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The OECD Skills Profiling Tool: A new instrument to improve career decisions

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Abstract

This paper documents the development and piloting of the OECD Skills Profiling Tool (https://oecd-skillsprofilingtool.org/). The OECD Skills Profiling Tool assesses three types of skills: occupation-specific skills; foundational skills (literacy, numeracy and digital skills); and a set of non-cognitive skills using academically validated self-reported tests. After completion of the assessment, the OECD Skills Profiling Tool generates two sets of results: a personalised skill profile, which can be benchmarked against other users; and a list of suggested occupations that make use of those skills. In December 2021, 270 users and 38 career guidance counsellors in Chile, Colombia, Mexico and Peru tested the OECD Skills Profiling Tool. This paper describes the selection of assessment instruments, the methodology used to generate the results provided by the OECD Skills Profiling Tool and the outcomes of the piloting phase of the tool.

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Executive Summary

The first step to help adults navigate changing labour markets is to take stock of their skills. Accurately profiling an individual's skills is particularly important for those who have been out of formal education for many years, for those who never obtained a formal qualification, or for those who have predominantly worked in the informal sector. Without skill profiling, these individuals may miss relevant job opportunities because their CV does not provide a full picture of their true skill set.

Unfortunately, few skill profiling tools do a good job at assessing non-cognitive skills and experience acquired outside of work, in addition to recording qualifications and prior occupations. With support from the JPMorgan Chase Foundation, the OECD has developed a skills profiling tool to help career guidance professionals or training providers to quickly assess what adults can actually do.

This paper documents the development and piloting of the OECD Skills Profiling Tool (https://oecd-skillsprofilingtool.org/), that was launched in February 2022. Four design criteria were identified as crucial in developing this tool:

- Speed of completion (less than 30 minutes);
- User-friendliness;
- Cost-free for the user; and
- Easy benchmarking.

While existing tools with similar objectives already exist, most fall short on one or more of the above criteria. The OECD Skills Profiling Tool builds on the strengths of existing tools, while also permitting users to benchmark their performance against that of other users.

The OECD Skills Profiling Tool assesses three types of skills: occupation-specific skills; foundational skills (literacy, numeracy and digital skills); and a set of non-cognitive skills. The non-cognitive skills are selected from those most sought after in the labour market and include customer and personal service, time management and self-management, motivation and commitment and originality. The tool relies on self-reported tests widely acknowledged by the academic literature to assess these non-cognitive skills.

After completing the assessment, the OECD Skills Profiling Tool generates two sets of results: a personalised skill profile, which can be benchmarked against other users; and a list of suggested occupations that make use of those skills. This paper describes how these results are generated.

In December 2021, 270 users and 38 career guidance counsellors in Chile, Colombia, Mexico and Peru tested the OECD Skills Profiling Tool. The piloting phase provided useful feedback about how the OECD Skills Profiling Tool can be used most optimally. The career guidance counsellors who tested the tool expressed that it was particularly useful for adults with low or no formal education or those who did not have a defined career path, such as those entering or re-entering the labour market. It helped them by articulating their skills and by identifying relevant occupation suggestions. The tool is a useful complement to, and not a substitute for, professional career guidance. Adults require an opportunity to discuss suggested occupations with a professional career guidance counsellor who is equipped to

assess the suitability of the occupation suggestions for the adult, given their preferences and local labour market conditions.

1 Overview of existing skills profiling tools

This chapter provides an overview of several skill profiling tools available internationally and highlights how the OECD Skills Profiling Tool fills a clearly identified gap in demand. All reviewed tools share the following characteristics: they assess skills; they are available online; and they are publicly accessible. The examples are classified into three groups: those that involve direct assessments, those that rely on self-reported assessments, and those that generate a list of skills based on an occupation-to-skills classification.

Direct assessments

A direct assessment is a type of data collection that requires a person to demonstrate their knowledge, skill or behaviour. Direct assessments that generate a score, such as a written test, provide an objective measure of a person's skills benchmarked against the scores of other test takers. There are several tools currently that use direct assessments, each with their strengths and limitations.

The OECD's Education and Skills Online is a computerised assessment of cognitive and non-cognitive skills. It is designed to provide individual-level results that can be benchmarked against the average scores obtained from the OECD Survey of Adult Skills (PIAAC). Assessments are available for literacy, numeracy and problem solving in technology-rich environments. The assessment also includes optional modules collecting information on self-reported skill use, career interests, and subjective well-being and health. The test is not free: institutions, organisations or researchers may purchase codes which give test takers access to the test. While this tool provides a rigorous and objective assessment of users' skills, its length makes it impractical to administer in cases where a short test is required. The full test takes on average 120 minutes to complete, and the direct assessment modules take on average 65 minutes.

The French Pix website (https://www.pix.fr/) is another example of a direct assessment tool, but with a focus on digital skills. The Pix is free to use, and tests proficiency in 16 digital skills of the European DigCom Reference Framework, from beginner to advanced levels. The tests are very practical and concrete and require the individual to complete actual challenges online. Based on the individual's performance, online tutorials are recommended to help the learner to progress. While the Pix is user-friendly and cost-free, it tests only one set of skills (digital).

In addition, employers use a variety of psychometric tools in their hiring processes, and many of these use direct assessments to test skills. However, while publicly accessible, these tend to be fee-based.

Skills assessments based on self-reporting

Skills assessments based on self-reporting ask an individual to report their own knowledge, skills or behaviour, rather than directly testing it. This approach is generally faster than directly assessing a

person's skills and allows the assessment of a broader range of skills. However, self-reporting produces subjective assessments that are less reliable indicators of the skill level individuals possess relative to direct assessments.

The European Union Skills Profile Tool for Third Country Nationals (https://ec.europa.eu/migrantskills/#/) relies on self-reported assessments and covers a broad range of skills, including literacy, numeracy, digital, and technical skills. The tool is intended to be used by organisations offering assistance to third-country nationals to provide personalised advice on next steps, such as a referral to recognition of diplomas, skills validation, further training or employment support services. Efforts have been made to make the tool accessible for migrants, refugees and people with low levels of literacy. It has been translated into multiple languages, and many questions about skills proficiency include cartoon images to facilitate understanding for people with low levels of literacy. A unique feature of this tool is that it goes beyond skills acquired in the workplace and asks about skills acquired in informal contexts, such as at home or while volunteering. For example, the tool asks individuals to self-assess skills like driving, caring for elderly people, and mending clothing. A drawback of this tool is that it is not possible to benchmark against other users.

In several countries, ministries of employment or education provide career guidance tools to be used by young people making occupation/education decisions, and most of these are based on self-reported skills assessments. For instance, the *Observatorio Laboral* in Mexico (https://www.gob.mx/stps/articulos/observatorio-laboral-mexicano) provides occupation suggestions for young people based on their responses to questions about their work preferences. Similarly, Peru's *Ponte en Carrera* (https://www.ponteencarrera.pe/pec-portal-web/) is directed at high-school students, and includes questions about learning style, social skills, intelligence type, and interests. Its objective is to help high-school students decide which university program to pursue. The New Zealand government offers two tools on their career website (https://www.careers.govt.nz/) that provide job ideas based on two different types of skills assessments based on self reporting: users answer 78 questions about their work interests with the CareerQuest tool, and the SkillsMatcher tool has users identify their top 3 skills. These tools are geared towards young people rather than adults, and the questions tend to be basic, do not target skills acquired informally and the assessment is not available in multiple languages. They also do not allow for benchmarking.

Other career guidance tools offered by public administrations are aimed at both young people and adults who are looking for work, and these tend to use self-reported skills assessments. In Finland, Crear (www.crear.fi) is intended for both young people and jobseekers and asks questions about the skills one needs to study and learn effectively, well-being, time management and planning, employment skills and career management skills. The tool delivers a general summary of the person's readiness for employment. Austria's AMS Career Compass (www.ams.at/berufskompass) collects information about a person's interests, personality, strengths and expectations about their future job, and provides occupation suggestions based on this information. However, these tools are only available in one language, and do not allow for benchmarking against other users.

Skills generator based on occupation-to-skills classification

A third approach to skills assessment relies on a correspondences between occupations and the skills they require, based on taxonomies containing information on skills requirements by occupation, such as O*NET or ESCO (see Section 2 for a description of O*NET). Based on this correspondence and on the user's occupational history, tools relying on this approach suggest occupations that use a similar set of skills. Examples of such tools include France's MindMatcher (https://mindmatcher.org/), Chile's Relink (https://www.relink.cl/), and Finland's AVO (https://asiointi.mol.fi/avo/responsive/self-evaluation.xhtml). Skills generator tools provide the fastest approximation of a person's skills, relative

to both direct assessments or self-reported assessments. They also generate a more detailed list of skills: the O*NET database includes detailed information on about 120 categories of knowledge, skills and abilities and ESCO covers about 13,500 types of knowledge, skills and competences. O*NET also includes a measure of how important each skill is to a given occupation.

While faster and more detailed, this approach has limitations. An individual with work experience in a given occupation might not have all the skills associated with that occupation and may possess other skills that they are not using, making the assessment imprecise. There is also significant variation in skills required at work within occupations. In other words, two jobs with the same occupational code may be quite different in their content, depending on the industry, the seniority and experience of the employees, or how work is organised in specific companies. Furthermore, unless databases are updated regularly, they may not reflect changing skill requirements in a given occupation due to technological change and other trends. They may also not reflect the skill requirements that are specific to one's own country (for instance, O*NET and ESCO were developed for occupations in the United States and Europe, respectively). Another important limitation is that they will not capture the proficiency that individuals have in the skills required for a given occupation. Finally, if this is the only method used to assess a person's skills, then it will miss skills acquired outside of work experience.

Value-added of the OECD Skills Profiling Tool

The OECD Skills Profiling Tool builds on the strengths of existing tools in conducting the skills assessment. It combines self-reported skills assessment with a skills generator approach. Direct assessments are not employed due to the lengthy time needed to carry out such assessments. Skills assessment is conducted through four components:

- First, the Skills Profiling Tool generates a detailed list of likely skills based on current or previous occupation.

- Second, it allows the user to validate the generated list, removing skills that might not be relevant. This way, the generated list is a more accurate picture of the user's occupation-specific skills.

- Third, it invites the user to self-assess their aptitude on a number of transversal skills using academically-validated tests.

- Fourth, for users without work experience, it asks about skills that may have been acquired through informal roles.

Through this process, the OECD Skills Profiling Tool leverages the speed and detail of the skills generator approach. It also builds on the strength of the EU Skills Profile Tool for Third Country Nationals, enabling skill assessment for adults who may not have previous work experience but have acquired skills in informal everyday settings.

Similar to other tools, the output produced by the Skills Profiling Tool is a printout with scores for the skills that were assessed and a list of job suggestions to consider in one's job search. A value-added of the Skills Profiling Tool is that it allows benchmarking against other users. Users are told how they perform relative to all users in their country, or relative to those in the same occupation or education level.

Overall, the OECD Skills Profiling Tool fills an identified gap in available skills profiling tools by providing a fast, costless and user-friendly way for career guidance professionals to quickly assess what adults can do that takes into account skills acquired in formal education and occupations, but also in informal roles. The self-reported skills assessments for foundational and non-cognitive skills are academically-

validated and can be benchmarked against other users. The tool is available in multiple languages (English, Spanish and Portuguese).

2 Identifying the relevant skills and their respective instruments

Adults are expected to possess a combination of skills in order to thrive in today's labour market and society (Figure 2.1).[1] They need to have a set of occupation-specific skills in order to be hired and excel in their jobs and progress in their careers. These are often hard, technical skills – such as being able to operate a machine or knowing a specific technique; although occupation-specific skills can also be soft – such as the ability to coordinate people for team managers. In addition, they need to have a stock of foundational, information-processing skills – such as literacy, numeracy and digital skills – which are not only essential to take part in social interactions but are also highly transferable and relevant to many professional and personal contexts. Finally, workers must also have good levels of non-cognitive, transversal skills. These types of soft skills are associated with an individual's personality and attitudes, which are by nature harder to quantify.

Figure 2.1. A mapping of adult skills
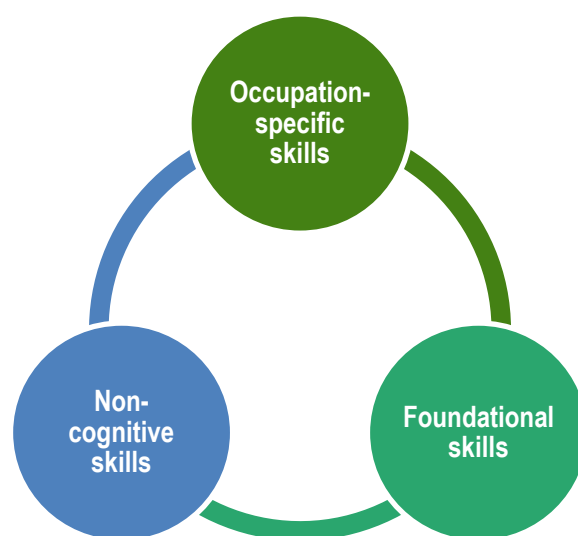
Note: As with every taxonomy, and especially those on skills mapping, the labels foundational, occupation-specific and non-cognitive skills merely serve a presentational purpose and should not be over-interpreted.
Source: Authors' elaboration.

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[1] Numerous scholars and analysts have produced exercises to map the skills considered essential for successful participation in economic and civic life – some examples include Rychen and Salganik (2003[14]), Ananiadou and Claro (2009[15]), and Binkley et al. (2010[16]). Please refer to OECD (2013[4]) and Fidler (2016[17]) for a more thorough discussion on adults' key competences.

The OECD Skills Profiling Tool innovates on the current landscape of career guidance platforms by assessing a broad range of skills from these three categories of foundational, occupation-specific and non-cognitive skills. In particular, the following skills have been selected as key to draw the overall profile of adults across countries:

- *Occupation-specific skills*: occupation-specific skills, abilities and knowledge areas from the O*NET database.
- *Foundational skills*: literacy, numeracy and digital skills.
- *Non-cognitive skills*: customer and personal services, time and self-management, motivation and commitment, originality.

The following sections describe why the above subset of skills were chosen.

Occupation-specific skills

Measuring occupation-specific skills is a potentially monumental task, since it entails not only a mapping of all skills required for each job in the labour market but also information on the level at which these skills are used in the workplace in each occupation based a statistically representative sample of workers or expert advice. Fortunately, since the early 1990s, the Employment and Training Administration of the Department of Labor of the United States has been sponsoring the development and updating of O*NET, a database containing information on skills requirements for almost 1 000 occupations.[2] In particular, the O*NET database provides information on the level and importance of 120 skills, abilities and knowledge areas for each occupation. Similar detailed information on skills are also published by ESCO, which is the classification of European Skills, Competences and Occupations.[3] According to O*NET:

- Skills are defined as developed capacities that facilitate learning and the more rapid acquisition of knowledge (basic skills) or that facilitate performance of activities that occur across jobs (cross-functional skills) – examples include reading, problem-solving, monitoring, and negotiation;
- Abilities are enduring attributes of the individual that influence performance – such as oral comprehension, mathematical reasoning, selective attention, among others;
- Knowledge is defined as organised sets of principles and facts applying in general domains – e.g. business and management, communication, and education.

Despite being developed for the context of the United States, the skills, abilities and knowledge areas identified in O*NET have been found to be applicable to other country contexts, at least for developed countries (OECD, 2017[1]). In particular, Handel (2012[2]) found an average correlation of about 0.80 between O*NET scores and parallel measures from the European Social Survey (ESS), EU-LFS, Canadian skill scores, the International Social Survey Program (ISSP), and the UK Skill Survey (UKSS), thereby concluding that most skill scores can be generalised to other countries with a reasonable degree of confidence.

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[2] The O*NET database and background information can be accessed at the following link: https://www.onetonline.org (accessed 26/06/2022).

[3] For the scope of this research, though, O*NET data have been preferred since they are more widely used by the economic literature as well as updated more frequently. Moreover, as discussed in the sections below, the Skills Profiling Tool matches occupation information with Lightcast data on postings, which are mapped using the O*NET taxonomy.

We match the O*NET database with the most recent International Standard Classification of Occupations (ISCO-08) by the International Labour Organisation (ILO), using the most detailed level of disaggregation of occupations – i.e., 4-digit. In this way, we obtain a full matrix of 410 occupations, each of which displays information on the intensity of 120 skills, abilities and knowledge areas. In this way, once a user selects his or her current or past occupation, the Skills Profiling Tool provides a score for the average intensity of skill use in that occupation for each of the 120 skills, abilities and knowledge areas. To ensure that the average intensity of skill requirements taken from O*NET reflects the user's actual experience, the Skills Profiling Tool invites the user to validate whether he/she used a set of skills, abilities and knowledge areas when working in the occupation that he/she most identifies with. This verification is done for the top 10 skills, abilities and knowledge areas in each occupation.

For users who have no prior work experience, the OECD Skills Profiling Tool administers another set of questions focusing on individuals' daily activities at home, such as their experience with cooking, cleaning, gardening or caring for others. Please refer to Section 3 for more information on this.

Foundational skills

The main information-processing skills are literacy and numeracy, which are the foundation for developing higher-order cognitive skills, like analytic reasoning, and are critical for gaining access to specific domains of knowledge (OECD, 2013[3]). In addition, digital skills – i.e. the capacity to access, analyse and communicate information through the use of digital devices and applications – are increasingly becoming a requirement to function in society, since information and communication technologies (ICTs) are omnipresent in both the social sphere and the workplace.

A number of surveys have been developed in recent years to collect comprehensive information on the level of proficiency of adults in foundational skills, including cross-country datasets like the Survey of Adult Skills (PIAAC), the Adult Literacy and Life Skills Survey (ALL) or the International Adult Literacy Survey (IALS). A common feature of all these surveys is that they rely on detailed but long tests – for instance, the average time taken to complete the cognitive assessment of PIAAC is around 50 minutes (OECD, 2013[4]). For the purposes of the OECD Skills Profiling Tool, a much shorter assessment of foundational skills was needed, since the instrument needs to be used during career guidance sessions.

For this reason, the Skills Profiling Tool employs a set of skills-use questions to measure foundational skills. These questions, the same as those used in the Survey of Adult Skills, measure the frequency with which respondents perform specific tasks in their jobs and everyday life. Based on PIAAC data, there is a strong positive association between skills use and skills proficiency concepts – notably between the use of reading skills and literacy proficiency and between the use of numeracy skills and numeracy proficiency (OECD, 2013[3]). In particular, the OECD Skills Profiling Tool exploits the skills use questions included in Table 2.1.[4]

Table 2.1. Skills use questions on literacy, numeracy and digital skills included in the OECD Skills Profiling Tool

Literacy	Numeracy	Digital skills
How often do you usually perform each of the following activities (including online, on a computer or on other electronic devices)?	How often do you usually perform each of the following activities (including online, on a computer or on other electronic devices)?	The following questions are about the use of computers or the internet. This could be at home or in other places that offer internet services, like internet cafes or

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[4] Note that in a few cases, original skills use questions included in the PIAAC have been slightly modified in order to make them more self-explanatory so that they could be more easily understood by people with poor basic skills.

Literacy	Numeracy	Digital skills
		libraries. How often do you usually perform each of the following activities?
Read books?	Calculate prices, costs or budgets?	Use email or communicate with others through mobile applications (excluding phone calls)?
Read articles in newspapers, magazines or newsletters?	Prepare charts or tables to, for example, forecast savings or classify expenditures?	Use the internet in order to access information?
Read articles in professional journals or scholarly publications?	Undertake measurements (e.g., when following cooking recipes or undertaking repairs)?	Conduct transactions on the internet, for example buying or selling products or services, or banking?
Read instructions or forms?	Use more advanced math or statistics such as calculus, complex algebra, trigonometry or use of regression techniques?	Use spreadsheet software, for example Excel?
Read messages, e-mails or letters?		Use a word processor, for example Word?
Read bills, invoices or bank statements?		Use a programming language to program or write computer code?
Read online content such as blog posts or posts on social media?		Participate in real-time discussions on the internet, for example in webinars, using platforms such as Zoom or Skype?
Write messages, e-mails or letters?		Participate in social networks, for example, posting photos, comments or interacting with your networks' posts?
Write online content such as blog posts or posts in social media?		Use internet or digital devices for entertainment, for example, to listen to music, play video games or edit photos?
Fill in forms?		Use maps, plans or GPS for finding directions and locations?

Note: Possible answers included "Never", "Less than once a month", "Less than once a week but at least once a month", "At least once a week but not every day", "Every day".
Source: Authors' elaboration based on the Survey of Adult Skills questionnaire (OECD, 2013[4]).

For each skill, we construct an indicator aggregating the relevant frequency questions. While several weighting techniques exist to aggregate variables – including statistical approaches such as factor analysis and polychoric principal component analysis – we rely on equal weighting (that is all variables within an indicator are given the same weight), as this approach seems the most transparent, given that it implies no a priori judgement about which variable counts more than others. As a result, each skill indicator is measured as the simple average of its sub-variables.

Non-cognitive skills

Non-cognitive skills – also called soft skills, personality traits or socio-emotional skills (Kautz et al., 2014[5]) – have long been overlooked as important work skills, despite playing a key role in how individuals are valued in the labour market and in society at large. Only recently, labour economists have started paying attention to these skills, following the seminal work by psychologists (McCrae and Costa, 1987[6]) (Goldberg, 1990[7]). Indeed, over the last decades psychologists have arrived at a relatively well-acknowledged taxonomy of non-cognitive skills, called the "Big Five": openness to experience, conscientiousness, extraversion, agreeableness and neuroticism. More recently, other taxonomies have been proposed to map additional non-cognitive skills, including self-efficacy, empathy, grit and trust, among others.

In order to identify which of the numerous non-cognitive skills recognised by the literature should be included in the Skills Profiling Tool, we use a machine learning approach to classify skills recently developed by the OECD. Specifically, Lassébie et al. (2021[8]) use a semi-supervised machine learning

algorithm and online job postings data from Burning Glass Technologies to identify which are the skills currently most sought after in the labour market.[5] For the Burning Glass Technologies data analysis, we restrict our analysis to job postings requiring up to secondary education only, to avoid putting too much emphasis on extremely high-skilled vacancies that might require specific skills sets. Table 2.2 shows the frequency of each skill category among job postings for the United States in 2019.

Table 2.2. Skills frequency in job postings in the United States in 2019

Skill category	Frequency
Customer and Personal Service	41.4%
Time Management	40.8%
Installation and Maintenance	37.9%
Office Tools and Collaboration Software	32.6%
Physical Abilities	31.3%
Writing	24.0%
Management of Personnel Resources	21.5%
Management of Financial Resources	20.5%
Reasoning and Problem-solving	18.4%
Self-management	16.1%
Speaking	14.9%
Coordination	13.8%
Management of Material Resources	13.3%
Quantitative Abilities	11.2%
Digital Data Processing	11.0%
Motivation/commitment	8.6%
Training and Education	7.2%
Quality Control Analysis	5.7%
Design	4.9%
Active Listening	3.7%
ICT Safety, Networks and Servers	3.4%
Originality	3.3%
Computer Programming	3.0%

Note: Only skill categories with a frequency greater than 3% are presented in the Table. Skill categories that represent pure knowledge areas are excluded from the analysis as they do not represent non-cognitive skills. Job postings with missing education requirement, missing skill keywords, or with more than 20 skill keywords are excluded from calculations.
Source: Authors' elaboration based on Lassébie et al. (2021[8]).

Out of the skill categories most commonly cited in online job postings in the United States in 2019, we have selected the following top non-cognitive skills to be included in the Skills Profiling Tool, based on the existence of academically-validated tests for the given skill:[6]

- Customer and personal service;
- Time management and self-management;

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[5] From a technical point of view, Lassébie et al. (2021[8]) exploits machine learning techniques to classify the 17 331 skills keywords contained in online job postings gathered by Burning Glass in Australia, Canada, New Zealand, Singapore, the United Kingdom and the United States into a pre-existing taxonomy of 61 skill categories inspired by O*NET.

[6] Note that, in addition to non-cognitive skills, Table 2.2 includes several foundational skills already captured by our skills use variables described above, namely literacy (writing, speaking), numeracy (quantitative abilities) and digital skills (office tools and collaboration software, digital data processing).

- Motivation and commitment;
- Originality.

Direct tests cannot measure users' levels of non-cognitive skills, which, instead, are better captured through self-reported surveys (Kautz et al., 2014[5]). For this reason, we have selected a set of self-reported tests widely acknowledged by the academic literature to ensure robustness of estimations. The four tests we adopted are: 1) the Basic Empathy Scale in Adults (BES-A) by Carré et al. (2013[9]) to capture empathy and customer service; 2) the "conscientiousness" section of the Big Five Aspect Scales (BFAS) by DeYoung et al. (2007[10]) to measure time and self-management; 3) the Short Grit Scale (Grit-S) by Duckworth and Quinn (2009[11]) to measure motivation and commitment; 4) the Creative Personality Scale by Gough (1979[12]) to calculate originality and creative personality. These instruments have been selected among those available in the academic literature based on their high Cronbach's alpha value to ensure reliability and validity of the selected measures.[7]

All the self-reported surveys are included in the main Skills Profiling Tool questionnaire, available in full in 4Annex A.

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[7] Cronbach's alpha is a coefficient of reliability that is often used in academic literature to measure the internal consistency – i.e., how closely related a set of items are as a group – of a composite indicator. In technical terms, Cronbach Alpha measures the portion of total variability of the sample of indicators due to the correlation of indicators. As such, it is equal to 1 if indicators are perfectly correlated and equal to 0 if no correlation exists.

3 Generating results

Once the individual completes the tests and questions included in the Skills Profiling Tool, the results of the different tests are processed and integrated into a single skills profile.[8] Users can interact with their skills profile by comparing it to the average skills profile of some user groups or to the skills profile needed to work in a given occupation. Additionally, the tool presents a list of suggested occupations based on the user's skills profile.

This section first describes how the skills profile of the user is generated, including the possibility of comparing the skills profile to population group averages, followed by a description of how test results are matched to occupation information to allow for comparability with occupations and, finally, how suggested occupations are selected.

Generating the user's skills profile

To generate the skills profile of an individual, the Skills Profiling Tool first adds the scores assigned to each response of the individual within each test. Then, it divides the total sum of the scores within each test by the maximum possible score in that test. Multiplying this value by 100 leads to the percentage score obtained by the user for each individual test, easing the interpretation of results and increasing comparability across test results.

Users can compare their skills profile with two different types of information: 1) to the average skills profile of users in the same country, age group or with the same education level; and 2) to the skills profile needed to work in a given occupation. To compare the skills profile to the average skills profile of users in the same country, age group or with the same education level,[9] the tool retains anonymised assessment results of users that belong to the relevant population group. It then computes and shows a simple average of their results for each test. This average is updated every time a new user completes the assessment. To compare the user's skills profile for the skills that are assessed to the skills profile needed to work in a given occupation, the Skills Profiling Tool relies on information from O*NET.[10] The next subsection describes how the O*NET database is used to generate the results section of the Skills Profiling Tool.

Matching test results with occupation information

To be able to compare the user's skills profile derived from the Skills Profiling Tool for the skills that are assessed to the level of skill required in each occupation, we manually matched the individual skills assessed in the tool to skills, abilities and knowledge areas in O*NET.

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[8] See 4Annex B for examples of the Skills Profiling Tool results page.

[9] This comparison is only possible if a minimum of 60 users belonging to the relevant group has completed the questionnaire of the Skills Profiling Tool.

[10] See Section 2 for more detail on the O*NET database.

To carry out this match, the individual items included in each skill assessment for the non-cognitive skills were compared to the different anchoring examples for all skills, abilities and knowledge areas included in O*NET to find the closest match.[11] Table 3.1 shows the resulting correspondence between the skills assessed in the tool and the skills, abilities and knowledge areas in O*NET.

Table 3.1. Correspondence between skills assessed by the Skills Profiling Tool and skills, abilities and knowledge areas in O*NET

Skill Measured by the Skills Profiling Tool	Corresponding skill, ability or knowledge area in O*NET
Empathy	Social perceptiveness (skill)
Literacy	Reading comprehension (skill)
Numeracy	Mathematics (skill)
Digital skills	Computer and electronics (knowledge area)
Conscientiousness	Time management (skill)
Grit	Active learning (skill)
Creative personality	Originality (ability)

Source: Authors' elaboration

Additionally, O*NET levels range from 0 to 7 while user's individual skill score is reported in a 0 to 100 scale. To enable comparison to an individual's score, O*NET individual skills, abilities and knowledge areas levels are rescaled. This assumes a perfect correspondence between the level of skill identified by each instrument and the level of skill in O*NET.[12] While this is a strong assumption, it was supported by the anchoring examples of many of the skills assessed.[13] Anecdotally, a one-to-one correspondence seems to lead to reasonable results. For instance, based on data collected from early users as of April 2022, the average numeracy score of users with a higher education degree is 45%, which is almost the same as the score required to be a lawyer (46%), and lower than the score required to be an industrial engineer (69%) or a mathematician (89%) – both occupations one would expect would require a higher level of numeracy than a lawyer.

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[11] The anchoring examples are provided by O*NET and link actions to their assigned level of a skill, ability or knowledge area. They intend to provide a reference point to the different levels of a skill. As an example, three anchoring examples are provided for Reading Comprehension. The examples and their corresponding skill levels are the following: "Read step-by-step instructions for completing a form", level 2; "Read a memo from management describing new personnel policies", level 4; and "Read a scientific journal article describing surgical procedures" at level 6.

[12] An advantage of assuming a one-to-one correspondence is that it does not impose a cap on the maximum possible score that users can obtain relative to O*NET skill levels, allowing for the full set of occupations to be considered for the occupation suggestions result. For example, another possible assumption might have been that a score of 100 in the empathy test corresponds to level 4 of the corresponding skill, social perceptiveness. In this case, however, the score that users could obtain for social perceptiveness would be capped at 4, despite the fact that their actual level of social perceptiveness may be higher. Thus, the tool would mostly consider suggested occupation requiring a level of social perceptiveness around 4 or lower to all users. Thus, assuming a one-to-one correspondence allows the tool to compare individual skills profiles to a larger set of occupations.

[13] For example, while, to obtain a 100 score in the Literacy assessment, the user must read, among other reading materials, "articles in professional journals or scholarly publications" on a daily basis, the anchoring example on the O*NET database for what would be an 85% in the rescaled score is "read a scientific journal article describing surgical procedures". Similarly, to obtain a 100 score in numeracy, the user should, among other, "use more advanced math or statistics such as calculus, complex algebra, trigonometry or use of regression techniques" on a daily basis. The corresponding anchoring example for an occupation that required 85% level of that skill is "derive a complex mathematical equation". These suggests that a one-to-one correspondence could be reasonable.

Matching the user's skills profile to potential occupations

As a final result, the Skills Profiling Tool generates a list of suggested occupations based on the user's skills profile. Depending on whether the user has previous work experience or not, the tool provides either a list with 4 potential occupations at the most detailed level from ISCO-08 (4-digit level) or 10 potential occupations at a higher level of grouping from ISCO-08 (3-digit level). The questions included in the Skills Profiling Tool also differ depending on whether the user has previous work experience or not.

Case 1: the user has previous work experience

If the user has previous work experience, they will be able to select the occupation in their work history with which they most identify, with occupations defined using ISCO-08 at the most detailed level (4-digit level). The tool then extracts the full set of skills, abilities and knowledge requirements attached to that occupation and the level at which they are required.

The Skills Profiling Tool tests some of these skills directly and allows the user to update information on the level of occupation-specific skills, abilities and knowledge areas by asking them whether they used a set of skills, abilities and knowledge areas when working in that occupation. The skills included in the questionnaire are the 10 top skills, abilities and knowledge areas required in the occupation, according to the O*NET database. If the user replies that they did in fact use a given skill, ability or knowledge area, the level suggested by O*NET for that skill, ability or knowledge area is kept. If instead the user replies that they did not use a given skill, ability or knowledge area, the level is updated to 0,[14] which assumes that the user does not have that skill, ability or knowledge area. While this may seem arbitrary, it takes into account the fact that jobs may vary within occupational categories and adjusts accordingly to draw a more precise picture of individual skills, abilities and knowledge than what is based blindly on their occupational history.

Once each user has a complete and personalised vector of skills, abilities and knowledge areas,[15] this information can be used to find the occupations in O*NET with the closest skills match. To do so, the tool computes the Euclidean distance between the skills profile of the user and the skills profile of each occupation included in O*NET.

First, for each skill, ability and knowledge area included in O*NET, *s*, the tool computes the difference between the level of that skill, ability and knowledge area for a given occupation, *o*, and the corresponding level of the user, *user*. Then, these individual distances are squared and added up. The Euclidean distance is the square root of the resulting value.[16]

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[14] As already mentioned in Section 2, it could happen that one of the skills assessed by the tool also belongs to the top 10 skills, abilities and knowledge areas of the user's main occupation. If the user reports not having used that skill while at his or her job (and so the O*NET level had been updated to 0), the level of that element is replaced by the score obtained in the assessment instead of the average.

[15] The tool additionally replaces the O*NET levels of skills assessed by the tool (see Table 3.1.) with the average of the score that the user obtained in the tool test and the O*NET level. This adjustment makes use of all available information for those skills. Since the user score is in a 0-100 scale while the O*NET skill levels range from 0-7, the tool rescales the user's score to a 0-7 scale so it is comparable to O*NET. As above, this assumes a perfect correspondence between the test and the O*NET scales.

[16] This use of the Euclidean distance was adapted from Robinson (2018[13]).

$$distance_{o,user} = \sqrt{\sum_{s=1}^{S}(value_s^o - value_s^{user})^2}$$

Once the Euclidean distances are computed for all ISCO-08 occupations at the most detailed level (4-digit), occupations are sorted by distance and the four occupations with the shortest Euclidean distance are shown in the results page of the Skills Profiling Tool.

Additionally, this same calculation is done separately for skills and abilities, excluding knowledge areas, and for knowledge areas, excluding skills and abilities. In this way, in the results page, the user can select whether they want to see the matched occupations using the full set of information or using only subsets of information, either excluding knowledge area or excluding skills and abilities. This is relevant if the user has a preference for occupations either related to their previous occupation (in which case they would exclude skills and abilities) or not related to their previous occupation (in which case they would exclude knowledge areas).[17]

Case 2: the user does not have previous work experience

If the user does not have previous work experience, the tool does not have an initial vector of skills, abilities and knowledge areas derived from O*NET from which to start. Thus, to match the user's skills profile with potential occupations, the tool relies on information on skills, abilities and knowledge areas gathered from the included tests and questions.

However, the fact that the user does not have work experience does not mean that the user has not developed any occupation-specific skills. For example, someone who has been taking care of their garden could have developed gardening skills that could be useful to work as a gardener. To capture these skills, the tool includes questions about daily activities related to occupation-specific skills included in O*NET. Table 3.2 shows how daily activities were mapped into O*NET skills, abilities and knowledge areas.[18]

Table 3.2. Correspondence between daily activities and skills, abilities and knowledge areas in O*NET

Daily activities included in the Skills Profiling Tool	Corresponding skill, ability or knowledge area in O*NET
Cooking, cultivating crops, taking care of livestock	Food production (knowledge area)
Setting the table, washing dishes, cleaning	Service operation (skill)
Laundry, ironing, clothing repairs	Operation monitoring (skill)
Home repairs, maintaining a vehicle	Mechanical (knowledge area)
Caring for children, elderly, sick or people with disabilities	Customer and personal service (knowledge area)

Source: Authors' elaboration.

Given that these skills have been developed in a non-professional environment, it cannot be assumed that they are at the same level of someone who learnt these skills on the job. Thus, for individuals who report having experience with any of these activities, we input a level of 2 on the corresponding O*NET

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[17] Since these results exclude from the calculations relevant information on the level required of elements in the omitted category (knowledge areas or skills and abilities), they also present a list of the items in the omitted category that are required at a high level (i.e., have a score of 4 or above in O*NET) to perform the occupation.

[18] This match was done by comparing the anchoring examples included in O*NET for all skills, abilities and knowledge areas to the relevant actions included in the set of questions.

skill, ability or knowledge area. Based on the anchoring examples from O*NET, a level of 2 would be roughly equivalent to the level of a junior professional in an occupation that required those skills.

After the user completes the tests and questions included in the Skills Profiling Tool, the tool will have gathered information on 12 out of the 120 skills, abilities and knowledge areas included in O*NET for each occupation. These 12 skills, abilities and knowledge areas are the only information used to compute the Euclidean distance in the case that the user does not have previous work experience.

To improve the matching with potential occupations when the user does not have previous work experience, the tool also makes use of the user's education level. Whether a university degree is required or not for a given occupation is a significant barrier for gaining immediate entry into an occupation. Thus, we use O*NET information on the education level of workers in different occupations to determine if a university degree may be required or not. In particular, if 50% or more of workers in an occupation have at least a university degree according to O*NET, then we assume that having a university degree is required and that this occupation would not be suitable for a worker without a university degree. Thus, when computing the Euclidean distance, only occupations in which less than 50% of workers had a university degree according to O*NET are included for users without a university degree, while users with a university degree can be matched to all occupations.[19]

Additionally, there are two other adjustments to the way the matching is computed and presented when the user does not have previous work experience. These adjustments intend to account for the lower precision of the occupation match in this case. The first one is that the Euclidean distance is computed with respect to a higher grouping of occupations, ISCO-08 at 3-digit level,[20] instead of ISCO-08 at 4-digit level. The second difference is that the tool presents a larger number (i.e. 10) of suggested occupations and these occupations are shown in random order, instead of ranked by distance.

Whether or not a person has work experience, the occupation suggestions should only be considered as "suggestions" and the individual is encouraged to discuss them with a career advisor. Suggested occupations are based only on the skills, abilities and knowledge areas that the tool assesses and do not take into account the user's interests, the local labour market conditions or other particularities such as the need for a certification to work in some occupations or the availability of training opportunities. Thus, either if the user has previous work experience or not, the user should discuss their results with a career guidance counsellor, who can use that information combined with their expertise to provide concrete advice based on the interests of the user, their skills and the available job and training opportunities.

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[19] Holding a university degree is not a permanent barrier, as individuals could complete a university degree before changing occupation. However, the goal of the tool is to identify occupations that the user could pursue fairly quickly. This is the reason why workers without a university degree can only be matched with occupations in which less than 50% of workers had a university degree according to O*NET.

[20] The Euclidean distance is computed with respect to the average level for each skill, ability and knowledge area in O*NET across all occupations within the same 3-digit ISCO-08 group.

4 Results from a large-scale, cross-country pilot

In December 2021, the OECD conducted a pilot of the Skills Profiling Tool in four countries: Chile, Colombia, Mexico and Peru. There were two objectives of this pilot: first, to ensure that the assumptions made during the development of the tool led to reasonable results, that is, aligned with career guidance counsellor's perceptions about a candidate; and, second, to define some best practices on how and with whom should career guidance counsellors use the tool. Indeed, creating a skills profile of an individual in less than 30 minutes involves making a number of simplifying assumptions, as described in Section 3. The pilot helped to ensure that these assumptions and the results produced by the Skills Profiling Tool were reasonable.

Pilot implementation

To carry out the pilot, the OECD team collaborated with four public career guidance providers in Latin America: the National Training and Employment Service in Chile (SENCE, *Servicio Nacional de Capacitación y Empleo*), the National Learning Service in Colombia (SENA, *Servicio Nacional de Aprendizaje*), the National Employment Service in Mexico (SNE, *Servicio Nacional de Empleo*) and the Ministry of Labour and Employment Promotion in Peru. These institutions reviewed and provided comments on the questionnaire included in the tool and made a total of 38 of their career guidance counsellors available to participate in the pilot. Participating counsellors were trained in the use of the tool and on the interpretation of its results through an online webinar. The pilot phase was carried out from November 30 to December 10, 2021. During this period, participating counsellors used the Skills Profiling Tool with 270 users. The pilot was conducted either remotely, by phone, or in person, generally with support from the counsellor.

Feedback on the tool was gathered through two channels: questionnaires and online meetings. Two questionnaires gathered the counsellors' opinions about the tool and demographic information on the users. The OECD team also conducted online meetings with a selection of counsellors to better understand how they used the tool and to gather more detailed feedback.

Figure 4.1 summarises the socio-demographic composition of the user sample. During the pilot phase, the share of users was equally distributed by gender. By age group, at the time of the implementation of the pilot, the largest group of users were between 35 and 54 years old (39%), followed by the group between 25 and 34 years old (33%). Two-thirds of users (67%) held tertiary education (Figure 4.1), while only 1% of users had a primary education only. Nearly all users resided in urban areas (97%). Given these characteristics of the user group, it should be kept in mind that the tool's sample is not fully representative of the population in the studied countries. In particular, the sample is more highly educated and disproportionately living in urban areas. This may have implications for how results are interpreted; for example, users with a lower educational level may need more time to respond to the questionnaire and to interpret the results.

Figure 4.1. Socio-demographic characteristics of users

A. Gender

B. Age group

C. Education
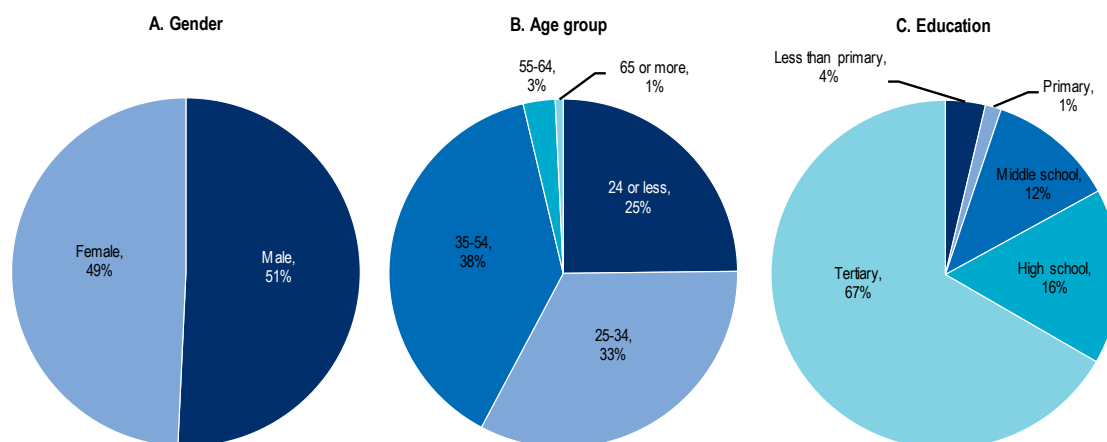
Source: Data from the pilot phase of the tool in Chile, Colombia, Mexico and Peru.

Feedback from counsellors

Through the questionnaires and the online interviews, counsellors provided feedback on the use of the tool.

How much time does it take to complete the assessment and explain the results?

Most counsellors (66%) reported that users took between 15 and 30 minutes to complete the assessment, whereas seven counsellors (18%) reported that it took between 30 and 45 minutes (Figure 4.2, panel A). All counsellors felt the length needed to complete the tool was adequate given its nature. The majority (74%) of counsellors reported they needed less than 10 minutes to explain the results to users.

How user-friendly was the tool?

Almost 75% of counsellors who participated in the pilot felt that users could have completed the tool by themselves, as it was only necessary to support users at the beginning of the assessment. Counsellors felt that the tool was simple and user-friendly

Who could benefit most from the tool?

The groups that counsellors believed could benefit most from the tool are those with a low level of education (34%) followed by users with no formal qualifications or work experience (32%) (Figure 4.2, panel B).

Figure 4.2. Users and perception of the tool

A. Length completing the questionnaire

45 min to 1 h, 5%
Less than 15 min, 8%
30 to 45 min, 18%
15 to 45 min, 3%
15 to 30 min, 66%

B. Users that would benefit from the tool

N. of Councellors

Users with low educational level: 13
Users who have highly developed their skills while working: 10
Users with no formal qualifications or work experience: 12
Other: 2
Professionals: 1
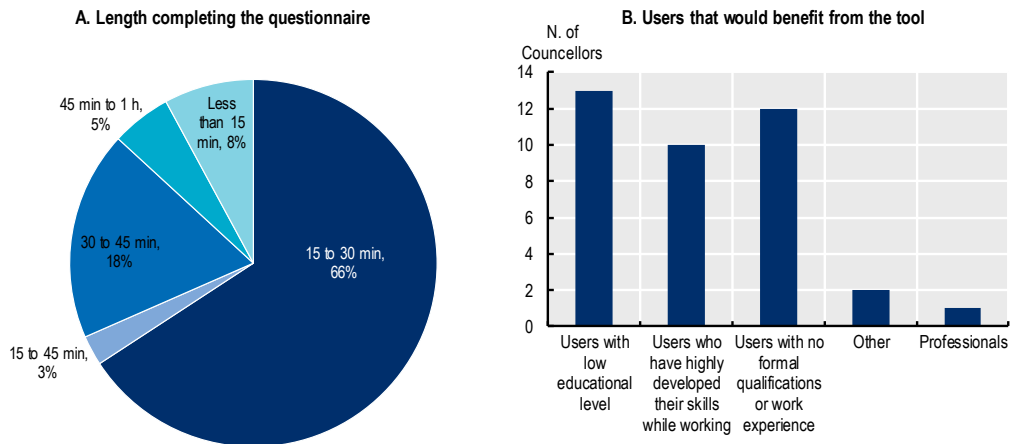
Source: Data from the pilot phase of the tool in Chile, Colombia, Mexico and Peru.

Conclusions from the pilot

The pilot demonstrated that assumptions made during the development of the Skills Profiling Tool were reasonable. Based on the online meetings with counsellors and the questionnaires they completed, it seems that counsellors generally agreed with the skills profile generated by the tool for particular individuals. Counsellors also expressed that the tool helps users better understand what their skills are. Counsellors also reported that the option to compare one's skills profile to the average user or to the skills profile needed to work in a given occupation provided incentives for users to upskill or retrain. The pilot confirmed that the Skills Profiling Tool is indeed fast to complete, as most users completed the questionnaire in less than 30 minutes.

Several conclusions were drawn during the feedback sessions with counsellors on how to optimise the use of the tool. One conclusion from the pilot was that the tool was simple enough that users could complete it on their own in advance of their career guidance session. This would allow the career guidance counsellor to optimise the time together with the individual during the session and to base their advice on the results generated by the tool. Additionally, on top of users with no formal education, counsellors expressed that the tool was particularly useful for users who did not have a defined career path, such as those entering or re-entering the labour market. Limiting use of the tool to these types of users may allow for a higher value impact.

Finally, the importance of discussing the final results with the counsellor was highlighted during the feedback sessions. This is particularly the case with the occupation suggestions generated by the tool, since these are based only on the skills for which the tool gathers information and are not adapted to local labour market conditions or available training opportunities. Counsellors highlighted the importance of users having an opportunity to discuss any suggested occupation they are interested in with their career guidance counsellor, who will be able to discuss with them to what extent the suggested occupations are suitable or not.

Overall, this pilot exercise confirmed that the OECD Skills Profiling Tool is effective at helping low-educated adults and those without formal work experience to articulate their skills. It is also effective at helping them to identify relevant occupation suggestions based on their skills, though these occupation suggestions should be discussed with a career guidance counsellor. In general, the tool should be seen

as a useful complement to and by no means a substitute for the personalised guidance that a career guidance counsellor can provide.

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Annex A. The Skills Profiling Tool Questionnaire

Section 1 – Background information

1. Who are you filling out this questionnaire for?

☐ Myself

☐ Someone else

2. In what country do you live?

Drop-down list

3. In what country were you born?

Drop-down list

4. How old are you?

☐ 24 or younger

☐ 25-34

☐ 35-54

☐ 55-64

☐ 65 or older

5. What is your sex?

☐ Female

☐ Male

☐ Prefer not to say

6. What is the highest level of education that you have attained?

☐ No formal qualification or below primary education

☐ Primary education

☐ Lower secondary education

☐ Upper secondary (e.g. high school diploma)

☐ Higher than secondary education (e.g., post-secondary or tertiary)

7. **[If Q.6="Lower secondary education" or higher]**

    What was the main subject or content of your highest level of education? If there was more than one, please choose the one you consider most important.

    ☐ Architecture and construction   ☐ No specialisation

    ☐ Agriculture

    ☐ Arts

    ☐ Biological and related sciences

    ☐ Business and Administration

    ☐ Education

    ☐ Engineering and engineering trades

    ☐ Environment

    ☐ Fisheries

    ☐ Forestry

    ☐ Health

    ☐ Humanities

    ☐ Hygiene and occupational health services

    ☐ Information and Communication Technologies

    ☐ Journalism and information

    ☐ Languages

    ☐ Law

    ☐ Manufacturing and processing

    ☐ Mathematics and statistics

    ☐ Personal services

    ☐ Physical sciences

    ☐ Security services

    ☐ Social and behavioural sciences

    ☐ Transport services

    ☐ Veterinary

    ☐ Welfare

    ☐ Other

    ☐ Not applicable

8. **Which language/s do you speak confidently? You can select more than one answer. Please, click on the arrow at the end of the page to proceed to the next question.**

   Drop-down list

9. **Are you currently or have you ever been employed or self-employed?**

   ☐ Yes

   ☐ No

10. **[If Q.9="Yes"]**

    Please, select your current or past occupation with which you identify the most.

    Drop-down list of ISCO-08 occupations at 4-digit level

11. **[If Q.9="Yes"]**

    Did you use any of the following skills, abilities or knowledge in the occupation you most identify with?

    This question shows the 10 O*NET elements (skills, abilities or knowledge areas) with highest level for the occupation identified in Q.10.

Skill/ ability/ knowledge area	Answer
Skill/ ability/ knowledge area 1	☐ Yes ☐ No
Skill/ ability/ knowledge area 2	☐ Yes ☐ No
Skill/ ability/ knowledge area 3	☐ Yes ☐ No
Skill/ ability/ knowledge area …	☐ Yes ☐ No
Skill/ ability/ knowledge area 10	☐ Yes ☐ No

12. **[If Q.9="No"]**

    Do you have any experience in the following activities?

Activities	Experience
Food preparation, cooking	☐ No experience ☐ Some experience ☐ A lot of experience
Set table, wash/put away dishes	☐ No experience ☐ Some experience ☐ A lot of experience

Activities	Experience
Cleaning (indoor or outdoor)	☐ No experience ☐ Some experience ☐ A lot of experience
Laundry, ironing, clothing repair	☐ No experience ☐ Some experience ☐ A lot of experience
Home repairs, maintain vehicle	☐ No experience ☐ Some experience ☐ A lot of experience
Caring for children	☐ No experience ☐ Some experience ☐ A lot of experience
Caring for elderly, sick or disabled people	☐ No experience ☐ Some experience ☐ A lot of experience
Cultivating crops	☐ No experience ☐ Some experience ☐ A lot of experience
Taking care of livestock	☐ No experience ☐ Some experience ☐ A lot of experience

Section 2 – Literacy and numeracy

13. **How often do you usually perform each of the following activities (including online, on a computer or on other electronic devices)?**

Read books?	☐ Never ☐ Less than once a month ☐ Less than once a week but at least once a month ☐ At least once a week but not every day ☐ Every day
Read articles in newspapers, magazines or newsletters?	☐ Never ☐ Less than once a month ☐ Less than once a week but at least once a month ☐ At least once a week but not every day ☐ Every day
Read articles in professional journals or scholarly publications?	☐ Never ☐ Less than once a month

	☐ Less than once a week but at least once a month ☐ At least once a week but not every day ☐ Every day
Read instructions or forms?	☐ Never ☐ Less than once a month ☐ Less than once a week but at least once a month ☐ At least once a week but not every day ☐ Every day
Read messages, e-mails or letters?	☐ Never ☐ Less than once a month ☐ Less than once a week but at least once a month ☐ At least once a week but not every day ☐ Every day
Read bills, invoices or bank statements?	☐ Never ☐ Less than once a month ☐ Less than once a week but at least once a month ☐ At least once a week but not every day ☐ Every day
Read online content such as blog posts or posts on social media (e.g., Facebook, Twitter)?	☐ Never ☐ Less than once a month ☐ Less than once a week but at least once a month ☐ At least once a week but not every day ☐ Every day
Write messages, e-mails or letters?	☐ Never ☐ Less than once a month ☐ Less than once a week but at least once a month ☐ At least once a week but not every day ☐ Every day
Write online content such as blog posts or posts in social media?	☐ Never ☐ Less than once a month ☐ Less than once a week but at least once a month ☐ At least once a week but not every day ☐ Every day
Fill in forms?	☐ Never ☐ Less than once a month

	☐ Less than once a week but at least once a month ☐ At least once a week but not every day ☐ Every day
Calculate prices, costs or budgets?	☐ Never ☐ Less than once a month ☐ Less than once a week but at least once a month ☐ At least once a week but not every day ☐ Every day
Prepare charts or tables to, for example, forecast savings or classify expenditures?	☐ Never ☐ Less than once a month ☐ Less than once a week but at least once a month ☐ At least once a week but not every day ☐ Every day
Undertake measurements (e.g., while following cooking recipes, gardening or undertaking repairs)?	☐ Never ☐ Less than once a month ☐ Less than once a week but at least once a month ☐ At least once a week but not every day ☐ Every day
Use more advanced math or statistics such as calculus, complex algebra, trigonometry or use of regression techniques?	☐ Never ☐ Less than once a month ☐ Less than once a week but at least once a month ☐ At least once a week but not every day ☐ Every day

Section 3 – Digital Skills

14. Do you use a computer, smartphone or tablet in your everyday life?

☐ Yes

☐ No

15. [If Q.14="Yes"]

The following questions are about the use of computers, digital devices (such as a smartphone or tablet) or the internet. This could be at home, at work or in other places that offer internet services, like internet cafes or libraries. How often do you usually perform each of the following activities?

Use email or communicate with others through mobile applications (excluding phone calls).	☐ Never ☐ Less than once a month ☐ Less than once a week but at least once a month ☐ At least once a week but not every day ☐ Every day
Use the internet in order to access information.	☐ Never ☐ Less than once a month ☐ Less than once a week but at least once a month ☐ At least once a week but not every day ☐ Every day
Conduct transactions on the internet, for example buying or selling products or services, or banking.	☐ Never ☐ Less than once a month ☐ Less than once a week but at least once a month ☐ At least once a week but not every day ☐ Every day
Use spreadsheet software, for example Excel.	☐ Never ☐ Less than once a month ☐ Less than once a week but at least once a month ☐ At least once a week but not every day ☐ Every day
Use a word processor, for example Word.	☐ Never ☐ Less than once a month ☐ Less than once a week but at least once a month ☐ At least once a week but not every day ☐ Every day
Use a programming language to program or write computer code.	☐ Never ☐ Less than once a month ☐ Less than once a week but at least once a month ☐ At least once a week but not every day ☐ Every day
Participate in real-time discussions on the internet, for example in webinars, using Zoom, Skype or Teams.	☐ Never ☐ Less than once a month ☐ Less than once a week but at least once a month ☐ At least once a week but not every day ☐ Every day
Participate in social networks, for example, posting	☐ Never

photos, comments or interacting with your networks' posts.	☐ Less than once a month ☐ Less than once a week but at least once a month ☐ At least once a week but not every day ☐ Every day
Use internet or digital devices for entertainment, for example, to listen to music, play video games or edit photos.	☐ Never ☐ Less than once a month ☐ Less than once a week but at least once a month ☐ At least once a week but not every day ☐ Every day
Use maps, plans or GPS for finding directions and locations.	☐ Never ☐ Less than once a month ☐ Less than once a week but at least once a month ☐ At least once a week but not every day ☐ Every day

Section 4 – Customer and personal service

16. How much do you agree with the following statements?

My friends' emotions don't affect me much.	☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree
After being with a friend who is sad about something, I usually feel sad.	☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree
I can understand my friend's happiness when she/he does well at something.	☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree
I get frightened when I watch characters in a good scary movie.	☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree
I get caught up in other people's feelings easily.	☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree
I find it hard to know when my friends are frightened.	☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree
I don't become sad when I see other people crying.	☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree
Other people's feeling don't bother me at all.	☐ Strongly disagree ☐ Disagree

	☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree
When someone is feeling 'down' I can usually understand how they feel.	☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree
I can usually tell when my friends are scared.	☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree
I often become sad when watching sad things on TV or in films.	☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree
I can often understand how people are feeling even before they tell me.	☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree
Seeing a person who has been angered has no effect on my feelings.	☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree
I can usually tell when people are cheerful.	☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree
I tend to feel scared when I am with friends who are afraid.	☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree
I can usually realize quickly when a friend is angry.	☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree
I often get swept up in my friends' feelings.	☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree
My friend's unhappiness doesn't make me feel anything.	☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree
I am not usually aware of my friends' feelings.	☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree
I have trouble figuring out when my friends are happy.	☐ Strongly disagree ☐ Disagree ☐ Neither agree nor disagree ☐ Agree ☐ Strongly agree

Section 5 – Time management

17. Read the following statements. How much do they describe you?

I carry out my plans.	☐ Not like me at all ☐ Not much like me ☐ Somewhat like me ☐ Mostly like me

	☐ Very much like me
I waste my time.	☐ Not like me at all ☐ Not much like me ☐ Somewhat like me ☐ Mostly like me ☐ Very much like me
I find it difficult to get down to work.	☐ Not like me at all ☐ Not much like me ☐ Somewhat like me ☐ Mostly like me ☐ Very much like me
I mess things up.	☐ Not like me at all ☐ Not much like me ☐ Somewhat like me ☐ Mostly like me ☐ Very much like me
I finish what I start.	☐ Not like me at all ☐ Not much like me ☐ Somewhat like me ☐ Mostly like me ☐ Very much like me
I don't put my mind on the task at hand.	☐ Not like me at all ☐ Not much like me ☐ Somewhat like me ☐ Mostly like me ☐ Very much like me
I get things done quickly.	☐ Not like me at all ☐ Not much like me ☐ Somewhat like me ☐ Mostly like me ☐ Very much like me
I always know what I am doing.	☐ Not like me at all ☐ Not much like me ☐ Somewhat like me ☐ Mostly like me ☐ Very much like me
I postpone decisions.	☐ Not like me at all ☐ Not much like me ☐ Somewhat like me ☐ Mostly like me ☐ Very much like me
I am easily distracted.	☐ Not like me at all ☐ Not much like me ☐ Somewhat like me ☐ Mostly like me ☐ Very much like me
I leave my belongings around.	☐ Not like me at all ☐ Not much like me

	☐ Somewhat like me ☐ Mostly like me ☐ Very much like me
I like order.	☐ Not like me at all ☐ Not much like me ☐ Somewhat like me ☐ Mostly like me ☐ Very much like me
I keep things tidy.	☐ Not like me at all ☐ Not much like me ☐ Somewhat like me ☐ Mostly like me ☐ Very much like me
I follow a schedule.	☐ Not like me at all ☐ Not much like me ☐ Somewhat like me ☐ Mostly like me ☐ Very much like me
I am not bothered by messy people.	☐ Not like me at all ☐ Not much like me ☐ Somewhat like me ☐ Mostly like me ☐ Very much like me
I want everything to be "just right".	☐ Not like me at all ☐ Not much like me ☐ Somewhat like me ☐ Mostly like me ☐ Very much like me
I am not bothered by disorder.	☐ Not like me at all ☐ Not much like me ☐ Somewhat like me ☐ Mostly like me ☐ Very much like me
I dislike routine.	☐ Not like me at all ☐ Not much like me ☐ Somewhat like me ☐ Mostly like me ☐ Very much like me
I see that rules are observed.	☐ Not like me at all ☐ Not much like me ☐ Somewhat like me ☐ Mostly like me ☐ Very much like me
I want every detail taken care of.	☐ Not like me at all ☐ Not much like me ☐ Somewhat like me ☐ Mostly like me ☐ Very much like me

Section 6 – Motivation and commitment

18. Read the following statements. How much do they describe you?

New ideas and projects sometimes distract me from previous ones.	☐ Not like me at all ☐ Not much like me ☐ Somewhat like me ☐ Mostly like me ☐ Very much like me
Setbacks don't discourage me.	☐ Not like me at all ☐ Not much like me ☐ Somewhat like me ☐ Mostly like me ☐ Very much like me
I have been obsessed with a certain idea or project for a short time but later lost interest.	☐ Not like me at all ☐ Not much like me ☐ Somewhat like me ☐ Mostly like me ☐ Very much like me
I am a hard worker.	☐ Not like me at all ☐ Not much like me ☐ Somewhat like me ☐ Mostly like me ☐ Very much like me
I often set a goal but later choose to pursue a different one.	☐ Not like me at all ☐ Not much like me ☐ Somewhat like me ☐ Mostly like me ☐ Very much like me
I have difficulty maintaining my focus on projects that take more than a few months to complete.	☐ Not like me at all ☐ Not much like me ☐ Somewhat like me ☐ Mostly like me ☐ Very much like me
I finish whatever I begin.	☐ Not like me at all ☐ Not much like me ☐ Somewhat like me ☐ Mostly like me ☐ Very much like me
I am diligent.	☐ Not like me at all ☐ Not much like me ☐ Somewhat like me ☐ Mostly like me ☐ Very much like me

Section 7 – Originality

19. Please, indicate if each of the following adjectives describes you or not.

Capable	☐ Like me ☐ Not like me
Artificial	☐ Like me ☐ Not like me
Clever	☐ Like me ☐ Not like me
Cautious	☐ Like me ☐ Not like me
Confident	☐ Like me ☐ Not like me
Egoistical	☐ Like me ☐ Not like me
Commonplace	☐ Like me ☐ Not like me
Humorous	☐ Like me ☐ Not like me
Conservative	☐ Like me ☐ Not like me
Individualistic	☐ Like me ☐ Not like me
Conventional	☐ Like me ☐ Not like me
Informal	☐ Like me ☐ Not like me
Dissatisfied	☐ Like me ☐ Not like me
Insightful	☐ Like me ☐ Not like me
Suspicious	☐ Like me ☐ Not like me
Honest	☐ Like me ☐ Not like me
Intelligent	☐ Like me ☐ Not like me
Well-mannered	☐ Like me ☐ Not like me
Wide interests	☐ Like me ☐ Not like me
Inventive	☐ Like me ☐ Not like me
Original	☐ Like me ☐ Not like me
Narrow interests	☐ Like me ☐ Not like me
Reflective	☐ Like me ☐ Not like me
Sincere	☐ Like me ☐ Not like me
Resourceful	☐ Like me ☐ Not like me
Self-confident	☐ Like me ☐ Not like me
Attractive	☐ Like me ☐ Not like me
Submissive	☐ Like me ☐ Not like me
Snobbish	☐ Like me ☐ Not like me
Unconventional	☐ Like me ☐ Not like me

Annex B. Example of Results Page

Case 1: the user has previous work experience

Basic information

Reference:
sopjth5vn3l2isd73r

Date of results
Start:
Thu, 28 Apr 2022 09:02:16 GMT
End:
Thu, 28 Apr 2022 09:10:46 GMT

Age bracket: 35-54

Gender: Male

Highest level of education: Higher than secondary education (e.g., post-secondary or tertiary)

Country: Australia

Languages spoken:

English

French

Spanish

Your skills profile		Compared with your * **Education level**	▾
Your score			

Literacy	0	70% ⊗ ⊕ 72%	100
Numeracy	0	⊕ 46% ✓ 63%	100
Digital skills	0	69% ⊗ ⊕ 71%	100
Customer & personal service	0	60% ⊗ ⊕ 75%	100
Time management	0	⊕ 73% ✓ 83%	100
Motivation & commitment	0	⊕ 69% ✓ 83%	100
Creative thinking	0	50% ⊗ ⊕ 65%	100

Compare yourself to a specific job

Telecommunications engineers

⌃ Telecommunications engineers

✅ You exceed the required skill level
❌ You fall short of the required skill level

Skill	0		100
Literacy	0	59% · 70% ✅	100
Numeracy	0	63% ❌ · 74%	100
Digital skills	0	69% ❌ · 91%	100
Customer & personal service	0	43% · 60% ✅	100
Time management	0	43% · 83% ✅	100
Motivation & commitment	0	54% · 83% ✅	100
Creative thinking	0	50% ❌ · 55%	100

Some occupation ideas based on your skills

Match by * ▼

∨ Lawyers

- ✅ You exceed the required skill level
- ❌ You fall short of the required skill level

Literacy	0	70% / 70%	100
Numeracy	0	46% ... 63%	100
Digital skills	0	58% ... 69%	100
Customer & personal service	0	57% / 60%	100
Time management	0	57% ... 83%	100
Motivation & commitment	0	61% ... 83%	100
Creative thinking	0	50% / 54%	100

∧ Judges

∧ Personnel and careers professionals

∧ Human resource managers

Case 2: the user does not have previous work experience

Basic information

Reference:
hkbmlandkubl2itj1ky

Date of results
Start:
Thu, 28 Apr 2022 09:37:21 GMT
End:
Thu, 28 Apr 2022 09:43:19 GMT

Age bracket: 24 or younger

Gender: Male

Highest level of education: Higher than secondary education (e.g., post-secondary or tertiary)

Country: Germany

Languages spoken:

English

German

Your skills profile

Compared with your * ▼

Your score

|			
Literacy	0	63%	100
Numeracy	0	75%	100
Digital skills	0	75%	100
Customer & personal service	0	60%	100
Time management	0	60%	100
Motivation & commitment	0	60%	100
Creative thinking	0	57%	100

Compare yourself to a specific job

Financial analysts

∧ Financial analysts

✅ You exceed the required skill level
❌ You fall short of the required skill level

Literacy	0	63% / 59%	100
Numeracy	0	75% / 64%	100
Digital skills	0	75% / 44%	100
Customer & personal service	0	60% / 46%	100
Time management	0	60% / 48%	100
Motivation & commitment	0	60% / 55%	100
Creative thinking	0	57% / 41%	100
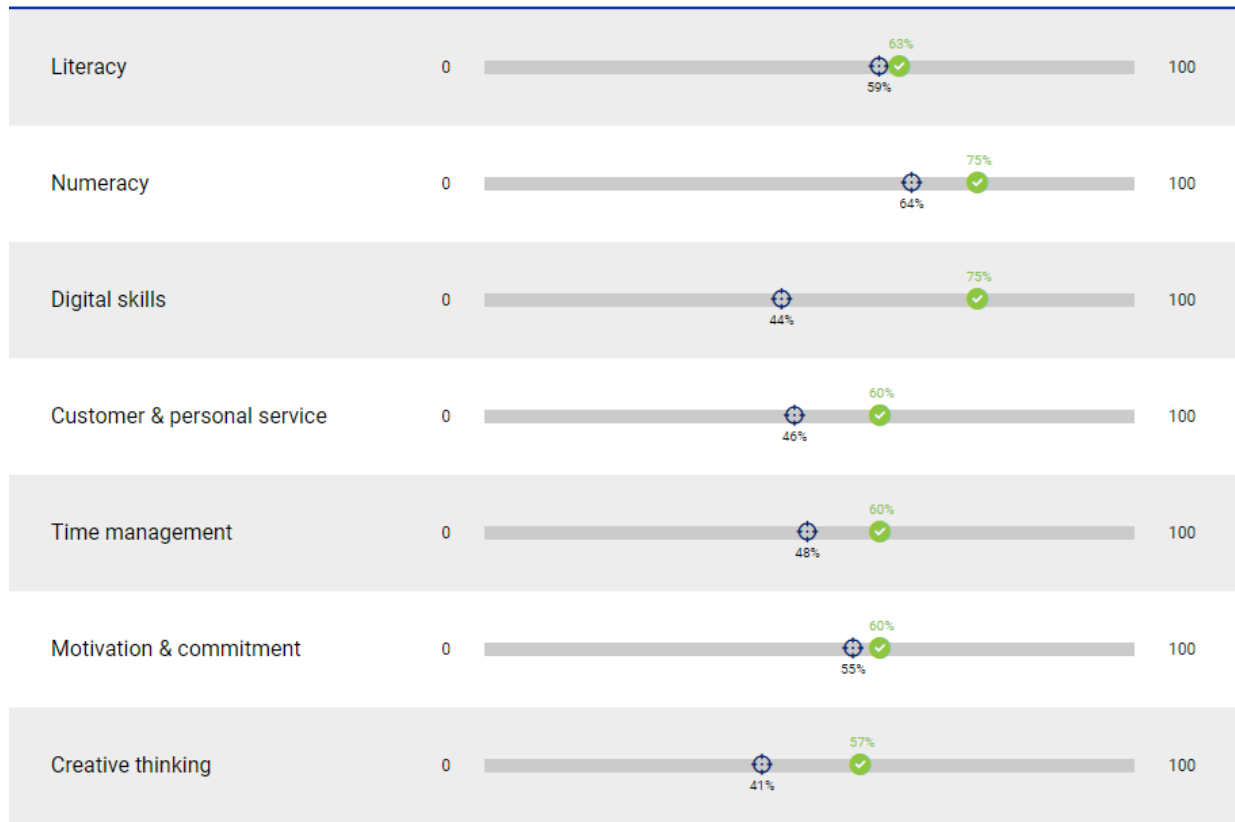
Some occupation ideas based on your skills

Social and religious professionals

Mathematicians, actuaries and statisticians

Software and applications developers and analysts

Physical and earth science professionals

Life science professionals

Financial and mathematical associate professionals

Finance professionals

Database and network professionals

Architects, planners, surveyors and designers

Professional services managers

These occupations are not listed in any particular order