

Problem-specific report on the employment-related PIAAC results

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EXECUTIVE SUMMARY

The PIAAC Survey was first conducted in Hungary in 2017-2018, with Hungary participating also in 2021. This is a key step for labour market analyses in several respects, as it is the first time that an internationally comparable methodology is used in Hungary to provide a picture of the (basic) skills of the working age population¹ and to assess the role of basic skills in labour market success. In addition, the PIAAC also asks about the use of skills in the workplace and, more broadly, about job tasks, so that we could also attempt to examine the fit between skills and tasks. Finally, the Hungarian survey included a number of substantive additions, including questions on the ethnicity and language skills of respondents, and additional information on registered jobseekers, which help to answer questions relevant to Hungarian employment policy.

In the first part of the report we look at labour market participation, with a special focus on specific groups, while in the second part we analyse the earnings of employees and the skills they use in the workplace.

First, we looked at how basic skills contribute to labour market participation: how much more likely someone is to be employed if they have better skills.² Our results suggest that there are significant differences in employment by both reading comprehension and numeracy skills, even when important characteristics such as gender, age, education and place of residence are taken into account. In this case, a 50-point higher skill (corresponding to a difference of about 1 skill level) is about 4 percentage points more likely result in employment, which is roughly equivalent to the effect of two years more

¹ These include: reading comprehension skills, numeracy and problem-solving skills in an information technology environment. Since there is a very close correlation between reading comprehension and numeracy (i.e. there are hardly any who have performed at a high level in one area and at a low level in the other area) these two skills are not usually discussed separately.

² Results in all three areas are displayed on a scale of 500 skill points. Reading comprehension and numeracy skills are classified by the OECD as 5+1 and problem-solving skills as 3+1 skill levels. While for reading comprehension and numeracy skills we show the effect of 50 skill points which roughly corresponds to one skill level, problem-solving skills in an information technology environment require a different presentation. This can be attributed to the fact that many people either failed the drop-in test assessing basic computer skills, or indicated that they could not or did not want to work on a computer, which is why it was not possible to assess their problem-solving skills. Therefore, in the area of problem-solving skills - similarly to the OECD - we distinguished only those who achieved relatively low (level 1 and below level 1) and higher (level 2-3) results from those who did not score for one of the above reasons.



spent in education. Problem-solving skills in an information technology environment also contribute to employment, but their impact is somewhat more modest. When all other determinants of labour market opportunities are taken into account, those with medium or high problem-solving skills are 5 percentage points more likely to be employed than those who do not have these skills (i.e. cannot use a computer).³

We then looked in more detail at the skills of people not currently in work or not in the primary labour market and compared them with those of people in employment. This may be important because it provides the public employment services (PES) with information on the proportion of individuals in the potential labour pool who could be employed without necessarily needing extended training. We looked at the broader groups of current or future clients of the PES: registered jobseekers; the unemployed as defined by the ILO;⁴ those who have been in public works in the previous five years; and women at home with children under 6 years. It was assumed that those whose basic skills are below the level of the lowest 10 percent of the currently employed population would definitely need skills development (and other training).⁵ Our results show that a very significant proportion of the clients of the PES require training in order to successfully re-enter the primary labour market: the skills of those in public works (both women and men), of 40% of women registered as jobseekers and of a quarter of men registered as jobseekers are very low. The ILO unemployed and mothers with young children have slightly better skills (and therefore can presumably return to the labour market more easily), as only a quarter of them are characterised by very low skill levels.

The Hungarian survey includes questions on ethnicity, so the database provides a unique opportunity to map the skills of respondents who identify themselves as Roma. The survey reveals that less than a quarter of the Hungarian Roma have higher than primary education. In line with this, the skills of the Roma population are also low: roughly two thirds of them score at (or below) level 1 in reading comprehension and numeracy, while in the total population five out of six people are at a higher skill level. The employment rate of Roma respondents is significantly (23 percentage points) lower than that of the general population, and it is clear that a large part of this gap is due to poor skills. Our analysis also shows that when all the main individual, household-level and residential disadvantages

³ Here, the first group is at skill level 2 or 3 in terms of problem-solving skills (ie, they have an average of 316 skill points), while the second group cannot be assessed for problem-solving skills (because they cannot use a computer).

⁴ That is, those who were actively looking for a job in the previous month and could start working within 2 weeks.

⁵ It is worth noting that the 10th percentile of the skill distribution of working women is around 221 skill points, while for working men it is around 210 skill points (both in numeracy and reading comprehension skills). This corresponds to skill level 1 and in the entire sample, the skills of 15 percent of women and 12 percent of men do not reach this skill score.



are taken into account (in addition to skills), Roma are not significantly less likely to work. However, respondents who identify themselves as Roma were much more likely to be in public works: 55% were involved (at least once) between 2012 and 2017, while one in eight of the general working age population was in public works. While low skill levels are a very strong factor increasing the likelihood of being included public works, this is not the only explanation for the high participation of Roma. We show that the Roma population has also been in public works for a longer period (and repeatedly) compared to non-Roma with similar skill levels, mainly due to their higher proportion living in underdeveloped settlements.

As part of the Hungarian PIAAC survey, an additional sample of registered jobseekers (more precisely, those who were in the register on 25 March 2017) was also included. In the supplementary sample,

the proportion of people with very low levels of skills (level 1 or below) is alarming: 41-42 per cent of registered jobseekers had this level of reading comprehension or numeracy skills, compared to 16-17 percent in the main sample. In terms of problem-solving skills, the situation of registered jobseekers is perhaps even more severe, with only one third of them at a level 1 or above (compared to 58% in the non-jobseeker sample) and one third lacking basic computer skills.

Turning to the analysis of earnings, we looked at the relationship between skills and hourly earnings. Although those with higher education typically have higher skills, skills can have an impact on earnings beyond this. We found that 50 skill points (for reading comprehension or numeracy) are associated with about 10 percent higher earnings when education and some basic individual characteristics are taken into account. Half of this difference in earnings is due to job characteristics, i.e. the return in earnings in case of a 50-skill-point increase in skills within a given occupation is only 5 percent. We also show that this positive return is only present in the competitive sector. Problem-solving skills seem to have a very significant impact on earnings, even if we take into account not only individual background variables, but also (numeracy) skills: those who perform at skill level 2 (or above) earn more by 13 percent, while those who perform at skill level 1 (or below) earn 10 percent more than those who lack basic computer skills. It is also clear from the data that the lack of computer literacy not only differs between age groups, but is strongly correlated with educational attainment. It is encouraging that vocational school graduates in the younger age group are less behind in problem-solving skills than those with high school diplomas than in the older age groups (53 percent of them performed at level 1 or above, compared to those who did not reach level 1 or had no problem-solving



results). However, only 29 percent of young people with primary school education passed at least level 1.

A special feature of the Hungarian PIAAC survey is that it includes questions about foreign language use (and its level), so the return of foreign language use can be well documented. Almost half of the employees do not use foreign languages and only one third of them understand some foreign language to a level where they can presumably use it in their work (at least understand simple texts). We show that the wage returns to foreign language use are significant: around 8 percent (if the level of use is not taken into account). In addition, the returns in the case of intermediate and especially high-level language skills are outstanding: while individuals who can understand simple texts earn 11 percent more than non-speakers of foreign languages in similar occupations and jobs, fluent speakers earn 22 per cent more than non-speakers. It is worth emphasizing that we cannot determine to what extent the returns to (high levels of) foreign language skills are due to the possibility of gaining access to (high-wage) multinational companies. At the same time, we also find that while the returns to language use are high in the competitive sector, there is virtually no wage advantage in the public sector.

The PIAAC data collection is also very valuable in that it also asks about the use of skills at work, i.e. the frequency of reading and writing activities, calculation tasks, and computer use. It also provides information on other aspects of work, such as work autonomy, tasks requiring personal interaction or the frequency of physical work. These were used to create three standard indices measuring reading comprehension, numeracy and the use of information and communication technologies. In addition, we calculated indices characterising the nature of the tasks performed at work, focusing on three main areas (tasks requiring abstraction and interaction, routine tasks and physical work). These areas were examined because the literature on digitalisation has shown that it is primarily those tasks that are typically routine and programmable that can be automated, and therefore the demand for labour to perform such tasks may decrease, while tasks requiring abstraction and interaction are expected to increase.

First, we show that although the occupation in which someone works is an important determinant of the use of skills and the nature of their tasks, there can be very significant differences between individuals within an occupation. That is, only 10 percent of the skills people use and tasks they perform can be explained by their occupation, except for the use of information and communication technologies, where the explanatory power of occupation is 20 percent. We also show that people



with better skills and higher education also use their (relevant) skills more intensively at work. We then move on to analyse the relationship between the use of skills at work and earnings, while taking into account basic skills. This is important because it allows us to avoid attributing a positive wage return to a skill use as those with better skills tend to perform these tasks more intensively. Our results show that having to perform computing-related tasks one standard deviation unit more intensively is associated with 9.5 percent higher wages even within a given occupation, while the returns to using reading comprehension skills are only 4.7 percent higher and there are no returns to using numeracy skills. In the analysis of job tasks, we found that the return on tasks requiring abstraction and interaction is positive, while the return on routine tasks, and especially physical work, is negative. Of course, it is also possible that the return on a particular type of task is positive because it is performed by individuals who are particularly talented in that area or because they are particularly efficient in performing certain tasks due to their work experience in that area. Signs of this were found in the case of tasks requiring abstraction/interaction, but not for routine or physical tasks.

By having both knowledge about workers' skills and skills use in the workplace, we were also able to examine the fit between workplace requirements (skills use) and workers' skills - i.e. the extent to which basic skills are in line with the requirements expected in the workplace. Here we used two different approaches. In the first, the workplace skills use and workers' skills were compared directly at the individual level, and from these we created indices of similar scale. For example, in a workplace with a high level of skill use but where the employee characterised by a lower level of skills, is considered to have 'too low' skills. The second approach is based on subjective perceptions of employees. The first step is to find people in a particular occupation who are a good fit in terms of skills - according to their own opinion. Then, we categorise workers according to the typical skill level of such individuals (within a given occupation): those whose skill level is too low are those whose skill level is below that of well-fit individuals.

The goodness of fit indicators under the two approaches show a very different picture. The subjective perception index typically shows a higher proportion of low-educated individuals with too low a skill level compared to well-matched individuals, and a higher proportion of high-educated individuals with too high a skill level. The method based on comparing workplace skill use and individual skills also shows a significantly higher proportion of those with too low skills among the low educated, but a similar trend is seen for those with secondary and tertiary education. However, we did not find clear and consistent results when examining whether there is a relationship between skills fit and earnings



and job satisfaction.

