



# **Main results of the second cycle of Cyprus' National Graduate Tracking Survey (2023)**

## **Executive Summary**

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# Executive summary

Skills mismatch appears to be a major concern across Europe. According to CEDEFOP, Europe's challenge is not just to improve skills levels, but to align individuals with the appropriate skills to suitable jobs. Skills mismatches take various forms, including overqualification, underqualification, horizontal mismatch, over- and under-skilling, skills gaps and skills obsolescence, among others (Cedefop, 2023). These mismatches significantly contribute to rising unemployment and create increasing challenges for individuals transitioning from education to the labour market in securing jobs that align with their potential. In Cyprus, skills mismatch has been identified as a major cause of concern in a multitude of policy reports. Despite being recognised as a critical challenge at the national level requiring urgent attention, there is a lack of comprehensive national data on the type and extent of various forms of skills mismatches. Identifying and measuring different forms of skills mismatches is essential, as each has distinct implications and necessitates tailored interventions.

The project of the Department of Higher Education (DHE) of the Ministry of Education, Sport, and Youth (MESY) entitled "Development of a National Graduate Tracking Mechanism and Design and Implementation of an Employers' Skills Survey" is included in the Cyprus Recovery and Resilience Plan (RRP) aims to address this need by collecting longitudinal national data on graduates' pathways after leaving Higher Education as well as data on labour market's current and future needs in terms of skills. In this way, the project aims to identify, measure and monitor on a longitudinal basis the different types of skills mismatches, drawing on data from two key sources: graduates and employers. By providing a robust evidence base, the project seeks to support informed decision-making by a wide range of stakeholders, including policymakers in relevant ministries, services, and organisations, Cyprus Higher Education Institutions, the Human Resource Development Authority, counselling services, researchers, employers, and students. Ultimately, this effort aims to enhance the responsiveness of Cyprus' education and training system to the needs of the labour market. In the context of DHE's project two national surveys have been developed and implemented for collecting high quality data that will contribute to a comprehensive understanding of the mismatch between the skills acquired by graduates of Cyprus Higher Education Institutions (supply) and the skills required by the local labour market that will employ them (demand). These surveys are the National Graduate Tracking Survey (NGTS) and the National Employers' Skills Survey (NESS). Cyprus also funds its participation through this project in two waves (2022 and 2026) of the European Graduate Tracking Survey i.e. EUROGRADUATE Survey. This report presents the theoretical and policy context, the methodology, implementation, and main results of the second cycle of the National Graduate Tracking Survey 2023 in Cyprus.

The methodology employed by the National Graduate Tracking Survey adheres to the standards, guidelines, and methodology established by EUROGRADUATE. Data is collected through an online questionnaire, with personalized invitation links sent via email to all graduates through their respective Higher Education Institutions. The questionnaire is administered in two languages, Greek and English and covers core topics that are repeated in each cycle. These core topics are: "Education Experience", "Labour Market Participation and Labour Market Outcomes", "International mobility of graduates after graduation", "Skills Mismatch" and "Upskilling and reskilling during employment" and "Personal and social background". In each cycle additional thematic areas are included according to special interest and policy priorities of the Ministry of Education, Sport and Youth. In the second cycle new questions were added regarding the labour market participation of graduates with disabilities, the usefulness of various teaching and learning modes in acquiring skills as well as future plans of graduates. Moreover, more skills were incorporated into the skills framework to align the scale with that used in the NESS. By aligning the survey with the Employers' Skills Survey, the NGTS aims to ensure consistency in the assessment of skills demand and supply, facilitate comparability of data across surveys, and provide a comprehensive understanding of labour market needs and graduate outcomes. To ensure data quality and comparability, the questionnaire includes a variety of question types, standardized lists, and international taxonomies. The National Graduate Tracking Survey follows a census approach, ensuring that all graduates from all Cyprus Higher Education Institutions are invited to participate. The target groups for the second cycle of National Graduate Tracking Survey (for 2023) involved all graduates of the

academic years 2017/18 (i.e., five years after graduation – T+5) and 2021/22 (i.e., one year after graduation – T+1) from all Higher Education Institutions in Cyprus, both private and public. Specifically, the total population included graduates of all nationalities, all enrolment statuses (e.g., full-time, part-time, distance learning) who completed programs of study at ISCED level 5 (Certificates and Diplomas), ISCED level 6 (Bachelor's degrees) and ISCED level 7 (Master's degrees). The total target population comprised of 26,158 graduates, out of which 10,798 were T+5 graduates and 15,360 were T+1 graduates.

Data collection for the second cycle took place during January and June 2024. Throughout the data collection period, extensive support was provided to both the participating graduates and the involved Higher Education Institutions. Additionally, various dissemination activities were carried out to enhance awareness and the visibility of the National Graduate Tracking Survey. These efforts aimed to encourage high participation and ensure a sufficient response rate, highlighting the importance of the survey for graduates and stakeholders alike.

Altogether, 2,251 graduates completed the questionnaire. However, the final number of participants was determined based on EUROGRADUATE's definition of valid cases. According to this definition, the total number of valid respondents was 2,156, 829 for T+5 (2017/18) and 1,327 for T+1 (2021/22).

In terms of demographic, educational, and socioeconomic characteristics, in the 2017/18 cohort, approximately 39% were males and 61% were females, while in the 2021/22 cohort, 34% were males and 66% were females. It should also be noted that 0.02% of the population in both cohorts identified themselves as non-binary or other. Total population-wise, the majority of graduates in both cohorts were “under 25” years old, at the time of their graduation. However, looking at the sample, the majority of the participants are falling into the “35 and over” category at the time of their graduation. Age distribution at the time of the survey differed, with most participants in both cohorts falling into the “35 and over” category. In relation to the birthplace of graduates, in the 2017/18 cohort, 54% of participants were born in Cyprus, which this figure decreased to 43% in the 2021/22 cohort. The percentage of participants from EU countries reached the 37% in 2017/18 and 46% in 2021/22. Participants from non-EU countries remained relatively stable at 10% for the 2017/18 cohort and 11% for the 2021/22 cohort. Approximately 5-6% of graduates in both cohorts reported having a visible or invisible disability, learning difficulty, or serious medical condition. The majority of graduates in both cohorts came from universities (81% in the 2017/18 and 82% in the 2021/22). In the 2017/18 cohort, 11% of graduates earned a degree at ISCED level 5, 34% at ISCED level 6, and 55% at ISCED level 7. In the 2021/22 cohort, 8% obtained a degree at ISCED level 5, 28% at ISCED level 6, and 65% at ISCED level 7. The most popular fields of study were Business Administration (32% in 2017/18 and 28% in 2021/22) and Education and Teacher Training (20% in 2017/18 and 32% in 2021/22).

The main findings are organised into seven sections, following the core topics of the questionnaire.

### **Experiences form Higher Education**

Regarding the findings on graduates' experiences from their studies in Higher Education, graduates from both cohorts reported a high overall satisfaction with their education. The highest satisfaction scores were reported by graduates in the fields of Education and Teacher Training (85%) and Business Administration (80%) for the 2017/18 cohort. In 2021/22 cohort, the fields with the highest graduate satisfaction rates were Law and Information and Communication Technologies (87%). In terms of the contribution of their program of study to their professional career and personal development, graduates from both cohorts reported that it was very beneficial, especially for their personal development. In relation to the teaching and learning modes employed by their programmes of study, most graduates (>50%) within both cohorts reported a learning environment that relied on lectures and traditional modes of study. The learning experience heavily emphasized on written and group assignments. Lecture were the mode of study used at the highest extent in both cohorts (over 85%), whilst the graduates reported as the most useful to be: internships and work placements (over 74%) and lectures (70% and 72% in 2017/18 and 2021/22 respectively). Most graduates also indicated that their program of study did not offer many opportunities for participation in internships or work placements, which establish a strong connection between learning and work. Moreover, the levels of satisfaction with the opportunities to gain work experience were lower compared to other aspects of studies such as content of programme and quality of teaching. The survey also examined graduates' experiences abroad, as participation in mobility

programs offers valuable opportunities for personal and professional development. The percentage of graduates who had at least one experience abroad as part of their study program was approximately 20% in both cohorts. Most graduates reported that studying abroad was the main reason for the time spent abroad, while a significant percentage in both cohorts reported internships or work placements as a second reason.

Regarding skill development, the survey highlighted the following key findings. Self-Management Skills were the most notably developed, with a high percentage of graduates across both cohorts reporting substantial development. In terms of hard skills, graduates reported significant development, particularly in the fields of Health and Information and Communication Technologies. The development of soft skills is also worth reporting, with graduates from fields such as Social Sciences and Journalism reporting significant development. However, there was a noted need for further improvement in certain areas, such as effective communication. While there was some development in digital skills, the survey indicated room for further development. Information and Communication Technologies graduates reported the highest contribution to digital skills development, but overall, digital skills were among the least developed across all fields consistently receiving lower ratings across all ISCED levels. This underscores the need for higher education programs to more effectively integrate topics related to digital skills.

In terms of pathways after completing their program of study, more than 10% of graduates in both cohorts decided not to enter the labour force after graduation and to pursue further studies in Higher Education. In both cohorts, ISCED 6 level had the highest percentage of graduates who reported pursuing further studies after graduation when compared to ISCED 5 and ISCED 7 levels. The field of Natural Sciences had the highest percentage of graduates continuing their studies after graduation, while the field of Education and Teacher Training the lowest in both cohorts.

### **Transition to Work**

Regarding the transition of graduates to work, the survey revealed several key trends. The trend for ISCED 5 and 6 graduates in both cohorts is that they started looking for paid work after graduation with the latter recording the highest percentage (57% in the 2017/18 cohort and 65% in the 2021/22 cohort). In contrast, the majority of ISCED 7 graduates reported having a job already and did not want a new role (50% in the 2017/18 cohort and 48% in the 2021/22 cohort) indicating they were satisfied with their employment status. Among the participants who responded positively in looking for a paid job most reported looking for a job within their field of study, particularly graduates from STEM and Health fields. In the other fields the situation was more mixed as a notable group also looked for jobs outside their field. The primary reason for seeking employment outside their area of study was the lack of available work (50% of the 2017/18 cohort and 37% of the 2021/22 cohort) and lack of necessary experience (17% and 22% respectively). These findings underscore the limited job opportunities in certain fields and the challenges graduates face in securing positions within their chosen field of study. The persistent challenge of insufficient work experience highlights the need for stronger connections between programs of study and the labour market.

### **Labour Market Participation**

In relation to labour market participation, as expected, the percentage of 2017/18 graduates who are part of the labour force (93%) is higher than the corresponding percentage of 2021/22 graduates (87%), as the former had more time to make the transition into employment. Consequently, the percentage of graduates who reported that they are unemployed or out of the labour force is higher in the 2021/22 cohort. In relation to sectors of employment, most participants reported working in the private sector in both cohorts. Specifically, in both the 2017/18 and 2021/22 cohorts, most graduates were employed in the private sector, with 46% in the 2017/18 cohort and 48% in the 2021/22 cohort. A significant percentage of graduates were also employed in the public sector, with 43% in the 2017/18 cohort and 44% in the 2021/22 cohort. A smaller percentage of graduates reported being self-employed compared to those working in the private and public sectors. Specifically, in the 2017/18 cohort, 11% of graduates were self-employed, while in the 2021/22 cohort, this percentage decreased to 8%. This indicates that self-employment was the least common employment type among the graduates surveyed in both cohorts. This may indicate a preference for more stable or traditional

forms of employment in the private or public sectors, or it could reflect barriers or challenges graduates face in pursuing self-employment.

Regarding the place of employment (Cyprus or abroad), it is noted that a high percentage of graduates in both cohorts have found employment in Cyprus. This percentage is higher in the 2017/18 cohort when compared to the 2021/22 one (59% and 48% respectively). By exploring the relationship between place of employment and country of birth, the following pattern emerged in both cohorts: most Cypriots (>90%) found employment in Cyprus, the vast majority (>88%) of graduates from EU countries are employed outside Cyprus, more than half of the graduates from non-EU countries are employed in Cyprus and the other half abroad. For graduates from EU countries, this finding may be largely attributed to the significant number of distance learners from Greece.

Three indicators of job quality were also explored: job security, working hours and earnings for graduates who have made a successful transition to the labour market. Job security refers to the security of finding and keeping a job and more specifically to holding permanent contracts or contracts of unlimited duration. Most graduates reported having a contract of unlimited duration at 67% in 2017/18 and 55% in 2021/22. This suggests that a significant portion of graduates in both cohorts secured stable employment with permanent contracts, although there is a shift towards more temporary or less secure employment contracts. In relation to working hours (both contracted and actual) significant differences were found in actual working hours among graduates from specific fields of study, with graduates in the field of Law and Engineering and Architecture reporting a high number of actual working hours but remaining within the limits set by European regulations and Cyprus law. Additionally, median annual earnings of the 2017/18 cohort were significantly higher (23.943 euros) than that of the more recent one (18.000 euros). This could reflect the impact of accumulated experience over time, as individuals with more years in the workforce typically earn higher salaries. Higher media earnings were reported by males, ISCED 7 graduates and graduates aged 35 and over which this finding might suggest that gender, level of education, and experience (or age) play a significant role in determining earnings. This finding also might indicate that more advanced qualifications and increased experience over time can enhance earning potential in the labour market. Findings also indicated the presence of a gender pay gap among graduates. This is well-cited in the relevant literature and indicates that gender-related disparities in earnings persist, even among graduates.

Time taken to find a job after graduation was also explored. It is evident that it took a longer time for graduates in the 2017/18 cohort to find employment (median time of 12,1 months), compared to the 2021/22 cohort (median time 3,0 months). Additionally, a higher proportion of graduates reported finding a job after graduation in the 2017/18 cohort (63%), when compared to graduates in the 2021/22 cohort (41%). It is also important to note that when comparing the two cohorts for a fixed period of 18 months after graduation, both graduate cohorts took the same amount of time—3.0 months—to secure a job after graduation. In relation to the field of study, in the 2017/18 cohort, graduates from the field of Education and Teacher Training reported the longest time taken (approximately 19,7 months) and graduates from the field of Engineering and Architecture the shortest, while in the 2021/22 cohort graduates from the field of Social Sciences and Journalism had the highest time taken, when graduates from the field of Services the lowest. In all fields of study, the percentages of graduates that found a job after graduation do not exhibit significant discrepancies.

The survey also assesses job satisfaction, which on average appears to range from moderate to high in both cohorts with marginal gender age, type of education and field of studies differences. Additional analyses have been conducted regarding different aspects of satisfaction e.g. studies and employment related. The highlights of these findings lay on the fact that graduates are less satisfied with their career advancements and earnings compared to other factors.

Finally, in terms of labour market participation for graduates with disabilities, approximately 6% of graduates in each cohort reported having some type of disability. The general trend in both cohorts is that graduates with disabilities reported a slightly lower rate of employment than graduates without disabilities. In the 2017/18 cohort, most graduates with disabilities were employed in the public sector (46%), whereas in the 2021/22 cohort, most of these graduates were working in the private sector (52%). In the 2017/18 cohort, 48% of graduates reported that their disability restricted them for entering the labour market at a high/ very high extent, while in the 2021/22 cohort, this figure decreased to 15%. Both cohorts indicated a high level of agreement

that their employers were supportive in relation to their disability. This suggests that although graduates with disabilities face certain challenges in the labour market, there has been improvement over time in terms of employment accessibility and support from employers.

### **Mobile Graduates**

Mobile graduates are graduates who are now located in a different country from that of graduation for purposes of work or further learning. The analysis reveals that the percentage of mobile graduates in both cohorts is relatively modest, standing at 9% for 2017/18 cohort and slightly higher at 11% for the 2021/22 cohort. Particularly, an interesting trend emerges regarding gender differences in international mobility. In both cohorts, males exhibit a higher propensity to migrate compared to their female counterparts, suggesting that male graduates are more inclined to seek opportunities outside the country. Additionally, age at graduation plays a significant role in graduates' mobility, as younger graduates are more likely to embark on international journeys in search of career prospects compared to the older ones. This pattern highlights the dynamic nature of young graduates seeking diverse experiences abroad. When considering the graduates' level of study, bachelor's graduates appear to be more inclined towards mobility. A detailed examination of the field of study reveals interesting insights. In both cohorts, the fields of Law and Natural Sciences record the highest proportion of mobile graduates.

### **Skills Mismatches**

Graduates' successful transition into the labour market hinges on finding employment that aligns with their educational qualifications and field of study. Findings suggest a high extent of overqualification which does not come as a surprise. Cyprus has one of the highest percentages of Higher Education graduates in the age groups 25-34 in the EU, thus indicating the high educational level of the workforce. Specifically, a substantial percentage of graduates, over 40% in both cohorts, reported that they are overqualified for their current positions (vertical mismatch). A significant proportion of graduates, 20% in the 2017/18 cohort and 16% in the 2021/22 cohort, reported misalignment between their education and job roles (horizontal mismatch).

A new composite variable that combined both horizontal and vertical mismatches was created in this report, which integrated these two dimensions into five distinct categories: Well-Matched, Overqualified (higher qualifications than required for their job but matched in terms of the field of study), Underqualified (lower qualifications than required for their job but matched in terms of the field of study), Field of Study Mismatch (matched qualifications for their job but mismatched in terms of the field of study), Full/Double Mismatch (mismatched qualifications and mismatched in terms of the field of study), to provide a more comprehensive assessment of the mismatches experienced by graduates. The findings indicated that only one third of graduates in both cohorts (33% for 2017/18 and 35% for 2021/22) had a job that aligned with their education indicating that two-thirds of employed graduates experienced some form of mismatch. Specifically, a significant percentage of graduates reported full mismatch (29% in 2017/18 and 27% in 2021/22), while others reported overqualification (16% in 2017/18 and 19% in 2021/22), field mismatch (14% in both cohorts), and underqualification (7% in 2017/18 and 4% in 2021/22). Younger, bachelor, university graduates recorded higher levels of well-matched in both cohorts. In terms of fields of study, Law graduates recorded higher levels of well-matched horizontally and vertically.

Graduates evaluated their proficiency across a range of skills, including hard, soft, core, self-management, green, manual, and digital skills, as well as the levels of these skills expected by their current jobs. Graduates in both cohorts reported high proficiency in all assessed skills. Graduates also indicated that their current jobs require high levels of various skills, suggesting that their education has equipped them well for their roles. All graduates indicated over-skilling in all types of skills assessed. Interesting findings emerged regarding graduates' current own level of skills compared to the level of skills required by their job within and between different sub-groups of graduates (based on demographic variables and variables related to their Higher Education studies).

### **Participation in upskilling and reskilling activities**

Graduates' participation in upskilling and reskilling activities during their employment is a significant aspect of their career development but also might indicate whether they were adequately prepared by their higher

education studies for the demands of the labour market. Based on findings, It is apparent that graduates actively engage in upskilling and reskilling activities during their employment. It was observed that a higher percentage of graduates from the 2017/2018 cohort (53%) reported their participation in these activities compared to the 2021/22 cohort (45%) indicating that earlier graduates were more likely to pursue additional training. The primary motivation for participating in upskilling and reskilling activities, was to acquire hard skills relevant to their current job roles reflecting the graduates' awareness of the need to the need to constantly update and/or to acquire new skills to adjust to rapidly changing skill demands. Online training was the prevalent method employed for training. These results underscore the importance of continuous learning and skill development in the contemporary workforce.

### **Future plans**

Regarding the plans of graduates for Fall 2024, similar patterns have been observed across both cohorts. The most common response was "continue in my current position" (58% and 49% respectively). However, when examining future plans in relation to the four categories of mismatches (Overqualified Underqualified, Field of Study Mismatch, Full/Double Mismatch distinct trends emerged. Specifically, the most popular opinion among all categories of mismatch is continue in my current position. Full mismatched graduates appeared more likely to seek new jobs followed by field of study mismatched, suggesting that graduates that face a full mismatch between their qualifications and their job roles are more likely to seek new job opportunities compared to other categories of mismatch. Field of study mismatched graduates showed also an inclination towards entrepreneurship. Additionally, underqualified graduates in the 2021/22 cohort seem more likely to consider further study, which might indicate their desire to improve their qualifications and address their skills gap

This report provides an overview of main findings in relation to graduates' experiences in Higher Education, as well as from their transition and participation in the labour market. Further analysis is underway to better understand the factors that influence employment outcomes, the acquisition of high-level skills, and various forms of skill mismatches. Future cycles of the NGTS will address the challenges faced during the second cycle, explore ways to improve response rates but will also explore the possibility of combining data from surveys, as well as from administrative sources. Finally, this report illustrates the importance of collecting national data on the pathways of Cyprus Higher Education graduates and provides insightful results that can inform various national policies and strategies.