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RECOVERY AND RESILIENCE PLAN

Preliminary results of the first cycle of Cyprus' National Graduate Tracking Survey

Executive Summary

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Executive summary

Skills mismatch appears to be a major challenge 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. There are various types of skills mismatches, such as overeducation, undereducation, horizontal mismatch, over-skilling, skills obsolescence, etc., which are a major cause of rising unemployment and increasing difficulties for individuals transitioning from education to the labour market to find jobs matching their potential. In Cyprus, skills mismatch has been identified as a major cause of concern in a multitude of policy reports. Although, skills mismatches have been identified as a great challenge at national level that needs to be urgently addressed, national data on the type and extent of different types of skills mismatches are scarce. The identification and measurement of different types of skills mismatches (such as overeducation – undereducation, over-skilling – under-skilling, horizontal mismatch, etc.) is important as these have different implications and call for different actions.

The overall objective of 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 to collect national data on graduates’ pathways after leaving Higher Education as well as data on labour market’s current and future needs in terms of knowledge and skills. By this way, the project aims to identify, measure and monitor on a longitudinal basis the different types of skills mismatches from two sources of data: graduates and employers, and provide the evidence-base to various stakeholders (e.g., policy makers in relevant Ministries/ Services/ Organisations, Cyprus Higher Education Institutions, Human Resource Development Authority, Counselling Services, researchers, employers, students, etc.) to make informed decisions that will ultimately contribute to increasing the responsiveness of Cyprus’ education and training system to labour market needs. This project is part of a broader project entitled “Addressing Skills Mismatch between Education and the Labour Market” (C5.1R1), which is included in the Cyprus Recovery and Resilience Plan (RRP).

In the context of DHE’s project in the RRP, three surveys will be 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 and the skills required by the local labour market that will employ them. These surveys are the National Graduate Tracking Survey (NGTS), the National Employers’ Skills Survey and the EUROGRADUATE Survey. This report presents the design, implementation, and main results of the first cycle of the National Graduate Tracking Survey 2022, along with the implementation of the first wave of EUROGRADUATE 2022 Survey in Cyprus. The current report mainly focuses on national findings as comparative findings of Cyprus’ graduates with graduates from other European countries participating in the EUROGRADUATE Survey will be published in a comparative report prepared by the EUROGRADUATE Consortium in 2024. It is important to note that, in the years the EUROGRADUATE Survey will be running, the National Graduate Tracking and EUROGRADUATE Surveys will share a common methodology and questionnaire for comparability purposes with the respective results of other countries participating in the EUROGRADUATE Survey. Therefore, the National Graduate Tracking Survey was designed according to standards and guidelines provided by the EUROGRADUATE Consortium.

The target groups for the first cycle of National Graduate Tracking and EUROGRADUATE Surveys (for 2022) were all graduates of the academic years 2016/17 (i.e., five years after graduation – T+5) and 2020/21 (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 24.095 graduates, out of which 10.478 were T+5 graduates and 13.617 were T+1 graduates.

Data collection took place during February and March 2023 through an online questionnaire which was administered in two languages, Greek and English. The questionnaire included questions in six thematic areas:

“Education History”, “Employment”, “Skills/ Competencies”, “Regional Mobility”, “Career Counselling in Upper Secondary Education and Higher Education” and “Upskilling and Reskilling during Employment”. The first four thematic areas were also part of the EUROGRADUATE Survey’s questionnaire, while the last two were national thematic sections added by the Department of Higher Education. It is noted that, an additional section collected data on personal and social background. Various question types were included in the questionnaire, along with several standardized lists and taxonomies to enhance the quality and comparability of the gathered data.

Invitations for participation were sent to graduates by their Higher Education Institutions which included personalized links to access the questionnaire. During the period of data collection, a comprehensive support to both participating graduates and Higher Education Institutions involved was offered. During data collection, various dissemination activities were employed to maximize the visibility of the National Graduate Tracking and EUROGRADUATE Surveys, encourage a high participation and achieve a sufficient response rate.

A total of 1.476 graduates completed the questionnaire, which, based on EUROGRADUATE Consortium’s definition for valid cases, then decreased to 1.438: 524 for T+5 (2016/17) and 914 for T+1 (2020/21). In both cohorts, most participants were females, 56% in 2016/17 and 58% in 2020/21. However, when it comes to the age of graduation, a different pattern was observed among respondents. In the 2016/17 cohort, the majority of graduates who responded to the National Graduate Tracking Survey graduated before the age of 25 (38%), while a significant percentage (27%) belonged to the category of 35 and over. On the contrary, in the 2020/21 cohort, the largest proportion of participants fell into the age group of 35 and over (38%) and another significant proportion at the age category of under 25 (32%). Regarding the respondents’ country of birth, in both 2016/17 and 2020/21 cohorts, most participants were born in Cyprus (68% and 53% respectively). In relation to variables related to their studies, in both cohorts, the largest proportion of participants attended Universities for their Higher Education studies (84% for 2016/17 and 75% for 2020/21) and graduated from programs of study at ISCED level 7 (52% in 2016/17 and 54% in 2020/21).

Main findings are presented in six sections, following the thematic areas of the questionnaire. In relation to findings regarding graduates’ experiences during studies in Higher Education, graduates from both cohorts reported a high overall satisfaction with their studies. The highest satisfaction scores were reported by graduates in the fields of Business Administration and Law, and of Education and Teacher Training in cohort 2016/17 and by graduates in the field of Technology and Engineering in cohort 2020/21. 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. Regarding the teaching and learning modalities employed by their programs of study, most graduates (>50%) within both cohorts reported a joined learning environment of lectures and problem-based learning. The learning environment that relied heavily on lectures was a clear second option by graduates from both cohorts (around 30%), whereas problem-based learning environment, which is relevant to an active learning environment, recorded percentages below 10%. Most graduates also reported that opportunities for participation in internships or work placements (which create a close link between learning and work) were not offered to a high extent by their program of study. While a large percentage of graduates from both cohorts reported that they had a labour market experience during their studies in Higher Education (48% and 63% for cohorts 2016/17 and 2020/21 respectively), this experience was not only gained through internships and work placements that were part of their program of study, but also through internships and work placements offered to all students of their HEI on a voluntary basis, or by engaging in paid employment alongside their studies. The percentage of graduates in both cohorts with a labour market experience in a related field to their studies was significantly higher than those who had gained labour market experience in an unrelated field. International mobility was also explored as participation in mobility programs gives the opportunity to Higher Education students to be exposed to different views, teaching and research methods, work practices, but also it is an opportunity to develop key skills for their personal development. The percentage of graduates who had at least one experience abroad as part of their program of study was approximately 15% 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. Approximately 30% of graduates in both cohorts decided not to enter the labour force after graduation and continued their 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 Health the lowest in both cohorts.

In relation to labour market participation, as expected, the percentage of 2016/17 graduates who are part of the labour force (90%) is higher than the corresponding percentage of 2020/21 graduates (82%). Consequently, the percentage of graduates who reported that they are unemployed or out of the labour force is higher in the 2020/21 cohort. In relation to sectors of employment, most participants reported working in the private sector in both cohorts (2016/17: 48% and 2020/21: 46%) and a significant percentage is employed in the public sector (2016/17: 37% and 2020/21: 40%). Only a small percentage reported being self-employed (2016/17: 15% and 2020/21: 14%). Self-employment could potentially serve as an indication of entrepreneurship within the workforce. Regarding the place of employment (Cyprus or abroad), most graduates in both cohorts have found employment in Cyprus. This percentage is higher in the 2016/17 cohort when compared to cohort 2020/21 (67% and 57% 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 (>85%) of graduates from EU countries are employed outside Cyprus and approximately half of the graduates from non-EU countries are employed in Cyprus and the other half abroad. Three indicators of job quality were also explored: job security, working hours and earnings for graduates who made the transition to the labour market. Job security refers to the security of finding and keeping a job and more specifically to permanent contracts or contracts of unlimited duration. Most graduates reported having a contract of unlimited duration at 76% in 2016/17 and 70% in 2020/21. Average contracted working hours were the same in both cohorts (approximately 37 hours per week on average) based on data reported by graduates who are employed or self-employed on a full-time basis. Actual working hours per week differ in both cohorts (39,3 for 2016/17 and 40,5 for 2020/21 graduates). The gap between average contracted and actual hours per week was found to be statistically significant in both cohorts. Graduates from the field of Health reported the highest average of contracted and actual working hours in both cohorts. Another important aspect of quality employment is earnings. Graduates reported their gross annual earnings plus annual supplementary payments. More specifically, graduates in the 2016/17 cohort reported significantly higher earnings than graduates in the 2020/21 cohort. In both cohorts, males had significantly higher median earnings than females. In addition, ISCED 7 graduates reported the highest median earnings in both cohorts. In relation to the field of study, in both cohorts, the highest median earnings are paid to Business, Administration and Law and to Technology and Engineering graduates, while the lowest to Education and Teacher Training graduates. Regarding time taken to find first job after graduation, graduates in the 2016/17 cohort reported a longer waiting time to find employment (17,1 months). However, a higher proportion of 2016/17 graduates reported finding a job after graduation (60%) than 2020/21 graduates (46%). The survey also collected data on overall job satisfaction. The average job satisfaction appears to be medium to high in both cohorts (3,85 for the 2016/17 cohort and 3,83 for the 2020/21 cohort on a scale from 1 to 5). Graduates employed in the public sector reported a higher average job satisfaction in both cohorts.

Findings are also reported regarding mobile graduates. Mobile graduates are defined as persons working or learning in a different country from that of graduation at any point following completion of their higher education studies. The proportion of mobile graduates in both cohorts was relatively low, with percentages equal to 9% and 10% for the 2016/17 and 2020/21 cohorts respectively. In both cohorts, males exhibited a higher tendency to migrate than females, as did younger graduates compared to older ones. Additionally, ISCED level 6 graduates were more prone to leaving the country than ISCED level 5 and 7 graduates, and those from Universities were more inclined to migrate than graduates from Institutions of Tertiary Education (ITE). Regarding the field of study, in the 2016/17 cohort, the highest proportion of mobile graduates was found within the field of Natural Sciences (18%), while in the 2020/21 cohort in the field of Health (31%).

When graduates transition into the labour market, it is crucial that they find a job that matches their qualifications and skills. Graduates who are employed in a position that does not match the level of their higher education qualifications (vertical mismatch) or the field of their studies (horizontal mismatch) are considered to be in a particularly difficult situation. Previous surveys have shown that they face skills depreciation and earn significantly less. In the context of this study, various types of skills mismatches were explored. All types of skills mismatches reported were subjectively measured, i.e., they were based on graduates' views and self-

assessments. A considerable percentage of graduates, approximately equal to 46% in both cohorts, reported being overeducated or, put simply, reported having a higher level of education than it is required by their job. In the 2016/17 cohort, the majority of females indicated that they are overeducated (49%), while the majority of males reported that their job matches their level of education (48%). In the 2020/21 cohort, the opposite pattern is observed: more than half of females expressed that they are matched with their current job and most males (48%) reported that they are overeducated. Undereducation does not appear to be a problem as only a small percentage of graduates reported having a lower level of education than it is required by their job (9% in 2016/17 and 8% in 2020/21). In both cohorts, most ISCED 5 and ISCED 6 graduates reported that their level of education matched with the requirements of their current employment, while the majority of ISCED 7 graduates reported being overeducated. ISCED 6 is the group with the highest percentage of graduates with matched jobs in both cohorts (68% in the 2016/17 and 77% in the 2020/21). In relation to the alignment between the level of education and current employment according to graduates' field of study, in the 2016/17 cohort, the majority of graduates in the fields of Education and Teacher Training and the category "Other" (which included the fields of Agriculture, Forestry, Fisheries, Veterinary and Services) reported being overeducated (65% and 70% respectively). The field of Natural Sciences had the highest percentage of graduates reporting being undereducated (22%) compared to other fields. In the 2020/21 cohort, the majority of graduates in the fields of Education and Teacher Training and Business, Administration and Law (49% and 50% respectively) reported being overeducated, while the category "Other" had the highest proportion of graduates reporting being undereducated (23%) compared to the other fields. The proportion of graduates reporting being horizontally mismatched was much lower when compared to the proportion of graduates reporting being vertically mismatched (either overeducated or undereducated) in both cohorts. Specifically, 21% and 15% of graduates from the 2016/17 and 2020/21 cohorts respectively reported that their current job was not in line with the field of their program of study. ISCED 5 had the highest percentage of graduates reporting that they were horizontally mismatched when compared to other ISCED levels (48% as opposed to 18%-19% for ISCED levels 6 and 7 in cohort 2016/17 and 25% as opposed to 13%-14% for ISCED levels 6 and 7 in cohort 2020/21). In relation to the extent of horizontal mismatch by graduates' field of study, in the 2016/17 cohort, the fields of Natural Sciences, Health, Other and Arts and Humanities had more than 30% of graduates reporting that their job did not align with the field of their degree (40%, 35%, 33% and 33% respectively). In the 2020/21 cohort, only the fields of Arts and Humanities and "Other" had more than 30% of graduates reporting being horizontally mismatched. Two other types of skills mismatches that were measured in the context of this study were over-skilling and under-skilling. Graduates were requested to assess their current proficiency in various types of skills (hard, soft, digital and green), along with the expected level of skill required by their current job, using a seven-point rating scale (ranging from 1-very low to 7-very high). In both cohorts, graduates' own level was significantly higher than the corresponding level required by their current job for almost all skills assessed, thus indicating over-skilling. The largest discrepancy between current own level and the level required by current employment related to the soft skill "Ability to write and speak in a foreign language" and to the green skill "Ability to make decisions towards environmental sustainability and a resource-efficient society and act accordingly" in both cohorts. Differences in average discrepancy scores were also explored between different sub-groups of graduates based on demographic variables and variables related to their studies, with many interesting findings emerging from this exploration.

Career counselling and guidance is viewed as continuous process throughout life and supports individuals of all ages at all stages of their career to make informed decisions about their education, training, and employment. Its role is considered critical and necessary to support individuals to make smooth transitions from Secondary to Higher Education, from Higher Education to employment, from one job to another, etc. In order to explore the extent and quality of career counselling activities and guidance in Upper Secondary and Higher Education, relevant questions were posed to graduates. Only ISCED 5 and ISCED 6 graduates responded to questions regarding career counselling in Upper Secondary Education as the focus was on the transition between Secondary and Higher Education. Approximately one third of graduates in both cohorts received counselling while studying in Upper Secondary Education. The Career Counselling and Educational Services (CCES) of the Ministry of Education, Sport, and Youth was indicated as the main provider. Graduates evaluated the services received by the CCES in terms of specific aspects as moderately useful. It is also worth mentioning that most graduates in both cohorts indicated that guidance received by the CCES while in Upper Secondary Education did not have an impact on the choice of the program of study in Higher Education from

which they graduated. Only a small percentage of graduates (15-16%) received career guidance during their Higher Education studies in both cohorts. The main provider of career counselling in Higher Education was their Higher Education Institution. Graduates evaluated the usefulness of career guidance and counselling services received by their HEI positively. It is also worth mentioning that 48% of University graduates and 53% of graduates from ITE stated that guidance received by their HEI had a big contribution to finding a job after graduation, while 61% of University graduates and 60% of graduates from ITE indicated that guidance received played a significant role in their decision to continue their studies in Higher Education.

Finally, graduates' participation in upskilling and reskilling activities during employment was also explored. Reskilling and upskilling have a crucial role to play in a fast-changing labour market where old jobs are disappearing, some skills become obsolete and new jobs and skills are emerging. More specifically, the investigation sought to determine the extent to which graduates engage in upskilling and reskilling activities, as well as the underlying motivations for their participation. A higher percentage of 2016/17 graduates (63%) reported participating in upskilling and reskilling activities than 2020/21 graduates (55%). Most of these graduates participated in training activities offered by their employer, either on a compulsory or voluntary basis. The primary motive cited by most graduates for engaging in upskilling and reskilling activities was the acquisition of hard skills directly relevant to their current job roles, with percentages at 77% and 81% for the 2016/17 and 2020/21 graduates respectively. The joy of learning and the acquisition of soft skills were also selected as important motives for participating in such activities. Online training was the most frequently utilised approach for delivering reskilling and upskilling activities (51% of the training for the 2016/17 cohort and 50% for the 2020/21 cohort) with a considerable percentage of graduates reporting their involvement in upskilling and reskilling training sessions conducted through face-to-face sessions (38% in the 2016/17 cohort and 36% in the 2020/21 cohort).

This report provides an overview of preliminary findings in relation to graduates' experiences from studies in Higher Education, as well as from their transition and participation in the labour market. More in-depth analysis is in progress for exploring significant relationships, such as factors influencing/ predicting employment, factors having an impact on the acquisition of high levels of skills, factors having an impact on vertical and horizontal mismatch, etc. Future cycles of the NGTS will address the challenges faced during this first 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 significance and feasibility of collecting national data regarding the pathways of Cyprus Higher Education graduates and provides insightful results that are relevant to various national policies and strategies.