it will show certain areas that require action in lifelong learning.

Related to these questions, and especially to educational policy, is the third question, concerning employer requirements related to the level of education. It is frequently the case that the source of the mismatch of competencies is the level of education that is inappropriate to the performing of given occupational activities. It may happen that the level of adaptation of a given person is higher than required for the given work, and the competences exceed the requirements of employers, which is when the phenomenon of overeducation occurs (Budria, Moro-Egido 2009, pp. 329–345; Büchel et al. 2003). If this is the case, people seeking employment in occupations below their competencies may have exaggerated remuneration expectations. Situation to the contrary occurs when candidates to work have a level of education below that required by the employer: in this case, we deal with the phenomenon of undereducation. In such a case,

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[3] In line with the guidelines of the Ministry of Labour and Economy from 2004, diagnosing excess and deficit occupations was recognised as a systematic task of all the territorial authorities in Poland (Act on promotion of employment and institutions of the labour market of 20th April 2004, Journal of Laws 2008, No. 69, item 415, with later amendments). Majority of the analyses conducted was based only on the comparison of the official data concerning education with the job offers submitted at Employment Offices, which yielded fairly imprecise results. The holistic concept of the labour market designed in the BKL Study project and its systematic character allow more exact analyses and analysing the dynamics of changes in this area.

[4] The definition of competency accepted in the BKL project differs from the assumptions of the National Qualification Framework (KRK, cf. Sławiński 2011). Competences in the understanding of the KRK are the combination of the definition of the term with its classification, as they list various types of competencies in defining section (e.g. "in the context of the European Qualification Framework, skills are defined as mental (cognitive – encompassing logical, intuitive, and creative thinking) and practical (related to effectiveness and use of methods, materials, tools, and instruments. (p. 10)"), which makes the definition too imprecise and tautological (as the defined notion should not be present in the defining section). The understanding of competencies approved for the BKL project allowed building a detailed classification of various types of competencies that originated on the grounds of differentiation of knowledge, skills, and attitudes used in specific occupational situations. In this way, it was possible to provide a far more precise diagnosis of the situation in the labour market with respect to the required and available resources of the human capital examined through competencies treated in this manner. More on the subject: Strzebońska, Dobrzyńska, 2011.

Employee needs vs. availability of labour resources

i.e. employment of people with lower level of education, employers must frequently incur additional costs for later training and education.

Also in this case, juxtaposition of requirements of employers and people seeking employment will provide an answer to the question whether the labour market is balanced in its demand for a specific level of education. This will help to start actions aimed at an appropriate modification of the system of vocational education within individual occupations and their profiles, which can improve the efficiency of education, and – in the capacity of a developmental mechanism – contribute to the development of the entire country.

Demand for human resources

While both the studies were conducted – i.e. in the autumn of 2010 and summer of 2011[5] – relatively few employers sought human resources. Only every fifth employer declared that they currently sought somebody to work (16% and 17% of such responses, respectively). Taking into account the period of one year when the question was asked to the employers, one needs to emphasise the caution with which they approach the questions of employment in the face of a disadvantageous economic situation in Poland and globally. Spring is the time of intensification of seasonal works, which, as a rule entails even greater demand for human resources. In this light, a lack of a major change when it comes to the readiness to admit new people to work must be assessed as nothing else but prudence in running business.

To check what influenced the fact whether somebody sought (or not) human resources, an analysis of logistic regression was conducted.[6] One of the predictors of likelihood of whether employers sought human resources was the index of the phase of development of the company, which is why all the institutions (organs of governmental administration, local authority communities, mutual insurance companies, state bodies, local and regional authorities and bodies at the level of commune, county and region, co-operatives, institutions of higher education, independent public healthcare units, and funds) were excluded from the analysis. The decision was made as this index concerned only the situation of businesses.[7]

[5] The first round of the study was conducted from 17th August to 10th December 2010, and the second round – from 29th March to 29th June 2011.

[6] The dependent variable was the question "Does your business currently seek people to be employed at any post?".

[7] More on the subject in the report from the employer study in 2011 (Kocór et al. 2012).

Table 1.1.

Results of the logistic regression model forecasting the likelihood of readiness to employ staff

Variables		Exp(B) Seeking (0 No → 1 Yes)	
		2010	2011
Constant		***0.084	***0.101
Development phase	(Ref. Stagnant)	***	***
	Poorly developing	***1.656	***1.637
	Developing	***2.693	***2.687
	Strongly developing	***3.761	***4.326
Employment	(Ref. 1-9)	***	***
	10-49	1.199	0.981
	50-249	*1.645	**1.719
	250-499	***3.363	***3.788
	500+	*5.666	*4.812
Employee competences assessment	(Ref. Satisfied)	***	***
	Require training	***1.794	***1.807
	Not satisfied	***2.358	***3.143
Region	(Ref. Dolnośląskie)	***	***
	Kujawsko-pomorskie	0.863	0.8
	Lubelskie	1.279	1.148
	Lubuskie	1.021	1.142
	Łódzkie	1.129	***1.608
	Małopolskie	1.178	1.141
	Mazowieckie	**1.326	1.217
	Opolskie	1.105	1.188
	Podkarpackie	0.876	0.906
	Podlaskie	*1.453	1.072
	Pomorskie	1.144	***1.587
	Śląskie	0.923	1.071
	Świętokrzyskie	0.751	1.126
	Warmińsko-mazurskie	0.908	1.25
	Wielkopolskie	*0.765	1.074
	Zachodniopomorskie	1.13	*1.345
Main sector of activity	(Ref. Construction and transport)	***	***
	Industry and mining	***0.735	***0.682
	Trade, accommodation, and food service activities	**0.804	***0.627
	Specialist services	1.149	***0.382
	Private education	0.916	***0.413
	Human health and social work	1.032	***0.73
Model summary	Cox and Snell R square	0.051	0.059
	Nagelkerk R square	0.086	0.098
	McFadden R square	0.058	0.066
	Significance of the likelihood ratio test	0	0
	N	12637	12836

Levels of significance: *** p<0,001 ; **p<0,01 ; *p<0,05.

Source: BKL – Study of the employers 2010, 2011.

Employee needs vs. availability of labour resources

The results acquired show that the phase of development of the enterprise, satisfaction with competencies of the staff employed, and volume of employment each had a relatively large influence on the fact that entrepreneurs sought staff (Table 1.1). The impact of the type of business conducted and region where it was conducted, had a decisively smaller impact. If a firm developed strongly, the probability that they sought somebody to work was nearly four times as high, when compared to the stagnant businesses (by 276% in 2010 – exp(B) = 3.761 and 333% in 2011 – exp B = 4.326). Quite obviously, the increase of the probability to employ new people was influenced by the size of the business: the larger the enterprise, the higher was the probability that human resources would be sought. Thus, in the companies employing over 500 people – compared to the smallest businesses composed of up to 9 employees – the opportunity of recruitment increased nearly by the factor of five (by 467% in 2010 – exp B = 5.666 and 381% in 2011 – exp B = 4.812). In turn, dissatisfaction of employers with the competencies of their staff increase the probability of seeking candidates to work (by 136% in 2010 – exp B = 2.358 and by 214% in 2011 – exp B = 3.143) as compared to the situation of the businesses whose representatives were satisfied with the level of competencies of the employed. In the spring of 2011 – when seasonal work flourished – the construction and transport industries proved large demand for staff. Because of that, employers from other sectors of economy were less eager to employ new people. The odds were lowest in the case of specialist services and private education, which were halved when compared to the construction and transport sector (correspondingly by 62% – exp B = 0.382 and by 59% – exp B = 0.413).

The region were business was conducted, modified the probability of seeking employees in a fairly ambiguous way. In both points of time, this influence was different. Taking as the starting point, employers from Lower Silesia (Dolny Śląsk), in autumn 2010 a significantly larger probability of employment was declared by employers from Mazowsze and Podlasia (by 33% and 45% – exp B = 1.326 and 1.453 respectively) while those from Wielkopolska – declared smaller (by 24% – exp B = 0.765). In the spring of 2011, the picture changed: employers from the Łódzkie, Pomorskie and Zachodniopomorskie regions pointed to the readiness of employing staff to a much greater level (by 61%, 59%, and 34% – exp B = 1.608, 1.587, and 1.345 respectively).

Summing up, one notices that a greater probability of seeking employees was demonstrated by employers from larger businesses, developing, dissatisfied with the competencies of the employed, and active in construction business.

Having determined what employers sought employees, it is necessary to make a more precise reconnaissance of the structure of that demand, that is to take a closer look at the specific occupations in which employees were sought. Analysing the volume of demand for employees in the spring of 2011, employers sought more than 590,000 people to work. Taking into account the data from the autumn of 2010, it was only an insignificant increase in the demand, as at that time, employers, declared the need to employ more than 560,000 people. A growth of demand by 5% in the period of a greater intensity of various types of seasonal works is a proof of the caution in the face of economic crisis.

The table below (Table 1.2.) presents the general structure of demand for employees in various occupations in 2011, depending on the sector of business, region, and the size of the business and/or institution.

In the spring of 2011, the sectors generating the largest demand for employees were: construction and transport (nearly 200,000 employees sought), services for people, that is Trade, accommodation and food related service activities with the demand exceeding 160,000 people, and specialist services, with over 110,000 people needed. In these sectors, demand for specific occupations resulted from the specific features of business. In the construction and transport sector, employers sought mostly skilled workers, and operators and assemblers. In the businesses and institutions dealing with services for people, primarily service workers and sales force, and skilled workers were sought. In turn, employers providing specialist skills sought professionals, technicians and other associate professionals and service and sales workers.

Table 1.2.

Number of employees sought in individual occupations (broken down into sector, region and volume of employment (population data, occupations divided into major groups)

	MNGR	PROF	ASSO	CLER	SERV	SKIL	OPER	UNSK	Total
Industry and mining	587	5639	4349	6378	4206	44234	11194	5350	81936
Construction and transport	3520	20120	10554	1885	3966	100555	36644	18922	196166
Hospitality, retail and other services	2167	7160	20957	8977	61769	37406	16806	10817	166059
Specialist services	4546	26032	29683	9099	27729	11260	1770	2000	112120
Public education	47	4172	245	100	318	57	0	970	5909
Private education	43	1162	107	307	71	201	1388	660	3939
Human health and social work activities	17	20335	7659	422	1680	103	36	516	30768
Dolnośląskie	770	3760	6865	1289	6303	9725	3531	1910	34153
Kujawsko-pomorskie	444	3408	1851	844	1524	7028	4653	1679	21433
Lubelskie	228	2790	3005	663	4137	5527	3407	390	20149
Lubuskie	516	2651	3610	539	1692	8444	3037	876	21365
Łódzkie	447	5436	7162	1249	6538	21204	7316	4599	53950
Małopolskie	767	9108	4287	1067	3838	19611	4249	3294	46221
Mazowieckie	3779	27139	10308	10709	19314	12120	8782	2718	94808
Opolskie	38	1152	1631	300	1494	10720	1419	926	17680
Podkarpackie	401	2787	1610	101	2476	5571	2419	1417	16782
Podlaskie	43	1366	1616	901	2192	5150	490	905	12664
Pomorskie	483	9387	6635	1618	12634	9277	3852	4035	47922
Śląskie	962	4073	11929	3596	14504	19405	6733	9623	70826
Świętokrzyskie	327	4966	1205	868	1603	6553	3163	1074	19760
Warmińsko-mazurskie	1209	1627	2269	783	5178	8234	1141	2018	22460
Wielkopolskie	179	3054	3475	372	10414	35780	3417	1318	58008
Zachodniopomorskie	393	1917	6095	2269	5897	9464	10229	2451	38715
1-9	8863	70672	64488	22908	88502	172911	58414	33115	519873
10-49	1005	4855	3872	1480	5257	10995	3059	2073	32595
50-249	484	3660	2063	969	2125	4707	2597	2095	18699
250-999	518	4201	2201	1316	3066	4043	2578	1497	19420
1000+	58	1233	930	494	789	1159	1191	455	6309
Total	10927	84621	73554	27168	99739	193815	67839	39234	596897

Source: BKL – Study of the employers 2011.

The smallest demand for employees was recorded in the public services sectors, namely education (both public and private), human health and social work activities. Taken together, the employers from these three sectors were looking for 40,000 people to work.

There were no major surprises in the regional mix of employee demand. The largest number of employees were sought by employers from Mazowsze. The above was true for all the occupations with the exception of worker occupations, which results from the specific characteristic of businesses and institutions other regions were plenty of people to work were sought included Śląskie and Wielkopolskie.The geographic distribution of demand for skilled workers was quite interesting: the largest demand for such workers was present in four regions: Wielkopolskie, Łódzkie, Śląskie, and Mazowieckie. This was probably related not only to a greater number of seasonal works (mostly construction, as such employees from this category were needed in largest numbers), but also to major public projects being carried out.

Employee needs vs. availability of labour resources

Firms and institutions of various sizes declared different numbers of employees sought. Even though – on average – these were employers employing large numbers of people who needed most human resources, yet in 2011 these were on the whole the smallest employers who were responsible for the greater demand for labour. Simply, there are more micro-businesses and institutions in Poland. What is, however, interesting is the structure of demand of employers of various sizes for people sought to different positions. This, however, becomes visible only when the numbers mentioned above are expressed in percentage of demand for specific occupations, as presented in Table 1.3.

Table 1.3.

Employees sought to work in a specific occupation, depending on the volume of employment (percentages in rows calculated from the totals based on population data)

	MNGR	PROF	ASSO	CLER	SERV	SKIL	OPER	UNSK	Total
1-9	2	14	12	4	17	33	11	6	100
10-49	3	15	12	5	16	34	9	6	100
50-249	3	20	11	5	11	25	14	11	100
250-999	3	22	11	7	16	21	13	8	100
1000+	1	20	15	8	13	18	19	7	100

Source: BKL – Study of the employers 2011.

The smaller the firm or institution, the greater the demand for skilled workers. In turn, parallel to the growth of the volume of employment, the demand for white-collar workers increased (professionals, technicians, and other associate professionals and clerical staff). In the case of the remaining occupational categories, there were no major differences.

Having performed those general analysis of demand for employees, it is worthwhile to take a closer look at which specific occupations were most sought by employers, and what changes took place as compared to the autumn of 2010. The comparison of both rounds of the studies showed that – irrespective of the period of the year – generally three employee categories belong to those most frequently sought:[8]

1. **Skilled workers, assemblers and operators** – in the autumn of 2010, 40% of employers ready to employ staff sought people to such work, with the respective proportion in the spring of 2011, amounting to 50%.
2. **Professionals** – in 2010, 40% of employers mentioning an increase of employment sought people in this area, yet in 2011 the number of employers seeking human resources in this group of occupations decreased to 25%, and even that only with the inclusion of the business and administration associate professionals (as, should this category be excluded, only 15% of employers sought such human resources).
3. **Service workers** – 20% in 2010, and in 2011 – 25% of employers ready to employ people sought employment in such occupations.

It is clearly visible that the seasonal change of demand for staff in various occupations meant an increase of the demand for skilled workers, with parallel drop in the interest in professionals. Its character is seen even clearer from an analysis of the level of ISCO-08 sub-major groups (Table 1.4).

This table does not present changes for all the 43 occupational categories from this level of ISCO-08 classification, yet only the ones that had at least 50 employers seeking employees. The changes portray differences in the number of employees needed in 2010 and 2011. Visible is a decided growth of employer de-

[8] The changes described concern the gross values and do not account for current changes in employment introduced by employers. Such a limitation was applied consciously, and results from the methodology employed, which assumed collection of data via CATI interviews, which have to be short when it comes both to the duration and the number of questions asked. The general questions concerning the fluctuations of employment in the last 12 months prove, however, that there is a balance between instances of dismissal and employment. The data presented must always be treated as signals providing information about general trends concerning fluctuations in demand for employers.

mand for skilled workers, assemblers, and operators. This is related to the intensification of seasonal works in spring, especially in construction, which shows in the structure of demand for specific occupations. Employers sought the largest number of employees in specialised construction occupations (bricklayers, plasterers, pavement layers, construction carpenters and joiners, painters, roofers, and pipe fitters), and also just helpers at construction sites.

Another result of the growth of demand for skilled workers, assemblers, and operators was minor interest of employers in professionals. Employers sought fewer people to work in actually every professional occupation, with the exception of science and engineering professionals, where the greater demand was true for the occupations related to construction (construction engineers and architects), and business and administration professionals (including especially sales professionals).

Table 1.4.

Demand for employees in individual occupations (broken down into sub-major occupational categories) among employers seeking people to work (population data for occupations with at least 50 employers seeking employees in both the rounds of the study)

Occupation (ISCO-08 major groups)	2010	2011	Difference %*
Labourers in mining, construction, manufacturing and transport	9243	25511	**176**
Building and related trades workers, excluding electricians	62782	101275	**61**
Personal service workers	25514	40113	**57**
Stationary plant and machine operators	7391	11215	**52**
Metal, machinery, and related trade workers	30308	43560	**44**
Science and engineering associate professionals	5639	7697	**36**
Electrical and electronic trades workers	13187	17756	**35**
Administrative and commercial managers	2460	3225	**31**
Business and administration associate professionals	43249	47755	**10**
Cleaners and helpers	5142	5642	**10**
Science and engineering professionals	17188	18512	**8**
Business and administration professionals	26223	27980	**7**
Food processing, wood working, garment and other craft and related trades workers	28302	29536	**4**
Production and specialised services managers	3910	3996	**2**
Drivers and mobile plant operators	54089	50897	**-6**
Numerical and material recording clerks	13718	12781	**-7**
Teaching professionals	7044	6209	**-12**
Sales workers	65806	50795	**-23**
Protective services workers	7630	5751	**-25**
Health professionals	37556	22702	**-40**
General and keyboard clerks and related	19701	9234	**-53**
Customer services clerks	9822	3596	**-63**
Information and communications technology professionals	19787	6336	**-68**
Legal, social and cultural professionals	11423	2883	**-75**

* PLEASE NOTE: the last column contains the difference between the number of employees sought in 2011 and 2010 expressed in %. A positive value denotes that there were more people sought in the given occupation in 2011, and a negative one – that the number was smaller. Categories of individual occupations are colour coded, with pink marking skilled workers and assemblers, blue – professionals, and green – service workers.

Source: BKL – Study of the employers 2010, 2011.

What was highly interesting were the seasonal fluctuations of demand for service workers. The structure of that demand changed between 2010 and 2011, despite a generally larger number of employers seeking such people to work. Employers were less interested in customer services clerks, protection services, and sales force (even though, as it can be seen, the demand for professionals in this last field grew), yet they were looking for a larger number of people to become involved in personal services. This chiefly concerned hairdressers, waiters, bartenders, and beauticians.

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To eliminate the influence of the structure of the sample on the shape of the results, it is worthwhile to complement those with the data from the panel. Sample. In 2011, 2622 employers who participated in the first round of the study were deliberately re-examined.[9] The analysis conducted corroborates the conclusions presented above (see: Table A1 in the Appendix). Similarly, in this case also the largest increase of the demand concerned skilled workers in various specialties, and especially ones related to construction. Only in the case of operators and assemblers, that is predominantly drivers, the employers participating in the panel proved somewhat lower interest in 2011 as compared to 2010. Yet in the case of these employers, the question of fluctuation of demand for professionals looked differently. The demand for these occupations, even though it generally grew, remained only in the case of certain occupations: teaching professionals (mostly various teachers), information and communication technology professionals (a greater demand for system analysts, software testers, and network administrators) and science and engineering professionals (road construction engineers, quality control professionals, automation and robotics engineer). What, in turn, diminished, was the demand for health care professionals (physicians, nurses, and pharmacists), and business and administration professionals (banking and human resources professionals). Such changes in the demand for professionals result from the specific characteristics of firms and institutions participating in the panel. Businesses employing at least 50 people generally proved a greater interest in professionals. In the case of service workers, the trend observed for all the respondents was corroborated for the participants of the panel. What, however, increased was the interest in personal service workers (mostly cooks, waiters, and bartenders), and – to a slightly smaller degree – in sales personnel and client care personnel.

Employee demand and supply balance

The correct operation of the labour market requires appropriate balancing of the needs of employers concerning the employment of appropriate staff and availability of people eager to work in specific occupations. Which is why the further step is an attempt at such a juxtaposition of the demand and supply of human resources in occupational and regional frame. The data presented in the Table 1.5 present the differences between the percentage of employers seeking employees in specific occupations and the percentage of people who sought employment in such occupations. The people who declare that themselves to be ready to undertake a specific job were those who work, yet for some reasons are ready to change employment; the professionally inactive, who wanted to return to work; the unemployed seeking employment; and young people entering the labour market: graduates of secondary schools and institutions of higher education. Such an extended perspective of the supply side of the labour market will make it possible to estimate precisely the balance between the supply and demand for labour. For presentation purposes, the displayed results are broken down into regions (voivodeships), and only into the sub-major occupational categories, in line with the ISCO-08 classification. Negative values are highlighted in blue, and denote that the demand for the given type of employees exceeds the supply (expressed in %), which means that there was a shortage of people to work in the given occupation (and/or region). On the other hand, the positive values – highlighted in red – denote oversupply of labour (expressed also in %).

What can be noticed at the general level is that in the spring of 2011, there was a relatively high excess of supply of elementary workers, office workers, sales workers, and service workers. Shortages, in turn, concerned mostly skilled workers for physical works: workers, operators, and assemblers. To a smaller degree, the lack of appropriate staff in the labour market was present among technicians, associate professionals, and managers.

[9] Participating in the panel sample were only representatives of businesses and institutions employing more than 50 people (including all the employers drawn previously from the layers of businesses and institutions exceeding 250 people). For that reason, the industry-related structure of the panel sample was somewhat different: it had a greater participation of employers dealing with manufacturing and mining, and fewer of entrepreneurs running services for people (trade, accommodation and food related service activities), and services in education.

Table 1.5.

Balance between employee supply and demand in individual regions (the difference between the percentage of people seeking employment in the occupation and the percentage of employers seeking employees in the given occupation, broken down into sub-major groups according to ISCO-08 classification of occupations

		MNGR	PROF	ASSO	CLER	SERV	SKIL	OPER	UNSK
2010	Dolnośląskie	-2.8%	-17.2%	-1.4%	5.7%	6.5%	-3.7%	3.2%	9.9%
	Kujawsko-pomorskie	1.5%	0.6%	-1.5%	-1.0%	14.9%	-9.8%	-11.4%	6.6%
	Lubelskie	-1.3%	-10.6%	14.7%	5.0%	6.7%	-7.7%	-12.7%	5.9%
	Lubuskie	-2.2%	-11.8%	-5.3%	11.1%	8.9%	-9.0%	0.1%	8.3%
	Łódzkie	-2.1%	-11.5%	6.9%	-6.9%	10.6%	3.4%	-3.8%	3.4%
	Małopolskie	-2.3%	-8.5%	18.1%	-0.8%	-4.5%	-4.9%	-3.8%	6.6%
	Mazowieckie	-2.2%	-7.9%	-2.7%	1.3%	5.6%	2.8%	0.7%	2.3%
	Opolskie	2.3%	0.4%	3.8%	8.3%	-11.5%	13.7%	-19.2%	2.2%
	Podkarpackie	-5.9%	-11.8%	0.2%	4.1%	14.3%	-0.8%	-11.7%	11.7%
	Podlaskie	-3.4%	2.1%	-3.5%	5.4%	9.9%	-5.0%	-7.4%	2.0%
	Pomorskie	-6.1%	-13.9%	-0.4%	3.2%	13.9%	1.5%	-14.6%	16.3%
	Śląskie	1.6%	-12.3%	-3.5%	-10.1%	14.3%	-3.8%	-3.5%	17.3%
	Świętokrzyskie	-0.8%	-0.8%	3.6%	2.2%	-3.0%	-8.7%	-11.3%	18.6%
	Warmińsko-mazurskie	0.4%	5.2%	-10.1%	2.8%	9.2%	-3.5%	-11.8%	7.7%
	Wielkopolskie	-0.8%	-1.0%	-13.5%	6.1%	14.7%	0.8%	-5.5%	-0.7%
	Zachodniopomorskie	-7.1%	-18.4%	-15.0%	-6.4%	22.3%	10.1%	-0.4%	15.0%
	Total	-1.9%	-9.1%	-0.5%	0.6%	9.3%	-1.4%	-4.9%	8.0%
2011	Dolnośląskie	-2.9%	0.9%	-14.7%	5.1%	5.6%	0.0%	-4.5%	10.5%
	Kujawsko-pomorskie	-2.9%	-10.3%	3.0%	-3.0%	19.1%	0.4%	-9.9%	3.6%
	Lubelskie	-0.4%	1.6%	-13.3%	9.3%	9.1%	-9.1%	-10.6%	13.7%
	Lubuskie	-0.7%	-8.6%	-7.4%	7.0%	15.2%	-10.3%	-9.5%	14.2%
	Łódzkie	-1.6%	6.5%	-5.8%	14.5%	0.1%	-10.6%	-5.4%	2.2%
	Małopolskie	-1.3%	-7.5%	1.3%	9.1%	11.1%	-11.3%	-8.1%	6.7%
	Mazowieckie	-4.3%	3.3%	-5.8%	1.3%	-8.1%	2.7%	-1.1%	11.9%
	Opolskie	-0.2%	-0.3%	-8.3%	13.5%	13.3%	-17.9%	-7.5%	7.3%
	Podkarpackie	-2.4%	-7.9%	6.1%	5.1%	10.6%	-13.9%	-4.1%	6.4%
	Podlaskie	-0.4%	-2.1%	-4.4%	-1.4%	2.8%	-10.2%	3.7%	12.0%
	Pomorskie	0.5%	-4.6%	-3.9%	6.3%	-7.8%	7.0%	-0.4%	2.8%
	Śląskie	-2.5%	3.3%	0.8%	7.8%	-3.0%	-12.1%	0.0%	5.7%
	Świętokrzyskie	-3.4%	3.6%	8.3%	-1.6%	8.2%	-4.8%	-15.7%	5.3%
	Warmińsko-mazurskie	-6.8%	-2.6%	-6.2%	5.6%	5.3%	-7.3%	2.8%	9.3%
	Wielkopolskie	-0.5%	2.6%	2.3%	10.9%	6.9%	-28.0%	-3.0%	8.6%
	Zachodniopomorskie	-2.1%	5.0%	-4.7%	10.2%	8.3%	-7.5%	-15.1%	5.9%
	Total	-2.2%	-0.6%	-2.8%	5.8%	3.4%	-7.3%	-4.7%	**8.3%**

Source: BKL – Study of the employers 2010, 2011 and Population Study 2010, 2011.

Interesting conclusions can be drawn from a comparison of labour market balance in two periods when the studies were conducted. As far as the situation of elementary workers, operators and assemblers, and managers did not change (which means that the oversupply of elementary workers and shortage of labour in the remaining two categories continued), in the case of other employees, the juxtaposition of supply and demand brought other results. The picture changed most for two occupational categories, namely skilled workers and professionals. The shortage of skilled workers, present in 2010, increased significantly

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in 2011, from 1.4% to 7.3%. The change in the numbers of professionals was to the contrary: as far as that occupational category experienced the greatest shortage (with the demand exceeding supply by 9.1%) in the autumn of 2010, the demand for such staff was actually at par with the supply in the spring of 2011.

Analysing the percentages of people seeking work in various occupations, one can say that the changes described here resulted solely from the seasonal character of the demand for employees reported by employers. In both rounds of the study, the same number of people declared seeking jobs in the individual occupations,[10] with only somewhat fewer people seeking work as technicians and associate professionals in 2011, and a slightly larger number looking for employment as elementary workers. Taking into account the seasonal change of employer demand for people to work in specific occupations, the changes described here are easy to explain. On the one hand, growing significantly in 2011 was the demand for skilled workers, which was related to intensification of various seasonal works calling for such workers in springtime, their supply remaining at the same level caused, therefore, a significant shortage. On the other hand, the demand for professionals decreased, which weakened the deficit of employees in this group of professions.

In the case of elementary workers, one must bear yet another question in mind. Namely that in fact, the number of people ready to embark on such work was higher. Some people who were asked about work they sought answered "any", which means they could perform any elementary work. Taking the above into account, it must be added that the actual oversupply in the category of elementary workers is at least by 10% higher than the presented listing would suggest, a factor that is true for both the periods of studies.

With data from both the periods available, it is worthwhile to present also a number of the most interesting changes that took place when it comes to labour supply and demand balance in regional breakdown. The table presented above (Table 1.5) uses bold type and boxes to point to the largest changes in the balance of needs of employers and employee availability in individual regions. Such a change became most obvious in the case of the Opolskie region, and concerned service workers and sales people, and skilled workers. Present in 2010 was a shortage of service and sales workers and oversupply of skilled workers, while the situation in 2011 was reversed. The changed was caused by different needs of the employers from the region and availability of labour in the two occupational categories. Present in Wielkopolskie region in 2011 was a major shortage of skilled workers, caused by a large growth of demand among the region's employers for such labour (with the supply remaining unchanged). The reason was the number of construction investments carried out at the time in Poznań and throughout the region. In the Łódzkie region, a large number of people seeking work in clerical occupations turned up in 2011, which – with constant demand among the employers – caused the oversupply in the market. A situation to the contrary occurred in the Lubelskie region and concerned technicians and associate professionals. In 2011, a decidedly smaller number of people sought employment in this occupation, which caused a shortage of such employees. The last case to be discussed here were professionals in Zachodniopomorskie region, with the region's employers reporting a smaller demand in 2011, which resulted in a slight oversupply of such people in the region's labour market.

[10] Between the studies conducted in 2010 and 2011, the changes of the percentage of the people seeking employment, broken down by major occupational categories was as follows: managers – no change, professionals – 0.2% people fewer sought employment in 2011, technicians and associate professionals – 2.6% fewer people sought employment in 2011, clerical workers – 0.8% more people sought employment in 2010, sales and service workers – 0.3% more people sought employment in 2011, skilled workers – 0.5% more people sought employment in 2010, operators and assemblers – 0.4% fewer people sought employment in 2011, elementary workers – 1.6% more people sought employment in 2010.

Table 1.6.

Employee supply and demand balance in individual occupations, broken down by region (difference between the percentage of people seeking work in the occupation and the percentage of employers declaring seeking people to work in the given occupation, divided into sub-major groups according to ISCO-08)

	C	S	E	NW	SW	N	Total
11 Chief executives, senior officials and legislators	-0.1%	-0.1%	0.1%	-1.9%	0.0%	0.3%	**-0.3%**
12 Administrative and commercial managers	-1.4%	0.3%	-0.6%	-0.2%	0.8%	-1.4%	**-0.5%**
13 Production and specialised services managers	-0.2%	0.2%	-2.3%	-1.5%	-2.5%	-0.3%	-0.8%
14 Hospitality, retail and other services managers	-0.6%	-1.0%	0.2%	0.3%	0.0%	-0.7%	**-0.3%**
21 Science and engineering professionals	-2.6%	0.1%	-1.8%	-1.2%	-1.9%	-0.2%	**-1.4%**
22 Health professionals	-1.8%	-7.4%	-1.0%	-5.8%	-5.8%	-3.1%	**-4.0%**
23 Teaching professionals	2.0%	2.3%	2.1%	2.0%	1.2%	0.0%	**1.6%**
24 Business and administration professionals	-4.0%	-2.7%	-4.4%	-4.6%	-2.0%	-0.4%	-3.2%
25 Information and communications technology professionals	-3.3%	-3.4%	-1.1%	-1.4%	-2.0%	-1.3%	**-2.3%**
26 Legal, social and cultural professionals	-1.3%	0.4%	0.7%	1.8%	-2.3%	1.0%	**0.0%**
31 Science and engineering associate professionals	1.7%	4.5%	1.9%	0.7%	2.0%	-0.2%	**2.0%**
32 Health associate professionals	-2.1%	-1.0%	0.8%	0.9%	-0.4%	-1.3%	**-0.6%**
33 Business and administration associate professionals	2.6%	1.0%	1.6%	-10.3%	-5.8%	-1.7%	-1.7%
34 Legal, social, cultural and related associate professionals	0.6%	1.6%	0.9%	-0.7%	3.0%	-0.2%	**0.7%**
35 Information and communications technicians	-3.1%	1.2%	-1.4%	-1.8%	1.2%	0.7%	**-0.8%**
41 General and keyboard clerks	2.6%	4.6%	6.9%	4.5%	8.5%	2.7%	**4.3%**
42 Customer services clerks	0.0%	-2.2%	-1.9%	-1.9%	-4.6%	-0.1%	**-1.4%**
43 Numerical and material recording clerks	-3.3%	-8.1%	-0.8%	-0.2%	1.5%	0.0%	-2.4%
44 Other clerical support workers	-0.7%	0.4%	-0.1%	0.2%	0.4%	-0.9%	**-0.1%**
51 Personal service workers	1.8%	-0.4%	5.8%	4.4%	1.6%	2.4%	**2.7%**
52 Sales workers	0.3%	4.4%	0.7%	7.9%	-1.9%	7.9%	**3.7%**
53 Personal care workers	2.1%	1.0%	1.4%	2.3%	0.9%	1.0%	**1.4%**
54 Protective services workers	2.5%	-0.1%	1.9%	1.2%	1.2%	1.1%	1.3%
71 Building and related trades workers, excluding electricians	0.0%	-4.1%	-6.5%	-3.2%	-1.5%	-2.7%	**-2.7%**
72 Metal, machinery and related trades workers	0.4%	0.3%	-2.4%	0.1%	-2.2%	-2.2%	**-0.9%**
73 Handicraft and printing workers	0.9%	0.0%	0.1%	-0.2%	0.3%	-0.5%	**0.1%**
74 Electrical and electronic trades workers	0.5%	-2.2%	-0.3%	0.2%	-2.2%	-2.2%	**-0.8%**
75 Food processing, wood working, garment and other craft and related trades workers	1.9%	0.1%	0.9%	3.4%	3.0%	2.8%	1.6%
81 Stationary plant and machine operators	-1.3%	-0.2%	-2.4%	-0.5%	0.9%	-0.7%	**-0.8%**
82 Assemblers	-0.9%	0.8%	-0.6%	0.3%	0.0%	-0.7%	**-0.2%**
83 Drivers and mobile plant operators	1.5%	-4.2%	-7.4%	-2.0%	-3.0%	-10.2%	**-3.7%**
91 Cleaners and helpers	1.3%	2.5%	2.1%	3.5%	-0.6%	2.8%	**2.1%**
92 Agricultural, forestry and fishery labourers	0.0%	0.0%	0.0%	0.3%	-0.1%	0.9%	0.2%
93 Labourers in mining, construction, manufacturing and transport	3.2%	7.4%	4.9%	3.7%	7.2%	5.3%	**5.2%**
94 Food preparation assistants	-1.5%	1.4%	1.0%	0.2%	0.0%	0.3%	**0.3%**
95 Street and related sales and service workers	0.2%	0.4%	0.2%	0.0%	0.0%	0.0%	**0.2%**
96 Refuse workers and other elementary workers	1.3%	2.0%	0.6%	-0.8%	1.7%	1.9%	**1.1%**

Acronyms for regions: C – Central, S – Southern, E – Eastern, NW – North-western, SW – South-western, N – Northern.

Source: BKL – Study of the employers 2010, 2011 and Population Study 2010, 2011.

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An analysis of the labour supply and demand balance at the level of more detailed, occupational categories, known as sub-major in ISCO-08 classification[11] brings more precise information about shortages and surpluses of human resources. The results are presented in Table 1.6, where – much like previously – the blue colour marks shortages, and red – surpluses. The deficit of labour concerned mostly highly specialist occupations: managers and professionals, but also skilled workers and operators and assemblers. Relatively highest shortages were present among healthcare professionals (physicians of various specialties, nurses, and pharmacists), business and administration professionals (sales professionals, marketing professionals), and assorted drivers and mobile plant operators. In turn, oversupply was present among the service and sales workers and elementary workers, and especially in the case of workers in mining, industry, construction and transport, secretaries, keyboard clerks, and sales workers. The relatively high oversupply of unskilled production workers – present virtually in every region of the country – is an interesting phenomenon. As shown in the previous analyses that a demand for such employees has significantly increased.

Examination of this balance in the regional breakdown allows to capture certain differentiations. As far as shortages were concerned, Western regions stood out (Dolnośląskie, Lubuskie, Opolskie, Wielkopolskie, and Zachodniopomorskie): here, the demand slightly exceeded the supply in the case of healthcare professionals and business and administration associate professionals (mostly bookkeepers). Characteristic of the southern region – Silesia and Małopolska – was the shortage of healthcare professionals, numerical and material recording clerks (warehouse operators and accounting assistance) and construction workers. There was, however, present a relatively large oversupply of science and engineering associate professionals (i.e. technicians operating in these fields) and elementary workers in production. The Northern region (the Kujawsko-Pomorskie, Pomorskie, and Warmińsko-Mazurskie administrative regions) featured on the one hand a major surplus of sales people, and the largest shortage of drivers and mobile plant operators in the country, on the other.

To sum up, one needs to say that both in 2010 and 2011 the most deficit occupations in Poland were ones that fall into one of the following three categories: skilled workers in specific industries (mostly construction), assorted professionals (healthcare, business and administration, and information and communication), and specific categories of service workers (hairdressers, beauticians, and cooks, waiters and bartenders). These occupations were most frequently sought, irrespective of the season of the year, and the seasonal changes in demand for labour influenced the structure of the demand only insignificantly (in spring and summer, the demand for workers grew, while that for professionals decreased). Answering the needs of employers in these occupations, the labour market does not manage to keep up producing an appropriate number of people to work. At the same time, there are surpluses of employees in other occupational categories, mostly unskilled workers, sales workers, and office and clerical staff. Especially in the case of people to perform basic elementary works, the availability of human resources is high, and is additionally augmented by the group of people who – seeking work – would be ready to perform even such elementary works.

Employee preferences concerning employees

Before presenting a balance of employer demand for competencies and competency resources in the hand of people seeking work, it is worthwhile to explain the general expectations and requirements of the employers towards candidates to work in various occupations in greater detail. To achieve that, employers answers to the question about what they take into consideration while seeking an employee in one of 35 occupations were analysed in two stages.[12] Three types of requirements where covered, namely:

[11] Excluded from the analyses are occupations related to agriculture (codes 61, 62, and 63) because of the fact that employers dealing with agriculture were not part of the sample.

[12] The analysis was conducted in reference to the so-called sub-major occupational categories in the ISCO-08 classification covering 43 more generalised occupations. Excluded from the analyses are occupations related to agriculture (codes 61, 62, and 63) because of the fact that employers dealing with agriculture were not part of the sample.

- gender of the candidates[13]
- level of education
- competencies, divided into 11 main competency classes.

Such data was first used to conduct a multidimensional correspondence analysis between various types of criteria which were used to assess the jobseekers in various occupations. Then, the results acquired from the correspondence analysis were used in hierarchical clustering analysis, which made it possible to show in which occupations employers used similar requirements for the candidates.

The multidimensional correspondence analysis disclosed three main dimensions that can be used to identify employee preferences towards candidates applying for jobs in various occupations. These three dimensions are responsible for altogether 86.2% of the entire model inertia. It turned out, however, that only the two first dimensions are clearly interpretable. The third dimension that differentiates employer preferences towards the candidates cannot, however, be unmistakably named. Yet the limitation of the model solely to a two-dimensional space made it impossible to apply the clustering analysis to point clearly to the occupations, in which employers formulated similar requirements for employees. This is why, presented as results is only the analysis of employer requirements profiles based on two dimensions. The preference profiles towards various occupations in a two-dimensional space defined in this way are shown in the Chart 1.1.

The first of the isolated dimensions referred to the differentiation between two types of work – physical and non-manual (responsible for 60.8% of the entire model inertia). Thus, it divides the three types of requirements taken into account (gender, education, and competencies), depending on the type of employee sought – physical and non-manual. The second dimension differentiated the work performed from the point of view of the level of specialisation (professionalism) related to every occupation: from elementary works that do not require major preparation (e.g. food preparation assistants) to more advanced occupations (e.g. science and engineering professionals). The latter dimension differentiates the preferences of employers to a smaller degree, and is responsible for 17.4% of the model inertia.

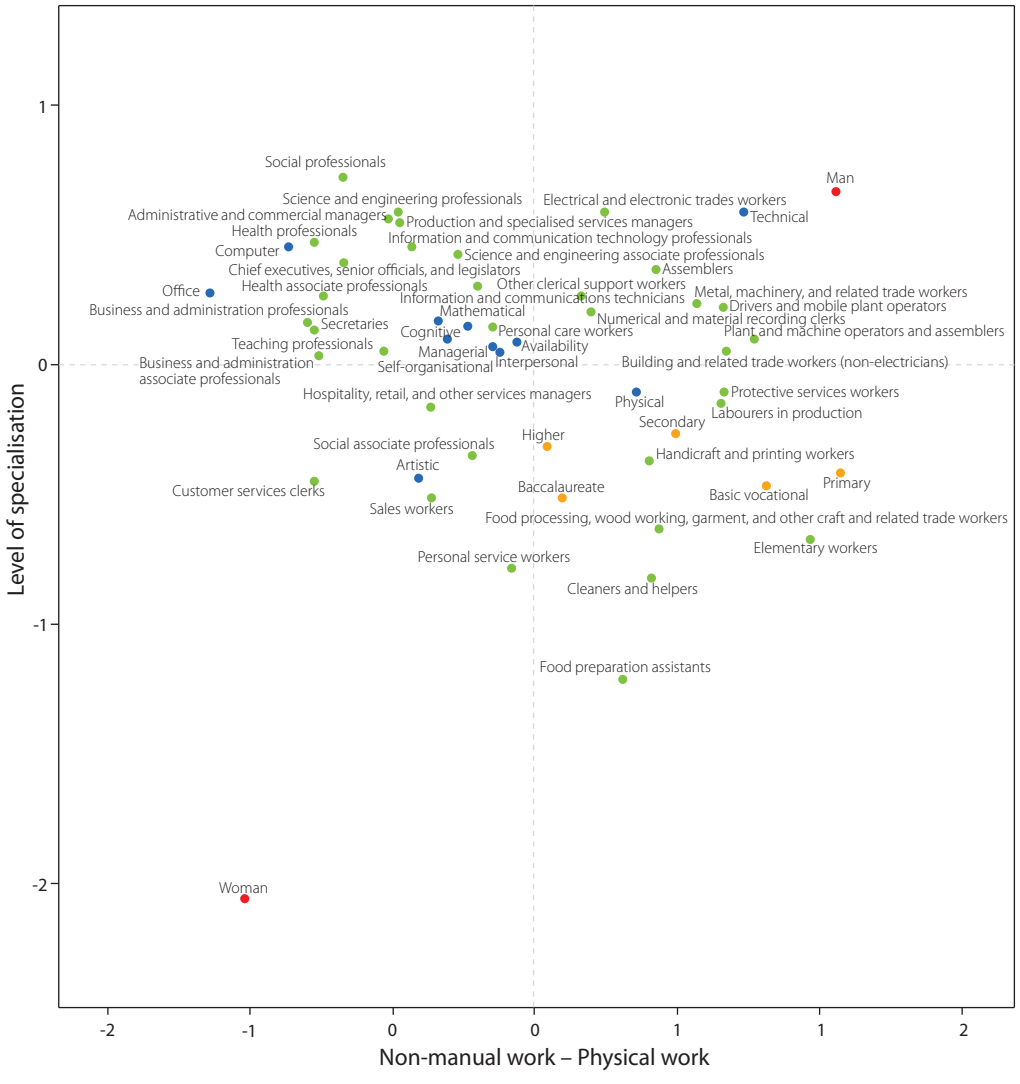
What immediately catches the eye is the clear polarisation of employer requirements by the gender criterion. Women were preferred to non-manual occupations, yet not requiring more solid preparations. In the opinion of employers, the more feminine occupations include therefore, beginning with the most elementary: food preparation assistants, cleaners and helpers, personal care workers, sales workers, customer services clerks, social associate professionals, to the more complex: hospitality, retail and other services managers, business and administration associate professionals, and education professionals. Men, in turn, are perceived by the employers, as more fit for physical work and jobs requiring a higher level of specialisation. The number of more masculine occupations included the following: electrical and electronic trades workers, assemblers, metal and related trade workers and mechanics, drivers and mobile plant operators, plant and machine operators and assemblers, building workers, protective services workers, labourers in production and elementary workers. In the case of managerial and professional occupations, gender did not play such an important role, which was corroborated by the direct responses of the employers.

[13] The respondents were asked a question "While enrolling people to work, would you definitely prefer to enrol a woman, rather a woman, rather a man, definitely a man, or does it not matter at all?" (With the part of the answer "does not matter at all" not being read out directly to the subjects.)

Employee needs vs. availability of labour resources

Chart 1.1.

Employer requirements profiles viz. candidates to work in specific occupations



PLEASE NOTE: Colour coding refers to individual types of requirements, with blue concerning competencies, orange – level of education, and red – gender. Green points denote individual occupational categories.

Source: BKL – Study of the employers 2010, 2011.

The following conclusions concern the required level of education. It proved to be a rather purely formal requirement and had no influence on the diversity in employer preferences towards candidates for various posts. As was observed in line with common sense, employers would rather associate higher levels of educational requirements to white-collar jobs, while lower levels of education would predestine the candidates somewhat more to physical work.

On the other hand, it is very interesting to examine the requirements concerning various types of competencies. Generally, it can be said that not all the competencies defined the expectations of employers concerning work in individual occupations. Some competencies did not have such a significance. These were the self-organisational, interpersonal, and availability competencies, which – as is known from other analyses – were most sought after by employers, irrespective of the occupation to which they sought candidates, as well as the mathematical, managerial, and cognitive competencies, which in turn employers required only occasionally from the candidates.

The remaining competencies quite clearly translated into the expectations connected to specific occupations. Thus, technical and physical competencies were connected to physical work and worker occupations, to which men were sought for their predispositions. Computer and office competencies were expected in candidates to white-collar jobs, especially in the occupations at a high level of specialisation (managers and professionals). Holding artistic competencies the employers in most cases associated with the feminine occupations.

Using the dimensions acquired in the correspondence analyses, a clustering analysis was conducted; its results show which occupations were similar in the respect of requirements formulated by the employers towards the candidates applying for work in various occupations. The results of this analysis are presented in the Chart 1.2 below.

The chart is a dendrogram, in which the connecting lines (branches) show which occupations had similar employer preferences. The closer the individual branches are, the greater the similarity of requirements and expectations.

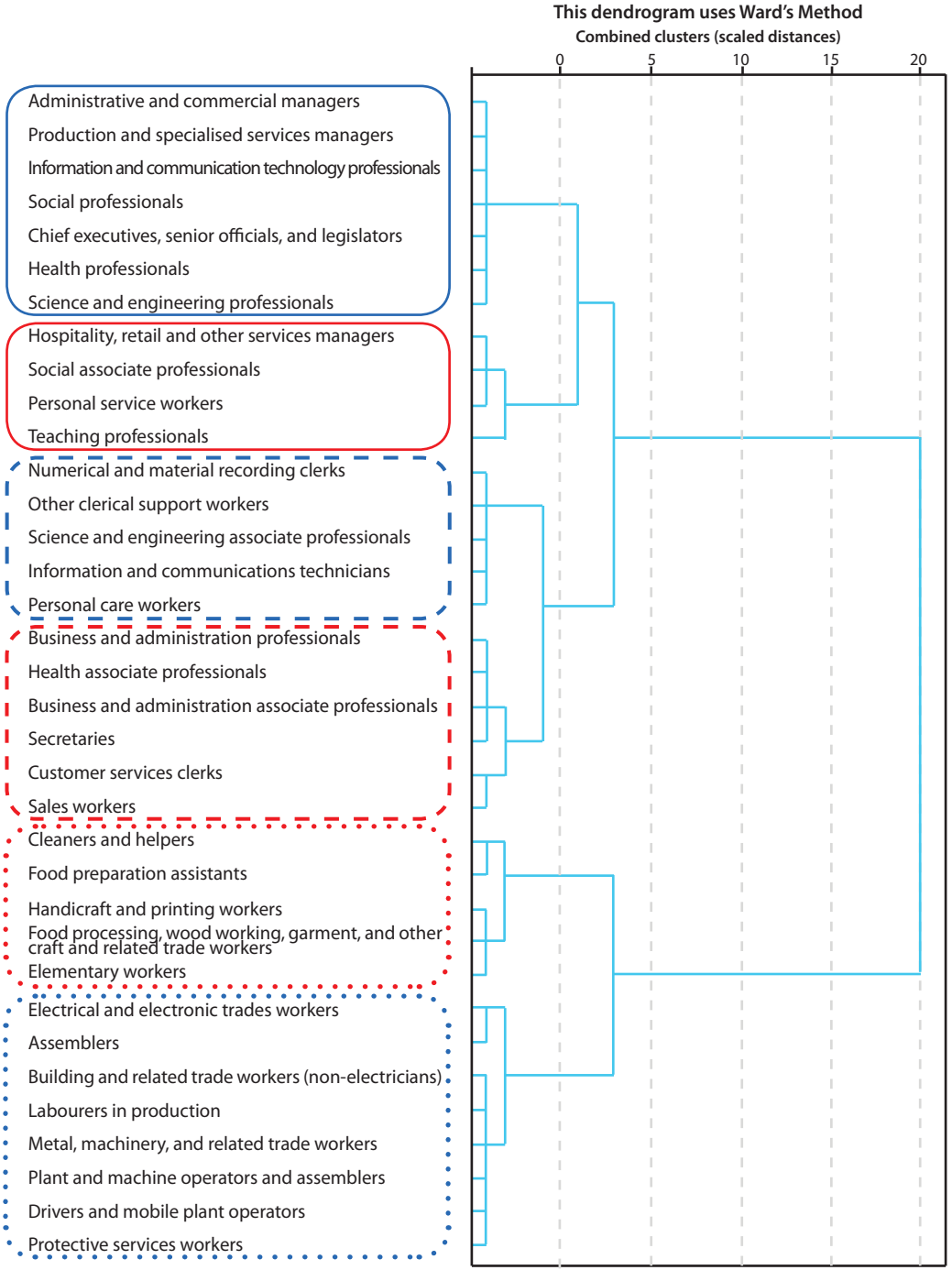
Compared to the results of the correspondence analysis identifying the profiles of requirements, one notices that the main factors deciding about the similarity of employer expectations were gender and level of professionalisation of the occupation. Thus, six types of professions can be distinguished (as indicated in the chart by colour and style of the boxes around the names of similar occupations):

1. Highly specialised masculine occupations: representatives of public authorities, chief executives, senior officials, and legislators, administrative and commercial managers, production and specialised services managers, information and communication technology professionals, science and engineering professionals, health professionals and science and engineering associate professionals.
2. Highly specialised feminine occupations: hospitality, retail and other services managers, teaching professionals, legal, social and cultural associate professionals, personal service workers.
3. Masculine associate professional and technician occupations: science and engineering associate professionals, information and communications technicians, numerical and material recording clerks, other clerical support workers and personal care workers.
4. Feminine associate professional and technician occupations: business and administration professionals, health associate professionals, business and administration associate professionals, general and keyboard clerks, and customer services clerks and sales workers.
5. Masculine elementary occupations: protective services workers, building and related trade workers (excluding electricians), metal, machinery, and related trade workers, electrical and electronic trades workers, stationary plant and machine operators, assemblers, drivers and mobile plant operators, and Labourers in mining, construction, manufacturing and transport.
6. Feminine elementary occupations: cleaners and helpers, food preparation assistants, handicraft and printing workers, Food processing, wood working, garment, and other craft and related trade workers, and also refuse workers and other elementary workers.

Employee needs vs. availability of labour resources

Chart 1.2.

Similarity of occupations, in whose case employers sought candidates, with respect to the requirements formed



Source: BKL – Study of the employers 2010, 2011.

The comparison above shows clearly that employers treated feminine and masculine occupations differently, depending on the level of specialisation required in every one of them. In the case of men, the occupations with high level of specialisation required were managerial and professional occupations, while in the case of women, they included ones related to teaching (teachers, school pedagogues) and managerial in the field of services, yet besides these, also the (social) associate professional and technician occupations, and personal service workers. A similar situation was present among the most elementary occupations – the ones defined as feminine required lower level of specialisation (unskilled workers).

Competency shortages

Another question asked in the introduction was the question of the lack of candidates vested with appropriate competencies, i.e. an attempt at identification of competency shortages. To answer the question, two analyses were conducted. First, competency shortages were analysed on the grounds of an analysis of occupations, in which employers experienced difficulties in recruiting appropriate candidates, if the reason for such difficulties was the lack of appropriate competencies. Secondly, a more detailed analysis of these shortages meant addressing specific competencies lacking in candidates to specific occupations. Such an approach to the problem of competency shortages made it possible to analyse them more precisely than in the approach resorted to by the European Centre for the Development of Vocational Training (CEDEFOP), where shortages are in most cases identified through the analysis of recruitment problems among employers (Skills 2010).

The results from two rounds of the study show that differences with finding appropriate staff were a problem which is constant in its nature, present systematically and irrespectively of the period, and as such was reported by 75% of employers in Poland. The similarities present here between the two periods of time make it possible to conduct an analysis on an aggregated sample, which allows obtaining more precise results.

Difficulties concerning the recruitment of staff, resulted chiefly from the failure to fulfil the requirements for candidates. It was the reason behind the impossibility to find appropriate employees experienced by three in four employers subjected to problems in recruiting appropriate people to work (Table 1.7). Only in the case of certain occupations, peopling the posts caused problems due to the reasons. Such a situation was true in the case of physicians, nurses, pharmacists, information technology technicians, and teaching professionals (teachers of various types), where appropriate people for work were missing, and candidates did not apply.

In the case of certain occupations, the problem was in excessive expectations of the employees, especially of remuneration nature. The problem, however, concerned rather employees in the more elementary occupations – cleaners and house aids, operators of machines and mining and processing machinery, yet also – which is interesting – material recording clerks (warehouse staff and accounting assistants). It is useful to mention that the situation presented here hardly diverged from the results acquired in the autumn of 2010.

Employee needs vs. availability of labour resources

Table 1.7.

Reasons behind difficulties in finding appropriate people to work (% of answers of the employers who have problems with finding people to work, broken down into sub-major occupational groups according to ISCO-08; merged data for 2010 and 2011)

	Practically no one answered the job posting	Candidates did not meet our expectations	Candidates found our conditions unsatisfactory	N Non-weighted
11 Chief executives, senior officials and legislators	0	99	1	30
12 Administrative and commercial managers	2	86	13	60
13 Production and specialised services managers	19	66	15	108
14 Hospitality, retail and other services managers	5	93	1	8
21 Science and engineering professionals	5	72	23	226
22 Health professionals	63	25	12	367
23 Teaching professionals	25	63	13	202
24 Business and administration professionals	3	96	1	199
25 Information and communications technology professionals	8	91	1	90
26 Legal, social and cultural professionals	20	74	6	34
31 Science and engineering associate professionals	10	81	9	132
32 Health associate professionals	23	61	16	31
33 Business and administration associate professionals	3	83	14	262
34 Legal, social, cultural and related associate professionals	25	53	21	42
35 Information and communications technicians	28	71	1	19
41 General and keyboard clerks	25	63	12	42
42 Customer services clerks	1	98	1	41
43 Numerical and material recording clerks	0	60	40	49
44 Other clerical support workers	0	100	0	7
51 Personal service workers	14	78	8	172
52 Sales workers	3	86	11	262
53 Personal care workers	2	97	1	6
54 Protective services workers	1	82	17	30
71 Building and related trades workers, excluding electricians	12	80	8	335
72 Metal, machinery and related trades workers	10	83	6	417
73 Handicraft and printing workers	7	90	4	37
74 Electrical and electronic trades workers	12	83	6	156
75 Food processing, wood working, garment and other craft and related trades workers	24	66	10	322
81 Stationary plant and machine operators	14	60	26	99
82 Assemblers	0	100	0	16
83 Drivers and mobile plant operators	6	76	18	321
91 Cleaners and helpers	0	67	33	37
93 Labourers in mining, construction, manufacturing and transport	11	75	13	59
94 Food preparation assistants	8	83	10	16
96 Refuse workers and other elementary workers	1	94	5	13
Total	13	75	11	4247

Source: BKL – Study of the employers 2010, 2011.

Competency shortages

Employers were relatively unanimous on which requirements were not met by the candidates (Table 1.8). What they meant was predominantly the lack of appropriate competencies, the fact pointed to by 40% of employers.[14] If one were to account for the fact that the opinions entered in the category "other shortages", concerned mostly the shortage of certain specific competencies, it may be assumed that in the case of every other difficulty related to the recruitment of staff, and resulting from the requirements unfulfilled by the candidates, the reason were competency shortages.

Candidates' lack of appropriate competencies was mentioned in the capacity of an obstacle in finding appropriate people to work by employers with various volume of employment with similar frequency. Similarly, the phase of development of the firm was poorly correlated with emphasising competency shortages as reasons for difficulties: the developing businesses would report this problem more often than the stagnant ones. Yet it is also to be emphasised that, irrespective of the level of development of the enterprise, the problem was true for all the employers.

Table 1.8.

Shortages perceived in candidates that are an obstacle in finding appropriate people to work (% of responses of employers who encounter difficulties to find people meeting expectations to work, broken down by the size of the firm, and its level of development; aggregated data for 2010 and 2011)

		Shortages of:					
		Competencies	Licenses	Experience	Motivation to work	Other shortages	N non-weighted
1-9	Stagnant	31	7	33	24	4	435
	Poorly developing	34	11	21	27	7	835
	Developing	45	4	23	21	7	819
	Strongly developing	45	6	21	23	5	392
	Total	39	7	24	24	6	2481
10-49	Stagnant	36	16	27	19	3	29
	Poorly developing	41	8	31	13	7	60
	Developing	37	6	28	24	5	45
	Strongly developing	38	4	32	16	10	18
	Total	39	8	29	18	6	153
50+	Stagnant	36	17	32	10	5	12
	Poorly developing	35	15	36	8	7	21
	Developing	38	13	36	9	4	15
	Strongly developing	42	8	39	6	6	7
	Total	37	14	36	8	5	55

Source: BKL – Study of the employers 2010, 2011.

The size of the enterprise differentiated fairly clearly the problems related to the requirement of appropriate candidate experience. The larger the business, the more do the employers complain about the lack of job experience. These problems resulted from greater requirements concerning the duration (years) of experience put up for candidates by large businesses.

Shortages in experience on the job in the candidates to the positions offered came as a surprise, as employers emphasise the significance of occupational experience in the process of recruitment. It was the most frequently present criterion of selection (and by the way the one to be best described) found in job offers – both those published in County Employment Offices (PUPs), and in online portals both in 2010 and in 2011.[15]

Analysing the percentages of offers that contained the requirement of job experience at the level of sub-major occupational categories according to ISCO-08 classification, one can clearly see that a contemporary employer needs an employee "ready" to perform specific actions that belong at the worksite (Table 1.9).

[14] The data presented in Table 1.8 concern only representatives of businesses, and do not account for employers from various institutions. Nevertheless, the opinions of institutional employers concerning shortages in candidates to work were convergent with those of business employers.

[15] Detailed requirements towards candidates formulated in job offers published in County Employment Offices (PUPs), and in online portals can be found in the Appendix 2 Employer requirement sheets based on job offers.

Employee needs vs. availability of labour resources

Table 1.9.

Requirements concerning occupational experience: % of job offers that contained information about experience on the job, average number of years of professional experience required, and information about required references (percentage and arithmetic mean, broken down by ISCO-08 sub-major groups)

Occupation	N	% of offers with experience	Average number of years of experience	% of offers requiring references
11 Chief executives, senior officials and legislators	309	81	2.8	70
12 Administrative and commercial managers	482	80	2.7	60
13 Production and specialised services managers	446	80	3.2	51
14 Hospitality, retail and other services managers	444	66	2.3	65
21 Science and engineering professionals	658	80	2.5	33
22 Health professionals	241	87	2.4	26
23 Teaching professionals	360	76	2.1	38
24 Business and administration professionals	2231	72	2.3	51
25 Information and communications technology professionals	955	87	2.4	38
26 Legal, social and cultural professionals	199	90	2.4	19
31 Science and engineering associate professionals	408	75	2.7	34
32 Health associate professionals	155	81	2.9	20
33 Business and administration associate professionals	3426	75	1.8	35
34 Legal, social, cultural and related associate professionals	134	71	-	38
35 Information and communications technicians	142	69	1.7	36
41 General and keyboard clerks	333	77	1.8	30
42 Customer services clerks	429	72	1.5	36
43 Numerical and material recording clerks	296	78	2.2	28
44 Other clerical support workers	56	93	1.2	21
51 Personal service workers	1018	75	1.9	27
52 Sales workers	2768	72	1.6	36
53 Personal care workers	31	62	-	38
54 Protective services workers	230	84	1.8	17
71 Building and related trades workers, excluding electricians	1015	79	2.5	24
72 Metal, machinery and related trades workers	826	86	2.7	17
73 Handicraft and printing workers	50	72	2.4	46
74 Electrical and electronic trades workers	392	79	2.3	26
75 Food processing, wood working, garment and other craft and related trades workers	562	72	2.9	31
81 Stationary plant and machine operators	168	82	2.7	20
82 Assemblers	58	81	2.2	29
83 Drivers and mobile plant operators	998	85	2.3	18
91 Cleaners and helpers	264	90	1.6	9
93 Labourers in mining, construction, manufacturing and transport	269	84	2.1	16
94 Food preparation assistants	85	76	1.8	26
95 Street and related sales and service workers	44	91	-	0
96 Refuse workers and other elementary workers	83	88	2.8	12

Source: BKL – Study of job offers 2011.

It does not come as a surprise that the longest occupational experience was expected in the case of applicants to managerial occupations. What, however, is interesting are two aspects related to the length of the minimum experience of the job:

1. Candidates in the process of applying for worker positions – with the exclusion of elementary workers – must prove a longer experience on the job, when compared to candidates to associate professional, office, and service-related positions (smallest differences in the mean value).
2. In the occupations connected to healthcare, and science and engineering – longer experience on the job is required from candidates to associate professional positions, as compared to the recruitment requirements formulated towards professionals.

A complementation of requirements concerning employer preferred minimum experience on the job is expectation of references from previous place(s) of employment. Lack of such documents renders it impossible to apply for more than every other position offered for managers and business and administration professionals, and also for more than approximately 30% of advertisements addressed to candidates to the remaining occupations. The exception here are elementary workers, protective service workers, drivers and mobile plant operators, and metal, machinery, and related trades workers, in whose case, a requirement to present an opinion from the former employer turns up sporadically, with the requirement of experience on the job being formulated more often than usual.

The question of motivation to work presented by the candidates is interesting. It appears that people who apply for work in small businesses were less eager to work. It is justified to assume that the above is related to the financial aspects of businesses of various size: in the larger ones, remuneration as a rule is better, which increases motivation to work.

Before pointing to the specific competencies that the shortages concern, it is worth a while to take a look at the occupations in which employees experienced worst difficulties in recruiting appropriate people to work (Table 1.10). First of all, it turned out again that the fluctuations in the scope of occupations where employees experienced the worst difficulties in recruitment, were highly insignificant between 2010 and 2011, which corroborates the systematic nature of the phenomenon. Moreover, one can perceive that occupations that are difficult in recruitment are at the same time the ones that employers especially sought after.

These were predominantly three occupational categories:

1. Skilled workers: dominant here were construction workers of various specialisations, managers and plant machine operators and assemblers, and other workers from various sectors.
2. Sales workers and personal service workers (e.g., hairdressers, cooks, waiters, and bartenders).
3. Professionals (healthcare professionals and engineers in various specialties) and associate professionals (especially business and administration associate professionals, for example, accounting assistants and healthcare assistants).

Noticeable between 2010 and 2011 was a slight difference in the difficulties related to finding people to work in specific occupations experienced by employers. Problems related to the recruitment in the skilled workers grew, while the number of employers declaring such problems in seeking professionals went down. Such variations resulted from a different structure of the employer demand in autumn, and in spring-summer, which was related to seasonal works and a higher demand for workers.

Referring the difficulties in finding employers to the scale of recruitment in a given occupation, the dependency proved fairly obvious. In the occupations where employers prove greatest interest in people to work, there were more frequent difficulties in finding appropriate people to work (the "% of seeking" column in the Table 1.10).

Employee needs vs. availability of labour resources

Table 1.10.

Occupations in which employees experienced worst difficulties in finding appropriate people to work (% of replies of employers seeking people to work, broken down by ISCO-08 sub-major groups; the counts concern employers seeking employees and experiencing problems with finding them)

Occupation where finding employees is difficult	2010			2011			Difference %*
	N	%	% of seeking	N	%	% of seeking	
71 Building and related trades workers, excluding electricians	202	11	84	340	17	92	6
52 Sales workers	176	10	84	256	13	89	**3**
51 Personal service workers	104	6	99	228	11	96	**5**
83 Drivers and mobile plant operators	276	15	87	202	10	94	**-5**
33 Business and administration associate professionals	171	9	77	177	9	85	**0**
72 Metal, machinery and related trades workers	145	8	78	177	9	94	1
21 Science and engineering professionals	88	5	60	116	6	92	**1**
75 Food processing, wood working, garment and other craft and related trades workers	81	4	73	116	6	94	**2**
32 Health associate professionals	143	8	96	78	4	99	**-4**
74 Electrical and electronic trades workers	65	4	71	87	4	89	**0**
31 Science and engineering associate professionals	49	3	69	51	3	76	0
22 Health professionals	38	2	100	53	3	99	**1**
41 General and keyboard clerks	62	3	52	67	3	96	**0**
93 Labourers in mining, construction, manufacturing and transport	16	1	37	60	3	46	**2**
13 Production and specialised services managers	27	1	79	34	2	94	**1**
24 Business and administration professionals	101	5	57	38	2	61	-3
25 Information and communications technology professionals	98	5	93	44	2	87	**-3**
35 Information and communications technicians	5	0	12	36	2	88	**2**
43 Numerical and material recording	34	2	66	46	2	81	**0**
81 Stationary plant and machine operators	30	2	67	33	2	72	**0**
12 Administrative and commercial managers	6	0	67	26	1	91	1
23 Teaching professionals	33	2	98	22	1	91	**-1**
26 Legal, social and cultural professionals	25	1	54	11	1	76	**0**
34 Legal, social, cultural and related associate professionals	15	1	76	25	1	57	**0**
42 Customer services clerks	27	1	89	12	1	57	**0**
82 Assemblers	29	2	99	20	1	81	-1
11 Chief executives, senior officials and legislators	12	1	91	10	0	40	**-1**
14 Hospitality, retail and other services managers	7	0	43	2	0	87	**0**
44 Other clerical support workers	4	0	88	1	0	2	**0**
53 Personal care workers	0	0	0	7	0	98	**0**
54 Protective services workers	14	1	85	6	0	88	-1
73 Handicraft and printing workers	13	1	93	3	0	97	**-1**
91 Cleaners and helpers	20	1	77	7	0	64	**-1**
94 Food preparation assistants	14	1	74	9	0	52	**-1**
96 Refuse workers and other elementary workers	8	0	65	3	0	55	**0**

* PLEASE NOTE: the column "% of seeking" shows what percentage of employers seeking employees in the given occupation experienced difficulties in finding people to work in this occupation.

The last column contains the difference (expressed in %) in difficulties with finding appropriate people, existing between 2011 and 2010. Colour coding refers to occupations that belong to 3 occupational categories: pink denotes skilled workers, operators, and assemblers; blue – professionals; and green – service workers.

Source: BKL – Study of the employers 2010, 2011.

Competency shortages

Worth recording are the problems that employees experienced while seeking sales workers. On the one hand, there was an oversupply of people in this occupation both in 2010 and in 2011. On the other, however, difficulties in finding appropriate people to work resulted from the lack of the absolutely necessary competencies, which means that the shortage of competencies among sales workers was especially acute.

Moreover, employers were asked to point to competencies whose shortages were sufficiently acute to disqualify from working in the given occupation. This made it possible to define the most important competency shortages, which were reduced to 11 main competency classes, and accounted additionally for occupational competencies, qualifications, and language and other competencies that could not be defined unambiguously),[16] which is shown in the Table 1.11.

Table 1.11.

Competency shortages – the percentage of replies from employers experiencing problems in finding candidates to work in specific occupations (broken down into major occupational groups according to ISCO-08; aggregated data for 2010 and 2011)

	N	OCC	SLF	INT	QUAL	COM	COG	TEC	OTHR	PHY	AVL	LNG	ART	MNG	MAT	OFF
MNGR	46	28	3	17	11	0	43	0	2	0	0	1	0	2	0	0
PROF	268	39	13	6	19	20	1	3	3	2	4	5	7	0	0	2
ASSO	143	37	18	20	17	2	8	8	10	5	2	6	5	0	7	0
CLER	48	5	21	34	11	19	15	0	1	1	0	21	0	0	7	14
SERV	157	47	23	30	4	8	10	3	5	6	8	2	0	5	3	0
SKIL	417	48	23	7	6	4	4	15	7	11	3	3	2	6	1	0
OPER	77	43	29	4	10	4	11	5	21	9	2	6	1	0	3	0
UNSK	23	26	3	43	4	11	23	1	1	0	0	0	0	19	0	0
Total	1179	**42**	**20**	**15**	**10**	**8**	**7**	**7**	**7**	**6**	**4**	**4**	3	3	2	1

Source: BKL – Study of the employers 2010, 2011.

Employers pointed mostly to three types of lacking competencies:

- occupational – related to the specific nature of activities performed in each occupation (for example, in the case of electricians – the skill of making electric installations, knowledge of electricity, and appropriate behaviour at work are necessary in the occupation)
- interpersonal – contacts with other people, and group work
- self-organisation – independence, ability to make decisions, entrepreneurship and showing initiative, resilience to stress, and – generally – motivation to work.

Shortage of occupational competencies (unique for each occupation) concerned skilled workers and sales workers and service workers relatively more frequently. In a few cases, they were assigned as missing ones to candidates to managerial, clerical, and skilled worker posts.

In the case of managers, this is connected to the nature of the occupation; employers simply expect much from candidates to such work, but also characteristic of people seeking employment in this occupation is the high level of competencies. Additionally, required in the case of managers are other, specific competencies – 43% of employers paid attention to the lack of appropriate candidates to managerial positions, who would be able to analyse information, learn and draw conclusions (as they lacked cognitive compe-

[16] The description of the classification of competencies used in the study can be found in the report from the first round of the BKL Study, see: Strzebońska, Dobrzyńska (2011). Acronyms used to denote main competencies used in this report: OCC – occupational, SLF – self-organisational, INT – interpersonal (contacts with people), QUAL – qualifications without licences/permits, COM – computer, COG – cognitive, PHY – physical, LNG – command of foreign languages, OTHR – other competencies, AVL – availability, TEC – technical, ART – artistic, MAT – mathematical, MNG – managerial, OFF – office.

Employee needs vs. availability of labour resources

tencies). In the case of office workers and elementary workers, it is difficult to define what is decisive for occupational competencies. Hence, employers less frequently pointed to shortages of occupational competencies, and deficiencies concerned other competencies: in office workers, besides interpersonal competencies and self-organisation competencies, the shortage of appropriate language skills was reported, while elementary workers were perceived to lack interpersonal and cognitive competencies.

Besides occupational competencies, employers pointed to shortages of general competencies related to appropriate organisation of work and maintaining contacts with others. Interestingly, the shortage of people vested with such competencies occurred not only in the case of occupations where they were most useful, and therefore related to white-collar work. Shortages of these competencies in candidates applying for work were more frequently recognised by the employers seeking people to worker positions. The worst shortage of self-organisation competencies was present among candidates to all office posts. People seeking employment in such occupations did not have interpersonal competencies either. Shortages of competencies related to contacts with others were also quoted by employers in the case of elementary workers.

Turning up among spontaneous explanations from employers, and concerning competency shortages, ones that referred to insufficient qualifications were frequent. Qualifications, unlike competencies, are construed as such skills, knowledge, and behaviours that have been formally corroborated – through certificates and licenses (e.g. driving licence). The results acquired prove that the lack of appropriate qualifications concerned relatively more often people applying for white-collar jobs: managers, professionals, associate professionals and technicians, and clerical support workers.

Candidates to work lacked most the competencies related to office work (office), mathematical, language, availability, managerial, and artistic (creative talents, and knowledge of art and customs). This did not, however, mean that such competencies were sufficiently developed in the candidates, but that employers paid less attention to these competencies while seeking staff. For example, managerial competencies are very important in the case of managers, yet being vested with such competencies in the case of personnel operating in this occupation was treated as an obvious requirement, so that it was not directly advertised by the employers.

Besides competency shortages in people applying for work, the other source of information about shortages concerning the competencies held was the assessment of competencies of the employed personnel. As part of the studies conducted, employers were asked to provide a general assessment of satisfaction with the competencies of the people they employ, and subsequently to point to the competencies, whose level is worth increasing.[17]

Both in 2010 and in 2011, employers were rather satisfied with the competencies of their staff, as only 4% of them believed these competencies to be too low. Of the remaining employers, nearly every other (44% in 2010 and 46% in 2011) stated that competencies, even though satisfactory, would nevertheless be worth improving. An additional source of information about competency shortages in the Polish labour market were the opinions of the employers who were entirely dissatisfied and perceived the need or necessity to provide additional training for their staff.

[17] Due to the short duration of telephone interviews, which was the main technique applied for employer study, questions about the particular competencies that come in short supply among the employed personnel and which occupation they concerned were not asked. The question asked was related to all the unemployed, in this way providing a summary of information concerning competency shortages.

Table 1.12.

Competency shortages among the personnel in employment (% of the employers who pointed to the need for improving competences of the employed)

Competences	2010		2011	
	N	%	N	%
Occupational	4064	56	5304	68
Self-organisational	1690	23	1487	19
Interpersonal	1317	18	1316	17
Computer	846	12	684	9
Technical	344	5	379	5
Language	350	5	326	4
Qualifications	259	4	352	4
Cognitive	217	3	123	2
Managerial	95	1	122	2
Office	115	2	150	2
Physical	94	1	51	1
Artistic	29	0	14	0
Availability	31	0	33	0
Mathematical	20	0	9	0
Other	157	2	15	0

Source: BKL – Study of the employers 2010, 2011.

The competencies that proved insufficient among the personnel in employment are shown in Table 1.12. Already the first glance allows an ascertainment that opinions on competences of the employed reflected nearly perfectly the shortages of competencies that employers pointed out to candidates applying for jobs. Consequently, the employees lacked primarily the following competencies:

- occupational
- self-organisational
- interpersonal.

Unlike in the case of the assessment of people applying for work, the critical opinion about occupational competencies of the employed acquired even more significance. In fact, it is only the actual work that verifies somebody's specific skills, knowledge and behaviours related to the occupation, and – as it turned out – after a time, some employers were dissatisfied with the level of competencies of the candidates (in 2011, the number of employers speaking about occupational competencies of the employed in terms of shortages, was by no fewer than 26% greater than that of candidates for employment in any occupation). Comparing the opinions of employers in the two periods when the study was conducted, one notices that the proportion of critical assessments of occupational competencies of the staff increased significantly: by 12%. To a degree, this is the result of a seasonal change in the structure of employment: in spring 2011, the number of employees sought in the category of skilled workers increased, and in the case of that category opinions about occupational competencies were most critical.

Moreover, it is worth emphasising that employer opinions concerning competency shortages of the staff deployed were unrelated both to the volume of employment and to the level of development of the firm. The lack of major changes over time points to the systematic character of competency shortages present in Polish economy.

To sum up, it can be said that competency shortages, i.e. lack of people furnished with appropriate competencies, was fairly clear. At least when it comes to 3 classes of competencies, namely occupational com-

petencies, related to the specific post and work performed at the post, and two general ones – self-organisational and interpersonal ones. Low assessment of these very competencies were true both in the case of candidates applying for work and the staff already employed, which underlines the significance of the problem. The future rounds of the studies will show whether such shortages are of truly lasting nature, and how the changes taking place in the economic and social environment will influence them.

Competency mismatch

Related to the problem of the mismatch between the needs of employers and the capacity of the labour market is also the second of the notions introduced earlier, namely, that of competency mismatch. Such a mismatch is present when the requirements of employers concerning the level of employee competency diverges from the level of the competencies they have. This means that competency resources available in the labour market are too low or too high as compared to employer needs. Both the cases are unfavourable. In the case of the level of employee (meaning current or future employees) competency is too low, as compared to requirements, employers must incur additional costs to provide additional training to the staff in the matters of competencies had, or employ other people with appropriate competencies (the stake in this case is also the cost of additional recruitment). In the latter case, when competencies exceed the requirements of employers, employees perform works below the level of their abilities, for which they receive lower remuneration. Generally, independent of the type of competency mismatch, the labour market experiences losses, whether they are on the side of the employers or of the employees. For that reason it is important to diagnose where the competency mismatch occurs (in which specific competencies) and how large it is.

Useful in achieving that was a reference not to the free answers of employers concerning the missing competencies, but to the standardised questions asked both to employers and employees. The research conducted in the BKL Study project included questions asked to both the groups about the assessment of the level of required (employers) and offered (population) competencies.[18] The questions referred to in 11 main competency classes.

Included in the Appendix are tables A2 and A3, presenting competency self-assessment performed by people seeking work in a specific occupation and requirements for candidates concerning the level of competencies had, assessed by employers. Due to various frames of reference of employers formulating their requirements, and the employed self-assessing their abilities, the levels of the values are not directly comparable, yet the structure of the two assessments can be considered similar. Worth summing up are the results acquired in the two rounds of the study conducted so far: in the autumn of 2010 and in the spring of 2011. As far as self-assessment of the level of competencies performed by the people seeking work has not changed (with maximum fluctuations of 0.5 at the level of individual competencies, and of 0.1 in the general mix), certain characteristic differences could be perceived in the opinion of employers. The changes concerned two occupations: skilled workers, and service and sales workers. In the case of skilled workers, the level of requirements concerning technical and physical competencies increased in 2011, which was accompanied by a simultaneous fall in requirements concerning the level of computer, interpersonal, and office competencies. Such changes can be explained by an increase in the demand for seasonal works, whose characteristics include the degree of complexity and which also require physical agility and technical competencies. What changed between the two rounds was the structure of demand for service workers: employers no longer needed so many sales workers, yet they sought personal services workers (hairdressers, beauticians, cooks, waiters, and bartenders). This resulted in the inclusion of a high level of computer and office competencies in the requirements, accompanied by a lower level of required artistic and physical competencies.

[18] The results on the two scales were measured somewhat differently. The employers assessed competency requirements using a scale from 0 to 4, and those seeking employment – from 1 to 5. To standardise the results, the 1 to 5 scale wars reduced to the scope from 0 to 4, so that both the assessment scales assumed the same levels: low, basic, average, high, and very high.

Table 1.13.

Differences in the average level of competencies required by employers and average self-assessment of jobseeker competencies

		$N_{empl.}$	N_{ppl}	OFF	MNG	PHY	TEC	COM	ART	MAT	COG	AVL	INT	SLF
2010	MNGR	54	18	-1.3	0	-1.1	-0.8	-0.4	-1.1	-0.1	-0.2	-0.5	0.2	0.1
	PROF	549	279	-1.2	-1.3	-1.6	-0.9	-0.4	-1.2	-0.9	-0.2	-0.6	-0.2	0.1
	ASSO	380	311	-0.7	-1	-1.3	-1.1	-0.2	-0.8	-0.5	-0.1	-0.4	0.1	0.4
	CLER	239	244	-0.7	-1.6	-1.4	-1	-0.4	-1.4	-0.3	-0.7	-0.9	-0.1	0.2
	SERV	332	535	-0.8	-0.8	-0.8	-0.9	-0.2	-0.5	-0.6	-0.3	-0.6	0.2	0
	SKIL	484	409	-1	-0.6	0	-0.5	-0.6	-0.5	-0.3	-0.1	-0.6	-0.2	0.5
	OPER	358	170	-0.9	-0.9	-0.4	-0.6	-1.2	-0.9	-0.6	-0.4	-0.4	-0.2	0.3
	UNSK	99	280	-0.6	-0.4	0.4	-0.8	-0.6	-0.9	-0.3	0.3	0.3	-0.2	0.5
	Total	2495	2245	**-0.8**	**-0.8**	**-0.8**	-0.8	-0.3	-0.8	-0.4	-0.1	-0.4	0	0.4
		$N_{empl.}$	$N_{ppl.}$	OFF	MNG	PHY	TEC	COM	ART	MAT	COG	AVL	INT	SLF
2011	MNGR	68	19	-2	-0.2	-1.8	-1.9	-0.5	-1.3	-0.1	-0.6	-0.5	-0.1	-0.3
	PROF	342	284	-1.7	-1.8	-1.7	-1.2	-0.7	-0.8	-0.9	-0.4	-0.6	-0.1	-0.1
	ASSO	351	262	-1	-1.4	-1.6	-1.5	-0.3	-0.8	-0.3	0.1	-0.5	-0.1	0.2
	CLER	120	278	-0.8	-1.2	-1.5	-1	-0.7	-1.4	-0.8	-0.7	-0.8	0	-0.1
	SERV	626	569	-0.9	-0.7	-0.7	-0.9	-0.7	-0.6	-0.6	-0.3	-0.2	0.2	0.2
	SKIL	764	440	-0.9	-0.5	-0.2	-0.8	-0.8	-0.6	-0.5	-0.4	-0.5	-0.4	0
	OPER	330	169	-1	-1.3	-0.3	-0.5	-1.3	-1	-0.6	-0.7	0	-0.4	-0.1
	UNSK	107	330	-1	-0.5	0.2	-0.5	-1	-0.6	-0.5	-0.5	-0.2	-0.2	0.1
	Total	2707	2351	**-1.1**	**-0.9**	**-0.8**	**-0.8**	**-0.7**	**-0.7**	**-0.5**	**-0.4**	**-0.4**	**-0.1**	**0**

PLEASE NOTE: Negative values denote self-assessment exceeding the requirements, and positive values – requirements exceeding self-assessment.

Source: BKL – Population Study 2010, 2011 and Study of the employers 2010, 2011.

Comparison of employer requirements concerning the levels of competency and self-assessment performed by people seeking work shows that the image of competency mismatch in the two periods investigated was very similar (Table 1.13). Competencies in the table are ranked from those where the assessment of the given competency by the employees exceeded expectations of employers to those were the expectations of employers were higher than the level of competencies held by the people seeking work (according to the declarations). Obviously, in the autumn of 2010 and the spring of 2011, the population assessed their office, physical, technical, and managerial competencies above the level expected by the employers. This results from the simple fact that the requirements of employers concerning the level of these competencies were relatively low, and not from the people being vested with them to a high degree. Moreover, it is enough to look at the comparison of these two opinions in the case of managers and managerial competencies, and workers and physical competencies. If the case of these two occupational categories, both the first and the latter type of competencies were important, and the actual value was appropriately assessed by the employees. Hence the level of requirements and the assessment of the competencies held in the area were fairly dissimilar.

Due to the difference between the frames of reference mentioned above in the performing of evaluation of competency levels by employers and jobseekers, it is inappropriate to analyse these results in detail. Yet certain patterns may be paid attention to. Clearly, the highest requirements of employers concerned the level of self-organisational and interpersonal competencies, which was corroborated already by the previous studies carried out in the autumn of 2010. Employers put the hurdle somewhat higher when it comes to self-organisation competencies, and in fact, people seeking employment in any profession found these expectations difficult to meet. The question why employers lowered the requirements con-

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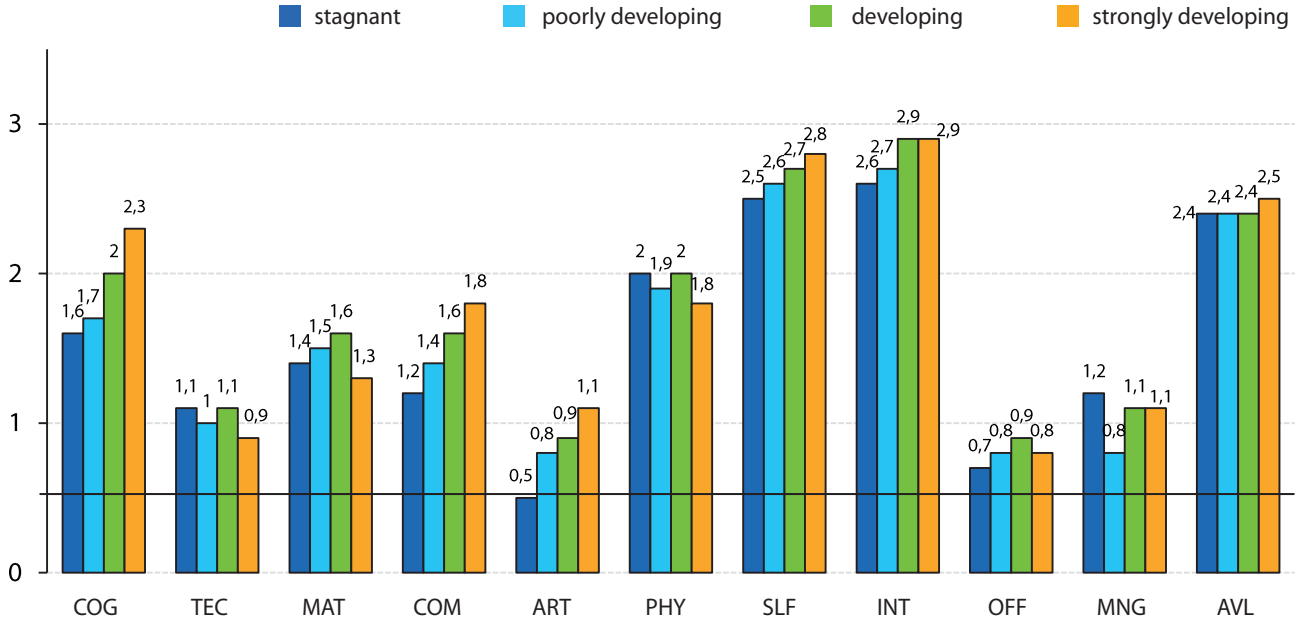
cerning the level of self-organisation competencies in the spring of 2011 remains an interesting one. Perhaps it was not the question of a change in the structure of demand for employees, as self-organisation competencies were required equally often from employees in all the occupations. There is, however, a hypothetical explanation – justified through discussions with human resources experts – that the lowering of these requirements may be a result of more general problems with finding appropriate staff. In the case of interpersonal competencies, in a similarly high demand, the self-assessment of the employees was lower.

When broken down into individual occupations, two extreme categories of employees stood out, namely managers and unskilled/elementary workers. In these two occupations more often than in the case of others, the self-assessment of the level of competencies was close to the requirements addressed to such staff. Yet what lay of the foundation of these observations were most probably entirely different mechanisms. Employers required that managers would have a higher level of competencies, and people seeking work in this occupation found meeting such expectations difficult. In turn, in the case of elementary workers, the requirements were low, and yet people seeking such employment assessed their competencies lowly as well.

The level of required competencies differed depending on the phase of development of the enterprise, and the size of a firm or institution. The dependencies were fairly obvious (charts 1.3 and 1.4). Thus, more developing businesses expected a higher level of competencies related to non-manual work from candidates; they were: cognitive (analysing information, drawing conclusion, and learning), computer, artistic (creative skills, knowledge of current events, and knowledge of culture), and self-organisation competencies. Similarly, higher expectations concerning competencies related to non-manual work were formulated by representatives of larger firms and institutions, with employment exceeding 250 people (they required a higher level of cognitive, mathematical, and computer competencies). It can therefore be stated that development, especially in the case of large businesses, was connected to greater expectations concerning competencies of own employees, especially those involved in non-manual work.

Chart 1.3.

Required competency levels depending on the level of businesses development (average on a scale from 0 to 4, aggregated data for 2010 and 2011, N = 23935)

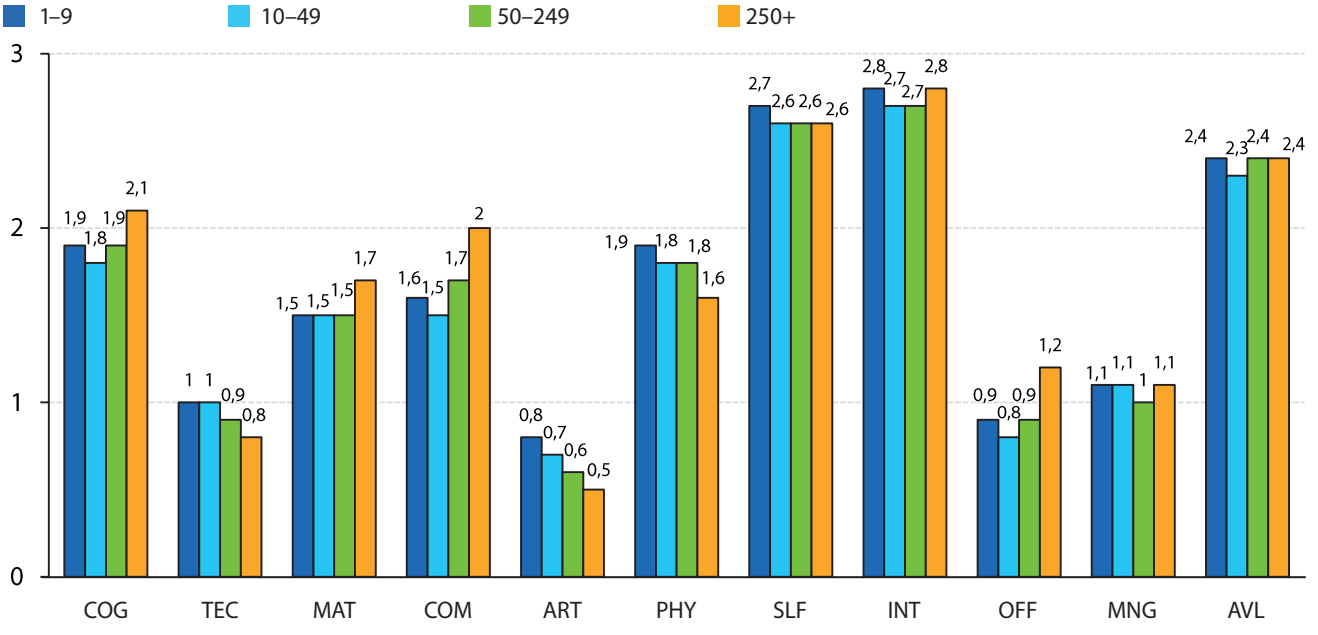


Source: BKL – Study of the employers 2010, 2011.

Chart 1.4.

Required competency levels depending on the size of the firm or institution (average on a scale from 0 to 4, data aggregated for 2010 and 2011, N = 32,000)

Balance of requirements concerning the level of education



Source: BKL – Study of the employers 2010, 2011.

Balance of requirements concerning the level of education

The last issue in comparing employer expectations towards employees in various occupations is the question of the level of education. The intention is to ascertain whether people applying for work in a specific occupation have a level of education that meets employer requirements. Should the candidate fail to meet these expectations, it is possible that one of two opposing phenomena has occurred: overeducation or undereducation. Both may pose problems, as they strike both that the employer – undereducation may require staff retraining, and the employee – overeducation may result in jobs and salaries below the potential (the threat of overeducation is mostly the time "lost" for acquiring knowledge that remains unused). This is why it is worthwhile to analyse the situation in the Polish labour market from the point of view of employer expectations concerning education of the employees and the actual level of education of the latter.[19]

Employers seeking staff in individual occupational categories were asked about preferences concerning the education of the candidates. The analysis of the responses allowed to define whether individual levels of education are too low, adequate, or possibly too high in the given occupational category. The results are presented in Table 1.14.

[19] The analyses account only for the results of the second round of the study (2011). The reason being the desire to account for requirements concerning baccalaureate level education, which was not covered by the questions in the employer study in 2010.

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Table 1.14.

Proportion of employers recognising the given level of education adequate to the occupation performed (data in %, broken down by ISCO-08 major groups)

Occupation	N	Education				
		primary/ lower sec.	basic vocational	secondary	baccalaureate	master
MNGR	64	3	3	39	84	100
PROF	324	2	4	33	61	99
ASSO	321	12	22	77	90	92
CLER	117	31	35	90	81	83
SERV	583	31	73	96	84	73
SKIL	702	68	93	95	56	50
OPER	289	54	96	99	72	69
UNSK	90	83	98	86	63	61

Source: BKL – Study of the employers 2011.

The table lists percentages of employers who recognise the given level of education adequate at vacant posts.[20] For example: only 3% of employers seeking people to managerial position assumed that primary or lower secondary education is adequate (similar was the case with basic vocational education); secondary education was acceptable already by 39% of the employers, baccalaureate – by 84%, and all accepted graduates with master degrees.

The results acquired may be summed up in a handful of points, referring employer requirements to individual occupations:

- **managers and professionals**: only holders of master degrees can be "certain" that education will not construe an obstacle in employment; baccalaureate may prove insufficient, especially in the case of professionals (adequacy of 61%); acceptability of secondary education is clearly below 50%
- **associate professionals**: the adequacy of higher education, whether baccalaureate or master degree, remained still very high (above 90%), while secondary education is acceptable already for nearly 80% of employers
- **clerical support workers**: adequacy of secondary education grows to nearly 90%, and exceeds that of higher education (again without differences between baccalaureate and master levels) at the level somewhat exceeding 80%
- **sales and service workers**: a radical increase in the adequacy of vocational education (over 70%), while the adequacy of secondary comes close to 100%, and adequacy of higher education drops (even though it still exceeds 70%)
- **skilled workers**: primary and lower secondary education becomes definitely acceptable (nearly 70%), vocational and secondary is equally good (clearly over 90%), and the adequacy of higher drops clearly (to the level around 50%)
- **operators and assemblers**: the trend is reversed; unlike in the case of skilled workers, people with primary/lower secondary education are accepted less often, and the adequacy of higher education grows to around 70%
- **elementary workers**: the only category where vocational education is most adequate (nearly 100%); and there is very high acceptability of primary education (exceeding 80%).

A similar analysis of employer expectations, yet conducted at the level of more detailed sub-major occupational categories in ISCO-08 classification (Table 1.15) corroborates the observations made above, yet it discloses also additional facts. Most interesting are the opinions of employers about people with baccalaureate, which employers treated as somewhat poorer than higher education with master degree.

[20] The cases (% of employers) when the given level of education was considered too low or too high, were omitted. Obviously, in the case of primary/lower secondary and vocational education, "not adequate" meant too low; and in the case of higher education with master degree, "inadequate" meant too high; in the case of secondary education and baccalaureate (the cases where it was inadequate), this might mean too low in some categories (managers, professionals), and too high in others (worker occupations).

Balance of requirements concerning the level of education

Higher education was completed by employers eager to work in managerial, professional, and associate professional occupations, yet the baccalaureate did not assure employment in all such occupations. If the case of more specialised work, related to natural sciences, people with master degree were preferred. Such occupations included production and services managers, health professionals, science and engineering professionals, and also associate professionals in these fields. In the case of physicians and some engineers, it is simply the result of the system of education, which does not provide education and baccalaureate level in such occupations. Yet in the remaining recessional occupations, where there is possibility of studying at two levels, i.e. baccalaureate or master (e.g. nurses, and environmental and professionals), employers visibly preferred people with greater experience. Generally, it can be said that baccalaureate ensured an opportunity to compete for the jobs of managers, professionals, and also associate professionals in the fields of social and related sciences to greater degree than in the case of other forms of activity.

Interesting to observe are also expectations of employers concerning the level of education of candidates applying for work as information and communication technology professionals. In the case of people to work on state-of-the-art IT technologies, employers seem to follow common sense, and the education requirement was only formal, as people with just secondary education could easily apply for such jobs as well.

Table 1.15.

Proportion of employers recognising the given level of education adequate to the occupation performed (data in %, broken down by major groups of occupations ISCO-08)

Occupation	N	Education				
		primary/ lower sec.	basic vocational	secondary	baccalau-reate	master
12 Administrative and commercial managers	23	9	9	26	96	100
13 Production and specialised services managers	20	0	0	40	55	100
21 Science and engineering professionals	107	0	6	40	69	100
22 Health professionals	88	0	0	5	20	100
23 Teaching professionals	31	0	0	10	77	100
24 Business and administration professionals	57	0	0	60	89	95
25 Information and communications technology professionals	22	18	18	91	100	100
31 Science and engineering associate professionals	38	5	8	79	82	92
32 Health associate professionals	28	4	4	43	34	89
33 Business and administration associate professionals	208	14	25	86	100	94
34 Legal, social, cultural and related associate professionals	29	0	21	60	100	90
41 General and keyboard clerks	59	15	19	90	95	100
43 Numerical and material recording clerks	42	62	69	88	55	52
51 Personal service workers	235	36	90	95	86	63
52 Sales workers	328	27	62	96	83	78
71 Building and related trades workers, excluding electricians	350	76	97	93	51	47
72 Metal, machinery and related trades workers	178	66	97	97	65	56
74 Electrical and electronic trades workers	82	20	59	98	48	40
75 Food processing, wood working, garment and other craft and related trades workers	86	81	99	97	62	55
81 Stationary plant and machine operators	46	41	96	100	89	76
83 Drivers and mobile plant operators	233	58	98	99	69	67
93 Labourers in mining, construction, manufacturing and transport	56	91	100	77	66	64

PLEASE NOTE: The analysis accounts for occupations in which employment is sought by at least 20 employers.

Source: BKL – Study of the employers 2011.

Employee needs vs. availability of labour resources

Adequacy of the level of education declared by employers is worth comparing to the formal requirements in the process of recruitment. The minimum education defined in the advertisement for the position (broken down into sub-major ISCO-08 occupational groups) is presented in Table 1.16. As could be expected, expectations concerning the level of candidate education are lower – on average by one level of education – when compared to the results of employer studies (see: Table 1.15). The most interesting conclusions from the analysis of the distribution of the minimal level of education of candidates recruited through job offers are as follows:

- the lower the given occupation ranks in the hierarchy of ISCO-08 classification, the less precise are the expectations concerning the preferred minimum level of education of the candidates, with the exception being advertisements recruiting to healthcare-related jobs, where approx. every other one lacked information concerning the preferred level of education; it is worth noting that in their job offers, employers considered experience on the job more important for selection purposes than the level of education of candidates
- the highest level of education, that is postgraduate studies, was expected only in the group of professional occupations (based on the 3% of job offers dedicated to professionals), recruited in the fields of specialist services and education
- most advertisements for candidates with master degree higher education (approximately 10%) were recorded in the area of industry, and concerned information technology professionals, science and engineering professionals, and production and services managers
- education at the level of first-cycle studies (the title of bachelor or engineer) was required primarily from the candidates to managerial and professional occupations in all the fields; applicants to the level of associate professionals, with office and sales workers ranking second in the frequency of mentions; additionally, 2% of job advertisements in industry that were addressed to electricians and electronics required first cycle studies.
- secondary education was most often accepted in trade, accommodation and food related service activities, irrespective of the occupation performed
- basic vocational education was acquired mostly from people to work in worker and personal services occupations, and there was no difference concerning the field of operation of the employers; it is worth remembering that the level of education in this occupational group was compensated with expectations towards the occupational experience obtained, which was in the case of these occupational groups most often required among all those analysed
- primary and lower secondary education was practically absent from job offers; this level of education was featured only in advertisements addressed to cleaners and house aids in specialist services, and trade, accommodation and food related service activities.

Table 1.16.

Minimum level of education accepted by the employer in job advertisements (data in %, broken down by ISCO-08 sub-major occupational groups)

Balance of requirements concerning the level of education

Occupation	N	Minimum education						
		not defined	primary/ lower sec.	basic vocational	secondary	baccalaure-ate/engineer	master	post-grad-uate
11 Chief executives, senior officials and legislators	309	20	0	0	3	71	3	0
12 Administrative and commercial managers	482	27	0	0	24	45	2	1
13 Production and specialised services managers	446	33	0	0	18	37	10	0
14 Hospitality, retail and other services managers	444	38	0	2	35	22	4	0
Total	1581	30	0	1	21	42	5	1
21 Science and engineering professionals	658	28	0	0	15	41	13	2
22 Health professionals	241	46	0	0	12	29	4	5
23 Teaching professionals	360	31	0	0	7	54	0	6
24 Business and administration professionals	2231	33	0	0	25	37	3	2
25 Information and communications technology professionals	955	38	0	0	6	44	8	3
26 Legal, social and cultural professionals	199	35	0	0	7	47	0	11
Total	4644	34	0	0	17	40	5	3
31 Science and engineering associate professionals	408	27	0	5	41	20	5	0
32 Health associate professionals	155	57	0	4	25	10	0	0
33 Business and administration associate professionals	3426	41	0	1	46	11	1	0
34 Legal, social, cultural and related associate professionals	134	68	0	6	19	7	0	0
35 Information and communications technicians	142	68	0	1	15	14	1	0
Total	4265	42	0	1	43	12	1	0
41 General and keyboard clerks	333	47	0	2	31	17	1	1
42 Customer services clerks	429	52	0	3	39	7	0	0
43 Numerical and material recording clerks	296	49	0	13	30	5	0	1
44 Other clerical support workers	56	50	0	4	30	13	0	0
Total	1114	49	0	5	34	10	0	0
51 Personal service workers	1018	59	4	22	13	0	0	0
52 Sales workers	2768	50	0	7	35	7	0	0
53 Personal care workers	31	85	0	0	12	0	0	0
54 Protective services workers	230	67	8	15	6	0	0	0
Total	4042	54	2	11	27	5	0	0
71 Building and related trades workers, excluding electricians	1015	60	4	31	2	0	0	0
72 Metal, machinery and related trades workers	826	49	1	41	7	0	0	0
73 Handicraft and printing workers	50	36	0	36	26	0	0	0
74 Electrical and electronic trades workers	392	40	0	41	18	1	1	0
75 Food processing, wood working, garment and other craft and related trades workers	562	57	4	35	3	0	0	0
Total	2845	53	3	36	6	0	0	0
81 Stationary plant and machine operators	168	49	0	33	14	0	0	0
82 Assemblers	58	43	5	33	17	0	0	0
83 Drivers and mobile plant operators	998	65	3	26	4	0	0	0
Total	1224	61	3	27	6	0	0	0
91 Cleaners and helpers	264	70	14	7	3	0	0	0
93 Labourers in mining, construction, manufacturing and transport	269	63	9	21	6	0	0	0
94 Food preparation assistants	85	56	6	27	2	0	0	0
95 Street and related sales and service workers	44	100	0	0	0	0	0	0
96 Refuse workers and other elementary workers	83	64	8	17	8	0	0	0
Total	789	66	10	15	5	0	0	0

Source: BKL – Study of job offers 2011.

Employee needs vs. availability of labour resources

Using complete information about employee preferences concerning education, estimations were made of the proportion of jobseekers in the given occupational category from the second ISCO level who would encounter employers recognising their level of education as too low, adequate or too high. For example, 6% of employers seeking science and engineering professionals considered secondary education as too low, and 40% – as adequate (with nobody considering it too high). In the population sample, there were 13 people with secondary education seeking employment in this occupational category; it was assumed that in the case of 8 of them (around 60%), the employer they will contact will consider their secondary education too low, and the remaining 5 (approximately 40%) will contact an employer who will not find their secondary education an obstacle.

Estimated in this way was the occupational adequacy of every level of education, accounting for occupational categories where people with such education sought employment. Taken therefore into account was the option that, for example, people with primary education have on the whole an absolutely adequate level of education if they seek employment in the occupations where such education was accepted by employers; with this adequacy remaining undiminished by the fact that there are many employers who reject candidates unable to prove completion of education at levels higher than lower secondary.

The results of comparisons of employer expectations and availability of people with appropriate education seeking employment in the given occupation are presented in the Table 1.17.

Table 1.17.

Adjustment of the level of education of people seeking work to the expectations of employers eager to employ staff in the given occupation (in %)

Education	ALL				MEN				WOMEN			
	N	too low	ad-equate	too high	N	too low	ad-equate	too high	N	too low	ad-equate	too high
primary/lower sec.	368	42	58	0	216	32	68	0	151	56	44	0
basic vocational	710	14	86	0	406	7	93	0	302	25	75	0
secondary	818	12	86	2	350	10	87	3	462	14	85	1
baccalaureate	117	13	81	6	36	7	84	9	82	16	80	4
master	324	0	96	4	117	0	92	8	205	0	98	2
Total	2337	16	83	2	1125	12	86	2	1202	20	79	1

Source: BKL – Study of the employers 2011, Population Study 2011.

In fact, a primary/lower secondary education may prove an obstacle in finding employment for many people (it is estimated that 42% of them will encounter an employer will consider it too low. People with basic vocational, secondary, and higher (baccalaureate) education generally seek employment in the occupations where their education does not often present an obstacle (approximately 12% to 14% will meet an employer who will, however, consider it to low). A few per cent of people with higher education may find themselves in a situation when their education is considered too high.

The results of this study, conducted separately for men and on women, prove very interesting:

- at every level of education (with the exception of master degree level) women are susceptible to a greater risk that the level of education would prove too low (This is especially visible in the case of primary, lower secondary, and vocational education.), which obviously results from the fact that women decidedly more often seek employment in the occupations where the given level of education is the condition for acceptance
- in the group of women, we observe a fairly systematic increase in the adequacy of education parallel to its level: generally, the higher the education, the more it is acceptable; in the group of

men, the situation is definitely opposite: the most adequate level of education (besides higher) is basic vocational, which results from the fact that there are many men who seek employment in worker occupations

- in the case of nearly 10% of men holding a diploma of an institution of higher education, their education may prove too high compared to the needs of the employer; such an event is clearly less probable in the case of women.

Balance of requirements concerning the level of education

The results of our simple simulation suggest that the problem of inadequacy of the level of education – from the point of view of employer requirements – may affect every fifth person seeking employment, with the main phenomenon concerned here being that of undereducation. The cases of the potentially too low education more frequently occurred among women, which should not be a reason to wonder, as women more frequently seek employment in occupations with higher requirements concerning education.

Summary

The goal behind the chapter was an attempt to take a closer look at both sides of the labour market – the demand (employers) and the supply (jobseekers), and to define whether characteristic of the Polish labour market in 2011 were problems similar to those diagnosed 6 months earlier, or whether the situation improved. The level of balancing of the labour market was assessed in terms of employer needs concerning human resources in specific occupations, competencies required to work at various positions, and expectations concerning the level of education of staff. Depending on the criterion of assessment, balance in this market was greater or smaller.

Comparing the employer demand for human resources in specific occupations and the potential of the labour market in providing such people, in the autumn of 2010 and the spring of 2011, there was a fairly clear shortage of skilled workers in various fields, professionals, and some service workers. These three general occupational categories were the ones in greatest demand among employers. Despite the seasonal character of economy resulting in an increase in the demand for workers in spring time, with parallel decrease of the demand for professionals, employers still sought primarily these three types of employees. It was also symptomatic that employers considered it a problem to find an appropriate person also in these occupations. The main source of the difficulties was the lack or inappropriate level of competencies required for specific jobs.

The lack of people to work with the required competencies and competency mismatch concerned three types of competencies. Most often, employers paid attention to the lack of occupational competencies, that is appropriate skills, knowledge, and behaviours while performing activities specific for the given occupation. This problem could be considered common, as more or less every other employer who experienced difficulties in recruiting staff pointed to this very shortage as the reason. Among other missing competencies frequently listed by the employers, one should mention those related to entrepreneurship, independence, and motivation to work (self-organisation), and requiring contacts with people, and collaboration within a group (interpersonal). If the case of these two more general competencies, it turned out also that being furnished with them – as assessed by the jobseekers – did not fully answer employer requirements.

The last criterion taken into account while assessing the balance in the labour market is the level of education. A simple simulation, accounting for the education of people seeking work in individual occupational categories and opinions of employers seeking people in the same category suggests that the problem of mismatching (and predominantly undereducation) may concern every fifth jobseeker.

Appendix 1

Table A1.

Demand for human resources in individual occupations (broken down by sub-major occupational groups) among employers seeking labour (population data from the panel sample for the occupations in which at least 20 employers sought human resources in the two rounds of the study)

Occupation (ISCO-08 sub-major categories)	2010	2011	Difference %
Labourers in mining, construction, manufacturing and transport	398	1234	**210**
Electrical and electronic trades workers	425	899	**112**
Science and engineering associate professionals	361	630	**75**
Business and administration associate professionals	890	1491	**68**
Personal service workers	356	546	**53**
Teaching professionals	267	397	**49**
Information and communication technology professionals	346	514	**49**
Stationary plant and machine operators	984	1461	**48**
Building and related trades workers, excluding electricians	741	1027	**39**
Science and engineering professionals	735	995	**35**
Cleaners and helpers	631	805	**28**
Numerical and material recording clerks	528	613	**16**
Sales workers	1317	1480	**12**
Metal, machinery, and related trade workers	2172	2392	**10**
Food processing, wood working, garment and other craft and related trades workers	1365	1465	**7**
Customer services clerks	314	319	**2**
Drivers and mobile plant operators	2004	1937	**-3**
General and keyboard clerks	242	225	**-7**
Production and specialised services managers	288	252	**-13**
Health professionals	2027	1770	**-13**
Business and administration professionals	1012	841	**-17**
Administrative and commercial managers	225	156	**-31**

PLEASE NOTE: The last column contains the difference between the number of employees sought in 2010 and 2011 expressed in %. A positive value denotes that more people were sought in the given occupation in 2011, and negative – that the number was lower. The colour coding refers to the occupations that belong to 3 occupational categories: pink denotes skilled workers, operators, and assemblers; blue – professionals; and green – service workers.

Source: BKL – Study of the employers 2010, 2011.

Table A2.

Appendix 1

Self-assessment of competencies performed by jobseekers, broken down by ISCO-08 major groups (average on a scale from 0 to 4)

		INT	AVL	PHY	SLF	COG	COM	MAT	OFF	MNG	TEC	ART	N
2010	MNGR	3.3	3.2	2.6	3.2	2.9	3	2.3	3	2.9	1.6	2	18
	PROF	3.3	3.1	2.7	3	2.9	3.2	2.5	2.7	2.7	1.6	2.2	279
	ASSO	3.1	3	2.8	2.7	2.5	2.8	2.5	2.5	2.3	1.9	1.6	311
	CLER	3.1	2.9	2.6	2.8	2.5	2.9	2.3	2.8	2.4	1.5	1.7	244
	SERV	2.9	2.7	2.5	2.4	2.1	2	2	1.9	1.9	1.3	1.6	535
	SKIL	2.5	2.7	2.6	2.1	1.7	1.4	1.7	1.2	1.5	2.2	1.2	409
	OPER	2.8	3.1	2.8	2.2	1.9	1.8	1.8	1.2	1.7	2.5	1	170
	UNSK	2.5	2.6	2.4	1.9	1.5	1.1	1.5	1.1	1.3	1.8	1.1	280
	Total	2.9	2.8	2.6	2.4	2.1	2.1	2	1.9	1.9	1.8	1.5	2245
		INT	AVL	PHY	SLF	COG	COM	MAT	OFF	MNG	TEC	ART	N
2011	MNGR	3.3	3.2	2.7	3.2	2.8	3.3	2.7	2.9	3	2.1	2	19
	PROF	3.3	3.1	2.8	3	3.1	3.2	2.4	2.7	2.6	1.7	2.3	284
	ASSO	3.2	2.9	2.8	2.9	2.5	2.9	2.5	2.5	2.4	2.1	1.8	262
	CLER	3	2.9	2.6	2.7	2.6	2.9	2.4	2.8	2.4	1.4	1.7	278
	SERV	2.9	2.7	2.7	2.4	2.1	2.2	2	1.9	1.9	1.3	1.7	569
	SKIL	2.7	2.7	2.6	2.2	1.8	1.5	1.7	1.2	1.5	2.3	1.3	440
	OPER	2.8	2.9	2.8	2.4	2	1.9	1.8	1.2	1.8	2.4	1.2	169
	UNSK	2.4	2.6	2.5	2	1.6	1.2	1.5	1.1	1.3	1.7	1.1	330
	Total	2.9	2.8	2.7	2.5	2.2	2.2	2	1.9	1.9	1.8	1.6	2351

Source: BKL – Study of the employers 2010, 2011.

Employee needs vs. availability of labour resources

Table A3.

Levels of competencies required from the employed, broken down by ISCO-08 major groups (average on a scale from 0 to 4)

		AVL	INT	SLF	PHY	TEC	COG	MAT	MNG	COM	OFF	ART	N
2010	MNGR	2.7	3.5	3.3	1.5	0.8	2.7	2.2	2.9	2.6	1.7	0.9	54
	PROF	2.5	3.1	3.1	1.1	0.7	2.7	1.6	1.4	2.8	1.5	1	549
	ASSO	2.6	3.2	3.1	1.5	0.8	2.4	2	1.3	2.6	1.8	0.8	380
	CLER	2.4	2.9	2.8	1.8	1	2	1.6	1.1	1.8	1.1	0.7	239
	SERV	2	3	3	1.2	0.5	1.8	2	0.8	2.5	2.1	0.3	332
	SKIL	2.1	3.1	2.4	1.7	0.4	1.8	1.4	1.1	1.8	1.1	1.1	484
	OPER	2.9	2.3	2.4	2.8	1	1.8	1.2	0.9	0.5	0.5	0.2	358
	UNSK	2.1	2.3	2.6	2.6	1.7	1.6	1.4	0.9	0.8	0.2	0.7	99
	Total	2.7	2.6	2.5	2.4	1.9	1.5	1.2	0.8	0.6	0.3	0.1	2495
		INT	SLF	AVL	PHY	COG	MAT	COM	TEC	MNG	ART	OFF	N
2011	MNGR	3.2	2.9	2.7	0.9	2.2	2.6	2.8	0.2	2.8	0.7	0.9	68
	PROF	3.2	2.9	2.5	1.1	2.7	1.5	2.5	0.5	0.8	1.5	1	342
	ASSO	3.1	3.1	2.4	1.2	2.6	2.2	2.6	0.6	1	1	1.5	351
	CLER	3	2.6	2.1	1.1	1.9	1.6	2.2	0.4	1.2	0.3	2	120
	SERV	3.1	2.6	2.5	2	1.8	1.4	1.5	0.4	1.2	1.1	1	626
	SKIL	2.3	2.2	2.2	2.4	1.4	1.2	0.7	1.5	1	0.7	0.3	764
	OPER	2.4	2.3	2.9	2.5	1.3	1.2	0.6	1.9	0.5	0.2	0.2	330
	UNSK	2.2	2.1	2.4	2.7	1.1	1	0.2	1.2	0.8	0.5	0.1	107
	Total	2.8	2.5	2.4	1.9	1.8	1.5	1.5	1	1	0.9	0.8	2707

Source: BKL – Study of the employers 2010, 2011.

Appendix 2

Anna Strzebońska

Employer requirement sheets based on job offers

This part of the report presents detailed requirements of employers concerning work in various occupations, formulated towards candidates applying for a given job. The data concerning such employer requirements originated from two sources. On the one hand, these were direct answers of employers to questions in the questionnaire, and on the other – secondary data in the form of job advertisements collected. As far as studies conducted among employers are concerned, they were asked about expectations towards the candidates, yet, due to the nature of the study, the information acquired was limited to simple question questions.[21] The job offers gathered originated from online portals which are the most popular way of offering jobs, and moreover from the County Employment Offices (PUPs), being the public channel for presenting job offers, which was to assure the potentially full list reflecting the current state of affairs. In result, 20,000 job offers from the two sources were collected. Employer requirements and expectations concerning candidates and contained in various job offers were not limited by the form of questionnaire questions, which is why they provide a more precise source of information concerning the actual preferences of the employers. The results presented in the appendix will be based on such data, coming from 2011.[22]

Due to the strongly varied requirements and expectations submitted by employers in job offers, a decision was made to present them as precisely as possible, retaining as much detailed information as feasible. The best form to present the data collected is a form of a catalogue describing preferences of employers concerning every individual occupation. Even though a large number of job offers was gathered, it is impossible to analyse these expectations for every occupation accounted for in the classification of the International Labour Organisation (ISCO-08). The catalogue presented in this appendix contains 36 sheets for the so-called sub-major occupational categories in this classification.[23]

Each of the sheets contains the following information (data in %) presented with respect to differences between sectors:[24]

- **education**: the level and course of education expected in the given occupational group (in the case of first and second cycles of studies, and postgraduate studies)
- **experience**: average duration of experience required in the given group, the need to present documents corroborating the declared experience, and references at least from the last place of employment
- **competencies**:[25] at least 10 most frequently listed competencies (the lowest two-digit codes) for white-collar occupations, that is, managers, professionals, technicians and associate professionals, clerical support workers, and service and sales workers. Due to the short supply of cases of competency expectations recorded for physical occupations for skilled workers, assemblers and operators, and elementary workers, at least five most frequently featured requirements are presented. Presentation of this data in the form of topographic tables makes it possible to trace the distribution of competency subgroups in individual sectors
- **additional requirements**: expectations that turn up in reference to qualifications, e.g. driving licence, clean criminal record, specialist courses.

Besides the name of the occupation (both in reference to the major and sub-major ISCO-08 category), the titles of the individual sheets include also its number, corresponding to the sub-major ISCO-08 educational category.

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[21] The formula of conducting research assumed – i.e., mostly through telephone interviews – imposed additionally the fairly simple form of these questions, and limited their number to the absolute minimum. Nevertheless, only thanks to conducting the studies in the CATI technique it was possible to gather such a large body of empirical material ensuring appropriate accurateness and reliability of the results.

[22] The detailed description of the procedure of gathering job offers is provided in the Methodological Report from the BKL Study (2011).

[23] ISCO-08 classification features 40 sub-major groups, yet due to the too low counts, the following categories were removed from the report: 61 – Market-oriented skilled agricultural workers, 62 – Market-oriented skilled forestry, fishery and hunting workers, 63 – Subsistence farmers, fishers, hunters and gatherers (altogether 50 job offers in the database), and 92 – Agricultural, forestry and fishery labourers.

[24] Analysis of differences between the sectors in employer requirements is based on six sectors of activity, which were based on the Polish Classification of Activities (PKD) in the following manner: "Industry and mining" combines the sections B, C, D, and E of the PKD; "Construction and transport" combines the sections F and H; "Trade, accommodation, and food service activities" corresponds to the sections G, I, and N; "Specialist services" – to the sections J, K, L, M, R, and S; "Education" is the section P, and "Human health and welfare activities" is the section Q. With respect to data credibility, requirements in the given sector were presented for N > 30.

[25] PLEASE NOTE: As multiple competencies may be mentioned in a single job offer, the percentages in the table do not total to 100.

Sheet 1.

Managers: Chief executives, senior officials and legislators [1.11]

N=309 (1.5%)		Total	Industry			
			Manufacturing and mining	Construction and transport	Trade, accommodation, and food service activities	Specialist services
Number of job offers		309 (100%)	71 (23%)	47 (15%)	31 (10%)	158 (51%)
Minimum level of education	higher (1st cycle)	71%	49%	64%	55%	84%
	higher (2nd cycle)	3%	8%	—	—	1%
	secondary	3%	6%	—	—	2%
	not defined	20%	32%	21%	23%	12%
	field of education:	business and administration	business and administration; engineering and engineering trades; manufacturing and processing	business and administration	business and administration	business and administration
Experience	% of offers	81%	73%	21%	71%	98%
	average number of years	2.8	3.6	5.6	3.4	2.3
Competencies	OCC: occupational	65%	57%	63%	61%	71%
	MNG: leadership	52%	46%	36%	52%	57%
	INT: being communicative	41%	21%	14%	48%	52%
	SLF: entrepreneurship	39%	27%	36%	19%	49%
	INT: cooperation within the group	35%	11%		13%	52%
	COG: finding information	32%	7%			51%
	SLF: initiative	21%	34%	14%	42%	13%
	SLF: independence	15%	24%	29%	16%	7%
	COM: basic computer handling skills	12%	17%	14%	32%	5%
	INT: establishing contacts with people, clients	11%	10%	29%	6%	7%
	COG: analytical and synthetic thinking	10%	23%	14%	10%	3%
Additional requirements	references	70%	59%	57%	71%	78%
	driving licence	15%	25%	14%	23%	8%

Source: BKL – Study of job offers 2011.

Sheet 2.

Managers: Administrative and commercial managers [1.12]

N=382 (1.9%)		Total	Industry			
			Manufacturing and mining	Construction and transport	Trade, accommodation, and food service activities	Specialist services
Number of job offers		382 (100%)	72 (19%)	46 (12%)	87 (23%)	167 (44%)
Minimum level of education	higher (1st cycle)	45%	60%	57%	28%	41%
	secondary	24%	11%	13%	36%	28%
	not defined	27%	26%	22%	31%	29%
	field of education:	business and administration	business and administration; engineering and engineering trades; manufacturing and processing	business and administration	business and administration	business and administration; computing
Experience	% of offers	80%	88%	65%	79%	73%
	average number of years	2.7	2.8	3.2	2.5	2.6
Competencies	OCC: occupational	45%	44%	52%	41%	46%
	MNG: leadership	43%	32%	54%	44%	47%
	INT: being communicative	34%	38%	28%	32%	36%
	SLF: initiative	33%	36%	35%	30%	32%
	SLF: independence	32%	37%	24%	32%	34%
	COM: basic computer handling skills	31%	56%	30%	24%	25%
	COG: analytical and synthetic thinking	26%	19%	11%	37%	28%
	SLF: time management	20%	15%	7%	16%	27%
	INT: conflict solving skills	19%	26%	11%	15%	22%
	AVL: geographic availability	18%	25%	10%	11%	22%
Additional requirements	references	60%	54%	72%	63%	60%
	driving licence	22%	29%	30%	20%	20%
	course in accounting	4%	—	4%	6%	4%

Source: BKL – Study of job offers 2011.

Sheet 3.

Managers: production and specialised services managers [1.13]

N=446 (2.2%)		Total	Industry			
			Manufacturing and mining	Construction and transport	Trade, accommodation, and food service activities	Specialist services
Number of job offers		446 (100%)	129 (29%)	204 (46%)	61 (14%)	52 (12%)
Minimum level of education	higher (1st cycle)	37%	35%	36%	41%	48%
	secondary	18%	17%	19%	35%	8%
	higher (2nd cycle)	10%	24%	6%	—	—
	not defined	33%	22%	38%	24%	40%
	field of education:	business and administration	business and administration; engineering and engineering trades; manufacturing and processing	business and administration; engineering and engineering trades; architecture and building	business and administration	business and administration; engineering and engineering trades; computing
Experience	% of offers	80%	81%	89%	21%	77%
	average number of years	3.2	3.1	3.7	1.9	2.7
Competencies	OCC: occupational	35%	46%	26%	24%	57%
	MNG: leadership	24%	33%	20%	25%	21%
	INT: being communicative	22%	32%	14%	31%	19%
	COM: basic computer handling skills	15%	23%	12%	13%	8%
	SLF: time management	15%	15%	15%	29%	12%
	SLF: independence	13%	12%	14%	14%	12%
	SLF: initiative	10%	12%	7%	15%	13%
	INT: cooperation within the group	9%	12%	5%	16%	12%
	SLF: entrepreneurship	8%	8%	8%	12%	8%
	SLF: decision making	8%	14%	3%	12%	10%
Additional requirements	references	51%	61%	44%	41%	65%
	driving licence	13%	10%	15%	18%	8%

Source: BKL – Study of job offers 2011.

Sheet 4.

Managers: Hospitality, retail and other services managers [1.14]

N=444 (2.2%)		Total	Industry			
			Manufacturing and mining	Construction and transport	Trade, accommodation, and food service activities	Specialist services
Number of job offers		444 (100%)	70 (16%)	61 (14%)	257 (58%)	56 (13%)
Minimum level of education	secondary	35%	26%	40%	36%	37%
	higher (1st cycle)	22%	21%	30%	19%	46%
	higher (2nd cycle)	4%	9%	—	2%	—
	not defined	38%	44%	20%	42%	11%
	field of education:	business and administration	business and administration	architecture and building	business and administration; personal services	business and administration; humanities and social sciences
Experience	% of offers	66%	70%	13%	77%	54%
	average number of years	2.3	3.5	3.7	2.1	3.2
Competencies	MNG: leadership	50%	44%	60%	53%	30%
	SLF: initiative	37%	23%	20%	42%	33%
	INT: being communicative	31%	31%	20%	31%	35%
	COM: basic computer handling skills	28%	23%	20%	30%	24%
	OCC: occupational	26%	30%	40%	22%	25%
	SLF: entrepreneurship	24%	21%	20%	28%	11%
	SLF: independence	19%	11%	—	21%	22%
	INT: establishing contacts with people, clients	19%	29%	—	20%	7%
	SLF: time management	18%	21%	—	18%	20%
	COG: analytical and synthetic thinking	12%	6%	—	12%	17%
Additional requirements	references	65%	66%	40%	65%	76%
	driving licence	12%	11%	40%	10%	22%

Source: BKL – Study of job offers 2011.

Sheet 5.

Professionals: Science and engineering professionals [2.21]

N=658 (3.2%)		Total	Industry			
			Manufacturing and mining	Construction and transport	Trade, accommodation, and food service activities	Specialist services
Number of job offers		658 (100%)	311 (47%)	153 (23%)	71 (11%)	109 (17%)
Minimum level of education	higher (1st cycle)	41%	40%	45%	39%	45%
	higher (2nd cycle)	15%	18%	11%	8%	14%
	secondary	15%	16%	13%	24%	8%
	not defined	28%	25%	29%	25%	32%
	field of education:	engineering and engineering trades; manufacturing and processing; architecture and building	engineering and engineering trades; manufacturing and processing architecture and building business and administration life sciences; physical sciences and computing	engineering and engineering trades; manufacturing and processing architecture and building	engineering and engineering trades; manufacturing and processing architecture and building business and administration	engineering and engineering trades; manufacturing and processing architecture and building business and administration life sciences, physical sciences mathematics and statistics
Experience	% of offers	80%	82%	77%	58%	80%
	average number of years	2.5	2.3	2.9	2.2	2.2
Competencies	OCC: occupational	44%	48%	34%	38%	55%
	COM: advanced computer handling skills	21%	19%	18%	14%	38%
	COM: basic computer handling skills	20%	23%	19%	8%	20%
	SLF: initiative	19%	22%	14%	14%	23%
	INT: cooperation within the group	16%	17%	13%	12%	20%
	SLF: time management	14%	18%	7%	14%	15%
	INT: being communicative	14%	13%	12%	17%	14%
	SLF: independence	12%	14%	8%	12%	15%
	TECH: practical application of technical imagination	12%	20%	4%	10%	3%
	MNG: leadership	11%	11%	11%	12%	10%
Additional requirements	references	33%	31%	41%	27%	33%
	driving licence	12%	12%	19%	4%	8%

Source: BKL – Study of job offers 2011.

Sheet 6.

Professionals: health professionals [2.22]

N=241 (1.2%)		Total	Industry		
			Manufacturing and mining	Trade, accommodation, and food service activities	Health and welfare
Number of job offers		241 (100%)	65 (27%)	68 (28%)	107 (44%)
Minimum level of education	higher (1st cycle)	29%	55%	29%	21%
	secondary	12%	14%	19%	18%
	postgraduate	5%	—	12%	—
	not defined	46%	14%	56%	58%
	field of education:	health and veterinary	health and veterinary engineering and engineering trades, personal services	health and veterinary	health and veterinary
Experience	% of offers	87%	31%	93%	87%
	average number of years	2.4	3.0	2.0	2.2
Competencies	OCC: occupational	23%	44%	6%	21%
	INT: being communicative	13%	17%	10%	12%
	INT: cooperation within the group	10%	17%	—	5%
	MNG: leadership	10%	10%	12%	—
	COM: basic computer handling skills	10%	14%	3%	6%
	SLF: time management	7%	14%	7%	2%
	SLF: independence	7%	10%	15%	2%
	AVL: geographic availability	6%	22%	—	—
	COM: advanced computer handling skills	5%	—	10%	3%
	ART: knowledge of customs	5%	—	3%	10%
Additional requirements	references	26%	52%	10%	20%
	driving licence	13%	21%	6%	8%

Source: BKL – Study of job offers 2011.

Sheet 7.

Professionals: Teaching professionals [2.23]

N=358 (1.7%)		Total	Industry
			Education
Number of job offers		358 (100%)	311 (87%)
Minimum level of education	higher (1st cycle)	54%	55%
	secondary	7%	8%
	postgraduate	6%	6%
	not defined	31%	31%
	field of education:	humanities, education	humanities, education
Experience	% of offers	76%	75%
	average number of years	2.1	2.1
Competencies	OCC: occupational	13%	10%
	SLF: initiative	13%	10%
	INT: being communicative	12%	9%
	MNG: leadership	10%	2%
	COM: basic computer handling skills	10%	2%
	INT: cooperation within the group	9%	7%
	ART: knowledge of customs	8%	8%
	SLF: time management	7%	6%
	SLF: independence	6%	5%
	AVL: geographic availability	6%	4%
Additional requirements	references	38%	36%
	driving licence	9%	7%

Source: BKL – Study of job offers 2011.

Sheet 8.

Professionals: Business and administration professionals [2.24]

N=2231 (10.8%)		Total	Industry				
			Manufacturing and mining	Construction and transport	Trade, accommodation, and food service activities	Specialist services	Education
Number of job offers		2231 (100%)	371 (17%)	91 (4%)	216 (10%)	1421 (64%)	72 (3%)
Minimum level of education	higher (1st cycle)	37%	49%	49%	33%	32%	44%
	secondary	25%	18%	21%	32%	26%	17%
	higher (2nd cycle)	3%	9%	14%	3%	1%	—
	postgraduate	2%	2%	—	—	2%	4%
	not defined	33%	22%	14%	31%	38%	33%
	field of education:	business and administration	business and administration engineering and engineering trades; social sciences	business and administration	business and administration	business and administration engineering and engineering trades; social sciences	business and administration; social sciences
Experience	% of offers	72%	78%	91%	75%	69%	79%
	average number of years	2.3	2.3	2.8	2.2	2.2	2.7
Competencies	OCC: occupational	45%	49%	47%	41%	45%	25%
	INT: being communicative	44%	45%	25%	48%	45%	28%
	SLF: initiative	34%	26%	19%	22%	40%	15%
	SLF: independence	28%	23%	26%	32%	30%	8%
	MNG: leadership	25%	27%	12%	24%	26%	8%
	SLF: time management	22%	24%	14%	28%	22%	10%
	COM: basic computer handling skills	22%	29%	30%	27%	19%	19%
	SLF: entrepreneurship	18%	14%	16%	17%	20%	7%
	INT: skill of establishing and maintaining relations with people, clients	18%	19%	11%	13%	19%	6%
	COG: learning skills	15%	11%	4%	10%	18%	—
Additional requirements	references	51%	46%	33%	60%	54%	43%
	driving licence	17%	20%	19%	22%	16%	10%
	clean criminal record	2%	—	—	—	3%	—

Source: BKL – Study of job offers 2011.

Sheet 9.

Professionals: Information and communications technology professionals [2.25]

N=955 (4.6%)		Total	Industry	
			Manufacturing and mining	Specialist services
Number of job offers		955 (100%)	104 (11%)	796 (83%)
Minimum level of education	higher (1st cycle)	44%	45%	44%
	higher (2nd cycle)	8%	11%	7%
	secondary	6%	9%	6%
	postgraduate	3%	—	4%
	not defined	38%	34%	38%
	field of education:	computing	computing; engineering and engineering trades	computing; engineering and engineering trades
Experience	% of offers	87%	31%	87%
	average number of years	2.4	3.0	2.2
Competencies	COM: building software application, including websites	57%	36%	62%
	OCC: occupational	56%	53%	56%
	COM: advanced computer handling skills	55%	60%	54%
	INT: being communicative	23%	29%	22%
	INT: cooperation within the group	23%	24%	23%
	COG: analytical and synthetic thinking	18%	20%	18%
	SLF: initiative	14%	16%	14%
	SLF: independence	13%	18%	13%
	SLF: time management	11%	13%	10%
	ART: command of foreign languages	11%	12%	11%
Additional requirements	references	38%	33%	37%
	driving licence	3%	9%	2%

Source: BKL – Study of job offers 2011.

Sheet 10.

Professionals: Legal, social and cultural professionals [2.26]

N=199 (1%)		Total	Industry
			Specialist services
Number of job offers		199 (100%)	141 (71%)
Minimum level of education	higher (1st cycle)	47%	44%
	postgraduate	11%	9%
	secondary	6%	8%
	not defined	35%	38%
	field of education:	social sciences, business and law	social sciences, business and law
Experience	% of offers	90%	87%
	average number of years	2.4	2.2
Competencies	OCC: occupational	47%	51%
	SLF: time management	20%	25%
	SLF: independence	20%	23%
	INT: being communicative	20%	21%
	COM: basic computer handling skills	20%	23%
	INT: cooperation within the group	16%	18%
	SLF: initiative	15%	11%
	MNG: leadership	11%	12%
	ART: knowledge of customs	11%	11%
	COG: concentration	10%	13%
Additional requirements	references	19%	21%
	driving licence	6%	6%

Source: BKL – Study of job offers 2011.

Sheet 11.

Technicians and associate professionals: Science and engineering associate professionals [3.31]

N=408 (2%)		Total	Industry			
			Manufacturing and mining	Construction and transport	Trade, accommodation, and food service activities	Specialist services
Number of job offers		408 (100%)	169 (41%)	74 (18%)	78 (19%)	70 (17%)
Minimum level of education	secondary	41%	38%	35%	62%	36%
	higher (1st cycle)	20%	26%	22%	3%	31%
	higher (2nd cycle)	5%	7%	9%	—	—
	basic vocational	5%	8%	3%	4%	—
	not defined	27%	22%	31%	32%	24%
	field of education:	engineering and engineering trades	engineering and engineering trades; manufacturing and processing; health	engineering and engineering trades; architecture and building	engineering and engineering trades	manufacturing and processing life sciences, physical sciences; veterinary
Experience	% of offers	75%	80%	78%	81%	53%
	average number of years	2.7	2.1	3.3	4.1	3.1
Competencies	OCC: occupational	27%	36%	14%	19%	24%
	COM: basic computer handling skills	17%	22%	11%	12%	11%
	COM: advanced computer handling skills	17%	18%	24%	—	24%
	INT: cooperation within the group	14%	20%	14%	6%	4%
	INT: being communicative	12%	13%	12%	4%	22%
	SLF: initiative	10%	12%	8%	5%	13%
	SLF: independence	9%	14%	—	5%	7%
	SLF: time management	8%	11%	—	6%	7%
	SLF: entrepreneurship	7%	10%	3%	6%	4%
	COG: analytical and synthetic thinking	7%	14%	—	—	4%
Additional requirements	references	34%	39%	32%	23%	40%
	driving licence	14%	8%	26%	23%	15%
	clean criminal record	1%	—	—	3%	—

Source: BKL – Study of job offers 2011.

Sheet 12.

Technicians and associate professionals: health associate professionals [3.32]

N=155 (1%)		Total	Industry	
			Trade, accommodation, and food service activities	Health and welfare
Number of job offers		155 (100%)	50 (32%)	86 (55%)
Minimum level of education	secondary	25%	28%	19%
	higher (1st cycle)	10%	11%	3%
	not defined	57%	59%	72%
	field of education:	health and veterinary	health and veterinary; personal services	health and veterinary
Experience	% of offers	81%	48%	85%
	average number of years	2.9	—	3.2
Competencies	OCC: occupational	18%	7%	14%
	INT: being communicative	14%	12%	9%
	SLF: initiative	13%	10%	13%
	ART: knowledge of customs	12%	—	19%
	COM: basic computer handling skills	8%	10%	—
	INT: cooperation within the group	7%	—	9%
	AVL: availability (time)	7%	—	9%
	SLF: independence	6%	—	9%
	SLF: time management	5%	—	8%
	COG: learning skills	4%	—	5%
Additional requirements	references	20%	10%	19%
	driving licence	4%	7%	2%
	courses dedicated to healthcare	4%	—	7%

Source: BKL – Study of job offers 2011.

Sheet 13.

Technicians and associate professionals: Business and administration associate professionals [3.33]

N=3426 (16.6%)		Total	Industry				
			Manufacturing and mining	Construction and transport	Trade, accommodation, and food service activities	Usługi specjalistyczne	Education
Number of job offers		3426 (100%)	776 (23%)	197 (6%)	862 (25%)	1412 (41%)	65 (2%)
Minimum level of education	secondary	46%	42%	42%	38%	54%	64%
	higher (1st cycle)	11%	14%	16%	9%	9%	9%
	basic vocational	1%	1%	—	2%	—	—
	higher (2nd cycle)	1%	1%	1%	—	—	—
	not defined	41%	41%	40%	51%	35%	27%
	field of education:	business and administration	business and administration; engineering and engineering trades	business and administration	business and administration	business and administration	business and administration
Experience	% of offers	75%	74%	80%	80%	73%	45%
	average number of years	1.8	1.9	2.0	1.9	1.6	2.0
Competencies	INT: being communicative	43%	35%	30%	34%	54%	56%
	SLF: initiative	33%	25%	14%	28%	44%	—
	OCC: occupational	27%	33%	29%	22%	27%	7%
	INT: skill of establishing and maintaining relations with people, clients	23%	25%	13%	21%	25%	13%
	SLF: independence	21%	19%	19%	21%	22%	31%
	COM: basic computer handling skills	21%	20%	23%	16%	25%	11%
	SLF: decision making	19%	16%	9%	12%	27%	—
	SLF: time management	17%	18%	17%	13%	18%	16%
	SLF: entrepreneurship	17%	19%	12%	15%	19%	—
	MNG: leadership	17%	21%	13%	14%	18%	—
Additional requirements	references	35%	40%	35%	29%	36%	40%
	driving licence	25%	39%	18%	31%	17%	13%
	clean criminal record	1%	—	—	1%	2%	—
	course in accounting	1%	—	—	4%	—	—

Source: BKL – Study of job offers 2011.

Sheet 14.

Technicians and associate professionals: Legal, social, cultural and related associate professionals [3.34]

N=134 (1%)		Total	Industry		
			Trade, accommodation, and food service activities	Specialist services	Health and welfare
Number of job offers		134 (100%)	40 (30%)	58 (43%)	36 (27%)
Minimum level of education	secondary	19%	19%	16%	22%
	higher (1st cycle)	7%	—	7%	—
	basic vocational	6%	13%	—	11%
	not defined	68%	63%	76%	56%
Experience	% of offers	71%	63%	79%	42%
	average number of years	not defined	—	—	—
Competencies	OCC: occupational	30%	41%	22%	11%
	SLF: initiative	15%	19%	10%	15%
	INT: being communicative	14%	13%	5%	26%
	SLF: time management	10%	10%	3%	11%
	ART: knowledge of customs	10%	13%	3%	—
	INT: cooperation within the group	9%	—	7%	—
	INT: skill of establishing and maintaining relations with people, clients	7%	15%	—	—
	MNG: coordination of work	7%	9%	3%	—
	MNG: leadership	5%	15%	—	—
	SLF: independence	5%	8%	5%	—
Additional requirements	references	38%	38%	24%	48%
	driving licence	8%	6%	12%	—
	courses corroborating artistic skills (drawing, sculpture, dance)	5%	—	10%	—

Source: BKL – Study of job offers 2011.

Sheet 15.

Technicians and associate professionals: Information and communications technicians [3.35]

N=142 (1%)		Total	Industry	
			Trade, accommodation, and food service activities	Specialist services
Number of job offers		142 (100%)	64 (45%)	65 (46%)
Minimum level of education	secondary	15%	9%	12%
	higher (1st cycle)	14%	9%	11%
	not defined	68%	82%	71%
	field of education:	computing	computing	computing
Experience	% of offers	69%	31%	71%
	average number of years	1.7	1.6	1.8
Competencies	COM: advanced computer handling skills	58%	60%	60%
	OCC: occupational	54%	60%	49%
	COM: building software application, including websites	38%	—	60%
	INT: being communicative	30%	40%	20%
	INT: cooperation within the group	20%	20%	22%
	INT: skill of establishing and maintaining relations with people, clients	18%	25%	11%
	COM: basic computer handling skills	17%	19%	11%
	SLF: initiative	13%	15%	10%
	COM: handling the Internet and e-mail	13%	10%	14%
	COG: learning skills	8%	—	11%
Additional requirements	references	36%	44%	37%

Source: BKL – Study of job offers 2011.

Sheet 16.

Clerical support workers: General and keyboard clerks [4.41]

N=333 (1.6%)		Total	Industry		
			Manufacturing and mining	Trade, accommodation, and food service activities	Specialist services
Number of job offers		333 (100%)	71 (21%)	35 (11%)	178 (53%)
Minimum level of education	secondary	31%	39%	34%	22%
	higher (1st cycle)	17%	22%	9%	17%
	higher (2nd cycle)	3%	—	5%	4%
	not defined	47%	37%	45%	55%
	field of education	business and administration	business and administration	business and administration	business and administration
Experience	% of offers	77%	56%	86%	42%
	average number of years	1.8	2.0	1.3	2.0
Competencies	COM: basic computer handling skills	39%	36%	53%	39%
	INT: being communicative	20%	4%	25%	29%
	SLF: time management	19%	4%	23%	19%
	OCC: occupational	15%	7%	16%	22%
	ART: knowledge of customs	14%	11%	14%	17%
	OFF: handling office equipment	13%	7%	14%	13%
	SLF: initiative	12%	4%	7%	17%
	SLF: independence	10%	7%	7%	17%
	ART: command of foreign languages	8%	7%	18%	3%
	SLF: decision making	8%	4%	7%	12%
Additional requirements	references	30%	15%	39%	26%
	driving licence	11%	23%	16%	12%

Source: BKL – Study of job offers 2011.

Sheet 17.

Clerical support workers: Customer services clerks [4.42]

N=429 (2.1%)		Total	Industry	
			Trade, accommodation, and food service activities	Specialist services
Number of job offers		429 (100%)	178 (41%)	148 (34%)
Minimum level of education	secondary	39%	42%	34%
	higher (1st cycle)	7%	6%	7%
	basic vocational	3%	3%	—
	not defined	52%	49%	56%
	field of education:	ekonomia i administracja; personal services	ekonomia i administracja personal services	business and administration personal services; welfare
Experience	% of offers	72%	78%	62%
	average number of years	1.5	1.4	1.6
Competencies	INT: being communicative	43%	43%	44%
	MNG: leadership	27%	17%	41%
	ART: proper speaking skills	23%	17%	28%
	COM: basic computer handling skills	20%	21%	14%
	SLF: initiative	18%	20%	14%
	COG: learning skills	15%	12%	19%
	ART: knowledge of customs	14%	14%	14%
	INT: skill of establishing and maintaining relations with people, clients	13%	13%	15%
	OCC: occupational	12%	12%	11%
	OFF: handling office equipment	12%	11%	11%
Additional requirements	references	36%	33%	43%
	driving licence	5%	6%	4%
	clean criminal record	1%	—	2%

Source: BKL – Study of job offers 2011.

Sheet 18.

Clerical support workers: Numerical and material recording clerks [4.43]

N=296 (1.4%)		Total	Industry			
			Manufacturing and mining	Construction and transport	Trade, accommodation, and food service activities	Specialist services
Number of job offers		296 (100%)	59 (20)	41 (14%)	72 (24%)	61 (21%)
Minimum level of education	secondary	30%	19%	32%	35%	39%
	basic vocational	13%	17%	15%	14%	3%
	higher (1st cycle)	5%	—	—	4%	13%
	not defined	49%	58%	49%	46%	44%
	field of education:	business and administration	business and administration	business and administration	business and administration	business and administration
Experience	% of offers	78%	86%	83%	76%	69%
	average number of years	2.2	1.5	3.5	2.2	1.3
Competencies	COM: basic computer handling skills	35%	22%	10%	25%	64%
	OCC: occupational	23%	19%	22%	18%	46%
	INT: cooperation within the group	14%	14%	10%	7%	36%
	SLF: initiative	10%	10%	17%	3%	16%
	OFF: handling office equipment	8%	3%	17%	15%	3%
	SLF: time management	8%	3%	20%	10%	8%
	INT: being communicative	8%	5%	5%	10%	15%
	AVL: without lower-level codes*	7%	3%	22%	3%	5%
	SLF: decision making	6%	7%	12%	6%	—
	COG: concentration	6%	7%	7%	6%	10%
	SLF: pursuit of increasing qualifications	6%	—	—	—	30%
Additional requirements	references	28%	19%	20%	32%	43%
	driving licence	16%	15%	15%	33%	—
	clean criminal record	2%	—	—	3%	5%

* The "AVL: without lower-level codes" category denotes competencies from the availability group that – because of the way the employers described them – could be classified only at the general level, i.e. of 11 competency classes.

Source: BKL – Study of job offers 2011.

Sheet 19.

Clerical support workers: Other clerical support workers [4.44]

N=56 (0.3%)		Total*
Number of job offers		56 (100%)
Minimum level of education	secondary	30%
	higher (1st cycle)	13%
	not defined	50%
	field of education:	business and administration
Experience	% of offers	93%
	average number of years	1.2
Competencies	INT: being communicative	21%
	OCC: occupational	20%
	INT: skill of establishing and maintaining relations with people, clients	20%
	SLF: time management	16%
	SLF: entrepreneurship	14%
	AVL: without lower-level codes**	14%
	COG: concentration	11%
	SLF: independence	11%
	COM: basic computer handling skills	11%
	INT: cooperation within the group	9%
Additional requirements	references	21%
	driving licence	20%
	clean criminal record	7%

* For the sake of data credibility, requirements in the given sector/industry are presented only for N > 30 job offers. In this occupational group, the quantity assumption was not met by the sector/industry, and therefore the data is presented without division into the employer's field of operation.

** The "AVL: without lower-level codes" category denotes competencies from the availability group that – because of the way the employers described them – could be classified only at the general level, i.e. of 11 competency classes.

Source: BKL – Study of job offers 2011.

Sheet 20.

Service and sales workers: personal care workers [5.51]

N=1018 (5%)		Total	Industry			
			Manufacturing and mining	Trade, accommodation, and food service activities	Specialist services	Health and welfare
Number of job offers		1018 (100%)	86 (8%)	515 (51%)	263 (26%)	74 (7%)
Minimum level of education	basic vocational	22%	2%	15%	12%	15%
	secondary	13%	20%	22%	28%	8%
	primary	4%	15%	3%	2%	—
	not defined	59%	63%	58%	56%	72%
Experience	% of offers	75%	95%	73%	73%	69%
	average number of years	1.9	—	2.1	1.9	2.3
Competencies	OCC: occupational	10%	2%	7%	13%	32%
	ART: knowledge of customs	7%	—	7%	8%	20%
	INT: being communicative	6%	—	5%	10%	12%
	SLF: initiative	5%	—	6%	3%	11%
	AVL: without lower-level codes*	5%	—	4%	8%	9%
	INT: cooperation within the group	4%	2%	1%	2%	3%
	SLF: decision making	3%	—	2%	4%	8%
	COG: learning skills	2%	—	2%	3%	3%
	SLF: time management	2%	—	2%	3%	—
	SLF: independence	2%	—	3%	1%	8%
	SLF: occupation-related ambitions (pursuit of promotions)	2%	—	1%	—	7%
Additional requirements	references	27%	5%	27%	32%	42%
	driving licence	15%	7%	21%	8%	9%

* The "AVL: without lower-level codes" category denotes competencies from the availability group that – because of the way the employers described them – could be classified only at the general level, i.e. of 11 competency classes.

Source: BKL – Study of job offers 2011.

Sheet 21.

Service and sales workers: sales workers [5.52]

N=2768 (13.4%)		Total	Industry			
			Manufacturing and mining	Construction and transport	Trade, accommodation, and food service activities	Specialist services
Number of job offers		2768 (100%)	222 (8%)	42 (2%)	1520 (55%)	624 (23%)
Minimum level of education	secondary	35%	39%	33%	31%	40%
	higher (1st cycle)	7%	7%	19%	3%	12%
	basic vocational	7%	5%	7%	11%	1%
	not defined	50%	48%	38%	54%	46%
	field of education:	business and administration	business and administration; engineering and engineering trades; personal services	business and administration	business and administration; engineering and engineering trades; personal services	business and administration; engineering and engineering trades; personal services
Experience	% of offers	72%	68%	76%	73%	67%
	average number of years	1.6	1.9	1.2	1.7	1.5
Competencies	INT: being communicative	36%	39%	26%	27%	49%
	OCC: occupational	26%	33%	26%	18%	40%
	SLF: initiative	21%	29%	12%	15%	32%
	COM: basic computer handling skills	18%	20%	29%	12%	28%
	INT: establishing contacts with people, clients	18%	29%	12%	12%	28%
	MNG: leadership	15%	13%	5%	11%	25%
	SLF: time management	14%	12%	10%	11%	18%
	ART: knowledge of customs	13%	19%	19%	11%	15%
	SLF: entrepreneurship	12%	13%	12%	8%	19%
	INT: cooperation within the group	12%	19%	12%	9%	13%
	AVL: without lower-level codes*	11%	20%	7%	13%	5%
Additional requirements	references	36%	40%	26%	32%	45%
	driving licence	17%	23%	19%	19%	11%
	clean criminal record	1%	1%	—	1%	1%

* The "AVL: without lower-level codes" category denotes competencies from the availability group that – because of the way the employers described them – could be classified only at the general level, i.e. of 11 competency classes.

Source: BKL – Study of job offers 2011.

Sheet 22.

Service and sales workers: personal care workers (N=31) [5.53]

N=31 (0.2%)		Total*
Number of job offers		31 (100%)
Minimum level of education	secondary	12%
	not defined	85%
Experience	% of offers	62%
	average number of years	not defined
Competencies	ART: knowledge of customs	23%
	OCC: occupational	23%
	AVL: availability (time)	19%
	SLF: decision making	15%
	SLF: initiative	12%
	AVL: without lower-level codes**	8%
Additional requirements	references	38%
	experience in personal care	23%
	clean criminal record	20%
	driving licence	12%

* For the sake of data credibility, requirements in the given sector/industry are presented only for N > 30 job offers. In this occupational group, the quantity assumption was not met by the sector/industry, and therefore the data is presented without division into the employer's field of operation.

** The "AVL: without lower-level codes" category denotes competencies from the availability group that – because of the way the employers described them – could be classified only at the general level, i.e. of 11 competency classes.

Source: BKL – Study of job offers 2011.

Sheet 23.

Service and sales workers: Protective services workers [5.54]

N=230 (1.1%)		Total	Industry
			Trade, accommodation, and food service activities
Number of job offers		239 (100%)	191 (83%)
Minimum level of education	basic vocational	15%	13%
	primary	8%	8%
	secondary	6%	6%
	not defined	67%	71%
Experience	% of offers	84%	85%
	average number of years	1.8	1.8
Competencies	SLF: resilience to stress	10%	10%
	ART: knowledge of customs	10%	11%
	AVL: without lower-level codes*	7%	7%
	SLF: time management	5%	5%
	INT: cooperation within the group	5%	6%
	COG: learning skills	4%	5%
	SLF: decision making	4%	5%
	COG: concentration	4%	5%
	OCC: occupational	3%	3%
	SLF: initiative	3%	3%
	PHY: physical fitness	2%	3%
Additional requirements	references	17%	16%
	driving licence	8%	8%

* The "AVL: without lower-level codes" category denotes competencies from the availability group that – because of the way the employers described them – could be classified only at the general level, i.e. of 11 competency classes.

Source: BKL – Study of job offers 2011.

Sheet 24.

Craft and related trades workers: Building and related trades workers, excluding electricians (N=1015) [7.71]

N=1015 (4.9%)		Total	Industry		
			Manufacturing and mining	Construction and transport	Trade, accommodation, and food service activities
Number of job offers		1015 (100%)	123 (12%)	789 (78%)	65 (6%)
Minimum level of education	basic vocational	31%	37%	30%	37%
	primary	4%	4%	5%	—
	secondary	2%	3%	1%	8%
	not defined	60%	53%	61%	54%
Experience	% of offers	79%	79%	79%	88%
	average number of years	2.5	1.6	2.8	2.4
Competencies	OCC: occupational	12%	15%	10%	23%
	TECH: practical application of technical imagination	4%%	2%	3%	11%
	INT: cooperation within the group	2%	2%	1%	—
	MNG: disciplining employees	1%	—	1%	—
	AVL: without lower-level codes*	1%	2%	1%	—
Additional requirements	references	24%	24%	25%	12%
	driving licence	12%	10%	12%	9%

* The "AVL: without lower-level codes" category denotes competencies from the availability group that – because of the way the employers described them – could be classified only at the general level, i.e. of 11 competency classes.

Source: BKL – Study of job offers 2011.

Sheet 25.

Craft and related trades workers: Metal, machinery and related trades workers [7.72]

N=826 (4%)		Total	Industry		
			Manufacturing and mining	Construction and transport	Trade, accommodation, and food service activities
Number of job offers		826 (100%)	387 (47%)	193 (23%)	189 (23%)
Minimum level of education	basic vocational	41%	40%	37%	47%
	secondary	7%	7%	6%	8%
	primary	1%	2%	2%	—
	not defined	49%	50%	53%	43%
Experience	% of offers	86%	84%	86%	86%
	average number of years	2.7	2.6	2.7	2.8
Competencies	OCC: occupational	20%	23%	17%	14%
	TECH: practical application of technical imagination	10%	18%	6%	1%
	INT: cooperation within the group	3%	4%	2%	3%
	PHY: manual skills	2%	3%	—	1%
	COG: concentration	2%	11%	—	—
Additional requirements	references	17%	19%	17%	15%
	driving licence	8%	5%	10%	13%

Source: BKL – Study of job offers 2011.

Sheet 26.

Craft and related trades workers: handicraft and printing workers [7.73]

N=50 (0.2%)		Total*
Number of job offers		50 (100%)
Minimum level of education	basic vocational	36%
	secondary	26%
	not defined	36%
Experience	% of offers	72%
	average number of years	2.4
Competencies	OCC: occupational	36%
	AVL: without lower-level codes**	24%
	COG: learning skills	12%
	MNG: disciplining employees	12%
	COG: concentration	10%
Additional requirements	references	46%

* For the sake of data credibility, requirements in the given sector/industry are presented only for N > 30 job offers. In this occupational group, the quantity assumption was not met by the sector/industry, and therefore the data is presented without division into the employer's field of operation.

** The "AVL: without lower-level codes" category denotes competencies from the availability group that – because of the way the employers described them – could be classified only at the general level, i.e. of 11 competency classes.

Source: BKL – Study of job offers 2011.

Sheet 27.

Craft and related trades workers: electrical and electronic trade workers [7.74]

N=392 (1.9%)		Total	Industry		
			Manufacturing and mining	Construction and transport	Trade, accommodation, and food service activities
Number of job offers		392 (100%)	156 (40%)	103 (26%)	81 (21%)
Minimum level of education	basic vocational	41%	35%	53%	38%
	secondary	18%	18%	9%	21%
	higher (1st cycle)	2%	5%	—	—
	not defined	40%	43%	38%	40%
Experience	% of offers	79%	81%	82%	74%
	average number of years	2.3	2.3	2.7	2.5
Competencies	OCC: occupational	20%	22%	13%	26%
	AVL: without lower-level codes*	6%	10%	4%	6%
	COM: basic computer handling skills	5%	3%	2%	6%
	INT: cooperation within the group	5%	8%	—	7%
	SLF: independence	5%	5%	—	4%
Additional requirements	references	26%	26%	19%	33%
	driving licence	22%	17%	16%	25%

* The "AVL: without lower-level codes" category denotes competencies from the availability group that – because of the way the employers described them – could be classified only at the general level, i.e. of 11 competency classes.

Source: BKL – Study of job offers 2011.

Sheet 28.

Craft and related trades workers: Food processing, wood working, garment, and other craft and related trade workers [7.75]

N=562 (2.7%)		Total	Industry	
			Manufacturing and mining	Trade, accommodation, and food service activities
Number of job offers		562 (100%)	474 (84%)	45 (8%)
Minimum level of education	basic vocational	35%	33%	51%
	primary	4%	4%	4%
	secondary	3%	3%	4%
	not defined	57%	59%	40%
Experience	% of offers	72%	72%	71%
	average number of years	2.9	2.9	3.0
Competencies	OCC: occupational	25%	27%	22%
	SLF: initiative	4%	4%	9%
	COG: concentration	3%	3%	—
	INT: cooperation within the group	3%	3%	4%
	SLF: independence	2%	3%	—
Additional requirements	references	31%	32%	29%
	driving licence	8%	7%	20%
	clean criminal record	1%	1%	—

Source: BKL – Study of job offers 2011.

Sheet 29.

Stationary plant and machine operators: stationary plant and machine operators [8.81]

N=168 (1%)		Total	Industry	
			Manufacturing and mining	Trade, accommodation, and food service activities
Number of job offers		168 (100%)	89 (53%)	31 (18%)
Minimum level of education	basic vocational	33%	31%	48%
	secondary	14%	18%	13%
	not defined	49%	48%	32%
Experience	% of offers	82%	85%	84%
	average number of years	2.7	2.8	2.6
Competencies	OCC: occupational	18%	17%	19%
	TECH: practical application of technical imagination	5%	9%	—
	TECH: posługiwanie się urządzeniami technicznymi	3%	2%	—
	SLF: initiative	3%	2%	—
	SLF: entrepreneurship	2%	2%	—
Additional requirements	references	20%	16%	26%
	driving licence	7%	6%	13%
	clean criminal record	1%	—	2%

Source: BKL – Study of job offers 2011.

Sheet 30.

Plant and machine operators, and assemblers: Assemblers [8.82]

N=58 (0.3%)		Total	Industry
			Manufacturing and mining
Number of job offers		58 (100%)	44 (76%)
Minimum level of education	basic vocational	33%	27%
	secondary	17%	18%
	primary	5%	7%
	not defined	43%	45%
Experience	% of offers	81%	77%
	average number of years	2.2	2.1
Competencies	OCC: occupational	24%	17%
	TECH: practical application of technical imagination	17%	9%
	AVL: without lower-level codes*	10%	10%
	PHY: zdolności manualne	10%	11%
	COG: concentration	5%	6%
Additional requirements	references	29%	34%
	driving licence	14%	14%

* The "AVL: without lower-level codes" category denotes competencies from the availability group that – because of the way the employers described them – could be classified only at the general level, i.e. of 11 competency classes.

Source: BKL – Study of job offers 2011.

Sheet 31.

Plant and machine operators, and assemblers: Drivers and mobile plant operators [8.83]

N=998 (4.8%)		Total	Industry		
			Manufacturing and mining	Construction and transport	Trade, accommodation, and food service activities
Number of job offers		998 (100%)	105 (11%)	648 (65%)	117 (12%)
Minimum level of education	basic vocational	26%	23%	27%	27%
	secondary	4%	5%	3%	6%
	primary	3%	5%	2%	—
	not defined	65%	64%	65%	64%
Experience	% of offers	85%	79%	87%	79%
	average number of years	2.3	2.1	2.3	3.1
Competencies	OCC: occupational	6%	4%	6%	7%
	TECH: posługiwanie się urządzeniami technicznymi	2%	—	5%	—
	AVL: without lower-level codes*	4%	—	4%	4%
	PHY: health	1%	—	2%	—
	PHY: space orientation	1%	—	2%	—
Additional requirements	driving licence	38%	42%	35%	54%
	references	18%	24%	15%	25%
	clean criminal record	3%	5%	3%	3%

* The "AVL: without lower-level codes" category denotes competencies from the availability group that – because of the way the employers described them – could be classified only at the general level, i.e. of 11 competency classes.

Source: BKL – Study of job offers 2011.

Sheet 32.

Elementary occupations: Cleaners and helpers [9.91]

N=264 (1.3%)		Total	Industry	
			Trade, accommodation, and food service activities	Specialist services
Number of job offers		264 (100%)	180 (68%)	57 (22%)
Minimum level of education	primary	14%	17%	7%
	basic vocational	7%	7%	9%
	secondary	3%	10%	3%
	not defined	70%	66%	82%
Experience	% of offers	90%	90%	96%
	average number of years	1.6	2.0	1.0
Competencies	OCC: occupational	3%	3%	4%
	SLF: bez kodów niższego rzędu*	5%	7%	5%
	AVL: without lower-level codes**	4%	2%	3%
	ART: knowledge of customs	3%	5%	—
	COG: concentration	2%	3%	—
Additional requirements	references	9%	9%	7%
	driving licence	6%	7%	4%

* The "SLF: without lower-level codes" category denotes competencies from the self-organisational group that – because of the way the employers described them – could be classified only at the general level, i.e. of 11 competency classes.

** The "AVL: without lower-level codes" category denotes competencies from the availability group that – because of the way the employers described them – could be classified only at the general level, i.e. of 11 competency classes.

Source: BKL – Study of job offers 2011.

Sheet 33.

Elementary occupations: Labourers in mining, construction, manufacturing and transport [9.93]

N=269 (1.3%)		Total	Industry	
			Manufacturing and mining	Construction and transport
Number of job offers		269 (100%)	98 (36%)	118 (44%)
Minimum level of education	basic vocational	21%	—	18%
	primary	9%	13%	7%
	secondary	6%	—	3%
	not defined	63%	65%	71%
Experience	% of offers	84%	88%	79%
	average number of years	2.1	2.2	2.0
Competencies	OCC: occupational	5%	3%	4%
	PHY: zdolności manualne	5%	5%	—
	AVL: without lower-level codes*	4%	2%	4%
	PHY: health	3%	3%	2%
	COG: concentration	2%	3%	—
Additional requirements	references	16%	9%	20%
	driving licence	14%	13%	14%

* The "AVL: without lower-level codes" category denotes competencies from the availability group that – because of the way the employers described them – could be classified only at the general level, i.e. of 11 competency classes.

Source: BKL – Study of job offers 2011.

Sheet 34.

Elementary occupations: food preparation assistants [9.94]

N=85 (0.4%)		Total*
Number of job offers		85 (100%)
Minimum level of education	basic vocational	27%
	primary	6%
	secondary	2%
	not defined	56%
Experience	% of offers	76%
	average number of years	1.8
Competencies	AVL: availability (time)	19%
	SLF: decision making	15%
	SLF: initiative	12%
	OCC: occupational	5%
	AVL: without lower-level codes**	4%
	COG: concentration	3%
Additional requirements	references	26%
	driving licence	22%

* For the sake of data credibility, requirements in the given sector/industry are presented only for N > 30 job offers. In this occupational group, the quantity assumption was not met by the sector/industry, and therefore the data is presented without division into the employer's field of operation.

** KatThe "AVL: without lower-level codes" category denotes competencies from the availability group that – because of the way the employers described them – could be classified only at the general level, i.e. of 11 competency classes.

Source: BKL – Study of job offers 2011.

Sheet 35.

Elementary occupations: Street and related sales and service workers [9.95]

N=44 (0.2%)		Total*
Number of job offers		44 (100%)
Minimum level of education	not defined	91%
Experience	% of offers	91%
	average number of years	not defined
Competencies	AVL: availability (time)	19%
	SLF: initiative	9%
	SLF: occupation-related ambitions	8%
	COM: computer literacy	7%
	AVL: without lower-level codes**	7%
	SLF: entrepreneurship	7%
Additional requirements	driving licence	7%

* For the sake of data credibility, requirements in the given sector/industry are presented only for N > 30 job offers. In this occupational group, the quantity assumption was not met by the sector/industry, and therefore the data is presented without division into the employer's field of operation.

** The "AVL: without lower-level codes" category denotes competencies from the availability group that – because of the way the employers described them – could be classified only at the general level, i.e. of 11 competency classes.

Source: BKL – Study of job offers 2011.

Sheet 36.

Elementary occupations: refuse workers and other elementary workers [9.96]

N=83 (0.4%)		Total*
Number of job offers		83 (100%)
Minimum level of education	basic vocational	17%
	primary	8%
	secondary	8%
	not defined	64%
Experience	% of offers	88%
	average number of years	2.8
Competencies	SLF: without lower-level codes**	7%
	AVL: without lower-level codes***	7%
	OCC: occupational	4%
	SLF: decision making	4%
	SLF: time management	4%
	AVL: availability (time)	2%
Additional requirements	driving licence	16%
	references	12%

* For the sake of data credibility, requirements in the given sector/industry are presented only for N > 30 job offers. In this occupational group, the quantity assumption was not met by the sector/industry, and therefore the data is presented without division into the employer's field of operation.

** The "SLF: without lower-level codes" category denotes competencies from the self-organisational group that – because of the way the employers described them – could be classified only at the general level, i.e. of 11 competency classes.

*** The "AVL: without lower-level codes" category denotes competencies from the availability group that – because of the way the employers described them – could be classified only at the general level, i.e. of 11 competency classes.

Source: BKL – Study of job offers 2011.

Impact of the level of education on occupational career

The occupational activity rate is highest while the unemployment rate is definitely lowest among the graduates with higher education. They have the highest opinion on their conditions of work, certainty of employment, potential for development, and are most satisfied with the type of work they perform. The situation of secondary school graduates with a certificate of secondary education (matura) in the labour market is less advantageous, even though it is still better than the situation of people who did not continue education after primary or lower secondary education.

Generally – the higher the education, the higher the wages, yet neither higher education guarantees high remuneration, nor does lower sentenced one to low wages.

Due to a radical growth of the percentage of people who completed higher education among the younger generations, in certain devotional categories we observe an increase of education-related requirements. In the categories of technicians and associate professionals, and in clerical works, certificate of secondary education is frequently not sufficient.

Konrad Turek, Szymon Czarnik

Impact of the level of education on occupational career

Introduction

Beginning with the 1990s, we observe a constant growth of interest in higher studies in Poland. In 1990, institutions of higher education provided tuition for 404,000 students. The number grew by the factor of four within a decade, and in 2005, institutions of higher education provided tuition already to nearly 2,000,000 students. The gross education ratio[26] in the academic year 1990/1991 amounted to 12.9%, in 2000/2001 – already 46.4%, and in 2009/2010 – it was as high as 53.7% (GUS 2010). The net education ratio indicator[27] went up from 9.8% in 1990/1991 to 40.9% in 2009/2010. The increase of the number of students was accompanied by an increase in the number of institutions of higher education, primarily private ones (non-public). Thus, in 2010, Poland boasted 467 institutions of higher education, providing tuition to 1.9 million students, of which 1.27 million (67%) were educated in public institutions, while 633,000 – at 330 non-public institutions.

One may venture stating that studying became a norm: frequently a "natural" stage in the educational career, not necessarily resulting from rational grounds. One needs to mention that nearly 87% of students in general secondary schools and 60% of students in technical secondary schools intend to continue education at higher level (BKL 2010). Even though the increase in educational aspirations in itself is essentially a welcome phenomenon, a problem that is frequently mentioned is the so-called overeducation of the society, that is the excessive supply of people with higher education, compared to the actual market demand. The mass quality of higher education favours asking questions whether the quantitative increase in the number of students and graduates of institutions of higher education is not perhaps followed by a drop in the quality of the educational services provided, a devaluation of the diploma of higher education included. In other words, a question about the real influence of the title of master, engineer, or bachelor on the increase of market opportunities and improvement of occupational situation in the early stages of the career.

In the last five years, the labour market was entered by 2.5 million people under 30, finishing formal education and not continuing to learn. Among that number, 43% were graduates of institutions of higher education, and 38% completed their education at the secondary level. The goal of the chapter will be to take a look at the beginning of the occupational career of graduates of various types of schools and institutions of higher education.

The first part of the chapter concerns the processes of shifting from the system of formal education to the labour market, and the careers of graduates of different types of schools. Yet, we will first present the

[26] Number of all students, compared to the number of people aged 19-24.

[27] Number of students aged 19-24, compared to the total number in this age category.

methodology of the study and the basic information concerning the graduates of various types of schools. This will be followed by a study of occupational-related and educational plans of students in last grades of schools higher than lower secondary, and last grade students in higher education. Further, we will try to verify these plans against the actual careers of the graduates. The final stage is to present a model describing the opportunities of finding employment in the early stages of occupational career of students of various types of schools.

The second part of the chapter is to analyse the role of education in a longer timeframe, including an analysis of the impact of education on remuneration. It tackles also the subject of changes in the structure of education within the last five decades and related changes in employment structure. The chapter finishes with recapitulation of both the parts.

The process of transition from the system of formal education to labour market and situation of graduates of different types of schools

Methodology

We define graduates as people who in the recent years graduated from any school that lies within the range of formal education and did not continue learning (other than in the form of courses and training). Excluded from the scope of the study are graduates of postgraduate, MBA, and doctoral studies, which is due to the specificity of these groups, and will be explained in the following subchapter. In most analyses, we focus on the graduates from the last five years, that is the people who in that time graduated e.g. from an upper secondary technical school, or master degree studies, and did not continue education at other levels.

The main goal of the chapter is to analyse the significance of the level of education at the beginning of the professional career, and for that reason, most analyses will be focused on the people aged from 18 to 30, the age assumed here as the first period of the career. As presented in further analyses, a decided majority of people finish their education at this age. Nevertheless, such a limit leaves out a group of people who acquired further education at a later age, during their occupational career, e.g. at extramural and postgraduate studies. They are excluded from the analyses, as accounting for that group would require a different approach, that does not fit into the frame of the present chapter.

The data that the analyses are based on come from research conducted as part of the first (2010) and second (2011) rounds of the Study of Human Capital in Poland project, and cover:

- the population study from 2010 and 2011;
- the study of students in higher education from 2010;
- the study of secondary school students from 2010.

In the population study, mostly the data from 2011 are analysed, yet due to the short period (of a few months) separating the first two editions, the results are highly convergent in many cases. This at times allows merging the two databases to achieve a greater precision of estimates on a larger sample. For example, analysing the average level of competencies of the subjects, the data from the first and second editions can be combined, as there were hardly any changes taking place in that scope in the period separating the rounds. In turn, the level of unemployment and employment underwent a fairly visible change (also due to the fact of conducting the studies in various months) and in this case merging data from two editions could lead to wrong conclusions. Therefore, in the case of analyses concerning areas of greater change dynamics, these are predominantly the 2011 data that are used for studies. The exception will be the model of logistic regression, in whose case, the grounds for analyses is the combined data from 2010 and 2011, with respect to controls of study rounds, which will be explained in one of the subchapters.

Impact of the level of education on occupational career

Age of completing formal education and number of graduates

According to ZUS data, the average age of entering the labour market in Poland in 2009 was approximately 22.5 years in the case of men, and to 23.5 years in the case of women (Młodzi 2011). Graduates of secondary schools covered by the BKL Study in 2010 and 2011 finished their education between 18 and 24. In the case of graduates of the second-cycle higher education, a decided majority graduated before 30th birthday (86%) (Table 2.1, Chart 2.1). In most cases it was the age of 22 or 23 years in the case of bachelor studies, and 24 or 25 years in the case of master and engineer degree studies. The data justify limitation of the analyses of graduates of second cycle and lower level studies to the people aged 30 and below.

Table 2.1.

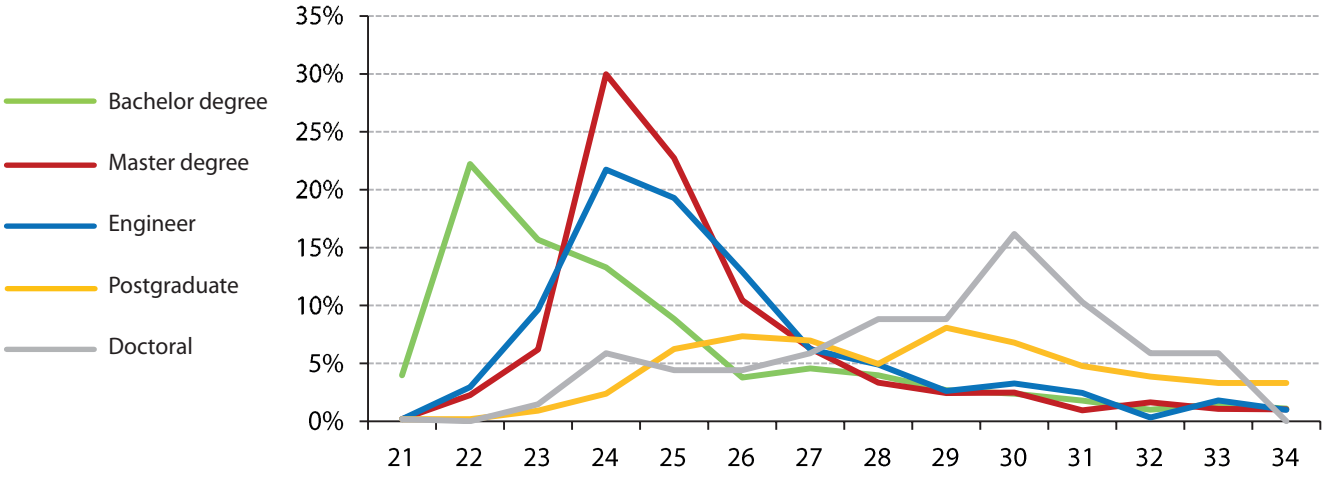
Age of completing the last stage of studies among the people who did not continue education (in %)

	Age of completing studies (%)								Total	
	18-24	25-30	31-35	36-40	41-45	46-50	51-55	56-64	%	N
Bachelor degree	56	26	6	5	4	3	0		100	1008
Master degree	40	48	6	4	2	1	0	0	100	4105
Engineer	36	50	7	4	2	1	0		100	608
Postgraduate	5	40	18	15	14	6	1	0	100	546
MBA	7	21	43		14		14		100	14
Doctoral	8	48	26	6	6	3		3	100	66
Total	39	44	7	5	3	2	0	0	100	6347

Source: BKL – Population Study 2010, 2011.

Chart 2.1.

Age of completion of the last stage of studies among people aged 21 – 34, who did not continue education (in %)



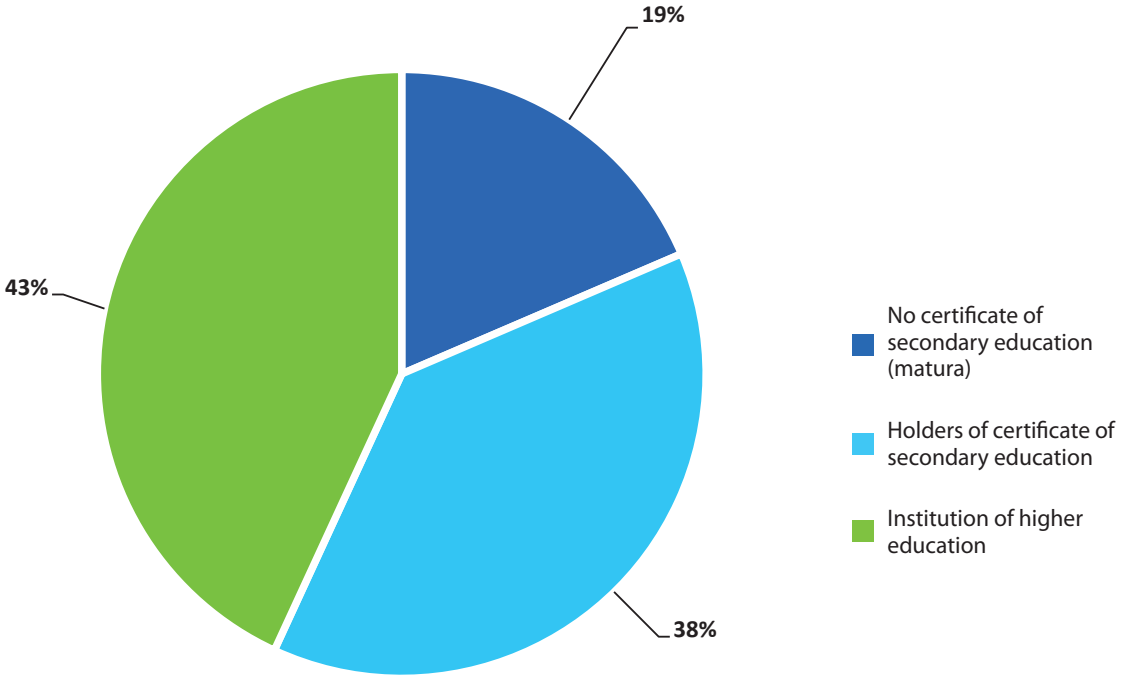
Source: BKL – Population Study 2010, 2011.

The age of the alumni of post-graduate studies was far more varied. 40% of them graduated when aged 25–30, yet 18% were between 31 and 35 years of age at graduation, 15% were aged from 36 to 40, and a further 14% – from 41 to 45. This corroborates that a study of the alumni of postgraduate studies would require a broader perspective, and would concern further education and lifelong learning rather than the initial steps in the career. For similar reasons, the analysis excludes MBA diploma holders (who are very few). Doctoral degrees were obtained in 44% of cases after the 30th birthday, which – combined with small count and a unique specificity of the studies – also suggests , excluding the group from the study.

As stated in the introduction, 2.5 million people below 30 have entered the labour market in the last five years. Of that number, 43% were graduates of institutions of higher education, 38% – of schools awarding secondary school certificates (matura), and 19% – of schools that do not award certificates of secondary education, that is basic vocational, lower secondary, and primary schools (charts 2.2. and 2.3.). Let us add that these are the people who did not continue their education. Most graduates entering the labour market held master degrees (over 714,000), below them ranked the graduates of secondary technical schools (430,000), general secondary schools (361,000), and basic vocational schools (304,000). Worth paying attention to are the 238,000 people who, having completed their baccalaureate within the last five years, did not continue into master degree studies.

Chart 2.2.

The percentage of graduates (in thousands) from the last five years (below 30), broken down by the type of school they graduated from

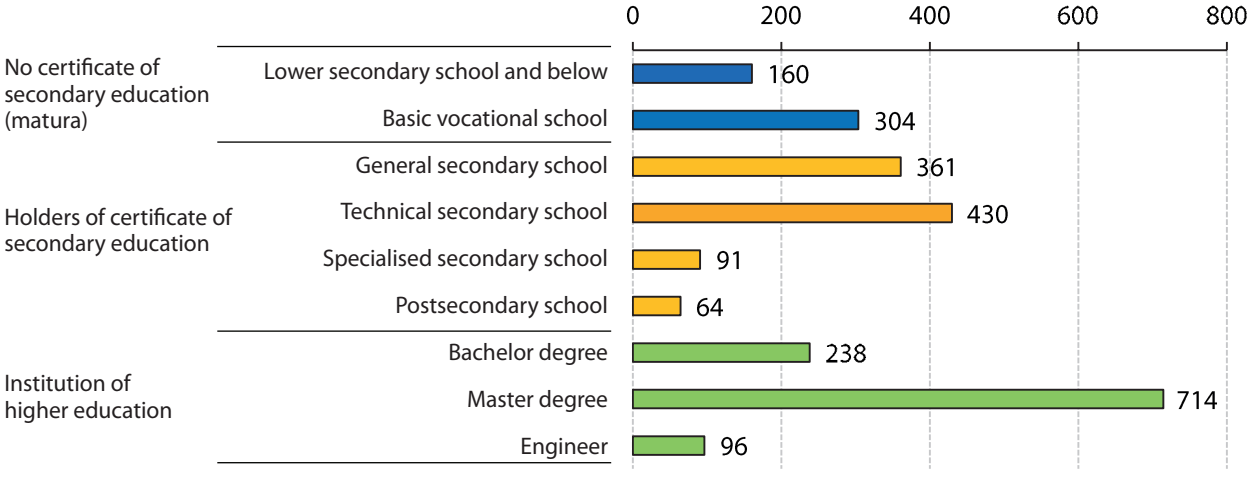


Source: BKL – Population Study 2011.

Impact of the level of education on occupational career

Chart 2.3.

Number of graduates (in thousands) from the last five years (below the age of 30), broken down by the type of school they graduated from

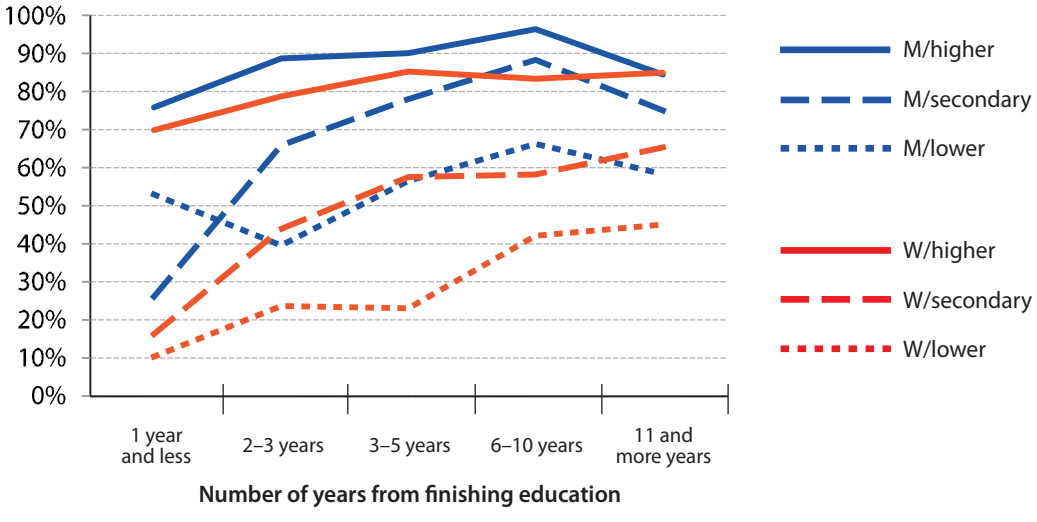


Source: BKL – Population Study 2011.

Before we pass on to analysing graduates from the last five years, it is worthwhile to take a look at the employment and unemployment rate among the people who finished their education, broken down by the type of the school graduated from, depending on the time that elapsed from the completion of their education. The charts 2.4 and 2.5 present the unemployment rate and the employment rate. Parallel to the increase of the period that passed from the completion of education, the percentage of the employed increased. Yet what is clearly visible here are the differences depending on the level of education. In the first years in the labour market, people with higher education decidedly coped best. Among the graduates who left school or institution of higher education no more than a year earlier, over 70% work, and the unemployment rate amounts to 21%. On the other hand, among the people with no certificate of secondary education, five years after leaving school, there were still only slightly above 40% of people who found employment, while the unemployment rate amounted to 42%.

Chart 2.4.

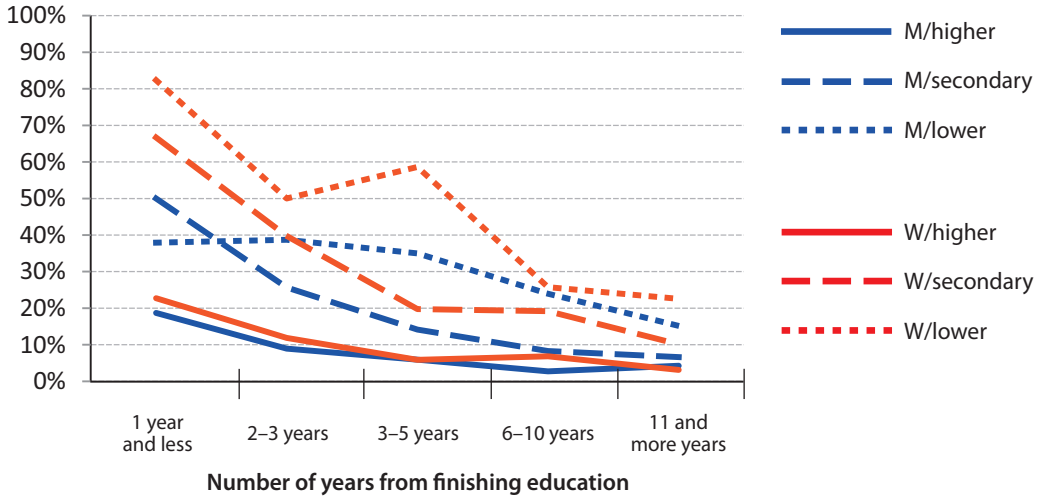
Employment rate among women and men who finished education, broken down by the level of education and period from completion of education (in %)



Source: BKL – Population Study 2011.

Chart 2.5.

Unemployment rate among women and men who finished education, broken down by the level of education and period from completion of education (in %)



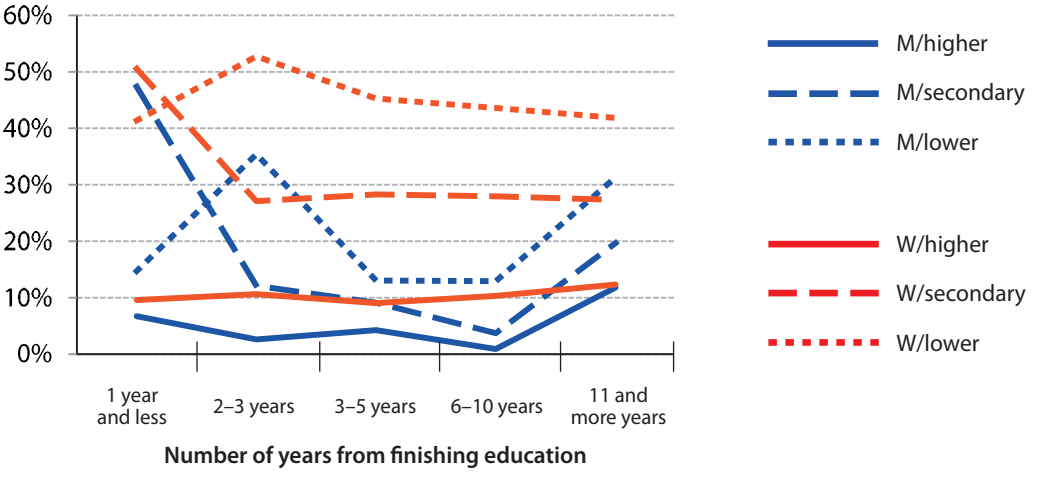
Source: BKL – Population Study 2011.

In all the categories of education, the indicators for women were less favourable than those for men, with the smallest differences being present in the case of higher education.

The share of inactive people varied strongly depending on the level of education among women (Chart 2.6). In other groups, broken down by the period that passed from the completion of education, there were as many as 40%–50% of women not active professionally in the group with lower education. Among the women with a diploma of higher education, the ratio amounted only to 10%. Men were occupationally inactive far less often than women. This is mostly related to the period of childbearing and child rearing.

Chart 2.6.

The proportion of occupationally inactive among women (W) and men (M) who completed education, broken down by the level of education and period from finishing education (in %)



Source: BKL – Population Study 2011.

In the following part, we take a closer look at the educational and occupational plans of last grade students (of secondary schools and institutions of higher education). The data come from the first round of the BKL Study conducted in 2010.

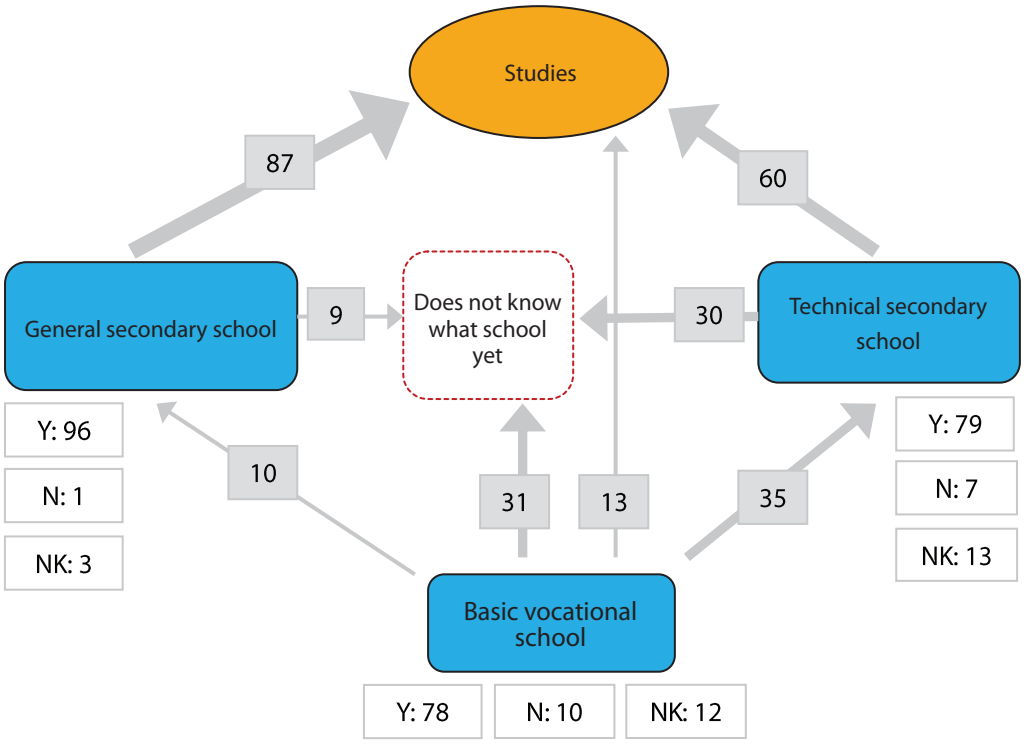
Students of upper secondary and higher schools

Studies of students of schools higher than lower secondary conducted in 2010 proved an extremely high indicator of educational aspirations among young people, assuming the form of frequent plans to opt for higher education. This proves that on the one hand, students are aware of the significance of higher education in contemporary economy. On the other, it is a testimony to the high penetration of higher studies and their easy accessibility, and what follows (and is emphasised by many critics of such a status quo) – a potential fall in the level of higher education and significance of the title gained.

A decided majority of last grade students in schools higher than lower secondary – no fewer than 87% – were determined to continue education immediately after finishing the school where they studied, with 8% not having made their minds up yet, and only 5% declaring a lack of eagerness to continue education (BKL 2010). The largest share of those planning education was recorded among students of general secondary schools (96%), and in specialised secondary schools (87%). In technical upper secondary schools, the proportion was 79%, and in basic vocational schools – 78%, with the lowest level being reached in postsecondary schools – 70%.

Diagram 2.1.

Educational plans of students of general secondary schools, technical secondary schools and basic vocational schools (% of all students of a given type of school)



Y: plans to continue education
N: does not plan to continue education
NK: does not know whether will continue education

* The values from grey fields may not sum up to 100%, as the respondents were allowed to choose multiple answers.

Source: BKL – Study of Students 2010.

Diagram 2.1 makes it possible to follow the main paths of the planned "flows" of students in the three most populous types of schools and levels higher than lower secondary, i.e. general secondary schools, technical secondary schools, and basic vocational schools (which jointly provided tuition for 94% of students in the study). The preferred form of continuing education was higher education, present in the plans of approximately 67% of all students. This was predominantly the choice of the students of general secondary schools, 87% of whom planned higher education, moreover, usually at day courses.

In the case of students of technical secondary schools, 60% planned to study, with every other planning day studies, and every other – extramural. As many as one in three did not know yet what education path they were going to choose, 13% were not sure whether they would continue education, and 7% planned no further education.

Students of vocational schools more often opted for secondary technical schools (35% of responses) 31% did not decide yet what school they were going to choose, a further 12% did not know whether to continue education at all, and 10% declared that having completed the school they would finish education as well. 13% pointed to plans of continuing education at higher level, which should be treated as an answer assuming obtaining a certificate of secondary education in the meantime.

Among students of specialised secondary schools, not presented in the diagram, 64% planned to study, while the corresponding proportion among the students of postsecondary schools was 44%.

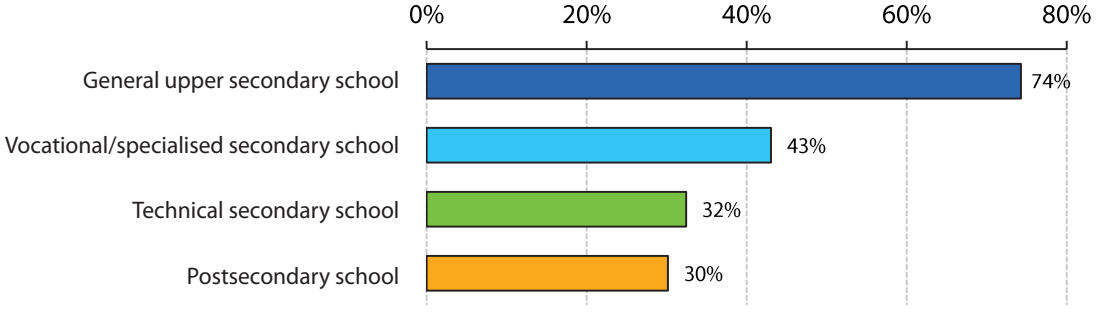
The vocational plans of the students responding in 2010 were as optimistic as their plans concerning education – nearly 60% planned to start working within three months after graduating from school (with such an answer being somewhat less popular among students of general secondary schools). Worth paying attention to is the fact that every other student covered by the study responded that at the same time they planned to continue education and start work. These results denote that the plans of students for the nearest future are hardly fine-tuned – even though in most cases they would like to continue education, a majority also consider starting work.

It is worthwhile to juxtapose these plans with the educational choices of their somewhat older colleagues, who graduated from the same types of schools during the last few years (according to population studies from 2010 and 2011). Here, a decided majority of graduates of vocational schools from the recent years[28] did not continue education (75%). Let us reiterate that three in every four students of these schools admitted to such plans. Only 14% started education in technical secondary schools, 7% in general secondary schools, and 3% in a vocational or specialised secondary school.

There was more determination visible among the students of general secondary schools, of whom 74% went into higher education (Chart 2.7). Among the students of vocational and specialised secondary schools the proportion was 43%, in technical secondary schools – 32%, and in postsecondary schools – 30%.

Chart 2.7.

The percentage of graduates of upper secondary and higher schools continuing into higher education (aged 18 to 25)



Source: BKL – Population Study 2010, 2011.

To sum up: apart from students of general upper secondary schools, most graduates of schools at levels higher than lower secondary did not continue education after completing the school, while the students responding in 2010 frequently expressed their eagerness to do so. The occupational careers of the people who graduated from various types of schools are followed in the further part of the chapter.

[28] People who at the time of the study were aged from 18 to 25.

Impact of the level of education on occupational career

Students in higher education

The studies from 2010 covered last grade students in first and second cycle day studies (baccalaureate, engineer, and master degrees).

A large proportion of last year students (42%) entered gainful employment during the 12 months preceding the first round of the BKL Study (Table 2.2). Employment was more often the choice of people graduating from master (44%) than baccalaureate (39%) studies. It is worth adding that even among students studying more than one course, 40% worked during the previous 12 months.

Table 2.2.

The percentage of students in various courses of studies working during the last 12 months, and attitude to the work performed

Field of education	% of all the students						% of all the working students		N total
	Worked during the last 12 months						After studies current work		
	in any form	abroad	own business	job contract	freelance agreement / commission contract	informal contract	will provide the main source of revenue	will not be continued after studies	
Economy and administration	44	5	2	11	27	10	13	71	5091
Social	48	5	2	13	30	11	15	72	4415
Humanities	42	6	1	10	23	13	12	65	3979
Teacher training and education science	44	5	1	11	25	13	10	65	3175
Engineering and engineering trades	38	3	2	9	22	9	17	66	2810
Health	33	4	1	10	18	7	16	69	2735
Computer science	44	3	2	9	30	5	41	39	1447
Architecture and building	38	2	2	5	26	11	36	52	1239
Personal services	45	7	1	10	27	12	12	65	1232
Life sciences	35	4	1	7	22	8	3	80	1143
Physical sciences	43	2	1	12	27	9	11	75	1139
Manufacturing and processing	41	4	3	10	23	9	15	64	1088
Law	36	5	1	8	24	6	16	67	681
Agriculture, forestry and fishery	33	7	3	10	15	10	12	62	623
Journalism and information	44	4	2	13	25	8	20	61	553
Art	44	5	1	7	30	12	23	43	545
Mathematics and statistics	31	2	0	4	21	8	9	68	482
Environmental protection	34	5	1	6	20	11	11	71	440
Transport services	51	2	3	16	28	13	36	64	204
Veterinary	30	12	2	5	15	10	10	90	97
Social welfare	41	4	1	9	25	7	1	80	96
Security services	27	5	1	8	11	10	3	93	56
Total	42	4	2	10	25	10	15	66	33270

Source: BKL – Study of Students 2010.

Most likely to enter gainful employment were the students of transport services, social sciences, personal services, business and administration, teacher training and education science, computer science, arts, and journalism. Least likely to work were the students studying security services, veterinary, mathematics and statistics, agriculture, forestry and fishery, and medicine (with fewer than one in every three students working).

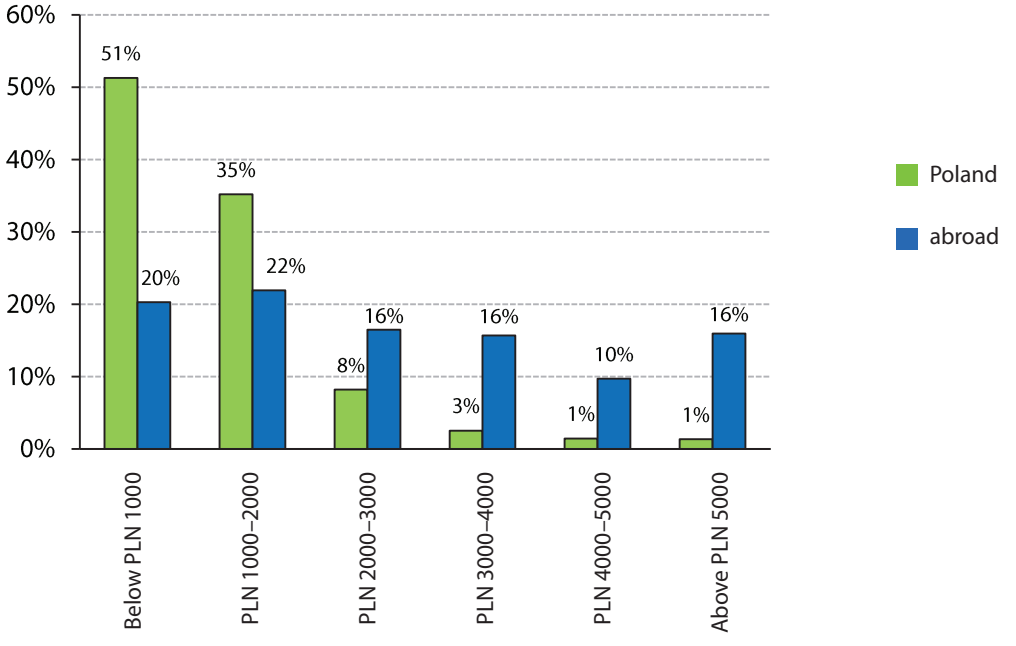
A testimony to the temporary character of the gainful employment, performed by the students is the form of their employment, and their attitude to such employment. Only 20% of cases of employment listed by the working students were performed as a job contract, and as many as 55% as freelance agreements and commission contracts (a form chosen by one in every four last grade students). No fewer than 21% of reported cases of employment were in the form of informal contracts, which means that 10% of students were involved in this form of work. Only 2% of last grade students had their own businesses.

For two students out of three, the work they performed was not the one they intended to embark on after studies. Only 15% performed work that – according to their assumptions – would be the main source of income, while 31% – a work that they treated as a potential source of additional revenue.[29]

Additionally, 62% of students who started working, claimed that the knowledge acquired in the course of higher education was immaterial for that work, but 30 found it somewhat helpful. Only 23% of students performed work in which knowledge from the studies was highly useful or necessary.

Chart 2.8.

Average monthly revenues from students' work performed in Poland and abroad



Source: BKL – Study of Students 2010.

Every tenth job that the respondents had took place abroad, which means that 5% of all the student respondents worked abroad during the year preceding the study. These jobs were paid perceptibly better, as illustrated in Chart 2.8. In Poland, every other student worked for less than PLN 1000 a month, 35% for anything from PLN 1000 to PLN 2000. Work abroad in 42% of cases resulted in monthly earning exceeding PLN 3000. Nevertheless, in the case of students, working abroad frequently means holiday jobs performed for a relatively short time.

[29] The percentages do not sum up to 100%, as the question concerned every job/work the students performed, and the respondents were allowed to name more than one category.

Impact of the level of education on occupational career

In most cases, students worked as sales workers, personal service workers, and labourers (i.e. unskilled workers) (Table 2.3). These are the occupations that did not require specific skills and qualifications. In the lead of the most popular occupations there are also ones from the category of skilled workers, operators and assemblers, agriculture, and also client care, and simple clerical works. Work in professional occupations turns up relatively rarely. 7% of students worked as teaching professionals (apart from working as a teacher, this includes also private tuition), which was the case predominantly among students of humanities (19%), mathematics (18%) and teacher training and education science (14%). Working in professional occupations were also IT students (information and communication technology was the field of involvement of 42% of working students of information technology), architecture and building, and artistic studies.

Table 2.3.

Occupational groups (ISCO-1 and ISCO-2), in which higher education students were employed, broken by subgroups of courses (in %)

Field of education	52 Sales workers	51 Personal service workers	9 UNSKILLED WORKERS	23 Teaching professionals	6 AGRICULTURE, 7 SKILLED WORKERS, 8 OPERATORS	42 Customer services clerks	41 General and keyboard clerks	33 Business and administration associate professionals	34 Legal, social, cultural and related associate professionals	26 Legal, social and cultural professionals	21 Science and engineering professionals	25 Information and communications technology professionals	N total
Economy and administration	31	17	14	3	6	9	7	9	3	1	1	0	2022
Social	32	17	12	5	6	9	10	7	5	4	1	2	1989
Humanities	25	18	13	19	6	7	5	4	4	11	1	0	1563
Teacher training and education science	33	20	13	14	6	5	3	3	8	2	1	0	1329
Engineering and engineering trades	21	10	16	5	19	3	4	7	4	1	5	5	938
Health	25	20	18	4	4	4	2	4	5	1	1	0	844
Computer science	11	7	6	4	5	4	2	4	2	1	7	42	583
Personal services	35	26	16	4	5	12	4	3	8	0	0	0	507
Physical sciences	33	17	19	9	9	6	5	3	3	2	2	0	458
Architecture and building	11	11	19	4	6	2	5	4	3	1	31	1	415
Manufacturing and processing	27	17	19	5	12	6	4	6	2	2	5	0	381
Life sciences	36	20	17	3	7	6	5	3	3	0	2	0	376
Journalism and information	31	10	12	9	5	4	8	4	12	11	3	1	230
Art	16	16	8	10	5	2	2	3	23	21	10	0	221
Law	19	14	14	6	7	6	18	6	10	11	1	1	217
Agriculture, forestry and fishery	29	14	28	3	17	3	4	1	8	0	3	0	183
Mathematics and statistics	26	13	17	18	7	2	5	3	1	0	2	5	138
Environmental protection	25	16	28	7	9	5	8	6	2	2	6	0	128
Total	27	17	15	7	7	6	6	5	5	4	3	3	12691

All the rows and columns with small council removed.
Percentages in rows.

Source: BKL – Study of Students 2010.

Summing up the involvement of last grade students in gainful employment, we can certainly argue that their work was predominantly of temporary character, and was embarked on mostly for purely gainful reasons. Employment of students in works that could equally well be performed by people with lower education is observed in other countries as well (see: Hofman, Steijn 2003). The authors of the texts referred to above explain it on the one hand by higher assessment of communicative competencies of students among the employers, and by their expectations of better skills in learning occupation-related duties, and also by the greater flexibility and availability of students. On the other hand, however, students can be employed on the power of contracts that do not require paying certain premiums and contributions, which is financially more beneficial for both the employer and the employee. Whichever the reason, such an activity does not necessarily increase the probability of finding a good job in your line of specialisation after graduating from higher education.

Yet students in the last years of their studies predominantly (86%) planned that after the studies they would attempt to start work in line with the course of the studies graduated from (Table 2.4), which in the majority of cases is to be understood as a professional occupation. Somewhat more likely to find employment in line with the course of their education are the future graduates of courses in the following groups: computer science, architecture and building, health, environmental protection, veterinary, engineering and engineering trades, life sciences, and arts. They were the courses, in which students in most cases attempted to find work in the occupation, while still studying.

Table 2.4.

Occupation-related plans and expectations of last-great students, broken by subgroups of courses

Field of education	Plans performing the occupation learned (%)[1]	Plans to start independent activity (%)[1,2]	Plans additional training, course (%)[3]	MIN[4]	MID[4]	MAX[4]	N total
Economy and administration	86	40	52	1779	2538	3603	5092
Social	78	38	56	1736	2518	3597	4414
Humanities	78	34	45	1680	2420	3275	3980
Teacher training and education science	85	32	45	1523	2099	2836	3174
Engineering and engineering trades	91	40	47	2146	3172	4597	2810
Health	94	43	50	1944	2789	3891	2736
Computer science	94	42	41	2266	3301	4881	1448
Architecture and building	96	56	46	2037	3016	4599	1239
Personal services	83	50	52	1660	2306	3243	1231
Life sciences	89	31	37	1726	2456	3437	1143
Physical sciences	84	33	52	1791	2562	3640	1138
Manufacturing and processing	87	38	44	2042	2924	4236	1088
Law	90	42	54	2026	3056	4595	682
Agriculture, forestry and fishery	81	42	44	1756	2377	3314	623
Journalism and information	79	42	42	1792	2522	3710	552
Arts	90	50	34	2061	3057	4620	545
Mathematics and statistics	90	30	35	1845	2740	3318	483
Environmental protection	93	43	44	1918	2711	3844	440
Transport services	84	39	50	2008	3000	4728	204
Veterinary	93	85	86	2029	2835	4457	98
Social welfare	79	24	51	1553	2188	2213	97
Security services	86	41	23	2093	2798	3869	56
Total	86	39	48	1822	2619	3702	33273

[1] The total percentage of answers "rather yes" and "definitely yes".
[2] E.g.: business, farm, foundation or association.
[3] The percentage of answers "Yes".
[4] MIN: Minimum remuneration to start working; MID: Satisfactory remuneration; MAX: The highest remuneration one could hope for if very lucky.

Source: BKL – Study of Students 2010.

Impact of the level of education on occupational career

When asked about the occupations that they would like to perform in future, the people who did not plan working in the occupation learned, still "in most cases quoted occupations from the professional sector: legal, social and cultural, business and administration, and teaching.

Of all the students, 39% planned (possibly or definitely) starting independent activity (business, farm, foundation, or association). In most cases, these were the people operating in veterinary (85%), architecture and building (56%), arts (50%) and students of courses in personal services, i.e. Tourism and recreation, and Cosmetology (50%). Least often such an option was considered by students of social welfare, mathematics and statistics, teacher training and education science, and humanities. There were 28% of students who did not plan starting independent activity, and 33% were not sure.

Nearly one in every two students planned additional training or courses after completion of studies. Such a high indicator of aspirations is in line with reality. In Poland, people with higher education are the ones who definitely most often embark on training. Eager to improve their competencies after completion of the studies are primarily students of veterinary sciences, social and humanist studies, law, physical sciences, and medicine.

The highest expectations concerning remuneration are encountered among students of information and communication technologies, various types of engineering courses, and also lawyers and students of artistic schools. Expectations concerning a satisfactory salary exceed PLN 3000 after tax. As far as remuneration is concerned, the aspirations of students of humanist, social, and economic courses were decidedly lower.

Recapitulating the question of occupation-related plans and expectations of students, we can claim that they were rather optimistic. They counted on knowledge and skills gained while studying letting them find a good job in future. That was the opinion expressed by 69% of all the respondents, only 17% did not believe in the above, and 14% were unable to state that. Moreover, 66% believed that their future work would be in line with their course of education, and only 1 in every 4 students claimed that studies did not teach them to use the knowledge gained in practice.

Graduates of various types of schools in the labour market

OCCUPATIONAL SITUATION OF THE GRADUATES

In the following paragraphs we consider more closely the people who finished education, and entered the labour market during the last five years. Table 2.5 presents more detailed information concerning their educational situation. It is clearly visible that generally, parallel to the increase in the level of education, employment increases, while the unemployment rate and the percentage of people occupationally inactive drop.[30] Looking worst is the situation of people with lower secondary and primary education, as in this category, 55% are occupationally inactive, and the unemployment rate reaches 60%. This, however, is a relatively small group that accounts only for 6.5% of all the graduates from the last five years. Situated at the opposite extremity are the graduates with the degree of engineer, among whom nine out of ten are currently in employment.

The with visible differences in the market indicators, present between graduates of bachelor and master courses, who entered the labour market and did not continue education, the latter cope visibly better in the labour market.

[30] Let us reiterate that the unemployment rate is defined as the ratio of people without jobs, actively seeking employment (i.e. making any moves related to it during the preceding four weeks), and ready to accept it during the following week compared to the number of people occupationally active. The employment ratio provides the proportion between the people in employment to the total count of a given category. On the other hand, the percentage of occupationally inactive people defines the proportion of people who do not work and do not seek employment in total population.

Table 2.5.

Employment ratio, unemployment ratio, and the percentage of occupationally inactive among graduates (both genders) in the last five years

Graduates of various types of schools in the labour market

Education	Unemployment rate		Employment rate		Percentage of occupationally inactive		N total	
	W	M	W	M	W	M	W	M
Lower secondary or below	84	45	6	28	63	49	51	65
Basic vocational.	53	34	29	58	38	12	85	135
General secondary.	39	34	32	41	49	38	136	125
Technical secondary	43	21	44	64	24	19	94	215
Other secondary (incl. LP, SP)	33	35	52	62	23	4	73	50
Bachelor degree	23	21	67	78	13	2	108	64
Master degree	12	15	80	80	10	5	338	178
Engineer	8	4	73	93	20	4	15	54
Total	26	24	56	63	24	17	900	886

W: women; M: men.
LP: Specialised secondary school; SP: postsecondary school.

Source: BKL – Population Study 2011.

Employment rates were higher among men (63%) than women (56%), with the situation holding in all education categories. The unemployment rates were significantly higher for women than men especially among the graduates of secondary technical schools (43% compared to 21% in the case of men), and basic vocational schools (53% and 35%, respectively). Nonetheless, the general unemployment rate was very similar – 26% and 24%, respectively. Moreover, the share of people occupationally inactive was greater among women: 24%, as compared to 17% among men.

The situation in the market, measured by employment and unemployment rates, is related to education as clearly as foreseeably (Table 2.6). Graduates of secondary schools find themselves in a position better than people with basic vocational and lower education, while the people who have graduated from higher education gained visible advantage over both these categories. Moreover, it is characteristic of the occupational situation of the people with poorest education to be relatively best in the country (disregarding Warsaw, due to the small count in this category), while the situation of the graduates with a diploma of an institution of higher education is generally best in the largest metropolitan centres.

Table 2.6.

Employment rate and unemployment rate among graduates in the last five years

	Education	Place of residence					Total
		Rural	Town up to 49,000 people	50,000 to 199,000	200,000 and over	Warsaw	
Employment rate (%)	Lower than secondary	45	32	25	30	50	37
	Secondary	48	54	52	46	22	49
	Higher	74	78	81	82	92	78
	Total	55	62	60	63	61	59
Unemployment rate (%)	Lower than secondary	33	49	66	52	50	45
	Secondary	33	26	36	25	60	31
	Higher	18	15	11	13	8	14
	Total	27	23	28	20	26	25
N total	Lower than secondary	163	65	56	47	4	335
	Secondary	305	178	100	90	18	691
	Higher	219	204	139	171	24	757
	Total	687	447	295	308	46	1783

Source: BKL – Population Study 2011.

Impact of the level of education on occupational career

The level of education obtained differentiated clearly not only the proportion of the working, but also the form of employment (Table 2.7). Among the currently working graduates, nearly 80% work on the power of the job contracts. Among all the graduates employed at any time by now, 59% were employed in this form. Parallel to the increase in the level of education obtained, their share increased as well. Among the graduates who finished their education in the last five years at the lowest level, only 13% have ever worked on a full-time or part-time contracted job, in the case of the graduates of basic vocational and secondary technical school, the proportion was nearly 50%, while among the graduates of master and engineer degree graduates – approximately 80%. Similarly, graduates of institutions of higher education, especially in engineering (29%) were far more likely to run their own businesses.

Table 2.7.

Forms of employment among graduates of different types of schools in the last five years

Education	Graduates currently in employment			All the graduates						
	N	job	business	N	job	business	freelance agreement / commission contract	no contract	internship, trainee-ship	abroad
					currently, or in the past		last 12 months			
Lower secondary, and below	21	43		116	13		8	14	16	2
Basic vocational school	103	83	3	219	53	2	6	8	25	6
General secondary school	93	68	7	261	34	3	13	7	8	4
Technical secondary school	179	77	12	310	55	8	8	7	21	7
Other secondary	67	81	10	122	67	6	12	9	25	2
Bachelor degree	122	75	9	172	70	7	20	8	28	7
Master degree	412	80	14	515	79	14	18	4	21	5
Engineer	61	82	23	69	84	29	7	4	14	0
Total	1058	77	11	1784	59	8	13	7	20	5

Source: BKL – Population Study 2011.

Only 13% of the graduates (both men and women) worked during the last year on the power of freelance agreements and commission contract. In many cases, there were graduates of bachelor (20%) and master (18%) degree courses, often working as freelancers and independent professionals, where job contracts may not necessarily be justified.

During the last year, 20% of graduates were involved in internships and traineeships. It must be remembered, however, that the period could overlap with the time of education at school, and that in some courses of studies, some form of traineeship (praktyki) is obligatory. Worth investigation is also work without a formal contract. It was most popular among people with lower secondary and lower education (14%, compared to the average of 7% for all the graduates). Working in this form definitely least often were people with higher education.

During the previous year, working abroad were only 5% of all the graduates, 5% of master degree holders, and 7% of baccalaureate holders. These are not volumes that would attest to the threat of the brain drain phenomenon, yet it must be noted that the data says nothing about the number of people who – having gone abroad to work – remained there. One can expect that the proportion of graduates working abroad has recently dropped due to the economic crisis, which strongly affected many countries, to which the young would throng in great numbers in the middle of the first decade of the 21st century.

Table 2.8.

Percentage of the graduates (in the last five years) in the specific groups of courses of studies working in various occupations (ISCO-1 and ISCO-2)

Field of education	1 MANAGERIAL	2 PROFESSIONAL	21 Science and engineering professionals	23 Teaching professionals	24 Business and administration professionals	3 ASSOCIATE PROFESSIONALS	33 Business and administration associate professionals	4 CLERICAL SUPPORT	5 SERVICES	52 Sales workers	6 AGRICULTURE; 7 SKILLED WORKERS; 8 OPERATORS; 9 UNSKILLED WORKERS	Total	
												%	N
Economy and administration	5	25	2	1	19	17	16	29	15	12	8	100	462
Teacher training and education science	3	41	2	31	2	18	7	12	20	16	7	100	212
Humanities	2	51	2	31	12	13	11	13	15	12	7	100	120
Social	4	28	3	5	17	13	9	24	18	11	12	100	110
Computer science	9	49	1	4	5	13	10	6	10	9	13	100	99
Engineering and engineering trades	11	41	27	5	3	11	6	3	10	10	24	100	84
Health	0	60	1	4	4	17	8	5	13	8	6	100	81
Personal services	3	16	2	1	9	19	13	11	30	22	22	100	68
Law	3	21	0	1	6	20	18	40	14	11	2	100	42
Life sciences	8	17	9	6	0	33	18	25	12	8	5	100	40
Architecture and building	20	38	33	5	0	9	2	3	16	11	14	100	40
Manufacturing and processing	5	35	17	0	12	21	16	14	10	7	15	100	38
Agriculture, forestry and fishery	0	21	12	5	4	12	4	15	15	7	37	100	37
Physical sciences	3	40	18	17	2	28	13	8	7	3	13	100	36
Total	4	34	5	9	10	17	12	18	16	12	11	100	1453

Rows with counts below 30 and columns with counts below 60 have been removed.

Source: BKL – Population Study 2010, 2011.

Graduates of institutions of higher education frequently worked as professionals (34%) that is usually in line with their education (Table 2.8). This was most often the case among the graduates of medical studies, where 60% worked as professionals, in most cases in the profession learnt. The case was similar for 49% of information and communication technology professionals. Among the graduates of humanist studies, 51% worked as professionals, including the 31% of those who work as teachers. The case of graduates of pedagogic studies was similar.

Ranking further among the most frequently encountered occupations are those that did not necessarily require higher education. They belong to the associate professional category, and include primarily business and administration personnel (12% indications), and further – clerical (18%) and service (16%) occupations, mostly sales workers (12%) and other worker and agricultural occupations (11%). Only 4% of graduates worked as managers, usually architects and graduates of construction (20%) and engineering and engineering trades (11%).

Impact of the level of education on occupational career

PARTICIPATION OF GRADUATES IN COURSES AND TRAINING IMPROVING COMPETENCIES

The highest additional training indicators were present among graduates of institutions of higher education, primarily master-degree studies. The proportion of people in training in this group was more or less stable in the categories broken down by time since they stopped education. Only among the last year graduates of engineering studies, no fewer than 34% were in additional training, which is visibly more than among older graduates. In the case of people freshly awarded master degrees, there was a reverse tendency: they went into additional training less often than the people who completed that level of education earlier.

Participating visibly least often in additional education were people with lower and basic vocational education (from 4% to 5%). Graduates of general and technical secondary schools with certificates of secondary education were somewhat more likely to do so.

Table 2.9.

Participation in courses and training (in the last 12 months) among people who did not continue education, broken down by the level of education and period from completion of education (in %)

	No. of years from completion of education (%)						N					
Education	1 year or shorter	2-3 years	3-5 years	6-10 years	11 or more years	Total	1 year or shorter	2-3 years	3-5 years	6-10 years	11 or more years	Total
Lower secondary, and below		4	6	12	4	4	0	123	94	324	4258	4799
Basic vocational school	12	6	7	7	5	5	169	182	153	724	8406	9634
General secondary school	15	13	10	11	11	11	190	151	152	317	1783	2593
Technical secondary school	11	13	17	11	12	12	206	200	258	676	3964	5304
Other secondary	22	19	16	12	17	16	64	115	120	397	2238	2934
Bachelor degree	18	23	18	24	21	21	229	160	155	255	210	1009
Master degree	26	34	31	35	30	32	446	468	499	963	1742	4118
Engineer	34	25	21	23	21	23	64	63	76	149	262	614
Total	19	20	20	18	10	12	1368	1462	1507	3805	22863	31005

Source: BKL – Population Study 2010, 2011.

GRADUATE COMPETENCIES

Parallel with the increase of the level of education, the self-assessment of competencies increased. Assessing them highest were graduates – holders of engineer and master degrees. On the other hand, the assessment was lowest among people with primary, lower secondary, and basic vocational education. The largest differences between the levels of self-assessment of respondent competencies at various levels of education are present in office, mathematical, and managerial competencies and – further – in the case of cognitive, self-organisational, and computer competencies. Differences were, in turn, smallest in physical, artistic, interpersonal, and availability competencies.

The fact that in the case of most competencies, graduates of master degree studies self-assessed themselves higher than the people who did not continue education after gaining baccalaureate is worth paying attention.

Table 2.10.

Average self-assessment of competency level among graduates in the last 5 years

Graduates of various types of schools in the labour market

Education	INT	COM	AVL	PHY	SLF	COG	MAT	OFF	MNG	TEC	ART	ASSO	N
Lower secondary or below	3.6	3.4	3.4	3.8	3.0	2.8	2.6	2.5	2.4	2.6	2.4	3.0	217
Basic vocational school	3.6	3.3	3.6	3.8	3.3	2.9	2.8	2.4	2.5	3.0	2.5	3.1	506
General secondary school	3.8	3.8	3.8	3.8	3.6	3.4	3.3	3.1	3.1	2.6	2.8	3.4	492
Technical secondary school	3.9	3.9	3.9	4.0	3.6	3.3	3.2	2.9	3.0	3.1	2.6	3.4	664
Other secondary	4.0	3.9	3.9	3.8	3.6	3.5	3.1	3.2	3.2	2.7	2.9	3.4	296
Bachelor degree	4.2	4.1	4.0	3.8	3.9	3.8	3.3	3.6	3.5	2.7	3.0	3.6	405
Master degree	4.3	4.4	4.0	3.8	4.1	4.0	3.7	3.9	3.8	2.7	3.1	3.8	1067
Engineer	4.3	4.5	4.1	4.0	4.2	4.0	4.0	3.8	3.8	3.6	3.0	3.9	156
Total	4.0	4.0	3.9	3.9	3.7	3.5	3.3	3.2	3.2	2.8	2.8	3.5	3803

Source: BKL – Population Study 2010, 2011.

Table 2.11 compares self-assessment of competencies performed by (last grade) secondary school and university students from the studies conducted in 2010 with the self-assessment of the graduates of the same levels of education, who finished their education during the last five years (again, only people below 30 were examined).[31] The graduates who have already entered the labour market assessed themselves above the students in the last grades of the same times of schools, especially in the case of basic vocational schools (the above is not true only about the graduates of institutions of higher education). Significant differences were found among others in the case of assessment of managerial, office, and computer competencies, which can be considered the result of "verification" of somewhat over-stated self-assessment of students who have not yet had an opportunity to use their skills in occupational practice. Following such interpretations, one can claim that a confrontation against market reality improved the self-assessment of the graduates of higher schools as compared to students.[32]

[31] The self-assessment of competencies did not significantly differ between the graduates from one, two, three, four, and five years ago.

[32] Last grade students from various types of studies were taken together, as there were hardly any differences between the average self-assessment of individual competencies among them.

Impact of the level of education on occupational career

Table 2.11.

Comparison of self-assessment of last grade secondary school and university students with self-assessment of graduates

		INT	COM	AVL	PHY	SLF	COG	MAT	OFF	MNG	ART	TEC	ASSO
Basic vocational school	Students	3.9	4.0	3.6	3.9	3.5	3.2	2.9	2.8	3.3	2.9	3.1	3.4
	Graduates	3.6	3.3	3.6	3.8	3.3	2.9	2.8	2.4	2.5	2.5	3.0	3.1
	Difference	-0.3	-0.7	0.0	-0.1	-0.2	-0.3	-0.1	-0.4	-0.7	-0.4	-0.1	-0.3
Secondary school	Students	4.1	4.1	3.8	3.7	3.7	3.5	3.2	3.2	3.6	3.1	2.3	3.5
	Graduates	3.8	3.8	3.8	3.8	3.6	3.4	3.3	3.1	3.1	2.8	2.6	3.4
	Difference	-0.2	-0.2	0.0	0.1	-0.2	-0.1	0.1	-0.1	-0.5	-0.3	0.3	-0.1
Technical secondary school	Students	4.0	4.2	3.9	3.9	3.7	3.3	3.0	3.2	3.5	3.0	2.8	3.5
	Graduates	3.9	3.9	3.9	4.0	3.6	3.3	3.2	2.9	3.0	2.6	3.1	3.4
	Difference	-0.1	-0.3	0.0	0.1	-0.1	-0.1	0.2	-0.3	-0.4	-0.4	0.3	-0.1
All students		4.0	4.2	3.9	3.6	3.9	3.8	3.3	3.6	3.6	3.3	2.6	3.6
Graduates of institutions of higher education	Bachelor degree	4.2	4.1	4.0	3.8	3.9	3.8	3.3	3.6	3.5	3.0	2.7	3.6
	Master degree	4.3	4.4	4.0	3.8	4.1	4.0	3.7	3.9	3.8	3.1	2.7	3.8
	Engineer	4.3	4.5	4.1	4.0	4.2	4.0	4.0	3.8	3.8	3.0	3.6	3.9
	Total	0.3	0.3	0.2	0.4	0.3	0.2	0.7	0.3	0.2	-0.2	1.0	0.3

Difference: The difference between graduates and students, in the case of institutions of higher education. It denotes the difference between all the students and the maximum value for the graduates of bachelor, and master and engineer degree studies.

Source: BKL – Population Study 2010, 2011, Study of Students 2010, and Student Study 2010.

GRADUATE JOB SATISFACTION

In the group surveyed, three in every four graduates holding full-time jobs were generally satisfied with their work and most of its aspects (Table 2.12). Assessed lowest were: odds of promotion, remuneration, and potential for development. The influence of the level of education was clearly visible only in the case of the odds of promotion and possibility of development.

Table 2.12.

Satisfaction with the individual aspects of work among people currently on job contracts who graduated in the last 5 years (% of answers Yes)

Education	Salary	Potential for promotion	Working conditions	Certainty of employment	Potential for development	The work performed	General satisfaction	N
Lower secondary and below	47%	37%	68%	47%	25%	74%	47%	19
Basic vocational school	60%	39%	77%	68%	52%	80%	74%	206
General secondary school	61%	43%	78%	60%	49%	81%	73%	151
Technical secondary school	64%	39%	78%	68%	53%	82%	75%	304
Other secondary	60%	44%	79%	75%	57%	81%	69%	134
Bachelor degree	55%	48%	81%	73%	61%	83%	73%	212
Master degree	61%	52%	88%	77%	72%	88%	80%	653
Engineer	61%	48%	82%	74%	69%	79%	73%	99
Total	61%	46%	82%	72%	61%	84%	75%	1778

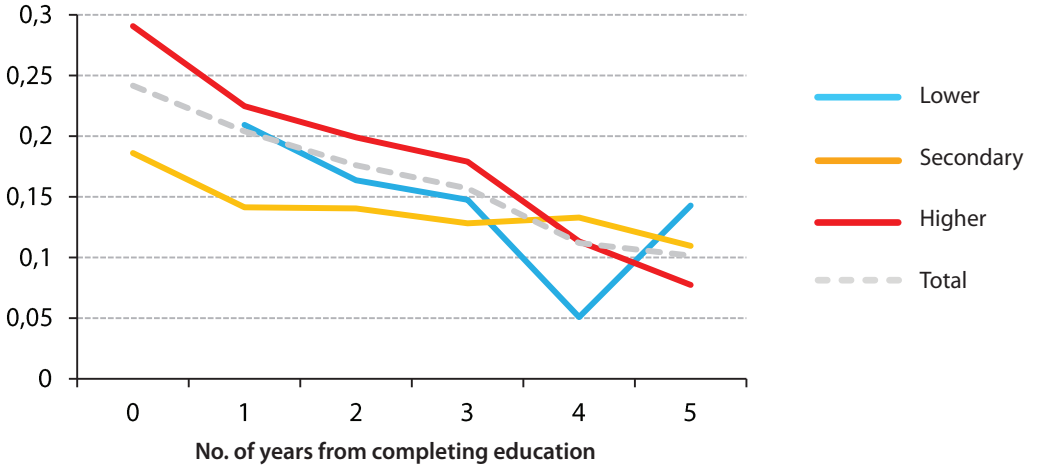
Source: BKL – Population Study 2010, 2011.

Graduates of various types of schools in the labour market

In 2011, 15% out of the working graduates seek a new job, a proportion which was slightly higher last year – 16.2%. It drops in parallel to the number of years from the completion of education, i.e. seeking a new job most frequently are the candidates who have freshly entered the labour market. Their number among last year's graduates exceeds 20%. Holders of diplomas of higher education wanted to change their jobs more often than others.

Chart 2.9.

Proportion of working graduates seeking new jobs, broken down by the number of years from finishing education and type of education



Source: BKL – Population Study 2010, 2011.

The sense of uncertainty of employment was similar: among this year's graduates the greatest anxiety concerning the loss of job in the coming months was expressed by the people who finished education in the preceding year, as such a concern was expressed by 15% of job holders (with the holders of a secondary education certificate being more frequent in the group – 20%). Only 7% of graduates from the last five years expected being promoted.

FAMILY

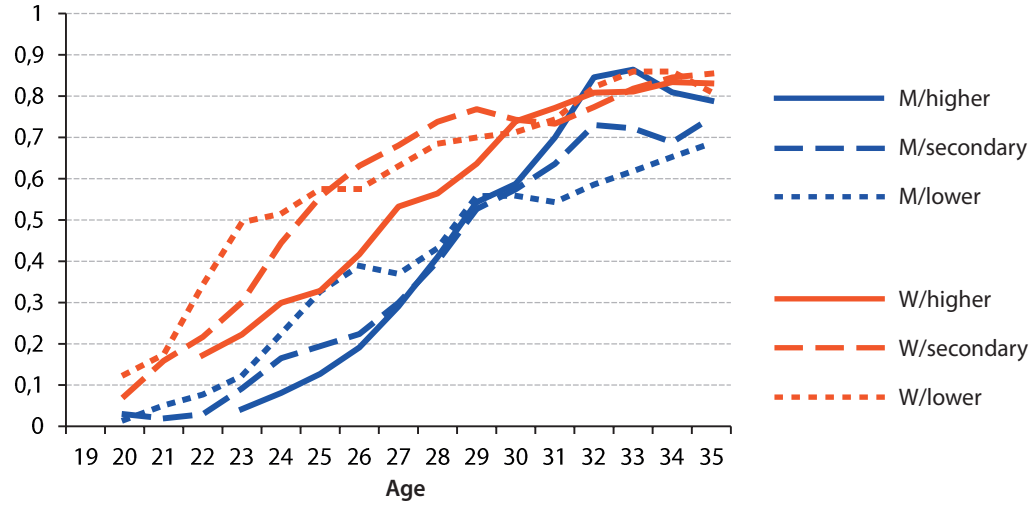
Chart 2.10 presents the proportion of people who finished their education, and are married or in a civil union (the latter case being far less often reported), broken down by the level of education and age. It shows first of all that marriages as a rule follow completion of education. Marrying at the earliest age are people with basic vocational, lower secondary, and primary education, and at the oldest – people who continued into higher education. Moreover, women enter matrimony at a much earlier age than men. Secondly, it is clearly visible that women enter relationships much earlier than men. At the age of 25, only 13% of men and 34% of women with higher education are in a relationship with a partner, with the corresponding figures for men and women with secondary education being 17% and 31%, and for men and women with lower education – 38% and 61%, respectively. The proportion of married women with various levels of education does not reach the same level until the age of 30.

It should be noted that the average marrying age in Poland is among the lowest in Europe. In 2008, it was around 25 for women and somewhat over 27 for men, while in Scandinavian countries and Switzerland, women on average married at the age of 31 – 32, and men only at the age of 34 – 35 (OECD Family Database, 2010). In most West European countries, the marrying age was 30 years for women and 32 years for men; which is the case in Italy, Germany, the Netherlands, and the United Kingdom.

Impact of the level of education on occupational career

Chart 2.10.

Proportion of women and men who finished education, married or in civil union, broken down by level of education and age



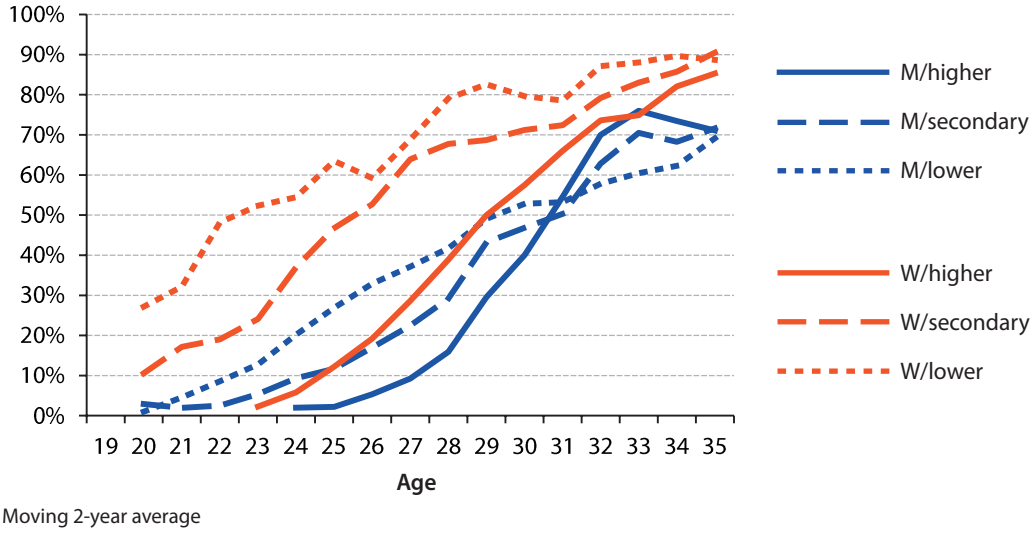
Moving 2-year average.

Source: BKL – Population Study 2010, 2011.

There is even a greater variety in the case of children born to people with various levels of education, even though the tendencies are very similar (Chart 2.11). Longer education is correlated with the later arrival of offspring. At the age of 25, only 14% of women with higher education had children, while among the women with low education at the same age, the proportion was 6%. It should be explained here that Poles with higher education have their children not only later but also less often and also fewer. In the age group from 30 to 35, the average number of children (among those with children) is 1.47 in the case of people with higher education, 1.65 in the case of people with secondary education, and 1.83 among people with no certificate of secondary education (matura). According to Eurostat data from 2010, the number of children born per woman (fertility rate) in Poland amounted to 1.38 in 2010, and was among Europe's lowest, with the EU average in 2009, amounting to 1.59. In 1990, it was still at the level of 2.06, yet beginning with the mid-1990s, it began to drop drastically. In 2003, it reached its historical low – 1.22 – and from that time it has been on the rise, gradually though slightly. Still, however, the level of fertility rate does not guarantee the natural replacement rate.

Chart 2.11.

Proportion of women and men with children, who finished education; broken down by level of education and age



Moving 2-year average

Source: BKL – Population Study 2010, 2011.

The reasons for delaying the time of starting a family can be perceived primarily in the change of lifestyle and occupational activity. What has changed especially are the situation, ambitions, and opportunities of self-fulfilment of women, who embark on gainful employment more often than in the previous system communist times (i.e. in People's Republic of Poland). From the purely economic point of view, pregnancy – and even the very probability of pregnancy – is a risk factor in the labour market. The conflict between the requirements of a career, and the eagerness to have children and provide them with appropriate education is experienced as a greater distress in this situation. This causes delaying marriage and the moment of bearing the first child, which in result influences negatively the demographic security of Poland. This is superimposed on the process of extending formal education visible among the women, especially in the last decades. Nevertheless, it would be difficult to consider its impact on the number of children born per woman in the categories of a simple cause-and-result mechanism, and analyse it on high-level data.

Employment odds among the graduates

A conclusion from the above considerations is an attempt to construct a model defining odds for finding employment by graduates from the last five years, aged below 30. To achieve that, the model of logistic regression, presented in the Table 2.13, was used. The study was conducted on combined data from the 2010 and 2011 studies.[33] Excluded from the analysis were the occupationally inactive, which left the working and the unemployed.

For statistical reasons, the results are presented as "employment odds" that is the probability of employment divided by the probability of unemployment. For example, if there is a group with 60% of the employed, this means that the employment odds in the group amounts to 60% divided by 40% = 6:4 = 1.5. In other words, odds at 1.5 mean that the probability of finding a person employed in the given category is 1.5 times as high as the probability of finding somebody who is not employed. With the probability of 50%, this factor is equal precisely to 1 (50%/50%), and with the probability below 50%, the resulting value is smaller than 1 (but is never negative). The values provided in the table (apart from the first row with the value of the constant) are the regression coefficient exponents, Exp(B), i.e. the so-called odds ratios – they inform about how (how many times) the opportunity of employment changes when the given variable increases by 1 while the remaining variables remain unchanged. This means comparing two people identical for all the variables accounted for in the model with the exception of this fact that for one person the value of the variable in question is greater by 1 than for the other. For example: the value of 1.5 for the variable "No. of years from completing education" in Model 4 denotes that – should we compare two people with the same type of education, the same self-assessment of general competencies, both furnished (or not) with a driving licence, sharing the gender, etc. – the person who finished education a year earlier has on average 1.5 times greater odds of employment; a person who graduated two years earlier, has the employment at the level of 1.5*1.5=2.25 times as high, and so on. In the case of category variables (type of education, driving licence, occupation, the values of the Exp(B), i.e. the odds ratios, show how many times greater (or smaller) is the opportunity of employment in the given category than in the referential, with the control of the remaining variables. For example, the value of 0.28 in the occupational category "2 Professionals" in the Model 4 denotes that – with the same type of education, the same period, since completion of education, identical general self-assessment of competencies, etc. – employment odds in the professional group is smaller by 72% (1-0.28=0.72) than the odds of employment in the service workers category (i.e. reference category).

[33] The "round" variable was included in the models, with values below 1 reflecting a drop in employment rates in 2011 as compared to the previous year, which may be partially caused by conducting the study at a different time of the year.

Impact of the level of education on occupational career

Table 2.13.

Logistic regression: odds of employment among graduates (not continuing education) in the last 5 years, aged below 30, occupationally active

Variables Model 1		Exp(B): Works (0 No → 1 Yes)			
		Model 2	Model 3	Model 4	
Constant		*0.67	***0.48	***0.48	0.079
Round (2010 → 2011)		***0.67	***0.66	***0.68	**0.71
Education	(Ref.: General secondary school)	***	***	***	***
	Lower secondary and below	***0.19	***0.25	***0.25	***0.14
	Basic vocational school	0.87	0.95	0.87	***0.49
	Technical secondary school	1.21	1.11	1.07	0.84
	Other secondary	0.83	0.78	0.76	0.82
	Bachelor degree	***2.01	*1.64	*1.53	***2.22
	Master degree	***3.40	***2.55	***2.33	***4.68
	Engineer	***4.81	***3.30	**2.53	***4.21
No. of years from completing education		***1.55	***1.54	***1.50	***1.50
General competency assessment		–	**1.34	**1.29	**1.34
Driving licence (0 Has None → 1 Has)		–	***1.61	***1.50	**1.44
Gender (0 Woman → 1 Man)		–	–	+1.217	1.20
Marital status (0 Single → 1 Married or in informal partnership)		–	–	***1.93	***1.83
dren (0 Has None → 1 Has)		–	–	*0.65	*0.58
Gender * children		–	–	*2.40	*2.39
Occupation[1]	(Ref.: 5 Service workers/ sales workers)	–	–	–	***
	2 Professionals	–	–	–	***0.28
	3 Technicians/associate professionals	–	–	–	***0.42
	4 Clerical support workers	–	–	–	***0.32
	7 Skilled workers	–	–	–	*1.54
	8 Operators and Assemblers	–	–	–	1.01
	9 Unskilled workers	–	–	–	*1.68
Summary of the model	Cox and Snell R square	0.121	0.131	0.140	0.151
	Nagelkerk R square	0.185	0.200	0.214	0.235
	R McFadden R square	0.121	0.132	0.142	0.159
	Hosmer and Lemeshow test significance	0.021	0.188	0.280	0.098
	N[2]	2896	2896	2896	2545

Levels of significance: *** p<0.001 ; **p<0.01 ; *p<0.05; +p<0.1.
Data aggregated from the 2010 and 2011 rounds of the study: occupationally active people, aged from 18 to 30, who in the last 5 years obtained any level of education and did not continue it (with the exception of postgraduate, MBA, and doctoral studies).

[1] Occupation denotes an occupation in which people currently in employment are employed, or the occupation in which the unemployed seek employment (ISCO Level 1 categories). Due to the small counts, the following categories have been excluded from consideration: 1 Managers, 6 Agricultural Workers, and 10 Seeking employment in any occupation.

[2] Seven outlying observations were removed.

Source: BKL – Population Study 2010, 2011.

Model 1 contains a key variable, that is the level of education obtained and the number of years since completion of education. Besides these, Model 2 includes the general self-assessment of competencies and holding the driving licence. Added in Model 3 are variables informing about the personal situation. Model 4 includes additional information about the graduate's occupation. It means the occupation of the currently employed and – in the case of the unemployed – one in which they seek employment.[34]

First, let's have a closer look at education. There are certain fluctuations of the Exp(B) values for certain categories between the models. They are caused by the control of a different set of variables. This, however, does not change the interpretation concerning the relationships between the categories. Decidedly the smallest employment odds were visible among people with the lowest education. Graduation from at least a vocational school or secondary school increased it a number of times. Compared to the graduates of general secondary schools, people who completed their education at the level of primary or lower secondary school had 80% smaller odds for employment.[35] It is also clearly visible that higher education decidedly increases the odds of finding employment among graduates, also when the other variables are controlled. The difference between the diplomas of various types of institutions of higher education is worth attention. Baccalaureate studies gave clearly smaller odds of employment than master degree studies. According to Model 4, the odds of find a job by graduates of baccalaureate studies who did not continue their education, was approximately a half of that of graduates a master or engineer degree. According to the Model 1 and Model 2, it seems that the greatest potential was vested in the title of engineer, nevertheless, its advantage over the graduates of master degree studies disappeared, when the variables concerning family situation and occupational categories were controlled.

Attention must be paid to the high significance of the time (in years) from completion of education for employment odds. With every year, the probability of employment increases by approximately 50%, which reflects the employment rates in the graduate groups distinguished in this way, as described above.

Having a driving licence influences the odds of finding employment. This is explained by the fact that in many occupations, the employer requires such a licence. Another positive factor was the general self-assessment of competencies.

The block of information about personal and family situation added in Model 3 requires more comments. It would be impossible to have a model covering the entire complex market reality which includes also the gender stereotyping of majority of occupations (ergo, the dominance of one of the genders among the employees or people seeking employment), which should be examined at a very detailed level of ISCO classification. Gender as such does not significantly discriminate the market odds, yet its influence is manifested significantly only when combined with having children. More precise studies prove that in the case of women, having children decreases employment opportunity by 35% (Model 3) or by 42% (Model 4). The situation is reversed among men: having children increases the employability: according to Model 3 by 56% (0.65*2.40=1.56), and according to Model 4 by 39% (0.58*2.39=1.39). The phenomenon may be explained with reference to, among others, the traditional model of family, where the duties of the caregiver are more often and to a greater extent a burden on the woman. Moreover, the group considered consists of young people, aged from 18 to 30, many of whom consequently have small children, which requires major involvement, especially on behalf of their mothers (which results, not only from cultural patterns but also from the biological and psychological needs of infants). The occupationally active women who have children probably have more requirements concerning conditions of their employment, e.g. flexibility of its form and hours. In turn, should we assume that women take up more caregiving duties, men with children may be more motivated to find employment. Moreover, let us remember that excluded from the analyses are people who are occupationally inactive, which comprises people who are not seeking

[34] The Exp(B) coefficients should be interpreted in reference to the reference category in brackets. Values greater than 1 denote a greater probability of being employed; for example, the value of 1.6 marks a probability that is 1.6 times (or by 60%) greater than in the reference category. Values below 1 denote smaller odds, which means that e.g. the value of 0.7 means odds that are 0.7 times (or by 30%) smaller than in the reference category. In the case of the variables not coded as qualitative (i.e. number of years of education and competency assessments) Exp(B) informs about an increase or a drop in the odds of employment when the independent variable is increased by 1.

[35] One needs to remember all the time that analysed here are differences of odds, and not probabilities. Odds smaller by 80% refers, for example, to a situation, when the proportion of the employed in one group equals 79%, and in the other – 95%; in which case, the odds are 79:21 and 95:5 respectively, that is more or less 3.8 and 19 (with the first odds being smaller by 80% than the latter).

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employment, and are on maternal or parental/child care leaves.[36] Therefore, the models refer only to the people who are occupationally active.

Marriage or civil union increases odds of employment by 93% (Model 3) or by 83% (Model 4).[37] This effect illustrates a process that is parallel to moving from the system of education to the labour market, namely the process of establishment in life and starting a family. Married people certainly have a greater motivation to find employment. Simultaneously with beginning life with a partner, they leave their family homes, which had by that time provided stabilisation (even though the two processes need not be simultaneous). A reverse relation can also be of importance: working people can be more attractive partners, which would also positively influence the regression indicator for that dependency.

Model 4 adds information about the occupational category (first level of ISCO classification), in which the respondents either currently work or (in the case of the unemployed) seek employment. These results show that – with the control of other variables (that is, among others with the same type of education, the same period since the end of education, identical general self-assessment of competencies, and identical family situation) – the odds for employment in the group of specialists, technicians and associate professionals, and clerical support workers is clearly smaller, while in worker occupations they are greater than the odds of employment in the service and sales workers group. Here, common sense can be used to interpret this in the following manner: out of three people with a similar level of intellectual capital and in a similar personal situation (defined by the variables which the model accounts for) it will be most difficult to find employment for the person who wants to work as a professional, somewhat easier for the person satisfied with employment in the services sector, and even easier for the person who agrees to work as an unskilled worker.

It needs emphasising that accounting for occupational category in the analyses does not eliminate the significance of education, but on the contrary – increases the options of people with higher education and lowers those of people with lower education. This is illustrated by the mechanism of the double queue described by J. Górniak in the report from the first round of the BKL Study (Górniak 2011). One queue consists of employers seeking employees, and it is ordered according to the competencies required. The other is formed by candidates seeking employment, and it is ordered according to the qualifications they have. Employers try to adjust the person with highest qualifications to the position, as this will reduce their future training costs. In turn, individuals – by investing in their education even to a greater degree than it is required by the type of their future employment – increase their odds in the labour market. Thus, a higher level of education becomes an additional strong suit in competing for employment.

Significance of education in a longer time perspective

The large first part of this chapter focused on the people who completed the last stage of formal education in the last five years. Closing, we would like to present the role of education in a longer time perspective, accounting for all the occupationally active people.

What first of all needs emphasis in this context is a radical change of the structure of employment in the past five decades (a systematic increase of the proportion of secondary and higher education certificate holders) and the extension of the time of formal education linked to that change (Table 2.14). The generation of sixty-year-olds on average entered education for two years fewer than the generation who are 25 today. In the meantime, the number of holders of secondary education certificates grew by the factor of two, and of graduates of institutions of higher education – nearly by the factor of four. The question to what degree this extended duration and changed form of education are translated into a realistic increase of knowledge and skills remains obviously justified.

[36] People in formal employment, yet actually not working for over three months (e.g. due to maternal leaves) were not classified as working.

[37] Considered here is mostly the significance of marriage, as respondents declared civil unions very rarely so that they constitute only 4% of cases.

Table 2.14.

Education rates by gender and age

	Gender	Age 18-24	25-34	35-44	45-49	50-54	55-59	60-64	Total
Estimated number of years of education completed	Men	10.9	13.1	12.7	12.2	12	11.8	11.6	12.2
	Women	11.4	13.8	13.3	12.8	12.5	11.7	11.7	12.7
	Total	11.1	13.5	13	12.5	12.3	11.7	11.6	12.4
At least secondary education* (%)	Men	50	64	49	39	36	34	33	47
	Women	61	77	65	58	57	48	46	63
	Total	55	71	57	49	48	42	34	55
Higher education (%)	Men	4	27	19	12	11	9	8	15
	Women	9	40	29	22	16	10	13	23
	Total	6	34	24	17	14	9	9	19
Count	Men	3028	4080	3624	1658	1842	1827	1871	17930
	Women	2771	4318	3679	1711	2376	2541	254	17650
	Total	5800	8398	7303	3369	4218	4367	2125	35580

* Covers both people who finished education in secondary school, and the people who continued education into the higher level.

Source: BKL – Population Study 2010, 2011.

It is worthwhile to use this opportunity to address the fact of mass education at upper secondary and academic level being present throughout the period in question, even though the changes of 1989/1990 added momentum to the entire process (Chart 2.12).[38] Especially the increase of the proportion of women diploma holders has been of systematic nature, beginning with the people born in the first half of the 1950s. Moreover, the clear advantage of women over men in this aspect reaches back to the age cohorts of the 1960s (i.e. the today's generation of 50+). This phenomenon should be connected to the clearly more frequent presence of women in the professional occupational categories (teachers, physicians), associate professionals (occupations related to personal care), and clerical staff, i.e. the ones for whom the appropriate level of education is either a condition of entry or a strong suit (see: report from population study).

Observed is a systematic decrease of the difference between women and men when it comes to the proportion of people with at least secondary education, mostly due to the fact that in the group of women, it would be difficult to experience a further growth of the indicator as in age group around 25 it reaches nearly 90%.

The slightly expiring trend in holding an diploma of higher education among men (pictured by the adjustment of the lines, terminating in arrows)[39] is an interesting fact. The further rounds of the study will make it possible to answer the question whether this is a real effect of the above or whether it is caused only by a longer study time among men (for which reason, not all the people from the youngest male birth cohorts have managed to complete their studies).

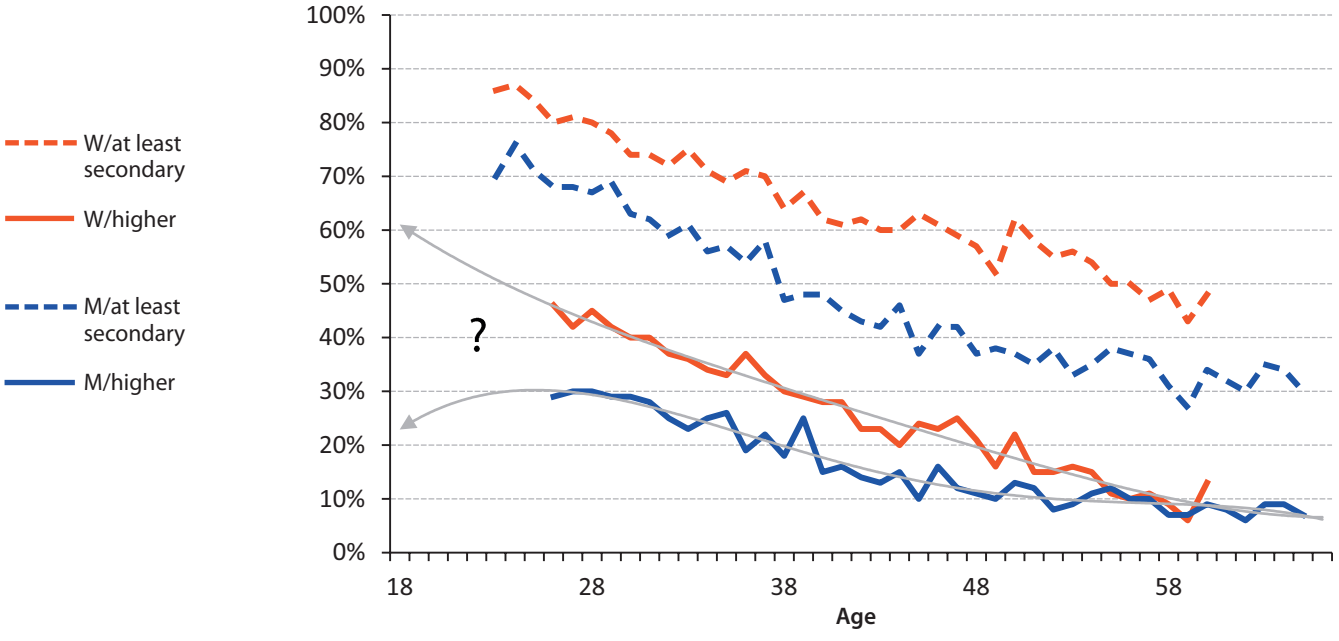
[38] Naturally, the proportion of people with higher education in individual age categories must be distinguished from the education ratio in higher education, which began to climb radically after 1989.

[39] Polynomials of fourth degree were adjusted in logistic regression of higher education to age and the power of age (from 2nd to 5th), all the coefficients are statistically important. This does not at all mean that the trends are going to continue developing along the defined line.

Impact of the level of education on occupational career

Chart 2.12.

Proportion of people with at least secondary or higher education, broken down by gender and age cohorts[1]



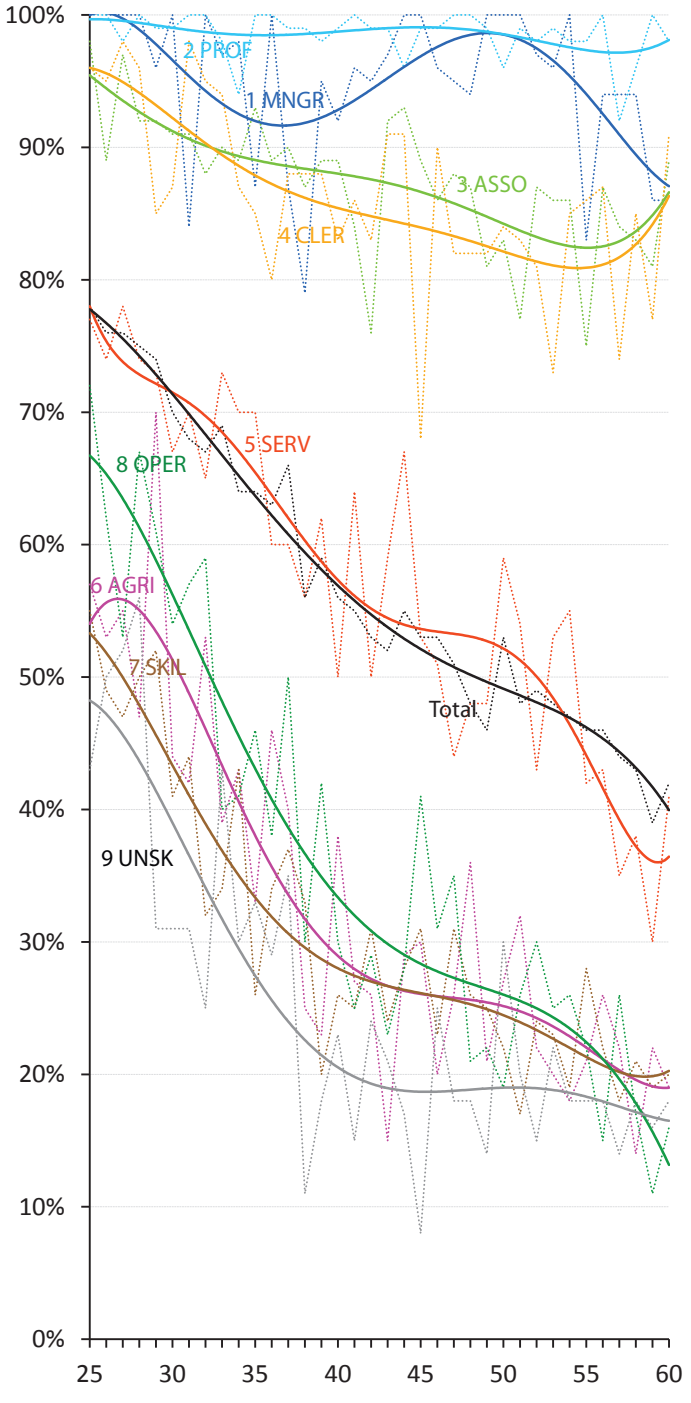
[1] The lines ending in arrows show a different form of the former dependency in the group of women and men (which does not, however, mean that the trends will continue to develop accordingly).

Source: BKL – Population Study 2010, 2011.

In the following two charts, we present the dependency between the age and secondary or higher education in individual occupational categories from the first level of ISCO classification. It must be remembered here that, much like in the previous analyses, the proportion of secondary education certificate holders covers also the ones who continued education having acquired such a certificate, and finished academic studies.

Chart 2.13.

Proportion of people with at least secondary education, broken down by age in individual occupational groups



The above accounts for all people who are currently work or used to work in the past.
Adjusted degree 5 polynomials.

Source: BKL – Population Study 2010, 2011.

Significance of education in a longer time perspective

Speaking most generally, occupations fall into two groups: the "white-collar" (inteligenckie) ones, where a certificate of secondary education in each generation was de rigueur (managers, professionals, technicians and associate professionals, and clerical support workers), and workers and farmers, in whose case a certificate of secondary education was a rarity in the older generations. Situated between these two groups are the service and sales occupations (Chart 2.13).

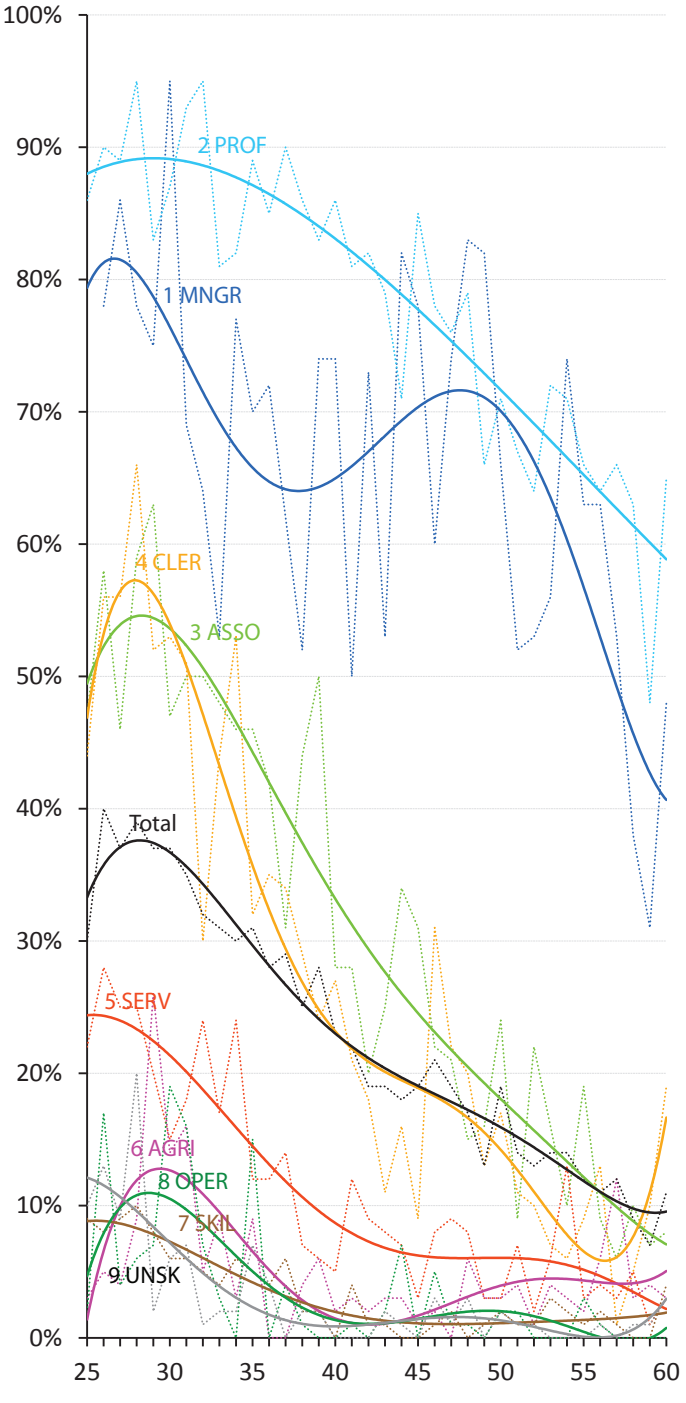
Besides professionals, among whom the proportion of certificates of secondary education is close to 100% and relatively few managers, where the dependency assumes a non-linear character, we observe an increase of the proportion of people with at least secondary education in all the occupations. This increase is especially strong in the worker and service categories, which started from a fairly low level. What becomes especially visible in these groups is the effect of the year 1989, which was more difficult to observe in Chart 2.12: among people below 40 (40-year-olds are the last birth cohorts who completed their secondary education in the People's Republic of Poland), the secondary school examination certificate trend becomes to climb much more steeply. This is best visible among the unskilled workers – the only group where the percentage of secondary school certification holders remained at a nearly constant level below 20% between the generations of today, 60- and 40-year-olds.

Possibly worth noting is also the fact that the strongest increase in the proportion of secondary education certificate holders among the worker occupations is visible among the operators and assemblers.

Impact of the level of education on occupational career

Chart 2.14.

Proportion of people with higher education, broken down by age in individual occupational groups



Adjusted degree 5 polynomials.

Source: BKL – Population Study 2010, 2011.

When it comes to the proportion of people with higher education in the occupational categories, we encounter a situation that is generally similar to that in the case of secondary school final examinations (Chart 2.14). Yet in this case, the characteristic of changes that take place in successive age cohorts is entirely different. In the oldest group, we see a clear division into managerial and professional occupations, in whose case, nearly every other employee (current or former) boasts higher education, and all the others, in whose case the proportions as a rule do not exceed 10%. In the following generations, we observe the systematic distinction of the group of technicians and associate professionals (3 ASSO) and clerical support workers (4 CLER) from that group – the two categories, whose characteristic feature is the most radical increase in the proportion of people with a diploma of higher education (from 10% to over 50%).

Another category that also experiences a significant growth (even though not as strong) are sales and service workers (5 SERV).

In worker categories, a certain growing trend is visible in the age groups below 40.

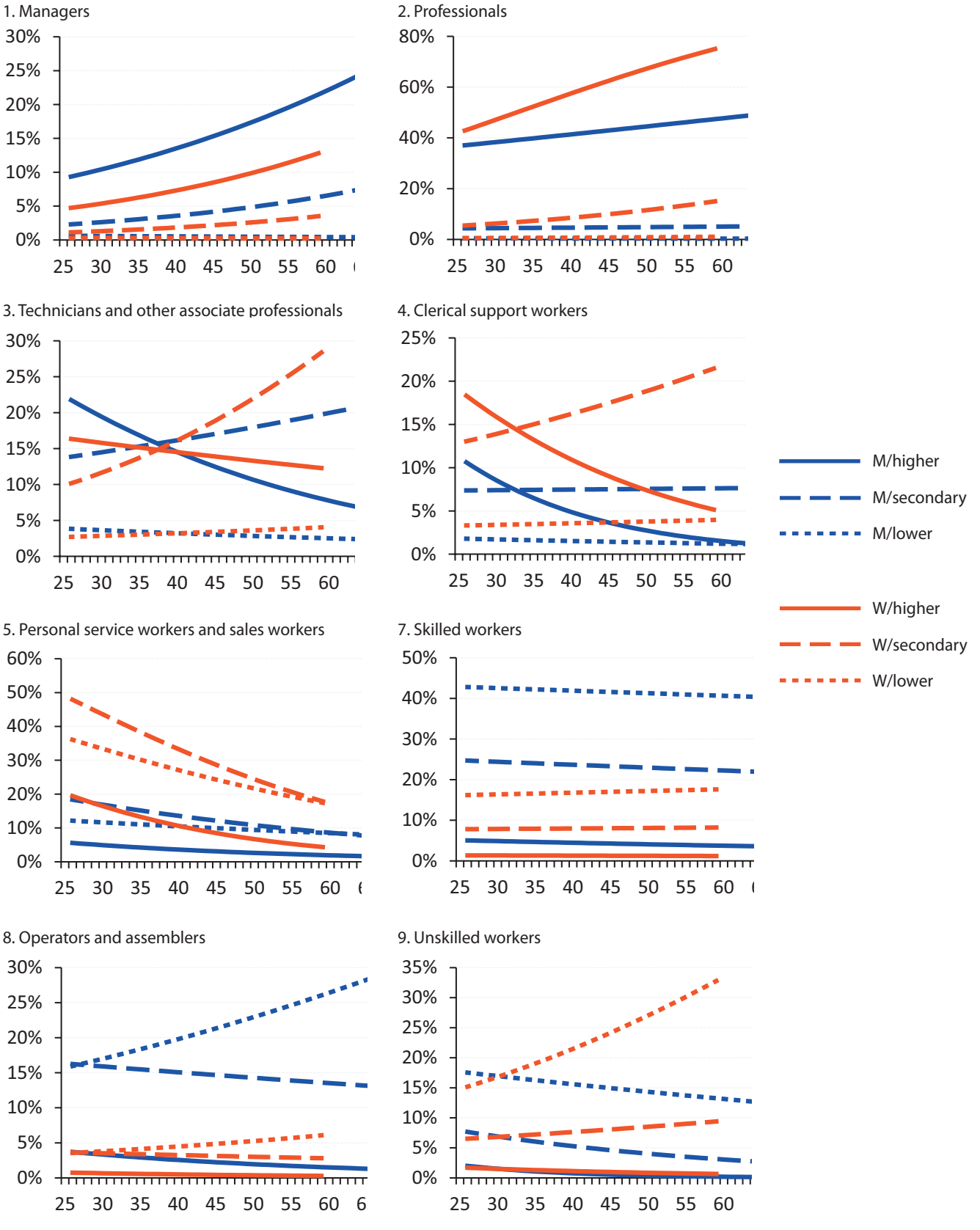
To take a closer look at the links between the individual occupational categories, and age, gender and education of employees, a series of logistic regressions was conducted. Membership in the given occupational category from the first level of ISCO was prognosticated on the grounds of information on:

- age
- gender
- education (lack of secondary school certificate, secondary school certificate, higher)
- gender/age interaction
- education/age interaction

The results are presented in a series of charts (Chart 2.15). They show the probability of finding a representative of a given occupational group, depending on the age of the respondent, broken by gender and education categories.

Chart 2.15.

Probability of working in the occupational category (ISCO Level 1), depending on age, gender, and level of education (based on the results of logistic regression)



PLEASE NOTE: The probability scales on the vertical axis vary between the charts.

Source: BKL – Population Study 2010, 2011.

Impact of the level of education on occupational career

One of the overarching goals of the analyses whose results are portrayed in Chart 2.15 above was to define what happens in the labour market with the increasingly more populous group of people with higher education, and recognition of the grounds where the potential "struggle" between people with various levels of education takes place. The comparison of individual charts leads to the conclusion that every occupational category has its specific dynamics differentiating it from the remaining categories. For this reason, we shall discuss the results in reference to the success of occupational categories.

1. Managers

Probability of finding a manager grows with age, and in the group of people with higher education. It is significantly greater than among the holders of only secondary school certificates (with the lack of such certificate practically excluding from the category). There is a greater systematic probability among men.

2. Professionals

Determinants are similar to those present in the case of managers, with the profound difference being the far greater probability of finding a professional among women (a disproportion that grows with age).

3. Technicians and other associate professionals

An occupational category (albeit strongly differentiated internally), with clear displacement of people holding only a secondary school certificate by people with the diplomas of higher education (a phenomenon present both among men and women). The younger the age, the more difficult it is to find representatives of this category among people holding only a certificate of secondary education, and the more often they turn out among those with higher education. There was also an interesting inversion of the proportions – as far as women were more often found in the category (at a given level of education), in the older generation in the youngest generation, these are men who begin to be dominant.

4. Clerical support workers

"Colonisation" of this category by higher education is visible, especially in the group of women – the younger the generation, the smaller the probability of finding employment in this category by women who hold only a certificate of secondary school education, and the greater – for women with higher education. Observed also among men is a clear increase of the proportion of clerical support workers among graduates of institutions of higher education. The fact that clerical support workers with higher education find employment in public institutions more often than others suggests that the "excess" of people with higher education is partially absorbed by the administration sector that has incessantly expanded since 1990.

5. Personal service workers and sales workers

Trends in this category clearly point to a shift of character of economy from industry and production to services. The younger the generation, the greater the share of service workers – a rule that is present in every category of gender and education, yet is most strongly visible among women with secondary education. Generally, at any level of education, service and sales provide more employment to women than men.

7. Skilled workers

The only occupational category where hardly any generation changes are visible, it is definitely most often selected by men with basic vocational and lower education, and (visibly less often) by ones with secondary education.

8. Operators and assemblers

A category very visibly dominated by men, with data suggesting that what we deal here with is a systematic displacement of people with the lowest level of education by holders of certificates of secondary education. As far as this occupational category was decidedly more popular among men with no certificate of secondary education in the older generation, in the generation of 25-year-olds, the proportions have become balanced.

9. Unskilled workers

A very clear drop of this category's share among young women with no certificate of secondary education is recorded; on the contrary, among men with no certificate of secondary education (and also with such a certificate), the proportion of unskilled workers is on the rise, even though insignificantly, in the youngest age categories.

Impact of education on income

To determine the impact on remuneration, a series of four regression analyses was conducted (Table 2.15) to test the difference between remuneration (in %) between holders of certificate of secondary education, and people without such a certificate ("the matura effect") and people with higher education, and those who finished the main part of the formal education by obtaining the matura ("the diploma effect"). The analyses were performed on combined databases from the first and second rounds of population study, on a sample of working people: both employed on the power of job contracts and running their own businesses. One reservation needs making, namely that the analysis was conducted on fragmentary data, as more or less every other respondent refused to answer the question about income (with the proportion being visibly greater among business owners).

In the first model, the impact of education was estimated with the control of the following variables:

- year of the study (in the 2011 sample, salaries were on average by 2% higher)
- place of residence (salaries drop by over 10% when moving from cities with population over 200,000 to smaller locations)
- age (corroborated was the nonlinear influence of age on the remuneration obtained: initially, in successive age categories, the remuneration rises, to reach its maximum after the age of 40, and later begins to drop)
- gender (with control of the remaining variables accounted for in the model, the remuneration of women was lower by slightly more than 20% than that of men)
- considering the employment permanent (which increases the average remuneration by over 20% as compared to the people who declare that the current work is only of temporary nature)
- number of working hours per week (on average an additional hour increases the remuneration by less than 1%)
- average competency self-assessment (people with self-assessment higher by one point on a five-point scale had remuneration higher by more than 10% on average).

With the control of the variables listed above, "the matura effect" amounted to 12.8% of additional income, and "the diploma effect" – by a further 30.3%.

Impact of the level of education on occupational career

Table 2.15.

Certificate of secondary education, diploma of higher education, and other factors influencing remuneration (changes expressed in %, calculated from regression analysis)

Variables / Model		1	2	3	4
(Constant)[1]		1600	1513	1519	1503
Round (2010 → 2011)		*2.2	*2.0	*2.2	*2.3
Location (Ref.: City of 200 000)	Location: rural	-13.5	-13.3	-13.4	-13.2
	Location: city up to 19.000	-13.6	-13.8	-13.7	-13.5
	Location: city 20.000–199.000	-10.7	-10.6	-10.4	-10.4
Age[2] (in 10s of years)		4.1	3.6	2.6	2.4
Age[2] (in 10s of years) squared		-3.8	-3.5	-3.4	-3.3
Gender (0 man → 1 woman)		-24.2	-22.9	-22.1	-21.4
Education	at least secondary[3]	12.8	9.8	9.0	8.5
	higher[4]	30.3	18.5	17.6	17.0
Permanent work[5] (0 no → 1 yes)		26.1	23.2	20.5	20.2
Work experience[6] (in years)		0.5	0.3	0.4	0.4
No. of working hours per week[7]		0.8	0.8	0.7	0.7
Average competency selfassessment[8]		17.3	14.9	13.6	11.8
ISCO-1 occupation (Ref.: 9 Unskilled workers)	1 Managers		45.2	45.5	33.9
	2 Professionals		28.8	29.4	29.1
	3 Technicians/associate professionals		18.6	18.8	17.8
	4 Clerical support workers		9.4	10.4	10.2
	5 Service workers/sales workers		**1.9	**0.2	**-0.4
	7 Skilled workers		10.7	10.5	10.5
	8 Operators and assemblers		11.7	12.2	13.0
Own business (0 no → 1 yes)				27.7	26.9
Managing others at work[9] (0 no → 1 yes)					14.0
[R^2]		0.381	0.407	0.427	0.437
[R^2 change][10]			0.026	0.020	0.010

Dependent variable (forecasted): logarithm of wages from the job.
The model accounts for people employed on job contracts and running their own businesses.
Excluded were 59 cases (0.6%) with the absolute standardised remainder greater than4 (N=9744).
All the significant coefficients in the models at the level of p<0.001, with the exception of: * p<0.01; ** not significant.

1 Forecasted revenue of the person in reference categories, with the remaining variables at zero level.
2 The variable is centred at the age of 40 years (approximated average age of the employed).
3 Change compared to people with no secondary education.
4 Change compared to people with secondary education.
5 In the case of own business, permanency of employment = yes.
6 Employment in years with the current employer (job holders), number of years from starting own operation (businesses). The variable is centred on the value of 5 years.
7 The variable is centred on the value of 40 hours per week.
8 The average self-assessment of 11 general competency scales, with the range from 1 to 5. The variable is centred on the value of 3.
9 In the case of own business: yes = employing somebody permanently, independent of the form of contract.
10 All the statistically significant R^2 changes at the level of p<0.001.

Source: BKL – Population Study 2010, 2011.

The following model (No. 2) includes a set of variables coding occupational categories from the first ISCO level (with the elementary occupations being considered the reference group). On average, all the groups accounted for here had average income (with the control of the variables listed above) significantly higher than other unskilled workers. The only exception were the service and sales workers, whose incomes were indistinguishable from those of unskilled workers. As expected, the greatest advantage as far as income is concerned, was obtained by managers, who outrank professionals, and technicians and associate professionals.

Worth noting is the fact that – having taken into account the occupations of the respondents, Model 2 showed a clear drop in both education-related effects: the matura effect from 12.8% to 9.8%, and the diploma effect from 30.3% to 18.5%. This proves that the remuneration-related impact of education is to a great extent caused by different parts of occupational career. And (to an even greater degree) higher education increases the odds of finding yourself in the better remunerated occupational categories.

In the following, third model, the set of controlled variables used before was expanded by information whether the respondent is employed or a hired, or whether he or she runs business. The average benefit from running business is on average a 27% higher income. Having accounted for this factor, we perceive further, even though insignificant (by less than a percentage point), drop in the effect of education. This means that – to a certain, yet small degree – the effect of education is caused by an increased probability of running your own business later.

Added in the last, fourth model is yet another variable, which informs whether the respondent manages others at work (in the case of people running businesses: whether the respondent employs other people). With the control of all the remaining variables, managerial functions increased income by 14%. Accounting for that factor decreases the value of both the effects of education even further, as a longer educational path favours holding managerial posts.

The variables accounted for in Model 4 explain altogether more than 40% of income variance in the group analysed.

The results acquired here need making three comments. First, the presented model is fairly simple in its nature, and does not include numerous interactions that may (and actually do) occur between the variables. A handful of sample interactions that were discovered in the more developed, and therefore more difficult to present, models include:

- the education effect increasing with age (generally, the difference in income related to education is somewhat more strongly visible in older age groups
- somewhat weaker financial effect of additional hours of work per week in groups with higher education
- running a business increases income in individual occupational categories in various ways (e.g. it is less beneficial to operators and assemblers than to other groups)
- a significantly different influence of marital status on the income of women and men (as far as a married man earns on average significantly more than an unmarried one, married women earn insignificantly less than single ones).

The second comment concerns the heterogeneous nature of occupational categories. The analysis above controlled only occupations from the first level of ISCO classification – and yet at any lower level, the more general categories fall into specifically differentiated subcategories. It is also typical that the more precisely defined an occupation, the greater probability that it is quantitatively dominated by one of the genders. The control of occupations at the first level of ISCO (or at the second, third, fourth) does not mean that we compare women and men performing the same job – it is highly probable that they perform very different jobs that found themselves in the same general category. For example, at the fourth level of ISCO, the category "3 Technicians and associate professionals" includes such occupational groups as "3352 Government tax and excise officials" (nearly solely women) and "3356 Prison guards" (nearly solely men).

Impact of the level of education on occupational career

Thirdly, the studies conducted let us define the average educational effect of education. As shown, both matura and higher education on average increase the level of income, yet (with no control of occupations) a range of significant exceptions from this general rule can be indicated. A number of them are listed in Table 2.16.

Table 2.16.

Occupational categories that do not correlate salaries with the level of education

Occupation	% of secondary education certificate holders	% with higher education	% of women	Salary (trimmed mean 5%)
23 Teaching professionals	99	96	84	2222
22 Health professionals	98	52	85	2134
34 Legal, social, cultural and related associate professionals	90	34	79	1585
74 Electrical and electronic trades workers	57	6	9	2167
83 Drivers and mobile plant operators	37	2	4	2192
71 Metal, machinery and related trades workers	28	3	2	1939

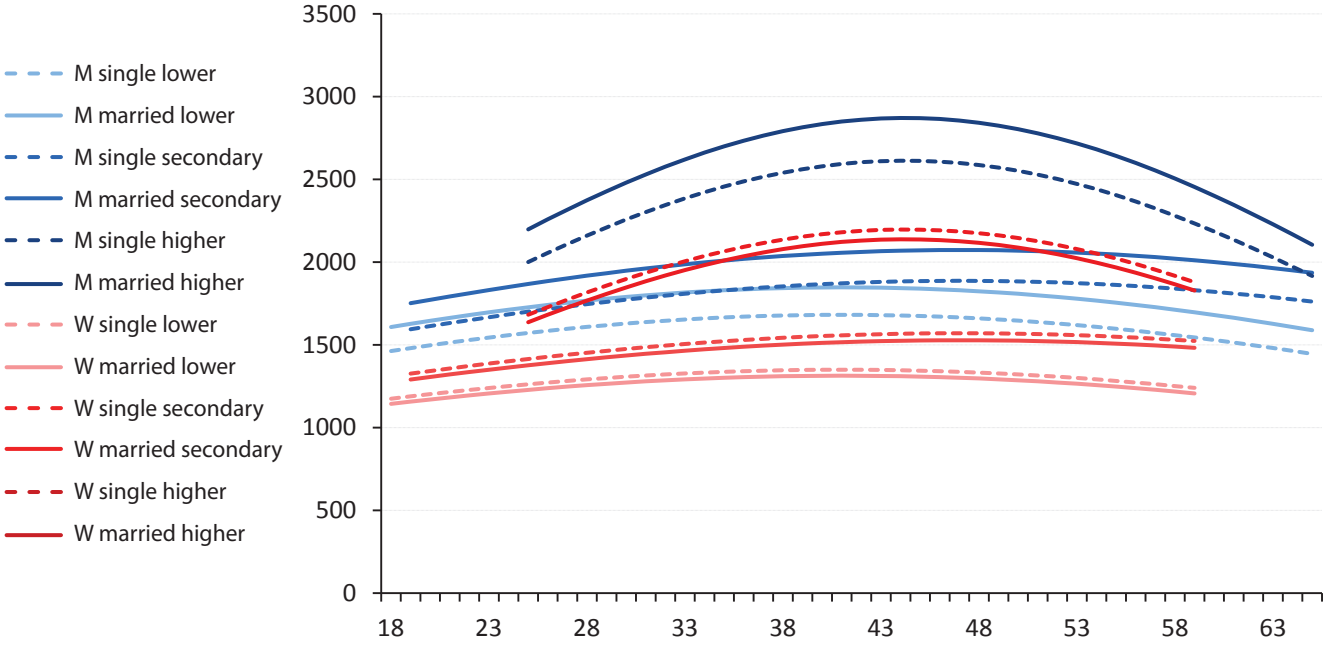
Source: BKL – Population Study 2011.

Closing, let's return to the interactions portraying the specific nature of dependencies between income and education, age, gender, and marital status mentioned in Chart 2.16 above:

- red lines denote women, blue lines – men
- broken lines denote singles, continuous – married people
- intensity of colour refers to the level of education, lighter shades denote education lower than matura; intermediate – matura holders, and dark – higher education.

Chart 2.16.

Estimated salary, depending on age, gender, marital status, and level of education



Source: BKL – Population Study 2010, 2011.

Visible in the chart is a modelled dependency between the variables; their nature boils down to a number of observations:

- generally, the higher the level of education the higher the income
- married men earn more than unmarried (which most probably results from the superimposition of two effects: on the one hand, the better earning men have a greater probability of starting a family, on the other – married men are forced to greater effort due to maintaining a family); in the group of women, the dependency is reversed and far weaker (married women earn insignificantly less than unmarried)
- in every category of education, women earn less than men, yet because of the interaction mentioned above, differences between single women and men are clearly smaller than between the married ones.
- in the case of higher education, the dependence between income and age is visibly non-linear.

Using large-scale data, it is impossible to define whether differences between the successive age categories result mostly from the changes at individual level (increase of income parallel to the acquisition of experience and promotion), or are rather the result of intergenerational differences. Let us, however, pay attention to the fact that the highest income is held by people with higher education at the age around 45, that is the category of people who graduated from universities and entered the labour market in the turning point of 1989/1990. This suggests that, at least to a certain extent, the increase of income of people with higher education in the 25–45 years age bracket is intrinsically a generation gap, related to the exceptional opportunity of promotion of people who entered the labour market during the institutional changes related to the rejection of the system of central planning.

Summary

Entering the labour market in the last five years were 2.5 million people below 30, finishing formal education and not continuing it. Of that number, 43% were graduates of higher education, 38% – of schools, ending in matura examination, and 19% finished lower level schools. One of the main goals of the chapter was an analysis of the initial stages of professional career of graduates of different types of schools and institutions of higher education, and their market odds. Graduates were defined as people who in the recent years completed any school that belongs to formal education, and did not continue education (with the exception of additional training e.g. courses), with the exception of graduates of postgraduate, MBA, and doctoral studies. Most analyses were limited to the graduates from the last five years, aged below 30.

We analysed the people growing up in the time of transformation: the generation of the demographic high attaining far higher levels of education than their parents, without experience of the former system (i.e. People's Republic of Poland), with other motivations and aspirations. Is it, yet, also a generation of mass higher education, hardly significant diplomas, and single and childless people, as is often presented in Germany's discussions? The analysis of the process of transfer from the system of formal education to the labour market provided a partial answer to these questions.

The main conclusion emerging from the analyses presented is the very high significance of the level of education and its influence on the odds of finding a job in the first years after completing formal education. Decidedly lowest were the odds of employment of people with the lowest education. Graduation of even a vocational or secondary school increased it a number of times. Moreover, higher education significantly increased an opportunity of finding work among the graduates parallel to the growth in the level of education, the employment rate grew, unemployment rate dropped, and so did the percentage of occupationally inactive people. Looking worst was the situation of people with primary and lower secondary education, in whose number 55% were occupationally inactive, and the unemployment rate reached 60%. More than 50% of people who in the last year entered the labour market with a certificate of completing secondary education, and an identical number of people without such a certificate (matura) could

Impact of the level of education on occupational career

not find employment. Among the graduates of institutions of higher education in the last year, the unemployment rate amounted to 21% only. With time from graduation from the school, the unemployment rate decreased, and the proportion of the employed grew. As a rule, people with higher education found employment more quickly. Nearly 90% of graduates of institutions of higher education worked in 3 to 5 years from completion of education.

Looking more comprehensively, the level of education is one of the key factors that define the value of income among all job holders and entrepreneurs. Comparing people at the same age, of the same gender, and residing in places with similar population, performing tasks of similar nature, etc., we see that matura on average increases income by approximately 10%, and the diploma of higher education – nearly by another 20%. It is material that the impact of education is visible, both directly and also indirectly – better education not only increases the income of people in the same (very generally defined) occupational category, but also increases the chance of finding yourself in an occupational category with higher salaries. Nevertheless, people with higher education more often obtain additional education and new qualifications at later stages of occupational life. While emphasising the dependency between education and remuneration, one needs to remark that there are a number of exceptions from this general rule: there are occupational categories of relatively low level of education, in which the average earning does not deviate from the income in some categories dominated by higher education. An expressive example being drivers and teachers.

Worth quoting are also other significant conclusions from analyses devoted to the role of education.

A large share of students in the last years of education (42%) worked for profit in the last 12 months. Such employment was predominantly of temporary nature, and was embarked on mostly for purely pecuniary reasons. Such an activity did not need to increase odds for finding a good job in your occupation after graduation. A proof of the temporary nature of the work performed by the students is the form of their employment, and their attitude to it. Only 20% of jobs that the working students mentioned were on the power of job contracts, and 55% – were freelance agreements and commission contracts (which means that one in every four last grade students accepted such a form). Only a fourth of the group claimed that the studies did not teach them to use the knowledge they provided in real life.

The study of the graduates showed that nearly 80% of those working hold job contracts. Working on the power of a freelance agreements or commission contract in the last year were only 13% of graduates.

Graduates of institutions of higher education were relatively often employed as professionals (34% of cases) that is usually in line with their education. Nevertheless, ranking below among the most frequently performed professions were ones that did not necessarily require higher education (for example, office and sales worker occupations).

A study of the occupational structure of various age groups shows that the growing proportion of people who completed studies in the Polish society leads to the increase of requirements concerning education in the categories of technicians and associate professionals, and clerical staff. Especially, the probability that a person with higher education will work in a clerical occupation increases radically in the youngest generation (reaching nearly 20% among women, and exceeding 10% among men). The data suggests that the "excess" of people with higher education is too a large degree absorbed by the sector of administration incessantly growing since 1990.

Clearly visible is the link between the extension of the period of education with the delay of the time of entering matrimony and the birth of the first child. People with higher education have children later, less frequently, and on average – in smaller numbers.

Closing, let us add that education is not only a resource that increases or decreases occupational odds. The Młodzi 2011 Report says that "young people need education, as, independent of the value of the diploma they hold, it provides a powerful capital of various types: intellectual – furnishing with competencies that allow a better understanding of the world and are creative participation in changing it; emotional – mo-

tivating to action, increasing the sense of own value, encouraging to more daring decisions and plans for life; and social – positively influencing the quality of social ties, stimulating the natural interest in the shape of the society, and triggering civic involvement". (Młodzi 2011) It is impossible to estimate the long-term impacts of education. Certainly, the high education-related aspirations and the high education ratio are certainly not a problem of the Polish society. The Polish people try to improve their market odds by education, to a degree even greater than required by this type of work. As the analyses showed, such an action is not meaningless.

Many experts emphasise that Polish economy is not capable of accommodating so many graduates of institutions of higher education. For this reason, they frequently work on posts that do not require higher education. Still extremely popular are courses in teacher training and education science, economy, political sciences, sociology, and marketing and management. And yet the market is saturated with professionals in the area. Superimposed on that is the problem of low quality of education in some institutions, and an insufficient emphasis on practical skills. The worst threat linked to the high educational aspirations of the Polish people is the failure to use this huge potential and the maladjustment of motivation and action of people to the real needs and expectations of the labour market and economy.

Adult learning and development of human capital: actors, strategies, determinants and barriers

Adult Poles do not learn or train often: this has not significantly changed for many years. The main reason behind the lack of educational activity of working people is the conviction that the current competencies are sufficient to perform the current work. Similarly, a lack of actions aimed at the development of their personnel is justified by the employers, of whom nearly every other one did not invest in the development of their staff in any way. The lack of awareness of the need to develop the personnel among the employers is also reported by representatives of training businesses and institutions as one of the most important barriers in the development of the training market in Poland. Is it, therefore, the low demand for knowledge in Polish businesses that provides the cause of low likelihood to develop competencies among adult Poles? Such a claim is corroborated by the fact that the people whose work requires continuous updating of competencies actively participate in education. Remaining educationally passive is, however, a very large group of Polish people with lower level of education, and holding lower positions in the hierarchy of occupations.

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Adult learning and development of human capital: actors, strategies, determinants and barriers

A very significant problem concerning the human capital is the fact that a lack of its development means stagnation, if not regression. Once obtained, competencies require persistent updating, as the ones that allow solving problems we faced yesterday are frequently insufficient to cope with the challenges that we face today, and – with even higher probability – they will prove insufficient to face what tomorrow may bring. Building a study of the human capital, one cannot therefore gloss over the actions focused on updating of the competencies obtained and acquisition of new qualifications, albeit not in the system of formal education, but by additional education, construed both as participation in courses, training and other forms of non-formal training, and self-education that is obtaining knowledge and skills on your own.

Yet, as numerous studies and publications inform, despite a significant success of Poland in the area of formal education – measured for example by the education ratio, PISA test results, and the low proportion of young people prematurely dropping out from school, we do not succeed in significantly increasing the tendency of adult Poles to learn and develop their competencies. According to Eurostat data on participation in non-formal education, in 2010, Poland ranked as 19th out of the 27 EU countries. Worse, the level of participation in courses and training did not significantly grow in the recent years, despite spending vast funds from the Human Capital Operational Programme, and earlier from the Development of Human Resources Sectoral Operational Programme.

Lack of significance changes in the area poses a question over the capacity of building Poland's competitive edge on the grounds of the high quality of the human capital. It seems that, despite the successes of formal education mentioned above, the perspective of transforming the Polish society into a learning one, and Polish businesses (albeit adapting well to the changes taking place around them) into learning organisations is still distant. The question of additional education and development of human resources becomes even more significant and requires a greater attention in the context of continuing demographic changes. Even though Polish economy still faces the problem of unemployment, in a recent future businesses operating in the Polish market will find it difficult to enrol appropriate personnel. They will have to seek candidates to work also among people in the older age cohorts, and people remaining in them will have to remain longer in the labour market due to the planned extension of the retirement age.

In this situation and also in the context of changes that take place following the introduction of the National Qualification Framework (Polskie Ramy Kwalifikacji), reform of vocational education, and the increasing significance of effects and not just the processes of education, taking a closer look at the level of

development of the system of non-formal education in Poland is worth a closer look. It is so as the system may play a significant role in the balancing of the demand for competencies among employers with the supply of such competencies on the employee side. The flexibility of the system of training and short cycles of education make it a potentially useful instrument in a better adaptation of people feeding the economy to the requirements of the labour market.

What proportion of employers invest in their human resources?

This is why this chapter holds a concise presentation of the most important information on the development of human resources, which takes place outside the system of formal education and concerns acquiring and updating knowledge and skills in adult people who have already completed the process of school education at various levels. We take a look at the process of additional learning and investment in human resources from the perspective of its key participants: employers, population, and training institutions and firms. We begin with a general characteristics of the participants, showing which employers invest in the development of human resources, what people in most cases participate in additional education, and what businesses provide training services. Then we take a look at the strategies and determinants of the process of development of human resources, paying attention mostly to the factors that influenced the selection of the manner of recruiting candidates to work and forms of investment into the development of staff related thereto. Moreover, we pay attention to the subject range of training organised by the employers and the subject range of training in which adult Poles participated, juxtaposing this information with the data on what training firms and institutions offer. In the last section, we take a look at the barriers that render increasing the investment into personnel on the side of the employers, the increase in the level of education among people, and the development of training institutions more difficult.

Main actors in the process of developing and updating competencies: employers, people, training institutions

What proportion of employers invest in their human resources?

Determinants of knowledge-based economy require that businesses continuously develop and adapt to the dynamically changing situation. Standing up to these challenges becomes possible thanks to the investments in the knowledge and skills of the staff, which – even though quickly dated – provide an important, if not the most important, source that allows obtaining competitive edge in such conditions. [40] This makes employers the key actor in the system of additional education on the demand side, and makes them perform a dual role: from the business perspective, they invest in training to acquire more competent and efficient human resources, and from the perspective of an individual – they demonstrate the sense of education in professional life, increasing the individual's motivation to learn on their own, and stimulate individuals to become more responsible for the development of their competencies.

Analysing the system of education after the completion of formal education in Poland, it is worth taking a closer look at the question of what proportion of employers become involved in the process of developing human capital in the businesses they manage, and to become familiar with their characteristic features.

The results of the Study of the Human Capital in Poland show that a large proportion of employers are still not convinced that investment in human resources is a strategic and necessary action from the perspective of development of their company. A testimony to the above is the fact that throughout 2010 only every other employer (54%) undertook any intentional action aimed at the development of qualifications and skills of their current staff. This means that the **estimated number of 850,000 employees invested in their employees in 2010**.

[40] A number of publications and studies in the area pointed to the positive impact of activity related to the improving of the level of qualifications and competencies of both rank and file personnel and the managing staff on the innovation and competitive edge of businesses. See: (Education 2010; Górniak, Mazur 2010).

At the same time it needs emphasising that activity in the area is strongly differentiated in different groups of enterprises.

Visibility strongly depends for example on the size of the business or institution: the larger the employer, the more often they declare investing in the development of their human resources. Such actions were conducted in 9 out of 10 large businesses and institutions (86%), slightly less often (by two percentage points) in the group of medium-sized businesses, and among small firms and institutions only three in four (71%) became involved in actions developing their human capital, while in the micro-businesses, it was only every other one (52%). Therefore, special attention should be paid especially to the stimulation of improving the competencies of staff in the smallest enterprises: both due to their poor activity in the area and also to their dominant share in population structure (nearly 93%).

It is worth noting that the tendency to invest more frequently in human resources, parallel to the increase of the volume of employment is constant and independent of the sector in which a given entity operates (Table 3.1). This, however, does not mean that there are no differences between individual sectors. Characteristic is the division between the industries considered traditional (industry and mining, construction and transport and trade, accommodation and food related service activities), where the proportion of enterprises providing training is lower than the national average, and ranges between 45% and 47%, and industries more strongly connected to the so-called new economy (education, specialist services, health).[41] In the latter group, the proportion of people in training was much higher, and ranged from 66% to 67% in specialist services and health care to 88% in the case of education sector, which was clearly the leader in the ranking.

Table 3.1.

Enterprises investing in employee education, broken down by the industry they operate in (% of responses)

Industry	1-9	10-49	50+	Total	N
Industry and mining	43	54	81	46	1794
Construction and transport	46	60	84	47	3229
Trade, accommodation, and food service activities	44	64	77	45	5443
Specialist services	65	81	86	66	3843
Education	82	96	93	88	556
Health and welfare	65	90	91	67	1293
Total	52	71	85	54	16159

Source: BKL – Study of the employers 2011.

Moreover, the type of ownership of the enterprise needs mentioning among the factors that differentiate the level of training activity of the employers. It is so as results of the study corroborate that public enterprises (89%) are more likely to invest in human capital than enterprises based on private capital (a half). This regularity is present, independent of the sector analysed, even though the proportions of those involved in the education of public sector employees and private employees in individual industries are different. The smallest difference is visible in the sector specialist services (18 percentage points between private and public employees), and the largest is present in the mining sector, with the difference between private and state employers reaching 48 percentage points.

[41] The existence of such a division in analysing activity in training and education of human resources is corroborated also by results of other studies, see: (Education 2010).

What proportion of employers invest in their human resources?

Especially interesting results are provided by the dependency analysis between investment of businesses in the development of staff, and the assessment of the degree of company development.[42] Results of the study prove a clear dependency between actions taken that are aimed at improving competencies and qualifications of the human resources in the level of development of the firm (Table 3.2). Among businesses classified to the group of strongly developing, the proportion of those investing in the development of human resources was highest (66%). The weaker the development of firm, the lower the proportion of employers involved in improving competencies of their staff in the group: in the developing firms, it amounted to 62%, among the poorly developing enterprises only every other invested in human resources in 2010, and among the stagnant ones – as few as 40%.

What becomes visible here is the regularity described earlier, and concerning a greater activity of large enterprises: larger (50+) strongly developing businesses, were involved in training in 92% of cases, while among the smallest businesses assessed as stagnant, nearly 2 in 3 did not undertake any intentional action for the development of their human resources.

Table 3.2.

Enterprises investing in employee education, broken down by the size and level of development

Enterprise size	Stagnant	Poorly developing	Developing	Strongly developing	N
1-9	39	50	61	65	13772
10-49	53	59	72	80	591
50+	74	81	85	92	165
Total	40	50	62	66	14528

Source: BKL – Study of the employers 2011.

Such a dependence may be interpreted as a mutual reinforcement of the process of development of a firm and investment in improving employee competencies. On the one hand, investment in human resources favours the development of the company, reinforcing its innovation and competitive position in the market as their staff are not only more productive but also more creative and loyal towards the employer.[43] On the other hand, the companies that develop better market new or significantly improved products and/or services, and change processes of production, are more likely to require actions increasing the adjustment of employee competencies to the new conditions at work. Investments in fixed and material assets – seemingly unrelated to investment in human capital – in a longer perspective lead to embarking on further training action, as the efficiency of using such assets in the company (modern technologies, state-of-the-art machinery and devices) depends on the level and degree of adjustment of staff competencies to the needs of the worksite. Thus, it can be assumed that investments into fixed assets and intangible assets (including knowledge and skills) should not be considered in the category of an alternative, as their efficiency depends on their strategic harmony within an enterprise.

The dependencies described above were concisely included in the logistic regression analyses conducted, which points which factors (with the remaining ones controlled) influence the training activity of entrepre-

[42] Assessment of the stage of development comprised primarily three factors concerning the last 12 months of operation: 1) marketing of new products, services, and/or means of production; 2) positive balance of employment; 3) an increase in profits (as assessed by own representative(s)). The businesses meeting all the three conditions classified as strongly developing, while stagnant ones met none of the above. The intermediate levels (i.e. "developing" or "developing poorly" corresponded to meeting one or two of the conditions described above. Analyses cover only enterprises, which excludes all institutions, in whose case introduction of innovations and changes in profits would be hard to discuss.

[43] A number of studies pointing to positive effects of education from the perspective of the enterprise can be found among others in (The impact 2011).

neurs to the highest degree[44] (The Independent variable: Was there any activity conducted to develop the qualifications and skills of the employees?).

Table 3.3.

Results of the logistic regression model prognosticating chances for employee readiness to train

Variables		Exp(B): Training (0 No → 1 Yes)
	Constant	***0.23
Assessment of development	Stagnant (reference)	***
	Poorly developing	***1.393
	Developing	***1.953
	Strongly developing	***1.957
Size	1 to 9 (reference)	***
	10 to 49	***1.877
	50 to 249	***4.597
	250+	***6.201
New post in the previous year	yes	***1.528
Required from recruited personnel	Complete preparation (reference)	***
	Some additional training	**1.104
	Greater additional training	***1.599
	Full additional training	***1.977
Satisfaction with employee skills	Are fully satisfactory (reference)	***
	Are satisfactory, yet staff need training	***2.445
	Are not satisfactory, staff need training	***1.95
Industry	Industry and mining (reference)	***
	Construction and transport	**1.253
	Trade, accommodation, and food service activities	**1.179
	Specialist services	***2.568
	Private education	***2.688
	Health and welfare	***2.277
Summary of the model	Cox and Snell R square	0.133
	Nagelkerke R square	0.178

Levels of significance: *** p<0.001 ; **p<0.01 ; *p<0.05; $^{+}$p<0.1.

Source: BKL – Study of the employers 2011.

The analysis confirmed that training took place most often in the large, developing companies, relatively satisfied with the competencies of the human resources, yet perceiving the need for improving them, following a strategy of recruiting staff who require training, and from sectors more closely linked to the so-called new economy.

In the case of large businesses, the probability that they run activities that serve the development of staff are six times as high as in micro-businesses (Exp(B)=6.201), with the remaining variables controlled, and in the case of medium-size businesses – 4.5 times as high. Growing by nearly 100% is the opportunity of

[44] Excluded from the analyses are all the institutions (organs of governmental authorities, community and local and regional authority units, mutual insurance funds, organisations of the state, organisations of communes, counties and regions, co-operatives, institutions of higher education, independent public healthcare units, and funds), as one of the variables used is the index of the phase of development of enterprise, which was true for businesses only.

conducting such activities in an enterprise, if it belongs to the category of developing or strongly developing as compared to stagnant firms. A similar increase (by 100%) in the probability is the case with firms recruiting personnel who require full training, as compared to the entrepreneurs seeking personnel furnished with all the necessary competencies. Growing by approximately 150% is also the probability that such activities take place in businesses that belong to the sectors of private education, specialist services, and healthcare, as compared to the reference sector of industry and mining.

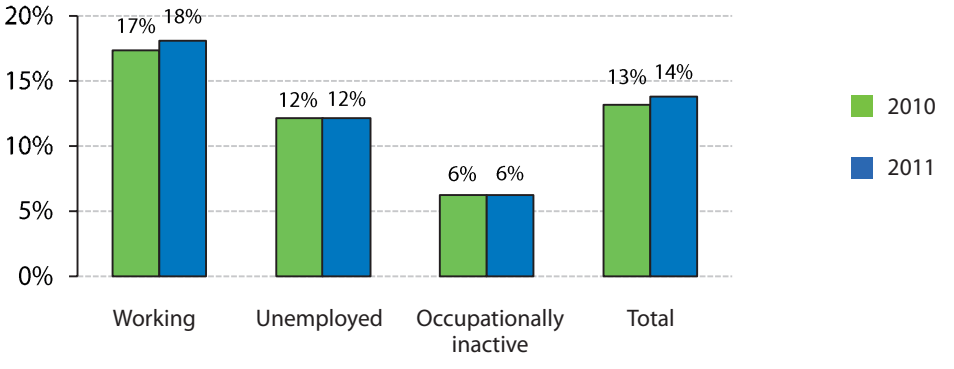
Population: who develops their competencies, and who does not?

Having presented the degree of involvement of employers in the development of the employees enrolled and the factors that differentiate the level of investment in human resources, we will present what the process of investing in the development of human capital looks like on the side of the ones who are the direct participants in the process of adult learning that is individuals – both employed and unemployed.

As many available studies show, **the learning rate among adult Poles has for many years remained at a very low level**. A lack of changes in the area is corroborated by the results of the BKL Study from 2011: according to the data, only 20% of Poles aged from 18 to 64 (approximately 5,000,000 people) improved their competencies in any way in the year preceding the study. The number covers self-education, and participation in courses and training. Active in self-education were fewer than 12% (2.5 million people). Yet especially significant are the indicators describing participation in courses and training. Participating in those in the last year were only 14% of all the respondents. This means that the market of training services covered approximately 3.4 million clients in the year preceding the second round of the BKL Study. 80% of Polish people did not learn in the past year in any way, not even through self-education. Nearly identical rates were recorded in the previous round of the BKL Study (2010), which means that there were practically no changes in the educational activity of adult Poles in the last year (Chart 3.1).

Chart 3.1.

Participation in courses and training among the working , the unemployed, and the occupationally inactive in 2010 and 2011



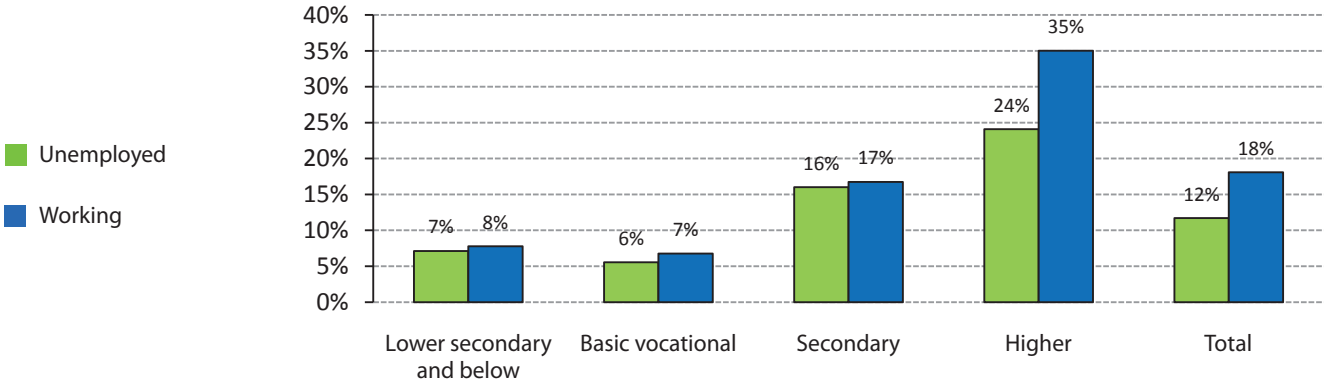
Source: BKL – Population Study 2011.

The key factors distinguishing the educational activity of Poles were the level of education, occupational situation, and the occupation – either currently performed (the employed) or performed in the past (the unemployed). Added to the above should be the age (or the stage of professional career) and place of residence.

More often active in training were the employed (Chart 3.2). Yet still, the proportion was very low. Participating in courses and training were 18% of working Poles aged 18 – 64 (i.e. approximately 2.6 million people), while among the unemployed, the rate reached 12% (approximately 290,000 unemployed).

Chart 3.2.

Participation in courses and training among the working and the unemployed, broken down by the level of education



Source: BKL – Population Study 2011.

The analysis of determinants of participation in courses and training may be presented in the form of logistic regression. Its results are presented in Table 3.4.

Table 3.4.

Logistic regression: chance of participation in courses and training during the last 12 months among people aged 25–64

Variables		Participation in courses and training (0: No; 1: Yes)	
		Model 1 (Exp(B))	Model 2 (Exp(B))
Constant		*** 0.01	***0.00
Occupational situation	(Ref: Occupationally inactive)	***	***
	Working	*** 3.85	***3.99
	Unemployed	*** 3.58	***3.60
Education	(Ref: Lower secondary and below)	***	***
	Basic vocational	0.92	0.93
	Secondary	***2.06	***2.05
	Higher	***3.65	***3.65
Age	(Ref: 25-34)	***	***
	35-44	1.07	1.07
	45-54	1.00	1.00
	55-59/64	***0.67	***0.68
Current (working) or previous (unemployed) occupation	(Ref: ELEM)	***	***
	MNGR	***1.97	***2.03
	PROF	***3.12	***3.20
	ASSO	***2.23	***2.31
	CLER	+1.30	+1.35
	SERV	1.18	1.21
	AGRI	1.33	1.31
	SKILL	1.14	1.15
	OPER	1.16	1.16
Place of residence	(Ref: Country)	***	***
	below 49.000	**1.26	***1.29
	50.000–199.000	***1.47	***1.48
	200.000+	*1.18	*1.18
Region	(Ref: Opolskie)	–	***
	Podlaskie	–	***5.59
	Małopolskie	–	***4.87
	Lubelskie	–	***4.40
	Warmińsko-mazurskie	–	***4.28
	Pomorskie	–	***3.61
	Śląskie	–	***3.47
	Podkarpackie	–	***3.44
	Łódzkie	–	***3.41
	Świętokrzyskie	–	***3.14
	Zachodniopomorskie	–	***3.00
	Lubuskie	–	***2.93
	Wielkopolskie	–	***2.85
	Kujawsko-pomorskie	–	***2.79
	Dolnośląskie	–	**2.49
	Mazowieckie	–	***2.48
Cox and Snell R square		0.122	0.129
Nagelkerke R square		0.215	0.228
McFadden R square		0.156	0.166
Significance of the likelihood ratio test		0.000	0.000
N		13 324	13 324

Levels of significance: *** p<0.001 ; **p<0.01 ; *p<0.05; +p<0.1.

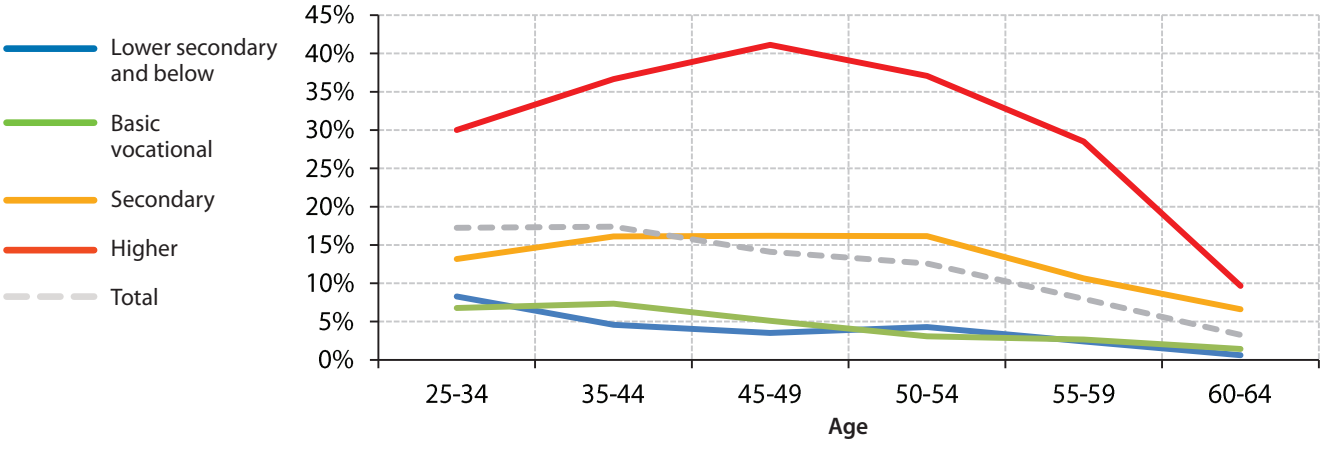
Source: BKL – Population Study 2011.

Model 1 tested the impact of occupational situation, occupational, age, education, and place of residence of the probability of participation in training in the last 12 months. Model 2 additional included the region of residence into the analysis. **Gender was not distinctive for respondents in this area**. The data was limited to people, aged from 25 to 64.[45] The analysis corroborates that **participating most often in courses and training were well-educated people, young or middle-aged, occupationally active, working (currently, or – in the case of the unemployed – in the past) in managerial, professional, and technical and associate professional occupations, and also residents of cities**. Being employed increases odds of participation in courses and training as compared to the occupationally inactive nearly by the factor of 4. In the case of the unemployed, this is an increase by the factor of 3.6. Least motivated to learning were people with lower education.

As far as learning is concerned, the elderly were a decidedly passive group. The odds of participating in courses and training by people aged 55-59/64 was, by 32% smaller than of people aged from 25 to 34. It is worth adding that in the group of the unemployed aged 50 to 64, 88% did not learn in any way, while among the working, the ratio was 78%. Participation in courses and training was by 265% higher in the case of people with higher education than with lower secondary or lower education. Let us emphasise that this dependency is present while the other variables (including age and occupation, yet not the worksite) are controlled. There was an additional interaction between age and education, which was not presented in the model for the sake of table legibility. It is presented below in the Chart 3.3.

Chart 3.3.

Participation in courses and training in population, broken down by the level of education and age (in the age group 25–64)



Source: BKL – Population Study 2011.

Training activity of people with lower secondary (and below) and basic vocational education dropped with age both among the employed, and the unemployed. Among people with secondary and higher education aged 35 to 54, there was an increase in involvement in learning. It was visible especially well among the graduates of institutions of higher education, of whom approximately 40% learnt at that age. In the oldest age groups, a marked fall was visible.

The proportion of people inactive in learning was 86% in the country, and 76% in the city. Model 2 additionally included in the analysis the regions of the country, with Opolskie Region, where the indicator of learning activity was lowest, being the reference category. The highest level of training activity – with the other variables being controlled – was registered in the following regions: Podlaskie, Małopolskie and

[45] The Exp(B) coefficients should be interpreted in reference to the reference category in brackets. Values greater than 1 denote a greater probability of participation in training; for example, the value of 1.6 marks a probability that is 1.6 times (or by 60%) greater than in the reference category. Values below 1 denote smaller odds, which means that e.g. the value of 0.7 means odds that are 0.7 times (or by 30%) smaller than in the reference category.

Lubuskie. Definitely least active, besides the residents of Opolskie Region were those living in Dolnośląskie, Mazowieckie, Kujawsko-Pomorskie, and Wielkopolskie.

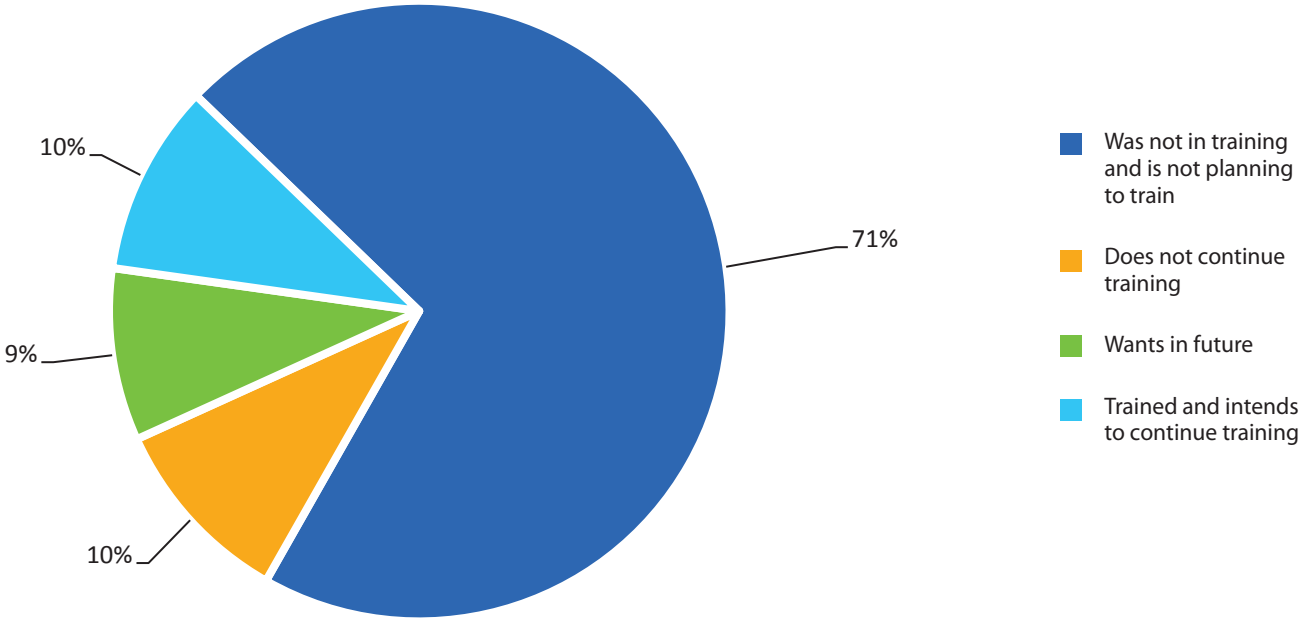
The highest probability to participate in courses and training, with the remaining variables controlled, was among the people working currently or in the previous job (in the case of the unemployed) as managers, professionals, and technicians and associate professionals. Their number includes IT professionals, teachers, physicians, and other healthcare professionals, chief executives, senior officials and legislators, and business and administration professionals. In this group, more or less every other employee learned and developed in some way in the last year. Participating in courses and training were most often teachers and physicians. This is linked to a great extent not only to the need to improve competencies, but also to participation in various types of obligatory training. In turn, the professions whose representatives were least frequently learning include primarily skilled and unskilled workers, operators and assemblers, and also farmers. In these occupations, no more than 15% of people participated in learning in any way.

What are the training-related plans of adult Poles?

Much like the proportion of people participating in courses and training in the previous year, few adult Poles want to learn in the following year. Only 19% planned any education-related activity in the following 12 months. This is close to 4.6 million citizens. Such declarations are made somewhat more often by the unemployed (30%) than the employed (20%), and by people with higher education (32%). Yet still 70% of the unemployed and 80% of the employed did not plan to train in the following year. Readiness to participate in courses and training drops visibly with age. As far as readiness to train was declared by approximately 25% of people aged from 18 to 34, in the age group from 35 to 49, the proportion was 19%, and in the group from 50 to 59/64 – only 9%.

Chart 3.4.

Adult Poles learning in the last year, and training plans for the coming year



Source: BKL – Population Study 2011.

Chart 3.4 presents the division of all the adult Poles into four groups using as the criterion their educational activity in the previous year and plans to train in the following one. Only 10% of Poles proved continuous educational activity, that is participated earlier in training, learnt on their own, and would like to continue education. Similarly, 10% did not plan to continue training, and 9% of the respondents – despite the lack of earlier educational activity in the past – would like to develop in future. Nevertheless, a decided majority of 71% was altogether passive in this scope: they did not participate in training, did not learn on their own, and did not intend to train in the coming 12 months. The answer was true for 62% of the unemployed and 67% of the employed. Least motivated to training and development were people with lower and basic vocational education. The largest proportion of people constantly improving their qualifications was present among the working people with higher education (26%).

Training firms and institutions: who provides training services?

Development of human capital, which is linked to updating the competencies obtained and acquisition of new ones, cannot be performed without the key actors in the process, i.e. training operators (firms and institutions). Thanks to their flexibility, focus on the development of specific skills, and predominant short education cycles, they are capable of offering courses/training in the subjects that are currently welcomed by the market, or that are envisaged to be in demand in near future.

Describing the key actors participating in the process of improving the quality of human capital in Poland, it is therefore worthwhile to present some characteristics of businesses operating in the market of training and consulting services, and make an attempt at assessing the level of development of the training sector.

How many training operators functioned in Poland in 2011?

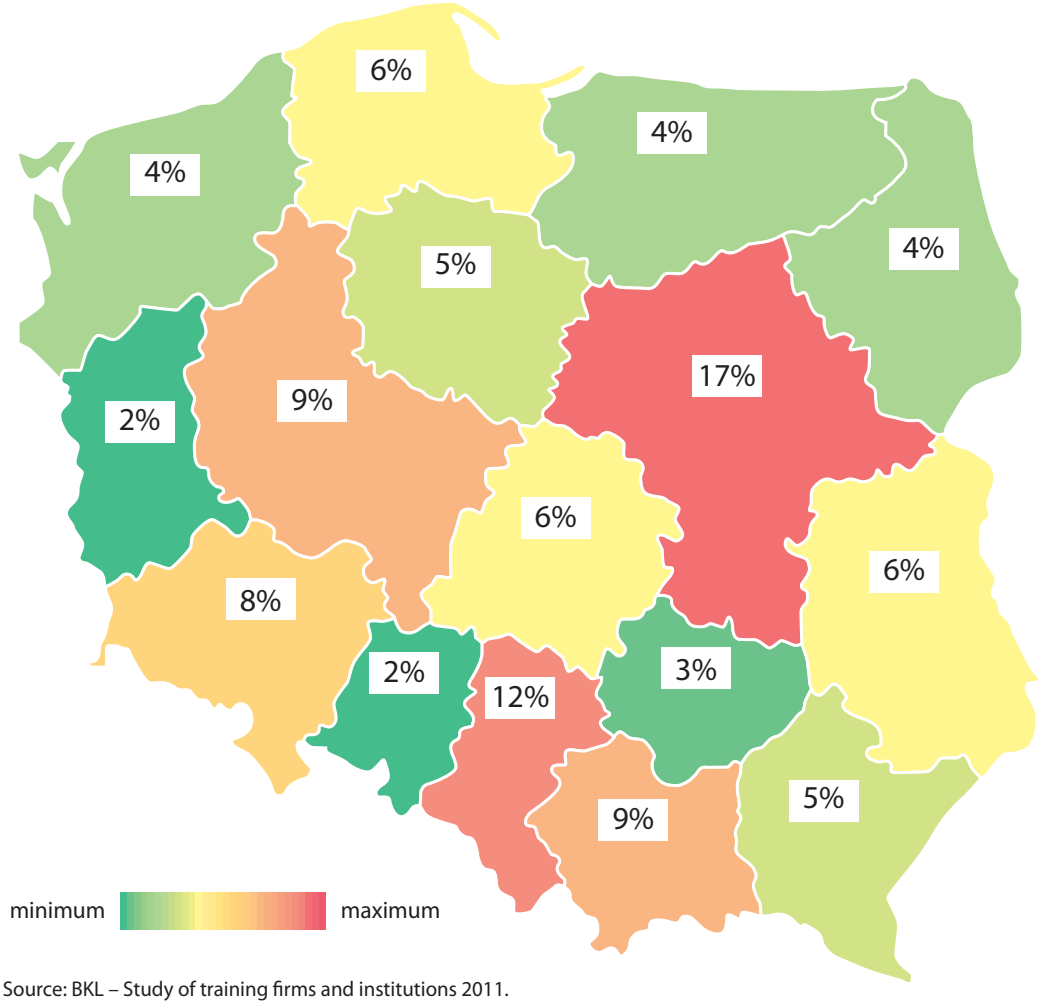
The answer to what seems an easy question is very difficult, if not downright impossible.[46] Even though, to cater for the needs of the studies of the training sector conducted as part of the BKL project, a list of entities offering training and/or consultancy composed of 18,007 items was drawn, it is difficult to assess whether it was an exhaustive one. Moreover, due to the large rotation of operators in the training market, such a register must be regularly updated. Assuming, however, that it is complete, it can be stated that studies of training firms and institutions conducted in 2011 on a sample of over 4500 entities providing training and consulting services covered 1 in every 4 training operators active in Poland. By the way, the RIS register as of 28th December 2011 included 9888 entities.

Most training firms and institutions operate in large metropolitan cities, which on the one hand is understandable due to the demand for training present in these locations, and on the other – explains the differences in the degree of saturation with training operators between individual regions. As the Map 3.1 shows, the largest number of such businesses have their registered seats in Mazowieckie Region, with Śląskie ranking second, and followed by Małopolskie, Wielkopolskie and Dolnośląskie. Opolskie and Lubuskie are the regions with fewest operators.

[46] The main reason for the difficulty is the lack of clarity in the term "training firm/institution". Even though the BKL Study assumed an operational definition, described in greater detail in the report Who educates us when the school is over?, this was not sufficient to avoid problems related to the making of decisions whether a given business can qualify as a training operator. Another problem, being to a degree of function of the previous one, is the lack of a register of such institutions. This function is not available in the Register of Training Institutions (RIS), because of the voluntary nature of registration, and resulting incompleteness. Worth mentioning is the fact that difficulties with the estimation of the number of training operators are common, and are not characteristic of the Polish situation only, see: e.g. (Barnett 1997).

Map 3.1.

Regional variations in the number of businesses operating in the training market (in %)



Source: BKL – Study of training firms and institutions 2011.

What are the types of entities operating in the training market?

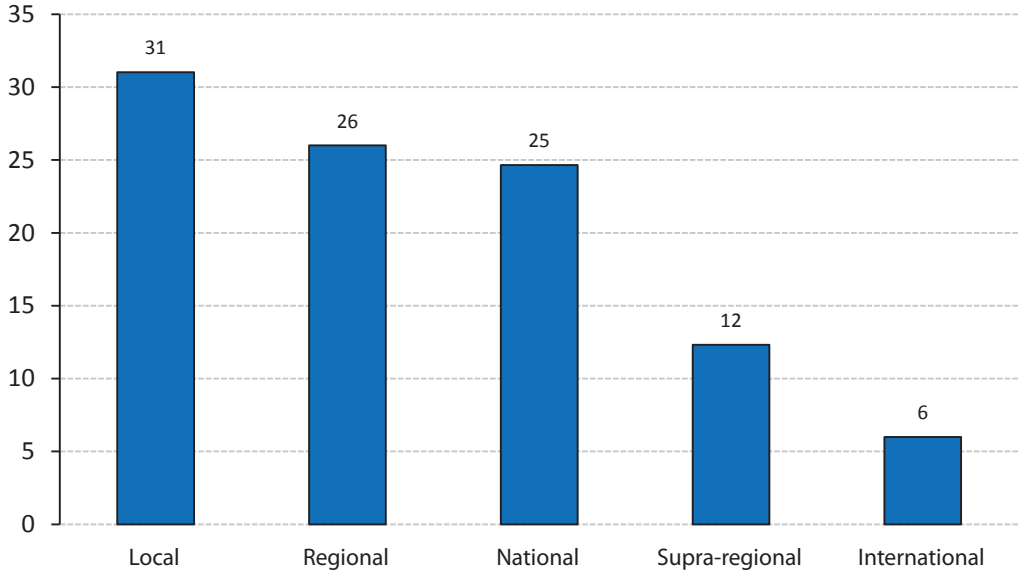
The most numerous category of entities operating in the training market in Poland are private training and training-and-consulting businesses. Altogether, no fewer than 83% of the responding firms and institutions are private entities. Private training institutions are usually micro businesses (43%) of which 5% are one-person businesses, and small enterprises (also 43%); medium-size enterprises are infrequent here (12%) and even less are large (2%) ones. The structure of public entities by size is different: micro-businesses account here for only 16% of the total, small ones – for 45%, medium-sized for 32%, and large ones for 7%. **As far as the turnover is concerned, only 1% of training firms and institutions in Poland can be considered medium-sized and large**. Turnover exceeding PLN 1 million was reached in 2010 by 28% of training operators participating in the study, yet the turnover of as many as 11% was in the range of PLN 25,000 – PLN 50,000 (a proportion that does not change, even when one-man businesses are excluded from the analysis).

Both the volume of the turnover and the volume of employment in training firms and institutions correspond with the scope of their activity. The largest number (31%) act locally: only in its place of operation and neighbouring towns, 26% cover with their activity an entire region, 25% – the entire country, 12% – the region (voivodeship) and the neighbouring ones, and only 6% are institutions operating on

an international scale (Chart 3.5). Institutions operating locally are mostly language schools and driving schools, while the operators who provide their services throughout the country are mostly training and training-and-consulting businesses.

Chart 3.5.

Scope of operation of training firms and institutions (in %)



Source: BKL – Study of training firms and institutions 2011.

Thus, these are small private entities that play a key role in non-formal education, so significant for the potential of quick reaction to the varying demands of the labour market. These entities are especially vulnerable to the fluctuations of economic situation and all changes taking place in their environment, such as changes of legal and financial regulations, and changes in the scope and principles of co-financing training activities from public funds. A testimony to the vulnerability of the situation in the training market to fluctuations is a high level of churn among businesses operating here. No fewer than 8% of training businesses and institutions that participated in the first round of the study in 2010 ceased to exist or no longer provided training services in 2011. Even though the value of this indicator may in fact be somewhat lower, due to problems with clear identification of training institutions, beyond doubt it proves the high dynamic of changes in the sector.

To supplement the information, it makes sense to add that the structure of businesses operating in the market of training services in Poland does not diverge from the structure of the training market in other countries. The prevalence of rather small entities specialising in specific areas of operation is a typical feature of the training sector, and results directly from its nature (see the report concerning the training sector in Australia: Ferrier et al. 2008).

Who were the clients of training firms and institutions, and what was their number in 2010?

A decided majority of training businesses and institutions (66%) provide services both to individual and corporate clients. Among the remaining ones, 20% specialise in servicing individual clients, and 14% – of corporate ones. The firms and institutions that provide services only to individual clients are primarily ones that offer tuition and courses in motoring (driving licence and other related licences), related to personal

services, recreation, personal development, medicine, social work, psychology, first aid, and IT and computers. Among the businesses offering the services to corporate clients only, there is the largest number of ones that specialise in management, marketing, trade and client care, development of general competencies, and accounting and finance.

Who were the clients of training firms and institutions, and what was their number in 2010?

The respondents (4506 training businesses and institutions) had approximately 2,665,788 individual clients in 2010,[47] of which 62% are clients of private entities, and 38% – clients of public ones. The public entities trained on average 1439 individual clients a year, while private ones had on average 518 such clients, which results directly from the specific nature of businesses operating in the two sectors: the predominance of medium-sized and large institutions in the public sector, and the predominance of micro and small entities in the private sector.

Worth emphasising is the fact that **training and consulting services for businesses are provided primarily by private training entities. The training firms and institutions participating in the study had 252,812 corporate clients in 2010**, of which 85% were catered for by private training operators, and only 15% – by public ones. The average number of corporate clients of private and public training operators is similar: private ones had 82 such clients on average, and public ones – 79.

The most numerous corporate client category in training operators are enterprises. They were mentioned as clients by 77% of the training operators who had corporate and not only individual clients. Public institutions other than employment offices and educational centres were listed as corporate clients by 57% of training operators, 48% mentioned that they had schools, institutions of higher education and other institutions of education among the clients, and 47% provided services to employment offices, and 37% – to NGOs.

The phenomenon of **specialisation in offering services only to selected groups of clients, e.g. employment offices or enterprises, is present in the market only to a very low degree**. If such phenomena take place, it is so only in the case of training or courses whose character makes them focus clearly on a narrowly defined category of recipients, e.g. businesses in specific sectors, or medical or educational enterprises. In the remaining cases, the training operators tried to acquire clients from among a varied scope of potential recipients: enterprises, employment offices, other public institutions, and individual clients.

An analysis of the profile of the subject range of the training offered by institutions providing services to employment offices and enterprises, in turn, shows various profiles of training preferences in these two categories of clients, and – what follows – various types of training and advisory institutions with which they collaborate (Table 3.5).

Enterprises feature most often among the clients of training firms and institutions that offer training and development in the construction industry, marketing and trade, management, accounting and finance, foreign languages, legal matters, and motoring. In turn, employment offices were in most cases, the clients of businesses training in motoring, construction and industry, personal, food, and recreation services, IT and computers, accounting and finance, psychology, and legal matters.

[47] It must be added that 5% of the respondents, that is 235 training firms and institutions did not provide information concerning the number of individual clients who used the services. The values provided by these institutions may also in fact be more of approximations, as naming the precise number of individual clients may in certain cases be difficult. Such difficulties may originate in the different character of the services provided, these can be e.g. training sessions offered to businesses, in which the staff of such businesses participates, yet the precise number of participants of such training sessions may not necessarily be always registered. Another factor that renders such calculations difficult may be the lack of easily available electronic registers of all the people trained by the given entity.

Table 3.5.

Subject range of training offered by training institutions and firms to enterprises and employment offices

Enterprises used the services of training institutions in the areas of:	Employment offices used the services of training institutions in the areas of:
• Construction and industry	• Motoring
• Marketing and trade	• Construction and industry
• Management	• Personal, food, and recreation services
• Accounting and finance	• IT and computers
• Foreign languages	• Accounting and Finance
• Legal matters	• Psychology
• Motoring	• Legal matters

Source: BKL – Study of training firms and institutions 2011.

Strategies concerning investments in human resources and the shaping of the range of training offered

After the presentation of the key factors operating in the area of improving the quality of human capital and outlining their characteristics, let us have a closer look at what strategies of selection of human resources and investment in personnel are used by employers. This will allow a better presentation of the context of the training activities undertaken by the employers, and in this way a fuller explanation of the differences in the level of investment in human resources between different types of businesses and institutions.

In an analysis of investment in the development of human capital, it is material not only who and why is trained, or which entrepreneurs train their staff, and which do not, but also what the training conducted results in, what its subject range is, and whether the courses and training fill up the gaps and competency shortages that exist in the market. This is why, in this part of the study we shall present also information on the subject range of training conducted in enterprises, training in which adult Poles participate, and the range of services provided by training operators.

Employer recruitment strategies

Study results prove that employers generally want to employ staff who are well prepared to embrace a specific position as far as competencies go (71%). Every third employee expects that in the process of recruitment, they will gain an employee fully prepared to perform specific duties, and another 37% allow the need for a slight retraining of an employee. Only 20% of employers are ready to enrol someone who will go through a major or complete training before embarking on a job. The strategy of recruiting employees who require training is most likely to be followed by the smallest entities (30%), and least often – by medium-sized ones (18%). Eight out of ten representatives of these businesses seek employees who are already furnished with appropriate qualifications and competencies.[48]

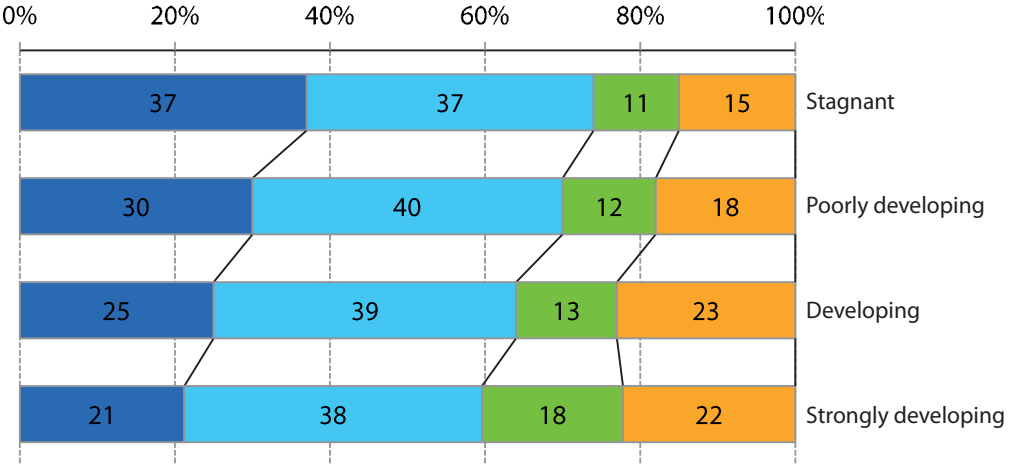
[48] The characteristics of expectations of employers towards specific occupations is described in detail in the chapter entitled Employee needs vs. availability of labour resources.

Domination of the strategy of acquiring employees who are fully prepared explains partially the problem of general difficulties experienced by employers in the processes of staff recruitment: in the two rounds of the study, such problems were brought up by 75% of employers seeking staff. Dominant here (75%) were candidates who failed to meet the expectations of employers, and the basic problem was nothing else but competency shortages.[49]

An analysis of dependencies between the requirements of employers and the degree of development of the enterprise (Chart 3.6) provides interesting results.

Chart 3.6.

Corporate recruitment strategies vs. the level of company development



Source: BKL – Study of the employers 2011.

Even though in every case employers prefer candidates at an appropriately high level of preparation to work, it can be noticed that developing businesses apply a somewhat different HR policy than stagnant and poorly developing ones. Developing businesses generally show a greater tendency to employ staff who require major or even complete retraining, or to run a policy of human capital development: they are more likely to apply active strategies, and assume an appropriate "shaping" of an enrolled member of staff. In turn, stagnant firms are more often focused on obtaining the best candidate from the labour market: one already equipped with the required competencies. Such a strategy is known as the "sieve strategy".[50]

Moreover, it is worthwhile to note that businesses using the strategy of acquiring staff who are fully competent or require slight retraining (presented jointly in the table as those who apply the "sieve strategy") and entities assuming major investments in the recruited personnel ("investment strategy") made different assessments of competency shortages in candidates:

- The key shortage among candidates in the first group were occupational competencies; mentioned by 41%
- In the second group, occupational competencies were also the most frequent problem, yet the proportion of reporting was much lower (27%), moreover, insufficient interpersonal competencies (1 in 4) and cognitive (13%) and technical and computer competencies were mentioned more often.

[49] See: Tables 1.7 and 1.8 in Chapter 1.

[50] See: (Education 2010). Results of the study quoted above also point to the presence of a similar dependency.

Table 3.6.

Competencies lacking in candidates vs. recruitment strategies

Competencies	"Sieve strategy"	"Investment strategy"
Cognitive	7	13
Individual, psychological	24	26
Artistic	4	1
Physical	6	4
Interpersonal	11	24
Managerial	5	5
Availability	2	6
Office/clerical, procedural	0	2
Technical	7	18
Computer	5	11
Mathematical	1	3
Occupational	41	27
Other	8	6
Command of foreign languages	2	6
Qualifications: education, licences	10	6
N	371	202

Source: BKL – Study of the employers 2011.

Employee training strategies vs. development

It goes without saying that the employers who perceived competency deficits among their staff (67%) and those who were decidedly dissatisfied with the condition of the human capital in their firm (62%) train their staff more often than the ones who expressed complete satisfaction with the skill of the personnel (41%). It is, however, worth to pay attention that competency deficits were significantly more often (a difference of 21 percentage points) perceived by developing firms than stagnant ones. At the same time, stagnant firms far more often expressed full satisfaction with the competencies of their personnel (60%, compared to 38 among the strongly developing ones).

Generally, however, **the employers asked about the assessment of the skills of the currently employed people, drew a highly optimistic picture**: every other was fully satisfied with the current level of skills of the staff, somewhat fewer (46%) were also satisfied, even though they perceived a need to provide additional training for the staff, and only 3% were fully dissatisfied with this aspect.

Thus, is non-investment in the company's human capital an economically rational action in such a situation, or may it possibly result from the exceedingly high self-assessment of competency in a firm? In a short perspective, this is certainly a rational behaviour, as employees are capable of performing their duties efficiently at the place of work, therefore there is no reason to generate additional costs for the enterprise or institution. Yet, what would certainly emerge in a longer perspective, which would require the definition of the firm's strategy of development, including a strategy of development of human resources, and determination of developmental goals and means of their achievements, are deficits in the competencies of staff or demand for specific directions of development. And yet, the results of the BKL Study proved that among the employers recognising the skills of the staff sufficient, every other stated at the same time that they do not have any defined training needs in their enterprises/institutions.

Such deficits are corroborated also by other studies conducted in the area: they show that managers are not aware of qualification and competency shortages of their staff, nor do they have leadership skills,

which include the definition of goals and motivation of people to attain them. Moreover, nearly 60% have no strategy of development of the firm, and the management of Polish businesses is not prepared to carry out such tasks (Education 2010).

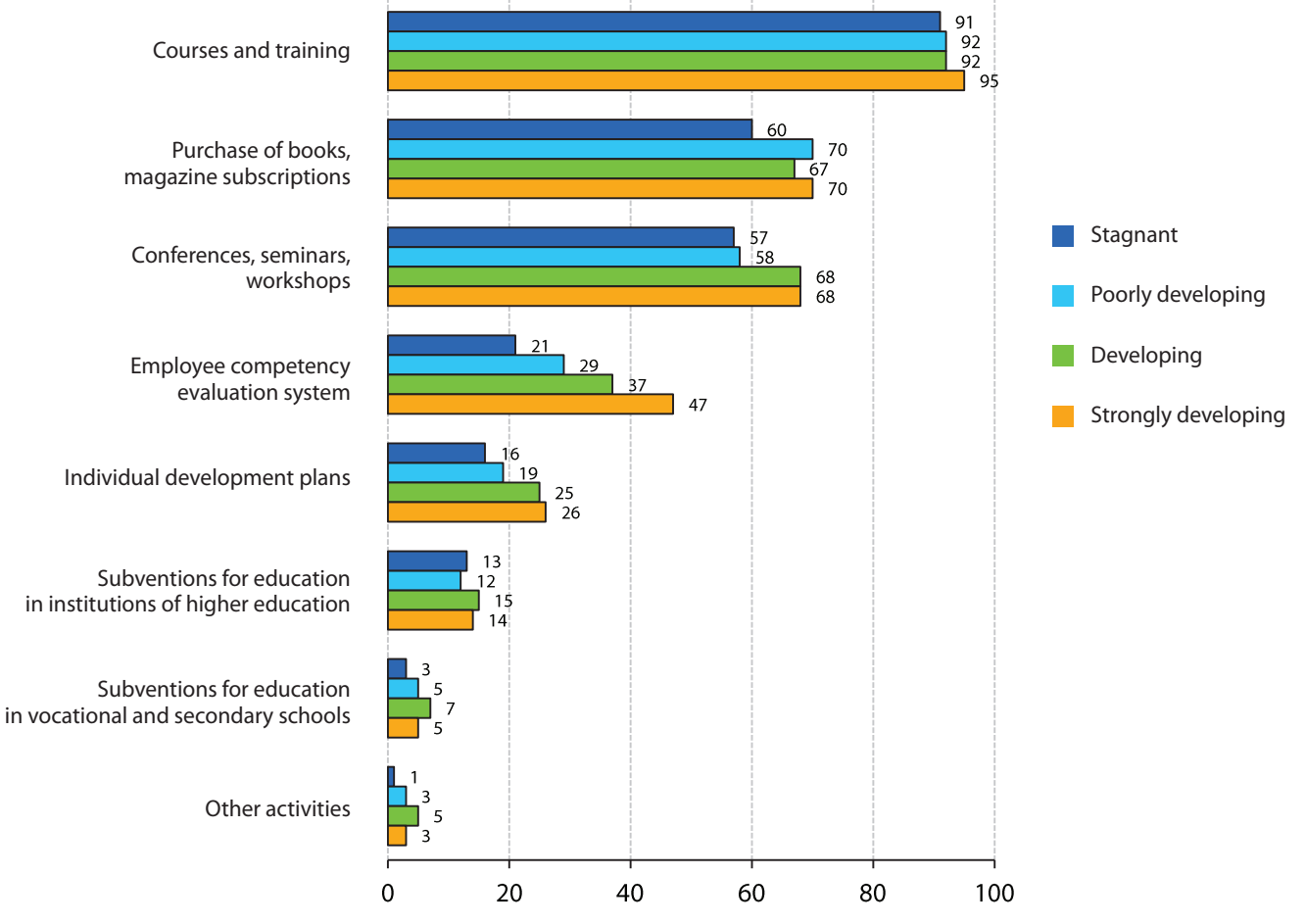
Employee training strategies vs. development

The weakness of the strategic approach to the training of staff is illustrated also by the results of the BKL Study concerning the forms of education of the staff applied by the employers. **The use of more "holistic" instruments and ones that require long-term involvement of the employer, e.g. the system for assessment of employee competencies or individual development plans, is not widespread among the employers** (Chart 3.7). The system of assessment of competencies was applied by every third employer investing in employee training (18% of the total), while the use of individual development plans for the employees was declared by every fifth employer investing in training (1 in 10 in total).

Worth paying attention is the link between the application of these instruments and the degree of development of the enterprise. **The use of the more advanced instruments for managing the development of human resources was visibly more frequent in developing than stagnant firms**; in the case of the competency assessment system, the difference amounted to 26 percentage points, and in the case of individual development plans – to 10 p.p. The proportion of businesses using these forms increased parallel to the size of the enterprise: the first of the instruments was used by every third micro employer providing training, and every other in the group employing staff of over 50. This regularity applies generally to every form of education.

Chart 3.7.

Forms of investment, broken down by the assessment of enterprise development (% of answers)



Source: BKL – Study of the employers 2011.

Unquestionably, courses and training remained the most popular form of education, as more than 90% of entities developing their human resources use them. The least popular are the forms that require long-term involvement of the employee's time and employer's financial assets, i.e. co-financing of education in higher and vocational schools. Even though there is an exception to the above that is worth emphasising: nearly 60% of the businesses with the employment exceeding 50 people and providing training to their staff pointed to the fact that they use this form of investment in their staff.

A broader range of tools used for the development of human resources was the domain of large entities and the better developing enterprises: four or more different forms were used by 41% of the strongly developing entities, while among the stagnant ones, this proportion amounted to 20%.

Certain differences can also be observed in the frequency of using own resources in employee education. Developing firms applied the strategy of combining external and internal training more often than the non-developing businesses (38% as compared to 31%) and of focusing on own resources only (17% as compared to 14%). In turn, the latter were based solely on external training (55% as compared to 45%).

Among the businesses which carried out only internal training, the training conducted more often concerned trading, sales, and customer care (23%), marketing training (10%), and the obligatory elements, e.g. H&S and fire prevention (24%). With the exception of the last group, with plenty of caution, one can attempt stating that these are the choices that hold a potential for development. In the entities that were based solely on external courses the subject of finance and accounting (14%) and law (19%) turned up more often than in other cases, which – making again a reservation concerning major caution in interpretation – could more frequently assume a form of adaptation to the changing legislation and environment than focus on development.

In general categories, the leader in listings of training activities by the subject were technical courses related to construction and industry, as they were mentioned by every fifth employer involved in training. Second (17%) came obligatory training for employers, that is H&S and fire prevention. At par with them was training in legal matters (which, however, can be a proof of an unwanted tendency caused by the frequent changes of law or lack of its clarity, which enforces continuous training of staff in the area). Thus, this can be training that serves adaptation rather than development.

It is interesting to note that the group of training that enjoyed lesser popularity included general competencies (8%), while the employers stated that two out of the three most deficit competencies in the human resources are the self-organisational and interpersonal competencies (the third, yet the first in the ranking of the worst deficiencies, was the category of occupational competencies), which to a degree can add a touch of scepticism to the assessment of cohesion of training activity of the employers with the competency deficits diagnosed among the staff.

How and in what areas do the Polish people develop their competencies?

Let us reiterate that the market of training services provided services to 3.4 million clients in the last year. The most popular subject range of courses and training selected by Polish people were subjects in construction industry, and also medicine, social work, psychology, first aid (Table 3.7). Learning in each of these areas were approximately 400,000 Polish people. Let us remember, however, that some of this training was obligatory. A somewhat smaller number of people, approximately 322,000 (every tenth participating in courses and training) took part in foreign language courses. Definitely most often the language was English (213,000), with the German language coming second with 43,000 participants.

Table 3.7.

Most popular subjects in training and self-education in the last 12 months

Subject	Courses, training	
	%	No. of participants
Construction and industry	12	408 857
Medicine, social work, psychology, first aid	12	396 336
Foreign languages	10	322 440
Education, education sciences, pedagogics	8	272 474
Information technology, computers (IT)	8	258 681
Other specialist, occupational	7	217 710
Personal services, hairdresser, beautician, care	6	205 333
Legal matters	6	191 617
Driving licence other than A and B, driver licenses, transport	5	175 717
Trade, sales, and client care	5	170 568
H&S, Fire prevention	5	165 813
Personal development, general competencies	4	146 272
Accounting and bookkeeping	4	123 662

* Multiple choice question, categories do not sum up to 100%.
* Only the categories with the highest counts are retained.
* % of all the respondents in training at courses/training.

Source: BKL – Population Study 2011.

The most popular form of training courses were regular day classes. Participating in them were 67% of those in training, i.e. approximately 2.3 million Poles. Ranking next was training at the place of work (20%). These attracted the participation of 680,000 employees.

More than every other training, in which the working respondents participated recently was financed entirely by the employer (Table 3.8). Every fifth was financed by the respondents themselves, and a similar proportion was financed by another firm/institution. In case of the unemployed, nearly 2 in 3 courses and training sessions were financed by another firm/institution – as can be guessed: the employment office. Interestingly, 27% were financed by the unemployed themselves.

Table 3.8.

Sources of financing of courses and training, in which working and unemployed respondents participated recently (in %)

	Working	Unemployed
Solely the employer	52	9
Solely the respondent	22	27
Another firm/institution	19	59
Partially the employer	5	1
Partially the respondent	5	1

* Multiple choice question, categories do not sum up to 100%.

Source: BKL – Population Study 2011.

Of all the courses and training sessions, 31% were conducted solely during working time, and another 9% – mostly during the working time. Held out of working time were 30% of training. 75% of courses and training ended in the presentation of a formal certificate. In two out of three cases in this number, a special final test had to be passed to achieve the certificate.

Ranking highest among the most frequently planned courses and training are foreign languages: 23% of people planning education, that is approximately 1,000,000 people, wanted to participate in them (Table 3.9). Listed further were other, specialist, occupational training and other vague training plans (usually that was the eagerness to embark on more or less indistinct studies or improving more or less indistinct occupational competencies), followed by courses in information technology and computers (IT), and construction and industry.

Table 3.9.

The most frequently listed subject range of planned courses and training

	%	No. of people in the population
Foreign languages	23	1 004 501
Not defined or other specialist occupational	15	650 137
Information technology, computers (IT)	14	610 074
Construction and industry	13	559 231
Personal services, hairdresser, beautician, care	7	303 885
Driving licence other than A and B, driver licenses, transport	6	262 011
Medicine, social work, psychology, first aid	6	249 124
A and B category driving licence	5	200 945

* Multiple choice question, categories do not sum up to 100%.
* Only the categories with the highest counts are retained.
* % of all the respondents planning education.

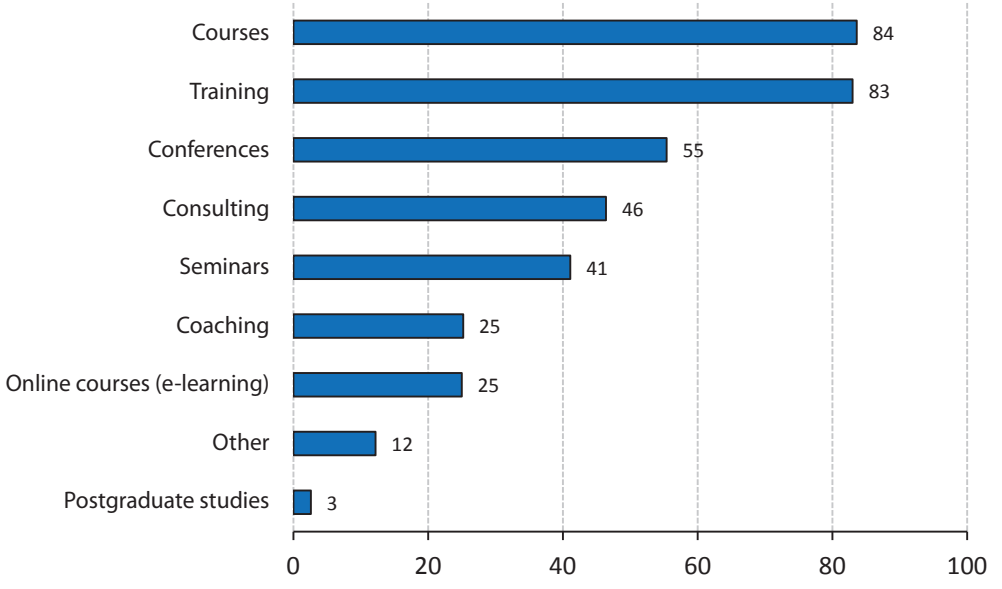
Source: BKL – Population Study 2011.

Services offered by training institutions and factors that influence it

Dominant in the range of services offered by training firms and institutions in the first half of 2011, much like in 2010, were basic forms of education, namely courses and training offered by over 80% of entities covered by the study (Chart 3.8). Another popular form of training were conferences, included in the range of services of more than every other entity covered by the study. Interestingly, a far greater number of businesses listed conferences in the offer in 2011 than in 2010: 55% as compared to 30%. Another significant increase was recorded in the number of operators who proposed coaching to the clients: 16% in 2010, and 25% in 2011; similar was the case with courses and training over the Internet (online): 13% in 2010, and 25% in 2011. Consulting and advisory services are in turn provided by fewer than every other training firm and institutions covered by the study.

Chart 3.8.

Forms of education on offer (in %)



Source: BKL – Study of training firms and institutions 2011.

In 2011, the largest number of training firms and institutions offered training connected with personal development and development of general competencies: such a subject range could be found in the offer of services of 27% of the entities studied. Coming second were subjects related to medicine, social work and psychology, with the largest share in this category being the issues from the field of psychology: it was offered by 22% of the respondents. An equally large number of training firms and institutions (i.e. 22%) offered education in IT, i.e. information technology and working with the computer. Ranking below in the frequency of presence in the offer are subjects related to motoring and driver licences, personal services (hairdressing, beautician, food, and care services), enterprise management, construction and industry, trade, sales, and client care, and law (the first column in Table 3.10).

A comparison of the subject range offered by training institutions and firms with the subject range in which individual clients learn most often, and in which the employers provide training to their staff (Table 3.10) portrays a number of tendencies characteristic of the training market:

1. Easiest to find in this market are **courses and training related to personal development and development of general competencies, or the so-called soft skills training**. Such issues were present in the range of services offered by 27% of the training entities covered by the study. Yet this subject range ranked as only 12th in the listing of the areas in which individual clients most frequently trained, and as 7th in the listing of the subject ranges of training among the employers. Thus, present in the training market is predominantly the range of services for the development of general competencies, although such services are not the ones that are most often selected by individual clients and/or businesses.
2. The number of operators offering training courses in **medicine, social work, psychology, first aid** is smaller by five percentage points only. Development in the scope of this subject range is offered by 22% of the respondents. Visible in the area is the alignment between the training offer and the market demand, as the subject comes also second in the listing of the subjects in which individual clients received their training, and ranked as 5th in a similar listing concerning employees. It must be remembered, however, that the more specific subject range within this category was usually psychology and psychotherapy, and not purely medical questions.

3. **Courses and training in construction and industry – selected most frequently by individual clients and employers – are on offer of nearly every fifth training entity studied**. In this category, most training operators offered training courses for electrical fitters, related to the power sector, providing the SEP licences, and also courses and training for the operators of excavators, loaders, lifts and other construction machines, and courses for welders, and other specialist courses related to construction and industry.
4. **Language courses**, which ranked third in the listing of the subjects among individual clients, **rank out of the first 10 on the list of subjects offered by training resources**, and also out of the first 10 in the case of enterprises providing education for their human resources. Therefore, these are usually the individuals who (as their own initiative) improve their language skills, while participation in such courses is not financed by the employers. It must be also added that taking part in such courses are, as a rule, young people who complement the knowledge and skills gained at school.
5. **The juxtaposition of the services offered – as far as they are used by individual clients and employers – shows also different strategies of building offers and using them**. It seems that it is easiest to find in the training market a subject range that is universal and can be offered by a large number of firms without major outlay (personal development, psychology, information technology, computers), and the subject range in which training is required to obtain specific rights (driving licence, and other related licences). Individual clients, in turn, go predominantly for occupation-related education, requiring specific licences, for example, ones required in the construction sector, or in the sector of medicine and social aid. Employers invest first in the necessary occupational competencies of their staff (construction and industry), and later update the knowledge of law (presumably to cope with the quickly changing regulations), organise the obligatory training in H&S and fire prevention, and improve their competencies of the human resources in client care.

Table 3.10.

Listing of training subjects: offered by training firms and institutions, and consumed by individual clients and employers

Training operators (subjects and % of training entities offering t he given subject range)	**Individual clients** (subjects and % of people who received training in the given subject in the last 12 months)	**Employers** (subjects and % of employers providing education in the given subject to their staff)
Personal development and development of general competencies (27%)	Construction and industry (12%)	Construction and industry (20%)
Medicine, social work, psychology, first aid (22%)	Medicine, social work, psychology, first aid (12%)	Legal matters (17%)
Information technology, computers (22%)	Foreign languages (10%)	H&S, Fire prevention (17%)
Driving licence other than A and B, driver licences (21%)	Education, education sciences, pedagogics (8%)	Trade, sales, and client care (15%)
Personal services, hairdresser, beautician, care (20%)	Information technology, computers (8%)	Medicine, social work, psychology, first aid (14%)
Enterprise management (20%)	Other specialist, occupational (7%)	Accounting and bookkeeping (11%)
Construction and industry (19%)	Personal services, hairdresser, beautician, care (6%)	Personal development and development of general competencies (8%)
Trade, sales, and client care (18%)	Legal matters (6%)	Education, education sciences, pedagogics (8%)
A and B category driving licence (17%)	Driving licence other than A and B, driver licences (5%)	Information technology, computers (7%)
Legal matters (17%)	Trade, sales, and client care (5%)	Driving licence other than A and B, driver licences (7%)

Source: BKL – Study of training firms and institutions 2011, Population Study 2011, Study of the employers 2011.

Services offered by training institutions and factors that influence it

The juxtaposition of forecasts of the representatives of the training sector with the plans of population, in turn, is a proof of a good expertise of the market among training institutions (Table 3.11). Adult Poles want predominantly to improve their language competencies (mostly English), gain skills in information technology and computer handling, and participate in occupational training courses related to construction and industry. This subject range was, moreover, most frequently pointed to by representatives of training firms and institutions as the one that during the 12 months from the date of this study will be in greatest demand.

Table 3.11.

Training plans of Poles: forecasts of representatives of the training sector, and responses of adult Poles

The training sector: which subjects will be in greater is demand in the coming 12 months? (7 most frequently named areas)	Population study: in what courses and/or training adult Poles would like to participate in the coming 12 months? (7 most frequently named areas)
1. Foreign languages	1. Foreign languages
2. Information technology, computers (IT)	2. Information technology, computers (IT)
3. Construction and industry	3. Construction and industry
4. Driving licence other than A and B, driver licences	4. Personal services, hairdresser, beautician, care
5. Personal development, development of general competencies	5. Driving licence other than A and B, driver licences, transport
6. A and B category driving licence	6. Medicine, social work, psychology, first aid
7. Personal services, hairdresser, beautician, care	7. A and B category driving licence

Source: BKL – Study of training firms and institutions 2011, Population Study 2011.

Making a decision about the theme-related content of the offer, training firms and institutions considered primarily the four basic factors:

1. their expertise
2. demand on behalf of individual clients
3. diagnosed expectations of training participants
4. employer demand.

Considered somewhat less important was the diagnosis of the situation in the labour market and availability of trainers with adequate knowledge and skills. Of least importance in the shaping of the range of training on offer – at least at the level of declarations – was the possibility of acquiring co-financing from EU funds for the activity conducted, and availability and furnishing of rooms.

The differences in the assessment of importance of the individual factors between individual types of training institutions are small, nevertheless, a number of regularities can be observed:

- specialisation is pointed to as a dominant factor by both small and large entities
- these are the medium-sized and large firms and institutions that pay more attention to the interests of individual clients and employers, as a determinant of the thematic content of the training offer; probably they are the ones capable of more flexible reactions to the changes of demand in the market
- possibility of acquiring co-financing from EU funds for the project conducted is more significant for large operators, who consequently use such a form of financing their activity more often

- there are no differences between the respondents in the assessment of the importance of infrastructural factors (rooms, workshops, furnishing) and training staff; the influence of these two factors was considered significant, yet not as much as the influence of factors found on the demand side of training.

Barriers to the growth of investment in human resources in Poland

Despite the large volume of funds spent on the development of the human capital in Poland, the level of learning of adult Poles did not significantly increase in the last 10 years, and nearly every other employer undertakes no actions serving the development of the staff they employ. Therefore, it is worthwhile to take a look at what factors render the increase of investment in human resources more difficult among the employers, which ones slow down the increase of training activity of the adults, and what barriers render the development of the training market more difficult. Information concerning these questions will be presented further in this chapter.

Limitations concerning the investment in human resources among the employers

Investments of the employers in human resources can be understood as an "extensive" process, that is one that increases the count of the personnel and the productivity of the staff at hand, i.e. the efficiency of performing tasks at the worksite. Yet, in the opinion of the employers, both processes are limited by a number of barriers that render the development of human resources construed in that way more difficult.

LIMITATIONS CONCERNING THE INCREASE OF EMPLOYMENT IN BUSINESSES

The basic limitation for investment in human resources, understood as **increasing the scale of employment**, are – as the employers believe – circumstances and regulations of economy. This especially concerns the following:

- too high non-wage labour costs
- too high taxation
- unstable economic situation.

The systemic limitations were the worst obstacle for all the employers, irrespective of the size class of the enterprise they represented. They were pointed to by three out of four employers in the total population. Especially pessimistic is the fact that, compared to the previous year, the proportion of people mentioning these barriers increased, which means that the image of conditions of business operation in Poland deteriorated in the eyes of the employers.

Analysing barriers to the growth of employment, it is worth turning attention to the fact that these limitations are most acute for the smallest employers, employing up to 9 people (Table 3.12). And yet these very entities strongly dominate the Polish businesses structure, which means that they respond for major part of demand for employees. Moreover, as the results of the studies prove, these are the micro employers who – deciding to employ a new person more often than larger businesses – did so by opening a new job.

Table 3.12.

Reasons limiting increase in employment, depending on the size of the enterprise and assessment of its development (data in %)

Limitations concerning the investment in human resources among the employers

	Enterprise size				Assessment of enterprise development (enterprises only)				
	1-9	10-49	50-249	250+	Stagnant	Poorly developing	Developing	Strongly developing	Total
Unstable economic situation	71	66	59	54	76	73	68	67	71
Difficult access to loans for businesses	23	18	13	15	23	25	23	30	23
High interest on loans for businesses	40	33	26	25	43	40	39	45	39
High employee salary expectations	48	49	53	59	47	50	50	48	48
Too high non-wage labour costs	76	68	57	59	78	80	77	79	76
Excessive taxation	75	63	54	49	77	77	75	82	74
Lack of appropriate candidates to work	40	36	33	43	36	42	48	52	40
Complicated legal rules and regulations	55	50	45	42	57	56	56	53	55
Tough competition in the market	59	54	52	53	63	62	59	56	59
Poor financial standing of the firm	24	26	22	24	26	26	15	12	24
N	14144	762	166	67	4369	5201	3307	966	13843

Source: BKL – Study of the employers 2011.

Close to every other employer considered limitations in employing new staff also on the side of the candidates. Importantly, these were the high wage expectations (mentioned by 48% of respondents) that proved a problem for a large number of employers rather than the maladjustment of candidate competencies to the needs of the job (40%). The only exception here were the strongly developing firms, which more often faced the problem of lack of appropriate candidates (52%) than the problem of their potentially excessive wage-related expectations (48%). It is worth emphasising that the significance of the barrier of costs related to the expected remuneration of a potential employee grew parallel to the growth of business size, yet did not differ as far as the recruitment strategy of the enterprise was concerned. (There was a similar number of cases both among those who required fully prepared candidates, and the businesses planning to train the candidates in future).

Of interest is also the fact that the limitations concerning the growth of employment do not result from the poor assessment of the financial situation of the firm. This factor was important for every fourth employer, yet – when compared to other questions – it can be assigned a secondary importance.

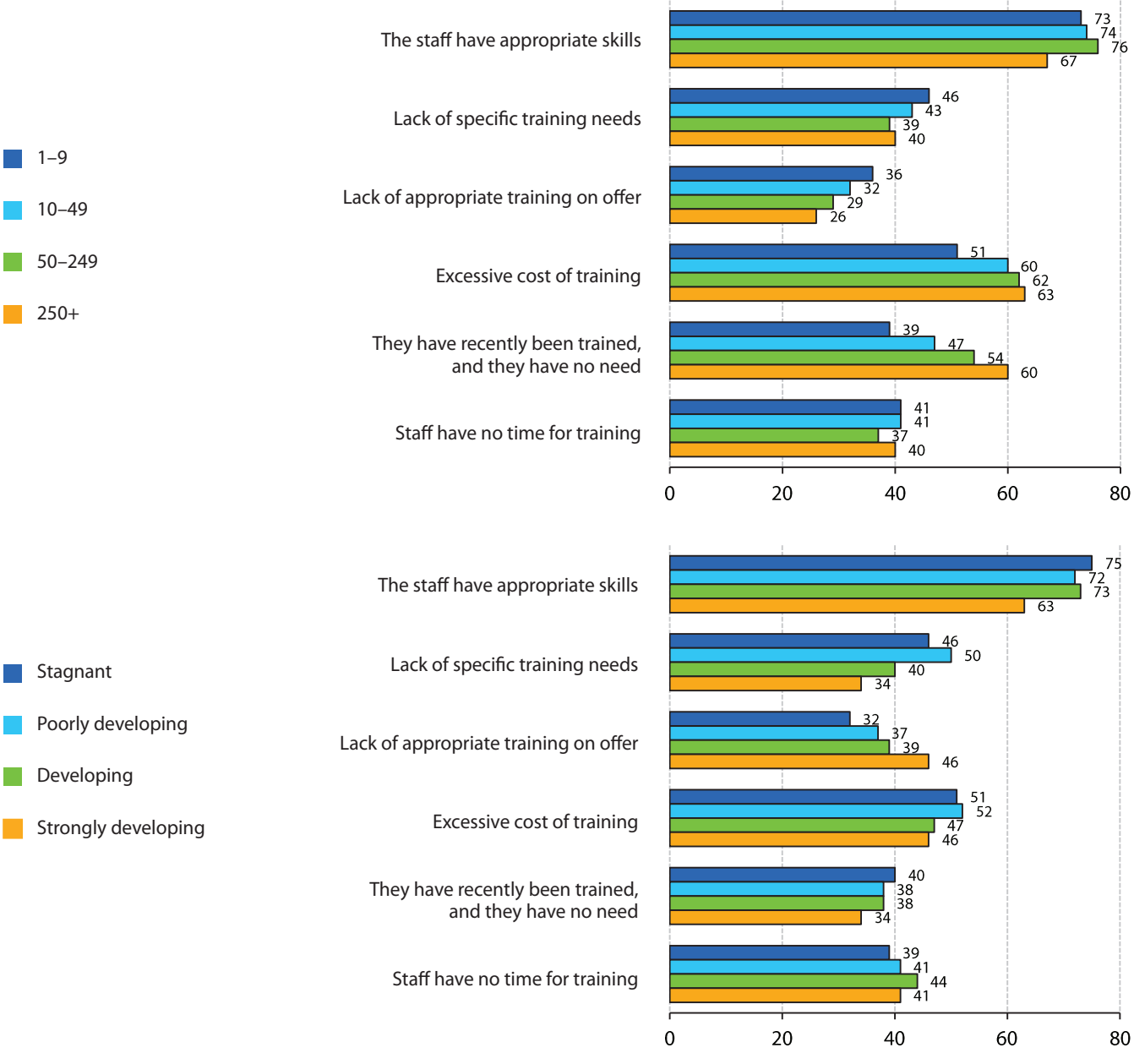
Limitations concerning investment in employee training

An unsatisfactory condition of employer training activity (46% did not embark on any intentional actions in the area in 2010) results predominantly from their optimism. To explain it, one needs to refer to root cause analysis of the lack of investment in the area of education of human resources. **The basic reason** why employers – irrespective of the size of the enterprise they represent, and also the assessment of the degree of their development – do not choose to invest in the improvement of employee competencies **is the conviction about the sufficient skills of their staff**. This is the opinion of three fourths of employers who do not invest in the competencies of the staff. Such a claim was put forth somewhat less often, by rep-

resentatives of large businesses and institutions (67% as compared to 76% of medium-sized businesses),[51] and also by enterprises assessed as strongly developing (63% as compared to 75% in stagnant ones).

Chart 3.9.

Reasons for lack of investment in the development of employee qualifications and skills by the employers, broken down by the assessment of development and size of the firm (% of responses) (N=7483)



Source: BKL – Study of the employers 2011.

[51] Unless stated otherwise, the percentages presented in the chapter concern the group of enterprises that did not conduct any activity aimed at education of their human resources in 2010.

Worth paying attention to is the fact that the **cost of training** ranked only as the second barrier in the process of staff development in the enterprise. The fact that it **was not the most important factor** in the lack of activity in the area of training is of major significance in the context of systemic actions focused on the improvement of the indicators of lifelong learning. Vast assets spent by the country, and primarily by the EU, in the last year on the improvement of the quality of human capital did not result in the expected growth of the indicators mentioned above. One can therefore expect that what we deal with here is the effect of substitution, which means that the training that was conducted with the use of public funds would have otherwise been financed from the funds of enterprises.

Interestingly, the high cost of training proves to be a great problem for businesses that employ more employees (63% of large enterprises) than for small (6%) and micro (51%) businesses. It was also a reason that was more frequently mentioned by public (7%) than private (51%) enterprises. In the case of private businesses, the **lack of time of the employees** (41%) and **lack of specific training needs** (46%) proved worse problems than in the case of public employees (30% and 32%, respectively).

It is worthwhile to pay attention also to a **different perception of barriers in developing and stagnant firms**. The latter more frequently resigned from training activity because of the conviction about the appropriate skills of their staff than the strongly developing businesses (75%, compared to 63%). This corresponds with the results quoted above concerning the generally higher degree of satisfaction from staff competencies in the businesses that do not develop. At the same time, they more often pointed to the problem of undefined training needs (every other poorly developing company), and limitations resulting from the too high training costs (also 50%).

In turn, in the case of strongly developing businesses, the lack of the training offer adjusted to their needs in the market (46% of mentions in this category) was one of the key problems. It is worthwhile to remember that the maladjustment may to a great extent concern the thematic range of training but can also be connected to other aspect (format, duration of training, etc.).

Finally, it must be emphasised that the problem of the lack of appropriate offer was the more significant. The better the firm developed, and the smaller the business or institution was (in the case of strongly developing micro firms, every other mentioned that this problem concerned them, while in the case of large and stagnant firms, the problem was noticed only in every seventh case). This results from the fact that it is easier for large businesses to satisfy specific training needs, e.g. by the organisation of internal training, and – thanks to the scale of employment – create homogenous training groups and employ and external trainer in case of demand for specific knowledge or skills. In turn, smaller businesses are to a greater degree dependent on the offer of open training available in the market.

What renders an increase in training activity of adult Poles difficult?

As we remember, 80% of Poles did not embark on any educational activity in the last year – be it in the form of courses and training, or be it learning on their own. Not participating in courses and training were 82% of the working, 88% of the unemployed, and 94% of the occupationally inactive. It seems that the main barrier in an increase of training activity is the low demand for higher competencies in firms and institutions in which Poles are employed, and most probably the lack of motivation for development strongly related thereto. Most people who did not participate in courses and/or training did not feel the need to improve their competencies. Among the working people, the reason for not taking any steps concerning education in the last year was simply the lack of such need in their job, as mentioned by 82% of the employed (Table 3.13). Other needs, including lack of time and lack of motivation were listed far less often. Answers that corroborated external barriers in participation turned up occasionally.

In most cases, the opinion that learning and development are not necessary in the work they perform came to light among the representatives of the occupations among whom the lowest educational

activity is observed, that is among skilled and unskilled workers, and operators and assemblers. In turn, in the occupations where the training activity is high, that is, among professionals and managers, this answer turned up somewhat less often, even though it was still the main reason for the lack of participation in courses and training for 65% of people. In turn, insignificantly more often – in 12% of cases – the explanation was lack of time for occupational reasons. Too high costs did not pose a problem, which results from the fact that 52% of training of the employees was financed fully by the employer, and 19% – by another institutional firm. Only 22% of the employed paid for participation in training themselves.

Table 3.13.

Main reasons for non-participation in courses and training in the last 12 months (in %)

	Working	Unemployed	Occupationally inactive	Total
Did not need for work	82	35	38	63
Had no time for personal reasons	7	13	18	11
Had no motivation to train	7	20	13	10
Training makes no sense at my age	3	8	19	9
Too expensive courses/training	5	20	5	6
Have no time for occupational reasons	9	3	2	6
There were no interesting courses around	4	18	5	5
Poor health did not permit	1	4	14	5
Had no support/incentive from the employer	5	5	1	4
Did not meet formal requirements	2	10	4	3
N	8428	1458	4657	14543

* Multiple choice question, categories do not sum up to 100%.

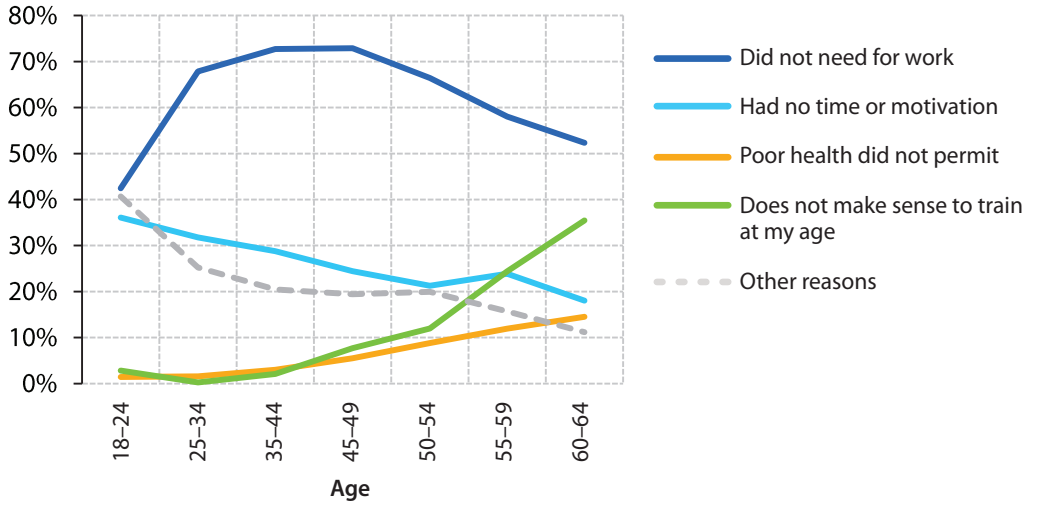
Source: BKL – Population Study 2011.

In the case of the unemployed, the answers were more varied, yet they predominantly come down to the fact that the unemployed saw no sense in improving their qualifications. Unlike the working, the unemployed more frequently pointed to external barriers to participation in training or courses. In 20% of cases, they mentioned the problem of extensive costs of such participation, in 18% – lack of access to interesting training, and in 10% – impossibility to participate caused by formal requirements.

Most of the occupationally inactive (94%) did not participate in courses and training. The reasons they quoted were limited nearly solely to a sense of lack of need and motivation, mostly due to the lack of interest in employment. In 14% cases it was the condition of health that was mentioned as the obstacle.

Chart 3.10.

Selected main reasons for non-participation in courses and training in the last 12 months, broken down by age groups



Source: BKL – Population Study 2011.

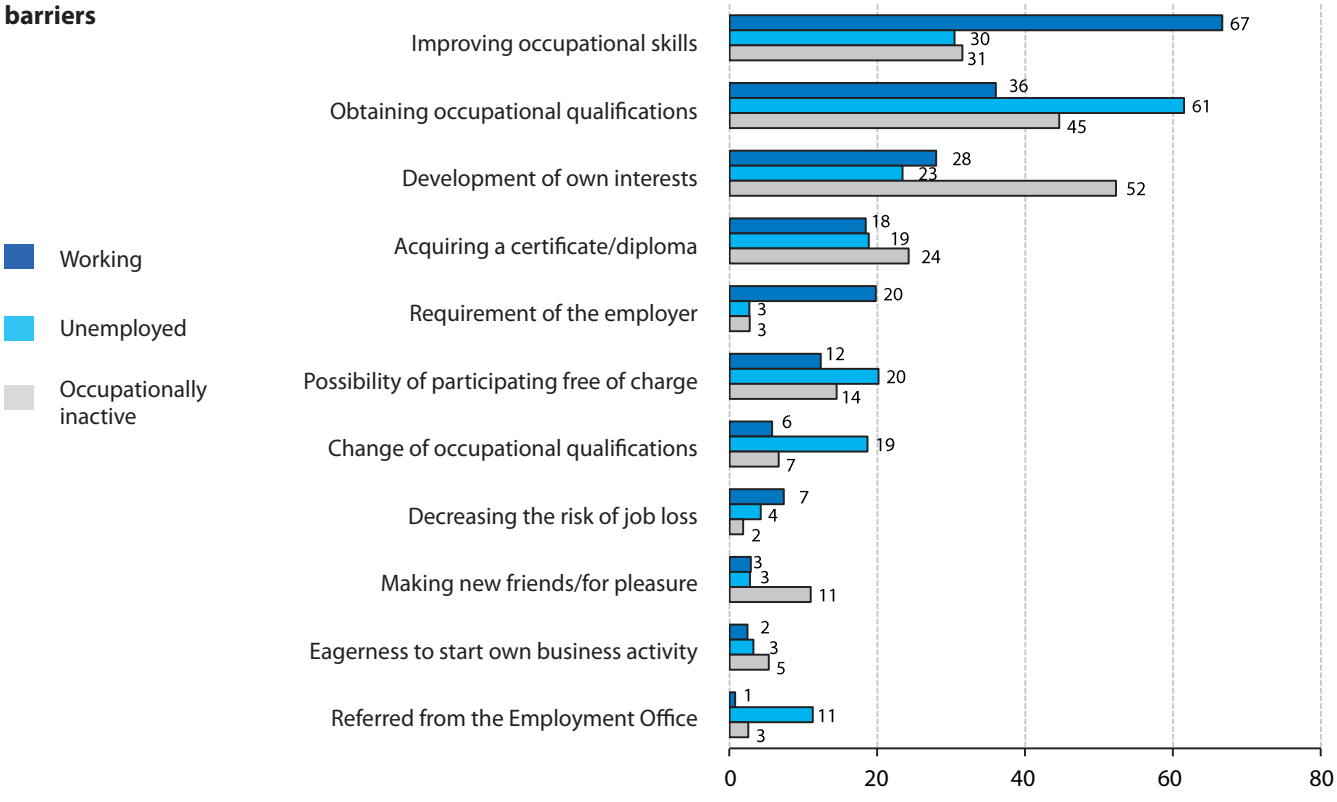
The reasons for the lack of participation in courses and training were hardly differentiated by the level of the formal education obtained. As Chart 3.10 shows, a more frequently mentioned reason for withdrawing from training in the 50+ age group was the conviction that it does not make sense to learn at this age. Similarly, in the oldest age groups, the significance of limitations caused by the state of health increased.

The image of the main obstacles in the development of educational activity of the adults needs complementing by an insight into the most important motivators of training activity. The reason to embark on education in the form of courses and training among the working was the eagerness to improve occupational qualifications (67%), or obtaining such qualifications (36%) as shown in Chart 3.11. For 20%, the development of their own interests provided the motivation, and in 20% of cases – it was only a requirement of the employer.

Motivation to participate in a course of training depended to a great extent on the subject range of the training, in which the working respondents participated. In the case of courses and training in medicine, social work, psychology, and also education, education sciences, pedagogics, and information technology, the need to improve occupational-related qualifications was reported most often. In the case of construction and industry subjects, nearly every other employee pointed also to obtaining qualifications. Obtaining a certificate mattered in the case of IT training. The learning of foreign languages was, in turn, as frequently motivated with improvement of qualifications as with the development of own interests.

Chart 3.11.

Main reasons for participation in courses and training among the working, the unemployed, and occupationally inactive (in %)



* Multiple choice question, categories do not sum up to 100%.

Source: BKL – Population Study 2011.

The most frequent motivation in the case of the unemployed was to obtain qualifications (61%) or to improve them (30%). An order from the Employment Office was mentioned by 11% of the learning unemployed. The opportunity of free participation encouraged every fifth person. Among the occupationally inactive people who trained exceedingly rarely (only 6% of the total), the development of own interests was of key importance (52% of mentions). Yet – much like among the unemployed – of high significance were also occupational motivations: improvement of occupational qualifications or obtaining of qualifications or certificates.

Summing up the question of the main motivations and barriers concerning training activity of adult Poles, one may state that education was treated by its participants predominantly in the categories of activity increasing market opportunities or occupational competencies. The eagerness to develop one's own interests, and other non--occupational motivations turned up much less often (besides the category of the occupationally inactive, who, however, learnt only occasionally). Lack of participation in courses and training must also be considered from the angle of the occupation. Among the employees, the dislike for learning was caused mostly by the sense of lack of need to improve their qualifications at their current job. In other words, they did not treat courses and/or training as sufficiently valuable or useful for their job. In turn, in the case of the unemployed, lack of participation can be explained in two ways. On the one hand, it can be primarily interpreted as a lack of trust in the sense and significance of such actions in the aspect of increasing employability opportunities. On the other hand, some unemployed pointed to external barriers including the costs of participation, lack of access to the interesting courses and training, and formal requirements of participation. Among the occupationally inactive, occupation-related motivations were of secondary importance, as they are often people who are not at all interested in seeking a job in the nearest future.

The reluctance to participate in training at courses caused by the lack of faith in its importance for the situation in the firm of in the labour market does not certainly have to mean that the underlying reason is the low quality of courses and training offered. What is certainly suspicious is the conclusion that improving the level of your competencies is actually useless for the employed and the unemployed (even though in many cases, this is what they claimed). The sources of such opinions may possibly be sought in the maladjustment of training to the needs and expectations of the recipients: both employees and employers. A failure to recognise the expectations of training participants means not only maladjustment of the scope of the transfer of knowledge to the competencies of the recipients (i.e. sharing knowledge that is too difficult or has already been acquired) but also the lack of opportunity to use it at work. The situation in which training is not addressed correctly leads to a drop of interest in them (a situation currently observed). Additionally, the time of employees or the unemployed is wasted together with the money of the employers or taxpayers (let us reiterate that majority of training is financed or co-financed by employers, and a significant part – from other sources, including public funds).

Barriers in the development of training operators

An analysis of barriers rendering the increase of training activity and of the level of investment in human resources in enterprises difficult needs limitation by a look from the perspective of training operators who are the main providers of training services. Juxtaposition of information collected in the studies of employers, population, and training operators allows acquiring a more complete insight into the factors that result in no significant increase in the level of educational activity of adult Poles being observed for years.

In the opinions of representatives of the training sector, **barriers in the development of the market of training services are to be found primarily in the environment of the sector**, and not within it. These barriers are the formal and administrative limitations (the form of tendering procedures promoting low price and not quality), low level of investment in human resources in enterprises (related to the lack of funds for training on the side of the employer, and low awareness of the needs to develop human resources), and the low level of interest in their development among Poles (Chart 3.12). In line with the declarations of representatives of the training sector, its development is not rendered more difficult by the factors including lack of trainers with appropriate competencies, and lack of appropriate infrastructure or equipment. Declarations of representatives of the sector suggest, therefore, that – after the liquidation or reduction of external barriers – the sector will be capable of responding flexibly to market demands and provide an appropriate quality of services.

A juxtaposition of the opinions of representatives of the training sectors concerning the barriers in development of the training market with the declarations concerning the factors decisive for the thematic content of the training offer, however, points to certain problems. The most important question here is the **actual role that is played by the EU funds in the training market**. The representatives of the sector believe that these funds influenced the thematic content of the services offered by training businesses and institutions only to a very small degree. If, however, such a declaration describes correctly the actual strategies of building the range of offered services, then EU funds should not significantly influence the type(s) of training offered in the market, and the groups it is addressed to, while fears about a collapse in the training market once aid funds earmarked to the development of the human capital have been reduced could be considered unjustified (End of financial 2011). This, in turn, is denied by the conclusions that can be formed on the grounds of the opinions of representatives of the training sector concerning the barriers hampering its development. The representatives of the milieu perceived the barriers to the development of the training market mostly among the ways of spending the public funds. They formed charges that the way that the invitations for bids are constructed promotes the businesses that focus not on the high standard of the services provided but on the struggle to win the order by offering dumping prices. The proportion of factors brought up as related to these questions has, albeit insignificantly, increased as compared to 2010.

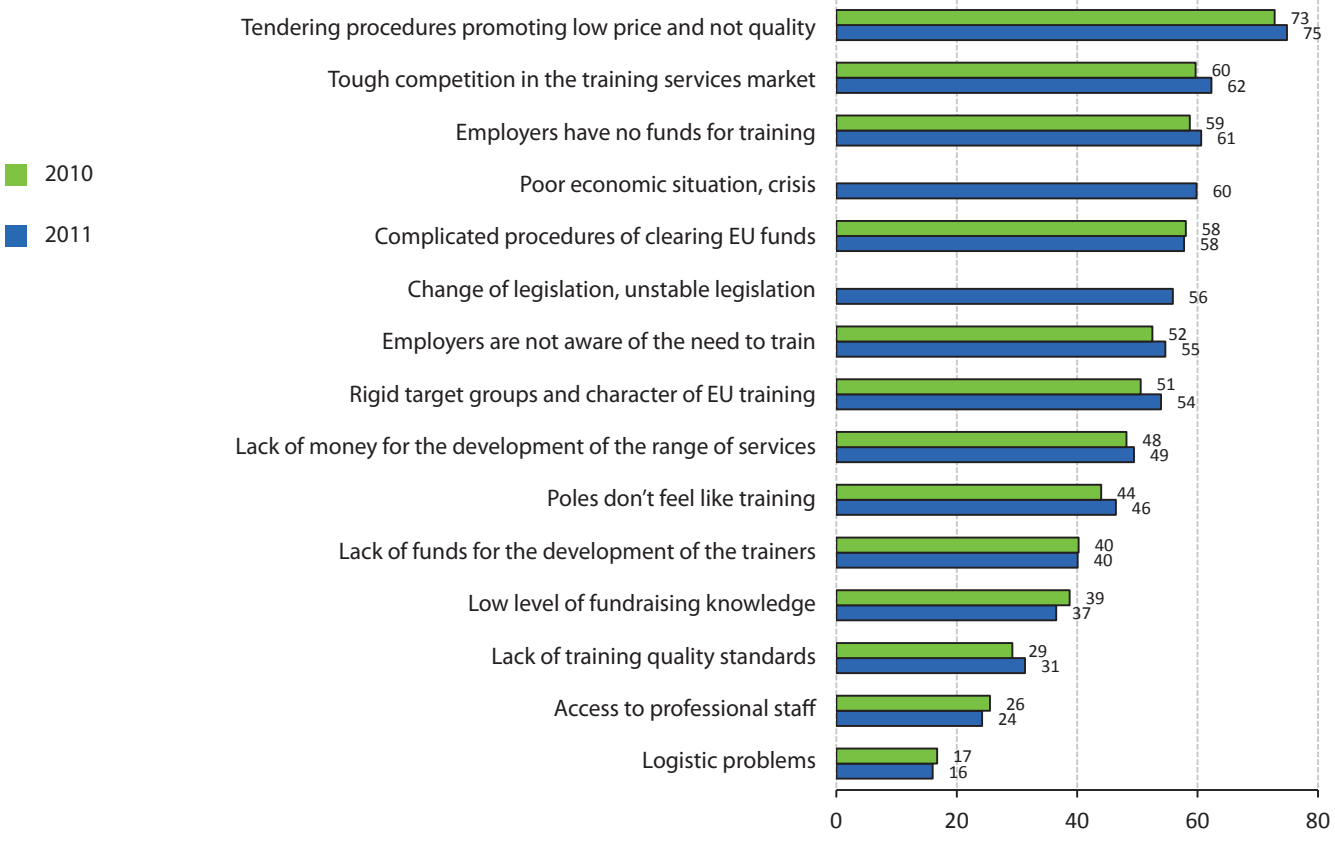
The problem of training quality is another question. Lack of standards concerning the quality of training ranked very low among barriers in the development of the sector (based on answers to closed questions, in which each factor hampering the development of the sector was assessed separately). Yet the

quality of training came first in the comments of the representatives of the sector and made when the questionnaires had already been filled in. The question of the quality of training services grows thus to the rank of one of the basic challenges which the training market faces. Coping with this challenge requires, however, complex activities, both on the side of the training recipients and of the system regulating the expenditure of public funds. It is, however, worth paying attention to the fact that formalisation of the requirements concerning the quality of training may also have negative consequences, as some criteria cannot be fulfilled by small and innovative companies which are only gaining experience in the market. What may be related to this question is the demand to assure equality of training businesses put up by the representatives of the sector. In the light of the fact that projects financed from EU funds are carried out mostly by large entities, this can point to the existence of a problem related to accessing such funds. Thus, formalisation of the criteria may cause tensions between the aspiration to acquire a service of satisfactory level of quality, and the development of entry barriers in the market for businesses offering high-quality services, yet not meeting the formal criteria.

Successive questions that rank high among the barriers **are also related to the financing of training**. A significant obstacle in the development of the training market in Poland is – according to the representatives of the sector – the lack of funds for training on the side of the employers. It is worth remembering that the lack of funds for training is not the reason most frequently mentioned by the employers among the reasons for lack of investment in the development of the human resources. Such a reason, however, is the conviction that the competencies of the employees are adjusted to the needs of the firm. This barrier is also perceived by the representatives of the training market, who point to the fact that the development of the training market is made difficult by the lack of awareness of the need to train among employers. The lack of awareness of the need to train and develop among people, that is individual clients, was considered less important.

Chart 3.12.

Barriers in the development of the training sector in Poland (% of the respondents declaring that the given factor renders the development of training firms and/or institutions to a moderate or high degree) (in %)



Source: BKL – Study of training firms and institutions 2011.

Summary

The situation concerning the adult learning and investment in human resources in enterprises has not changed in Poland for many years, at least if we consider the measurement of the dynamic of changes an indicator of adult educational activity. Therefore, summing up this chapter, we could reiterate the conclusions presented in many other works and pointing to the low level of learning among the adults, especially those with low level of education, older, and in worker occupations. These conclusions can be complemented by a presentation of a description of training activity of the employers, where a range of regularities are strongly reinforced, their number including investment in the development of staff made by large entities, operating in the industries connected to new economy, and developing. Yet this seemingly neutral statement about the lack of changes in the area provides the grounds for the formulation of hardly optimistic conclusions concerning the development of the learning culture in Poland and the construction of a competitive edge based on the development of the human capital.

Assessing the scope of investment in the Poles' occupational self-development, and the level of investment in human resources among the employers, one, however, should take into consideration the determinants of such processes. The key among them are the level of demand of the economy for higher competencies, that is, its consumption of knowledge. If this demand will remain at a lower level, also the motivation of individuals to learn and invest in their self-development will remain low. If the growth of competencies does not translate into obtaining a better position in the labour market, and not even into a realistic opportunity of improving the situation in the future, what remains a rational strategy is non-investment in development and earmarking of the free time and free means to other goals. The key factor that determines changes in the level of educational activity of adult Poles is therefore primarily the level of innovativeness in the economy and its demand for knowledge and skills. What also remains significant is the forecast of the demand for these in future, which we shall consider further.

As the results of studies presented here show, the development in the area of adult learning is induced predominantly by the activities of the employers. They are the ones who cover the costs of training courses, in which the working Poles participated to the greatest extent. Only slightly over 20% of participants of training financed their education on their own, and in the case of 19% - the costs were incurred by another institution. The fundamental role of the employers in the process of development of human resources is perceived by representatives of training operators, who considered the lack of funds among the employers for training and the lack of the need to train in businesses among the most important barriers in the development of the training market in Poland. The same representatives of the training sector believed the means of distribution of EU funds earmarked to the development of the human capital even more significant, and perceived the significant difficulties in the development of the sector they represent in the principles of their allocation. These opinions are worth serious consideration, as it goes without saying that the assistance funds earmarked to the development of the human resources in Poland have not as yet contributed to significant changes in the area of adult learning. These funds are used for financing of current operation by training firms, and do not change the conditions of operation of the sector, nor do they contribute to its institutional development. Moreover, the means of distribution of these funds cause controversies, which was corroborated in the opinions of representatives of the training sector, perceiving the invitations to bids instrumental to the quality of the services provided, and to the competition only in terms of – in many cases dumping – prices.

Analysing recruitment and training strategies of employers, one can draw conclusions about the weakness of the strategic and long-term approach to the management of employee development in businesses and institutions. In their managing and staff training practices, the managing staff hardly ever use such instruments as the system for assessment of employee competencies and individual development plans. The results prove also deficits in the use of a regular definition of training needs from the perspective of an enterprise or institution in the capacity of a tool for its development. For that reason, it becomes difficult to define the actual status of competencies and identification of the gaps, whose elimination could lead to an increase in the efficiency of the human resources available in the company. As a result, the employers – even though mostly dissatisfied with the competencies of candidates to work – emanate with an excessive optimism when it comes to the assessment of the personnel they already employ. All

these factors contribute to the low proportion of participation of businesses in lifelong vocational learning and education. And yet, as a foresight-type study of modern economy resources forecasts (Matusiak et al. 2009), expectations concerning the level of competency of employees will rise, and the need for their type will change. In this way, an opportunity for a better long-term adjustment of competencies of the staff to the demand for such competencies will emerge, and "today's employees should find a priority in prognostication and planning of development of human resources in their firms. Without running analyses and planning, plenty of enterprises may not be capable of further development and satisfaction of the clients' expectations due to the lack of skilled human resources." (Ibidem, p. 12).

Employers still make a relatively poor use of their internal potential for education of staff and improvement of their competencies. A testimony to this being a proportion of employers using internal and external training. In 2010, the businesses that worked on the basis of their internal training potential were nearly half the number of those using external trainers. Today, internal training is rather the domain of large businesses and – somewhat more frequently – also of developing and innovative ones. Going hand-in-hand with the use of those are declarations of applying a system for the assessment of employee competencies and individual development plans, which can be a proof of a certain training policy in the enterprise or institution. Yet they were applied only by every fourth of the total number of employers (i.e. by every other training employer), and only 1 in 10 based education of their staff on that form only. A reverse strategy, that is resorting to external courses only was used by every other entrepreneur. And yet – taking the United States as a touchstone – we perceive significant disproportions: nearly the entire pool of training in enterprises (98%) is covered by internal trainers in permanent employment, and only a small fraction of all the training activities (2%) is conducted by external training firms (quoted from: Saratoga 2009).

To a great degree, Polish employers do not feel responsible for the development of occupational competencies of their staff. Dominant among all the categories of enterprises is the policy of seeking in the market and subsequent recruitment of an employee fully or nearly fully prepared to perform their duties. Seeking the best candidates in the market, businesses apply the "sieve strategy": a process in which the assessment of their competencies and occupational preparation is of deciding significance. In most cases, as far as the people already in employment are concerned, no training is conducted, as businesses believe that they do not need this to operate. Hence, it is the lack of occupation-related motivation to learn and develop their competencies that provides the most powerful barrier in increasing the level of learning among adult Poles.

Upper secondary and higher schools at the time of the demographic low

Does the market of education at levels higher than lower secondary feel the impact of the demographic low entering the schools? How do schools react to that threat? What consequences for the labour market can come from specific strategies of schools?

The studies conducted show that – faced with the threat coming from the demographic low – upper secondary schools and institutions of higher education assume different strategies of action: one can therefore claim that to a certain degree the low contributed to the growth of their innovation. Moreover, both in upper secondary and higher education, slow changes in the scope of preferences of candidates to study are visible. Can we therefore say that the demographic low is becoming the main reformer of the Polish system of education?

Magdalena Jelonek, Dariusz Szklarczyk

Upper secondary and higher schools at the time of the demographic low

An analysis of the situation in the education market, which accounts for the structure of education providers and changing popularity of courses of education in individual types of their providers, cannot miss education at upper secondary level. Irrespective on the one hand of the obligation to continue education until 18, and of the value of the education ratio at the higher level on the other, this level of education must be considered a factor determining to a great extent the shape of the occupational structure in Poland. There are a number of reasons for that. First, the predominant number of schools at upper secondary level give an opportunity of gaining an occupation which defines further the path of the educational career of the graduates. Secondly, at the current stage of education, it is possible to switch from vocational to secondary education, which – in research of the social structure – is considered one of the key elements of its modernisation (Wasilewski 2006). Thirdly and finally, the phenomena observed in the market of upper secondary education allow to forecast, explain, and understand better the phenomena that take place in higher education.

The changes observed in education at upper secondary level influence beyond doubt the processes that can be identified in the academic sector. Therefore it goes without saying that the two systems are strongly interconnected: the better the system of upper secondary education operates, the easier it is for the academic institutions to achieve the intended goal (e.g. for the occupational and social elites). This, however, does not mean that all the problems present in the system of education at higher level are the result of the poor operation of schools at upper secondary level. In many cases, the institutions of higher education, consciously resign from the selective function that is assigned to them, focusing on actions aimed at encouraging the largest possible number of candidates to study in the school. This problem acquires a new significance in the context of the approaching demographic low, which may favour if not downright force institutions of higher education to apply the "the more the better" strategy. Yet the demographic changes should be considered not only a threat, but also an opportunity, which should be exploited by institutions of higher education. It is an opportunity for qualitative changes in education at higher level, including opening of institutions of higher education to various clients and various age groups (e.g. the elderly).

With the questions discussed above in mind, in this chapter we decided to seek answers to the following questions:

1. Concerning the analysis of courses in upper secondary schools:

   - What is the structure of schools at upper secondary level and how does it change?
   - Is it possible to observe changes in the number of students in individual types of upper secondary schools?

- What are the preferences of students in upper secondary courses of vocational education?

2. Concerning the analysis of courses in institutions of higher education:

- What is the structure of schools at the level of higher education, and how does it change? Which schools are more vulnerable to consequences resulting from the demographic low, and which should be able to face it without major problems?
- What strategies are used by institutions of higher education to survive in the educational market despite the demographic low?
- What are the preferences of students as far as education at higher level is concerned?

This chapter differs from the preceding ones, not only in the nature of the data on which the analyses presented are based (reporting data of the GUS and SIO), but it also plays different functions. Its main goal is to provide an outline of the institutional context, facilitating the interpretation of the results of survey research presented in the previous chapters.

Upper secondary and post-secondary schools in 2011 – general information

The study covered eight types of schools providing education at levels higher than lower secondary: general secondary schools, supplementary general secondary schools for the graduates of basic vocational schools, specialised general schools, post-secondary schools, technical secondary schools, supplementary technical schools for graduates of basic vocational schools, basic vocational schools, and artistic schools[52] and teacher and social works colleges. The data used comes from the September 2010 census (and contain some information from 2009), and from the March 2011 census. This allowed a diachronic comparison of the interesting information from three points in time.[53]

The first significant information is the lack of significant changes in the counts of schools providing education at levels higher than lower secondary (Chart 4.1). Compared to 2009, the number of supplementary general and post-secondary schools – that is schools offering a relatively quick change (compensation) of qualifications – increased insignificantly. This can be considered the answer of the educational market to the actual demand. The number of technical secondary schools decreased. The crucial question is whether there is any link (and what it is) with the number of people educated in individual types of schools.

It must be added that in 2011, 190 schools operating at levels higher than lower secondary operating a year earlier, no longer provided tuition: half of them were post-secondary schools, 12% – general secondary schools, 9% – technical secondary schools, and also 9% – supplementary general secondary schools). Moreover, 159 new schools emerged, of which 47% are post-secondary, 16% – general secondary, 12% – supplementary general secondary, and 12% – artistic schools. The statistics broken down by regions are presented further.[54]

[52] This category included: post-secondary artistic schools, Poznań Choir School, 1st grade six-year general music schools, 2nd grade six-year general music schools, six-year general schools of fine arts, 1st grade six-year music schools, 2nd grade six-year music schools, six-year schools of the art of dance, 1st grade four-year music schools, 2nd grade four-year music schools, four-year schools of circus arts, four-year artistic secondary schools, nine-year general secondary ballet schools, nine-year secondary schools of the art of dance.

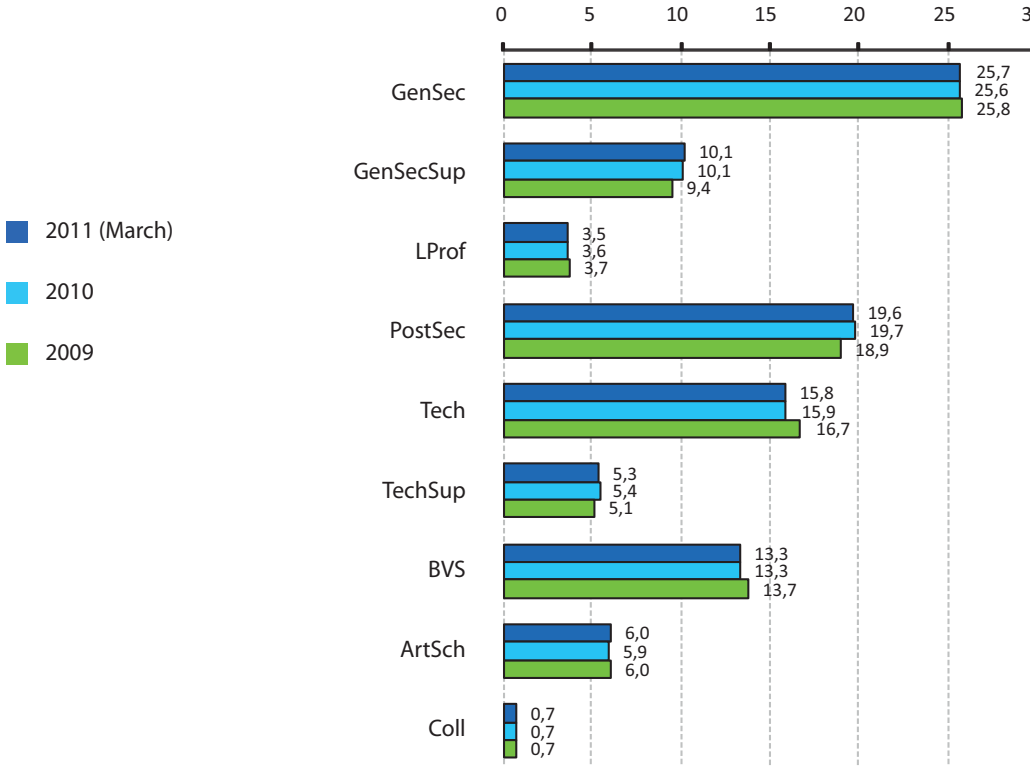
[53] Data presented for 2009 concern only the schools that continued their activity in the school year 2009/2010 or 2010/2011.

[54] This comparison speaks of an estimated number of schools, as the number of schools in the Dolnośląskie Region must be approached with caution. The entire Oleśnicki County was excluded from the analysis due to the unreliability discovered in the records.

Upper secondary and higher schools at the time of the demographic low

Chart 4.1.

Changes in the numbers of schools providing education at levels higher than lower secondary in 2009–2011 (data in %, N_{2011}=14071, N_{2010}=14141, N_{2009}=13159)



Abbreviations and acronyms for school types, used also further, denote respectively: GenSec – general secondary schools, GenSecSup – general secondary schools for graduates of basic vocational schools, LProf – specialise secondary schools, PostSec – post-secondary schools, Tech – technical secondary schools, TechSup – technical secondary schools for graduates of basic vocational schools, BVS – basic vocational schools, ArtSch – art schools, Coll – teacher training colleges and colleges of social work.

Source: Own study based on the Educational Information System (SIO).

Worth considering are the changes in the count of individual types of schools in the regions. This information provides expansion and documentation of data presented in Chart 4.1. Values in Table 4.1 are to be interpreted in reference to the number of schools in the region as of September 2010, quoted in rows in brackets, and the numbers in the last row (total) – in reference to the number of schools of the given type stated in brackets in each column.

Altogether, as compared to the number of schools in 2010, an estimated number of 31 schools at levels higher than lower secondary disappeared, of which majority in the Dolnośląskie Region. This balance proves greatest deficiencies in the case of post-secondary schools, that is the ones that feature higher opening and closing dynamic than the others. One can comment here on major flexibility for the diminishing – as the analyses of the number of students show – demand.

Table 4.1.

Changes in the numbers of schools above the lower secondary level in Poland in 2011, as compared to September 2010

Region	GenSec (3611)	GenSecSup (1417)	Lprof (501)	PostSec (2779)	Tech (2237)	TechSup BVS (758)	BVS (1869)	ArtSch (835)	Coll (95)	Total (14102)
Dolnośląskie (1023)	3	-2	-3	-14	-3	1	-1	2	0	-17
Kujawsko-pomorskie (871)	4	0	0	6	-1	-1	-1	-1	0	6
Lubelskie (879)	0	2	0	1	-3	0	-1	-1	0	-2
Lubuskie (383)	0	0	0	1	-3	0	-1	0	0	-3
Łódzkie (971)	-2	0	0	-4	0	0	0	0	0	-6
Małopolskie (1141)	-1	0	0	2	-2	0	-1	1	0	-1
Mazowieckie (1717)	2	0	0	-3	0	1	0	3	1	4
Opolskie (361)	0	1	0	-1	0	0	-1	0	0	-1
Podkarpackie (713)	-2	-1	0	3	0	0	2	0	1	3
Podlaskie (479)	-1	0	0	-5	0	-1	0	5	0	-2
Pomorskie (860)	0	-1	-1	2	1	-2	0	1	-1	-1
Śląskie (1636)	1	-1	0	-4	0	-2	4	0	0	-2
Świętokrzyskie (476)	-3	2	0	-2	0	0	0	0	0	-3
Warmińsko-mazurskie (587)	-2	1	0	0	-2	-2	-1	-1	1	-6
Wielkopolskie (1309)	1	3	1	-7	1	-3	0	0	0	-4
Zachodniopomorskie (696)	0	1	0	2	0	0	-1	2	0	4
Total (14102)	0	5	-3	-23	-12	-9	-2	11	2	-31

Source: Own study based on the Educational Information System (SIO).

Among the regions that recorded an increase in the number of schools at upper secondary and higher levels are Kujawsko-Pomorskie, Mazowieckie, Podkarpackie, and Zachodniopomorskie. At the scale of the country, the largest decrease in the number of schools was recorded among post-secondary (23), technical secondary (12), and supplementary technical (9) schools. In the total number of schools of specific types, an increase was recorded only in the case of artistic schools (11), supplementary general secondary schools (5), and 2 colleges (2). Interestingly, with 4 disappearing and 1 emerging, there has been no significant change in the number of the existing specialised secondary schools. With the decision about extinguishing of education in this type of school coming to force in September 2012 (termination of recruitment) having been announced long ago, this lack of changes may prove that the schools continued recruitment to the last moment and – as the numbers of students in this type of schools presented further prove – they did it successfully.

A recapitulation of the balance separately for general secondary schools (including supplementary) and the remaining types of post-lower secondary schools, whose majority provides education in a specific occupation, proves that five schools providing general education emerged in Poland, but 36 "vocational" ones disappeared. The difference will be worth scrutiny in the successive years. It should increase, should we take into account the tendency to increase the number of people with secondary education and establishment of a broader range of opportunities for education at a higher level (more information on the treatment of the 80:20 formula and reforms of education at levels higher than lower secondary is available in the collective publication entitled *Bilans Kapitału Ludzkiego w Polsce* (Study of Human Capital in Poland) – report concluding the first round of the study, conducted in 2010 (Balance, 2011).

Dynamic of changes in the number of students in individual types of post-lower secondary schools

The number of students in individual types of schools at levels higher than lower secondary did not change significantly in the period in question, nevertheless, due to the absolute values (1% being approximately 20,000 students) a handful of details are worth paying attention to (Chart 4.2).

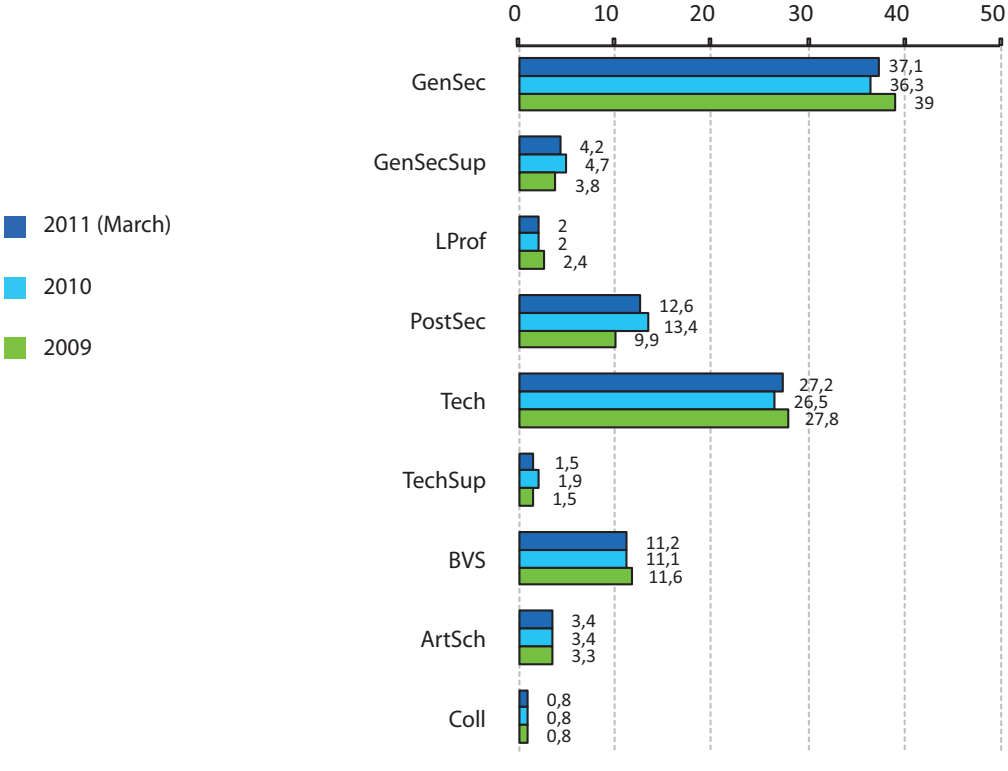
First, compared to the school year 2009/2010, the number of students of general and technical secondary schools grew (by 0.8 and 0.7 percentage points respectively). There have been practically no changes in the number of students of specialised secondary schools, basic vocational schools, artistic schools, and colleges. In turn, the number of people learning in supplementary general schools diminished, even though it is higher than in the school year 2008/2009.

What seems to be the most "dynamic" (in terms of the numbers of students) market of services at this level are the post-secondary education; in their case, the largest differences are visible in the period in question. Most probably, this is connected to the specific nature of education – compared to the remaining types of schools – which can end in learning an occupation within no more than a single school year. Moreover, visible in this type of school (e.g. in the reports of the Supreme Audit Chamber (NIK)) are large enrolments, both compared to the small degree of the graduates who passed vocational examinations, and the number of people who took the examinations. This was accounted for by the Ministry of National Education in the change of the way of financing of such schools to be introduced in September 2012.

Worth attention is also the fact that the number of students of technical secondary schools grew in 2011, as compared to 2010, while the total number of such schools – as Chart 4.1 shows – decreased.

Chart 4.2.

Changes in the numbers of students learning in individual types of schools providing education at levels higher than lower secondary in Poland in 2009–2011 (data in %, N_{2011}=1979794, N_{2010}=2081761, N_{2009}=1893054)



Source: Own study based on the Educational Information System (SIO).

Remaining at a relatively stable level is the number of students in basic vocational schools. This can prove a persistent level of interest in the selected courses in vocational training (as suggested by the results presented further), which – also in the opinion of employers – are attractive and desired.[55]

Dynamic of changes in the number of students in individual types of post-lower secondary schools

What requires further attention is the balance of students in a regional breakdown. It was drafted on the grounds of the data for 2010 and 2011, and accounts only for the schools which operated in both the periods (Table 4.2). The categories with positive balance in the table are few (the cases of specialised secondary schools and colleges), which is why the table is coloured differently than Table 4.1. This makes it easier to interpret the dynamic of the fall in the number of students which took place in all the regions.

Table 4.2.

Percentages of students in schools providing education at levels higher than lower secondary in Polish regions in 2011 as compared to 2010 (% in rows, N=13912)

Region	GenSec	GenSecSup	Lprof	PostSec	Tech	TechSup	BVS	ArtSch	Coll	Total
Dolnośląskie	-19	-15	-2	-26	-14	-7	-12	-3	-1	-100
Kujawsko-pomorskie	-16	-8	0	-34	-16	-13	-12	-1	-1	-100
Lubelskie	-13	-8	-2	-41	-14	-11	-6	-4	-1	-100
Lubuskie	-17	-19	-1	-42	-8	-5	-6	-2	0	-100
Łódzkie	-25	-9	-1	-25	-19	-8	-6	-3	-2	-100
Małopolskie	-17	-18	-1	-27	-16	-13	-4	-5	-0,1	-100
Mazowieckie	-23	-11	-2	-25	-17	-10	-6	-5	-2	-100
Opolskie	-17	-14	-8	-35	-9	-6	-6	-4	-1	-100
Podkarpackie	-13	-19	0	-40	-10	-7	-5	-3	-2	-100
Podlaskie	-17	-10	0	-50	-14	-5	-3	-1	1	-100
Pomorskie	-20	-20	0	-30	-10	-8	-11	-2	-0,1	-100
Śląskie	-24	-16	-1	-29	-9	-9	-8	-1	-2	-100
Świętokrzyskie	-22	-8	1	-28	-20	-16	-6	0	-1	-100
Warmińsko-mazurskie	-18	-20	-1	-42	-9	-6	-2	-1	-0,5	-100
Wielkopolskie	-21	-16	-3	-31	-9	-13	-5	-1	-1	-100
Zachodniopomorskie	-28	-11	-1	-34	-11	-2	-10	-3	-1	-100
Total	-20	-14	-1	-32	-12	-9	-7	-2	-1	-100

Source: Own study based on the Educational Information System (SIO).

[55] See among others the results of studies presented in the Complex development programme of vocational education in the Dolnośląskie Region: http://obserwatorium.dwup.pl/biblioteka/raporty?page=2 (accessed on 28th December 2011).

Upper secondary and higher schools at the time of the demographic low

The lowest plunges can be observed, actually in every region, in the percentage falls in the numbers of students of post-secondary schools. They range from 25% (Łódzkie, Mazowieckie) to 50% (Podlaskie) of the total balance at the level of the region. Further, the drops concern general secondary schools, supplementary general schools, and technical schools. In the case of these schools, the highest decline in the number of students was recorded in the general secondary schools in Zachodniopomorskie, Łódzkie and Śląskie regions. The relatively lowest losses were in the specialised general schools, colleges, and artistic schools. Although the regional differences are visible when each type of school is considered separately, the pattern of the plunges related with this type of school is more or less uniform. The nominal values of the plunges are presented in Table B1 in the Appendix.

To supplement the information provided above, it is worthwhile to ask the following question: whether the drop, increase, or relative lack of change in the number of students (without considering the volume of the increase/decrease) is first of all related to the type of the school in question, or is this status quo influenced by other factors, e.g. the size of the school (measured by the number of groups) or the population of the town where the school is situated.[56]

The type of school, proved to be the first criterion that differentiated the change in the number of students. A decrease in the number of students is the dominant category in the case of post-secondary schools, supplementary general schools, and supplementary technical schools (3/4 of schools in the category). In the case of the last two types, the tendency follows the decision on whose power schools of this type will be liquidated and replaced by general secondary schools for adults (liceum ogólnokształcące dla dorosłych). For the remaining types of schools, namely, the general secondary school, the specialised secondary school, technical secondary school, basic vocational school, and artistic school – the dominant category was the relative lack of changes.[57]

1. Post-secondary and supplementary general secondary schools:

- Besides the fact that they are the ones to record drops most often, they are the most "dynamic" group of schools, which means that they record the largest percentage of the increase in the number of students, especially when very small schools (with no more than two sections) are excluded: more than 20% of schools increased the number of students, as compared to 2010.
- Among the very small schools that belong to this group, most drops were recorded in schools situated in villages and towns up to 5000 residents[58] (over 70%), and the largest increases – in the schools of Poland's seven largest cities (over 15%).

2. Basic vocational and artistic schools:

- They differ, especially when the drops are concerned, with the largest number of them recorded in small schools (less than one in every three), and least – with medium-sized and large schools (drops in 20% of schools).
- In the case of very small schools, students in this group were lost primarily by the basic vocational schools (over 40%, compared to 25% in the case of artistic schools).

3. Technical secondary schools:

- Decisive for the stable number of students was primarily the size of the school. One in every three of the smallest schools recorded a drop in the number of students, while medium-sized and large schools (with more than eight sections) did not record any significant changes in more than 90% of cases.

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[56] The classification tree of the CHAID type was applied for the construction of the model; estimation according to the chi-squared distribution, with $p<0.05$. Colleges were excluded from the analysis due to their low count.

[57] "Relative lack of changes" means maintaining the status quo in the number of students or a change lying within +/-5% of the number of students as compared to 2010.] (85% in technical secondary schools).

[58] SIO offers a "town size class" variable for the places where the schools are situated; it assumes three values: country, city up to 5000 residents, and city above 5000 residents. We isolated analytically a fourth category that encompasses the largest Polish cities, with over 400,000 residents. (There are seven of them: Warsaw, Kraków, Łódź, Wrocław, Poznań, Gdańsk, and Szczecin).

4. General secondary schools:

- Much like in the case of technical secondary schools, the size of the school influenced the stability of the number of students most, with large schools (with more than 15 sections) recording no significant changes in 97% of cases.
- In the case of very small schools losing students in most cases, majority of falls can be observed in towns of over 5000 residents, yet with the exclusion of the seven largest cities.
- Among the small schools (above 2 yet below 8 sections), the most stable were the ones situated in villages and cities with population of up to 5000.

5. Specialised general secondary schools:

- The dominant category (more than 3 in every 4 schools) was a relative lack of changes.

The dynamic of the number of students in 2010–2011 differs by the type of school in question, yet what seems to be of key importance is the size of the school, which corroborates the old principle that in the situation of change, most threatened are the smallest units, while the large and powerful ones cope better. At the level of the statistical model presented, one can state that the demographic low strikes predominantly at the small schools. It is worthwhile to remember that the consequences of the phenomenon (e.g. closure of schools or refusal of such a decision), must be examined individually, from the point of view of the specific local authority, school, and the conflicts of interest taking place in such an environment.

Dynamic of changes in upper secondary vocational education

The changes in the number of students becoming ready to enter occupations can be examined from the angle of types of schools that offer a specific occupation (post-secondary, technical, specialised technical, basic vocational, and artistic schools), the profile of education (specialised general secondary schools) or specialty (teacher colleges and colleges of social works). Here, we focus on the first of the groups mentioned above.[59]

What becomes visible in comparison to the number of graduates of individual courses of education in lower secondary schools analysed in the earlier round of the study (Jelonek, Szczucka 2011) is the lasting quality of the trend in the selection of courses whose graduation provides the title of a technician. Technicians were the clearly dominant group among the students of the types of schools in question. Table 4.3 presents the most popular courses in education, providing tuition to at least 1% of all students of post-secondary, technical secondary, specialised secondary, basic vocational, and artistic schools.

[59] Let's acknowledge, however, that in the case of specialised secondary schools (704 units) most students selected the information management course (31%), followed by economy and administration (26%), social (19%), services and economy (13%) and environmental engineering (5%) N=39,056. This denotes lack of changes as compared to the previous year.

Table 4.3.

Most popular courses in vocational training (1 by the number of learners (N=1106643)

Course	No. of students	% of students	No. of schools offering the course
Information and communications technician	86563	7.8%	1146
Statistical, mathematical and related associate professional	65436	5.9%	691
Musician	55672	5.0%	676
Hotel receptionist	46550	4.2%	528
Administrative and executive secretary	40534	3.7%	621
Mechanical engineering technician	40214	3.6%	784
Civil engineering technician	39765	3.6%	504
Motor vehicle mechanic and repairer	39348	3.6%	907
Dietician and nutritionist	31394	2.8%	460
Clearing and forwarding agent	30356	2.7%	446
Restaurant services provider	29336	2.7%	1083
Hairdresser	25036	2.3%	713
Beautician / related worker	24202	2.2%	477
Environmental and occupational health inspector/associate	23523	2.1%	452
Hairdresser associate	22978	2.1%	483
Mechanical (motor) engineering technician	22641	2.0%	299
Shop sales assistant	22465	2.0%	519
Sales worker	21528	1.9%	732
Landscape architecture technician	19199	1.7%	314
Electronics engineering technician	18908	1.7%	245
Restaurant services worker	18714	1.7%	281
Travel consultant/clerk	17015	1.5%	375
Cook	16822	1.5%	276
Agricultural technician	16163	1.5%	395
Electronics engineering (mechatronics) technician	14476	1.3%	188
Electrical engineering technician	14295	1.3%	323
Advertising services agent	11427	1.0%	206

Source: Own study based on the Educational Information System (SIO) Educational Information System (SIO).

Among occupations that belong to technical associate professionals, this group includes musicians, mechanics, and personal service workers (restaurant services provider, hairdresser, salesperson, chef). Obviously, there are also technical occupations that are hardly ever selected, yet the situation seems to hold water rather in the case of craft and worker occupations offered by a larger number of schools (Table 4.4).

Table 4.4.

Most rare courses in education in 2011 (<30 students nationwide)

Course	No. of students	No. of schools offering the course
Well driller/borer	26	1
Stucco and related artistic stonework fitter	25	2
Chemical products plant and machine operator	23	11
Social work associate professional (in care for the elderly)	21	1
Circus actor	21	1
Built heritage renovator	21	2
Librarian	19	1
Sound technician	19	1
Shoemaker	17	7
Mobile farm and forestry plant operator	17	3
Chimney sweeper (Building structure cleaner)	16	12
Metal processing plant operator	16	3
Leather processing technician (Physical and engineering science technician not elsewhere classified)	12	2
Railway traffic controller (Electronics mechanics and servicer)	11	1
Musical instrument tuner (Physical and engineering science technician not elsewhere classified)	11	1
Pipe systems fitter (Plumbers and pipe fitter)	10	3
Glass and ceramics plant operator	9	6
Typhlo-IT technician	8	1
Broadcasting and audio-visual technician	8	1
Gas installation assembler (Plumbers and pipe fitter)	8	6
Sound technician (Broadcasting and audio-visual technician)	7	1
Metal processing (casting) plant operator	6	1
Glass and ceramics plant operator	6	1
Precision (opto-)instruments maker and repairer	5	2
Watchmaker/repairer (Precision-instrument maker/repairer)	5	5
Inland fishing technician (Agricultural technician)	4	1
Scientific information technician (Gallery, museum and library technician)	4	1
Metal moulder/coremaker	4	3
Musical instrument maker/assembler	4	1
Shoemaking technician (Physical and engineering science technician not elsewhere classified)	3	1
Stove builder/fitter	3	3
Mains assembler/fitter (Plumber/pipe fitter)	2	2
Plastic products machine operators	2	1

Source: Own study based on the Educational Information System (SIO).

With an observed decrease in the number of students in schools at levels higher than lower secondary, is it possible to indicate the directions in vocational training where the number of students increased as compared to the previous year? Such a situation exists only at the level of specific courses of education, while moving to the level of sub-major ISCO groups requires a negative answer to the question (the exception being chemical and photographic production equipment operators). There are a number of occupations whose balance is positive when compared to 2010: advertising specialist (+155), fire service technician (+126), florist (+84) and printer, dancer, stucco and artistic stonesmithery technician, broadcasting and film production operator, apiculture technician, industrial sheet metal worker, precision-instrument

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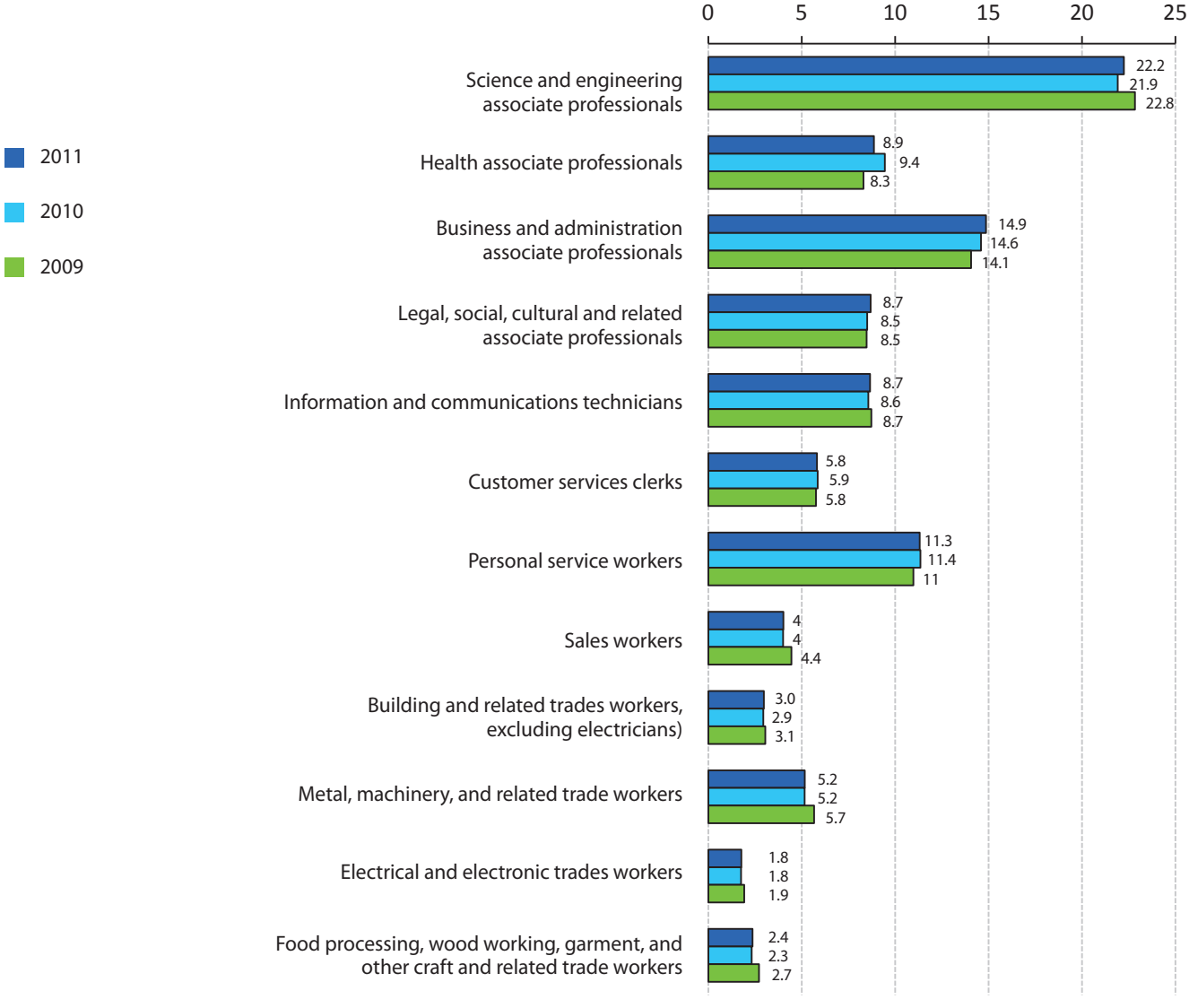
maker, weaver/knitter, blacksmith, coal and ore processing technician, circus actor, industrial and prospecting driller, and chemical processing plant operator (although increases above 10).[60]

The dominant segment of technicians of various specialties among the students of the investigated schools was mentioned slightly earlier. This group can be identified primarily with science and engineering associate professionals – the category that has long remained the most numerous (Chart 4.3).[61] Generally, in the groups of individual courses of education, no changes in the relative number of students are visible. Compared to 2010, there was a slight increase (by 0.3 percentage point) in the percentage proportion of students among science and engineering associate professionals, and business and administration professionals, and a decrease by 0.5 percentage points in the proportion of health associate professionals. Referring the results of the March 2011 census to the data from 2009, it is visible that a relative increase in the number of students in the (quantitatively) second category (business and administration associate professionals) is of lasting nature.

Chart 4.3.

Comparison of the number of students participating in different courses in vocational schools in 2009–2011 (data in %, N_{2011}= 1099025, N_{2010}=1161593, N_{2009}=1022878)



Source: Own study based on the Educational Information System (SIO).

[60] Concerns only the schools that ran a given course in both in 2010 and in 2011

[61] The categories which did not exceed 1% throughout the period analysed were removed from the chart.

Dynamic of changes in upper secondary vocational education

Vocational training above the lower secondary school follows the same pattern (with small divergences) in the breakdown into regions: strongly dominant is the training of technicians and associate professionals, with training in occupations related with personal services and sales, industrial workers and craftspeople (skilled workers) and clerical staff (Table 4.5) ranking below. Changes over time are small, even though visible in certain categories, e.g. a relative increase in the category of educated technicians and clerical staff, and a drop in the category of skilled workers in Dolnośląskie Region, or a relative, permanent increase in the category of educated employees of personal services and salespeople in the Małopolskie, Mazowieckie and Pomorskie regions.

Table 4.5.

Relative changes (in %) in vocational education in Poland in 2009–2011, broken down by ISCO-08 major groups (with the total number of students educated in the given year in each region in brackets)

Region	Year	ASSO	CLER	SERV	AGRI	SKILL	OPER	UNSK	Total
Dolnośląskie	2011 (73279)	62.4	9	15.4	0.2	12.6	0.3	0.1	100
	2010 (80038)	62	8.5	15.7	0.3	13.1	0.3	0.1	100
	2009 (66833)	60.8	7.8	15.6	0.4	15.1	0.3	0.1	100
Kujawsko-pomorskie	2011 (67414)	61.2	5.2	18.5	0.4	13.6	1	0.1	100
	2010 (70850)	60.3	5.5	18.9	0.6	13.6	0.9	0.1	100
	2009 (60567)	60.6	4.9	17.7	0.8	14.7	1.1	0.1	100
Lubelskie	2011 (63999)	64.5	6.6	16.8	0.5	11.2	0.3	0.0	100
	2010 (67770)	64.3	6.5	16.9	0.7	11.2	0.5	0.0	100
	2009 (59167)	64	5.9	16.9	0.8	11.7	0.6	0.0	100
Lubuskie	2011 (30908)	66.1	6.1	13.9	0.2	13.5	0.1	0.1	100
	2010 (33225)	66.6	6	14.2	0.2	12.9	0.1	0.1	100
	2009 (29119)	65.9	6.1	14.2	0.2	13.5	0.1	0.1	100
Łódzkie	2011 (67880)	69.6	5.5	13.4	0.2	10.5	0.7	0.1	100
	2010 (70715)	68.9	5.6	13.9	0.3	10.5	0.7	0.1	100
	2009 (60890)	68.2	5.2	13.5	0.4	12	0.6	0.1	100
Małopolskie	2011 (104029)	58.9	8.8	17.9	0.2	13.7	0.4	0.1	100
	2010 (106636)	59.3	8.8	17.6	0.4	13.5	0.4	0.1	100
	2009 (97020)	58.5	8.3	17.5	0.5	14.7	0.5	0.1	100
Mazowieckie	2011 (116400)	64.9	6.8	16.9	0.3	10.7	0.5	0.1	100
	2010 (123387)	64.8	6.8	16.9	0.6	10.4	0.5	0.1	100
	2009 (108364)	64.2	6.3	16.7	0.6	11.5	0.5	0.1	100
Opolskie	2011 (29205)	63.8	5.8	14.3	0.1	15.5	0.3	0.1	100
	2010 (30939)	64.5	5.6	14	0.2	15.3	0.3	0.1	100
	2009 (28576)	62.6	5.4	14.3	0.1	17.2	0.3	0.1	100
Podkarpackie	2011 (67195)	63.4	4.9	16.8	0.1	14.1	0.7	0.1	100
	2010 (70400)	62.8	5.1	17.1	0.2	14.2	0.6	0.1	100
	2009 (67157)	62.2	4.9	17	0.2	14.9	0.7	0.1	100
Podlaskie	2011 (38609)	70.8	7.4	12	0.4	8.7	0.6	0.1	100
	2010 (41032)	69.8	7.8	12.7	0.7	8.5	0.6	0.1	100
	2009 (34715)	69.6	6.6	11.7	0.7	10.6	0.7	0.0	100
Pomorskie	2011 (68522)	58.1	8.6	19.3	0.2	13.4	0.2	0.2	100
	2010 (73092)	58	8.6	19.3	0.3	13.4	0.2	0.2	100
	2009 (62224)	57.8	8.3	19.1	0.4	13.9	0.3	0.1	100
Śląskie	2011 (136720)	65.6	6.5	16.7	0.1	10	1	0.1	100
	2010 (144340)	65.2	6.7	16.5	0.1	10.1	1.2	0.1	100
	2009 (125925)	64.7	6.1	16.9	0.1	11.1	0.9	0.1	100

Świętokrzyskie	2011 (40863)	65.6	8.8	13.4	0.02	11.8	0.4	0.0	100
	2010 (42145)	64	8.6	14.7	0.4	11.8	0.4	0.0	100
	2009 (38684)	64	8.6	13.7	0.6	12.8	0.4	0.0	100
Warmińsko-mazurskie	2011 (42990)	58.5	8.5	18.5	0.1	13.7	0.5	0.1	100
	2010 (47303)	57.8	10.6	17.6	0.5	12.9	0.5	0.1	100
	2009 (40486)	57.3	10.3	17.2	0.6	13.8	0.6	0.1	100
Wielkopolskie	2011 (105327)	61	6.1	16.5	0.5	15.5	0.5	0.1	100
	2010 (111394)	60.8	6.2	16.7	0.6	15.1	0.5	0.1	100
	2009 (101695)	59.9	5.8	16.8	0.7	16.3	0.6	0.1	100
Zachodnio-pomorskie	2011 (45685)	63.5	8.1	16	0.2	11.8	0.2	0.2	100
	2010 (48327)	63.6	8.4	15.6	0.2	11.8	0.2	0.2	100
	2009 (41456)	62.4	7.8	15.8	0.1	13.3	0.3	0.2	100
Total	2011 (1099025)	63.3	7	16.4	0.2	12.4	0.5	0.1	100
	2010 (1161593)	63	7.1	16.5	0.4	12.3	0.6	0.1	100
	2009 (1022878)	62.4	6.7	16.4	0.5	13.5	0.6	0.1	100

Source: Own study based on the Educational Information System (SIO).

Worth emphasising are the small differences characteristic of clusters of regions. For example, when it comes to the share of educated technicians, their number is relatively smallest, in the Małopolskie, Pomorskie and Warmińsko-mazurskie regions, and largest in the Podlaskie and Łódzkie. This is related to the relatively larger number of students educated in services and sales in the first three regions, and smaller in the latter two. In the Kujawsko-Pomorskie, Lubuskie, Łódzkie, Opolskie, and Podkarpackie regions, but also – interestingly – in Śląskie and Wielkopolskie, there is a relatively small participation of students in the category of clerical workers.

Changes in the number of institutions of higher education and numbers of students in individual types of schools

The demographic low mentioned in the introduction generates significant consequences for institutions of higher education. As far as the number of schools has as yet not been drastically reduced, the visible decrease in the number of students (by over 50,000 between 2009 and 2010) may provide a barrier for further development if not for the existence of some institutions of higher education. The decrease is the more acute that it increases from year to year, for which reason – despite the growing values of the education ratio at the higher level – it is expected that the number of candidates to higher education will continue to decrease. To provide a fuller characteristics of the processes taking place in the Polish academic sector, two questions need asking:

1. Which of the schools are to a greater degree vulnerable to consequences resulting from the demographic low, and which should face it without major problems?
2. What strategies are used by institutions of higher education to survive in the educational market despite the demographic low?

First, one needs to pay attention to the fact that nominally in 2009 and 2010,[62] the largest number of students were lost by academies of economics[63] (over 30,000 students) and the so-called other schools (20,000 students), whose number is, however, dominated by higher schools of vocational education and non-public schools. Responsible for the drop of the number of students in academies of economics are, however, mostly the non-public academies counted into the category; public ones coped slightly better in 2010. A large number of students (8,000) were lost by universities and teacher education schools (4,300).

[62] The trend described is corroborated by the data, accounting for a longer time perspective.

[63] Division in line with the classification proposed by the Central Statistical Office (GUS).

Table 4.6.

Changes in number of individual types of schools, and in numbers of students educated in those schools

Changes in the number of institutions of higher education and numbers of students

School type	Schools		Students (in thousands)	
	2009/2010	2010/2011	2009/2010	2010/2011
Total	461	460	1 900.00	1 841.30
Universities*	19	19	535.6	526.8
Technical universities	23	23	317.5	318.7
Agricultural academies	7	7	81.2	80.5
Academies of economics	80	79	310	278.4
Teacher education schools	18	18	106.8	102.5
Medical universities/academies	9	9	60	62
Merchant marine academies	2	2	10	10.4
Academies of physical education	6	6	28.2	27.6
Fine arts academies	21	22	16.1	16.4
Theological academies	15	14	7.5	6.8
Academies of the Ministry of National Defence and of the Ministry of Interior and Administration	7	7	19.8	23.7
Other schools	254	254	407.4	387.4

* Division into school types in line with GUS classification (the classification was constructed a priori for the needs of a study of institutions of higher education, and was later consulted with representatives of the institutions).

Source: (GUS 2011).

To provide a picture of the volume of losses incurred by institutions of higher education, a demonstration of which of individual types of institutions lost the largest percentage, losing in this way market stability, is more significant than showing the decrease in the number of students. Examining institutions of higher education from this perspective, we notice that the worst losers due to the demographic crisis are the minor schools and academies of economics with an approximately 10% decrease in the number of students (with the provision that the non-public schools suffered most). For the universities, the nominally major loss in the number of students proved insignificant as far as percentages go (slightly over 1.5%), which corroborated the general conviction that at the time of the demographic rises, the power of the universities is in their size.

Moreover, we can single out schools that did not find the demographic low an obstacle in growth. Their number includes mostly schools of narrow specialisation (of the Ministry of National Defence and the Ministry of Interior and Administration with a growth of approximately 20%, and medical academies – of over 5%). A slight increase (below 1% of students) was also registered at technical schools, yet this growth, which we are going to focus on later, is of specific nature.

Chart 4.4 clearly shows that the demographic low provides a decidedly greater threat for extramural studies than for day studies. It also points clearly to the specific strategy of public higher education institutions, which can be termed the "strategy of shifting the costs" which will be described below. In fact, the number of students of extramural studies decreased in every school. Taking into account the decrease in the percentage of students in extramural studies, we see that between 2009 and 2010 it was most acute in:

- physical academies (over 10%)
- academies of economics (over 13%)
- universities, and merchant maritime academies (over 8%).

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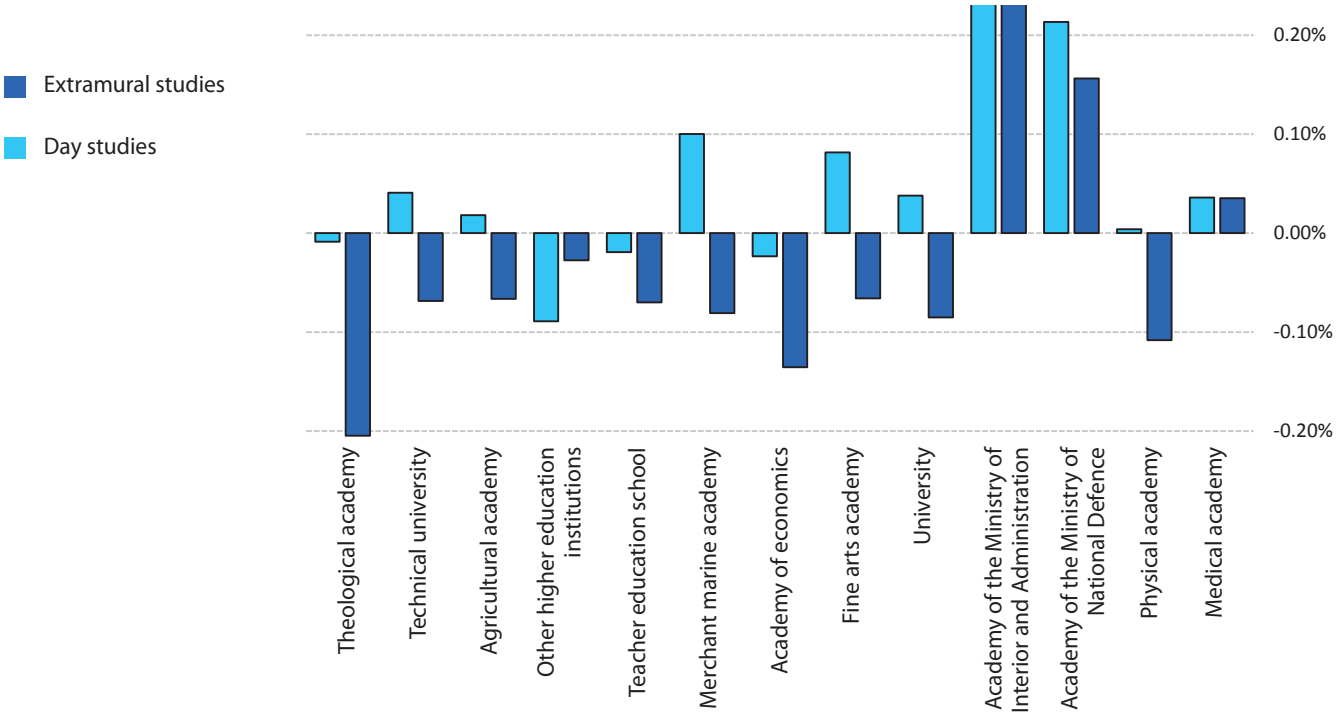
Chart 4.4.

Percentage change in the number of students learning in individual types of schools (2010 as compared to 2009)



Source: Own calculations based on GUS.

Public institutions tried to compensate the loss in the number of candidates to extramural studies by increasing the enrolment (often combined with the expansion of the types of education offered) in day studies. Thus, despite a huge decrease in the number of students of extramural studies educated at universities (by over 17,000), a growth in the number of day students (by approximately 14,000) was recorded; even though not fully compensating the loss, this fact significantly alleviates it. Interestingly, similar strategies were adopted also by other public schools, including technical universities (a drop in the number of students of extramural studies by over 6000, with parallel increase in the number of day studies students by over 8000), agricultural academies (a drop in the number of students of extramural studies by over 1700 people with a parallel increase in the number of day studies by over 900 people).

Concluding, one may say that public institutions of higher education use the strategy of shifting costs of education from the individual consumer to the state,[64] which is a most rational strategy, as it is safer for the institution. At the same time, it is in line with the course of educational choices of contemporary students (preferred daytime mode). The strategy seems to be more fool-proof, as first, the state has so far guaranteed solvency better than individuals. Secondly, in an educational market where the quality of the product (the value of the degree) has still been poorly investigated, it is easier and more safer to compete by price than by quality. Thirdly, with a relatively high unemployment among the young and their low remuneration, day studies seem to be an attractive alternative choice when compared with extramural studies combined with employment.[65]

At the same time, the strategy mentioned above may generate certain social and economic consequences that are worth mentioning:

[64] Interestingly, the strategy has full support of the state that (e.g. through the system of commissioned courses) pays the students for agreeing to consume a product that they are going to get for free anyway.

[65] Worth mentioning is the amendment to the Act Law on higher education that introduces a cap for increasing the number of day students in public institutions. Increasing the number of day students by 2% or more requires consent of the minister.

1. Such a situation may require increasing the outlay on education at day studies, increasing in this way relatively the burden on the state budget (due to an increase in the number of day students), which theoretically should be diminishing in the circumstances of the demographic low.
2. With the education ratio continuing to grow in higher education, the already low selection of candidates to academic studies diminishes, which in turn can influence the deterioration of quality of graduates of day studies.
3. Situations in which students would be ready to pay for education, and will not pay for it as they will receive it for free emerge.
4. It may have a demotivating impact on upper secondary students (as the risk of failing enrolment to day studies used to be a good motivation to learn).
5. It may fully form a profile of extramural studies as ones addressed mostly to working people eager to improve their qualifications, and not to the people who – due to the poor results of secondary school final examinations (*matura*) – must forget about day studies.

An important question which unfortunately cannot be fully answered on the grounds of the data from the GUS concerns the consequences of assuming the strategy described above, based on expanding enrolment to day studies. One should consider at whose expense day courses are expanded. At this stage, we can put forth two unfounded hypotheses that nevertheless are worth testing (e.g. on the grounds of recruitment data):[66]

1. Day courses at public institutions of higher education are expanded at the expense of (day and extramural) courses in non-public institutions.
2. Day courses at public institutions of higher education are expanded at the expense of extramural courses in these very institutions.[67]

Both the first and the second hypotheses seem probable and supported by data that show that the demographic low had strongest impact on the schools that GUS classifies as "other" (higher schools of vocational education and non-public schools) and at academies of economics: a group that is dominated by non-public schools.[68] In these schools, both the number of day students and extramural students dropped between 2009 and 2010.

An interesting case are technical universities, where the number of students grew insignificantly between 2009 and 2010. The increase was caused by a major increase (by approximately 9000) in the number of day students with a parallel major drop in the number of extramural students. The statistics quoted above imply a question: whether this growth did not take place at the cost of extramural studies at the same institution, which increased enrolment to day studies? Have the so-called commissioned courses, frequently offered in the day study mode, indeed increased the preference to study technical courses, and not a preference to enter the same courses yet "for free"? The questions asked above, even though they go beyond the scope of the answer we could provide on the grounds of the data found in GUS, seem to be significant for the construction of public policies, and hence are worthy of our further, in-depth analysis.

The institutions that were losing both day and extramural students are teacher education schools; visible in the case is the slow saturation of the market with paid studies and a drop in the demand for such a range of services, which is most probably caused by the end of the wave of mass upgrading of qualifications in obligatory education.

The picture of changes taking place in the academic sector drawn above is worth complementing with a description of individual recruitment strategies dominant in individual schools, and also – on the grounds of the strategies – with an attempt at an empirical classification of schools into relatively homogenous

[66] Necessary to test the hypotheses are data on individuals, describing the choices of individual students.

[67] It is worth checking whether the expansion of education offered at day studies does not take place at the expense of enrolments to extramural studies. In other words, whether the state does not pay for something that an individual consumer would be ready to pay, by increasing the enrolment to day studies.

[68] Public academies of economics use a strategy similar to the strategy of universities described here: they try to compensate the decreases in enrolment in extramural studies by increasing enrolment in day studies.

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groups. To achieve that, a hierarchical clustering analysis[69] was performed with the use of two variables that describe changes in enrolment to individual types of studies. These variables are the difference in the number of students educated at day studies (between 2009 and 2010) and the difference in the number of students educated at extramural studies (between 2009 and 2010).

Table B2 in the Appendix allows distinguishing three major types of schools, which were later subdivided into six further categories. These groups are:

1. The schools that were successful in enrolment mostly thanks to extramural courses (developing the range of extramural courses).

   The schools usually lost some day students, yet gained far more in extramural studies. These are in most cases non-public institutions of average size, with seats in main academic centres, and other major cities.

2. Schools that were successful in enrolment mostly thanks to day courses (developing the range of day courses).

   In most cases, these schools lost many students of extramural studies, yet compensated that loss by recruiting a greater number of day students than the number of all students lost. Therefore, these schools can be said to have been successful in the market by providing a range of services offered to candidates to day studies.

   The schools can be divided into two segments:

   A. Schools where the increase in the number of day students (and the drop in extramural) is high (increase by over 2000, decrease by over 1500). This group includes major public institutions (universities) with seats in major academic centres, for example, Kraków, Warsaw, and Łódź.
   B. Schools where the increase in the number of day students (and the drop in extramural) is somewhat smaller (increase by approximately 1000 students, decrease by approximately 300). These schools are not always able to compensate fully the drop in the number of extramural students. This group includes public schools of average or large size (mostly technical and universities), with seats in main academic centres, e.g. Kraków, Warsaw and Łódź.

3. Schools that lose students (the so-called regressive profile).

   These schools find it difficult to face the economic crisis, and in 2010 were losing both day and extramural students. These schools can be divided into two groups:

   A. Schools where the drop in the number of students proved significant, and their loss may result in negative consequences. Two subgroups can be distinguished in this group:
      i. Larger schools (over 10,000 students) which nominally lost a greater number of students (above 2000). This group includes both major non-public schools and public universities (in most cases from outside the main academic centres listed above)
      ii. Smaller schools (with a few thousand students, no more than 11,000), which lost nominally fewer students (more than a few hundred). This group includes mostly the so-called wyższe szkoły (both public and non-public), yet also smaller universities and technical schools (and from outside the major academic centres)
   B. Schools where the nominal drop in the number of students was not as significant as in the first case. This group includes mostly non-public institutions of higher education, and small public schools. Characteristic of this segment is its large variety, hence its full diagnosis – going far beyond the scope of this chapter – is worth devoting a separate study.

[69] Ward's agglomeration method, squared Euclidean distance.

Educational choices of candidates to studies – changes in preferences in courses of education

With the ways of operation of institutions of higher education when threatened with a demographic low described above, and also with the information about the preferences of employers concerning the education of potential staff in mind, let us take a look at changes in educational choices made by candidates to academic education that took place between 2009 and 2010.

These changes can be examined from two perspectives. First, analysing preferences of potential students, visible in their educational choices (absolute number of candidates to the given course), and secondly – by checking the difference between the number of students in the first year of studies in the specific course between 2009 and 2010. As far as the values of the indexes in the first group depend only on the actual preferences of candidates to education (corrected by their assessment of chances of being admitted to the given course), the second group of indicators belongs both to the preferences of potential students and strategies of enrolment that dominate in the institutions (an increase in the number of students, or no change). Therefore, we can consider an increase of the enrolment or lack of change of the enrolment a market success of the institution, yet if the enrolment decreased, we should treat it as a failure of the school.[70]

As GUS points out, the number of students enrolled to the first year of studies decreases, both in the case of day and extramural studies, with the total decrease by 31,300 (6.6%) students (GUS 2011). Much like in 2009, most people studied courses in economics and administration, social, and teacher training and education science, even though the interests in these courses diminishes from year to year. On the other hand, the popularity of courses in security, medicine, architecture and building, and engineering and technology is on the rise. (Ibidem.)

The charts presented below clearly show that preferences of candidates to academic education are fairly stable, although this does not mean that one cannot observe any change here between 2009 and 2010; the interest in courses in teacher training and education science, psychology, administration, tourism and recreation, sociology, international relations, culture sciences, and Polish philology – i.e. courses that belong mostly to humanities and social sciences – diminished in the period in question. The decrease of interest described above is in line with the intentions of the Ministry of Science and Higher Education, which tries to encourage young people to follow courses in sciences (including technical sciences), partially by discouraging them from studying humanities and social sciences.

As the chart below shows, there is a slow rise in the interest in technical courses, including construction, managing and engineering production, mechanical engineering and machine building, geodesy and cartography (that have topped popularity rankings for years) but also automatics and robotics (relatively new courses).

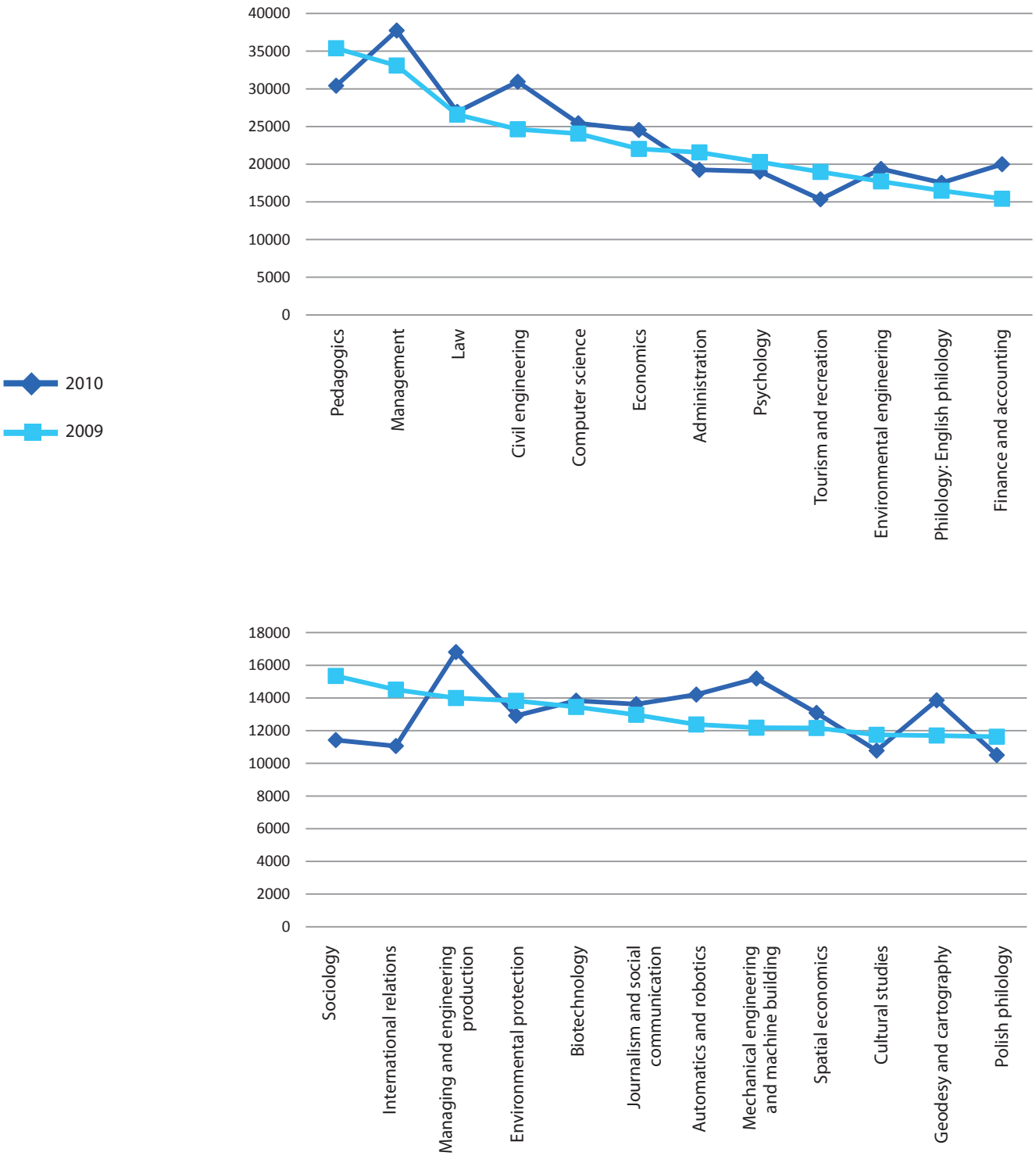
Despite the increase in technical courses, and the drop of the demand for social sciences and humanities, the students' readiness to study economic courses, including management, economics, finances and accounting, and spatial management is increasing. It is possible to hypothesise that these courses provide an attractive alternative for the people who do not see themselves studying typically technical courses, and at the same time are aware of the poor position of graduates of social sciences and humanities in the market.[71]

[70] This decision is of significant analytical consequence. Instead of a quantitative variable (a change in the number of students between the year X and X-1, we will use a dichotomous variable (a drop in the number of students vs. stabilisation or increase in the number of students). Such a procedure will make it possible to classify into the preferred courses not only the ones where enrolment increased, but also the ones where enrolment is stable (despite the large number of candidates per place).

[71] It is worth mentioning that despite an intensive debate in the media, the situation is actually not fully determined.

Chart 4.5.

The most popular courses at first-cycle day studies and unified master degree courses by the total number of candidates (10,000 and more)



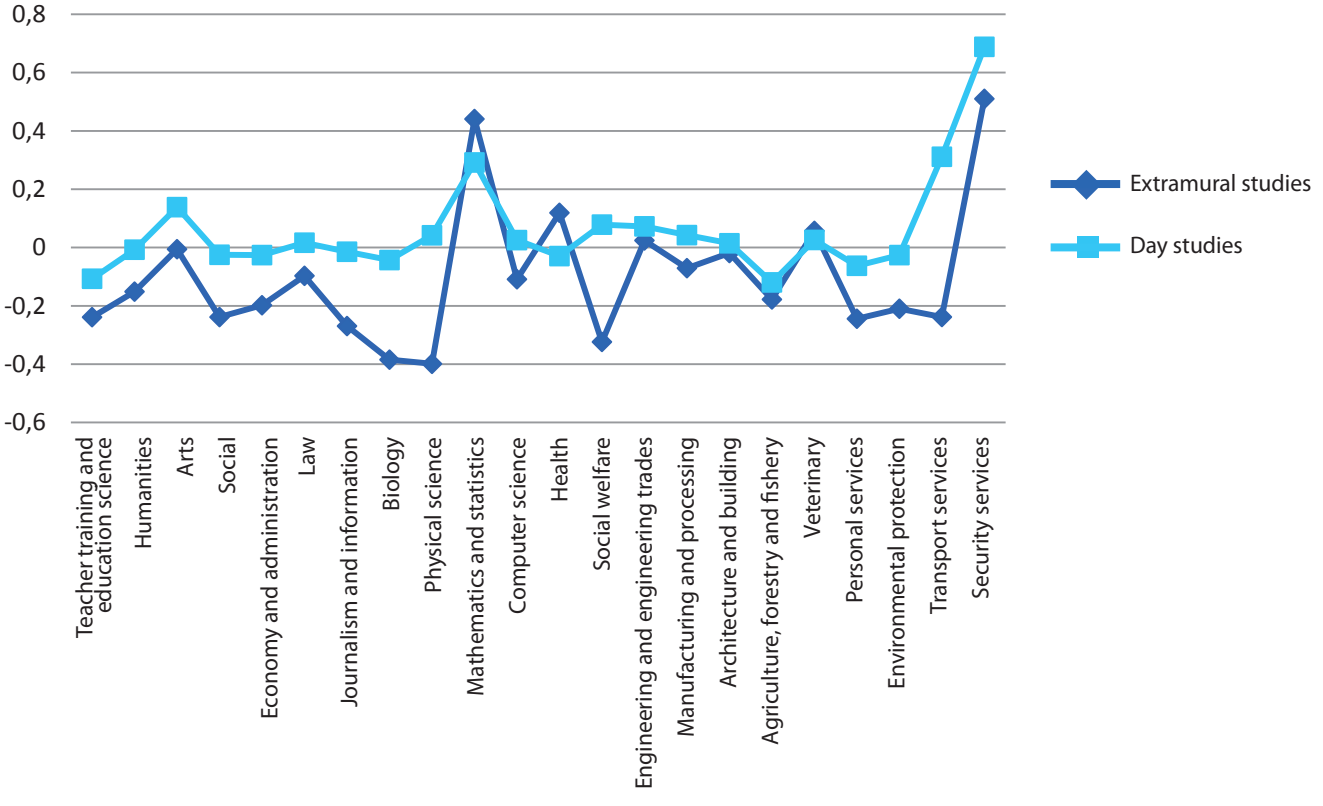
Source: Own calculations based on MNiSW, information about results of recruitment in the academic year 2009/2010 (and 2010/2011) in institutions of higher education supervised by the minister of science and higher education, and in non-public institutions of higher education.

Presented below is a listing of changes (between 2009 and 2010) in the percentage of students in first years of studies in individual groups of courses in day and extramural studies. Examination of Chart 4.6 allows to formulate a number of conclusions worth accounting for in further considerations:

1. The trends concerning enrolment to individual courses of education in day and extramural studies are very similar. Growing most have been enrolments (measured in the percentage growth) in the mathematical and statistical, security, artistic, medical and veterinary groups.
2. The increase in enrolment (in %) is as a rule greater in day studies, and the decrease (also in %) – in extramural studies (following the strategy of shifting costs of education, described above), with the exception of two specific groups of courses experiencing a stronger rising trend in extramural studies, namely, mathematics and statistics,[72] and medical.
3. The largest percentage drops both in day and extramural studies are visible in the following groups of courses: teacher training and education science and agriculture, forestry and fishery.
4. Large drops in percentages of students in extramural studies, combined with percentage increases in the number of day students are characteristic of the following groups: transport services and social welfare.
5. Drops in the percentages of extramural students, combined with stabilisation or a slight decrease in the number of day students are characteristic of the following groups: humanities, social sciences, economics and administration, journalism and information, biology, physical sciences, personal services, and environmental protection.

Chart 4.6.

Percentage change (2010 to 2009) in the number of students in the first year of higher education (first-cycle studies (vocational) and unified master degree)



Source: Own calculations based on GUS.

[72] In the case of this group, the sudden growth of the percentage has little in common with a nominal increase. The courses that belong to the mathematics and statistics group provide education for the smallest number of students in all the groups.

Upper secondary and higher schools at the time of the demographic low

The actual level of interest in individual courses of education is portrayed well not as much by the change in terms of percentages, but the nominal change in the number of people educated in the first year of studies in individual courses. The largest quantitative increases among the students of the first year (over 2000 extra people) were recorded in the following courses: medical (extramural studies), engineering and technology (day studies), and security services (both day and extramural studies).

Yet growing numbers of students were not recorded in all the courses of medical studies. The extramural studies that followed the strongest falling tendency (with the number of students decreasing by nearly 1500) was physiotherapy. Most popular among extramural students was nursing, a course that attracted over 5000 students more in its first year than in 2009, and medical rescue with nearly 800 students more. Responsible for the increase in the number of first-year students described here were mostly non-public institutions of education (including academies of economics, teacher training, and the so-called "other"). It can be said therefore that the courses from the medical group mentioned here were identified by non-public institutions of higher education (in difficult position in the market) as potential niches, which will fill up the gaps caused by the demographic low. A similar niche are all the courses in security services (e.g. national security, internal security, public security), which have been fashionable in the recent years, and which actually guarantee the institutions maximum enrolments.

Among the courses in the economics and administration group, which experienced a decrease in the number of first-year students (2010, compared to 2009) one needs to mention primarily administration and management, in whose case the number of students beginning education in 2010 was significantly smaller than in 2009. In the context of the large interest in studies in management and administration, such conclusions seem shocking, until we have verified who actually lost most. Candidates were lost in most cases by non-public and small schools. It can therefore be guessed that the increased interest in management (number of candidates greater than in 2009) can result from two reasons. First, students may be interested in studying management or administration, yet in specific (public) institutions of higher education, and secondly – students may consider courses such as management and marketing a "second-tier or third-tier" choice, to have an alternative option should they fail to be admitted to the preferred course.[73]

Summary

The goal behind this chapter was to describe the changes taking place in education above the lower secondary level and in higher education in 2009–2011. The starting point was the description of the existing structure of schools at levels higher than lower secondary, and institutions of higher education in the aspect of changes of demographic, economic, and political nature, with a special focus on the demographic low. Moreover, we were also interested in what the preferences of secondary and academic students are in such circumstances, especially concerning courses of education. A large fragment of the considerations consists of the description of strategies that allow institutions of higher education survival in the times difficult for the educational market.

As far as education at upper secondary levels is concerned, no major changes in the structure of schools have been observed in the period in question. At the same time, there are no major changes concerning the proportion of students educated in the individual types of schools: the largest number of students (including the supplementary general secondary schools – more than 40%) attend general secondary schools. Technical secondary schools are the second category in terms of numbers. Altogether approximately 2/3 of the total number of upper secondary students are educated in general and technical secondary schools. The number of students of basic vocational schools remains at a relatively stable level of 11%. With the increasing number of students of general secondary schools and a generally diminishing number of students, this is probably a harbinger of imminent changes in the number (a drop) and territorial distribution of such schools, which should remain especially wherever the education of the graduates answers the needs of the local labour market. As far as preferred courses of education are concerned, there

[73] Unfortunately, the Ministry of Science and Higher Education does not publish information which courses were selected as the first choice.

is an unflagging popularity (measured in the number of students) of technical courses, and the growing popularity of courses related to administration, business, and services. Remaining at a low level that does not yield to major fluctuations is the percentage proportion of students of worker occupations. The drop in the number of students occurs most frequently in the schools affected by systemic change decisions, whether concerning financing (post-secondary schools) or termination (supplementary general and supplementary technical schools). In this case, the reasons for the drop in the number of students may be perceived in institutional solutions only reinforced with the demographic trend. It is only the harbinger of deeper changes in the sector of secondary education above the lower secondary level, and the readers should not be misled by the stability of the situation in the period in question, as presented above. Besides the changes mentioned earlier, the school year 2012/2013 shall bring reform of vocational education at levels higher than lower secondary, based on the new core curriculum defining effects of education in the form of qualifications. The potentially complete assessment of the impact of the overlapping institutional and demographic factors is therefore, the question of the coming few years.

The situation in higher education is somewhat different. Here, the demographic low provides a realistic threat already at the moment, especially for the existence of extramural studies. In these circumstances, a specific strategy of public institutions of higher education, which can be termed "the strategy of shifting costs" can be observed. Public institutions tried to compensate the plunge in the number of candidates to extramural studies by increasing enrolment (often combined with augmenting the range of courses offered) in day studies. The difference between public and non-public institutions mentioned above is not the only one. The demographic low influences different types of institutions of higher education in various ways. Some are successful in recruitment, and some are in regression (losing students). The first group includes large public institutions (universities), with seats in main academic centres, including Kraków, Warsaw, and Łódź (visible here is a major increase in day studies and a decrease in extramural studies) and the remaining medium-sized and large public institutions (technical schools, universities). The regressive schools include in fact all the remaining schools losing various numbers of students because of the demographic low. Against this background, an exception are the schools with narrow specialisation (the schools of the Ministry of National Defence and the Ministry of Interior and Administration, and medical academies).

As far as preferences of candidates are concerned, they are relatively stable, even though – when 2010 is compared to 2009 – the interest in the courses in humanities and social sciences diminished. A slow increase in the interest in technical courses, including construction, managing and engineering production, mechanical engineering and machine building, geodesy and cartography, and automatics and robotics is recorded. At the same time, despite an increase in the interest in technical courses, and a drop in demand for social sciences and humanities, there is also an increased tendency for students to opt for education in economics.

Appendix

Table B1.

Nominal reduction in the number of students of individual types of upper secondary and higher level schools in Polish regions in 2011, as compared to 2010 (N= 13912)

Region	GenSec	GenSecSup	LProf	PostSec	Tech	TechSup	BVS	ArtSch	Coll	Total
Dolnośląskie	-1326	-1054	-167	-1814	-963	-454	-806	-201	-96	-6881
Kujawsko-pomorskie	-854	-397	5	-1765	-811	-662	-609	-53	-70	-5216
Lubelskie	-655	-435	-103	-2085	-695	-569	-326	-180	-72	-5120
Lubuskie	-584	-637	-19	-1420	-276	-162	-208	-63	n.d.	-3369
Łódzkie	-1202	-440	-62	-1203	-925	-396	-307	-130	-85	-4750
Małopolskie	-1038	-1106	-36	-1692	-989	-841	-233	-323	-9	-6267
Mazowieckie	-2271	-1044	-197	-2398	-1649	-1025	-565	-467	-148	-9764
Opolskie	-500	-416	-254	-1042	-265	-177	-180	-134	-27	-2995
Podkarpackie	-550	-771	-14	-1632	-403	-302	-224	-116	-102	-4114
Podlaskie	-628	-380	-4	-1871	-524	-183	-97	-39	21	-3705
Pomorskie	-1319	-1372	-23	-2001	-640	-547	-718	-102	-9	-6731
Śląskie	-3213	-2174	-194	-3787	-1244	-1216	-1038	-141	-246	-13253
Świętokrzyskie	-521	-194	21	-663	-480	-371	-132	-3	-17	-2360
Warmińsko-mazurskie	-1022	-1164	-65	-2377	-528	-355	-121	-44	-28	-5704
Wielkopolskie	-2193	-1683	-271	-3313	-962	-1419	-561	-93	-107	-10602
Zachodniopomorskie	-1515	-589	-43	-1802	-597	-121	-515	-136	-36	-5354
Total	-19391	-13856	-1426	-30865	-11951	-8800	-6640	-2225	-1031	-96185

Source: Own study based on the Educational Information System (SIO).

Table B2.

Appendix

Characteristics of selected school segments

	Statistics	Difference (day)	Difference (extramural)	Difference total	Difference (day) – Year 1	All students
EXTRAMURAL PROFILE	Average	27	1188	1215	-14	4104
	Median	-5	1086	1020	0	3248
	Minimum	-165	679	576	-140	155
	Maximum	284*	2407	2438	103	11268
	CLUSTER 1. Warszawa (2), Gdańsk (1), Poznań (2), other centre (4); academies of economics (2), other academic schools (7)					
DAY-STUDY PROFILE (1)	Average	2417	-1492	924	815	49392
	Median	2307	-1689	618	857	45648
	Minimum	2040	-2183	-143	392	42346
	Maximum	2905	-606	2299	1198	60183
	CLUSTER 2. Warszawa (1), Kraków (1), Łódź (1); universities (3)					
DAY-STUDY PROFILE (2)	Average	983	-421	562	278	21705
	Median	980	-284	793	264	19837
	Minimum	514	-1545	-786	-66	3221.00**
	Maximum	1793	773	1936	611	50672.00
	CLUSTER 3. Warszawa (3), Gdańsk (2), Katowice (1), Kraków (3), Poznań (2), other centre (5); academy of the Ministry of National Defence, universities (6), academy of economics, teacher education school, technical university (7)					
REGRESSIVE PROFILE (I)	Average	-158	-1826	-1985	-54	16171
	Median	-124	-1735	-2015	-77	12398
	Minimum	-323	-2327	-2379	-335	1994
	Maximum	-52	-1466	-1603	270	38828
	CLUSTER 4. Warszawa (2), Lublin (1), Łódź (2), Wrocław (1), other centre (2); universities (3), academies of economics (2), other academic schools (2), technical university					
REGRESSIVE PROFILE (II)	Average	-13	-437	-450	7	6319
	Median	-27	-382	-387	0	4142
	Minimum	-593	-1221	-1582	-256	366
	Maximum	420	-141	217	264	37846
	CLUSTER 5. Warszawa (19), Gdańsk (2), Katowice (4), Kraków (6), Lublin (4), Łódź (6), Poznań (10), Wrocław (3), other centres (52); medical academy, physical academies (4), academy of the Ministry of National Defence, university (5), academies of economics (29), merchant marine academies (2), teacher education schools (6), agricultural academies (4), technical universities (9), theological academy, other academic schools (44)					
REGRESSIVE PROFILE (III)	Average	-18	28	10	-15	2221
	Median	-13	-2	-13	-3	1078
	Minimum	-992	-219	-992	-416	42
	Maximum	463	935	848	339	33515
	CLUSTER 6. Warszawa (50), Gdańsk (8), Katowice (10), Kraków (10), Lublin (4), Łódź (12), Poznań (12), Wrocław (21), other centres (139); medical academies (8), physical academies (2), academies of the Ministry of National Defence (3), academies of the Ministry of Interior and Administration (2), universities (2), fine arts academies (21), academies of economics (39), teacher education schools (10), agricultural academies (3), technical universities (6), theological academies (10), other academic schools (160)					

* Maximum value is the result of one school launching 2 day-study courses in 2010.

** With one exception, institutions in this group are of average or large size.

Source: Own calculations based on GUS.

Methodological appendix

The appendix presents concisely the most important assumptions concerning the studies, beginning with the description of the procedure of conducting individual research modules (studies the employers, job offers, population, and training firms and institutions), via the presentation of the most important notions used throughout the entire project (competencies, qualifications, occupations) to the manner of presenting some data (uniform for all the modules). We do hope that becoming familiar with the description presented below will help to understand the conclusions presented, and also to clear doubts that may arise from the definitions.

Conducting the studies

Employer studies

The studies with employers were conducted in the spring of 2011, from 29th March to 29th June. To compare, the studies of the first round were conducted from 17th August to 10th December 2010. Therefore, the space between two rounds was roughly 6 months. The investigations were conducted by Millward Brown SMG/KRC. The study followed a multimode approach, which assumes simultaneous use of various ways of contact with the respondents: in person, over the phone, and over the Internet. The investigators used mostly telephone interviews, and 93% of results were collected in this way. The remaining interviews were conducted in the computer-assisted personal interview (CAPI: 5% of the results), and web interview CAWI (2% of all the results). All in all, during the second round of the study, 16,159 interviews with employers were conducted (compared to 15,841 interviews in the first round). The study covered employers, that is businesses currently operating in the market, i.e. the ones that during the field study employed at least one person. This excluded the self-employed from the population of respondents, a group covered by the studies conducted on a random sample of population. Moreover, excluded from the population were entities operating in a number of sections of the NACE (PKD 2007): agriculture, hunting, forestry and fishing, and also entire public administration and national defence, mandatory social insurance, households employing staff, households producing and providing services for own means, ex-territorial organisations and units, membership organisations and foundations, churches, denominations, unions, associations and other civic organisations, political parties, trade unions, employer organisations, organisations of economic and occupational authorities, and housing co-operatives and unions of agricultural producers. A careful study of businesses and institutions operating in these sectors and entities of these types would not be possible with the size of the sample assumed.

The list of the entities used for the drawing came from the REGON database verified with the use of other information concerning these entities, available from the Central Statistical Office (GUS). The use of REGON

in the capacity of a data source allowed to make a sample in line with assumptions concerning the target population, and ensuring appropriate quality of the results.

The sample used in the study, drawn from REGON, consisted of a panel sample (9,900 entities) from the first round of the study and the one drawn by the Statistical Office in Kraków for this round (36,704 entities). Before the drawing of the non-panel sample the largest entities in the sampling frame were excluded from the panel sample, that is:

- all the entities from the "1000 and over" employed subclass
- all the entities from the "250–999" employed subclass
- entities from the "50–249" employed subclass, of which 90% belonged to the "100–249" employed subclass..

The drawing of the entities to the non-panel sample was of the stratified non-proportional type: first with respect to the regions, where the same number (1500 entities in each) was drawn, secondly – although the selection applied was generally proportional in respect to the size of the entities (2–9, 10–49, and 50–249), the number of those that belong to the strata employing of up to 9 people was reduced by half. The number removed from the strata of micro-entities was proportionally distributed over the remaining strata. The sample was divided into main (24,000 entities) and five spare samples (with the total count of 12,704 entities). As the experience from the first round of the study taught, spares were necessary (the sample included records from outside the population: self-employed, non-existent companies, and duplicated records). Initially, the incorrect records reported by the Operator were replaced (additional sampling of records from the sampling frame), yet when the number began to approach 10% of the main sample (2995 records, of which 2136, from the 2–9 category), a decision was made to reach for the first spare sample. Worth mentioning is the fact of major churn within this segment of enterprises, which results in practical impossibility of using an up-to-date sampling frame for drawing. Due to difficulties in carrying out the project, studies began on all the spare samples. Additionally, for the sample of the largest entities the Operator additionally drew all (373) the entities from the EKD database (ones that belong to the approved population of the study) to complement the panel sample. Altogether, after the verification of the database and the supplements, the study sample consisted of 45,260 entities.

Study of job offers

The subject of the study in the job offers module were unique job offers, valid on 28th of March 2011 in the 16 regions (voivodeships) of Poland. The unique offer was construed as recruitment to an individual post, published on a specific date and present once per each ad. With the goals of the study in mind, excluded from the population thus defined were internship and traineeship offers for students of various levels, and also jobs offered abroad.

The job offers gathered, came from two publication sources:

- County Employment Offices (PUPs)
- www.careerjet.pl: a national online job brokerage portal (generator of links to ads placed in various sources). In 2011, 20,634 job offers were obtained; the job offers obtained were coded by two independent coders to ensure an appropriate quality of the process: thus prepared, the database provided the grounds for the studies.

Population studies

Population studies that included personal interviews (computer assisted (CAPI) or not (PAPI) were conducted from 22nd February to 11th July 2011. The people drawn were sent introductory letters, and after a specified period of time, the pollsters visited their places of residence. In case the interview could not be conducted, the pollster would arrange a different date with the respondent.

The population in question were people at working age, i.e. women aged from 18 to 59 and men aged from 18 to 64, residing in Poland at the time of the study. The contact data came from the PESEL (Polish Universal Electronic System for Registration of the Population) register. The drawing was of the stratified proportional type. The strata were based on the division into GUS subregions (66 subregions in the country), and nine town size classes (as used by GUS). Additionally, the stratification of the sample drawn included the distribution of genders and age cohorts for individual town size classes, independently for each region (voivodeship).

Altogether, 17,782 interviews were conducted in this round of the population study. The response rate in this round amounted to 56%. The most important reasons for the failure to conduct an interview were as follows: categorical refusal to participate in the study (13%), the person drawn moved out for a period exceeding three months (11%), and absence throughout the time of the study (5%).

Study of training firms and institutions

The second round of the study of training firms and institutions was conducted from 25th March to 29th June 2011. The studies used two ways of contacting the respondents: computer assisted telephone interview (CATI) and online questionnaire (CAWI). CATI made it possible to gather 4135 interviews (92%), and CAWI – 372. Altogether, **4507 interviews were conducted** in the study of training firms and institutions in 2011. The study was conducted by Millward Brown SMG/KRC.

Much like in the previous round of the study, it covered the firms and institutions that:

- run a form of activity that lies, according to NACE (PKD 2007), in the area of lifelong training of adults, including non-school forms of education in driver and pilot training, non-school forms of education not elsewhere classified, and teaching of foreign languages; after consultations with the representatives of the training community, firms and institutions whose activity encompasses consulting related to management were also included
- do not mention training and consulting as the main area of their work, yet declare provision of training services through appropriate entries in registers and databases for the training sector; among such registers were e.g. Rejestr Instytucji Szkoleniowych (RIS, literally: the register of training institutions) and the inwestycjawkadry.pl database managed by PARP
- confirmed that they conducted training or consulting work in the procedure of verification performed by phone or through online verification.

The grounds for building a sampling frame of training institutions by MB SMG/KRC were:

- a verified database of training institutions from the first round of the study
- data from the almanac of training firms
- newly acquired addresses of training firms from websites.

The original contact database that is the sampling frame of the study was composed of 18,007 records, and included items from the following sources:

1. Panel sample (from the first round of the study):
   a. Database 1: training firms with the largest potential (with the largest employment, and largest number of individual and corporate clients in 2009)
   b. Database 2: training firms with certain potential (smaller level of employment and smaller number of clients in 2009)
   c. Database 3: spare – training firms with small potential.
2. Random sample:
   a. Database 4: basic (contacts from the sampling frame from the 1st round of the study)
   b. Database 5: spare (contacts from the sampling frame from the 1st round of the study);
   c. Database 6: new contacts (from the almanac of training firms, and contacts obtained from websites).

The databases mentioned above were used for the drawing of two main samples: panel, and random. The panel sample (businesses participating in the first round of the study) was divided into two categories: firms with large potential, that is the highest employment and largest number of clients in 2009, and firms with lesser potential, that is, firms with lower level of employment and lower number of clients. Created besides them was a spare sample consisting of businesses with small potential. The random sample was divided into basic and spare. Additionally, three new databases of firms were created, already in the course of the study; one of them included the data from the almanac of training firms and two – from the sources available on websites. The new records were verified through online contacts: their uniqueness was checked, and it was also ascertained whether they offer training for natural people and/or enterprises and institutions.

The response rate in this study amounted to 25%, if we assume the total number of records in the database as the grounds (disregarding verification). This level diminishes the quality of the database defined here as the random sample, as it included both records of firms verified in the previous round of the study (ones that responded only to the verification module) and ones in whose case a live contact was established, yet without confirming the range of their activity.

In the panel sample, the response rate was high, and amounted to 51%, with the highest values among businesses with greatest potential (56%). In firms with less potential it amounted to 53%, and in the spare database of the panel sample, which was used for a shorter period of time – it reached 49%. In the random sample, the response rate of the unverified database amounted to 16%, with the highest efficiency being registered in the case of the database of new contacts used for the shortest period (23%).

The main reasons for the failure to conduct interviews were the following: the refusal of the competent person, impossibility of establishing contact (nobody answered the phone, or answerphone/for fax responding), and the fact that the firm did not operate in the training business.

The questionnaire used in the second round of the study of training firms and institutions was basically the same as the one used for gathering data in the first round. The only difference was the removal of some detailed questions concerning employment, number of clients, type of quality certificates in the possession of institutions, and trainers/coaches. These questions were not asked due to the short period between the first and second rounds of the study, and consequently, small changes in these areas.

Weighting of data

Employer studies

The weighting of the sample of employers was performed to compensate for non-identical probability of individuals from the population entering the sample resulting from the assumed sampling plan and unequal response rates in the strata. Despite the efforts of the firm conducting the studies in the field, only some businesses participated. Compensating for the non-identical probability of the execution of the division into the six categories of the NACE developed especially for the needs of the weighting, a division was included in the set of stratifying variables. The assignment of more detailed NACE categories to the six classes was based on the analysis of combinations maximising the differentiation between the classes of the key variables analysed in the studies.

The final calculation of weights was conducted so that their proportion in a sample of combinations of the strata (region and the "number of employees" class) with the six NACE classes corresponded to their proportion in the sampling frame which was the best currently available state of the register of businesses active in Poland at the time when the study was conducted (GUS). Population-related weights were calculated to allow population counts and the standardised weights adding up to the count of the sample to be estimated during the analyses. For the needs of estimating the number of the employees needed, it was assumed that the cases with extreme declared numbers of employees sought would have their population weights set to the level of 1. The upper so-called Tukey's jackknife, i.e. a variance estimator with

a value equal more or less to the upper quartile, increased by the doubled interquartile range (a way of defining the extreme values well-known in statistics, used among others for the generation of diagnostic box plots and stem-and-leaf plots) was approved as the criterion of extremity. The upper Tukey's jackknife was calculated separately for each stratum of enterprises listed above in terms of the number of employed.

Characteristic of the weights acquired in this manner is a high variance in the situation of global estimations at the level of the entire country. The variance of the weights drops substantially when the analysis is conducted at the level of regions and in the categories of business size. Thanks to this, in the case of investigations within these categories, the small size of the sample is to a certain degree compensated for by a smaller loss of precision caused by the variance of weights. In the case of analysis at the national level, the mechanism operates in the opposite direction.

Population study

To compensate for the differences in the rate of returns in individual strata, weights were applied to correct the total distribution of the sample, as compared to the population, broken down by the region, age, gender. Some interviews were not conducted because of the absence of the respondent, which gives reason to believe that the results may not be fully representative for people migrating for profit and e.g. students.

Differences as compared to the first round

The results from the previous round of the study (from 2010) presented in this report may differ from the results in the report concerning the employer study prepared after the first round of the project. After the completion of work on the reports from the previous round, updated data from the Central Statistical Office (GUS) concerning the number of businesses in Poland were received, which allowed the definition of new weights. A decision was made therefore for the current analyses to account for the results after the corrected weighting, as they reflect the state of Polish economy and labour market in the areas in question more precisely.

Notions and classifications used

Competencies

As the studies of employers were only one element in an entire research project, a decision was made to perform the necessary standardisation of the key notions, so that the results achieved could be comparable between individual modules. This is why the understanding of the basic notions related to the labour market and human capital, as assumed for the needs of the entire project, is worth explaining and the outset.

The pivotal point of all the studies was pointing to the competencies useful in the labour market and explaining their supply among the employees (current and potential – secondary school students, students in higher education, the unemployed). The competencies, in the sense assumed here, include knowledge, skills, and attitudes related to the performance of specific tasks, independent of both the way of acquiring them and their corroboration through a validation procedure. In the case of occupational tasks, related to the performance of specific occupation, we speak of occupational competencies. At the stage of concept work conducted, differentiation into 11 general competency classes referring the various realms of work were approved for the needs of the project:[74]

[74] The proposed classification of competencies was prepared after an analysis of various approaches to occupational competencies used by various institutions throughout the world; beginning with institutions, dealing with statistical data (e.g. the Australian Bureau of Statistics), via institutions focusing on the development of competency standards (e.g. Polish Standards of Occupational Classification, KSKZ) to projects responsible for the development of occupational competencies (e.g. O*NET: the Occupational Information Network). A complete discussion on the classification developed is presented in the report concluding the first round of the studies.

Tabela C1.

Classification of competencies used in the BKL Studies

Competency	Abbreviation	Phrase in the questionnaire
Cognitive	**COG**	Finding and analysing information, drawing conclusions
Technical	**TEC**	Handling, assembling, and repairing equipment
Mathematical	**MAT**	Performing calculations
Computer	**COM**	Working with computers and using the Internet
Artistic	**ART**	Artistic and creative skills
Physical	**PHY**	Physical fitness
Self-organisational	**SLF**	Self-organisation, initiative, punctuality
Interpersonal	**INT**	Contacts with other people
Office	**OFF**	Organisation, and conducting office works
Managerial	**MNG**	Managerial skills and organisation of work
Availability	**AVL**	Availability

Besides the eleven general competency classes above, mentioned in the questions asked to the employers, opinions concerning occupational competencies as such emerged frequently. These, in turn, were understood in a relatively narrow manner: as knowledge, skills, and attitudes defined by the specific nature of working in a given occupation. This gave reason to a major difficulty resulting from the significant variety within such competencies due to the great fragmentation of occupations. Assuming that the new classification of occupations introduced by the International Labour Organisation distinguishes 2301 individual occupations and specialties, it was impossible to describe specific occupational competencies for every one of the above. For that reason it was assumed that occupational competencies concerned the given occupation, and – falling back on their knowledge of the occupation – institutions and interested parties are capable of defining the requirements towards occupational competency resources for each of those.

Another term functioning side by side with the notion of competencies are qualifications. In the understanding approved for the needs of the project, qualifications are the knowledge and skills corroborated in the process of a formal validation procedure. (What can be considered qualifications in a narrow sense are only such knowledge and skills that have been corroborated by the authorising entity accredited by public authorities.) Thus, qualifications include, for example, a driving licence of a specific category, language certificate, etc.

Occupations

Conducting studies of competency resources, one needs to refer them to the occupation performed. A need to define what an occupation is subsequently emerges, especially in the case of studying the employers. In the language of human resources management specialists working in business, the term "post" is used more frequently than "occupation" to denote the smallest organisational unit of an enterprise, which entails the performance of a specific set of activities that require from the person performing them specific competencies and/or qualifications. Seeking staff, employers want to recruit people to a specific post. Posts may cover multiple occupations – as is the case with the assembler of installations in the construction industry – in whose case competencies related to numerous occupations (electrician, tiler, plasterer) are required. Therefore, to streamline studies conducted among the employers, they were asked about people sought to specific posts, competencies required at a specific post, etc. In turn, the comparability of the results between individual modules required standardisation of coding, for which reason the set classification of occupations designed by the International Labour Organisation (ISCO-08) was used. All the posts were coded according to the key of occupations included in the ISCO-08 standard. Which is why, speaking of employees sought, we operate in the terms of occupations. Considering the fact that the detailed classification of occupations consists

of over 2000 occupations and specialties, presentation of information about all of them would be impossible: both for the sake of data clarity, and because of the low counts in most of the occupations listed. This is why a decision was made to aggregate information about the individual occupations into certain more general categorisations in the form of occupational groups. For practical reasons, the report uses two types of categorisation: into the so-called major groups that contain nine general occupational groups, and sub-major groups covering 39 more detailed occupational groups.

Tabela C2.

International Standard Classification of Occupations (ISCO) – levels 1 and 2

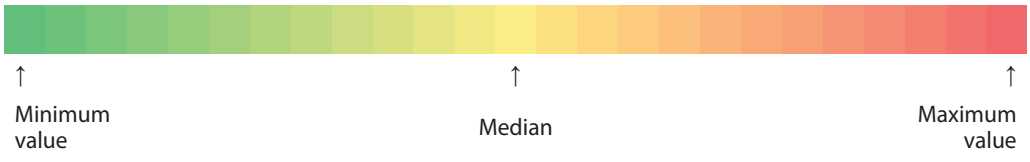
Level 1		Level 2
1 MNGR	**Managers**	11 Chief executives, senior officials and legislators 12 Administrative and commercial managers 13 Production and specialized services managers 14 Hospitality, retail and other services managers
2 PROF	**Professionals**	21 Science and engineering professionals 22 Health professionals 23 Teaching professionals 24 Business and administration professionals 25 Information and communications technology professionals 26 Legal, social and cultural professionals
3 ASSO	**Technicians and other associate professionals**	31 Science and engineering associate professionals 32 Health associate professionals 33 Business and administration associate professionals 34 Legal, social, cultural and related associate professionals 35 Information and communications technicians
4 CLER	**Clerical support workers**	41 General and keyboard clerks 42 Customer services clerks 43 Numerical and material recording clerks 44 Other clerical support workers
5 SERV	**Service workers and sales workers**	51 Personal service workers 52 Sales workers 53 Personal care workers 54 Protective services workers
6 AGRI	**Skilled agricultural, forestry and fishery workers**	61 Market-oriented skilled agricultural workers 62 Market-oriented skilled forestry, fishery and hunting workers 63 Subsistence farmers, fishers, hunters and gatherers
7 SKIL	**Craft and related trades workers (skilled workers)**	71 Building and related trades workers, excluding electricians 72 Metal, machinery and related trades workers 73 Handicraft and printing workers 74 Electrical and electronic trades workers 75 Food processing, wood working, garment and other craft and related trades workers
8 OPER	**Plant machine sampling operators and assemblers**	81 Stationary plant and machine sampling operators 82 Assemblers 83 Drivers and mobile plant sampling operators
9 UNSK	**Elementary occupations (Unskilled workers)**	91 Cleaners and helpers 92 Agricultural, forestry and fishery labourers 93 Labourers in mining, construction, manufacturing and transport 94 Food preparation assistants 95 Street and related sales and service workers 96 Refuse workers and other elementary workers

Colour coding of tables

To enhance legibility, many tables feature one of two types of colour coding used:

- **"Topographic"**, making reference to the convention of colouring maps:

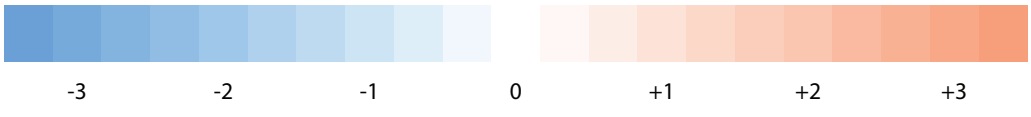
  Corresponding to the relatively low values is the green colour, to average ones (close to the median) – yellow, and to relatively high – red. It must be emphasised that both the centre and the extremes of the colour scale (i.e. the minimum value, the median, and the maximum value) are defined by the empirical values of the variable in question. In the "topographic" colouring of a table portraying different values, the whole range of colours – from green, via yellow, to red – will always be present.



Values of the metric as compared to the median

- **"Temperature"**, making reference to the colour scale related to the charting of temperature:

  Wherever we wanted the focus on the absolute divergence from a specific point of reference (especially zero), the value providing the point of reference was coded as white, negative values – as blue, and positive – as red. The greater the absolute distance from zero, the greater the intensity of colour. In "temperature" colour coding, the table does not need to feature the full spectrum of colours: it is possible that the blues will be dominant (if the majority of values is negative) or reds will be dominant (when most values are positive); it is also possible that the picture would feature only highly saturated reds and delicate blues, when the positive deviations are high, and negative – low (and vice versa). Therefore, the temperature convention suits especially well presentation of data that portray differences between values in two different categories, e.g. women and men.



Deviations from the point of reference (zero)

PART II

HUMAN CAPITAL AND THE DEVELOPMENT OF POLAND

KEY CHALLENGES

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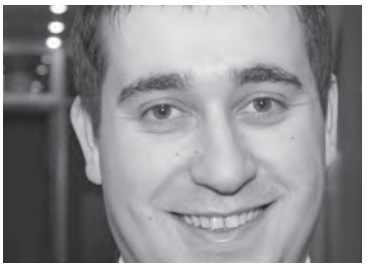

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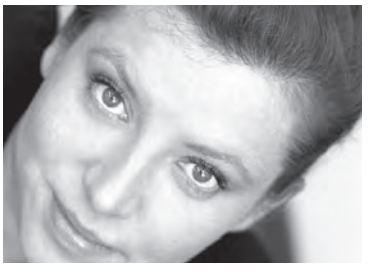

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Introduction

The challenges related to the development of human capital that Poland faces (and so do its politicians) are numerous. Moreover, there are many emerging concepts of actions to follow. A number of them are presented in this part of the report. When we are to embark on a debate on the strategy of action, it is necessary to point the priorities: few, key, and opening an opportunity for a breakthrough. Presentation of these and not any other priorities results from the conviction that continuation of the actions carried out so far will bring nothing new. Unfortunately, after 10 years of financing actions focused on the development of human capital (human resources), based on EU, pre-accession, and structural funds, the general indicators of educational activity among adults have hardly changed. The evaluation report Influence of cohesion policy on the level and quality of employment in Poland, published by the Ministry of Regional Development in 2010 states: "Examining the entire period of conducting projects, no presence of a significant net impact of training of the unemployed financed from EU funds was found with the exception of delaying their entering employment by approximately one month as the result of the block-in effect". Other studies also show that effects in this case are, at best, highly moderate. Employers seeking employees complain that they cannot find appropriate candidates, they also complain on the level of preparation of school leavers, and frequently fail to perceive the need to educate their staff (while the latter do not, in most cases, feel such in need, either), which can be interpreted as a lack of an offer of services that would spark interest in raising qualifications. Even training businesses complain that – due to the operation of the system of reimbursement of funds from the European Social Fund and the system of public procurement, there is a pressure on offering unsophisticated and frugally built concepts of training with standard effects. If this is the case, it can be assumed that the architecture of public policies assumed so far in the field of developing human capital fails to meet expectations. Most probably, many successful, good practices can be named, yet they are not capable of providing a breakthrough. What, therefore, must be paid attention to at first? **Emphasis must be laid on what is broadly construed as the quality of the content and methods of teaching, and – wherever the funds are to be earmarked to supporting demand for educational services – to the development of such forms of co-financing the learners and the employers eager to train staff that will favour competition between educational organisations in the realm of attracting client interest**.

Let's also reiterate that the number of people at working age is currently dropping, and that the process is only going to aggravate.[75] This will make Polish labour market face new challenges. If the growth capacity of the economy can be successful maintained, there will be a pressure on increasing labour efficiency, and therefore a competitive impulse must emerge. This is why the "excess of education" that we deal with may become handy, especially when we consider that the higher the formal education, the higher the likelihood of further learning. Unless economy restructures, it will begin to lose its momentum, which so far has also been based on the availability of inexpensive labour force. These times are drawing to a close, even though a debate about labour market policies continues to be under the pressure of current tensions in the labour market.

[75] "At a national scale, in the period of the forecast [2008 – 2035] a significant loss of population at working age is expected; beginning with 2010, in 15 years, the population will decrease by 2,946,000, with the maximum loss (of 1,215,000) envisaged just in five years, from 2015 to 2020." (GUS 2009 , p. 167).

Educational policy – quality of education and competitive market of education vs. the needs of innovative economy and civic society

The shape and quality of formal and non-formal education

Let's begin with non-formal education. The policy of support for adult learning conducted so far emphasised overcoming the barrier in demand for education. The actual "theory of the programme" is based on the assumption that the basic factor that renders using education difficult is the lack of financial means. In the light of the results of the BKL Study, this hypothesis is wrong in the current circumstances (which does not exclude the possibility that when structural programmes were initiated, different results of diagnoses were available). Only 6% of people who do not use informal education pointed to the lack of sufficient funds (28% among the unemployed). Even if this situation is the result of the current level of financing, it points to the fact that even earlier it was not the financial barriers that posed the key problem: the removal of the barrier did not increase the interest in the services offered. The main reason behind the lack of educational activity is the lack of need of learning. This position is shared by employees and employers, whose absolute majority do not feel the need to offer additional training to employees. This is the result among others of the low level of innovation in economy and extensive use of human resources. Yet a large role played is also by a lack of adequate services on offer.

Construction of an efficient and effective market of educational service providers

An inappropriate range of training addressed to a specific recipients to improve competencies – absolutely necessary in a developing economy – is a barrier in the development of human capital and social capital. A good range of services accounts for the needs of a given firm, is adjusted to its potential and phase of organisational development, market position, and potential for expansion. Yet the adjustment of the training market to the needs of recipients has not as yet taken place in the 20 years of market economy. So far, the "pumping" of public money into this market has primarily reinforced its demand type character, that is desensitised to the needs of the recipients of the services.

Building the awareness and knowledge of employers in the scope of competency management in their organisations (mutual education, internal training)

It is impossible to blame solely the service providers. A measure of the organisational maturity of a company or institution is the use of internal training. Atomisation of the personnel – even though capable of providing the tempting semblances of a tighter control – is a recipe for a defeat. In turn, the employers who are capable of cherishing an exchange of skills and experiences between the staff make the first step on the path to lasting success. The following step is the definition of the needs of the company in the area of external training. Such a conscious client will acquire cheaper services, as they will reduce transaction costs (by knowing what they want), and pay for a specific service adjusted to the needs.

This is precisely what some large businesses do. The problem is the adjustment of the range of services to the needs of medium-sized and small businesses, also because of the lack of organisational maturity among many of them. Employers do not always know how precious the resources they hold (employee competencies and qualifications, the potential, etc.) are, and what they lack. They can acquire the knowledge if they make sure that the personal identify with the company, and will organise their mutual learning – these are the relationships in which ideas for streamlining and market expansion are born.

Michał Federowicz
Director of the Educational Research Institute (IBE)

Addressing a stream of financial assets to the training sector, it was assumed that a satisfying supply of education services will automatically emerge. It did not. The range of services was adjusted to the requirements formulated in competition documentation and tasks of the provider envisaged in terms of reference in procurement procedures based solely on the price criterion. Deciding about the shape of the offer of services are civil servants, and not employers and employees (as mediated by the market). A way out of the situation is a change of the way of financing described in the following section. Even if the trainees themselves were to decide to choose training, then "casting" large funds into the market results simply in a growth of the demand and emergence of an additional range of services that do not meet quality expectations and/or an increase of prices of the training options offered. It is only in a longer period of time that one could count on a modification of the range of services, yet only on the condition of the simultaneous financing through the market ("education voucher").

If this is the situation, on the side of expenditure, the channel of financing must be switched to paying education centres through service purchases to build the demand. On the demand side, emphasis must be laid on the construction of a modern range of services, preparing the trainers, and providing methodological and hardware support. Building and importing good models of education, supporting the preparation of high-class manuals (ensuring also the evaluation), preparing teaching aids and equipment, standards of education, and system of accreditation – all these should lead to increasing the quality of education.

The best recognised patterns and good practices in the area need importing and being creatively adapted. One needs to start a systemic effort and also assign appropriate funds to reach that goal. Unfortunately, falling back on the current competition mechanisms does not guarantee achieving good results.

One needs to make sure that the system of education is based on the centres that have good facilities, experience and teaching/training staff, and follow a plan of quality development. Such centres are worth aiding in the implementation of the development plans and developing the quality of the services offered. Special support should be provided to teachers and trainers – for example, there should emerge a programme for supporting the improvement of their competencies by financing the education in the world's best centres in return for the obligation to train successive staff in Poland and/or participation in the work on building standards and further programming of education. If we do not do that, having spent the structural funds, we will be left with no structural effects!

Moreover, in the case of formal education, investments in improving teacher competencies, providing them with support in the form of materials and teaching aids, building collaboration networks, and other factors shaping the quality of education are the key task. This is true about all the levels and types of schools. Special care should be extended over the system of vocational training, its relevance, and – in the case of technical secondary and higher schools – by paying attention to the development of competencies in designing and construction of solutions. What requires plenty of effort is a change of quality in teaching mathematics and natural sciences in all types of schools, beginning with primary education. General competencies, as the skill of organising own work, ability to work in a team, creative and active approach to solving problems, and entrepreneurship cannot be taught by lecturing from course books. This is a certain process that must be included in the methodology of teaching, and the teachers themselves should be furnished with competencies in such work with students that would develop those very competencies. Even though the task is huge when the number of teachers is taken into account, systemic work must be launched in the area. The starting point is probably the very development of standards, examples, scenarios, demonstrations, and later delivery of those to teachers and launching forums of exchange and support using online platforms.

What calls for fundamental changes is a system of training teachers at universities. This requires increasing competencies of academic teachers and changes in methods and teaching curricula. By the way, an increase in the quality of teaching is necessary not only in teacher training courses. Emerging recently have been programmes, focused on the education of academic staff in the best international centres. Yet there is still plenty to be done in this area.

It is impossible to go beyond just a brief consideration of the range of problems mentioned here. The elements mentioned above serve only the development of a general idea of investments into the supply side of the system of formal and non-formal education.

What can the state do so that Poles develop their competencies in line with the needs of innovative economy and active civic society?

- ***By reforming education, it can support the teachers and improve external examinations, so that they test key competencies***

First of all, by a daring continuation of the reform of education so that it provides foundations for lifelong learning. Key programme reforms introduced in the recent years will not avail unless we invest in good teachers. Leaders in the teaching profession need reinforcement and rewarding, so that the young find the profession more attractive; needed at the same time are incentives for burnt-out teachers to change careers. Moreover, it is important that the system of external examinations is improved so that they test what schools should primarily teach, i.e. the skill of identifying problems and solving them with independently chosen information.

- ***Introduce a differentiation in the range of services offered by institutions of higher education and cause the emergence of a powerful and ambitious subsector of higher education with practical profile***

Secondly, use regulation and financial initiatives to stimulate diversification and improvement of the quality of services offered by institutions of higher education so as to channel the great potential and education-related aspirations of the young in a wiser manner. Reduction of the very high proportion of the young people who today continue education into academic level studies would be neither welcome nor possible. For this reason it is of key importance that a large number of good programmes with a practical profile are established to provide education, primarily at the level of first-cycle studies (moreover, very strongly related to praxis) e.g. for programmers, translators/interpreters of foreign languages, and physiotherapists. These curricula should answer the needs of most young people beginning their studies. This will allow improving and keeping standards at academic studies, appropriate for secondary school leavers with a greater inclination for abstract thinking, and educating for example information technology experts, philologists, and public health professionals.

- ***Support lifelong learning***

Thirdly, to discourage students who will not find any added value in second cycle studies to enrol in them, and instead encourage all the adults to lifelong learning, especially in the educationally and economically most effective forms of education/learning (that is, courses and training), in the natural environment of work and civic involvement. Poles enrol in studies to a scale not found anywhere in Europe, and aim at obtaining higher education, and later – if statistics are to be believed – for many long years drop out from further education or training. To change this unfavourable situation, the state may help primarily by ensuring information about quality of studies/training, and the value of individual qualifications (among others thanks to the establishment of the National Qualification System, KSK) and by (co-)financing the improvement of competencies of people who cannot afford it from their own or the employer's means.

Michał Miąskiewicz
Chancellery of the President of the Council of Ministers
Department for Strategic Analyses

Competitive system for financing education

Problems related to the ways of financing the support of processes of education were taken up in the discussion of the question of the quality of educational services offered. On the one hand, assets need transferring to the lasting improvement of the quality of the services, on the other hand, what also requires a change is the way of financing the support on the demand side. Dominant today is the form of financing which means transferring funds to the businesses providing educational services via public administration

through competitions and/or public procurement. This makes the range of services dependent on the relationships between the parties. Obviously, the object of procurement and competitions remains within the scope of the needs analysis performed, yet the rigid frameworks of competition and procurement procedures result in competing by price and formal correctness of the application and not the quality and effects, which makes adjustments of the bid to the needs impossible. The system of competitions and procurement procedures is "devoid of memory": the quality of delivery of previous projects, unless it entails legal consequences resulting in the exclusion of a given entity from applying for public funds, does not influence the decisions in successive competitions or tendering procedures. This does not favour activities furthering the building of the quality of the bid, and the brand it represents, and is perceived as a major problem, not only by the trainees (clients) but also by the respondents among training operators.

An alternative for the current way of financing is financing based on providing support to the people interested in learning and employers investing in the development of their staff. This can assume the form of education vouchers, individual educational accounts, etc., and also programmes of grants for enterprises. There is an entire catalogue of various ideas tested in many countries, including also the experiences of the Polish Agency for Enterprise Development with financing targeted ad businesses. Let us add: tested with various degrees of success (see: Cedefop 2009), as efficiency of this way of financing depends on a number of contextual factors.

Financing of the demand side – on the condition of providing good information – should favour allocation of funds to units offering educational services that are best adjusted to needs. In this case, it is assumed, most probably correctly, that people using support make rational choices, but also preferences of the entities making the choices are in line with the intentions of public policy. Unfortunately, the situation is not that easy. Influencing the preferences and final decisions may also be various institutional and situation-related factors that are difficult to envisage. Nor do we know the power of the effect which can be termed as the "effect of the gift horse" or – more generally – the influence of the source of finance on the way of its expenditure. Studies (among others: Zelizer 1994) report that such a dependency does take place. Which is why experience teaches caution.

Moreover, the experience in channelling co-financing of employee education through enterprises is not unambiguous. In this case there is a major risk of replacement of private outlay by public without acquiring added value, yet studies also prove that the effects of such investments come with a delay. It is worthwhile to sum up, and evaluate the experiences acquired so far among others by the Polish Agency for Enterprise Development and programmes conducted in other countries, and use them to develop new concepts of this path of financing.

Before introducing financing of the demand side in Poland, one needs to conduct a pilot project of the proposed options of solutions, and then make a decision about the shape of the target system. This will help to limit the risk of failure in implementing solutions at a large scale.

We reiterate once again: increasing demand for training services will not result in an automatic shaping of a good range of offers adjusted to the needs. A proof to the above is the reaction of the system of higher education to the educational boom: quantitative and not qualitative. A qualitative reaction will be gradually enforced by processes of competition, yet it will be rendered more difficult due to the pressure from shrinking revenues. Which is why an intervention at the level of building quality is necessary.

It can, however, be clearly stated that the way of implementing the system of supporting education must yield to a powerful change, as the one used currently and in the past brings neither bieżących short-term effects nor clear long-term structural benefits. Thus, it remains a fundamental challenge.

Two key priorities listed in this point – improvement of the quality of the educational offer and financing of the support on the demand side – provide an opportunity for a change. So far, no fewer than 98% of the responding training operators declared that they evaluate training, and take the results into account; at the same time, these operators mentioned that allocation of public funds is bad, the way of financing

training and construction of the invitations for bids promote low quality products and focus on competing by price; employers frequently do not find useful services, and people at working age as a rule do not learn and in most cases, say that they do not need learning to work. Public decision-makers are dissatisfied with the results achieved, and the personnel of administration involved in the process of implementation realise what drawbacks it contains. It can be said that the system lasts, even though it satisfies no one. There is a risk that it will continue to last as long as it meets the expectations of control centres in formal correctness of expenditure. Yet what will it give to us as a society? With the above in mind, the changes cannot be superficial.

Building a system of informal education by working out quality supporting mechanisms, an appropriate model of financing education, and recognition of knowledge and skills

Generally speaking, qualifications and skills of people and their capacity to generate them and deliver for the needs of economy are the basic factor that is decisive today for the competitive edge of regions: this is the engine that powers economy and development.

For years we have observed a low level of education of adults, which is translated into a low level of participation in lifelong learning. Successive studies only corroborate the lack of significant changes in the area (both qualitative and quantitative). It is therefore time to leave the policy of "declarative actions" for the sake of the policy of "adequate actions": actual and efficient actions that will set in motion and add momentum to the engine of development, and also assure its flawless operation in future. We must remember that an employee is prepared in the system of education for anything from 12 to 15 years, and as a rule operates in the labour market as an adult for another 40–45 years, in which they must incessantly improve their qualifications and obtain new skills!

New quality in the Polish labour market can be assured by the three pillars of its development that is quality, adequacy, and recognition.

1. Quality of education and training, expressed in the introduction and following educational and training standards at all and any levels of education. Standards must focus on ensuring that the intended results of teaching are attained, and not on the process of teaching itself. Schools, institutions of higher education, and training operators should compete by the quality of the services offered and not solely by price.

2. The adequacy of selection of the course of education and/or training to the actual needs in the labour market. Financing of education and training must be remodelled so as to have the subject of training and education – that is the learner and the employer, and not administration or the interests of the providers – decide about the selection of what is needed. The needs of the labour market should determine the process of managing the stream of funds earmarked to education and training. It is necessary to test the new tools for financing training using digital technologies by designing and testing the technologies of "education and training voucher".

3. The actual recognition of previously obtained knowledge and skills. The system must "see" what a person embarking on learning already knows and can do. Testing and practical implementation of the local (regional) level of a system for recognition of qualifications acquired informally would allow not only the "discovery" of a trove of competencies that have gone unnoticed so far, but would also facilitate the selection of appropriately prepared staff for employers, decrease costs of recruitment, and at the same time trigger positive competition in education, bringing about improvement in the quality of education. Schools and institutions of higher education would then have to compete for the student, as they would cease to be the only place where (formerly corroborated) qualifications could be obtained.

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Policy of the labour market and educational policy – improving competencies and qualifications as an active instrument of the labour market

Economic growth – the condition for curtailing unemployment

The Study of Human Capital in Poland project focuses its attention on the question of demand and supply for employees with a defined set of competencies. The question should not be approached purely statistically. It is impossible to achieve the stage of full quantitative and structural balancing of demand and supply of employees in a market economy. In practical life we face dynamic adjustments, disrupted by various factors. From the perspective of the employees, a measure of the success is the capacity of the economy to absorb people seeking employment (against a decent remuneration), while from the point of view of the employers – the capacity to satisfy demand for work by the inflow and adaptation of employee competencies, which is the condition of competition and development. Generally, the economic development capacity is expressed as a lasting, and relatively equally distributed increase of well-being based on the availability and quality of jobs. This is worth emphasising, as considering a variety of challenges related to the development of competencies from the aspect of the labour market, one needs to remember that the goals formulated in this respect are instrumental for more general economic objectives. For example, the goal being the attainment of a 40% share of people with higher education among people at working age (an objective of the Europe 2020 strategy) can be assessed as right or wrong, when adjusted to the needs of economic development. A good slogan illustrating the subject is the title of a recent report by the World Bank: Skills, not just diplomas (World Bank 2012).

Without availability of jobs, that is in the conditions of labour supply exceeding labour demand – i.e. an increase of the number of jobs – it is impossible to solve the problem of the high unemployment among school graduates, i.e. the young. A brief look at international unemployment statistics is sufficient to see the question of unemployment in problem groups is linked to the general unemployment rate. It is characteristic that the higher level of general unemployment is accompanied by the over-proportional increase of unemployment among the young. When the number of jobs resulting from the dynamics and prospects of the economy is growing, old employees become also more attractive. The key to solve the problem of unemployment is therefore primarily the development of a competitive economy opening new jobs. Placement of new people in the labour market based on grants or individual, short-time decrease of employment costs will either fail to be lasting or will be held at the cost of laying off other staff. Although this conclusion seems obvious, it is the fact that needs constant reiteration. In economic policy, it means primarily establishing good conditions for operation of enterprises, doing away with the excessive barriers and regulation burden, excessive tax burden, and such facilitation of operation of state agencies that this decreases transaction costs in operation of businesses.

"Economy matters, but not only…"

Education should not be considered solely from the perspective of functionality for economic development. It serves also personal and civic development, and – generally – the quality of life. The level of future remunerations is not the only factor that influences the choices of individuals, while the productivity of the human capital is not the only determinant of educational policy, even though without a doubt they play a very significant role. In this report, we focus, however, on the functional links between competencies and economy. nevertheless, one needs to remember about other functions of education, when we ask the question about choices and education-related aspirations.

Dilemmas in regional educational policy

Regional educational policy faces the challenge of adjusting not only to the needs of economy – perceived territorially, but also educational aspirations of the young resulting from the challenges of globalisation. Emerging in this context are dilemmas including who the region should educate its human resources for? To what degree it should satisfy the needs of the region, the country, the European Union, and the world?

Janina Mironowicz
Director of Regional Employment Office in Białystok

The need to provide skilled employees

With the still relatively low level of employment and high unemployment, a key question is to increase the number of jobs. Without this growth, the pressure on social expenditure will continue to be strong, as are its fiscal and therefore also developmental results. Demographic processes may, however, cause a severe medium-term shortage of employees, assuming a relative structural stability of the economy. Maintaining the economic growth will depend even more on the increase of labour efficiency, which – besides capital investments – calls for increase of competencies. The results of the two rounds of the Study of Human Capital in Poland show that approximately 70% of businesses seek staff, of which 90% as part of employee churn. Replacing the departing staff with new entails seeking candidates with experience and specific occupational skills, who can immediately take over the duties on the vacant post. No fewer than 75% of employers have problems finding appropriate staff, of which two thirds report problems related to occupational competencies of the potential staff: this is true both about professionals and the more frequently sought personnel to working positions, among others in the construction sector.

Changes in the system of education and attitudes of employers towards employee education

The Study of Human Capital in Poland points to the need of taking active steps in education sectors, concerning the shaping of the structure of schools and courses of education. The forecasts of the European Commission by 2020, envisage a drop in employment in the sector of public services, and in agriculture. Yet growing most in Poland in 2009–2010 was the number of students in the schools of the Ministry of National Defence and the Ministry of Internal Affairs and Administration. Another essential activity is the reinforcement of the role of vocational consultants in schools, beginning with the lower secondary level. The most important way of improving self-organisational and interpersonal competencies, the lack of which employers complain about, is the reinforcement of the educational role of the school and its responsibility by introducing the results of psychosocial competency tests into the algorithm for awarding funds for schools.

Increasing the employee predilections for lifelong learning requires also changing the attitudes of the employers: by making them aware of the significance of investment in the development of staff, improvement of HR development mechanisms in businesses, and improving the quality of competencies, and promotion of non-school forms of occupational development among managers.

Prof. dr hab. Marta Juchnowicz
Warsaw School of Economics (SGH)

The need to adjust vocational education to the needs of the labour market

Interestingly, difficulties in finding skilled workers are accompanied by a relatively high unemployment rate among people with basic vocational education, including the graduates of such schools, and on average a longer period of unemployment. This is the effect of spatial, programme, and qualitative maladjustment of vocational education to the needs of the labour market. The changes introduced in the field of vocational training did not influence even a partial solution of these problems. One of the reasons behind this status quo is the abrupt increase in educational aspirations of the young people, and treatment of the vocational education as "a blind alley" (for the least talented students). A reversal of the tendencies would seem difficult. Yet vocational education needs reconstructing so that it provides an attractive path of education.

Supporting employers in the process of preparing future personnel to work

The continuing "chase" of the system of formal education after the changing requirements of the labour market is a competition in which the contestants do not find a level playing field. The requirements of the labour market will always be a few years ahead, at least as long as we do not change the rules of that race. It may be the highest time to take a close look at the principles governing the discipline. The logic of functioning of the system of education and most governmental projects and programmes (also the ones conducted as part of the Human Capital Operational Programme) are based on the assumption that the state is bound (by the way, by the Constitution) to provide its citizens with education, to the age of 18 mandatorily. Obviously, not only so that citizens could participate consciously in the civic life, but primarily so that, having completed education, they could find jobs and earn a decent living. Also on the power of the Constitution, public authorities run a policy aiming at full, productive employment, among others by supporting vocational education. Following the conviction that it is the state that is bound to teach citizens, most employers expect that employees they seek will be prepared to work. Obviously, in the conditions of today's dynamic economic changes, and with education organised the way it is, this remains impossible. Everyone knows that, yet an improvement in the operation of the system of education is still sought by applying the same pattern of thinking. If the sources of occupational and professional knowledge are situated on the side of the labour market, possibly the direction of organisational and financial effort needs changing. Instead of revving up the structures of the system of education to chase the eloping labour market, one needs to seek solutions that will encourage employers to engage their forces and time in the occupational preparation of future staff.

Piotr Palikowski
President of the Polish Human Resources Management Association

Accounting for the voice of the employers and the shaping of educational programmes and focusing on quality and education for innovation

In future, an appropriately educated graduate will be an employee capable of doing their work in a way that is efficient and improving the competitive edge of the enterprise in the labour market. Such an effect can realistically be achieved only when we deal with a greater transparency, availability, and quality of the skills gained. To achieve this, it is necessary to establish a qualification framework that would provide a tool giving the opportunity to increase the quality of education in Poland. It must be remembered that quality of education affects the employer directly. In the case of the misseducated employee, it is the employer who bears the costs related to the need of further employee training. This is why it is material that the labour market, including employers, could influence the

establishment of effective educational curricula compatible with the needs of the employers: both in formal and in informal education. A graduate's skills must be adjusted to the requirements posed by the labour market, ergo also by the employers. It is only thanks to the innovation of businesses that one can compete in the European and global markets in a longer timeframe. Development of collaboration between scientific centres and entrepreneurs is aimed at developing a scenario in which research will not be conducted independent of market needs. One also needs to invest in training which will provide education for young scientists contributing to the development of innovative economy. What is necessary is the combination of scientific thinking with business approach, which in turn requires the designing of such solutions that will meet the expectations of consumers and find their place in the market.

Urszula Milewska-Marzyńska
Employers of Poland

The need to build a modern system of certification and skills recognition

Development, reconstruction, and – in many areas – the construction of a modern system of certification and recognition of skills is an important task. Research suggests that it is of special importance in the case of people with lower levels of formal education. The idea, therefore, is to build a system of recognising skills acquired outside the system of formal and informal education. In the case of a number of skills related to the higher level of education, there is a public or private system for recognition of certificates, specialisation, and other types of licences usually linked to the system of education, and often of international nature. Yet also in this area, a review and care for the establishment of a good framework of operation are worthwhile.

Building a system for recognising qualifications gained on the informal path: by self-education, and through collaboration with others and observation is significant both for motivating and informative functions – that is, both for employers and for the learning. As such, systems for recognising skills will not boost competencies, yet thanks to their functions thy can favour such a process. If the announcements concerning deregulation in access to occupations are fulfilled, the significance of formal aspects of the system will diminish, which does not mean its uselessness. Well-developed – in collaboration with employers – it is capable of reducing transaction costs related to the seeking employment of staff. The Polish Qualification Framework (also known as National Qualifications Frameworks) is also of major significance for the shaping of formal and non-formal education, including the shaping of standards of education. Present in the market of education services is strong asymmetry in information between providers of educational services, and their purchases. The Polish Framework can introduce transparency into the system. One must, however, perceive the risk of excessive formalisation and rigidity of the system. At the current stage, potential benefits from the good implementation of the Polish Framework seem to dominate clearly over the potential negative consequences. The development and implementation of the Polish (or National) Framework is an element of the process of improving the quality of education and beyond doubt requires also powerful public support. The system of recognising qualifications needs not be a state system in its final form; operating already in the market are recognised, non-public systems for skills certification. What form the national system for recognising skills (qualifications) will finally assume should remain a question of practical solutions. Yet it is worthwhile to use the shaping of regulations to build conditions for the operation of market entities dealing with the question.

Development of effective lifelong learning policy – Polish Qualification Framework, and communication activities aimed at labour market participants

One of the most important development-related challenges for Poland is to build an efficient lifelong learning policy, including a significant increase of participation of adults in various forms of learning: as part of formal and non-formal education, and also independent learning. This learning should lead to acquisition of competencies, and – via the appropriate evaluation and verification – also the acquisition of qualifications, needed in the labour market and for the development of the civic society.

To stand up to this challenge, activities continue, also as a part of work on the Polish Qualification Framework (PRK). The Framework provides a description of mutual relationships between skills, integrating various national subsystems of qualifications, serving an even greater transparency, availability, and quality of qualifications. In particular, it contains the description of the individual levels of qualification – each qualification is situated on one of the eight levels. Thus, the Framework is a particular instrument that makes it possible to order and hierarchise the available qualifications – ones that learners can obtain.

One of the problems concerning the labour market in Poland is the lack of knowledge among its participants about needs concerning competencies and qualifications. Employees and jobseekers not always know what the needs of the labour market and employees are, and therefore they do not always channel their personal development accordingly, and in most cases decide to abandon any action related thereto, believing that they have no need to continue learning. Similarly, the employers do not have full knowledge about how and work to develop the competencies of their staff, and how these competencies can serve the further development of the company. In result, it is visible also on their side – a fact profoundly supported by the results of the BKL Study – lack of will and motivation to invest in the development of employees is visible. In this context, the results of the BKL Study should be used for supporting communication on both sides: concerning the need to embark on actions supporting the development of competencies and lifelong learning.

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and Institute of Educational Research, Education and Labour Market Team

Lack of motivation to learn among adults and of an attractive options of education

In the report, we showed the data concerning the low involvement of adults in the processes of education, with simultaneous exceptional involvement in the processes of formal education. More eager to learn are people with a higher level of formal education, which can be defined as "the educational law of St Matthew": the ones who have more education will have even more added unto them. If the dependencies between the level of education and further educational activity are retained, we should – at least, thanks to the increase of the level of formal education – observe a gradual growth of interest in adult education. One could expect here that – thanks to the development of Internet use – the forms of complementing the competencies will undergo changes. A significant influence on the demand for education will come from the development of businesses: a transition from technological adaptation characteristic of the phase of catching up with advanced economies to the development based on creative adaptation of solutions and innovations. This transition is welcome, yet a historical necessity it is not. The alternative is economic stagnation. High-quality formal and non-formal education broadly applied favours the establishment of better conditions for the transfer of economy to the successive phase, even if in short term it creates "the educational excess". Yet even a success in this field does not exhaust the list of conditions necessary for a successful transformation.

Promotion of lifelong learning is extremely important. Yet to change relevant attitudes – and especially behaviours – in a lasting manner, an institutional change is necessary, and not only persuasive actions. For most people who do not invest in their own development, learning is simply useless to perform their job: this is true both about employees (4/5) and employers (3/4), but even the unemployed (1/3) who do not

make any efforts in this area. It would be exceedingly optimistic to interpret the fact as an indicator of a very high level of competencies. It is rather the result of the fact that benefits that can be obtained from the effort of embarking on education from the range of services known and available to the respondents fail to be perceived. It is "this will give me nothing" rather than "it doesn't make sense to learn".

The maintenance of the manner of allocating public funds used currently in the area will make the expenditure of public funds for support of education continue not to produce an added value, as it happens, so when public outlay predominantly replaces private which would have taken place otherwise; such expenditure is effectively of a consumptive character. Therefore, to gain a net effect, one needs to change allocation to improving the quality of the offered non-formal education, and a better quality of formal education, together with mechanisms of financing, which has already been mentioned above.

Establishment of an effective system of educational and vocational consulting

Long term support of the institution of educational consulting (education brokers, yet consulting also in the context of learning, and not only of an appropriate educational path) and vocational consulting aimed also at the people standing at the initial phase of formal education may contribute to more rational educational and vocational choices of learners. It is not always so that the learner has the support in their milieu in this aspect. As it turns out, wrong educational and vocational choices are more costly than investments in the policy of educational consulting and vocational consulting: a good example comes from the German educational and vocational consulting.

The shaping of the learning culture in the Polish society

In Poland, people who have already completed formal education do not as a rule continue learning, which results from the lack of the culture of learning in the society. These people are not internally motivated to embark on such activity, which is of key importance for the development of competencies and skills. Stimulating this internal motivation will result in a greater likelihood of bearing (co-bearing) the costs of further education, which today are predominantly covered by the employers. As a result of increasing internal motivation of citizens, progress can be expected, also in the case of pro-developmental training and reduction of the scale of adaptive training.

Supporting the development of key competencies in the system of formal education

A contemporary entrepreneur first of all needs staff with high-class competencies. Skills can be complemented while on the job. If an employee wants to improve their skills (qualifications) and is furnished with competencies that the employer finds attractive, the employer is more likely to cover the costs of obtaining such qualifications. Only the performance of certain professional occupations requires holding a special certificate at the entry, or a license that allows performance of certain duties at the place of work. Today, competencies, are the individual's greatest strength in the labour market. This is why it is so important to support the development of key competencies in formal education.

Management of the 5th level of National Qualification Frameworks

With respect to the very high education-related aspirations of Poles, and also to the occupational deactivation being preceded by educational deactivation and the decrease of activity among people aged 40+ portrayed in the Study of Human Capital in Poland, a public discussion on the management of the 5th level of National Qualification Frameworks should be launched. The studies conducted currently in the area do not recommend concrete solutions. Possibly, it is justified to introduce the so-called Short Cycle Higher Education (SCHE) in Poland, as positioning it at the 5th level would be dedicated especially for adults active in the labour market eager to improve their skills significantly. Possibly, this form of education and learning could be more attractive for individuals than courses that do not guarantee promotion.

Wojciech Augustowski
Strategy Department
Ministry of Science and Higher Education

Running policy for lifelong, life wide learning (LLL)

The reception of the LLL policy in the Polish society needs changing. The idea cannot – as has been the case so far – be brought down to the idea of lifelong learning of adults or lifelong education ratio. The central reference for the policy is not the system of education but an autonomous and responsible learner.

To reinforce the position of the learner, it is important that an equivalence of learning in different places and forms is introduced. Valuation of where and how we learn is less significant (also because it is difficult to separate and assess various contexts of learning separately). It is more useful to use the potentials from formal and other than formal learning in parallel. The effect of such an approach is, among others, the perception of education as a link between education and training, in which training is as important as education.

Moreover, the LLL policy aims at equivalence of various stages of life for learning. There is no disregard of the first few years of life, and reducing them to "care" as this is the period when we actually learn most intensively. There is no disregard of adult learning, even though education is no longer their main task (adults, independent of the age, should have an opportunity to obtain skills). This is true also about learning at senior age, which in the traditional perception is reserved only for social policy.

Significant for the reinforcement of the position of learners, the equal treatment of the venues, forms, and stages of learning is to be guaranteed by founding the systems of qualification on the effects of learning. Assessment of competencies of people and awarding qualifications should be made independent of the place, manner, and time of learning to an optimum degree (which is the basic assumption of European Qualifications Framework).

The governmental documents to express the LLL policy in Poland is Perspektywa uczenia się przez całe życie (a document developed in 2011 by the Interdepartmental Team for Lifelong Learning, including National Qualification Frameworks). This policy is to encourage independence, responsibility, and creativity of individuals, including entrepreneurship (also collective) and longer activity in the labour market and broader civic activity (including various forms of entering the labour market before the age of 24 and keeping up vocational and social activity after the age of 50).

The document defines five goals that answer the identified challenges of the LLL policy in Poland:

1. ***Stimulation of creativity and innovation of individuals****, by more excessive openness of education and training to learning other than formal (in content, system of teaching, and systems of evaluation and examinations).*

2. ***Opening the national system of qualification to the new reality of learning****: new solutions in competency assessment, awarding qualifications, and comparing the value.*

3. ***New policy for early education****: focusing this education on multifaceted and integrated support of parents bringing up small children, including an institutionally varied offer of early education services.*

4. ***Better adjustment of education to the needs of the labour market and social changes****: vocational education and education generally better preparing to changes of occupation.*

5. ***Promotion of the new approach to adult learning****: based on recognition of learning at work and in civic activity.*

Stanisław Drzażdżewski
Counsellor General
Department for Strategy
Ministry of National Education

The need to promote the habit of lifelong learning

Encouraging people at 50+ comes too late

Deactivation in education proceeds the vocational deactivation by anything from 5 to 10 years. Therefore, encouraging people aged 50+ to learn comes too late. Unfortunately, the policy of countering the phenomenon of vocational deactivation of seniors, conducted so far mostly by improving the skills, was focused on this very age group. As a rule, at 50+ there is a strong tendency to cease activity in the realm of education as such. Therefore, an intervention in the field of education should encompass people in the period preceding the statistical point of increased risk of deactivation by anything from 5 to 10 years.

The shaping of the sense of responsibility for self-development, construction of good work ethics

A challenge in the Polish labour market is primarily a change in the mentality, not only of the employers, but also of the employees. The corruption of work in itself took place many years ago. "Being unemployed" is generally acceptable. It is also common to "escape into a leave" when the employer terminates or wants to terminate our job contract. Physical occupations are believed to be worse, and children are persuaded that everyone must complete higher education. It must be remembered that higher education guarantees now only a good start, but does not ensure high incomes. Parents of people who are 20 or 30 today were brought up in the days when it was generally acknowledged that studies guarantee a good job. This time, a change of mentality must occur among the young, who will go into higher education – not just any course but the one that is designed for them. Today, approximately 70% of us do not work in an occupation aligned with the course of the studies we graduated from. Such an alignment emerges only in the case of postgraduate studies.

Another pathology present in the Polish labour market is the promotion of the ideology of "the employer will give, the employee will pay, the employer will train, the employer will provide". At the moment of employment expectations include the presentation of a path of development, presentation of a package of training, a good HR department, nice atmosphere, etc. There is a prevalent conviction that it is the employer who must care for everything in the stead of the employee. In this way we build a society that is not capable of managing their lives, and is sentenced to the expertise and inventiveness of the employer.

Recruiting in my life hundreds if not thousands of people, I daresay that the lower salaries of women partially result from their conviction that they deserve less. For working at the same post, most women quote lower rates than men. Obviously, lower earnings are also the question of women's dominance in the state sector, which may provide stability and certainty of employment, yet in return pays less than the market. To change the situation of women in the labour market, it is necessary to change their mentality in this aspect of valuation of their own skills.

Dominika Staniewicz
Business Centre Club

The need to build a system of teacher support and development

This challenge is actually contained in the priority of increasing the quality of education. We list this factor separately to emphasise its significance. The knowledge, skills, and attitudes of teachers are the key to success in the realm of education. By the way of various reforms of the educational system, funds for the development of teachers were usually lacking. Naturally, qualification-related requirements were introduced, yet as a rule, these were the teachers themselves, who incurred the costs of meeting such requirements. In result, they frequently sought a cheap way of fulfilling the formal requirements imposed on them, and not the possibility of authentic improvement of their competencies or skills. The available range of services offered to improve teacher competencies still requires a qualitative change. Whenever the question of education and substantive support for teachers is raised, many say that such a project cannot be carried out due to the number of teachers. It is not a good argument, if it is to result in avoiding changes. One needs to design a strategic programme of action in this area and follow it persistently. Without accepting the challenge vested in the change of nature (type rather than level) of teacher, instructor, and trainer competencies and the way of the operation, and building for them a system of support and development, we will not make any breakthroughs – the quality of teachers is the key to the quality of education. Recapitulating: this is a priority direction.

Supporting the development of key competences in the system of formal education, including especially entrepreneurship

What the system of education currently offers young Poles (at the level of schools and institutions of higher education) unfortunately diverges from the needs of Polish employers. Michał Boni, former Head of the Team of Strategic Advisor to the President of the Council of Ministers, rightly noticed it, stating that "the system of education must make one ready for the challenges throughout the occupational career. (…) It would therefore be important to develop practical skills in the last years of education, whether at school or in higher education". Thus, for a good start it might be worthwhile to have the subject of Entrepreneurship taught in schools at upper secondary level by managers, and not retrained teachers who were a few hours short of a full-time job.

The introduction to the report from the 2nd round of the BKL Study, conducted in 2011, contains the following question: "Can Poland find its path of development, and whether it will cope with the new challenges which it is facing? The answer is as follows: (…) Our intention is to turn attention to the significance of good education, as it is a growth factor. (…). Expenditure on education is a good long-term investment". The study corroborates that the growth of the level of education positions people best in the labour market. "Polish people try to improve their market opportunity by education, even to a greater degree than this is required by the type of their work. As analyses have proved this action is not devoid of sense. The threats related to these phenomena include maladjustment of this potential and motivations to the realistic needs and expectations of the labour market and economy." How to motivate an employer to invest in "a graduate"? Can economic growth be built on the more and more broadly used "trash contracts"? Can the economic growth be built on a systematic increase of unemployment among the graduates of institutions of higher education?

In many cases, the first and second rounds of the BKL Study provide an accurate diagnosis of the actual labour market. The study poses a range of difficult challenges to the government. Unfortunately, a lack of social support, the inertia of social dialogue at various levels, including primarily the forum of the Tripartite Commission for Social and Economic Matters, offer poor opportunity to navigate away from the drift present in many areas of social, educational, and economic policy. One, therefore, needs to hope that the precious documents developed in the project will inspire practical action.

Janusz Trzciński
All-Poland Alliance of Trade Unions (OPZZ)

Conclusions:

Reconstruction of labour market policy and educational policy – towards evidence-based policy

In line with the subject range of the report, we focused on the questions related to the development of competencies. Yet, as we remarked in the introduction, one cannot sever the educational policy from the labour market policy. Increasing employee competencies and qualifications is an important, active instrument of labour market policy. International experience gained so far proves that improving competencies is an instrument (besides active employment brokerage combined with consulting and control) mentioned most often as the one that brings effects, even though frequently delayed in time. With appropriately conducted policy of adult education, major social benefits can be obtained. Other instruments of active labour market policy as a rule do not bring effects or are selective and concern only selected groups. An important group, which is affected by numerous instruments, are the women returning to the labour market after a period devoted to raising the children. It is characteristic that, despite the knowledge based on international experience, Poland lacks systemic policy towards this target group. It is a very good indicator of the fact that the labour market policy is not evidence-based, even though it should be. Plenty of funds, especially from the Labour Fund, are earmarked to it, as are European funds. The government, employers, and trade unions should be interested in using these funds effectively. To achieve that, high-quality evaluation, focused on proving what works (and who for) and what does not, must be run in the area.

It may be said that one of the key challenges is the reconstruction of the manner of conducting labour market policy and educational policy, founding them on formally conducted studies, especially evaluations of the instruments applied, and solutions introduced. Nevertheless, evaluation is to no avail if the decision-making process in the area of these (and also other) policies is not established on professional analyses of public policies, considering various options, and reaching to the results of studies, and in the case of lack of such experiences – to pilot and experimental projects.

The need for in-depth analysis of needs and recognition of potentials, motivations, and limitations in the case of entities involved in lifelong education – for adequate choice of educational policy instruments

Adults – entering the labour market, having completed the process of formal education – usually present a level of adjustment to the needs of that market at a lower level than they themselves (and the market) expect. A study of the degree of maladjustment and competency gaps, and on these grounds – the improvement of curricula and forms of formal education is exceptionally significant, yet burdened with a long-lasting inertia. This is one of the reasons why these gaps will always provide space for activity of both employees (and their fuller empowerment in the labour market) and the remaining "main actors" of educational processes.

The most important and at the same time the weakest of these is the human – as the subject shaping the path of occupational development in a sovereign manner, vested with consciousness, and ready to make efforts and expenditure to achieve that goal. Therefore, the idea of Life Long Learning (LLL) should be expressed through the use of instruments, building up awareness, and supporting decisions and choices. Also significant is the financial aid addressed mostly to the employees. In this context, a return to the debate on the application of the educational voucher seems justified, yet requires support by focused studies and analyses. It is so as we know too little about the motivations and behaviour of people in the labour market, and experiences of some countries with educational vouchers are not free from pathologies. Another powerful support will be the National Qualification Frameworks, unless the employee perspective and the principle of treating qualifications obtained in non-formal and informal education at par with those obtained in the formal mode are lost in implementation.

The studies prove that the key "investors" in human capital are employers, including predominantly major firms and large corporations. This is why their motivations and structure of training expenditure deserve a more careful study. For the degree to which this source of financing serves the improvement of qualifications of general use, and the spreading of the lifelong learning habit – and not only short-term business goals and training focused on internal needs of the organisation – is important.

What also deserves a separate analysis is the role of small and medium-size businesses in these processes. It seems that the diagnosis concerning the reasons behind the low activity in the realm of learning and education is incomplete and does not concern only the low awareness or limited financial capacity, while the instruments of support so far including also the way of using funds within the Human Capital Operational Programme, seem hardly efficient.

Andrzej Lech
Chairman of the Council of the Polish Chamber of Training Companies
President of the Warsaw Institute of Banking

One of the key challenges is the actual involvement in the process of shaping the policy of developing the human capital of the employers, trade unions, and also associations dealing with the management of staff, training, and development of the system of education, that is the true social dialogue. What remains a challenge in itself is the working out of the methodology of consultation, which will allow to account for various points of view in defining problems and selecting efficient means of operation. This is the approach that we try to follow in the Study of the Human Capital in Poland project. It is extremely important to launch an appropriate, systemic process of participation in the construction of public policies, to use the distributed knowledge well. Such a process is perceived as "tightrope walking", as the changes, always disturb the established standards of operation and established structures of interests. Nevertheless, introduction of changes without participation also incurs a risk, as the entire process of implementation can be hampered by interest groups with sufficient political power. Therefore, what remains most important in the context of the always present interests of various social actors is the skilful garnering of support and resources to conduct the changes that are necessary for the common good. This is what the art of true politics is all about.

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Polish Agency for Enterprise Development (Polska Agencja Rozwoju Przedsiębiorczości, PARP) is a governmental Agency reporting to the Minister of Economy. It was established on the power of the Act of 9th November 2000. The task of the Agency is to manage funds received from State Treasury and the European Union allocated to manage entrepreneurship and innovativeness, and development of human resources.

For over a decade, PARP has supported entrepreneurs in implementing competitive and innovative projects. The goal of the Agency is to conduct programmes aimed at developing economy, supporting innovation and research activity in small and medium-size enterprises (SMEs), regional development, growth of export, development of human resources, and the use of new technologies.

The mission of the Agency is to establish favourable conditions for sustained development of Polish economy by supporting innovation and international activity of businesses, and promotion of environmentally friendly forms of production and consumption.

In the financial perspective 2007–2013, PARP is responsible for the implementation of tasks in three operational programmes: **Innovative Economy**, **Human Capital**, and **Development of Eastern Poland**.

The Centre for Evaluation and Analysis of Public Policies at the Jagiellonian University (CEiAPP UJ) was established in 2008 as an autonomous university research and development unit. The main area of its operation is collaboration with public administration – both central and regional – in the scope of evaluation and analysis of public policies and their methodology. The activity of the Centre covers educational services, conducting scientific and applied research, and expert and analytical studies focused primarily on the sector of public administration at various levels.

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ISBN 978-83-7633-109-6