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# Mapping the state of graduate tracking policies and practices in the EU Member States and EEA countries

Final report

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# Mapping the state of graduate tracking policies and practices in the EU Member States and EEA countries

Final report

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## **Abstract**

This study maps the **system-level approaches to higher education and vocational education and training graduate tracking across the European Union and the European Economic Area**, and their progress towards achieving the requirements of **the Council Recommendation on tracking graduates<sup>1</sup>**.

It finds that **about two thirds of the countries** have system-level graduate tracking in higher education and vocational education and training. The remainder will have to make considerable improvements if they are to establish system level graduate tracking in the next five years.

Ongoing reforms indicate an **increasing use of** administrative data and a **combination of administrative data and surveys** to track graduates. The **involvement and cooperation of key bodies**, including those in charge of the policies and those holding the data and the methodological expertise, are key to successful tracking.

A benchmarking of national graduate tracking measures shows that the most significant areas for improvement are a) the coverage of the whole graduate population in both vocational education and training and higher education; b) the inclusion of all (including cross-border) graduates and drop-outs; and c) having a longitudinal approach to tracking.

A first survey among higher education institutions found that graduate tracking is generally well-embedded in higher education institutions across EU and EEA countries.

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<sup>1</sup> Council Recommendation on Graduate tracking (2017/C 423/01)

## Executive summary

Graduate tracking is 'the collection of quantitative micro and aggregate data and/or qualitative information about the employment and social outcomes of people leaving higher education and vocational education and training (VET)<sup>2</sup>. This study, completed by the Inner City Fund (ICF), 3s Unternehmensberatung GmbH and the Centre for Higher Education Policy Studies (CHEPS) on behalf of the European Commission, captures what is happening in graduate tracking at system level (national or regional) for both higher education and vocational education and training, and at institutional level for higher education. It assesses how far countries are meeting the benchmarks for graduate tracking set out in the 2017 Council Recommendation and how far the measures they have in place would enable comparison at EU level.

## Background and context

Tracking graduates can provide crucial intelligence about the quality of learning programmes in higher education and vocational education and training and the extent to which it meets labour market needs. This is a powerful instrument to further improve the design and update of curricula for the acquisition of relevant skills and employability; and to ensure skills matching to support competitiveness, innovation and the resolution of skills shortages. It can also be used for improving career guidance for prospective students, current students and graduates, and planning for and forecasting employment, educational and social needs.

This has been underpinned by the European Commission's **New Skills Agenda for Europe** (2016), which emphasised the need for countries to have a '*better understanding of the performance of graduates*' and was supported by a mapping study of graduate tracking in vocational education and training completed in 2018. It was further emphasised by the Renewed EU Agenda for higher education (2017) and a range of initiatives to improve information on how graduates progress in the labour market, such as the Eurograduate Pilot Survey, and the establishment of an Expert Group on Graduate Tracking (2018-2020) to provide a forum for cooperation and mutual learning about graduate tracking and data analysis.

Additionally, the **Council Recommendation on tracking graduates** (2017) proposes "*making progress by 2020 on the establishment of graduate tracking systems*"<sup>3</sup>. The Recommendation acknowledges that initiatives and systems for collecting information about higher education and vocational education and training leavers could benefit from improvement and standardisation and sets out minimum requirements for graduate tracking measures.

It has also been underpinned by wider understanding that tracking graduates is a core component of effective quality assurance systems as it provides a mechanism for gathering intelligence on skills utilisation in the labour market and placement rates. This is recommended in both the Standards and Guidelines for Quality Assurance in the European higher education Area and the European Quality Assurance Framework for Vocational Education and Training.

## About this study

### Aims and objectives

The main aim of this study is to capture the state of play in graduate tracking at system level (national or regional) for both vocational education and training and higher education; and at institutional level for higher education. It also aims to share effective

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<sup>2</sup> Technical Specifications for Request for Services EAC/23/2019, Annex A, p. 1.

<sup>3</sup> [https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A32017H1209%2801%29#ntr12-C\\_2017423EN.01000101-E0012](https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A32017H1209%2801%29#ntr12-C_2017423EN.01000101-E0012)



practice in designing and implementing graduate tracking measures and disseminating and using their results.

The study has the following objectives:

- Specific objective **1**: Mapping the **state of play** and types of graduate tracking in higher education and vocational education and training;
- Specific objective **2**: **Comparative analysis** of country graduate tracking measures;
- Specific objective **3**: Producing a **set of guidelines** on designing, implementing, disseminating and using the results of graduate tracking<sup>4</sup>; and
- Specific objective **4**: **Mapping institutional** graduate tracking in higher education.<sup>5</sup>

To address these objectives, the key research questions that guided the study were:

- What is the general **coverage** of graduate tracking at institutional and system-level, both of higher education and of VET graduates?
- What are the main **methods** used to track HE and VET graduates?
- What is the **content** of data collected in graduate tracking?
- To what extent do national graduate tracking systems meet the requirements of the **Council recommendation** on tracking graduates?
- To what extent does graduate tracking conducted at system level allow for cross-country **comparability**?
- What are the **key features** of an effective system-level graduate tracking measure?

The study covers all EU-27, the UK and EEA member countries (31 in total). The mapping focuses on the system level. In the countries where higher education or VET systems are fully or partially devolved to sub-national authorities, regional measures were also researched.<sup>6</sup> The study covers higher education, initial VET and continuing VET. In terms of education levels, it focuses on upper secondary, post-secondary non-tertiary VET programmes, and higher education at EQF<sup>7</sup>/ISCED<sup>8</sup> level 6. However, it has collected measures found relating to other groups, such as higher-level graduates (EQF/ISCED level 7 and above) and apprentices and learners in dual VET<sup>9</sup> where they fall within the measures that meet the above criteria.

## **Method**

The study consisted of two main research tasks: the mapping and description of system-level approaches to VET and higher education graduate tracking, including the analysis of these systems and their measures, and a questionnaire survey of higher education Institutions about their graduate tracking practices and the analysis of the responses. Findings from these processes fed into the development of a guidance publication on graduate tracking.

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<sup>4</sup> The results of this part of the study are a guidance document, How to do graduate tracking, for policy makers and practitioners

<sup>5</sup> This is primarily the practices found in larger institutions (defined as having more than 200 students and 30 full-time equivalent staff) that predominantly deliver programmes at EQF level 6 or above.

<sup>6</sup> In Belgium the mapping focuses on Flanders (BE-NL) and Wallonia (BE-FR); in Germany, Italy and Spain the research focused on the national and regional levels; in the UK, the mapping focuses on England and Scotland but specific examples have also been included for Wales and Northern Ireland.

<sup>7</sup> European Qualifications Framework.

<sup>8</sup> International Standard Classification of Education

<sup>9</sup> Vocational education and training combining periods in an educational institution or training centre and in the workplace.

### **Mapping system level approaches to graduate tracking**

The mapping and description of system level approaches to graduate tracking in EU and EEA countries was based on desk research and semi-structured interviews. As part of this exercise a total of 95 interviews were conducted with ministry officials, project managers, researchers and statisticians.<sup>10</sup> The information collected included background information on graduate tracking in the country and a detailed description of each of the tracking measures identified at system level. The mapping exercise aimed to identify all of the system-level graduate tracking measures in place in EU and EEA countries, and in the UK.

Inevitably, the level of information obtained about each measure varies. In some cases, it was not possible to capture all the details about the methodology applied or the use made of tracking results. This was due to lack of information in published sources or known by interviewees and the scale of the task in some countries within the time scale of the research.

The information collected in the mapping has informed the comparative analysis, as well as the assessment of countries' progress towards meeting the Council Recommendation and the comparability and compatibility of practices and graduate outcomes data among EU and EEA countries.

The country factsheets completed for the mapping and a draft version of this report were shared with the members of the European Commission Expert Group on Graduate Tracking before its publication. Their feedback was incorporated into the final version of this report.

### **Surveying higher education institutions about graduate tracking**

higher education institutions' data on graduate tracking was collected using an online survey. The survey collected information on the type of graduate tracking measures used, the motivations for undertaking graduate tracking or, where tracking is not done, the reasons for not doing so. The survey was open to all higher education institutions between 5 November 2019 and 10 January 2020.

A response of 615 valid survey returns was achieved, which are estimated to represent about a third (34%) of the total higher education institutions in scope for the study and representing about half (50%) of the graduates in these organisations. This gives a representative response rate which allows for a robust statistical analysis of the approaches to graduate tracking by higher education institutions in Europe.

In 18 countries, the survey had responses from higher education institutions covering over 50% of the graduate population (AT, BE, BG, HR, CZ, DK, EE, FI, IS, IT, LI, LU, MT, PT, SK, SI, ES, SE). In the three countries where the survey received responses covering under 40% of the graduate population (UK, NO, DE), this may be explained by their participation in national measures which override the need for their own graduate tracking.

## **Key findings**

### **National policies and developments in graduate tracking**

**About two thirds of the countries have system-level graduate tracking in higher education and VET. The remainder will have to make considerable improvements if they were to establish system level graduate tracking in the next five years.**

- higher education and VET graduate tracking is an established practice in 18 countries (AT, BE-NL, CZ, DE, DK, EE, ES, FI, FR, IE, IT, LU, LT, NL, NO, SE, SK, UK).

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<sup>10</sup> In a few cases, due to lack of availability of the persons contacted, consultations were done via e-mail.

- Three countries have system-level graduate tracking measures for one of the sectors only, higher education (BG, HU, PL) or VET (BE-FR, PT).
- Two countries can be expected to have higher education graduate tracking in place over the next one or two years (LV, SI).
- In RO and IS there are activities but not necessarily at system level.
- In three countries without system level graduate tracking, the Eurograduate survey provided significant push to start developing a national system (HR, EL and MT).
- In CY and LI there is little or no relevant experience with graduate tracking so far.

**The countries where graduate tracking is a legal obligation tend to have well-established tracking systems. However, a legal basis is not a necessary condition for regular graduate tracking.**

In close to half of the countries, graduate tracking is both a legal obligation and a regular practice (AT, DE, DK, EE, ES, FI, FR, HU, IT, NL, PL, SE and UK).

In another third of countries, graduate tracking is a well-developed practice despite not being a legal obligation (BG (in higher education), BE-NL, CZ, IE, LT, LU, NO and SK).

In some of these countries, tracking is considered to be a policy objective (BG, CZ, IE, LT, SK) but in a few there is no policy focus on the topic (BE-NL, LU and NO).

A few countries with poorly developed graduate tracking have included the aim to do so in recent policy documents (BE-FR, BG (in VET), HR, MT, RO, SI).

In the remaining countries, graduate tracking is poorly developed and there are no policy objectives related to it (CY, EL, IS, LI).

**The responsibility for graduate tracking generally lies with the national or regional authorities which oversee higher education or VET policies.** In the countries where no measures can be identified at system level, it was not possible to establish which level is responsible for graduate tracking

in VET (BG),

in higher education (RO),

or both sectors (CY, EL, HR, IS).

**Ongoing reforms indicate an increasing use of administrative data and a combination of administrative data and surveys.**

New graduate tracking measures are currently under development in BG, LV and SI and have been announced in FR, HU, LI, LT, PL, RO and SK.<sup>11</sup>

Reforms of existing tracking measures are ongoing in BE-NL, DE, ES, FI, and SE.

Ongoing or announced reforms indicate an increase in the use of administrative data for graduate tracking (ES, FR and SK) and an awareness of the importance of combining administrative data and surveys.

**The involvement and cooperation of key bodies, including those in charge of the policies and those holding the data and the methodological expertise, are key to successful tracking.** Graduate tracking requires the involvement of different ministries, national agencies and departments, including statistical offices and research agencies. Smooth cooperation between these entities as well as with other relevant parties, such as education and training providers and employer representatives, can be a key factor to

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<sup>11</sup> A new graduate tracking measure based on administrative data collection was launched in 2019 in Slovakia. Information on the measure was not yet available at the time the research for this study was completed.

the successful implementation of graduate tracking. Common obstacles to the development of graduate tracking include lack of leadership or priority to foster cooperation between the different actors, restrictions due to differing legislation on personal data protection in Member States, insufficient methodological and technological capacity and insufficient funding.

### **Characteristics of system level tracking measures**

**The study identified 123 graduate tracking measures at system level across 29 countries.** Only EL and CY have no system level relevant measures except for the tracking of completers in European Social Fund-funded training. In the other countries, measures cover to varying degrees initial VET, continuing VET and higher education graduates. Continuing VET graduates are the least covered with just 34 measures identified.

**Measures do not necessarily include the entire graduate population.** Measures generally focus on completers of study programmes across all education sectors.

Around a third (39 measures) include students who dropped out before completing their degree; a higher proportion of these are initial VET measures.

Only a few measures (15) include graduates who have migrated to another country, more of these are higher education measures than initial VET or continuing VET ones.

Only a third of the measures (44) collect data on every cohort of graduates, others take place periodically at a variety of frequencies.

**Measures collect a wide range of data, which can be used for the purposes identified, although there are considerable variations in what is collected and in what detail.**

- The main variables collected relate to employment status, socio-biographical and socioeconomic information, further education and training pathways.
- As expected, surveys are the main sources of satisfaction data about the quality of programmes and the relevance of acquired skills.
- Fewer measures capture data, which can be of analytical value on graduate backgrounds (migration, ethnicity, parents' education) and data on graduate education which can be used for linkage to administrative data.
- Many measures (54) use unique identifiers enabling data to be linked. As a result, some of this data may not need to be collected through other means.
- Very few measures (13) capture information on graduates' social and civic activities.

Figure 1. Main indicators covered by the instrument

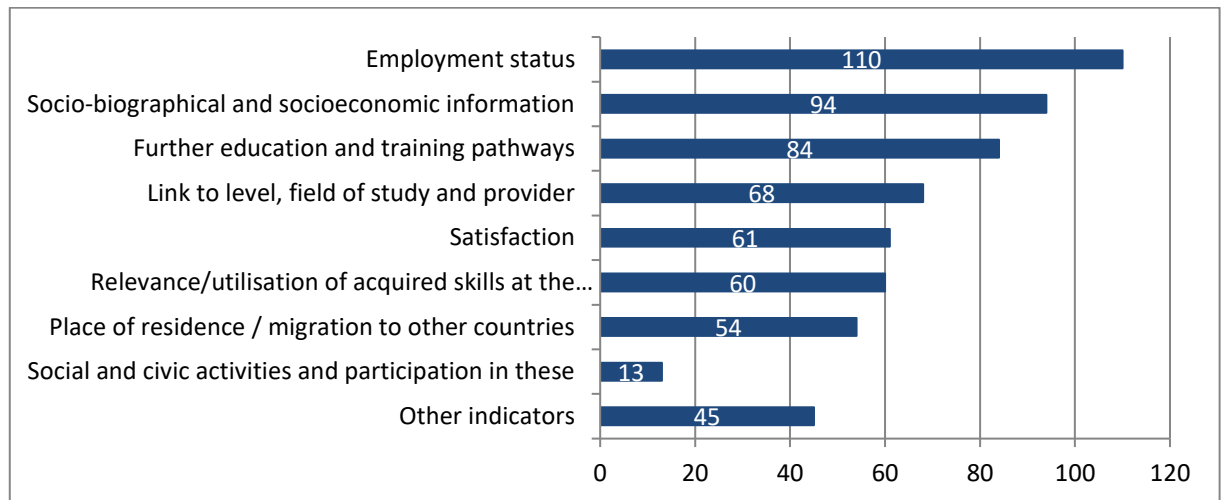


Figure 2.

Source: Mapping research conducted by ICF, 3s and CHEPS.

**Only around a third of measures (45) track graduates more than twice to provide longitudinal data, which is of value to policy makers and other users of the data.** Just under two thirds of countries (20) have at least one measure that gathers longitudinal data on graduates. Where cohorts are followed-up, this takes place mainly two or three times within a cycle of around two and four years after graduation. Thirty measures have at last three follow-ups; many of these are part of larger scale panel studies.

**Many countries use both survey and administrative data collection for tracking graduates since they complement each other in providing the data needed.**

Consequently, there are nearly an equal number of survey (mainly quantitative) and administrative data collection (mainly registers on education achievements, social security and unemployment) approaches identified.

Fewer measures use sampling (49) than use of the total reference population (67).

Administrative data-based measures more often draw on the total reference population for analysis and for sampling, than surveys which are more often based on achieved samples derived from contacting the entire graduate cohort (30) and from selected samples (44).

In around a quarter of the measures (30), there are reportedly limitations in the use of the data because of inadequate achieved sample sizes either because of response bias or because of size limiting sub-group analysis.

While many measures use robust methods for sampling (systematic and random), 12 use convenience sampling which runs a higher risk of response bias.

**Eighty percent of measures have some data made publicly available for others to use but in many cases there are either limitations in the level of detail and the availability to potential users.**

- Data are mainly available with limitations, for example in aggregated form only, restricted to specific users.
- For around a third of measures (39), anonymised case data are available, and for a greater number (55) data is available for providers.
- Data is generally provided freely.

**Data used for system level monitoring and evaluation of education policies and their development can be identified for over half of the measures. Some other uses are less frequently identified.**

- There are no significant differences in the use of data which are based on surveys and administrative data collection, and none between higher education and VET measures.
- Around a third of measures are used to plan for employment, education and social needs, to support design and current curriculum and to strengthen career guidance.
- Around 40% (50) of measures are used either in the funding or/and the appraisal and quality assurance of providers.
- Only one in four measures are used in improving skills matches.
- Only six measures have developed counterfactuals with comparison groups of non-graduates for their analyses.

Ten countries have systems to ensure the complementarity of system level measures and institutional level measures. These are: DK, FI, FR, HU, IE, IT, LV, NL, NO, UK.

**Country progress towards meeting the Council Recommendation on Graduate tracking (2017/C 423/01)**

The following progress benchmarking criteria were defined on the basis of the Council Recommendation:

**'Inclusion of graduate programmes'**: coverage of relevant programmes in higher education, initial VET and continuing VET.

**'Inclusion of graduates'**: coverage of the full graduate population, incl. cross-border graduates & drop-outs.

**'Longitudinality'**: tracking of graduates at different points after they graduated.

**'Quality of data'**: use of a variety of quantitative and qualitative data.

**'Dissemination and use of data'**: use of data for different purposes and by different users.

The assessment of countries' progress towards achieving in full the Council's Recommendation on graduate tracking is summarised in the table below. It shows:

- Virtually complete coverage of the benchmarking criteria for Germany and Finland and nearly complete coverage for Austria, Denmark, Ireland, Sweden and United Kingdom.
- Countries with (nearly) no coverage are Cyprus, Greece and Iceland.
- Belgium (BE-Fr), Bulgaria, Croatia, Latvia, Liechtenstein, Luxembourg, Malta, Romania, Slovakia and Slovenia have limited coverage.
- The other countries provide good coverage of the assessment against the criteria.

There are improvements to be made against all the criteria of the Recommendation by the majority of countries.

- The most significant areas for improvement for at least ten countries are coverage of all the graduate population in initial VET, continuing VET and higher education; the inclusion of all graduates; and having a longitudinal approach to tracking.
- A more detailed analysis of this shows that there is considerable room for improvement, particularly in the following aspects of graduate tracking:
  - The coverage of continuing VET across nearly all benchmarking criteria;
  - The inclusion of drop-outs and mobile graduates in surveys;
  - The follow-up of cohorts of learners at least twice within five years;
  - The coverage of the main indicators across all sectors; and

- The quality of surveys to provide sufficient representative achieved samples in all case.

Table 1. Assessment of countries' progress towards meeting the Council Recommendation on Tracking Graduates

Table 2.

	Inclusion of graduate programmes	Inclusion of graduates	Longitudinality	Quality of data	Dissemination and use of data	Average across benchmark areas	Estimation of timeline for meeting the Recommendation
Austria	Light Green	Green	Light Green	Light Green	Light Green	Light Green	3 years
Belgium (Flanders)	Yellow	Light Green	Orange	Yellow	Yellow	Yellow	4 years
Belgium (French-speaking)	Orange	Light Green	Light Green	Yellow	Orange	Orange	5 years
Bulgaria	Orange	Orange	Red	Yellow	Yellow	Orange	5 years
Croatia	Orange	Red	Red	Yellow	Red	Orange	4 years
Cyprus	Red	Red	Red	Red	Red	Red	4 years
Czech Republic	Orange	Light Green	Orange	Light Green	Yellow	Yellow	4 years
Denmark	Green	Light Green	Yellow	Orange	Green	Light Green	3 years
Estonia	Light Green	Light Green	Red	Light Green	Green	Yellow	3 years
Finland	Green	Green	Light Green	Light Green	Green	Light Green	2 years*
France	Yellow	Light Green	Light Green	Light Green	Yellow	Yellow	5 years
Germany	Green	Green	Green	Green	Light Green	Green	2 years*
Greece	Red	Red	Red	Red	Red	Red	6 years
Hungary	Orange	Light Green	Yellow	Light Green	Light Green	Yellow	4 years
Iceland	Red	Red	Red	Red	Red	Red	2 years
Ireland	Green	Yellow	Yellow	Light Green	Yellow	Light Green	2 years
Italy	Orange	Yellow	Yellow	Yellow	Light Green	Yellow	5 years
Latvia	Orange	Orange	Orange	Light Green	Green	Orange	4 years
Liechtenstein	Orange	Orange	Red	Yellow	Red	Orange	3 years
Lithuania	Orange	Orange	Yellow	Yellow	Light Green	Yellow	3 years

	Inclusion of graduate programmes	Inclusion of graduates	Longitudinality	Quality of data	Dissemination and use of data	Average across benchmark areas	Estimation of timeline for meeting the Recommendation
Luxembourg	Orange	Orange	Orange	Yellow	Red	Orange	3 years
Malta	Red	Orange	Red	Green	Yellow	Orange	3 years
Netherlands	Green	Yellow	Red	Light Green	Yellow	Yellow	3 years
Norway	Green	Yellow	Red	Light Green	Green	Yellow	3 years
Poland	Light Green	Light Green	Orange	Light Green	Yellow	Yellow	5 years
Portugal	Orange	Green	Yellow	Yellow	Orange	Yellow	4 years
Romania	Red	Yellow	Yellow	Light Green	Light Green	Orange	6 years
Slovakia	Orange	Orange	Red	Yellow	Yellow	Orange	4 years
Slovenia	Orange	Yellow	Red	Light Green	Yellow	Orange	4 years
Spain	Light Green	Light Green	Yellow	Yellow	Yellow	Yellow	5 years
Sweden	Green	Light Green	Orange	Light Green	Green	Light Green	3 years
United Kingdom	Green	Yellow	Light Green	Yellow	Yellow	Light Green	4 years

Source: Mapping research conducted by ICF, 3s and CHEPS.

\* Timeline for further elaboration of graduate tracking measures.

## Compatibility of practices and comparability of graduate outcomes data among countries

**There is potential for the comparison of the results of graduate tracking measures between many countries.** Fifty-one measures met a minimum threshold in relation to employment classification, representativeness and cohort /periodicity. More countries could be compared for initial VET and higher education graduate indicators than for continuing VET.

Many variables (described here as indicators) are commonly collected and are potentially comparable between many measures. Indicators with the highest country coverage across initial VET, continuing VET and higher education are employment status, socio-biographical information and further education and training. For the 51 potentially comparable measures, 'employment status' is covered best of all – with 19 countries in initial VET, 9 countries in continuing VET and 21 countries in higher education.

Other indicators in initial VET covering at least 10 countries and a maximum of 13 countries are sustainable employment, further education and training, socio-biographical information, age, gender. In continuing VET none of the indicators has a coverage of more than 9 countries. Indicators with the highest coverage are – besides employment status – further education and training (9 countries), socio-biographical information as well as level, field of study and provider (8 countries each). In higher education indicators with higher country coverage are socio-biographical information (17 countries) and further education and training (15 countries).



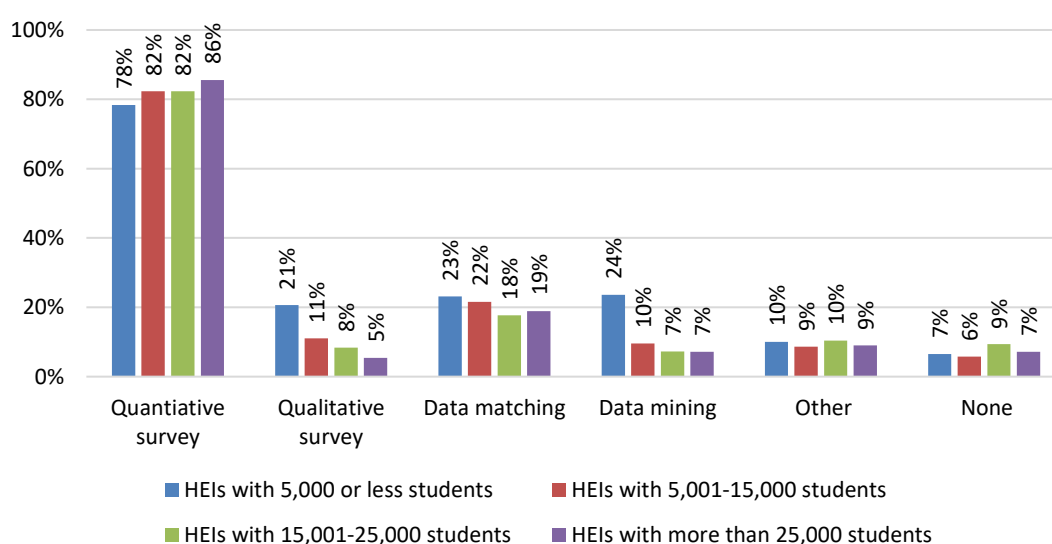
Comparability is only possible where measures have used the very similar if not the same approaches and use the same means for classifying indicators. These include standard international classifications such as ISCED and NACE<sup>12</sup>; standard definitions for socioeconomic/biographical data and satisfaction questions; similar periodicities for data collection; representativeness of the achieved sample or, in case of surveys, sufficient response rate; and data availability for comparative research.

Many measures do not currently match these requirements which reduces the potential number of measures which can be used for comparison and benchmarking and consequently reduces the number of countries' that can be included.

### Institutional graduate tracking in higher education

**The survey identified that graduate tracking is generally well-embedded in higher education institutions across EU and EEA countries.** Four out of five survey respondents said their higher education institutions holds private email addresses for their graduates, while only around half said they store home address contact details. More than nine out of ten survey respondents said their higher education institution undertakes some form of graduate tracking. The existence of good measures at national level appears to save resources for higher education institutions in some countries that are less likely to undertake institutional graduate tracking. Examples include the UK and Norway.

Figure 3. Type of tracking measure(s) used by size of higher education institutions



Source: ICF graduate tracking higher education institution survey (5,000 or less: N=199, 5,001-15,000: N=209, 15,001-25,000: N=96, More than 25,000: N=111). Multiple choice question.

### Most higher education institutions reported that they undertook a questionnaire survey to which they invited cohorts of graduates for whom they had contact details to complete online.

- Quantitative surveys are the most common form of graduate tracking and are used by more than four out of five higher education institutions undertaking tracking, typically administered online. Smaller higher education institutions are more likely to do qualitative surveys, such as interviews and focus groups.

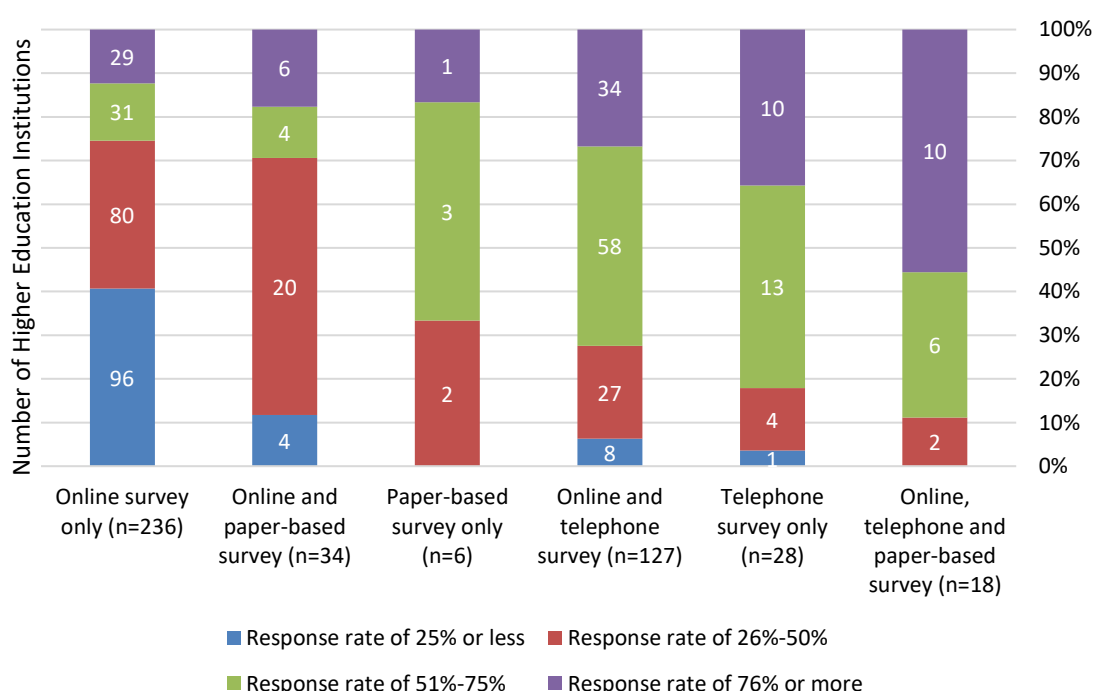
<sup>12</sup> Statistical Classification of Economic Activities in the European Community

- About three fifths of higher education institutions only use one tracking measure. Where higher education institutions use qualitative surveys or match administrative data, this is often supplementary to a quantitative survey of their graduates.
- Higher education institutions typically limit their tracking to former students who complete their studies and remain in the same country.

**The quality of institutional tracking varies considerably.** For quantitative graduate tracking surveys, around two thirds of higher education institutions said they use some form of random sampling and nearly half said they achieve a response rate of 50% or more. However, around a third of those sampling use a convenience sample. Sampling may account for some of the poor level of response higher education institutions receive to their quantitative surveys. For around a third it is reported to be lower than 30%. Under half (43%) of higher education institutions graduate surveys obtain more favourable response rates above 50%. Around a quarter (25%) achieve a response rate of above 70%, which would provide sufficient data for detailed sub-group analysis (by programme and graduate characteristics).

Higher education institutions that only distribute their graduate tracking survey online more often achieve a lower response rate compared to those that use more than one survey method, particularly where the survey is administered via telephone too. Three quarters of higher education institutions using only online methods failed to achieve a 50% response rate compared to just under a third (28%) of those using online and telephone.

#### Quantitative survey response rates by method(s) used



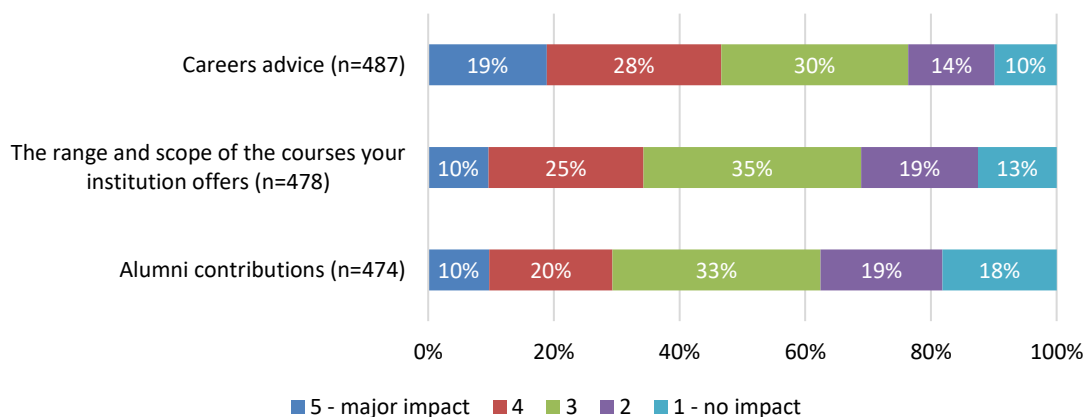
Source: ICF graduate tracking higher education institution survey (N=number of respondents shown above). 'Don't know' responses and item non-responses removed from the analysis.

A little over two thirds of higher education institutions implement their tracking measure within 18 months of graduation. The majority of higher education institutions do not track their graduates over more than one time period to collect longitudinal data.

Tracking measures most commonly capture data on graduates' employment status, job level and salary.

- Less than a quarter of higher education institutions using each type of tracking measure capture data on participation in volunteering or civic/community activities, and similarly reasons for pursuing further education was a measure much less commonly collected by individual higher education institutions.
- Overall, collected data typically has a larger impact on the careers' advice higher education institutions give their students than other areas, such as the range and scope of courses they offer or financial contributions from alumni.

Figure 4. Impact of graduate tracking on different areas of higher education institutions



Source: ICF graduate tracking higher education institutions survey. N=number of respondents answering each question.

## Conclusions

### **The study shows that further action is needed to improve graduate tracking measures in all countries**

There are significant differences in the graduate tracking mechanisms in the 31 countries analysed. While the majority of countries have well-developed graduate tracking systems, there is room for improvement in the comparability of data at EU level and the effectiveness of the measures taken.

The analysis of the comparability of the measures taken by the countries identifies the indicators that could be benchmarked among ten or so countries. Employment status, socio-biographical information and further education and training of graduates are the most often covered indicators across higher education, initial VET and continuing VET.

The changes to measures that would be needed to enable comparability on a greater scale include increasing the use of standard international classifications such as ISCED and NACE; standard definitions for socioeconomic/biographical data and satisfaction questions; similar periodicities for data collection; representativeness of the achieved sample or, in the case of surveys, a sufficient response rate; and data availability for comparative research. Increasing convergence should focus on improving different aspects of measures (sampling, data collected, and the classification of data) in parallel.

The results of the higher education institutions' survey provide up to date information on the state of play of graduate tracking within the higher education sector across the EU, UK and EEA, and how graduate data are used. This shows considerable interest by higher

education institutions in tracking graduates, with nine out of ten survey respondents informing that their institution undertakes some form of graduate tracking.

The survey also provides information on the limitations of these efforts in terms of data quality, representativeness and regularity. For instance, more than half of the higher education institutions using quantitative surveys failed to achieve a suitable response rate of 50% or more. For around a third it was under 30%.

It is important to consider how higher education institutions might be better supported to receive the information they need from graduate tracking. Institution-level measures could provide a good basis for developing a national system in countries where it is not available, as buy-in of higher education institutions is crucial for a successful graduate tracking mechanism.

### ***Countries at some distance from meeting the Recommendation's requirements can benefit from support and guidance***

This could be done through peer learning, expert support, self-organised consultancy and good practice sharing, in particular between countries facing similar challenges. For example, a group of countries in Mid-Eastern Europe have similar issues (BG, CY, EL, HR, RO, SI, SK), including a lack of systematic graduate tracking measures in some or all the sectors (especially in continuing VET), limited tracking data available (few indicators covered) and a lack of longitudinal data. However, a few of these countries have some well-developed tracking measures (SK, BG for higher education) and can share their experience. Small countries -with a low number of higher education institutions and vocational education and training providers- could also be grouped for peer learning activities or good practice sharing (CY, LU, LV, MT, SI, SK), combining countries that have progressed both more and less towards the Council Recommendation on graduate tracking.

### **Some recommendations**

- Encourage Member States to increase the coverage of their graduate tracking system across higher education and VET, including continuing VET graduates, and with all graduate cohorts tracked;
- Encourage Member States to work towards greater convergence: particularly in relation to survey questions, data collected, representative data, and longitudinal data;
- Consider providing additional capacity building support to share good practices in establishing and maintaining graduate tracking systems to overcome some of the gaps and deficiencies in their implementation. This could take the form of peer learning opportunities, mutual learning among country groups, task forces to support a specific country;
- Consider introducing additional requirements than the ones specified in the Council Recommendation on tracking graduates, namely to include social and civic outcomes of higher education and vocational education and training to the data collected, and a specification of a minimum percentage of graduates in achieved samples;
- Encourage European bodies representing higher education institutions to increase the advice and guidance they provide on graduate tracking and reflect on the findings of this study's survey results about the quality/scope of surveys.
- Encourage Member States and other countries to establish coordination between national and provider level graduate tracking activities to increase synergies and convergence.

## 1 Introduction

### 1.1 Background and context

Tracking the destinations of graduates can provide crucial intelligence on the quality of learning programmes in higher and vocational education (higher education and vocational education and training) and the extent to which it meets labour market needs. This can be used for:

- Strengthening career guidance systems for prospective students, current students and graduates;
- Supporting the design and updating of curricula to improve the acquisition of relevant skills and employability;
- Improving skills matching to support competitiveness and innovation at local, regional and national level, and to resolve skills shortages;
- Planning for and forecasting evolving employment, educational and social needs; and
- Contributing to policy development at both national and EU levels.

The Commission's **New Skills Agenda for Europe** (2016) emphasised the need for countries to have a '*better understanding of the performance of graduates*'. To achieve this the Commission proposed a new EU-level initiative on tertiary graduate tracking to improve information on how graduates progress in the labour market.<sup>13</sup>

The **Council Recommendation on tracking graduates** (2017) was subsequently issued which proposed "*making progress by 2020 on the establishment of graduate tracking systems*"<sup>14</sup>. The Recommendation acknowledges that initiatives and systems for collecting information about higher education and vocational education and training leavers could benefit from improvement and standardisation.

The ability to track graduates is also considered a core component of effective quality assurance systems as it provides a mechanism for gathering intelligence on skills utilisation in the labour market and placement rates. This is recommended in both the Standards and Guidelines for Quality Assurance in the European Higher Education Area (**ESG**) and the European Quality Assurance Framework for Vocational Education and training (**EQAVET**).

In line with policy recommendations, the Commission has supported several initiatives to increase the knowledge of graduate tracking policies and practices in Europe, and to enhance the use and quality of graduate tracking.

In 2017, the Commission published "*The Mapping of vocational education and training graduate tracking measures at EU Member States*" which described national and institutional practices in vocational education and training and discussed scenarios for cooperation at EU level.<sup>15</sup> In the higher education sector, the Eurograduate Pilot Survey has recently tested the feasibility of implementing a European graduate survey across Erasmus+ countries.<sup>16</sup> The Commission has also established the Expert Group on Graduate Tracking (2018-2020) which provides a forum for cooperation and mutual learning about graduate tracking and data analysis. The Expert Group recognised the need to have an up to date mapping of measures across higher education and vocational education and training in the EU.

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<sup>13</sup> [http://europa.eu/rapid/press-release\\_IP-16-2039\\_en.htm](http://europa.eu/rapid/press-release_IP-16-2039_en.htm) (12.07.2019).

<sup>14</sup> [https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A32017H1209%2801%29#ntr12-C\\_2017423EN.01000101-E0012](https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A32017H1209%2801%29#ntr12-C_2017423EN.01000101-E0012)

<sup>15</sup> The study was conducted by ICF Consulting Services Limited, in association with 3s, under the framework contract EAC/47/2014 (Request for Services VT/2016/058). Available at: <https://op.europa.eu/en/publication-detail/-/publication/00d61a86-48fc-11e8-be1d-01aa75ed71a1/language-en/format-PDF/source-69741501>

<sup>16</sup> <https://www.eurograduate.eu/>

Against this background, DG Education, Youth, Sport and Culture (DG EAC) commissioned this study 'Mapping the state of graduate tracking policies and practices in the EU Member States and EEA countries' in 2019 completed by ICF in association with 3s and CHEPS. The study aims to update and add to existing intelligence on graduate tracking mechanisms in higher education and vocational education and training to inform the work of the Expert Group on Graduate Tracking, ahead of the reporting required on progress towards achieving the Recommendation in 2020. It also aims to draw on effective practice in countries to present guidance for policy makers on how to design and implement graduate tracking measures.

This report presents the study findings. It is structured as follows:

- Section 1 presents the study aim, objectives and scope;
- Section 2 reports on the findings of the mapping of system-level graduate tracking measures in the EU-28 and EEA countries;
- Section 3 analyses countries' progress against the 2017 Council recommendation;
- Section 4 discusses the comparability and compatibility of practices and graduate outcomes data among EU and EEA countries;
- Section 5 reports on the findings of the survey conducted on institutional graduate tracking in higher education;
- Section 6 presents the conclusions of the study and recommendations for future actions.

Guidance material on how to design and implement graduate tracking measures is included in a separate document.

## **1.2 Objectives and scope of the study**

The aim of this study is to capture the state of play in graduate tracking at system level (national or regional) for both vocational education and training and higher education, and at institutional level for higher education. It also aims to share effective practice in designing and implementing graduate tracking measures and disseminating and using their results.

Graduate tracking can be defined as 'the collection of quantitative micro and aggregate data and/or qualitative information about employment and social outcomes of people leaving vocational and higher education'<sup>17</sup>.

The study has the following main objectives:

- **Specific objective 1:** Mapping the state of play and types of graduate tracking in higher education and vocational education and training;
- **Specific objective 2:** Comparative analysis of country graduate tracking measures;
- **Specific objective 3:** Producing a set of guidelines on designing, implementing, disseminating and using the results of graduate tracking; and
- **Specific objective 4:** Mapping institutional graduate tracking in higher education. This primarily examined practices taking place in larger institutions (defined as having more than 200 students and 30 full-time equivalent staff) that predominantly deliver programmes at EQF level 6 or above.

The key research questions are:

- What is the general **coverage** of graduate tracking at institutional and system-level, both of higher education and of vocational education and training graduates?

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<sup>17</sup> Technical Specifications for Request for Services EAC/23/2019, Annex A, p. 1.

- What are the main **methods** used to track higher education and vocational education and training graduates?
- What is the **content** of data collected in graduate tracking?
- To what extent do national graduate tracking systems meet the requirements of the **Council recommendation** on tracking graduates?
- To what extent does graduate tracking conducted at system level allow for cross-country **comparability**?
- What are the **key features** of an effective system-level graduate tracking measure?

The study covers all EU-28 and EEA member countries (31 in total). The mapping focuses on the system level. In the countries where higher education or vocational education and training systems are fully or partially devolved to sub-national authorities, regional measures were also researched.<sup>18</sup>

The study covers higher education, initial vocational education and training and continuing vocational education and training. In terms of education levels, it focuses on upper secondary, post-secondary non-tertiary vocational education and training programmes, and higher education at EQF<sup>19</sup>/ISCED<sup>20</sup> level 6. However, it has collected measures found relating to other groups, such as higher-level graduates (EQF/ISCED level 7 and above).

### **1.3 Overview of the methodology**

The study methodology combined two main research tasks: the mapping and description of system-level approaches to vocational education and training and higher education graduate tracking, and the analysis of graduate tracking practices by higher education institutions.

Findings from these processes fed into the development of a guidance publication on graduate tracking. The two research tasks are described below.

#### **1.3.1 Mapping of system-level approaches to graduate tracking**

The mapping and description of system level approaches to graduate tracking in EU and EEA countries was based on desk research and semi-structured interviews. As part of this exercise a total of 92 interviews was conducted with ministry officials, project managers, researchers and statisticians (see 0).<sup>21</sup>

The information collected included:

- Background information on graduate tracking in the country:
  - if there is a legal obligation and/or policy focus on graduate tracking;
  - whether graduate tracking is an established practice;
  - main tracking measures;
  - purposes of graduate tracking and main users of tracking results;
  - and ongoing or planned reforms.
- A description of each of the tracking measures identified at system level:
  - coverage in terms of education sector (initial vocational education and training/continuing vocational education and training/higher education) and level, population included and geographical scope (national/regional);

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<sup>18</sup> In Belgium the mapping focuses on Flanders and Wallonia; in Germany, Italy and Spain the research focused on the national and regional levels; in the UK, the mapping focuses on England and Scotland but specific examples have also been included for Wales and Northern Ireland.

<sup>19</sup> European Qualifications Framework.

<sup>20</sup> International Standard Classification of Education

<sup>21</sup> In a few cases, due to lack of availability of the persons contacted, consultations were done via e-mail.

- entities responsible, history and rationale;
- data collected;
- use of standardised classifications;
- methodological approach (data collection approach, timing and frequency of data collection, sampling);
- data protection and accessibility;
- use and dissemination of results;
- costs;
- connection to other tracking instruments;
- strengths, weaknesses and future developments.

Desk research was used to gather detailed information on the measures' scope, methods and content, which is usually available from published sources such as reports or databases on tracking results. Interviews were used to complete missing information and gather insights on countries' approach to graduate tracking, the strengths and weaknesses of existing measures and ongoing or foreseen developments regarding existing measures or new, upcoming ones.

The mapping exercise aimed to identify all of the system-level graduate tracking measures in place in EU and EEA countries. This included all the national measures and a range of examples of regional measures where these are a core feature of a country's approach to graduate tracking (mainly in BE, DE, ES, IT and UK).

The list of graduate tracking measures initially identified was reviewed and a few measures were discarded for being outside the parameters of the study. These included, for instance, one-off tracking studies or statistics providing data on graduates' employability that did not involve graduate tracking. Such measures were only kept in the list if no other relevant graduate tracking measures -in higher education or vocational education and training- could be identified in the country.

The level of information obtained about each measure varies. In some cases, it was not possible to capture all the details about the methodology applied or the use made of tracking results because of the lack of information in published sources and the scale of the task in some countries within the time scale of the research. Country experts who are members of the Expert Group on Graduate tracking were asked to verify information collected and provide additional information.

The information collected in the mapping informed the comparative analysis in section 2 of this report, as well as the assessment of countries' progress towards meeting the Council recommendation (section 3) and the comparability and compatibility of practices and graduate outcomes data among EU and EEA countries (section 4).

### **1.3.2 Understanding institutional graduate tracking in higher education**

Data on institutional graduate tracking was collected from an online survey for higher education institutions to complete. The survey collected information on the type of graduate tracking measures used, the motivations for undertaking graduate tracking or, where tracking is not done, the reasons for not doing so. The survey was tested in October 2019 with a few institutions and was open to all higher education institutions between 5 November 2019 and 10 January 2020. It was available in six languages: English, French, German, Italian, Polish and Spanish.

The availability of the survey was promoted to higher education institutions rectorates and relevant departments by international higher education institution umbrella organisations. We specifically approached EU bodies representing higher education institutions (EUA, The Guild and EURASHE), ENQA members and Expert Network members to do this. For EU bodies, we provided each organisation with a short promotion piece describing the purpose and benefits of the survey and reason for participating. This had little impact on responses.



Country researchers were tasked with making approaches to officials, the QA agency in their country and any relevant organisations representing higher education institutions (which exist in the larger EU countries), to see if they could support distribution or help identify any groups/networks of higher education institution staff (e.g. alumni coordinators) that country researchers could approach directly.

To increase response rates, country researchers also contacted individual higher education institutions directly asking them to complete the survey, prioritising higher education institutions with larger shares of a country's graduates in the first instance. By these means, the study has achieved a response of 615 valid survey returns, which are estimated<sup>22</sup> to represent about a third (34%) of the total population of higher education institutions in scope for the study within the definition used and representing about half (50%) of the graduates. This gives a representative response rate which allows for a robust statistical analysis of the approaches to graduate tracking by higher education institutions in Europe.

The aim of the survey was to achieve a response rate of higher education institutions covering at least 50% of higher education graduates in a given country. Data from the European Tertiary Education Register (ETER) was linked to the survey responses to examine the coverage of higher education institutions that have responded. ETER data was extracted in October 2019 on higher education institution characteristics and the number of higher education institutions and students in each country.

Limitations in ETER data - including non-coverage of Latvia and Romania and missing cases and variables for a few other countries<sup>23</sup>- pose difficulties for the calculation of a European response rate including all the countries covered by the study. Estimated country response rates are presented in the table below together with the number of higher education institutions that responded to the survey. Estimates are likely to be lower than the actual graduate coverage of responding higher education institutions in some countries due to the way these estimates were calculated with the data available.

The survey in total received responses from 615 higher education institutions in scope for the study across all 31 EU and EEA countries. In 18 countries the survey received responses from higher education institutions covering over 50% of the higher education student population (AT, BE, BG, HR, CZ, DK, EE, FI, IS, IT, LI, LU, MT, PT, SK, SI, ES, SE). In only three countries did the survey receive responses from higher education institutions that covered less than 40% of the higher education graduate population (UK, NO, DE). In all of them, this is probably linked to a limited number of higher education institutions conducting their own graduate tracking.

In NO and the UK, low levels of graduate tracking by higher education institutions are linked to the existence of well-established national-level measures. In Norway, the graduate survey conducted by the Nordic Institute for Studies in Innovation, Research and Education (NIFU) has been in place since 1972 and only some higher education institutions carry out their own graduate surveys. In the UK, the Higher Education Statistics Agency (HESA) has delivered a survey of graduates since 1994/95, currently called the Graduate Outcomes Survey. Higher education institutions pay a statutory subscription fee to participate in it and can pay for selected additional questions from a question bank to ask their graduates. It is likely that most UK higher education

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<sup>22</sup> Complete data on higher education institutions was not available for RO, LV, DK, EE, FR, IS, IT and LT to fully determine how many higher education institutions were in scope (meeting the criteria of 200+ students enrolled and 30+ FTE academic staff and more than 50% of students at ISCED Level 6 and above). For RO and LV estimates for the total population of higher education institutions in scope are extrapolated based on the percentage of each country's students at ISCED Levels 6-8 which the higher education institutions responding to the survey teach. For DK, EE, FR, IS, IT and LT estimates for the total population of higher education institutions in scope are based on the overall number of institutions recorded in the ETER with students enrolled at ISCED Level 5+ (some of these institutions are likely to be out of scope so the response rate from higher education institutions in scope may be higher).

<sup>23</sup> DK, EE, FR, IS, IT and LT.

institutions do not see the need or have the resources to develop graduate tracking measures of their own. Some UK higher education institutions declined to invest time in participating in our survey for this reason. In Germany, 60 higher education institutions cooperate with a research institute of the University of Kassel<sup>24</sup> under the KOAB project<sup>25</sup> and apply the same tracking methodology and survey questionnaire. As explained by some German higher education institutions contacted by the research team, it made no sense for all of them to provide the same response to the survey, and they chose not to participate.

The responses by country for each country are presented in the table below.

Table 3. Survey for higher education institutions. Response rates

Country	Total number of higher education institutions in scope	Number of survey responses	Number of survey responses from higher education institutions in scope <sup>26</sup>	Number of survey responses matched with ETER data	Approx. % of total graduates in country <sup>27</sup>
Austria	61	29	27	27	55%
Belgium	22	14	13	13	76%
Bulgaria	45	18	17	17	50%
Croatia	29	44*	10	10	81%
Cyprus	8	5	5	5	46%
Czech Republic	34	19	15	15	52%
Denmark	32**	11	9	8	~50%**
Estonia	21**	7	7	7	~78%**
Finland	37	27	23	23	77%
France	158**	108*	93	53	~43%**
Germany	297	54	49	48	37%
Greece	39	14	12	12	42%
Hungary	43	13	13	13	42%
Iceland	7**	5	4	4	~96%**
Ireland	24	10	10	10	40%
Italy	210**	55	51	50	~59%
Latvia	c.8***	5	4	0	~49%***
Liechtenstein	1	1	1	1	100%
Lithuania	29**	10	8	8	42%**

<sup>24</sup> International Centre for Higher Education Research of Kassel (INCHER-Kassel).

<sup>25</sup> Cooperation project graduate studies. In German, Das Kooperationsprojekt Absolventenstudien (KOAB).

<sup>26</sup> Includes survey responses from higher education institutions that are not recorded in the ETER database but that self-reported being in scope based on a set of survey questions (meeting the criteria of 200+ students enrolled and 30+ FTE academic staff and more than 50% of students at ISCED Level 6 and above).

<sup>27</sup> Only calculated based on survey responses matched with ETER data. These estimates therefore don't include all the survey responses in scope and are therefore likely to be underestimates.

Country	Total number of higher education institutions in scope	Number of survey responses	Number of survey responses from higher education institutions in scope <sup>26</sup>	Number of survey responses matched with ETER data	Approx. % of total graduates in country <sup>27</sup>
Luxembourg	1	1	1	1	100%
Malta	1	2	1	1	100%
Netherlands	50	12	11	11	41%
Norway	33	7	7	7	31%
Poland	225	51	47	45	45%
Portugal	57	24	23	23	65%
Romania	c.68***	26	25	0	>37%***
Slovakia	20	15	14	14	70%
Slovenia	3	3	3	3	100%
Spain	78	60	54	52	68%
Sweden	36	30	24	24	78%
United Kingdom	154	34	34	34	30%
<b>Total</b>	<b>-</b>	<b>714</b>	<b>615</b>	<b>540</b>	<b>~50%</b>

\* Has a high number of responses from different faculties within the same higher education institutions, and a high number of faculty responses which cannot be linked to a higher education institution.

\*\*Due to limitations with the ETER data for these countries, estimates are based on the number of enrolled students at ISCED levels 5-7 rather than graduates at ISCED levels 6-8. Estimates do not take account of the small number of missing cases in the ETER data, except for France.

\*\*\*Not based on ETER data; estimate calculated using national data on the total enrolled students in the country sourced by a country researcher alongside higher education institution survey responses on their enrolled students. This is likely to be an underestimate of graduate coverage given that some students in the country will be attending higher education institutions that are out of scope for this study.

The information collected through the survey is analysed in section 6 of this report.

## 2 National policies and developments in graduate tracking

This chapter presents national policies and developments in graduate tracking in EU and EEA countries based on the mapping of measures. It specifically explores the extent to which graduate tracking is a policy objective in countries, the maturity of country graduate tracking systems (including planned reforms), how data from graduate tracking is used and barriers and obstacles to developing tracking measures.

### 2.1 Policy focus on graduate tracking

Graduate tracking is a **policy objective** in over two thirds of the EU and EEA countries (24 out of 32<sup>28</sup>) (see Table 4). In most cases, these countries have strategies and policies that cover both higher education and vocational education and training. However, in CZ, DE, PL, SE there are policies that cover graduate tracking in higher education only. In IT and LU the focus is on vocational education and training only.

In most of these countries, graduate tracking is referenced in national strategies, legislation and other policy documents (listed in 0). These set out:

- Objectives of developing new tracking systems (BE-FR, BG, HR, HU, IE in vocational education and training, IT in vocational education and training, LT in vocational education and training, LV, MT, RO, SI);
- Current tracking systems, their continuity and/or strengthening (CZ, FI in vocational education and training, FR in vocational education and training, SK in higher education, UK in higher education);
- The use of graduate tracking results as part of performance-based funding mechanisms (DK and FI in higher education); conditionalities for providers to receive public funding to start new study programmes (NL); or strategic planning of course offers (SK in vocational education and training).

In EE it is indirectly linked to a policy strategy: the country intends to use tracking results to monitor the objectives of the Estonian Lifelong Learning Strategy 2020.

In other countries (AT, DE, ES, PL, SE and UK (vocational education and training)), graduate tracking is not explicitly mentioned in published policy documents but the focus on graduate tracking is evidenced by ongoing policies and practices.

Table 4. Graduate tracking as a policy objective

Country	Policy objective	Sector	Country	Policy focus	Sector
<b>AT</b>	Yes	both	<b>IS</b>	No	n.a.
<b>BE-FR</b>	Yes	both	<b>IT</b>	Yes	vocational education and training
<b>BE-NL</b>	No	n.a.	<b>LI</b>	No	n.a.
<b>BG</b>	Yes	both	<b>LT</b>	Yes	both
<b>CY</b>	No	n.a.	<b>LU</b>	No	vocational education and training
<b>CZ</b>	Yes	higher education	<b>LV</b>	Yes	both

<sup>28</sup> Note that Belgium is counted twice as two separate templates were completed for the French-speaking Community (BE-FR) and the Dutch-speaking Community (BE-NL).

Country	Policy objective	Sector	Country	Policy focus	Sector
DE	Yes	higher education	MT	Yes	both
DK	Yes	both	NL	Yes	both
EE	Yes	both	NO	No	n.a.
EL	No	both	PL	Yes	higher education
ES	Yes	both	PT	No	n.a.
FI	Yes	both	RO	Yes	both
FR	Yes	both	SE	Yes	both
HR	Yes	both	SI	Yes	higher education
HU	Yes	both	SK	Yes	both
IE	Yes	both	UK	Yes	both

Source: Mapping research conducted by ICF, 3s and CHEPS.

There is a **legal obligation** to conduct graduate tracking in half of the countries (16 out of 32) (see Table 5).<sup>29</sup> In most cases it requires the tracking of both higher education and vocational education and training graduates. The exceptions are AT, DE, HU, PL and the UK where the obligation refers to higher education graduates only; and ES (in 13 out of 17 regions), NL, and PT where the obligation refers to vocational education and training only.

The legal obligation to conduct tracking mostly lies with system-level authorities (national or regional). In a few countries the obligation to conduct tracking lies directly with providers meaning that they need to ensure that graduate tracking is done either by participating in relevant national or regional measures or by developing their own measures. This is the case for higher education institutions in DE, FI and the UK-E, SC, W and NI, and for vocational education and training providers in ES (in 13 regions), NL, and PT. In DK, EE and LV, although national authorities have the responsibility for tracking, the legislation establishes the obligation for education and training providers to collect the data needed for tracking and submit it to national level authorities.

Table 5. Legal obligation to track graduates

Country	Level of legal obligation	Sector	Legal basis
AT	National	higher education	The Austrian University Law in §60 Abs. 1b Ziffer 1.j requires, that for information and guidance prospective students are to be informed about number of students enrolled in the programme, the average duration of studies, the pass rates and employment statistics.

<sup>29</sup> A legal obligation to track higher education graduates has been established in Greece in 2020 (Law 4653/2020, article 7). This piece of legislation was issued after the completion of the research for this study and is thus not included in the analysis.

Country	Level of legal obligation	Sector	Legal basis
DE	Provider	higher education	(1) Laws on Institutions of higher education of the Federal States (2) Contracts between Federal States and higher education institutions
DK	National	Both	Act on Statistics Denmark (Bekendtgørelse af lov om Danmarks Statistik) § 8, 3.
EE	National	Both	Government 's order on conducting the analysis 'Labour Market success of Vocational and higher education Graduates'
ES	Provider	vocational education and training	- National regulation: Royal Decree 1558/2005, of 23 December, regulating the Integrated Centres of Professional training (affects a specific type of vocational education and training provider); and Royal Decree 1529/2012, of 8 November, developing the contract for training and learning and establishing the base of dual training (affects dual vocational education and training projects). - Regional regulation in 13 Autonomous Communities. <sup>30</sup>
FI	National (vocational education and training) and provider (higher education)	Both	vocational education and training: The National Agency for Education Act 564/2016. <sup>31</sup> higher education: The Universities of Applied Sciences Act (data collection mandate) <sup>32</sup> ; The University act (Section 51§ on Data collection mandate) <sup>33</sup> ; The MinEdu Decree on the calculation of the UAS basic funding <sup>34</sup> ; The MinEdu Decree on the calculation of universities' basic funding. <sup>35</sup>
FR	National	Both	higher education: Legal obligation for a national observatory on transition to labour market ( <i>Loi de l'Éducation, Article L611-5</i> , modified 2018). vocational education and training: Order of 24 January 2013 creating an automated processing of personal data on the integration into the working life of pupils and apprentices who have left the education system.
HU	National	higher education	higher education: Law 2011 CCIV on National higher education; <sup>36</sup>

<sup>30</sup> [https://tractionerasmus.eu/wp-content/uploads/2019/05/Estudio\\_MedidasSeguimientoFP.pdf](https://tractionerasmus.eu/wp-content/uploads/2019/05/Estudio_MedidasSeguimientoFP.pdf)

<sup>31</sup> <https://www.finlex.fi/fi/laki/ajantasa/2016/20160564>

<sup>32</sup> <https://www.finlex.fi/fi/laki/ajantasa/2014/20140932>, section 45§

<sup>33</sup> <https://www.finlex.fi/fi/laki/ajantasa/2009/20090558>

<sup>34</sup> <https://www.finlex.fi/fi/laki/alkup/2019/20190117>

<sup>35</sup> <https://www.finlex.fi/fi/laki/alkup/2019/20190119>

<sup>36</sup> <https://net.jogtar.hu/jogszabaly?docid=A1100204.TV>

Country	Level of legal obligation	Sector	Legal basis
IT	National, regional and local	Both	higher education: the higher education Quality Assurance system introduced by Law n. 240/2010 and Legislative Decree n.19/2012. 2) 2a)  vocational education and training: Art. 14 of D.P.C.M. (25 January 2008) of the 'Guidelines for the reorganisation of the education and training system and the constitutions of higher technical institutes'; <sup>37</sup> The Agreement between the State and the Regions (24 September 2015); <sup>38</sup> As regards the ITS pathways, the Agreement between Government, Regions and Local authorities (5 August 2014) includes a reference to a monitoring and evaluation system of ITS pathways.
LV	National	Both	higher education: higher education law; <sup>39</sup>  Both: State Educational Information System regulations. <sup>40</sup>
NL	Provider	vocational education and training	Vocational education and training and higher education institutions are required to inform prospective students about their programmes. For vocational education and training institutions, there is a legal arrangement (Regulations for vocational education and training studies leaflet <sup>41</sup> ) which specifically addresses which indicators they have to use to inform potential students one of which is the percentage of graduates with a job.
PL	National	higher education	Law on higher education, which entered into force in October 2014.
PT	Provider	vocational education and training	vocational education and training: Decree-Law 92/2014
SE	National	Both	§ 9 Regulation (2015: 1047) with instructions for the National Agency for Education; <sup>42</sup> Ordinance (SFS 2012:810) with instruction for the Swedish Higher Education Authority; <sup>43</sup> Ordinance (SFS 2011: 1162)

<sup>37</sup> [https://www.cliclavoro.gov.it/normative/d.p.c.m\\_25\\_gennaio\\_2008.pdf](https://www.cliclavoro.gov.it/normative/d.p.c.m_25_gennaio_2008.pdf)

<sup>38</sup> [http://www.sistemaduale.anpal.gov.it/documentazione/Documents/accordo\\_stato\\_regioni\\_24\\_settembre\\_2015.pdf](http://www.sistemaduale.anpal.gov.it/documentazione/Documents/accordo_stato_regioni_24_settembre_2015.pdf)

<sup>39</sup> <https://likumi.lv/doc.php?id=37967>

<sup>40</sup> <https://likumi.lv/ta/id/307796-valsts-izglitiba-informacijas-sistemas-noteikumi>

<sup>41</sup> Regeling studiebijsluiters mbo (<https://wetten.overheid.nl/BWBR0042000/2019-03-20>)

<sup>42</sup> [https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-20151047-med-instruktion-for\\_sfs-2015-1047](https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-20151047-med-instruktion-for_sfs-2015-1047)

<sup>43</sup> [https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-2012810-med-instruktion-for\\_sfs-2012-810](https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-2012810-med-instruktion-for_sfs-2012-810)

Country	Level of legal obligation	Sector	Legal basis
			with instructions for the Agency for Higher Vocational Education incl. SFS 2019:586 <sup>44</sup>
UK	National and provider	higher education	Implicit in sections 64 and 65 of the Higher Education and Research Act 2017. <sup>45</sup>

Source: Mapping research conducted by ICF, 3s and CHEPS.

Consequently, the inclusion of policy objectives on graduate tracking goes together with the legal obligation to track in close to half of the countries;<sup>46</sup> in another third of the countries, there is a policy focus but not a legal obligation.<sup>47</sup> In one case (PT) there is a legal obligation on vocational education and training providers but not a policy focus on graduate tracking. In the remaining countries, there is neither a policy objective nor a legal obligation to track graduates.<sup>48</sup>

## 2.2 Responsibility for graduate tracking

Responsibility for graduate tracking commonly lies at the system-level across EU and EEA countries. In most countries, system-level refers to national authorities (see Table 6). The exceptions are:

- Belgium: the different regions (French-speaking and Dutch-speaking) are responsible for tracking both in higher education and vocational education and training;
- Spain: responsibility for graduate tracking is shared by the central government and the regions (autonomous communities);
- Similarly, both the UK government and those of its nations have competences in graduate tracking. Currently, in higher education, graduate tracking is done at national (cross-nation) level whereas in vocational education and training it is done by the different nations;
- Germany and Italy: the national government oversees tracking in higher education and lander/regions are responsible for tracking in vocational education and training;
- Romania: the government has devolved the competences of vocational education and training graduate tracking to the sub-regional County School Inspectorates (CSI), decentralized public services of the Ministry of Education.<sup>49</sup>

In **Spain**, competences in vocational education and training and higher education are shared by the central government and the autonomous communities (regions) and, thus, so is the responsibility for graduate tracking.

In vocational education and training, there is currently one main measure for graduate tracking at national level, the survey on education-training transitions and labour

<sup>44</sup> [https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-20111162-med-instruktion-for\\_sfs-2011-1162](https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-20111162-med-instruktion-for_sfs-2011-1162)

<sup>45</sup> <http://www.legislation.gov.uk/ukpga/2017/29/contents/enacted>

<sup>46</sup> AT, DE, DK, EE, ES, FI, FR, HU, IT, LV, NL, PL, SE and UK.

<sup>47</sup> BE-fr, BG, CZ, HR, IE, LT, MT, RO, SI, and SK.

<sup>48</sup> BE-nl, CY, EL, IS, LI, LU and NO.

<sup>49</sup> There are 41 County School Inspectorates in Romania, one in each of the 41 counties, plus the Bucharest School Inspectorate, <https://www.edu.ro/inspectorate-scolare-judetene>.



insertion (Etefil<sup>50</sup>), conducted by the national statistics office.<sup>51</sup> In addition, according to the study Tracktion,<sup>52</sup> most autonomous communities (15 out of 17, except for the Valencian Community and Extremadura), have at least one regular measure to track vocational education and training graduates in their territory, which is implemented on a periodic basis. The most commonly used method is surveys (16 out of 23 measures).

In higher education, there are two main measures for graduate tracking at national level, the survey of the labour insertion of university graduates (EILU<sup>53</sup>), conducted by the national statistics office, and the analysis of the labour insertion of university graduates, based on administrative data, conducted by the Ministry of Science, Innovation and Universities. In addition, a few autonomous communities (3 out of 17) have systematic measures to analyse the labour insertion of university graduates in their territory. These include surveys in Catalonia<sup>54</sup> and the Basque Country<sup>55</sup> and one tracking measure based on administrative data in Andalusia<sup>56</sup>. In two other autonomous communities there are relevant measures which appear to be less systematic (Aragon<sup>57</sup> and Galicia<sup>58</sup>) and, in the remaining territories, no evidence has been found of tracking at regional level. Across all autonomous communities, most universities have regular measures to track their graduates.

Only in two countries (AT and FI) does the main responsibility for graduate tracking lie with providers when it comes to higher education. In the case of Finland, it is shared between the government and higher education institutions. Tracking based on administrative data is conducted by Vipunen (Education Statistics Finland). Universities – through the *Aarresaari* network of university career services – are responsible for the development and management of tracking surveys. The data are collected nationwide and aggregated by Research Stats Service TUPA of the University of Tampere and CSC – the IT Centre for Science, in collaboration with *Aarresaari*. The universities of applied sciences are developing a similar approach (in spring 2019 the first survey was conducted in collaboration with CSC).

Table 6. Responsibility for graduate tracking

Country	vocational education and training graduates	higher education graduates	Country	vocational education and training graduates	higher education graduates
AT	National	Provider	IS	N/a	N/a
BE-NL	Regional	Regional	IT	Regional	National
BE-FR	Regional	Regional	LI	National	National
BG	N/a	National	LT	National	National

<sup>50</sup> In Spanish, *Encuesta de Transición Educativo-Formativa e Inserción Laboral* (Etefil).

<sup>51</sup> A new measure combining administrative and survey data is currently being developed.

<sup>52</sup> Romero Garcia & Diego Rodriguez (2019). Mapping of vocational education and training Graduate Tracking Measures in Spain (Tracktion project): <https://tracktionerasmus.eu/outputs/>

<sup>53</sup> In Spanish, *Encuesta de Inserción Laboral de los Titulados Universitarios* (EILU).

<sup>54</sup> [http://www.aqu.cat/aqu/publicacions/insercio\\_laboral.html](http://www.aqu.cat/aqu/publicacions/insercio_laboral.html)

<sup>55</sup> <https://www.ehu.eus/es/web/gardentasun-ataria/enplegagarritasuna#Empleabilidad2>

<sup>56</sup>

<https://www.juntadeandalucia.es/organismos/empleoformacionytrabajoautonomo/servicios/publicaciones/detalle/78869.html>

<sup>57</sup> <https://www.aragon.es/-/transicion-educativa-laboral-e-insercion-laboral#anchor2>

<sup>58</sup> <http://www.acsug.es/es/documentacion/publicacions/inserci%C3%B3n-laboral>

Country	vocational education and training graduates	higher education graduates	Country	vocational education and training graduates	higher education graduates
CY	N/a	N/a	LU	National	N/a
CZ	National	National	LV	National	National
DE	Regional	National	MT	National	National
DK	National	National	NL	National	National
EE	National	National	NO	National	National
EL	N/a	N/a	PL	N/a	National
ES	National & regional	National & regional	PT	National	National
FI	National	National & provider	RO	Regional	N/a
FR	National	National	SE	National	National
HR	N/a	N/a	SI	National	National
HU	N/a	National	SK	National	National
IE	National	National	UK	Regional	National

Source: Mapping research conducted by ICF, 3s and CHEPS.

*N/a: not applicable. The level of responsibility for graduate tracking in these countries and sectors (higher education/vocational education and training) is unclear. There are no system-level measures and, in some cases, tracking is being done at regional or provider level but not systematically. In Iceland, although all higher education institutions conduct graduate tracking surveys, graduate tracking is not a requirement and cannot be considered providers' responsibility.*

There are countries where graduate tracking is only being developed by regions (BG, PL) or vocational education and training providers (BG, EL, HR) or higher education institutions (EL, HR, IS, LU, RO) but this does not mean that the responsibility for tracking lies at these levels. Rather, it signifies that no relevant measures exist at system level. These situations have been classified as 'not applicable' (n/a) in the table above.

### 2.3 Maturity of countries' graduate tracking systems

Graduate tracking systems are an established practice in both higher education and vocational education and training in 18 countries (see Table 7). In these countries graduate tracking has been conducted on a regular basis over recent time. In some countries tracking systems are well established in higher education but not vocational education and training (BG, HU and PL), or vocational education and training but not higher education (BE-FR and PT).

Overall, graduate tracking is more developed in higher education than in vocational education and training (BG, FI, HU, IS, LV, LT, PL,<sup>59</sup> SI, SK, UK). The opposite holds true for BE-FR, PT and RO.

<sup>59</sup> Tracking in the higher education sector is a national-level systemic practice, while tracking studies of INITIAL vocational education and training graduates were developed in Poland as decentralised initiatives of regional labour offices (NUTS 2 level, voivodships). A system-level initiative for vocational education and training graduates is now being developed.

In most countries the inclusion of policy objectives on graduate tracking and/or a legal obligation to track are the background to the established practice: AT, CZ (higher education), DE (higher education), DK, EE, ES, FI, FR, HU, IE, IT, NL, PL, SE, SK and UK. However, in BE-NL, CZ (vocational education and training), DE (vocational education and training), LU (vocational education and training) and NO, graduate tracking is an established practice despite not being a policy objective and /or legal obligation.

Table 7. Experience of tracking – overall approach (vocational education and training and higher education)

Graduate tracking...	Countries
Is an established practice	AT, BE-FR (vocational education and training), BE-NL, BG (higher education), CZ, DE, DK, EE, ES, FI, FR, HU (higher education), IE, IT, LT, LU, <sup>60</sup> NL, NO, PL (higher education), PT (vocational education and training), SE, SK, UK
Is a poorly developed practice	BE-FR (higher education), BG (vocational education and training), EL, HR, HU (vocational education and training), IS (higher education), LV, MT, PL (vocational education and training), PT (higher education), RO, SI
Is not used at all	CY, IS (vocational education and training), LI

Source: Mapping research conducted by ICF, 3s and CHEPS.

Graduate tracking is poorly developed in 10 countries. From these, BG (vocational education and training), LV and SI have established policy objectives on graduate tracking and are taking steps towards the implementation or improvement of systematic graduate tracking.

In **Bulgaria**, measures for implementing vocational education and training graduate tracking are stated in the 'Strategy for the development of vocational education and training in the Republic of Bulgaria 2015-2020'. At present there are no such measures at system level. There are local and regional initiatives (at the level of regional educational authorities), which collect limited data on whether graduates continue in higher education and if they get employed in the year following their graduation. There is also a pilot project under the Erasmus+ programme (2019-2021) led by the Ministry of Education and Science that expects to develop a mechanism for vocational education and training graduate tracking. This measure will combine administrative data and a survey and it will cover three regional educational authority areas - Vratsa, Stara Zagora and Burgas.

In **Latvia**, the development of graduate tracking for both higher education and vocational education and training is covered in the 'Guidelines for the Development of Education for 2014-2020'. The current reforms focus on higher education, where a tracking tool is nearly developed (2017-2020). A tool for vocational education and training tracking is also being developed but is at an early stage, with a concept report expected in 2020.

<sup>60</sup> Note: In Luxembourg no evidence has been found of higher education graduate tracking at system level. However, the only Luxembourgish higher education institution that falls within the scope of this study -the University of Luxembourg- conducts an annual survey to track its graduates. Therefore, as the country does in fact track its graduates, it has been classified as having an established graduate tracking practice.

**Slovenia** piloted the measure 'Monitoring the employability of graduates of upper-secondary vocational and technical schools' in 2011 and 2013, but at present there is no vocational education and training graduate tracking measure in place. However, in higher education, there have been more promising developments. In 2019, as part of the EU co-funded project '*Establishing a system for monitoring employability of higher education graduates in Slovenia and upgrading the records and analytical information system for higher education in the Republic of Slovenia (eVŠ)*', the eVŠ system is being upgraded with the 'employability module' that will enable gathering and analysis of data relevant for graduate tracking. This should put in place measures to establish a fully operational graduate tracking system in the future.

In BE-FR, IS (higher education) and PT there are some relevant measures but there has been little development towards more robust and comprehensive systems over the past few years.

In **Belgium (FR)**, the development of a new measure to track higher education graduates was announced in 2014 but has not yet been launched. Tracking is more developed in vocational education and training with the Ulysses Survey.

In **Iceland**, all higher education institutions conduct annual/biannual tracking surveys. The four public higher education institutions all use the same questionnaire and same approach to data analysis and most higher education institutions use the data to review their course offer and as an internal quality assurance mechanism. However, there are no system-level policies or measures on graduate tracking. Higher education institutions use their own, limited funds to conduct surveys and there is no longitudinal tracking or analysis of trends over time. National authorities are interested in a possible future participation in a Europe-wide graduate tracking study (Eurograduate).

In **Portugal**, the government has developed an indicator on the percentage of recent higher education graduates registered in the public employment service but has not developed a tracking system that follows graduates on an individual basis over time. To provide data for the indicator, the public employment service interviews unemployed people and collects data on their previous studies (programme and provider). Vocational education and training graduates are, however, tracked through a survey covering all upper secondary graduates which has been conducted systematically since 2010.

In HR, MT and RO there have been relevant pilot studies or one-off initiatives, but it is not clear if systematic tracking will take place in the near future.

In **Croatia**, graduate tracking has so far been conducted mostly at provider level and there have been some one-off pilots of tracking measures at system level covering higher education graduates. Recently, the country has participated in the Eurograduate project, a measure which could become regular.

Although graduate tracking is not an established practice in **Malta**, there is a growing interest in graduate tracking in higher education as well as in both general and vocational education and training systems. This is reflected in Malta participating in the Eurograduate survey.

In **Romania**, there is a national methodology for vocational education and training graduate tracking but it is not being applied systematically. It has been piloted by some County School Inspectorate areas, on an ad-hoc basis

depending on funding. At present, there are no ongoing pilots. In higher education, there is no national graduate tracking measure. There was a pilot project which ended in 2012 and a new one is now starting.

In EL graduate tracking is a poorly developed practice, and in CY, LI and IS (vocational education and training) there is no evidence of tracking being done at all.

In **Greece** there are no measures at system level and no policy focus on the topic. Some tracking is done at provider level but it is not believed to be a common practice. The country has, however, participated in the Eurograduate project.

In **Iceland**, there is no evidence of graduate tracking in vocational education and training at system or provider level.

In **Cyprus**, graduate tracking is not done at system level and no evidence was found of tracking at provider level. However, the government is planning to develop a platform to connect initial vocational education and training and continuing vocational education and training graduates with employers in the country. Through this platform, the development of a tracking method could be possible.

**Liechtenstein** is a unique case in the sense that 90% of upper secondary school leavers move abroad to study, mainly to Switzerland and Austria. As such, tracking is problematic. Currently, the National Statistical Office collects data on its own students and graduates and Austria and Switzerland provide data on students and graduates from Liechtenstein enrolled there. However, data received from the Swiss and Austrian statistical offices is anonymised and, thus, cannot be used to track the progression of students through different higher education institutions or their entry into the labour market after graduation.

## 2.4 Ongoing and planned reforms

There are some ongoing and planned reforms in graduate tracking across EU and EEA countries. In some cases, these refer to reforms of existing measures (see box below).

In **Belgium (NL)**, a pilot project is currently running on the School Leavers Study (which covers both higher education and initial vocational education and training). Changes might be implemented from 2021-22 onwards. The changes aim to include more data in the measure and to start tracking graduates several times over a specified time period. They also intend to make data on graduate performance available to institutions.

In **Germany**, two major panel studies managed by the German Centre for Higher Education and Research Studies (the German graduate panel and the Panel Study on School Leavers with higher education entrance qualification) are to be integrated into one panel: the Student Life Cycle Panel (SLC).<sup>61</sup>

In **Finland**, work is ongoing to identify options for improving the qualitative data about vocational education and training graduates.

In **Spain**, a measure on the labour market insertion of initial vocational education and training graduates is being developed. It is a follow-up to a study conducted in 2015 but back then the necessary mechanisms to match data

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<sup>61</sup> Information at: [https://www.dzhw.eu/en/forschung/projekt?pr\\_id=583](https://www.dzhw.eu/en/forschung/projekt?pr_id=583)

from different services were not in place. The new measure, which is still being designed, is expected to use administrative data from several services and supplement this with a survey.

Statistics **Sweden** is investigating if current surveys (used for higher education and vocational education and training) need to be adjusted as a consequence of the EU recommendation on graduate tracking. The measurement used for 'establishment in the labour market' is under revision and an updated version is planned for the end of 2019.

In several countries, new measures are planned or already under development. Ongoing reforms in BG, LV and SI were discussed in the previous section. In FR, HU, LI, PL, RO and SK there are ongoing discussions and projects to introduce new tracking measures but there is little evidence of concrete developments so far (see box below):

In **France**, the statistical services of the Ministry of National Education (DEPP) and Ministry of Labour (DARES) have recently launched a project to measure the professional integration of young people into the labour market following apprenticeships or vocational training. It involves the development of a new information system resulting from the matching of several administrative sources.<sup>62</sup>

In **Hungary**, the 2019 government policy strategy for vocational education and training (Vocational education and training 4.0) refers to the development of a national graduate tracking scheme that would build on data reported by vocational education and training providers.<sup>63</sup>

In **Liechtenstein**, there are plans for the national office for schools and the National Statistical Office to develop a national tracking system. This would involve the integration of information about educational pathways into national data sets. There are however no details at yet on the methodologies that will be used.

In **Lithuania**, the tracking of vocational education and training and higher education graduates at the national level is carried out by the Government Strategic Analysis Centre through the analysis of administrative data. The country has also been trying to use graduate tracking surveys but with little success as they have achieved very low response rates. Lithuania has participated in the pilot survey of Eurograduate, which could contribute to the implementation of tracking surveys at the national level.

In **Poland**, there is an ongoing project by the Institute for Educational Research (governmental research agency) which aims at developing a model for tracking labour market outcomes for vocational education and training graduates at system-level by 2019.<sup>64</sup> The results of this project are not yet known.

In **Romania**, there are plans to revise the national methodology for vocational education and training graduate tracking, diversify the data collection methods and implement the measure at national level. The changes are planned for 2020. However, no evidence has been found of progress towards this target date. In higher education, the project 'Quality in higher education: internationalisation and databases to enhance the Romanian education system'

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<sup>62</sup> In French, *système d'information statistique consolidé académique-déclaration sociale nominative* (SYSCA-DSN).

<sup>63</sup> <https://www.nive.hu/Downloads/Hirek/DL.php?f=szakkepzes-4.0.pdf>

<sup>64</sup> Monitoring the educational and professional paths of graduates and young adults, <http://www.ibe.edu.pl/pl/projekty-krajowe/badanie-losow-absolwentow>

proposes the development of a survey on employability as well as a platform aimed at interconnecting student databases and other national databases with relevant information on employees.

In **Slovakia**, proposals on tracking higher education graduates are being intensively discussed. The Ministry of Labour and Ministry of Education decided to link their data at an aggregated level and plan to launch a website with anonymised data accessible for all.<sup>65</sup>

## 2.5 Main purposes and users of graduate tracking

In **vocational education and training**, the most common **purposes** of collecting graduate data across EU and EEA countries are the monitoring of education policies (identified in 20 out of 32 countries included in the analysis), quality assurance (20) and the provision of information and guidance to prospective students (20). These are followed by the strategic planning of course offers (15) and access to funding (7) (see Table 30 in annex).

Other purposes of graduate tracking in vocational education and training include informing policies at system or provider level to help match supply with labour market demand (DE, EE, PL, SE), providing data for research (DK, EE, PL) and the use of data by vocational education and training schools in marketing material (SE).<sup>66</sup>

The main **users** of vocational education and training graduate tracking results are governments (26), including national and regional governments in the case of Spain. These are followed by vocational education and training providers (19), researchers (15), current and prospective students and graduates (13), and employers (7) (see Table 5 in annex). Other users include employment services (BE-NL, CZ), bodies for cooperation in vocational education and training (the National Council for vocational education and training in Norway and National vocational education and training programme councils in SE), career guidance counsellors (CZ), student families (SI) and wider society (LV).<sup>67</sup>

### Examples of uses of vocational education and training graduate tracking results

In **Portugal** the data from the '*Observatory of secondary students' trajectories. Youth in post-secondary survey*' is used by the National Agency for Qualifications and vocational education and training (ANQEP) to support:

- The annual planning of vocational education and training provision in the country;
- The computation of EQAvocational education and training indicators; and
- Discussions at the 'Higher employability network' (network of schools providing vocational education and training) annual meetings about employability).

In **Belgium (NL)**, the School Leavers Study is the main graduate tracking measure and covers initial vocational education and training and higher education. The Service for Employment and Vocational training (VDAB), leading

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<sup>65</sup> A new graduate tracking measure based on administrative data collection was launched in 2019 in Slovakia. Information on the measure was not yet available at the time the research for this study was completed.

<sup>66</sup> Please note that these 'other' purposes were referred to by country researchers under an open-ended question. As such, the mapping of countries against purposes is not complete. Some of these purposes might also be considered in other countries not listed here.

<sup>67</sup> As above, these 'other' purposes were mentioned by country researchers under an open-ended question and the mapping may not be complete.

the study, provides an interactive online tool to inform prospective students' choice of study by showing the employability prospects of specific degrees.<sup>68</sup>

In **higher education**, the provision of information and guidance to prospective students is the most common **purpose** for collecting graduate data (23) followed by quality assurance (22), the monitoring of education policies (18), strategic planning of course offers (16), and access to funding (9) (see Table 4 in annex).

Other purposes of graduate tracking in higher education include (with examples):

- Informing policies at system or provider level to help match supply with labour market demand (DE);
- Providing data for research (EE) and the returns of education (DE);
- Supporting institutional development (FI);
- Providing support to career centres at higher education institutions (PL); and
- Building mutual understanding between higher education institutions and employers (PL).<sup>69</sup>

The list of **users** is headed by governments (27) and higher education institutions (25). These are followed by researchers (21), current and prospective students and graduates (17), and employers (8) (see Table 6 in annex). The fact that the provision of information and guidance is highest on the list of purposes, but students and graduates are fourth indicates that tracking data is aimed more at higher education institution staff such as student advisors and counsellors than students and graduates directly.

Other users include employment services (BE-NL) and trade unions (FI). In NO, users include the Councils for Cooperation with Working Life (RSA) which encourage collaboration between higher education institutions and social partners in the country.<sup>70</sup>

### Examples of use of higher education graduate tracking results

Indicators using tracking data feature in the **Bulgarian** University Ranking System which is used in:

- Performance-based funding: in 2020, 60% of state funding to higher education institutions is determined by their results in the ranking;
- Deciding on the number of students to be admitted to public higher education institutions and the criteria to be used; and
- Decisions on revisions to the List of Priority Professional Areas and the List of Protected Specialities.

In **Ireland**, the '2016 Follow Up Surveys of Further Education and training (FET) Programme Participants' are mainly used by SOLAS (the FET authority) to inform their national funding strategy on which programmes to support.

In **Lithuania** graduate tracking results have been used in a variety of research studies. For instance, in 2019, tracking data informed the development of a forecasting model of demand for healthcare specialists up to 2028. This model is based on the analysis of data on the employment and career of medical students (progression and drop out).

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<sup>68</sup> [https://www.onderwijskiezer.be/v2/secundair/sec\\_schoolverlater.php](https://www.onderwijskiezer.be/v2/secundair/sec_schoolverlater.php)

<sup>69</sup> Please note that these 'other' purposes were referred to by country researchers under an open-ended question. As such, the mapping of countries against purposes is not complete. Some of these purposes might also be considered in other countries not listed here.

<sup>70</sup> As above, these 'other' purposes were mentioned by country researchers under an open-ended question and the mapping may not be complete.



## **2.6 Drivers and obstacles to the development of graduate tracking**

A few key messages emerge from the system-level information about the implementation of tracking on the drivers of and obstacles to graduate tracking. Well-functioning graduate tracking measures seem to be characterised by:

- Fruitful cooperation between the different key bodies holding relevant data for tracking (BE-NL);
- Interest and involvement (including funding) from relevant ministries and national agencies (IE, FR); and
- The participation of well-established agencies and institutions with sound methodological expertise, such as national statistical offices (SE) and educational research agencies (DE, UK).

Additionally, the motivation of higher education institutions in tracking for reasons of institutional development can be a driver too (FI). Finally, time or tradition in graduate tracking and data-informed policy-making brings acceptance and can help consolidate tracking in a country (NL, SE).

The study also identified a range of obstacles that can inhibit graduate tracking. These include:

- Tracking not being a national priority or a legal requirement, which makes it harder to instigate (SI, LT).
- Lack of political interest in developing graduate tracking.
- Lack of leadership to foster cooperation between different government departments (ministries of education and employment, social security, etc.) (PT).
- Restrictions due to legislation on personal data protection (SI, HR, PT). This can cause difficulties when databases from different ministries and services need to be linked (HR, PT).
- Insufficient methodological and technological capacity at institutional level which can hinder the development of tracking measures (BG, RO, SI),
- Insufficient funding from government to take forward the initiative (RO, IS).

The involvement of different stakeholders is considered important to the development of tracking but ensuring smooth cooperation between them can also be challenging. For instance, in LT, the lack of social dialogue on skills between vocational education and training/higher education providers and representatives of employers may be acting as an obstacle to the further development of tracking. In BE-FR, the development of a tracking measure in higher education appears to be taking longer than expected due to difficulties in reaching an agreement on the data to be collected.

The variety and complexity of qualifications covered by tracking measures can create challenges to the development of standardised data collection tools. In the UK, the fact that tracking in vocational education and training is less developed than in higher education could be explained by the fact that there are fewer higher education providers than vocational education and training providers and the main types of courses offered in higher education are more standardised than the diverse range of courses available across nations in initial vocational education and training and continuing vocational education and training, making standardised data and standardised tracking less straightforward. In LT, a lack of a coherent national database of qualifications, as well as continuing reforms in the national system of qualifications, may have slowed down the development of tracking in the past.<sup>71</sup>

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<sup>71</sup> This situation has improved with the introduction of the national occupational standards and the implementation of the Lithuanian Qualifications Framework.

## **2.7 Key summary points**

**Eighteen countries have system-level graduate tracking in higher education and vocational education and training; the remainder have considerable ground to make up and while improvements are being made, the pace of change would have to be faster if they were to establish system level graduate tracking in the next five years.**

- higher education and vocational education and training graduate tracking is an established practice in 18 EU and EEA countries (AT, BE-NL, CZ, DE, DK, EE, ES, FI, FR, IE, IT, LU, LT, NL, NO, SE, SK, UK).
- Five countries have system-level graduate tracking measures for one of the sectors only, higher education (BG, HU, PL) or vocational education and training (BE-FR, PT). Of these, BG, HU and PL could have fully developed measures for the two sectors over the next few years. In HU and PL, vocational education and training graduate tracking measures are currently under development. In BG, there is an ongoing pilot study which, if successful, could eventually be mainstreamed across the country.
- Two countries can be expected to have higher education graduate tracking in place over the next one or two years (LV, SI). Of these, LV may have fully developed measures for the two sectors in 3-4 years' time.
- In IS system-level higher education graduates tracking could be in place relatively quickly by building on the existing measures at institutional level. However, it would take longer to develop vocational education and training graduate tracking as there is no provider experience to build on.
- In RO, the situation is the opposite. Vocational education and training graduate tracking could be in place sooner by supporting the completion of pilots, refinement and mainstreaming of the existing measure. In higher education, a new ESF co-funded project involves the development of a graduate tracking measure. The success of this project and the availability of national funds to mainstream the new measure will determine whether graduate tracking will become a regular practice in the future.
- In three countries, the Eurograduate survey has created an opportunity for the development of regular higher education graduate tracking (HR, EL and MT). They are likely to continue participating in the EU-level measure if this is extended. There are no initiatives in vocational education and training.
- In CY and LI there is little or no relevant experience so graduate tracking would be starting from scratch though their size and scale could make this achievable in a relatively short time.

**The countries where graduate tracking is a legal obligation, tend to have well-established tracking systems. However, a legal basis is not a necessary condition for regular graduate tracking.**

- In around one third of countries, graduate tracking is both a legal obligation and a regular practice (AT, DE, DK, EE, ES, FI, FR, HU, IT, PL, SE and UK). In PT there is a legal obligation to track vocational education and training graduates and there is a relevant, regular measure covering this population. In LV, a legal obligation to track concurs with recent reforms to establish tracking measures in higher education and vocational education and training.
- In another third of countries, graduate tracking is a well-developed practice despite not being a legal obligation (BG (in higher education), BE-NL, CZ, DK, IE, LT, LU, NL, NO and SK). In some of these countries, tracking is considered to be a policy objective (BG, CZ, DK, IE, LT, NL, SK) but in a few there is no policy focus on the topic (BE-NL, LU and NO).
- A few countries with poorly developed graduate tracking have included in recent policy documents the aim to create new tracking measures (BE-FR, BG (in vocational education and training), HR, MT, RO, SI).

- In the remaining countries, graduate tracking is poorly developed and at the time of the research there are no policy objectives related to it (CY, EL, IS, LI).

**The responsibility for graduate tracking generally lies with the national or regional authorities which oversee higher education or vocational education and training policies.**

- In most countries, the responsibility for graduate tracking lies with national authorities.
- In six countries regional authorities have partial or full responsibility for graduate tracking (BE, DE, ES, IT, RO, UK).
- Regions are more often responsible for vocational education and training than higher education graduate tracking. Vocational education and training graduate tracking is a regional competence in DE, IT, RO and UK. In BE, regional authorities have full responsibility for higher education and vocational education and training graduate tracking. In ES, responsibility is shared between the national and regional governments for both sectors.
- Only in one country (FI) do providers share the responsibility of tracking, in higher education.
- In the countries where no measures can be identified at system level, it was not possible to establish which level is responsible for graduate tracking in vocational education and training (BG), higher education (RO), or both sectors (CY, EL, HR, IS). In some of these countries, there are examples of regional or provider level measures, but these are not conducted systematically.
- In PL, tracking studies of initial vocational education and training graduates were developed as decentralised initiatives of regional labour offices but a national-level initiative for vocational education and training graduates is now being developed. In LU, the only higher education graduate tracking measure identified is conducted by the University of Luxembourg but it is not clear if the responsibility for tracking lies on the institutional level.

**Ongoing reforms indicate an increasing use of administrative data and combination of administrative data and surveys**

- New graduate tracking measures are currently under development in BG, LV and SI and have been announced in FR, HU, LI, LT, PL and RO. Reforms of existing tracking measures are ongoing in BE-NL, DE, ES, FI, SE and SK.
- Ongoing or announced reforms indicate an increase in the use of administrative data for graduate tracking (ES, FR and SK) and an awareness of the importance of combining administrative data and surveys. For instance, new measures in BG and RO and a renewed measure in ES will combine survey and administrative data. LT is trying to develop surveys to complement administrative data.
- Other improvements to tracking include collecting more or better-quality information on graduates (BE-NL, FI) and collecting data at several points in time to allow for longitudinal tracking (BE-NL).

**Quality assurance, the provision of information and guidance to prospective students, and the monitoring of education policies, are the main purposes for collecting graduate data**

- Graduate tracking data has multiple purposes and potential users.
- The three main purposes for collecting graduate data -quality assurance, the provision of information and guidance to prospective students, and the monitoring of education policies- coincide in higher education and vocational education and training.
- In vocational education and training, the monitoring of education policies leads the list of purposes of graduate tracking and, accordingly, the main users of such data are governments.

- In higher education, the most common purpose of tracking data is the provision of information and guidance to prospective students. The main users are governments and higher education institutions. It is likely that tracking data is particularly aimed at higher education institution staff such as students' advisors and counsellors.

**The involvement and cooperation of key bodies, including those in charge of the policies and those holding the data and the methodological expertise, are key to successful tracking**

- Graduate tracking requires the involvement of different ministries, national agencies and departments, including statistical offices and research agencies.
- Smooth cooperation between these entities as well as with other relevant parties, such as education and training providers and employer representatives, can be a key factor to the successful implementation of graduate tracking.
- Common obstacles to the development of graduate tracking include lack of political interest or leadership to foster cooperation between the different actors, restrictions due to legislation on personal data protection, insufficient methodological and technological capacity and insufficient funding.

### 3 Characteristics of system-level tracking measures

This chapter presents the characteristics of system-level graduate tracking measures drawing on the country research. It examines the scale and variety of measures identified in EU and EEA countries, the key features of these systems (coverage, data collected, comparability of data and the methodologies used) and the complementarity between system measures and measures at other levels.

#### 3.1 Number of system level measures in the EU and EEA

The mapping identified 123 system level graduate tracking measures from 29 countries.<sup>72</sup> Annex 3 provides a detailed overview of each measure in country code order, title in English and in original language, system coverage (initial vocational education and training, continuing vocational education and training, higher education, Others), the general type/source of data collection (survey, administrative data, census, other source), area/level of intervention (national, federal/regional), the coverage of the data (total reference population, sample), and reasons for tracking (policy, institutional, other).

In the following table/s each measure is listed with a country code and a number. By this code the measure can be identified in the annex table.

Table 8. System coverage of the graduate tracking measures

initial vocational education and training	continuing vocational education and training	higher education	Other
AT1, AT2, BE-FR2, BE-NL1, BE-NL3, BG1, CZ4, CZ5, DE1, DE2, DE3, DE4, DE5, DE9, DK1, DK3, DK5, DK7, EE1, EE2, ES1, ES2, ES3, ES4, ES5, FI1, FI7, FI8, FI9, FR1, FR2, FR3, HU2, HU3, IE1, IE2, IE4, IE5, IT1, IT2, IT3, IT8, IT9, IT10, LT1, LU1, LV3, MT1, NL3, NO1, NO4, PL1, PT2, PT3, RO1, SE1, SE2, SE7, SI1, SK1, UK2, UK3, UK4	AT1, BE-FR1, BE-FR2, BE-NL2, BE-NL3, DE1, DE3, DE4, DK2, DK5, EE2, ES1, FI1, FI7, FI8, FI9, FR1, HU2, IE1, IE4, IE5, LV3, MT1, NL3, NO1, NO5, PL1, PT3, RO1, SE5, SE6, SE7, UK2, UK4	AT1, AT3, AT4, AT5, BE-FR2, BE-NL1, BE-NL3, BG2, CZ1, CZ2, CZ3, CZ4, DE1, DE2, DE3, DE4, DE6, DE7, DE8, DE9, DE10, DE11, DK1, DK3, DK6, EE1, EE3, ES1, ES2, ES6, ES7, FI1, FI2, FI3, FI4, FI5, FI6, FI8, FI9, FR1, FR4, FR5, HR1, HU1, IE3, IE6, IT3, IT4, IT5, IT6, IT7, LI1, LT1, LT2, LV1, LV2, MT1, MT2, NL1, NL2, NL4, NL5, NL6, NO1, NO2, NO3, PL2, PT1, RO2, SE3, SE4, SI2, SK1, SK2, UK1, UK2	AT2, BE-FR2, DE2, DE9, DK1, DK4, ES1, ES3, ES5, FI1, FI9, FR1, NL5, NO1, SE1, SE2, SE7

<sup>72</sup> The measure 'Graduate tracking based on administrative data collection' (SK) was launched after the research for this study was completed and is thus not included in the analysis. In NL, in addition to the measures mapped in this study, the national statistics office publishes information on the labour market position of vocational education and training graduates every year based on administrative data. This information, together with the measure BVE-monitor (NL3) are both used to gather the necessary information for the Dutch 'macro efficiency policy' and to inform prospective vocational education and training students.

initial vocational education and training	continuing vocational education and training	higher education	Other
63	34	76	17

Source: Mapping research conducted by ICF, 3s and CHEPS.

The mapping identified 76 measures in higher education; 63 measures in initial vocational education and training; 34 measures in continuing vocational education and training; and 17 other measures. However, some measures covered more than one education area. 77 measures targeted only one education sector; 27 covered two and 18 covered three or more areas.

Other measures covered specific subsets of the education system (e.g. dual vocational education and training) or specific thematic alignments (e.g. graduates from art schools).

Only two countries (EL and CY) have no graduate tracking measures at system level except for the tracking of completers in ESF-funded training. In EL some graduate tracking takes place at institutional level, by higher education institutions or sectoral bodies. In CY, no evidence was found of graduate tracking at institutional level.

### Tracking of completers in ESF-funded training

According to ESF requirements, responsible authorities must collect information on the employment status of participants six months after leaving any ESF-funded measure.<sup>73</sup> This information is required at least twice in the funding period, in 2018 and 2023.

This study identified tracking systems of ESF-funded training in 9 countries (BE-NL, CY, DK, EL, FI, IT, PT, ES, SE). In all cases, the information on the employment status of participants had been collected by the organisations implementing the training and collated by the ESF managing authorities in 2018.

The architecture of ESF implies that a variety of organisations are involved in data collection. This includes managing authorities, ESF beneficiaries and intermediaries. For instance, in Finland, in the Operational Programme Sustainable Growth and Jobs 2014-2020, the managing authority (the Ministry of Employment and Economy) has established guidelines on tracking programme completers. Based on this, the Centres for Economic Development, Transport and the Environment (ELY-centres) undertake regional implementation and guide training providers (recipients of ESF funding) to collect participants' information. An external evaluator (TK-Eval) conducted the long-term tracking (after 6 months) based on the data originally collected by the course providers.

Data collection on employment status can be done through administrative data (such as public employment services or social security), which is the case in BE-NL, IT, PT, DK, FI, IT, ES and SE or through participant follow-up surveys. Often, a variety of methods is used within the same country depending on the operational programme, region, or intermediate entities involved. For instance, in ES, entities responsible for some operational programmes have agreements with the Department for Social Security to access their data for tracking while the public employment service uses its own employment data where it is a training provider and beneficiary of ESF funds.

<sup>73</sup> Regulation (EU) No 1304/2013 of the European Parliament and of the Council of 17 December 2013 on the European Social Fund and repealing Council Regulation (EC) No 1081/2006.

No links have been identified between the tracking systems developed for ESF-funded measures and other graduate tracking systems.

## 3.2 Key features of system-level graduate tracking measures

### 3.2.1 Coverage (target population)

Most (114) of the graduate tracking measures only collect data on students that have completed their learning programme (graduates). Only 39 measures include people who have left without completing, a higher number of these measures take place in the initial vocational education and training sector (29).

18 measures collect information on students before they completed their course (see table below), 12 of them in the initial vocational education and training and/or higher education sector, 7 in continuing vocational education and training.

Very few (15) tracking measures collect information on graduates that have migrated to another country, most of them in the higher education sector (11). Thirty-five measures are applied in a broader sense to residents in a country in general and 20 measures are targeted at specific groups of students, such as early school leavers, young people not in employment, education and training (NEETs) and people registered in public employment services. One measure also collects information on the employers of the graduates.

Table 9. Graduate population which is included in the tracking measure

Measures per education sector				
Survey population	Initial vocational education and training	Continuing vocational education and training	higher education	Total*
Completers	AT1, AT2, BE-FR2, BE-NL1, BG1, CZ4, CZ5, DE1, DE2, DE3, DE4, DE5, DE9, DK1, DK3, DK6, DK7, EE1, EE2, ES1, ES3, ES4, ES5, FI1, FI7, FI8, FI9, FR1, FR2, FR3, HU2, HU3, IE1, IE2, IE4, IE5, IT1, IT2, IT3, IT8, IT9, IT10, LT1, LU1, MT1, NL3, NO4, PL1, PT2, PT3, RO1, SE1, SE2, SE7, SI1, SK1, UK2, UK3, UK4 (59)	AT1, BE-FR1, BE-FR2, BE-NL2, DE1, DE3, DE4, DK2, EE2, ES1, FI1, FI7, FI8, FI9, FR1, HU2, IE1, IE4, IE5, MT1, NL3, NO5, PL1, PT3, RO1, SE5, SE6, SE7, UK2, UK4 (30)	AT1, AT3, AT5, BE-FR2, BE-NL1, BG2, CZ1, CZ2, CZ3, CZ4, DE1, DE2, DE3, DE4, DE6, DE7, DE8, DE9, DE10, DE11, DK1, DK3, DK6, EE1, EE3, ES1, ES6, ES7, FI1, FI2, FI3, FI4, FI5, FI6, FI8, FI9, FR1, FR4, FR5, HR1, HU1, IE3, IE6, IT3, IT4, IT5, IT6, IT7, LI1, LT1, LT2, LV1, LV2, MT1, MT2, NL1, NL2, NL4, NL5, NL6, NO2, NO3, PL2, PT1, RO2, SE3, SE4, SI2, SK1, SK2, UK1, UK2 (72)	114
People who have left without completing	AT1, AT2, BE-FR2, BE-NL1, CZ4, DE1, DE3, DE4, DE5, DK1, EE1, FI1, ES1, ES3, ES5, FR1, FR2, FR3, HU3, IE2, IE4, (13)	AT1, BE-FR2, DE1, DE3, DE4, DK2, ES1, FI1, FR1, IE4, PL1, PT3, UK2 (13)	AT1, AT3, BE-FR2, BE-NL1, CZ4, DE1, DE3, DE4, DK1, EE1, ES1, FI1, FI2, FR1, LI1, PL2, SE3, SE4, SI2, UK2	39

Measures per education sector				
Survey population	Initial vocational education and training	Continuing vocational education and training	higher education	Total*
	LU1, PL1, PT2, PT3, SE1, SE2, SI1, UK2 (29)		(20)	
Students (before completion)	CZ5, DE1, DE3, DE4, DE9, DK1, FI1, HU3, IE4, IT3, PL1, PT2 (12)	DE1, DE3, DE4, DK2, FI1, IE4, PL1 (7)	AT4, DE1, DE3, DE4, DE9, DK1, EE3, FI1, HU1, IT3, LI1, SI2 (12)	18
Residents in country	AT1, AT2, BG1, DE1, DE2, DE3, DE4, DE5, ES1, FR1, LT1, LV3, NO1, PT2, SE1, SE2, UK2, UK3, UK4 (19)	AT1, DE1, DE3, DE4, ES1, FR1, LV3, NO1, SE5, SE6, UK2, UK4 (12)	AT1, AT3, AT5, BG2, DE1, DE2, DE3, DE4, DE10, ES1, ES6, ES7, FI2, FI3, FR1, LI1, LT1, LT2, MT2, NL6, NO1, SE3, SE4, UK2 (24)	35
Those who migrate to another country after graduation	AT2, DE3, HU3, LV3, PT2 (5)	DE3, LV3 (2)	AT5, DE3, DE10, ES7, FI2, FI3, FI4, FI5, MT2, NL4, NL6 (11)	15
Others	AT1, DE2, DE3, DE9, ES1, ES2, ES3, ES5, FI9, NL3, SE7 (11)	AT1, DE3, ES1, FI9, NL3, SE7 (6)	AT1, AT5, CZ1, CZ2, DE2, DE3, DE6, DE9, DE10, ES1, ES2, FI9, NL5, NO3, PT1 (15)	20

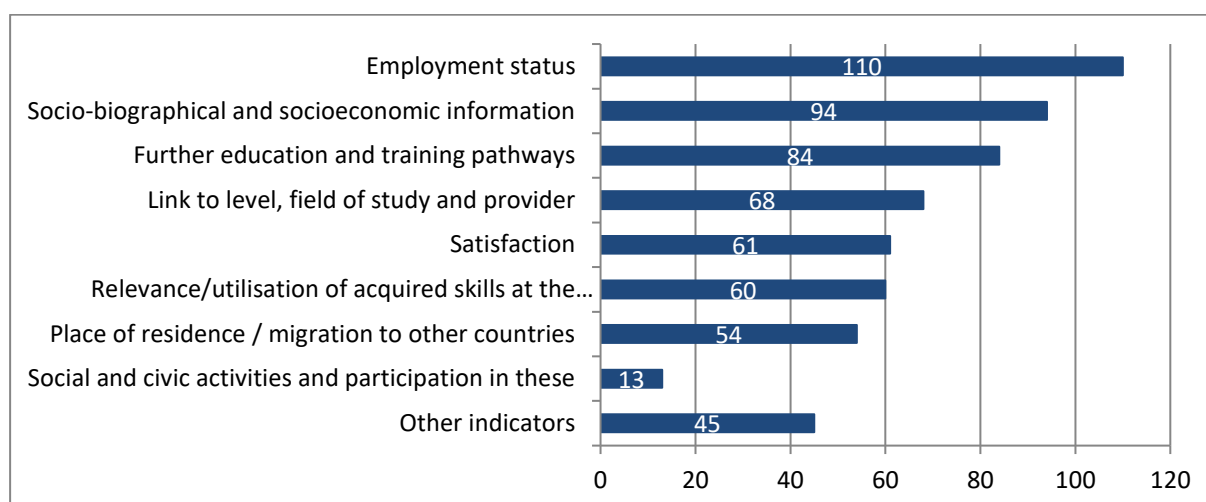
Source: Mapping research conducted by ICF, 3s and CHEPS. \* Including 17 measures covering also other education sectors than initial vocational education and training, continuing vocational education and training, higher education.

### 3.2.2 Information collected from graduate tracking measures

The most commonly collected information generally matches the types of information specified in the Council Recommendation on tracking graduates. In 110 of 123 measures information on employment status is collected, followed by socio-biographical and socio-economic information (94), further education and training pathways (84) and links to level, field of study and provider (68) (see Figure 1below). It is recognised that information about graduates' satisfaction with courses of learning and the relevance of their skills for their employment, for example, will only be drawn from survey measures.



Figure 5. Main indicators covered by the instrument



Source: Mapping research conducted by ICF, 3s and CHEPS.

### Examples of most commonly collected indicators

- **Employment status:** employment status (employed, full-time, part-time, unemployed, self-employed, in maternity leave etc.), NACE code of employer, duration of employment/unemployment, length of job search, salary level, geographical/sectoral mobility, job history, ways of access to job (via WBL, PES, friend/family, advertisements, other), job search time, career pathways, location of work, satisfaction with job
- **Socio-biographical and socioeconomic information:** age, sex, nationality, place of residence, social background (level of education, occupation of parents), disability, mother tongue, ethnic background, country of birth, children, age of children, marital status, household income, completed formal education and training, highest educational attainment, year of graduation
- **Further education and training pathways:** participation in training, number of days in education, level and type of education and training, fields of study, further qualifications achieved
- **Link to level, field of study and provider:** level and field of study, type of study (full-time, part-time, while in employment), type of provider, factors for the choice of institution and field of study, duration of study, recognition of earlier learning and work experience / ways of access to the programme
- **Satisfaction:** satisfaction with study program/training (partly with assessment of detailed aspects such as content, balance of theory and practice, teachers, exams, attractiveness of the program), satisfaction with study conditions, satisfaction with current job, satisfaction with current income/salary, satisfaction with career progress, satisfaction with relevance of education/training for current job
- **Relevance/utilisation of acquired skills at the workplace:** usability of study for current employment, matching of skills acquired during education and their utilisation in employment, relevance of study for career progression
- **Place of residence / migration to other countries:** current place of residence/employment, place of residence during study, intra-

country/international mobility, migration background, country of birth, migration of the parents, country of birth of parents

- **Social and civic activities and participation in these:** democratic values, attitudes towards Europe, active citizenship, social and civic engagement, social media presence and profiling, voluntary/unpaid work, activities in associations, leisure activities

Other indicators that are collected in graduate tracking measures include: motives for studying, student grants/financial aid, living conditions and living expenses, international mobility, information about different student groups (e.g. with health impairments, disabilities, students on PhD programmes, students with children), social inclusion, health, satisfaction with the course/programme, student well-being (e.g. support services, study environment equity), NEETs.

The following box provides examples of some of the variables collected and their frequency (see also further information on comparative indicators in chapter 5.1.2).

#### Examples of frequencies of collected indicators

- **Ethnic background:** covered in 21 measures (AT1, AT5, CZ3, DE5, DE9, FI2, FI4, FI7, FI8, HU1, IE2, IT7, LI1, NL4, NL6, NO2, NO4, PT2, RO1, SI1, UK2); different indicators such as migration background, migration status, migration to other countries, in-country migration, migration of the parents, ethnic background, ethnic-national origin, ethnicity, mother tongue, language of parents
- **Country of birth:** covered in 7 measures (AT4, LU1, NL1, NL2, NL4, NL5, SI2); country of birth of parents is covered in LU1, NL5, NO2)
- **Parent educational background:** covered in 10 measures (AT3, AT4, IT5, MT1, NL3, NL4, NO2, RO2, SE1, SE2); different indicators: educational background, socio-biographical/socio-economic information relating to parents, parents with higher education degree
- **Quality of education (including work-based or lecture-based learning):** covered in 27 measures (AT5, CZ1, CZ2, CZ3, CZ5, DE1, DE4, DK6, EE2, EE3, ES7, FI2, FI5, FI6, FI7, HU1, IT2, IT7, IT9, LV2, MT1, MT2, NL3, NL5, NO2, NO5, SE5); different indicators such as quality of university, perception of quality/relevance of education and training for finding employment and for current job, quality of teachers, quality of exams; overlap with indicator 'satisfaction': satisfaction with (content/organisation of) education/study programme, satisfaction of individuals with vocational education and training training/skills/practical training received
- **Mismatch between skills acquired and those used at the workplace:** covered in 3 measures (CZ1, CZ2, LT2) but also covered in the indicator "relevance/utilisation of acquired skills at the workplace"

### 3.2.3 Methodology of data collection

There is a reasonably equal mix of surveys (78) and administrative data collection instruments (79) (see table below). Only one measure is based on census data, and this is in higher education. Two measures are based on other sources of discrete data: NL6 uses data of LinkedIn users gathered directly from LinkedIn (though not through scraping

or data mining);<sup>74</sup> and IE4 uses results from exams after completing a course for supplementary information.

Surveys are dominated by quantitative approaches. These were used for 68 of the 78 survey measures, with most (58) being online surveys. The other methods were mostly telephone surveys, comprising Computer-Assisted Personal Interviews (CAPI), Computer-Assisted Telephone Interviews (CATI) or Computer-Assisted Web Interviews (CAWI).

Table 10. Data collection approach

Data collection approach	Total
Survey	78
<i>Qualitative survey</i>	12
Interviews	9
Focus groups	1
Other	9
<i>Quantitative survey</i>	68
Telephone survey	18
Paper survey	22
E-Survey	58
Other	8
Administrative data collection instruments	79
<i>Population register</i>	29
<i>Social security register</i>	39
<i>Register on education achievements</i>	59
<i>Unemployment register</i>	38
<i>Tax register</i>	23
<i>Register of ESF beneficiaries</i>	5
<i>Other</i>	26
Census	1
Other source of discrete mass-data	2

Source: Mapping research conducted by ICF, 3s and CHEPS.

### Examples of surveys

**DZHW Panel Study of School Leavers with a Higher Education Entrance Qualification (DE9):** This measure, covering initial vocational education and

<sup>74</sup> In the Netherlands, web scraping of online job vacancies is being used by the Foundation for Cooperation on Vocational Education, Training and Labour Market (SBB) for an indicator on future job prospects for vocational education and training graduates.

training and higher education, is conducted by the German Centre for Higher Education Studies and Science Studies (DZHW) since 1976 every three years. Several survey waves are conducted for each cohort at different times before and after acquiring the Higher Education Entrance Qualification (first wave: 0,5 years before graduation, second wave: 0,5 years after graduation, third wave: 2,5 years after graduation, fourth wave: 4,5 years after graduation, later waves: different intervals up to 20 years after graduation). It is based on a quantitative survey, a mixture of paper survey and an e-survey.

**Graduates' employment condition (AlmaLaurea Consortium) (IT6):** This measure in higher education is based on a combination of a qualitative and quantitative survey, using CAWI and CATI design, a census and administrative data collected by the universities. Cohorts are followed up with the surveys being conducted 1, 3, and 5 years after graduation.

Administrative data commonly use registers of education achievements (59 measures), social security recipients or unemployment (39 measures each), and to a less extent population (29 measures) and tax (23 measures). Other administrative data use data from the chamber of commerce, a state database on people with disability, student registers, and pensions data.

#### Example for administrative data

**Transition from school to further education and work (FI1):** This measure, covering initial vocational education and training, continuing vocational education and training and higher education, is based on administrative data collection. Statistics Finland produces its core data for graduate tracking through combining Statistics Finland's extensive person-based data with its degree register. Information on further education is produced from Statistics Finland's student registers and data on employment and labour which are collected by combining several registers

The table below provides an overview of the measures for each type/source of data collection.

Table 11. Type and source of data collection

Survey	Administrative data	Census	Other source
AT2, AT4, AT5, BE-FR1, BG1, CZ1, CZ2, CZ3, CZ5, DE1, DE2, DE4, DE6, DE7, DE8, DE9, DE10, DE11, DK5, DK6, EE2, EE3, EL1, ES3, ES4, ES5, ES7, FI2, FI3, FI5, FI6, FI7, FI9, FR1, FR2, FR3, FR4, FR5, HR1, HU1, HU3, IE1, IE2, IE3, IT1, IT2, IT4, IT5, IT6, IT7, IT9, IT10, LI1, LT2, LV1, MT1, MT2, NL1, NL2, NL3, NL5, NO2, NO3, NO4, NO5, PL1, PT1, PT2, RO1, RO2, SE1, SE3, SE5, SI1, SK2, UK1, UK3, UK4	AT1, AT2, AT3, BE-FR1, BE-FR2, BE-NL1, BE-NL2, BE-NL3, BG1, BG2, CZ4, DE1, DE3, DE5, DK1, DK2, DK3, DK4, DK5, DK6, DK7, EE1, ES1, ES2, ES4, ES5, ES6, ES7, FI1, FI2, FI3, FI4, FI5, FI6, FI7, FI8, FI9, HU1, IE3, IE4, IE5, IE6, IT1, IT2, IT3, IT4, IT5, IT6, IT7, IT8, IT9, IT10, LT1, LT2, LU1, LV1, LV2, LV3, NL1, NL3, NL4, NL5, NL6, NO1, NO2, PL1, PL2, PT1, PT2, PT3, SE1, SE2, SE3, SE4, SE6, SI2, SK1, UK2, UK4	I IT6	IE4, NL6
78	79	1	2

Source: Mapping research conducted by ICF, 3s and CHEPS.

### 3.2.4 Data protection and ability to link data on an anonymised basis

All tracking measures have to comply with European and national data protection guidelines. This commonly sets requirements for:

- The anonymization of personal data.
- The aggregation of data for too small groups.
- Access to data only for accredited people.
- Access for researchers who want to work with data via secure data centres or secure work rooms.
- Data handing and storage.

For 54 measures the use of unique identifiers is used to ensure anonymity and to offer the possibility to link data on an anonymised basis. These were AT1, AT2, AT3, AT4, AT5, BE-FR1, BE-FR2, BG1, BG2, CZ1, DE2, DE3, DE6, DE10, DK1, DK2, DK3, DK4, EE1, ES1, ES4, FI1, FI2, FI3, FI4, FI5, FI6, FI7, FI8, IE2, IE5, IE6, IT1, IT2, IT3, IT5, IT6, IT9, LU1, MT1, NL3, NL4, NO1, NO3, NO4, NO5, SE1, SE3, SE5, SE6, UK1, UK2, UK3 and UK4.

#### Example for the use of unique identifiers

**For education-related employment career monitoring (BibEr, AT1) in Austria** administrative data about education and the labour market are processed in a structured way and merged by an anonymous key (target swapping). This is when a certain percentage of individual characteristics of data sets is swapped with those of other data sets.

**In Sweden (SE1, SE3) a person number per respondent** is used to enable the linkage of different data sources.

### 3.2.5 Timing and frequency of data collection

Around a third (44 of 116) of measures are collected on an annual cycle for a cohort of learners. For 70 measures another cycle was used which ranges from 6 months up to 6 years. The most common cycle is between 2 and 4 years. This means that not each cohort is included.

Table 12. Frequency of data collection

Frequency	Measures	Total
Annually	AT1, BE-FR1, BE-NL1, BE-NL2, BG2, DE1, DE7, DK1, DK3, DK4, DK7, EE1, ES1, FI1, FI2, FI3, FI4, FI8, FR2, FR3, FR4, HU3, IE3, IE4, IE6, IT2, IT5, IT6, IT8, LU1, LV2, NL1, NL3, NL4, NL5, PL2, PT1, SE2, SE4, SE5, SI2, UK2, UK3, UK4	44
Another cycle	AT2, AT3, AT4, AT5, BE-FR2, BG1, CZ1, CZ2, CZ3, CZ4, CZ5, DE2, DE3, DE4, DE5, DE6, DE8, DE9, DE10, DE11, DK5, DK6, EE2, EE3, ES2, ES3, ES5, ES6, ES7, FI5, FI6, FI7, FI9, FR1, FR5, HR1, HU1, IE1, IE2, IE5, IT1, IT3, IT4, IT7, IT9, IT10, LI1, LT1, LT2, LV1, MT1, MT2, NL2, NL6, NO1, NO2, NO3, NO4, NO5, PT2, PT3, RO1, RO2, SE1, SE3, SE6, SI1, SK1, SK2, UK1	70

Source: Mapping research conducted by ICF, 3s and CHEPS.

Over a third of measures (45) track graduates multiple times to gather longitudinal tracking data. These are presented in the table below.

Table 13. Follow up of cohort – longitudinal studies

Measures with follow up of cohort	Total
AT1, AT2, AT3, BE-FR2, BE-NL2, CZ5, DE1, DE2, DE6, DE7, DE8, DE9, DE11, DK1, DK2, DK3, DK4, ES5, ES6, FI1, FI6, FI7, FI8, FR1, FR4, FR5, HU1, HU3, IE5, IE6, IT1, IT2, IT6, IT7, LT2, LU1, LV2, PL1, PL2, PT2, PT3, RO1, RO2, SE2, UK2	45

Source: Mapping research conducted by ICF, 3s and CHEPS.

The frequency of the follow up in measures varies – most common are two or three follow ups.

Table 14. Follow up of cohort – frequency

Frequency of follow up	Measures	Total
1 follow up	PL1	1
2 follow ups	DE2, DE7, ES5, FI6, FI7, FR4, FR5, HU1, IT1, IT2, IT7, PT3, RO1, RO2	14
3 follow ups	CZ5, DE6, DE8, DE11, FI1, FI8, FR1, HU3, IE5, IE6, IT6, LT2, PT2, SE2	14
4 follow ups	AT1, BE-NL2, DE9, DK3, ES6	5
5 or more follow ups / yearly follow ups	AT3, BE-FR2, DK1, DK2, DK4, LV2, PL2	7
Other designs (e.g. multi-cohort, multi-method design with different follow up frequencies)	AT2, DE1, LU1, UK2	4

Source: Mapping research conducted by ICF, 3s and CHEPS.

Examples for follow ups are presented in the box below.

### Examples for follow ups

In **AT2 (Austria)** administrative data have been collected at multiple measurement points after 6 months, 1 year, 2 years, 3 years, 4 years and 5 years after graduation.

In **HU3 (Hungary)** the cohort is followed up in three waves: students in their final year, 7-8 months after graduation, and 19-20 months after graduation.

In **RO2 (Romania)** cohorts are followed twice – one year and five years after graduation.

### 3.2.6 Sampling approaches and representativeness

Over half of tracking measures (67) draw on the total reference population, whereas 49 use a sample. The total reference population provides the basis more often in administrative data collection (49 cases) than in surveys (30 cases). Sampling is applied more often in surveys (44 cases), than in administrative data measures (25 cases).

Where this is known, the sampling techniques vary:

- 18 of the measures use systematic sampling, which is selecting from the reference population by some criteria (e.g. gender, age, region) that are then applied to select randomly.
- 14 measures use random sampling with all members of the reference population with an equal probability.

- 12 measures are based on convenience sampling with reference population members who indicate they are available/willing to participate.

The sampling techniques of measures where these are identified are presented in Table 3.8 below, including a differentiation between surveys and administrative data collection.

Table 15. Sampling approach in surveys and administrative data collection

Basis for tracking measure	Survey	Administrative data collection	Total *
Total reference population	AT4, EE2, EE3, FI2, FI3, FI5, FI6, FI7, FR2, FR3, FR4, FR5, HR1, HU1, IE3, IT5, IT6, NL1, NL2, NL3, NL5, NO4, NO5, PT1, PT2, RO1, RO2, SE5, UK1, UK4 (30)	AT1, AT3, BE-FR2, BE-NL1, BE-NL2, BG2, CZ4, DE5, DK1, DK2, DK3, DK4, EE1, ES2, ES6, FI1, FI2, FI3, FI4, FI5, FI6, FI7, FI8, HU1, IE4, IE5, IE6, IT3, IT5, IT6, IT8, LT1, LU1, LV2, NL1, NL3, NL4, NL5, PL2, PT1, PT2, PT3, SE2, SE4, SE6, SI2, SK1, UK2, UK4 (49)	67
Sample	AT2, AT5, BE-FR1, BG1, CZ1, CZ2, CZ3, CZ5, DE1, DE2, DE4, DE6, DE7, DE8, DE9, DE10, DE11, DK6, ES3, ES4, ES5, ES7, FI9, FR1, HU3, IE1, IE2, IT1, IT2, IT4, IT7, IT9, IT10, LI1, LT2, LV1, MT1, MT2, NO2, NO3, PL1, SE1, SE3, SI1, SK2, UK3 (44)	AT2, BE-FR1, BG1, DE1, DE3, DK6, ES1, ES4, ES5, ES7, FI9, IT1, IT2, IT4, IT7, IT9, IT10, LT2, LV1, NL6, NO1, NO2, PL1, SE1, SE3 (25)	49
Systematic sampling	BE-FR1, CZ5, DE1, ES3, FI9, FR1, HU3, IE1, IE2, IT1, IT9, LT2, PL1, SE1, SE3, UK3 (16)	BE-FR1, DE1, FI9, IT1, IT9, LT2, NL6, NO1, PL1, SE1, SE3 (11)	18
Random sampling	AT2, AT5, CZ3, DE2, DE4, DE6, DE9, DE10, DE11, ES7, IT4, SK2 (12)	AT2, DE3, ES1, ES7, IT4, NL3 (6)	14
Convenience sampling	CZ1, CZ2, DE7, IT2, IT10, LI1, LV1, MT1, MT2, NO2, NO3, SI1 (12)	IT2, IT10, LV1, NO2 (4)	12

Source: Mapping research conducted by ICF, 3s and CHEPS.

Thirty measures indicated that they have limitations due to the lack of representativeness of the achieved sample (see table below and box). This applies to surveys (25 measures) as well as to administrative data-based measures (20). In surveys, low response rates were the most common issue (reported for 18 measures). This meant that either particular sub-groups were too small for analysis or the overall sample was biased.

Table 16. Data limitations

Data limitations	Yes - Survey	Yes – Administrative data collection	Total *
Are there limitations because of representativeness of the sample?	CZ2, CZ5, DE1, ES5, FI7, FI9, HR1, HU1, HU3, IE2, IT1, IT2, IT4, IT7, LT2, LV1, MT1, NL2, NO2, NO4, PT1, SE1, SE3, SI1, UK3 (25)	AT1, AT3, BG2, DE1, ES5, FI7, FI9, HU1, IE5, IT1, IT2, IT4, IT7, LT2, LV1, NL6, NO2, PT1, SE1, SE3 (20)	30
Is a survey response rate too small or biased for sub-analysis?	AT2, BG1, CZ2, CZ5, EE2, EE3, FI9, FR5, IE1, IT2, LT2, NO2, NO4, NO5, PT2, SI1, SK2, UK3 (18)	AT2, BG1, BG2, FI4, FI9, IT2, LT2, NO2, PT2 (9)	20

Source: Mapping research conducted by ICF, 3s and CHEPS.

### Examples of limitations

**AlmaDiploma - Choices of diploma holders (IT2):** The schools and training providers involved in the measure only cover 18 regions, hence this is not representative of the graduate population nationally.

**Monitoring of employability of graduates of upper-secondary vocational and technical schools (SI1):** The surveys are based on convenience sampling and the response rates are low (particularly in the 2013 survey with a net sample size of 264 and a response rate of just 21%) which makes them unrepresentative.

### 3.2.7 Availability of data

Only 39 measures make all the data available. Most (58) have limitations (see table below). These limitations are mostly that the data is available in aggregated form only. For many measures the data is only available under specific conditions (e.g. follow data protection rules, sign a user agreement, on-site access only) for research purposes.

Table 17. Availability of data

Availability of data	Measures	Total
Data are available publicly	BE-FR2, BG2, CZ4, DK6, ES2, ES3, ES5, ES6, ES7, FI8, FR4, HR1, HU3, IE1, IE2, IE5, IE6, IT3, LI1, LT1, LT2, NL1, NL5, NO1, NO2, NO4, NO5, PL1, PL2, PT1, PT2, PT3, SE1, SE2, SE3, SE4, SE5, SE6, UK2	39
at institutional/provider level	CZ4, DK6, ES6, FI8, FR4, IT5, IT6, IT7, LI1, NO2, PL2, PT1, SE2, SE4, SE6, UK2	16
at local level	DK6, IE5, IE6, PL2, SE2	5
at regional level	ES5, HU1, IE5, IE6, NO2, NO5, PL2, RO1	8
at national level	BG2, DK6, ES2, ES5, ES7, FI8, FR1, FR4, HR1, HU3, IE1, IE2, IE5, IE6, IT3, LT1, LT2, LV1, NL1, NL5, NO1, NO2, NO4, NO5, PL2, PT1, PT2, PT3, SE1, SE2, SE3, SE4, SE5, SE6, UK1	35



Availability of data	Measures	Total
Data are available with limitations	AT1, AT2, AT3, AT4, AT5, BE-FR1, BE-NL1, CZ5, DE1, DE2, DE3, DE4, DE5, DE6, DE7, DE8, DE9, DE10, DE11, DK1, DK2, DK3, DK4, EE1, EE2, EE3, ES1, FI1, FI2, FI3, FI4, FI5, FI6, FI7, FR1, HU1, IE3, IT1, IT2, IT4, IT5, IT6, IT7, IT8, IT9, LU1, LV1, LV2, LV3, MT1, NL2, NL3, RO1, RO2, SI1, SI2, SK1, UK1	58
No availability of data	BE-NL2, BG1, CZ1, CZ2, CZ3, FI9, FR2, FR3, FR5, IE4, IT10, NL4, NL6, NO3, SK2, UK3, UK4	17

Source: Mapping research conducted by ICF, 3s and CHEPS.

For 55 of the measures it is possible to use the graduate tracking measure data to provide performance information to specific vocational education and training providers/higher education institutions or specific vocational education and training provider/higher education institutions groups. Additionally, 16 measures provide other locally relevant benchmarking data (for example for providers to compare their performance to their peers). See table below.

Table 18. Availability of user information at provider-level

Item	Measures	Total
Possibility to create feedback for specific vocational education and training/higher education providers	AT1, AT3, AT4, BE-NL1, BE-NL2, BG1, CZ2, CZ5, DE7, DE8, DE11, DK1, DK2, DK3, ES5, ES6, FI1, FI2, FI3, FI4, FI5, FI6, FI7, FI8, FI9, FR4, HR1, HU1, IE4, IT2, IT5, IT6, IT7, IT8, LT1, LU1, LV2, LV3, NL1, NL3, NL5, NO2, PL2, PT1, PT3, SE2, SE4, SE5, SE6, SI2, SK1, SK2, UK1, UK3, UK4	55
Provision of other local relevant data	AT3, BE-NL1, BG1, ES6, FI1, FI2, FI3, FI4, FI8, HU1, LT1, NO2, PT1, SE2, SE6, UK1	16

Source: Mapping research conducted by ICF, 3s and CHEPS.

For most of the measures the graduate tracking data is available free of charge. However, this commonly related only to aggregated data. For 9 measures data has to be purchased.

Table 19. Availability of data

Availability of data	Measures	Total
Free of charge	AT2, AT4, AT5, BE-FR1, BE-FR2, BE-NL1, BG1, BG2, CZ1, CZ2, CZ3, CZ4, CZ5, DE1, DE3, DE6, DE8, DE9, DE10, DE11, DK1, DK2, DK3, DK4, DK6, EE1, EE2, EE3, ES1, ES2, ES3, ES5, ES6, ES7, FI2, FI3, FI4, FI5, FI6, FI7, FI8, FR1, FR4, HR1, HU1, IE1, IE2, IE3, IE5, IE6, IT1, IT2, IT3, IT4, IT5, IT6, IT7, IT8, IT9, LI1, LT1, LT2, LU1, LV1, LV2, LV3, MT1, NL1, NL2, NL4, NL5, NO4, NO5, PL1, PL2, PT1, PT2, PT3, RO1, RO2, SE1, SE2, SE3, SE4, SE5, SE6, SI1, SI2, SK1, SK2, UK2, UK3	92
Has to be purchased	AT1, AT3, DE2, DE4, DE7, FI1, NL3, NO1, UK1	9

Source: Mapping research conducted by ICF, 3s and CHEPS.

### 3.2.8 Approaches to measure the counterfactual

For 6 measures (1 in Austria, 2 in Italy, 3 in Sweden) a comparison group is used to measure the added value of vocational education and training and higher education

provision. These were typically non-participants of programmes or non-graduates (see examples in box).

Table 20. Use of comparison groups

Comparison group implemented	Measures	Total
Yes	AT2, IT9, IT10, SE1, SE2, SE3	6
No	AT4, BE-FR1, BE-FR2, BE-NL1, BE-NL2, BG1, CZ1, CZ2, CZ3, CZ5, DE1, DE2, DE3, DE4, DE5, DK1, DK2, DK3, DK4, EE1, EE2, EE3, ES1, ES2, ES3, ES6, ES7, FI1, FI6, FI9, FR1, FR2, FR3, FR4, FR5, HU1, HU3, IE1, IE2, IE3, IE5, IE6, IT1, IT2, IT3, IT4, IT5, IT6, IT7, IT8, LI1, LT1, LT2, LU1, MT1, MT2, NL1, NL2, NL3, NL4, NL5, NL6, NO1, NO2, NO3, NO4, NO5, PL1, PT1, PT2, PT3, SE4, SE5, SE6, SI1, SI2, SK2, UK3, UK4	79
Information not available	AT3, AT5, DE6, DE7, DE8, DE9, DE10, DE11, DK6, ES4, ES5, HR1, LV1, RO1, RO2, UK1	16

Source: Mapping research conducted by ICF, 3s and CHEPS.

#### Examples for comparison groups

**After graduation of dual vocational education and training (AT2):** The group of drop-outs is regarded as an unintended comparison group to the sample.

**Youth Guarantee (IT9):** The comparison group is represented by similar individuals who are registered in the job centre but have not participated in the activities of the programme.

**Entrance to the labour market after upper secondary school (SE1):** The comparison group is represented by those who did not graduate.

**Establishment in the labour market – What young people do after upper secondary education (SE2):** The comparison group consists of young people who started in year 3 but did not graduate and young people that have only participated in years 1 and 2 and are the same age as the young people who graduated. The comparison group is included in the total reference population.

**Establishment in the labour market after higher education (SE3):** The comparison group consists of non-graduates with enough ECTS to graduate.

### 3.3 How graduate tracking data is being used

Table 19 shows how graduate tracking information is used. It is most commonly used to monitor and evaluate education policies and contribute to policy developments at a national level – this applies to measures based on surveys as well as to administrative data collections. However, over a third of measures have also been used to plan for employment, education and social needs, to support design and current curriculum and to strengthen career guidance. There are no significant differences between measures based on surveys and those based on administrative data in what they are used for.

Table 21. Use of data

Use of data	Survey	Administrative data collection	Total
Strengthen career guidance	CZ2, CZ5, DK6, ES4, ES7, FI2, FI3, FI5, FI6, FI7, HU1,	AT3, BE-NL1, BG2, CZ4, DK1, DK6, DK7, EE1, ES4,	55

Use of data	Survey	Administrative data collection	Total
	HU3, IT1, IT2, IT4, IT5, IT6, IT7, LT2, MT1, NL1, NL2, NL3, NL5, NO2, NO3, PL1, RO1, RO2, SE1, SE3, SE5, SI1, SK2, UK1 (35)	ES6, ES7, FI2, FI3, FI4, FI5, FI6, FI7, FI8, HU1, IT1, IT2, IT4, IT5, IT6, IT7, LT1, LT2, LV2, LV3, NL1, NL3, NL5, NO1, NO2, PL1, PL2, SE1, SE2, SE3, SE4, SE6, SK1, UK2 (43)	
Support design and current curriculum	BE-FR1, CZ5, DE7, DE8, DK6, FI2, FI3, FI5, FI6, FI7, FR1, HU1, HU3, IE1, IE2, IE3, IT1, IT2, IT5, IT6, IT7, IT10, LT2, NL1, NL2, NL3, NL5, NO2, NO3, PL1, RO1, RO2, SE5, UK1, UK3, UK4 (36)	AT3, BE-FR1, BE-NL1, BE-NL2, DK2, DK6, DK7, EE1, FI2, FI3, FI4, FI5, FI6, FI7, FI8, HU1, IE3, IT1, IT2, IT5, IT6, IT7, IT8, IT10, LT1, LT2, LU1, LV2, LV3, NL1, NL3, NL5, NO1, NO2, PL1, SE2, SI2, UK4 (38)	53
Improve skills matching	FI2, FI3, FI6, FI7, HU1, HU3, IT2, IT5, IT6, IT7, LT2, MT1, NO2, NO3, RO2, SE5 (16)	DK2, DK7, EE1, FI2, FI3, FI4, FI6, FI7, FI8, HU1, IT2, IT5, IT6, IT7, IT8, LT1, LT2, LV2, LV3, NO1, NO2, SE2, SK1 (23)	28
Plan for employment, education and social needs	DE1, DE2, DE8, EE2, EE3, ES7, FI2, FI6, FI7, HU1, HU3, IT1, IT2, IT4, LT2, MT1, NO2, NO3, NO4, NO5, PL1, PT1, PT2, SE1, SE3, SE5, SI1 (27)	AT1, DE1, DK1, DK7, EE1, ES7, FI1, FI2, FI4, FI6, FI7, FI8, HU1, IT1, IT2, IT3, IT4, LT1, LT2, LV2, LV3, NO1, NO2, PL1, PL2, PT1, PT2, SE1, SE2, SE3, SE4, SE6, SI2, SK1 (34)	45
Monitor and evaluate education policies	BE-FR1, BG1, CZ2, CZ5, DE1, DE6, DE9, EE2, EE3, ES5, FI2, FI3, FI6, FI7, FI9, FR1, HR1, HU1, IE1, IT1, IT4, IT5, IT9, IT10, LV1, NL1, NL2, NL3, NL5, NO2, NO3, NO4, NO5, PL1, PT2, RO2, SE1, SE3, SE5, SK2, UK1, UK3, UK4 (43)	AT1, BE-FR1, BE-FR2, BE-NL1, BG1, BG2, DE1, DK1, DK2, DK4, DK7, EE1, ES5, FI1, FI2, FI3, FI4, FI6, FI7, FI8, FI9, HU1, IE4, IE5, IE6, IT1, IT3, IT4, IT5, IT9, IT10, LT1, LV1, LV2, LV3, NL1, NL3, NL5, NO1, NO2, PL1, PT2, PT3, SE1, SE2, SE3, SE4, SE6, SI2, SK1, UK2, UK4 (52)	70
Contribute to policy development at a national level	AT4, CZ5, DE1, DE2, DE6, DE9, DK6, EE2, EE3, FI3, FI7, FR1, HU1, HU3, IE2, IE3, IT1, IT4, IT9, LT2, LV1, MT1, NL1, NL3, NL5, NO2, NO3, NO4, NO5, RO2, SE1, SE3, SE5, SI1, UK1, UK3, UK4	AT1, BG2, CZ4, DE1, DK1, DK2, DK4, DK6, DK7, EE1, FI1, FI3, FI4, FI7, FI8, HU1, IE3, IE4, IE5, IE6, IT1, IT3, IT4, IT8, IT9, LT1, LT2, LV1, LV2, LV3, NL1, NL3, NL5, NO1, NO2, SE1, SE2, SE3,	64

Use of data	Survey	Administrative data collection	Total
	(37)	SE4, SE6, SI2, SK1, UK2, UK4 (44)	
Other	AT2, AT4, AT5, CZ1, DE1, DE4, DE6, DE7, DE10, DE11, ES3, ES4, ES5, FI5, HR1, IE3, LI1, LV1, MT1, NL2, PT1 (21)	AT1, AT2, AT3, BE-NL2, BE-NL3, DE1, DE5, DK4, ES4, ES5, FI1, FI4, FI5, LV1, LV2, LV3, NL4, PT1, PT3, SE2 (20)	34

Source: Mapping research conducted by ICF, 3s and CHEPS.

Other use of data includes being used as a condition for performance-based funding (see box below), as an information source for policy on national and/or European level, and to support lifelong learning by collecting data on the experiences and needs of graduates.

#### Example of the use of graduate tracking data on performance-based funding mechanisms

In **Bulgaria**, the results of the 'Bulgarian University Ranking System' (BG2) are used for quality assurance and performance-based financing of public higher education institutions.

In **Denmark**, funding for higher education programmes has become dependent on graduates' employment rates 12 to 23 months after graduation since 2017.

In **Finland**, the results in the 'Finnish Bachelor Graduate Survey' (FI5) and the 'AVOP Graduate feedback questionnaire for Universities of Applied Sciences (UAS)' (FI6) also influence the allocation of performance-based funding to higher education institutions. The new higher education and science strategy "Vision for higher education and science 2030" brought in a new funding allocation model for universities and UAS. From the beginning of 2021, graduate tracking will determine 2% of the performance-based funding for universities and 3% for UAS.

In the **Netherlands**, a small share of the public funding for vocational education and training and higher education institutions is linked to 'quality and investment plans' developed by institutions and reviewed by an independent commission put in place by the ministry. These plans contain indicators on policy objectives which make use of graduate tracking information.

Graduate tracking data is also commonly used to inform the funding and appraisal of providers: In total, the results of 26 measures are or were part of external quality assurance and/or accreditation mechanisms. The results of 24 measures are/were included in performance-based funding mechanisms, performance agreements and/or funding formulae.

In 52 measures (see below; 36 of them are based on surveys, 36 on administrative data) the information from graduate tracking measures is used to inform provider development. This includes supporting:

- Provider quality assurance and for planning of course/programme offer
- Analysis of the quality of education and its relevance to labour market needs
- Updating curricula

- Planning of new course/studies offer
- Placement information to identify issues affecting the employability of graduates
- Guidance of students.

Table 22. Use of results for a 'feedback-mechanism' between graduates' experiences and provider development

Survey	Administrative data collection	Total
BE-FR1, BG1, DE6, DE7, DE8, DE11, DK6, EE2, EE3, FI2, FI3, FI5, FI6, FI7, FI9, HR1, HU1, HU3, IE3, IT1, IT2, IT5, IT6, LT2, NL1, NL2, NL3, NL5, NO2, NO3, NO5, RO2, SE5, SI1, SK2, UK1, UK3 (36)	AT3, BE-FR1, BE-NL1, BE-NL2, BG1, DK2, DK3, DK6, EE1, FI1, FI2, FI3, FI4, FI5, FI6, FI7, FI9, HU1, IE3, IT1, IT2, IT5, IT6, IT8, LT2, LU1, LV2, LV3, NL1, NL3, NL5, NO2, PL2, SE2, SE6, SK1 (36)	52

Source: Mapping research conducted by ICF, 3s and CHEPS.

For 66 measures (see below; 41 of them are based on surveys, 46 on administrative data) it was reported that they are used to inform national education strategic priorities. These include:

- Informing the measurement of strategic goals
- Informing objectives of national lifelong learning strategy
- Identifying the need for improvements to the quality of teaching, training and course offers
- Identifying potential improvements to students' learning experience and learning outcomes
- Helping to understand skills demand and supply, and identify skills shortages
- Helping to improve the labour market relevance of vocational education and training
- Increasing transparency and access to provider information

Table 23. Tracking information supports national strategic objectives

Survey	Administrative data collection	Total
AT2, AT4, BE-FR1, BG1, CZ5, DE1, DE2, DE6, DE7, DE8, DE10, DE11, EE2, EE3, FI2, FI3, FI5, FI6, FI7, HR1, HU1, HU3, IE1, IE3, IT2, IT5, IT6, IT9, LV1, NL3, NO2, NO3, NO4, NO5, RO1, SE1, SE3, SE5, UK1, UK3, UK4 (41)	AT1, AT2, AT3, BE-FR1, BE-FR2, BE-NL2, BG1, BG2, DE1, DK2, DK4, EE1, FI1, FI2, FI3, FI4, FI5, FI6, FI7, FI8, HU1, IE3, IE6, IT2, IT3, IT5, IT6, IT8, IT9, LT1, LU1, LV1, LV2, LV3, NL3, NO1, NO2, PL2, SE1, SE3, SE4, SE6, SI2, SK1, UK2, UK4 (46)	66

Source: Mapping research conducted by ICF, 3s and CHEPS.

### 3.4 Other graduate tracking measures

Alongside system-level graduate tracking measures, there are additional graduate tracking measures undertaken by higher education or vocational education and training providers, sub-regional authorities, sectoral bodies and others. The table below provides an overview of these measures identified by country.

There are in total, 26 countries with further graduate tracking measures in higher education and 17 in vocational education and training. In four countries graduate tracking measures are undertaken by sub-regional authorities and in six countries they are undertaken by sectoral bodies. In seven countries there are measures undertaken by other organisations, which included Trade Unions in Finland, the Agency for Science and Higher Education in Croatia, the Chamber of Commerce and Industry and Institute for

Economic and Enterprise Research in Hungary, a private entity in the Netherlands, Universities UK International in UK, the Ladok Consortium of higher education institutions, and Statistics Sweden.

Table 24. Existence of other graduate tracking measures

Graduate tracking by ...					
Country	higher education Institutions	vocational education and training providers	sub-regional authorities	sectoral bodies	others
AT	x	x		x	
BE-NL					
BE-FR	x	x			
BG	x	x	x		
CY					
CZ	x				
DE	x	x		x	
DK	x	x			
EE					
EL	x			x	
ES	x				
FI	x				x
FR	x		x		
HR	x	x			x
HU	x				x
IE	x	x		x	
IS	x				
IT	x	x	x	x	
LI	x				
LT	x	x			
LU					
LV	x	x		x	
MT		x			
NL	x	x			x
NO	x				
PL	x	x	x		
PT	x	x			
RO	x				
SE	x	x			x

Graduate tracking by ...					
Country	higher education Institutions	vocational education and training providers	sub-regional authorities	sectoral bodies	others
SI	x	x			
SK					x
UK	x				x
<b>Total</b>	<b>26</b>	<b>16</b>	<b>4</b>	<b>6</b>	<b>7</b>

Source: Mapping research conducted by ICF, 3s and CHEPS.

Graduate tracking measures at institutional or sectoral level are often based on graduate surveys (42 measures). Fourteen of the indicated measures are based on administrative data and, 5 combine survey and administrative data sets (see table 23).

Table 25. Methods used for other graduate tracking measures

Method	Total
Graduate surveys	42
Administrative data	14
Combination of survey and data	5
Other measures	13

Source: Mapping research conducted by ICF, 3s and CHEPS.

### 3.5 Complementarity between system-level and other measures

Ten countries have in place mechanisms to ensure complementarity of system-level measures with measures undertaken at institutional or other levels (DK, FI, FR, HU, IE, IT, LV, NL, RO and UK). Examples of these mechanisms are described in the table below.

Table 26. Mechanisms to ensure complementarity between system-level measures and measures at institutional or other levels

Country	Specification of mechanism
DK	<p>In the measure EducationZOOM, the survey was developed together with higher education institutions and it allows higher education institutions to add their own questions.</p> <p>Through meetings at the Contact Committee for Education Statistics, stakeholders are able to provide feedback to Statistics Denmark with regard to data quality and publications. The educational institutions/course providers are obliged to provide their records to Statistics Denmark, on request.</p>
FI	<p>Technical implementation by the CSC - IT Centre for Science is now used in all higher education tracking systems. higher education tracking systems also allow institutions to specify additional questions. The 'Kandipalaute' (Bachelor feedback for universities) includes specific questions added by trade unions in the field of business, law and engineering. Synergy is provided by VIPUNEN which publishes all tracking related statistics (along with other education statistics) which can be edited in multiple ways, including data visualisations. The Platform "Toissa.fi" provides user-friendly</p>

Country	Specification of mechanism
	data visualisation of graduate tracking results covering both university and vocational education and training results for the purposes of study and career guidance in upper secondary and higher education.
FR	Communication between bodies conducting national surveys and regional authorities (labour-market, education) has led to the production of regional analyses and reports. Sometimes, regional reports are co-authored by representatives from national agencies (Céreq).
HU	As a result of a recent revision of the questionnaire, higher education institutions can request specific questions to the national higher education tracking survey. Relevant results are required to be published on the higher education providers' websites, while national results are published by the Educational Office.
IE	The higher education graduate survey provides the opportunity for higher education institutions to add their own questions at the end of the survey. These questions are specific to the higher education institution and are not returned as part of the national dataset.
IT	In the Almalaurea survey higher education institutions have the chance to personalise the questionnaire by adding local questions.
LV	Synergy between system and higher education institutions will be implemented in the new monitoring system. The administrative data register of vocational education and training will be part of the State Education Information System (SEIS). The storage and circulation of data will be ensured by the Ministry. The State Revenue Service, the State Employment Agency and the Central Statistical Bureau will prepare and submit to the Ministry data on the monitoring of graduates.
NL	There is some mutual consultation on the design of the surveys between the project teams in the HBO-monitor and the National Alumni Survey. It is also done between the HBO-monitor and the BVE monitor, resulting in a convergence on graduate tracking questions at national level.  The HBO monitor also offers institutions the opportunity to include their own institution specific questions (up to 5 questions).
RO	For the vocational education and training survey, 80% of the survey is standard and 20% can be amended by the country school inspectorates
UK	The national Graduate Outcomes survey allows higher education institutions to opt-in to pay for selected additional questions from a question bank to ask their graduates.

Source: Mapping research conducted by ICF, 3s and CHEPS.

### 3.6 Key summary points

**The study identified 123 graduate tracking measures at system level across 29 countries.**

- Only EL and CY have no system level relevant measures except for the tracking of completers in ESF-funded training.
- In the rest of countries, measures cover to varying degrees initial vocational education and training, continuing vocational education and training and higher education graduates. Continuing vocational education and training graduates are the least covered with just 34 measures identified.
- Measures generally focus on completers of study programmes across all education sectors. 39 measures include students who dropped out before completing their



degree; a higher proportion of these are initial vocational education and training measures.

- Only some measures (15) include graduates who have migrated to another country, more of these are higher education measures than initial vocational education and training or continuing vocational education and training.
- Only a third of the measures (44) collect data on every cohort of graduates, others take place periodically at a variety of frequencies

**Measures collect a wide range of data which can be used for the purposes identified, although there are considerable variations in what is collected and in what detail.**

- The main variables collected relate to employment status, socio-biographical and socioeconomic information, further education and training pathways.
- Surveys as expected are the main sources of satisfaction data about the quality of programmes and the relevance of acquired skills and these data are generally obtained.
- Fewer measures capture data on graduate backgrounds (migration, ethnicity, parents' education) which can be of analytical value and data on graduate education which can be used for linkage to administrative data.
- Many measures (54) use unique identifiers to enable data to be linked so may not require some of this data to be collected.
- Very few measures (13) capture information on graduates' social and civic activities.

**Over a third of measures (45) track graduates more than twice to provide longitudinal data which is of value to policy makers and other users of the data.**

- At least one of these measures can be found in just under two thirds of countries (20).
- Where cohorts are followed up, this takes place mainly two or three times within a cycle of around two and four years after graduation.
- Thirty measures have at least three follow-ups; many of these are part of larger scale panel studies.

**Many countries use both methods for tracking graduates since they complement each other in providing the data needed.**

- Consequently, there is nearly an equal number of survey (mainly quantitative) and administrative data collection (mainly registers on education achievements, social security and unemployment) approaches identified.
- Fewer measures use sampling (49) than use the total reference population (67).
- Administrative data-based measures more often draw on the total reference population for analysis and for sampling, than surveys which are more often based on achieved samples derived from contacting the entire graduate cohort (30) and from selected samples (44).
- In around a quarter of the measures (30), there are reportedly limitations in the use of the data because of inadequate achieved sample sizes either because of response bias or because of size limiting sub-group analysis.
- While many measures use robust methods for sampling (systematic and random), 12 use convenience sampling which runs a higher risk of response bias.

**Around eighty percent of measures have some data made publicly available for others to use but in many cases there are either limitations in the level of detail and the availability to potential users.**

- Data are mainly available with limitations, for example in aggregated form only, restricted to specific users.
- For around a third of measures (39) anonymised case data are available, and for a greater number (55) data is available for providers.

- Data is generally provided freely.

**Data used for system level monitoring and evaluation of education policies and their development can be identified for around half of the measures. Some other uses are less frequently identified.**

- There are no significant differences in the use of data which are based on surveys and administrative data collection.
- Around a third of measures are used to plan for employment, education and social needs, to support design and current curriculum and to strengthen career guidance.
- Around 40% (50) of measures are used either in the funding or/and the appraisal and quality assurance of providers.
- Only one in four measures are used in improving skills matches.
- Only six measures have developed counterfactuals with comparison groups of non-graduates for their analyses.

Ten countries have systems to ensure the complementarity of system level measures and institutional level measures. These are: DK, FI, FR, HU, IE, IT, LV, NL, NO, UK.

## 4 Country's progress towards meeting the Council Recommendation

This chapter draws on the information collected through the mapping of system-level graduate tracking measures to assess countries' progress against the Council Recommendation. This is expected to contribute to a progress report required as part of the Recommendation.

### 4.1 Country overview

#### 4.1.1 Methodology for assessing progress

The following benchmarking criteria were defined on the basis of the Recommendation to enable an assessment of progress:

- **'Inclusion of graduate programmes'**: Coverage of relevant programmes in higher education, initial vocational education and training and continuing vocational education and training by regular survey and administrative data analysis.
- **'Inclusion of graduates'**: Coverage of the full graduate population, including people who migrate to another country after graduation, and, also, people who left without completing/drop-outs.
- **'Longitudinality'**: Tracking of graduates at different points after they have graduated.
- **'Quality of data'**: Use of a variety of quantitative and qualitative data which meet a wide variety of needs.
- **'Dissemination and use of data'**: The use of data for different purposes and by different users.

The following table presents the results of the comparative assessment. Complete coverage is indicated in dark green, nearly complete coverage in light green, good coverage in yellow, limited coverage in orange, and (nearly) no coverage in red. Details of the methodology followed for the assessment can be found in Annex 4. The table also includes an estimate of the **timeline** which it is expected countries might need to meet the Council Recommendation. This takes into account on the one hand the assessment of each country's progress to date; and on the other hand, the scale and complexity of the improvements required. In practice, this will also be affected by further variables such as political engagement, the complexity of stakeholder involvement or the willingness/ability of stakeholders to cooperate.

The table shows that:

- In relation to the Recommendation the traffic light assessment finds that two countries (DE, FI) have virtually complete coverage of the criteria; five countries (AT, DK, IE, SE, UK) have nearly complete coverage; 12 countries have good coverage (BE nl, CZ, EE, ES, FI, HU, IT, LT, NL, NO, PL, PT); ten countries have limited coverage (Be fr, BU, HR, LV, LU, MT, RO, SK, SI) and three countries have no/hardly any coverage of the criteria (CY, EL, IS).
- There are improvements to be made in all of the criteria of the Recommendation by the majority of countries.
- The most significant areas for improvement for at least ten countries (orange and red ratings) are coverage of all the graduate population in initial vocational education and training, continuing vocational education and training and higher education; the inclusion of all graduates; and having a longitudinal approach to tracking.

Table 27. Assessment of countries' progress towards meeting the Council Recommendation on Tracking Graduates

	Inclusion of graduate programmes	Inclusion of graduates	Longitudi-nality	Quality of data	Dissemi-nation and use of data	Average across benchmark areas	Estimatio n of timeline for meeting the Recommendation
Austria	Light Green	Green	Light Green	Light Green	Light Green	Light Green	3 years
Belgium (Flanders)	Yellow	Light Green	Orange	Yellow	Yellow	Yellow	4 years
Belgium (French-speaking)	Orange	Light Green	Light Green	Yellow	Orange	Orange	5 years
Bulgaria	Orange	Orange	Red	Yellow	Yellow	Orange	5 years
Croatia	Orange	Red	Red	Yellow	Red	Orange	4 years
Cyprus	Red	Red	Red	Red	Red	Red	4 years
Czech Republic	Orange	Light Green	Orange	Light Green	Yellow	Yellow	4 years
Denmark	Green	Light Green	Yellow	Orange	Green	Light Green	3 years
Estonia	Light Green	Light Green	Red	Light Green	Green	Yellow	3 years
Finland	Green	Green	Light Green	Light Green	Green	Light Green	2 years*
France	Yellow	Light Green	Light Green	Light Green	Yellow	Yellow	5 years
Germany	Green	Green	Green	Green	Light Green	Green	2 years*
Greece	Red	Red	Red	Red	Red	Red	6 years
Hungary	Orange	Light Green	Yellow	Light Green	Light Green	Yellow	4 years
Iceland	Red	Red	Red	Red	Red	Red	2 years
Ireland	Green	Yellow	Yellow	Light Green	Yellow	Light Green	2 years
Italy	Orange	Yellow	Yellow	Yellow	Light Green	Yellow	5 years
Latvia	Orange	Orange	Orange	Light Green	Green	Orange	4 years
Liechtenstein	Orange	Orange	Red	Yellow	Red	Orange	3 years
Lithuania	Orange	Orange	Yellow	Yellow	Light Green	Yellow	3 years
Luxembourg	Orange	Orange	Orange	Yellow	Red	Orange	3 years
Malta	Red	Orange	Red	Green	Yellow	Orange	3 years

	Inclusion of graduate programmes	Inclusion of graduates	Longitudinality	Quality of data	Dissemination and use of data	Average across benchmark areas	Estimation of timeline for meeting the Recommendation
Netherlands	Green	Yellow	Red	Light Green	Yellow	Yellow	3 years
Norway	Green	Yellow	Red	Light Green	Green	Yellow	3 years
Poland	Light Green	Light Green	Orange	Light Green	Yellow	Yellow	5 years
Portugal	Orange	Green	Yellow	Yellow	Orange	Yellow	4 years
Romania	Red	Yellow	Yellow	Light Green	Orange	Orange	6 years
Slovakia	Orange	Orange	Red	Yellow	Orange	Orange	4 years
Slovenia	Orange	Yellow	Red	Light Green	Yellow	Orange	4 years
Spain	Light Green	Light Green	Yellow	Yellow	Yellow	Yellow	5 years
Sweden	Green	Light Green	Orange	Light Green	Green	Light Green	3 years
United Kingdom	Green	Yellow	Light Green	Yellow	Yellow	Light Green	4 years

Source: Mapping research conducted by ICF, 3s and CHEPS. \* Timeline for further elaboration of graduate tracking measures.

In the sub-sections below, the assessment of each country's progress is described.

#### 4.1.2 Countries with complete coverage

**Germany**, has a total of eleven measures – three of them covering all sectors (DE1, DE3, DE4). DE2 focuses on initial vocational education and training and higher education, as well as DE9. DE5 covers initial vocational education and training, whereas DE6, DE7, DE8, DE10 and DE11 cover higher education. Only DE1 is based on the combination of survey and administrative data, the other measures are either based on a survey (DE2, DE4, DE6, DE7, DE8, DE9, DE10, DE11) or on administrative data (DE3, DE5).

All groups of graduates are covered in the tracking measures, including people who migrate to another country after graduation and drop-outs. Longitudinal data on graduates are collected - cohorts are followed in DE1, DE2, DE6, DE7, DE8, DE9. With regards to tracking data collected, all Recommendation indicators are covered in the measures – socio-biographical and socioeconomic information, employment status, further education and training pathways, satisfaction, relevance of acquired skills at the workplace and the link to level and field of study and provider.

Of the nine measures reported for **Finland**, three cover all sectors (FI1, FI8, FI9), whereas in FI2, FI3, FI4, FI5, FI6 the focus is on higher education. FI7 addresses initial vocational education and training and continuing vocational education and training. FI2, FI3, FI5, FI6, FI7, FI9 are based on a combination of survey and administrative data approaches, FI1, FI4, FI8 on administrative data. All groups of graduates are covered in the tracking measures, including people who migrate to another country after graduation (in Career Monitoring surveys) and drop-outs (Education Statistics Finland). Longitudinal data on graduates are available; longitudinal data is collected in FI1, FI6, FI7, FI8. All Recommendation indicators are covered in the measures.

### **4.1.3 Countries with nearly complete coverage**

In **Austria**, AT1 covers all sectors (initial vocational education and training, continuing vocational education and training, higher education), and AT2 focuses on initial vocational education and training. Higher education is also covered in AT3, AT4 and AT5. Most measures are either based on a survey (AT4, AT5) or on administrative data (AT1, AT3) although AT2 combines them. All groups of graduates, including emigrants after graduation, and drop-outs are covered. Longitudinal data on graduates are available; cohorts are followed in AT1, AT2, AT3. All Recommendation indicators are covered in the measures.

In **Denmark**, initial vocational education and training is covered in four measures (DK1, DK3, DK5, DK7), continuing vocational education and training in two measures (DK2, DK5) and higher education in three measures (DK1, DK3, DK6). DK1, DK2, DK3, DK4, DK7 are based on administrative data, DK5 and DK6 on a combination of survey and administrative data. Drop-outs are covered but not people who migrate to another country after graduation. Longitudinal data on graduates are available; cohorts are followed in DK1, DK2, DK3, DK4. Recommendation indicators for satisfaction and the level, field of study and education provider are not covered in the measures.

In **Ireland** six measures are reported, of which three cover initial vocational education and training and continuing vocational education and training (IE1, IE4, IE5), one covers initial vocational education and training (IE2), and two covering higher education (IE3, IE6). IE1, IE2 are based on a survey, IE4, IE5, IE6 on administrative data, IE3 is based on both. People who migrate to another country after graduation are not covered. Longitudinal data on graduates are available - cohorts are followed in IE5, IE6. All Recommendation indicators are covered in the measures.

In **Sweden** two measures cover initial vocational education and training (SE1, SE2), two cover continuing vocational education and training (SE5, SE6), and two cover higher education (SE3, SE4). One covers initial vocational education and training as well as continuing vocational education and training (SE7). SE5 is based on a survey, SE2, SE4, SE6 on administrative data, SE1 and SE3 on a combination of both. People who migrate to another country after graduation are not covered. Longitudinal data on graduates are available; cohorts are followed in SE2. All Recommendation indicators are covered in the measures.

In the **United Kingdom**, measure UK2 covers all sectors (initial vocational education and training, continuing vocational education and training, higher education) across the UK. The focus of UK3 is on initial vocational education and training (Northern Ireland), UK4 covers initial vocational education and training and continuing vocational education and training (Scotland), and UK1 covers higher education (whole UK). UK1 and UK3 are based on survey data, UK2 on administrative data and UK4 is based on both. People who migrate to another country after graduation are not covered in the data measures. However, longitudinal data on graduates are available as cohorts are followed in UK2. All Recommendation indicators are covered in the measures.

### **4.1.4 Countries with good coverage**

The three measures reported for **Belgium (NL)** cover initial vocational education and training and higher education (BE-NL1), continuing vocational education and training (BE-NL2) or all three sectors (BE-NL3). All measures are based on administrative data; surveys are not applied which reduces the indicators which are collected. People who migrate to another country after graduation are not covered. Longitudinal data on graduates are available; cohorts are followed in BE-NL1 (covering initial vocational education and training and higher education), but only once, and in BE-NL2 (covering continuing vocational education and training). Recommendation indicators for further education and training pathways, satisfaction and relevance of acquired skills at the workplace are not covered in the measures.

In the **Czech Republic**, from the five measures identified, three focus on higher education (CZ1, CZ2, CZ3), one on initial vocational education and training and higher education (CZ4), and one on initial vocational education and training (CZ5). CZ4 is based on administrative data, the other measures are based on surveys. People who migrate to another country after graduation are not covered. Longitudinal data on initial vocational education and training graduates are available; cohorts are followed in CZ5. All Recommendation indicators are covered in the measures.

In **Estonia** the initial vocational education and training sector is covered by measures EE1 and EE2, continuing vocational education and training by EE2 and higher education by measure EE3. EE1 is based on administrative data, EE2 and EE3 on surveys. People who migrate to another country after graduation are not covered. Longitudinal data on graduates are not available. All Recommendation indicators are covered in the measures.

For **France** five measures are reported, two of them with a focus on initial vocational education and training (FR2, FR3), two of them with a focus on higher education (FR4, FR5) and one covering all sectors (FR1). All measures are based on surveys; administrative data are not used. People who migrate to another country after graduation are not covered. Longitudinal data on graduates are available; cohorts are followed in FR1, FR4, FR5. All Recommendation indicators are covered in the measures.

The measures identified in **Hungary** focus on initial vocational education and training (HU3) and higher education (HU1). A new, planned measure will focus on initial vocational education and training and continuing vocational education and training (HU2). HU1 is based on a combination of survey and administrative data, HU3 on survey data. People who migrate to another country after graduation and drop-outs are covered. Longitudinal data on graduates are available; cohorts are followed in HU1 and HU3. All Recommendation indicators are covered in the measures.

In **Italy**, from the ten measures identified, five focus on initial vocational education and training (including four national and one regional measure), four on higher education, and one measure addresses initial vocational education and training as well as higher education. Continuing vocational education and training is not covered. IT3 and IT8 are based on administrative data, whereas all other measures use a combination of survey and administrative data. Drop-outs and people who migrate to another country after graduation are not covered. Longitudinal data on graduates are available; cohorts are followed in IT1, IT2, IT6, IT7. All Recommendation indicators are covered in the measures.

In **Lithuania** LT1 covers initial vocational education and training and LT1 and LT2 cover higher education. Continuing vocational education and training is not covered. LT1 is based on administrative data, LT2 on a combination of survey and administrative data. Drop-outs and people who migrate to another country after graduation are not covered. Longitudinal data on graduates are available; cohorts are followed in LT2. All Recommendation indicators are covered in the measures.

Most of the six measures reported for the **Netherlands** cover the higher education sector (NL1, NL2, NL4, NL5, NL6); NL3 focuses on initial vocational education and training and continuing vocational education and training. NL1, NL3 and NL5 are based on a combination of surveys and administrative data, whereas the other measures focus on surveys (NL2) or administrative data (NL4, NL6). Drop-outs are not covered as target group of the measures. Longitudinal data on graduates are not available. All Recommendation indicators are covered in the measures.

In **Norway** all sectors are covered through five measures. NO1 covers initial vocational education and training, continuing vocational education and training, and higher education; NO2 and NO3 focus on higher education; NO4 on initial vocational education and training; and NO5 on continuing vocational education and training. NO1 is based on administrative data, NO3, NO4 and NO5 on surveys, and NO2 is based on a combination of both methods. Dropouts and people who migrate to another country after graduation

are not covered. Longitudinal data on graduates are not available. All Recommendation indicators are covered in the measures.

In **Poland**, PL1 focuses on initial vocational education and training and continuing vocational education and training (but it is still in a testing phase) and PL2 covers higher education. PL1 is based on the combination of a survey and administrative data, PL2 on administrative data. People who migrate to another country after graduation are not covered. Longitudinal data on graduates are available, cohorts are followed longitudinally in PL2. All Recommendation indicators are covered in the measures.

Three measures are reported for **Portugal**: PT2 focuses on initial vocational education and training and PT3 on ESF-funded initial vocational education and training and continuing vocational education and training. PT1 covers higher education but it is not strictly a tracking measure - the public employment service interviews unemployed people and collects data on their previous studies (programme and provider). PT1 and PT2 use combined approaches of surveys and administrative data, PT3 is based on administrative data. All groups of graduates, including people who migrate to another country after graduation, and drop-outs are covered. Longitudinal data on graduates are available, cohorts are followed in PT2. Recommendation indicators such as the level, field of study and provider are not covered in some of the measures.

In **Spain** initial vocational education and training is covered in five of seven measures (ES1, ES2, ES3, ES4, ES5), continuing vocational education and training in one measure (ES1), higher education in four measures (ES1, ES2, ES6, ES7). ES1 addresses all sectors (initial vocational education and training, continuing vocational education and training, higher education). ES3 is based on survey data, ES1, ES2 and ES6 on administrative data, ES4, ES5 and ES7 use both methods. All groups of graduates, including dropouts and people who migrate to another country after graduation, are covered. Longitudinal data on graduates are available, cohorts are followed in ES5, ES6. All Recommendation indicators are covered in the measures.

#### **4.1.5 Countries with limited coverage**

In **Belgium (FR)** one measure covers continuing vocational education and training (BE-FR1). A new measure covering all three sectors (BE-FR2) has been announced but has not yet been launched. BE-FR1 is based on a combination of survey and administrative data. People who migrate to another country after graduation are not covered. Longitudinal data on graduates are currently not available. Indicators such as the level, field of study and education provider are not covered in the measure.

The measures reported for **Bulgaria** focus on initial vocational education and training (BG1, pilot) and higher education level (BG2), continuing vocational education and training is not covered. BG1 is based on a combination of survey and administrative data, BG2 on administrative data. Drop-outs and people who migrate to another country after graduation are not covered. Longitudinal data on graduates are not available. Indicators for socio-biographical and socioeconomic information, relevance of acquired skills at the workplace and the link to level, field of study and provider are not covered in the measures.

For **Croatia** one measure was reported (HR1), focusing on higher education. Initial vocational education and training and continuing vocational education and training are not covered at system level. HR1 is based on a survey, administrative data are not used. Drop-outs and migrant graduates are covered by the measure. Longitudinal data on graduates are not available. Indicators on further education and training pathways and the level, field of study and provider are not covered in the measure.

There are currently two measures in **Latvia** that cover higher education (LV1 and LV2), the second one focusing on doctorate holders. A new measure, covering initial vocational education and training and continuing vocational education and training (LV3), is currently in an early planning phase. LV2 is based on administrative data, LV1 combines survey and administrative data. Drop-outs and people who migrate to another country



after graduation are not covered. Longitudinal data on graduates are available; cohorts are followed in LV2. All indicators are covered in the measures.

For **Liechtenstein** only a one-off study (LI1) was reported as a relevant measure, covering higher education. There are no measures for initial vocational education and training and continuing vocational education and training. LI1 is based on a survey, administrative data are not used. It covers completers and drop-outs, but not migrant graduates. Longitudinal data on graduates are not available. Indicators on further education and training pathways and the relevance of acquired skills at the workplace are not covered in the measure.

In **Luxembourg** one measure is reported with a focus on initial vocational education and training. Continuing vocational education and training and higher education are not covered. The measure is based on administrative data. People who migrate to another country after graduation are not covered. Longitudinal data on graduates are available in LU1. Indicators for satisfaction, relevance of acquired skills at the workplace and link to level, field of study and provider are not covered in the measure.

In **Malta** tracking is not conducted on a regular basis. There have been two one-off measures: a pilot conducted in 2015, covering all education sectors (MT1); and the country's current participation in the Eurograduate survey which covers the higher education sector (MT2). The two measures are based on a survey; administrative data are not used. Drop-outs are not covered. Longitudinal data on graduates are not available. All indicators are covered in the measures.

In **Romania** RO1 covers initial vocational education and training and continuing vocational education and training; however, this measure has not been applied systematically. RO2 focused on higher education but it was a pilot project which ended in 2012. Both measures are based on survey data. Drop-outs and people who migrate to another country after graduation are not covered. Longitudinal data on graduates are available; cohorts are followed in RO1 and RO2. Indicators on further education and training pathways are not covered in the measures.

The two measures reported for **Slovakia** cover initial vocational education and training and higher education (SK1) and higher education sector (SK2); there is no measure focusing on continuing vocational education and training. SK1 is based on administrative data, SK2 on a survey. Drop-outs and migrant graduates are not covered by the measures. Longitudinal data on graduates are not available. Indicators on satisfaction are not covered in the measures.

The two measures reported for **Slovenia** focus on initial vocational education and training (SI1) and higher education (SI2); continuing vocational education and training is not covered. SI1 is based on survey data with a low response, SI2 on administrative data. People who migrate to another country after graduation are not covered. Longitudinal data on graduates are not available. All indicators are covered in the measures.

#### **4.1.6 Countries with (nearly) no coverage**

In **Cyprus**, the only tracking system identified concerns ESF-funded training with no further information available on the methodologies used. There are no other graduate tracking measures at system level. The situation in **Greece** is similar. Except for tracking of completers of ESF-funded training, there are no other system-level measures available. In **Iceland** graduate tracking takes place at provider level, but not at system level.

## **4.2 Coverage of benchmarking criteria**

This section examines the overall coverage of the benchmarking criteria in the analysed measures as well as the coverage in each education sector: initial vocational education and training, continuing vocational education and training, higher education. The

following table presents the results. Complete coverage is indicated in dark green, nearly complete coverage in light green, good coverage in yellow, limited coverage in orange, and no coverage in red. The basis for this assessment is the number of countries to which the respective criteria apply (see detailed table in Annex 4).

The table shows:

- Continuing vocational education and training is much less frequently covered than higher education and initial vocational education and training.
- **Surveys** are applied in more countries (28 countries) than data administrative collection (24 countries).
- A high number of countries (26) conducts graduate tracking measures **regularly**.
- **Representative** data is obtained in 24 countries, sufficient response rates in 19 countries (from 28 countries which use surveys) but this is not consistent across initial vocational education and training, continuing vocational education and training and higher education.
- There is a high grade of **data availability**: In 29 countries some data from tracking measures are available in public or in limited form.
- While programme completers are generally included in the **graduate population**, others such as emigrants are often not, even when the latter could be included in surveys. Drop-outs are covered in measures in 19 countries.
- **Cohorts are followed up** in 20 countries' measures – 17 countries follow graduates in the initial vocational education and training sector, 12 countries in continuing vocational education and training and 15 in higher education.
- **Main indicators** with high levels of coverage include socio-biographical and socioeconomic information (in 28 countries – 25 countries in initial vocational education and training, 15 in continuing vocational education and training, 25 in higher education) as well as the employment status of graduates (in 29 countries – 27 in initial vocational education and training, 19 in continuing vocational education and training, 26 in higher education).
- Indicators of '**satisfaction**' and '**relevance/utilisation of acquired skills at the workplace**' from surveys have high levels of coverage. Satisfaction in 25 of 28 countries (18 in initial vocational education and training, 12 in continuing vocational education and training, 19 in higher education). The relevance of acquired skills is covered in 25 countries (21 countries in initial vocational education and training, 12 countries in continuing vocational education and training, 21 countries in higher education).
- Other indicators, such as information about further education and training pathways, level, field of study and provider and the place of residence / migration to other countries are covered in 24 countries, with better coverage in higher education (22 countries) than in initial vocational education and training (16 countries) and continuing vocational education and training (10 countries).
- In many countries the measures cover up to three forms of use. 15 countries cover 4 or 5 forms of use, only in 7 countries are all forms of use of data found.
- Country coverage of benchmarking criteria overall and by education sector (initial vocational education and training, continuing vocational education and training, higher education).

Table 28. Country coverage of benchmarking criteria overall and by education sector (initial vocational education and training, continuing vocational education and training, higher education)

Benchmarking criteria*		Overall coverage (of 31 cases)	Initial vocational education and training coverage	Continuing vocational education and training coverage	higher education coverage
Inclusion of graduate programmes	Surveys	Green	Yellow	Orange	Yellow
	Administrative data collection	Yellow	Yellow	Orange	Yellow
	Periodicity of measures	Yellow	Yellow	Orange	Yellow
	Representativeness of data	Yellow	Yellow	Orange	Yellow
	Sufficient response rate*	Yellow	Orange	Orange	Yellow
	Data availability	Green	Yellow	Yellow	Green
Graduate population included	Completers	Green	Yellow	Yellow	Yellow
	People who have left without completing	Yellow	Orange	Orange	Orange
	Students (before completion)	Orange	Orange	Red	Orange
	Residents in country	Orange	Orange	Orange	Orange
	Migrants to another country after graduation	Orange	Red	Red	Orange
Longitudinality / Follow-up	Is the cohort followed-up?	Yellow	Yellow	Orange	Orange
Quality of data / main indicators covered	Socio-biographical and socioeconomic information	Green	Yellow	Orange	Yellow
	Employment status	Green	Yellow	Yellow	Yellow

Benchmarking criteria*	Overall coverage (of 31 cases)	Initial vocational education and training coverage	Continuing vocational education and training coverage	higher education coverage
Further education and training pathways				
Satisfaction*				
Relevance/utilisation of acquired skills at the workplace*				
Link to level, field of study and provider				
Place of residence / migration to other countries				
Dissemination and use of data / Missing forms of use	All forms of use (6-7 options)			
	Good coverage of forms of use (4-5 options)			
	Limited forms of use (2-3 options)			
	(Nearly) no forms of use (0-1 options)			

Source: Mapping research conducted by ICF, 3s and CHEPS. \* Evaluated only for countries with survey-based measures (n=28), as these indicators usually are not collected via administrative data instruments.

This also indicates that there are many criteria which are not met by at least around 10 countries. There are more criteria relating to continuing vocational education and training that need to be addressed by countries than relate to higher education and initial vocational education and training. Specific criteria which require most attention include: response rates to surveys, the inclusion of migrant students in surveys and coverage of all the recommended areas of data collection.

### 4.3 Key summary points

The assessment of countries' progress towards achieving in full the Council's Recommendation on graduate tracking summarised in Table 25 above shows:

- Virtually complete coverage of the benchmarking criteria for Germany and Finland and nearly complete coverage for Austria, Denmark, Ireland, Sweden and United Kingdom.
- Countries with (nearly) no coverage are Cyprus, Greece and Iceland. Belgium (fr), Bulgaria, Croatia, Latvia, Liechtenstein, Luxembourg, Malta, Romania, Slovakia and Slovenia have limited coverage, the other countries provide good coverage of the assessment against the criteria.

There are improvements to be made against all of the criteria of the Recommendation by the majority of countries.

- The most significant areas for improvement for at least ten countries (those with orange and red ratings in Table 26 above) are coverage of all the graduate population in initial vocational education and training, continuing vocational education and training and higher education; the inclusion of all graduates; and having a longitudinal approach to tracking.
- A more detailed analysis of this shows that there is considerable room for improvement, particularly in the following aspects of graduate tracking:
  - The coverage of continuing vocational education and training across nearly all benchmarking criteria;
  - The inclusion of drop-outs and migrants in surveys;
  - The follow-up of cohorts of learners at least twice within five years;
  - The coverage of the main indicators across all sectors; and
  - The quality of surveys to provide sufficient representative achieved samples in all case.

## 5 Compatibility of practices and comparability of graduate outcomes data among countries

This chapter analyses the potential for comparing national data from graduate tracking cross-nationally. This involved an analysis of the similarities and differences in the data collected, the methods used and the coverage of existing measures. It only includes analysis of system-level graduate tracking measures.

### 5.1 Methodology for the analysis of comparability and compatibility of practices and graduate outcomes data

This study has applied a **four-step methodology** to identify the measures with a higher potential for comparability based on the following criteria: type of data/indicators covered, use of international classifications and representativeness of data. See Annex 5). The steps were as follows:

- **Step 1:** Identification of graduate outcome indicators that are commonly produced from tracking surveys.
- **Step 2:** For each of the indicators, identification of the measures by which they can be derived and their coverage (initial vocational education and training, continuing vocational education and training or higher education sector).
- **Step 3:** For each of the indicators, identification of the feasibility with which they can be compared based on:
  - Graduate population included (whether its completers, drop-outs, migrated graduates etc.)
  - Indicator classification (whether they are using international standards)
  - Representativeness of graduate population included (whether they have the same level of robustness)
  - Periodicity of data collection (whether it is conducted regularly or not)
  - Similarity of graduate group
- **Step 4:** Analysis of supporting and limiting factors for comparability

#### 5.1.1 Step 1: Identification of the most common outcome indicators

The main indicators covered by the measures generally match those in the Council Recommendation on tracking graduates (see also chapter 3.2.2). In 110 of 123 measures the employment status is covered, followed by socio-biographical and socio-economic information (94), further education and training pathways (84) and relevance/utilisation of acquired skills at the workplace (60). Social and civic activities and participation in these are only covered in 13 measures (see box below). Nevertheless, they are a relevant indicator in surveys for social and civic engagement and skills of graduates (see chapter 3.2.2 for examples).

#### Regular outcome indicators in graduate tracking measures

- **Employment status (110)**  
Sustainability of employment (65)  
Salary (49)
- **Further education and training pathways (84)**
- **Satisfaction (in general) (61)**  
Satisfaction with study programme/training (47)  
Satisfaction with current job (25)
- **Relevance/utilisation of acquired skills at the workplace (60)**
- **Social and civic activities and participation in these (13)**

There are also other indicators that are collected frequently in graduate tracking measures and therefore could be used from cross-national comparison. These are shown in the box below and include socio-biographical and socioeconomic indicators (94) as well as the level, field and provider of the study programme (covered in 68 measures). The place of residence and/or information about migration of graduates to other countries is collected in 54 measures.

**Other relevant indicators for comparability in graduate tracking measures**

- **Socio-biographical and socioeconomic information (94):**
  - Age (59)
  - Gender (65)
  - Nationality (43)
  - Social background (highest educational attainment of parents, occupation of parents) (27)
- **Link to level, field of study and provider (68)**
- **Place of residence / migration to other countries (54)**

**5.1.2 Step 2: Identification of the measures from which indicators can be derived**

In Step 2 the indicators were then compared to examine the extent to which they were available for initial vocational education and training, continuing vocational education and training and higher education. The regular outcome indicators in graduate tracking measures are presented in table 27 below. This mapping found:

- Indicators such as **employment status** and **further education and training pathways** have good coverage. They are covered in at least 42 measures and 24 countries for initial vocational education and training, in at least 55 measures and 22 countries for higher education and in at least 27 measures and 15 countries for continuing vocational education and training.
- There is reasonable coverage of indicators **relevant to acquired skills at the workplace, salary, general satisfaction** and **sustainability of employment**. These are covered in at least 22 measures and 15 countries for initial vocational education and training, in at least 36 measures in 20 countries for higher education and in at least 12 measures (covering at least 11 countries) for continuing vocational education and training.
- Overall, comparability is more feasible for higher education and initial vocational education and training. Six of the indicators are covered in at least 22 measures for initial vocational education and training (covering at least 15 countries) and in at least 36 measures for higher education (covering at least 15 countries). In contrast, for continuing vocational education and training only three indicators are contained in 17 or more measures and cover 14 or more countries.

A detailed analysis of the specific measures that contain these indicators is presented in Annex 5.

Table 29. Coverage of regular outcome indicators by measures and countries for initial vocational education and training, continuing vocational education and training and higher education

Indicator	Initial vocational education and training	Continuing vocational education and training	higher education	Others
Employment status	57 measures, covering 27 countries	30 measures, covering 19 countries	69 measures, covering 26 countries	15 measures, covering, 11 countries
Sustainability of employment	35 measures, covering 20 countries	17 measures, covering 14 countries	37 measures, covering 15 countries	10 measures covering, 8 countries
Salary	22 measures, covering 15 countries	12 measures, covering 11 countries	36 measures, covering 20 countries	6 measures, covering 6 countries
Further education and training pathways	42 measures, covering 24 countries	27 measures, covering 15 countries	55 measures, covering 22 countries	12 measures, covering 9 countries
Satisfaction (in general)	24 measures, covering 18 countries	13 measures, covering 13 countries	40 measures, covering 19 countries	5 measures, covering 4 countries
Satisfaction with study program/training	18 measures, covering 14 countries	10 measures, covering 11 countries	29 measures, covering 16 countries	2 measures, covering, 2 countries
Satisfaction with current job	12 measures, covering 10 countries	7 measures, covering 6 countries	18 measures, covering 11 countries	3 measures, covering 3 countries
Relevance of acquired skills at the workplace	26 measures, covering 21 countries	13 measures, covering 13 countries	37 measures, covering 21 countries	5 measures, covering 5 countries
Social and civic activities and participation in these	5 measures, covering 5 countries	5 measures, covering 5 countries	10 measures, covering 8 countries	no measures

Source: Mapping research conducted by ICF, 3s and CHEPS.

Other relevant indicators for comparability in graduate tracking measures with a focus on socio-biographical and socioeconomic variables about graduates are presented in the table below. It shows that:

- **Socio-biographical and socioeconomic information** has good coverage – in 45 measures covering 25 countries in initial vocational education and training and 60 measures covering 25 countries in higher education. In continuing vocational education and training the coverage is lower with 24 measures in 15 countries.



- More specifically, there is reasonable coverage of **age** and **gender** with at least 27 measures in 18 countries in initial vocational education and training and with at least 39 measures covering at least 17 countries in higher education. In continuing vocational education and training the coverage is lower with 13 measures covering at least 9 countries.
- Information about the **level, field of study and provider** shows good coverage in initial vocational education and training and higher education with at least 30 measures covering at least 19 countries. In continuing vocational education and training 20 measures in 14 countries are covered.
- Overall, as in the results for regular outcome indicators above, comparability is better for initial vocational education and training (five of the indicators are covered in at least 18 measures covering at least 16 countries) and for higher education (five of the indicators are covered in at least 39 measures covering at least 17 countries).

Table 30. Coverage of other indicators by measures and countries for initial vocational education and training, continuing vocational education and training and higher education

Indicator	Initial vocational education and training	Continuing vocational education and training	higher education	Others
Socio-biographical and socioeconomic information	45 measures, covering 25 countries	24 measures, covering 15 countries	60 measures, covering 25 countries	11 measures, covering 8 countries
Age	27 measures, covering 18 countries	13 measures, covering 10 countries	39 measures, covering 18 countries	9 measures, covering 8 countries
Gender	31 measures, covering 18 countries	13 measures, covering 9 countries	41 measures, covering 17 countries	9 measures, covering 8 countries
Nationality	19 measures, covering 13 countries	10 measures, covering 8 countries	28 measures, covering 14 countries	7 measures, covering 6 countries
Social background	12 measures, covering 10 countries	3 measures, covering 3 countries	20 measures, covering 9 countries	3 measures, covering 3 countries
Link to level, field of study and provider	30 measures, covering 19 countries	20 measures, covering 14 countries	46 measures, covering 22 countries	8 measures, covering 6 countries
Place of residence / migration to other countries	18 measures, covering 16 countries	11 measures, covering 10 countries	44 measures, covering 22 countries	5 measures, covering 5 countries

Source: research ICF, 3s and CHEPS.

A detailed analysis of the specific measures that contain these indicators are presented in Annex 5.

### **5.1.3 Step 3: Assessment of comparability of measures**

For an assessment of the comparability of measures the following characteristics of graduate tracking measures were taken into account:

- Graduate population included (completers, drop-outs, students, residents in country, graduates who migrate to another country after graduation)
- Use of international standards and classifications such as ISCED, ILOSTAT, ESCO/ISCO or NACE
- Representativeness of the population in the achieved sample and/or sufficient response rate
- Rhythm/periodicity of data collection (whether it is conducted regularly or not, e.g. in case of one-off measures or measures which are not continued any more)
- Follow up of cohorts
- Similarity of graduate groups, using the ISCED levels covered by the respective survey as indicator for comparability
- Data availability (data are public available or available with limitations, e.g. for specific target groups such as researcher)
- Education sector (initial vocational education and training, continuing vocational education and training, higher education)

The detailed findings of the analysis are presented (separately for initial vocational education and training, continuing vocational education and training, higher education) in Annex 5.

It is evident that not all the tracking measures can be used for comparability. Taking each of the characteristics above, the analysis finds that:

- Graduate populations are differently defined which may mean that in some cases, say where many graduates migrate are not captured, that they may not be comparable. For example, the **graduate population** includes completers in 114 measures while only 36 measures cover drop-outs and migrants to another country are covered in 13 measures (see chapter 3.2.1).
- International classifications are commonly but not universally used. The international classification most often used across measures to allocate the **level of educational attainment** and orientation is ISCED. 76% of the measures (93) are based on ISCED or ISCED-F (46 of 64 measures in initial vocational education and training, 24 of 34 measures in continuing vocational education and training, 63 of 76 measures in higher education).
- Overall, 55% of the measures use a **classification of occupations and/or skills** on the basis of ILOSTAT, ESCO/ISCO and/or NACE (32 in initial vocational education and training, 16 in continuing vocational education and training, 47 in higher education).
- Many but by no means all have representative samples which enable any comparison. Sixty-one measures have very large samples (29 in initial vocational education and training, 20 in continuing vocational education and training, 41 in higher education). The survey response rate is also sufficient in 40 survey measures (16 in initial vocational education and training, 11 in continuing vocational education and training, 28 in higher education).
- The **periodicity of data collection** may make comparison difficult if measures are at dissimilar times post-graduation. In 91 measures the data are collected regularly and can be compared on this basis (46 measures in initial vocational education and training, 23 in continuing vocational education and training, 60 in higher education). The other measures are either one-off measures, measures with several measurement points which are not continued any more or measures which data are not available yet.

- 45 measures are longitudinal measures with a **follow up of cohorts** (25 in initial vocational education and training, 14 in continuing vocational education and training, 28 in higher education). In many cases the follow-up takes place twice (13 measures), followed by three times (9 measures), yearly follow-ups (7 measures) and other rhythms (e.g. continuously over 36 months after completing vocational education and training studies such as in LU1). Comparability of around one, three and five years should be possible between most of these measures.
- **Data are available** in 98 of 123 measures (51 times in initial vocational education and training, 26 times in continuing vocational education and training, 65 times in higher education) – in 40 measures they are publicly available, in 58 measures with limitations (see chapter 3.2.7).

Applying the **comparability criteria** of the use of ISCED classification, representativeness of the sample and/or sufficient response rate, periodicity of data collection as well as (limited) availability of data to the 123 measures, this reduces the number to 51 potentially comparable measures.

These are analysed further to understand to what extent the different graduate groups and indicators are covered by these 51 measures and for how many countries. The detailed findings of this analysis are presented in Tables 75 to 82 (separately for initial vocational education and training, continuing vocational education and training, higher education) in Annex 5. A summary of the results is provided here:

- There are 25 measures in initial vocational education and training, 14 measures in continuing vocational education and training and 37 measures in higher education which show high potential for comparability.
- There is good country coverage of completers, followed by drop-outs and residents in country. Low coverage for comparative analysis of students (before completion) and graduate populations including migrants.
- Of all the indicators, 'employment status' is covered best of all – with 19 countries in initial vocational education and training, 9 countries in continuing vocational education and training and 21 countries in higher education.
- Other indicators in initial vocational education and training covering at least 10 countries and a maximum of 13 countries are sustainable employment, further education and training, socio-biographical information, age, gender. Indicators with lowest coverage are social/civic activities (one country) and social background (5 countries).
- In continuing vocational education and training none of the indicators has a coverage of more than 9 countries. Indicators with highest coverage are – besides employment status – further education and training (9 countries), socio-biographical information as well as level, field of study and provider (8 countries each). Indicators with lowest coverage are social/civic activities (1 country) and social background (2 countries).
- In higher education other indicators with higher country coverage are socio-biographical information (17 countries) and further education and training (15 countries). Indicators like social/civic activities (3 countries), social background (4 countries), nationality (6 countries), satisfaction (8 countries) and sustainable employment (9 countries) show lowest coverage, all other indicators are covered in 10 or more countries.

Many measures were considered not to be comparable because either they were not representative or information was missing about the achieved sample size and population. For example, there was no information available about the representativeness of 31 measures. If **comparability criteria** are reduced to a **minimum threshold** of at least the use of ISCED classification and periodicity of data collection, the number of comparable measures increases to 75 measures with corresponding increases in the number of countries where measures can potentially provide comparable indicators:

- 39 measures in initial vocational education and training, 19 measures in continuing vocational education and training and 51 measures in higher education show high potential for comparability.
- In initial vocational education and training indicators on employment status (21 countries), socio-biographical information (18 countries) and further education and training (15 countries) show the highest coverage, similar to continuing vocational education and training where these indicators are each covered by 9 to 10 countries.
- In higher education these three indicators are covered by 18 to 21 countries with salary, level, field of study, provider and the place of residence/migration covered in 16 countries each.
- There continues to be very low coverage of indicators such as social/civic activities and social background of graduates in all three education sectors.

#### 5.1.4 Step 4: Analysis of supporting and limiting factors for comparability

For the comparability and compatibility of measures across countries some aspects were identified as helpful.

First, the **use of international classifications** such as ISCED or ESCO/ISCO. The level of highest educational attainment and orientation (**ISCED**) is included in most of the countries. Only BE-FR, BG, LE, RO so far do not have any measures with ISCED-related data, neither on level of ISCED nor on level of ISCED-F. It will be helpful too if similar or the same ISCED levels are covered by measures which are compared with each other.

**ILOSTAT, ESCO/ISCO or NACE** criteria are provided by at least one measure in most of the countries using international classifications, but this is not the case for BE-FR, HR, LE, MT, PT, RO, and SI. This makes it more difficult to compare these countries' measures in relation to occupations and skills of graduates.

Second, the **use of similar intervals of data collection and follow up of cohorts post-graduation**. Measures that have cohort follow-up and are carried out annually potentially provide comparable indicators. One-off measures do not enable this.

Third, having a **representative achieved sample** which in the case of surveys means a sufficient response rate. If this cannot be provided results cannot be used for any comparative analysis.

Fourth, **data must be available to be shared** with other parties for comparative research. This is not always the case for measures which do have data which can be compared.

A major **limitation for comparability** is the form in which many indicators, such as employment status, socio-biographical information, relevance of acquired skills, are operationalized. The analysis of information collected from graduate tracking measures in chapter 3.2.2 already show differences in how information about these indicators is collected. See the examples in the box below.

#### Examples for differences of indicators in surveys

27 measures collect information on the social background of respondents, but this is done in very different forms for:

- Background of parents (which can contain: profession/occupation, level of education, income of parents),
- Economic situation of the individual (which can include income/financial barriers or the household situation of the respondent (e.g. household income)).

In 68 measures the indicator **link to level, field of study and provider** is covered. The specification information shows that not in all cases is the same kind of detail information collected, although most at least collect the field and level of study. The provider is covered via its name or due to anonymity via its province, its type (higher education provider, vocational education and training provider etc., public/private), and/or its subject focus.

Another key limitation is the representativeness of data because of too small samples being drawn or too small or biased survey responses.

Limitations to the **representativeness** of data might hinder comparability of data from HR, HU, LI and MT. This, as shown above, significantly reduces the number of comparable measures.

A too small or biased survey **response rate** which hinders sub analysis (inference from sample or coverage population to target population when using survey data) was indicated for 12 measures (CZ2, CZ5, EE2, EE3, FI4, FR5, IE1, LT2, NO2, NO4, NO5, and SK2) in eight countries.

### 5.1.5 Comparison of selected measures in higher education

For a better illustration of the possibilities and limits of comparability, an exemplary comparison of three selected measures from the higher education area is presented here.

#### Comparison of selected measures in the higher education area

For the selection the following criteria were applied:

- The measures focus on higher education level.
- Their data are comparable on ISCED level.
- ISCED levels which are covered are similar or at least overlap.
- Cohorts are followed up three times (1, 3, 5 years after graduation).
- The measures are based on administrative data collection as method.
- There are no limitations because of representativeness of the sample.

On the basis of these criteria the following measures were selected:

- FI8: Placement after graduation
- IE6: higher education outcomes
- LV2: higher education graduate monitoring

An analysis of main indicators covered via the three measures shows comparability in the **following** areas which are covered by all three instruments:

- Socio-biographical and socioeconomic information
  - Age (not specified for FI8, but probably covered)
  - Gender (not specified for FI8, but probably covered)
  - Nationality
- Employment status, including occupation, type of employment, salary level, career progression
  - Employment status (employed, not employed)
  - Salary (not specified for FI8, but probably covered)
- Further education and training pathways
  - Further education/training
- Link to level, field of study and provider

- Field of study

Other indicators are not covered by all three measures: satisfaction and relevance/ utilisation of acquired skills at the workplace are covered in LV2. The indicator place of residence / migration to other countries is covered in FI8 and LV2, but not in IE6 which hinders comparability.

## **5.2 Key summary points**

There is potential for comparison of the results of graduate tracking measures:

- Fifty-one measures meet a minimum threshold in relation to employment classification, representativeness and cohort /periodicity though there were more countries which could be compared for initial vocational education and training and higher education graduate indicators than for continuing vocational education and training;
- Many indicators are commonly collected so are potentially comparable. Indicators with the highest country coverage across initial vocational education and training, continuing vocational education and training and higher education are employment status, socio-biographical information and further education and training of graduates.
- For the 51 potentially comparable measures, 'employment status' is covered best of all – with 19 countries in initial vocational education and training, 9 countries in continuing vocational education and training and 21 countries in higher education.
- Other indicators in initial vocational education and training covering at least 10 countries and a maximum of 13 countries are sustainable employment, further education and training, socio-biographical information, age, gender. Indicators with lowest coverage are social/civic activities (one country) and social background (5 countries).
- In continuing vocational education and training none of the indicators has a coverage of more than 9 countries. Indicators with highest coverage are – besides employment status – further education and training (9 countries), socio-biographical information as well as level, field of study and provider (8 countries each). Indicators with lowest coverage are social/civic activities (1 country) and social background (2 countries).
- In higher education other indicators with higher country coverage are socio-biographical information (17 countries) and further education and training (15 countries). Indicators like social/civic activities (3 countries), social background (4 countries), nationality (6 countries), satisfaction (8 countries) and sustainable employment (9 countries) show lowest coverage, all other indicators are covered in 10 or more countries.
- Comparability is enabled by the use of standard international classifications such as ISCED and NACE; standard definitions for socioeconomic/biographical data and satisfaction questions; similar periodicities for data collection; representativeness of the achieved sample or, in case of surveys, sufficient response rate; and data availability for comparative research. Many measures do not currently match these requirements.

## **6 Institutional graduate tracking in higher education**

This chapter presents analysis of institution-specific graduate tracking undertaken by individual higher education institutions. It presents information on the types of approach that higher education institutions have adopted, the quality and coverage of these tracking measures and what information is collected.

The chapter draws on analysis of a survey of higher education institutions across the EU-28 and EEA countries that received 714 responses<sup>75</sup>. However, after cleaning the data to remove out-of-scope institutions and duplicate entries the final number of responses used in the analysis is 615 higher education institutions. Further details on the characteristics of respondents by country can be found in the annex for chapter six.

### **6.1 Prevalence and type of graduate tracking undertaken by higher education institutions**

#### **6.1.1 Prevalence of graduate tracking**

Nearly all (93%) survey respondents stated that they undertook some form of graduate tracking. However, this is not necessarily wholly representative of the wider population of higher education institutions since those that do not conduct graduate tracking at institutional level may have been less likely to complete the survey (i.e. this particular finding may be affected by non-response bias). In some of the countries with slightly lower response rates,<sup>76</sup> the research team detected reluctance from higher education institutions to invest time in completing the survey because they do not have their own tracking measures and, instead, participate in tracking measures at national level (DE, NO, UK).

higher education institutions in countries with well-established system-level graduate tracking measures are less likely to undertake their own graduate tracking. The countries with the highest proportion of higher education institutions with no tracking measures were the UK (19% of non-tracking respondents; 8 higher education institutions), and Sweden (17%; 7 higher education institutions). The number of Swedish higher education institutions that do not conduct any graduate tracking can be explained by their participation in national graduate tracking systems (by Statistics Sweden and the higher education national agency).<sup>77</sup> In the UK, higher education institutions collectively fund the higher education Statistics Agency to undertake graduate tracking which explains why fewer higher education institutions have in-house tracking measures.

#### **6.1.2 Approaches to undertaking graduate tracking**

Quantitative surveys are the most common tool used by individual higher education institutions to undertake graduate tracking, as indicated by the survey results in the figure below. About four fifths of higher education institutions that responded to the survey use this approach to track their graduates, while only about one in eight use qualitative surveys or data mining (either instead of a quantitative survey or administrative data matching or more often to supplement them).

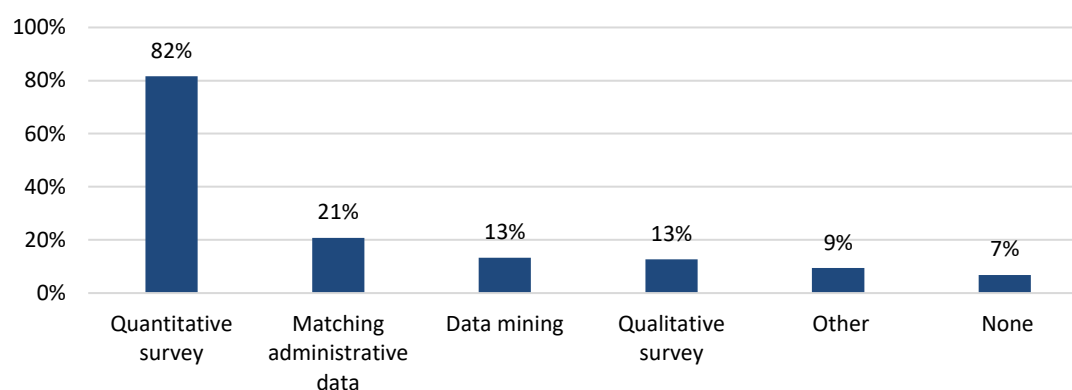
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<sup>75</sup> Number of responses received by 20 January 2020.

<sup>76</sup> For response rates, please go to **Error! Reference source not found.**

<sup>77</sup> Sub-samples of higher education institutions with no tracking measures in the remaining countries are too small to draw any conclusions on the reasons for non-tracking.

Figure 6. Types of graduate tracking measures used by higher education institution survey respondents



Source: ICF graduate tracking higher education institution survey (N= 615). Multiple choice question.

Some survey respondents reported that administrative data matching and qualitative surveys were used to address gaps and supplement a quantitative survey which served as their primary graduate tracking tool. However, in other cases different departments in a few higher education institutions have adopted other approaches to tracking their respective graduates.

Around a tenth of survey respondents also reported using other methods for gathering intelligence on the destinations and views of their graduates, often in more informal and less rigorous ways. These included obtaining insights from:

- Alumni events and “meet and greets;”
- Institutional online alumni portals; and
- Aggregated higher education databases.

Of the higher education institutions that only conduct one tracking measure, over four-fifths used quantitative surveys. Relatively few conducting only qualitative surveys, data matching, or data mining.

Table 31. Type of tracking measure used amongst higher education institutions only using one method

	% of higher education institutions only using one tracking method	Number of higher education institutions
Quantitative surveys	85%	318
Qualitative surveys	2%	6
Data matching	6%	22
Data mining	2%	7
Other	6%	22

Source: ICF graduate tracking higher education institution survey (N= 375)

The proportion of higher education institutions using quantitative surveys was generally consistent across all countries<sup>78</sup>. Qualitative surveys were also used across most countries, with the exception of: IS, IE, LI, LT, LU NO, CY, ES. Over a quarter of the higher education institutions conducting data mining were situated in France. However,

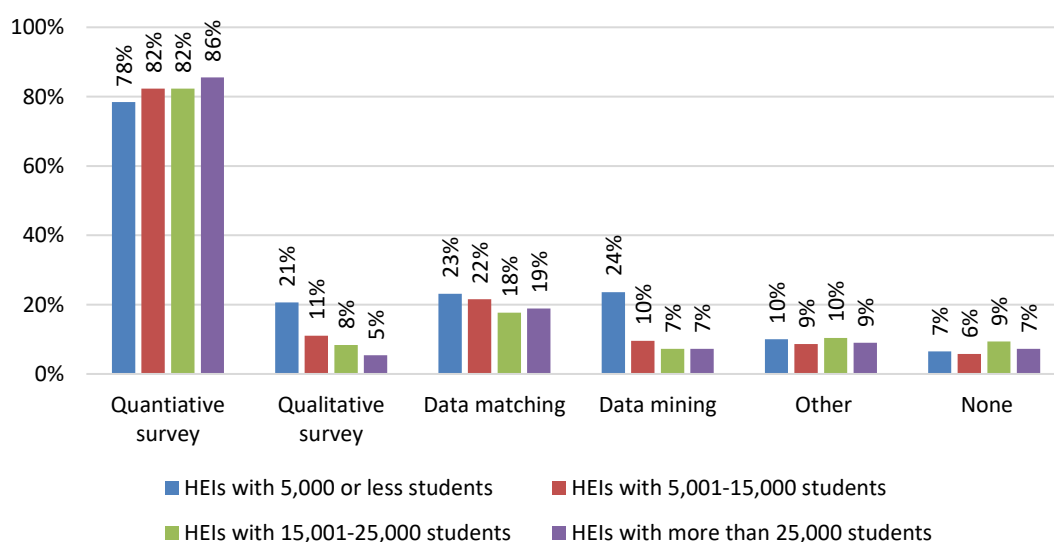
<sup>78</sup> The annex for chapter six contains a detailed breakdown of the types of tracking measures used by country.



across the rest of the countries there was also a relatively even spread of higher education institutions that have conducted data mining. The countries where data mining was not used were: BE, HU, IS, IE, LI, LT, LU, MT, NO, SI. In contrast, administrative data matching is more prevalent in Austria (AT), Italy (IT), and Spain (ES) but not widely used by higher education institutions from other countries. The countries where data matching is not used at all are: BE, CY, EE, IS, LI, LU, MT, NO, SI.

The type of tracking measures used varies slightly by the size of the higher education institution, as shown in the figure below. Most notably, while larger universities more commonly use quantitative surveys, other methods are used more commonly by smaller universities. Smaller higher education institutions with 5,000 or less enrolled students more commonly have used qualitative surveys or data mining than larger higher education institutions. These approaches can be undertaken at a small scale with limited resources or technical expertise which may explain this difference. A very small proportion of large higher education institutions with more than 25,000 enrolled students used either of these approaches.

Figure 7. Type of tracking measure(s) used by size of higher education institution



Source: ICF graduate tracking higher education institution survey (5,000 or less: N=199, 5,001-15,000: N=209, 15,001-25,000: N=96, More than 25,000: N=111). Multiple choice question.

Over three quarters of each of private, private government dependent, and public higher education institutions use quantitative surveys, as shown in the table below. A marginally higher proportion of private institutions use qualitative surveys and data mining while a higher share of public institutions has used data matching.

Table 32. Tracking measures used by public and private higher education institutions<sup>79</sup>

Type of tracking measure	Private higher education institutions		Private government dependent higher education institutions		Public higher education institutions	
	%	No.	%	No.	%	No.
Quantitative survey	85%	52	78%	64	80%	328
Qualitative survey	21%	13	9%	7	11%	46
Data matching	15%	9	16%	13	24%	100
Data mining	20%	12	12%	10	10%	40
Other	11%	7	9%	7	10%	41
None	5%	3	12%	10	7%	27

Source: ICF graduate tracking higher education institution survey (Private: N=61, Private government dependent: N=82, Public: N=409). Multiple choice question.

Around four-fifths of universities, universities of applied sciences, and other types of higher education institution conduct quantitative surveys. Other institutions are more likely to conduct qualitative surveys and data mining, which is to be expected given that these are often smaller institutions with more limited resources and capabilities.

Table 33. Tracking measures used by type of higher education institution<sup>80</sup>

Type of tracking measure	University		University of applied sciences		Other <sup>81</sup> higher education institution	
	%	No.	%	No.	%	No.
Quantitative survey	81%	344	79%	60	80%	40
Qualitative survey	11%	45	13%	10	22%	11
Data matching	23%	98	21%	16	16%	8
Data mining	11%	45	9%	7	20%	10
Other	11%	45	7%	5	10%	5

<sup>79</sup> The type of the higher education institution was obtained using the ETER database. 552 of the 615 respondents to our survey were matched with this data and did not contain missing information. The table therefore excludes the remaining 63 survey responses from the analysis.

<sup>80</sup> The legal status of the higher education institution was obtained using the ETER database. 552 of the 615 respondents to our survey were matched with this data and did not contain missing information. The table therefore excludes the remaining 63 survey responses from the analysis.

<sup>81</sup> Examples of the type of institutions in this category include engineering schools, university colleges, and art academies.

Type of tracking measure	University		University of applied sciences		Other <sup>81</sup> higher education institution	
	%	No.	%	No.	%	No.
None	8%	32	5%	4	8%	4

Source: ICF graduate tracking higher education institution survey (University: N=426, University of applied sciences: N=76, Other: N=50). Multiple choice question.

Around three fifths of higher education institutions responding to the survey have used only one type of tracking measure (61%, or 374 out of 615) as shown in the table below. Of these 374 higher education institutions, 85% chose to conduct a quantitative survey. Of those who have carried out more than one type of measure (39%), it was relatively uncommon for higher education institutions to conduct more than two, with only 10% doing so.

Table 34. Number of tracking measures used by higher education institutions

Number of tracking measures	All higher education institutions	
	%	No.
No tracking measures	7%	41
One tracking measure	61%	375
Two tracking measures	22%	136
Three tracking measures	8%	50
Four tracking measures	2%	13
Total	100%	615

Source: ICF graduate tracking higher education institution survey (N= 615).

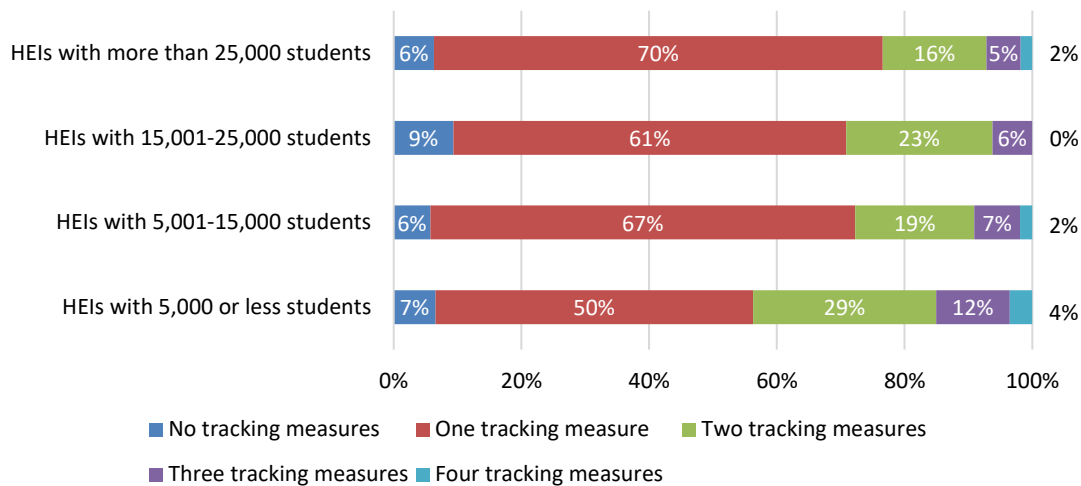
Where higher education institutions used qualitative methods they were typically used in conjunction with quantitative surveys (63 out of 78 higher education institutions using qualitative surveys, 81%) presumably to provide supplementary richer data. A similar proportion of higher education institutions that match administrative data to track graduates also use quantitative surveys. Again, these two methods typically provide quite different types of intelligence for higher education institutions.

There were no significant country level differences between the number of tracking measures used by higher education institutions<sup>82</sup>.

The number of tracking measures used varies by the size of higher education institution, as shown in the figure below. The largest higher education institutions typically focus on one tracking measure (70%), usually a quantitative survey, while a higher share of the smallest higher education institutions (45%) use two or more different types of tracking measure.

<sup>82</sup> The annex for chapter six contains a detailed breakdown of the number of tracking measures used by country.

Figure 8. Number of tracking measures used by size of higher education institution



Source: ICF graduate tracking higher education institution survey (5,000 or less: N=199, 5,001-15,000: N=209, 15,001-25,000: N=96, More than 25,000: N=111).

Over half of private, private government dependent, and public higher education institutions all used only one tracking measure. Private government dependent higher education institutions were twice as likely (12%) to have no tracking measures than private and public higher education institutions.

For all types of higher education institution, over half only used one tracking measure, and over a fifth used two tracking measures. The proportion using no tracking measures, three tracking measures, and four tracking measures were below 10% for all types of higher education institution. No universities of applied sciences used four tracking measures.

## 6.2 Use of quantitative and qualitative surveys

### 6.2.1 Methods used to administer the surveys

About nine out of ten (89%) respondents using a quantitative survey to track their graduates reported that it was administered online. Telephone surveys were used by 39% and paper surveys by 14% of higher education institutions, sometimes in conjunction with an online method to increase response rates. In a few (3%) higher education institutions several different surveys were administered and the methods varied depending on the curriculum area, study level or qualification type. Only 3% of institutions used other methods, which included administering surveys using social media (e.g. through platform-specific tools on LinkedIn and Facebook).

Qualitative surveys were most often administered through face-to-face interviews (45%), followed by focus groups (40%) and telephone interviews (37%). Workshops, online wiki chat rooms, and other methods were not used frequently. Examples of other informal methods included discussions through the alumni network. No respondents reported using webinars.

### 6.2.2 Graduate population coverage

Most higher education institutions only survey graduates that have completed their studies and were working in the country in which they studied. One in ten respondents undertaking quantitative surveys and 17% of respondents using qualitative surveys reported that they surveyed former students who left without graduating. Graduates and former students who migrated to another country after leaving their institution were only included in 33% of quantitative surveys and 27% of qualitative surveys.

More than four out of five higher education institutions using both quantitative and qualitative surveys focus on surveying graduates that studied at ISCED level 6 and 7.

ISCED level 8 graduates are covered in around a half of quantitative surveys and around a third of qualitative surveys. Few surveys include tracking of ISCED level 5 graduates. These results are in line with the scope of the study and dissemination efforts which targeted higher education institutions providing programmes at ISCED level 6 and above, as well as the additional measure of excluding higher education institutions with 50% or more of their students studying at ISCED level 5 from the survey analysis.

Table 35. ISCED levels included in quantitative and qualitative survey

ISCED level(s) covered in tracking measure	Higher education institutions that conduct <u>quantitative</u> surveys		Higher education institutions that conduct <u>qualitative</u> surveys	
	%	No.	%	No.
ISCED level 5 (Short-cycle tertiary education)	13%	65	9%	7
ISCED level 6 (Bachelor degree or equivalent)	84%	415	86%	66
ISCED level 7 (Master degree or equivalent)	94%	464	92%	71
ISCED level 8 (Doctoral degree or equivalent)	48%	234	32%	25

Source: ICF graduate tracking higher education institution survey (quantitative survey N=492; qualitative survey N=77). Multiple choice question.

### 6.2.3 Frequency of graduate tracking

Three quarters of higher education institutions conducting quantitative surveys (75%) and around half (47%) of higher education institutions conducting qualitative surveys run the survey every year. A relatively high proportion of qualitative surveys in particular are undertaken as and when required (33%). These results may suggest that qualitative surveys are not the primary source of data but are used to answer more specific ad hoc research questions about graduates where quantitative survey results do not provide sufficient insights.

Table 36. Frequency of graduate tracking using surveys

Frequency of data collection	Higher education institutions that conduct <u>quantitative</u> surveys		Higher education institutions that conduct <u>qualitative</u> surveys	
	%	No.	%	No.
Every year	75%	368	47%	36
Every two years	9%	43	9%	7
Every three years	6%	31	8%	6
Every four years	1%	3	1%	1

Frequency of data collection	Higher education institutions that conduct <u>quantitative</u> surveys		Higher education institutions that conduct <u>qualitative</u> surveys	
	%	No.	%	No.
Every five years	1%	6	1%	1
As and when required	8%	38	33%	25
Total	100%	489	100%	76

Source: ICF graduate tracking higher education institution survey (quantitative survey N=489; qualitative survey N=76).

#### 6.2.4 Stage at which data is collected and the use of follow-up tracking

The most common stage at which higher education institutions start undertaking tracking is 12-18 months after study completion for quantitative surveys and immediately after study completion for qualitative surveys. These results suggest that qualitative surveys are typically used to gather insights on graduate perceptions of their course and plans for the future, while quantitative surveys are initially used to capture the destinations and early outcomes of a cohort of graduates.

Table 37. Stage at which graduate tracking is first collected

Period after completion when tracking information is collected	Higher education institutions that conduct <u>quantitative</u> surveys		Higher education institutions that conduct <u>qualitative</u> surveys	
	%	No.	%	No.
Immediately after completion	11%	56	18%	13
Within three months	7%	32	5%	4
After 3-6 months	11%	54	14%	10
After 6-12 months	17%	82	16%	12
After 12-18 months	21%	102	12%	9
After 18 – 24 months	8%	39	8%	6
After 2-3 years	10%	49	5%	4
After 3-5 years	7%	36	5%	4
After 5+ years	1%	5	3%	2
Other <sup>83</sup>	7%	33	14%	10
Total	100%	488	100%	74

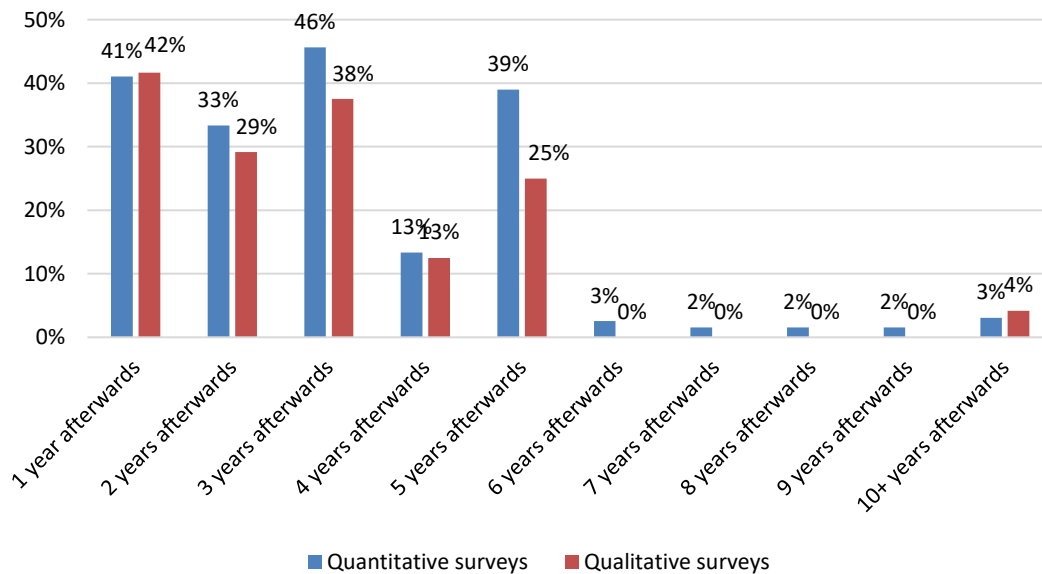
<sup>83</sup> Responses under “other” included: survey sent out to all graduates every three years and therefore initial time after graduating varies, five years after graduation, and on an ad hoc basis

Source: ICF graduate tracking higher education institution survey (quantitative survey N=488; qualitative survey N=74).

Overall, follow-up tracking of graduate cohorts is done by around one third of the higher education institutions using surveys. About two fifths of respondents who conduct quantitative surveys and 35% of those that conduct qualitative surveys track their graduates over time.

Among higher education institutions that do collect longitudinal data, most of the follow up data is collected either 1, 3, or 5 years after the initial stage of tracking. For higher education institutions conducting quantitative surveys, 100 out of the 195 institutions stated that they follow up on their graduates more than once. For qualitative surveys this was 8 out of 26.

Figure 9. Frequency of follow-ups for quantitative and qualitative surveys



Source: ICF graduate tracking higher education institution survey (quantitative survey N=195; qualitative survey N=24).

### 6.2.5 Sampling and response rates

More than four out of five survey respondents (83%) stated that their quantitative survey target the total graduate population instead of a sample. About 7% stated they targeted a total graduate population with a more specific definition (e.g. excluding those living abroad). Only 10% employ a formal sampling technique or use a convenience sample.

Where a higher education institution's survey has used a sample, there is a reasonably equal mix of sampling approaches used in both quantitative and qualitative surveys, as shown in the table below. For quantitative surveys, stratified sampling was the most popular technique (used by 40% of higher education institutions), which is often the most rigorous approach to collecting high quality and representative survey data from a sample.

higher education institutions most commonly did not use a formal sampling approach when using qualitative surveys (i.e. they achieved a convenience sample of graduates that were easy to reach) or used purposive sampling with criteria determined by the researcher(s).

Table 38. Sampling techniques employed by higher education institutions

Sampling approach	Higher education institutions that conduct <u>quantitative</u> surveys		Higher education institutions that conduct <u>qualitative</u> surveys	
	%	No.	%	No.
Stratified random sampling	40%	19	14%	9
Random sampling	28%	13	24%	15
Purposeful sampling	N/A	N/A	27%	17
No formal sampling approach (convenience sample)	32%	15	35%	22
Total	100%	47	100%	63

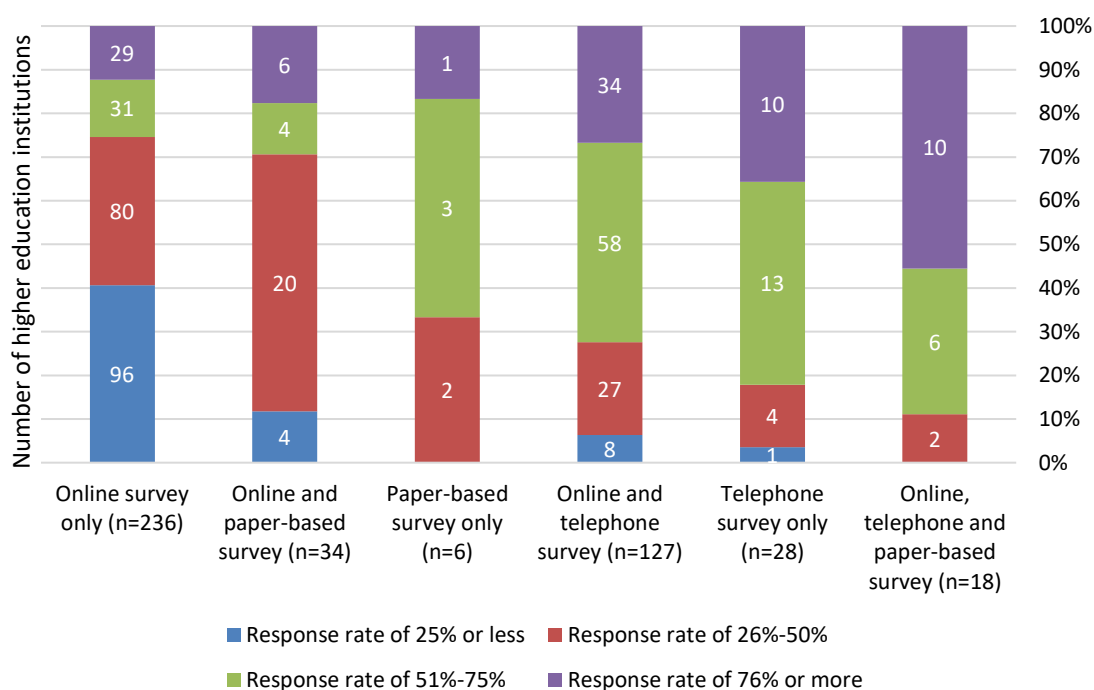
Source: ICF graduate tracking higher education institution survey (quantitative survey N=47; qualitative survey N=63)

There is considerable variation in the response rates that higher education institutions reported that they received to their quantitative surveys. Around one third of higher education institutions (31% of 468 higher education institutions that responded to this question) received a response rate to their graduate survey that was lower than 30% of their student population, which can be problematic when generalising findings if the overall size of the graduate population is relatively small. Nearly half (48%) of higher education institutions obtained more favourable response rates to their graduate surveys of above 50%, and around a quarter (27%) achieved a response rate of above 70%, which would provide data for robust statistical analysis.

The figure below shows that higher education institutions that only distributed their graduate tracking survey online often achieved a lower response rate compared to higher education institutions that used more than one survey method, particularly where the survey was administered via telephone too. Some of the counts for this breakdown are low so results should be treated with caution but whereas 75% of higher education institutions using only online methods have failed to achieve a 50% response rate, only around 28% of those using online and telephone failed to achieve 50%.



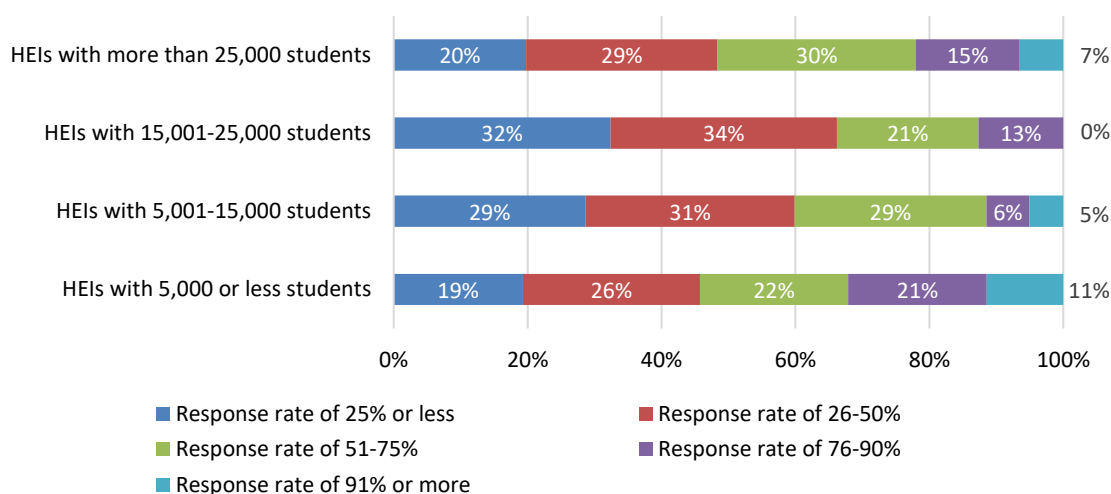
Figure 10. Quantitative survey response rates by method(s) used



Source: ICF graduate tracking higher education institution survey (N=number of respondents shown above). 'Don't know' responses and item non-responses removed from the analysis.

Further analysis of the graduate survey response rates achieved by size of higher education institution is presented in the figure below. It shows that about a third (32%) of small higher education institutions with 5,000 or less enrolled students achieved response rates to their surveys of more than 75% from their intended population of graduates. It is possible that smaller institutions are able to reach their overall target graduate population more easily. However, about one in five (22%) of the larger higher education institutions with more than 25,000 enrolled students also achieved a response rate above 75%, while medium sized higher education institutions typically had lower response rates to their graduate tracking surveys. It is possible that the largest institutions often have more resources and capability to invest in achieving high response rates to surveys than medium sized institutions.

Figure 11. Quantitative survey response rates by size of higher education institution



Source: ICF graduate tracking higher education institution survey (5,000 or less: N=140, 5,001-15,000: N=157, 15,001-25,000: N=71, More than 25,000: N=91).

### 6.2.6 The organisation, administration and management of the surveys

Both quantitative and qualitative surveys were predominantly organised and delivered by in-house staff as opposed to an external organisation. A lower proportion of responding higher education institutions using quantitative surveys said their institution's survey was conducted by in-house staff (73%) than for qualitative surveys (87%). This is not surprising given that quantitative surveys typically require more resources and technical expertise that some universities may not have.

Graduate tracking surveys in a large proportion of higher education institutions are administered by quality assurance staff. Overall, 26% of higher education institutions using quantitative surveys said they were administered by quality assurance staff, and a similar proportion were administered by quality assurance staff for higher education institutions using qualitative surveys (25%). Alumni liaison services also played a prominent role, with 14% of respondents using quantitative surveys and 21% using qualitative surveys reporting their responsibility for administering tracking measures. 75 higher education institutions reported using the careers service to administer their surveys.

Quality assurance staff also often *manage* graduate tracking surveys in addition to *administering* them (this was the case for 30% of respondents using quantitative surveys, and 25% using qualitative surveys). Alumni Liaison teams also manage graduate tracking surveys relatively commonly (13% for quantitative surveys and 21% for qualitative surveys). 82 higher education institutions reported using the careers service to manage their surveys.

Table 39. Administering and managing of surveys

Organisation responsible	Administering tracking measure				Managing tracking measure			
	Quantitative surveys		Qualitative surveys		Quantitative surveys		Qualitative surveys	
	No.	%	No.	%	No.	%	No.	%
Quality assurance staff	91	26%	17	26%	142	30%	19	25%
Alumni liaison team	50	14%	14	21%	62	13%	16	21%
Registrar's office team	30	9%	7	11%	31	7%	8	11%
Head(s) of department	6	2%	4	6%	15	3%	5	7%
Head(s) of faculty	6	2%	6	9%	9	2%	5	7%
Senior leadership team	5	1%	2	3%	20	4%	6	8%
Course tutors	3	1%	2	3%	3	1%	2	3%

Organisation responsible	Administering tracking measure				Managing tracking measure			
	Quantitative surveys		Qualitative surveys		Quantitative surveys		Qualitative surveys	
	No.	%	No.	%	No.	%	No.	%
Other	157 <sup>84</sup>	45%	14 <sup>85</sup>	21%	193 <sup>86</sup>	41%	15 <sup>87</sup>	20%

Source: ICF graduate tracking higher education institution survey

## 6.3 Use of administrative data

### 6.3.1 Graduate population coverage in data matching

At least nine out of ten higher education institutions responding to the survey that used administrative data matching as a tool tracked graduates at ISCED level 6 and level 7. This is similar to the coverage of quantitative and qualitative surveys. Almost half of the responses included ISCED level 8 but few covered ISCED level 5.

Table 40. ISCED levels included in data matching

ISCED level covered in tracking measure	Higher education institutions that conduct data matching	
	%	No.
ISCED level 5 (Short-cycle tertiary education)	15%	16
ISCED level 6 (Bachelor degree or equivalent)	95%	103
ISCED level 7 (Master degree or equivalent)	90%	97
ISCED level 8 (Doctoral degree or equivalent)	48%	52

Source: ICF graduate tracking higher education institution survey (N= 106). Multiple choice question.

Most of the higher education institutions tracking their graduates through data matching only cover graduates that have completed their course and live in the country where they have studied. Only 10% of respondents to this question stated that they used data matching for students that left without graduating, and only 16% reported that it covered students living abroad.

### 6.3.2 Frequency of tracking

Most (69%) institutions that conduct data matching do so every year. It is very uncommon for institutions to only follow up every four or five years, and only 13% do it as and when required.

<sup>84</sup> 75 out of 157 using "other" reported using the careers service

<sup>85</sup> 8 out of 14 using "other" reported using the careers service

<sup>86</sup> 82 out of 193 using "other" reported using the careers service

<sup>87</sup> 8 out of 15 using "other" reported using the careers service

Table 41. Frequency of graduate tracking using data matching

Frequency of data collection	Higher education institutions that conduct data matching	
	%	No.
Every year	69%	73
Every two years	8%	8
Every three years	8%	9
Every four years	1%	1
Every five years	1%	1
As and when required	13%	14
Total	100%	106

Source: ICF graduate tracking higher education institution survey (N = 106).

### 6.3.3 Stage at which tracking is collected and the use of follow-up tracking

Overall, most higher education institutions (71%) start collecting information about graduates through data matching within 18 months of their graduation, and almost a quarter (23%) collect information between 12 and 18 months after completion.

Table 42. Stage at which graduate tracking is first conducted using data matching

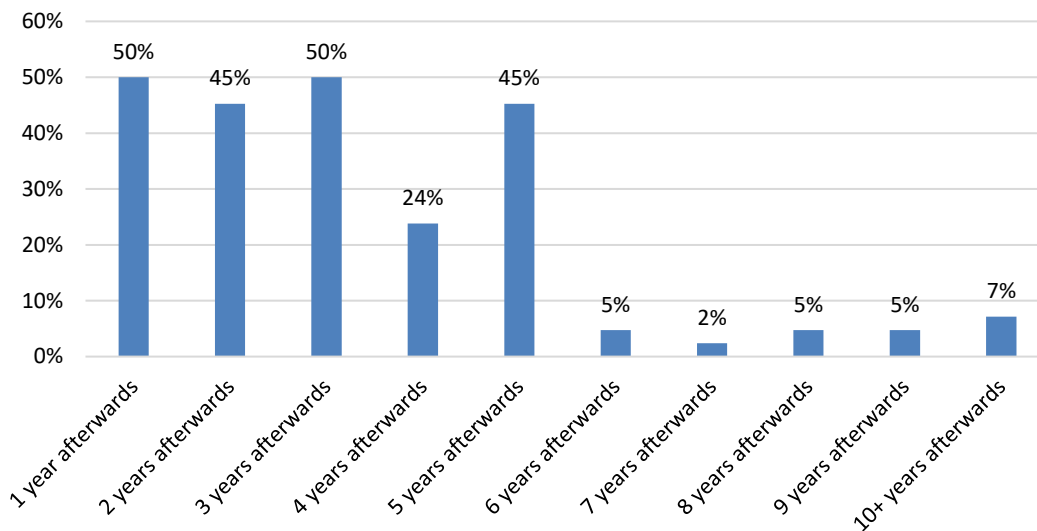
Period after completion when tracking information is collected	Higher education institutions that conduct data matching	
	%	No.
Immediately after completion	13%	14
Within three months	4%	4
After 3-6 months	10%	10
After 6-12 months	20%	21
After 12-18 months	24%	25
After 18 – 24 months	6%	6
After 2-3 years	5%	5
After 3-5 years	5%	5
After 5+ years	3%	3
Other <sup>88</sup>	11%	11
Total	100%	104

<sup>88</sup> Responses under “other” included: initial time of tracking is dependent on department, tracking is conducted continuously

Source: ICF graduate tracking higher education institution survey (N = 104). Percentages may not sum to 100% due to rounding.

Less than half of higher education institutions responding to the survey who use data matching to track their graduates repeated the exercise to track the same graduates over time (43 out of the 104 higher education institutions that responded to this question). Where follow-up data is collected, over half follow-up over multiple time periods and most do so again within the first five years after graduation. The figure below shows the time points at which higher education institutions typically collect data.

Figure 12. Frequency of follow ups for data matching



Source: ICF graduate tracking higher education institution survey (N = 42). Multiple choice question.

#### 6.3.4 Sampling

Almost four-fifths (78%) of higher education institutions use data for their total graduate population in a given cohort to conduct data matching. About 14% used a narrower definition of their total graduate population with some graduates removed such as those living abroad). Only 8% conducted data matching on a sample of graduates.

#### 6.3.5 The organisation, administration and management of data matching

The organisation and delivery of data matching was usually done by in-house staff (66%) as opposed to external organisations (33% of higher education institutions).

Over a quarter of higher education institutions responding to this question use quality assurance staff to administer data matching (28%). A relatively high proportion of data matching measures are also managed by the Registrar's office team (21%). The use of other institutions to administer data matching was reported by 25% of respondents, with 8 out of the total 18 of these responses referring to the use of the higher education institution's careers service. These departments are also most commonly responsible for managing data matching tracking exercises.

#### 6.3.6 External data sources used

Most higher education institutions conducting administrative data matching use government employment data to match their institution data on graduates (71%). Relatively few (17%) use government tax data and only 12% use data collected by commercial organisations. Over a fifth (23%) of survey respondents said their higher education institution used other external data sources, which included data collected from employers and social media such as LinkedIn.

Table 43. External data sources used to match institution data on graduates

Data source	Higher education institutions that conduct data matching	
	%	No.
Government employment data	71%	79
Government tax data	17%	19
Data collected by commercial organisations (e.g. recruitment companies)	12%	13
Other	23%	25
None	13%	15

Source: ICF graduate tracking higher education institution survey (N= 112). Multiple choice question.

## 6.4 Use of data mining

### 6.4.1 Graduate population coverage in data mining

At least three quarters of higher education institutions using data mining to track their graduates target graduates who studied at ISCED levels 6 and 7. Just under half of them include ISCED level 8 with much fewer including ISCED level 5 graduates. This is similar to the approach to undertaking surveys and data matching.

Table 44. ISCED levels covered in data mining

ISCED level covered in tracking measure	Higher education institutions that conduct data mining	
	%	No.
ISCED level 5 (Short-cycle tertiary education)	11%	8
ISCED level 6 (Bachelor degree or equivalent)	76%	56
ISCED level 7 (Master degree or equivalent)	92%	68
ISCED level 8 (Doctoral degree or equivalent)	45%	33

Source: ICF graduate tracking higher education institution survey (N = 74). Multiple choice question.

Over half (53%) of the higher education institutions that conduct graduate tracking through data mining aimed to capture information on both graduates and former students who have migrated to another country after leaving the institution. However, less than a quarter include former students who left without graduating. This is not surprising given that this group are likely to be harder to capture through data mining techniques, such as social media data web scraping, if these former students do not mention the institution or course they dropped out of.

### 6.4.2 Frequency of tracking

Over two-thirds (70%) of higher education institutions conducting data mining to track their graduates do so every year. However, a fifth of survey respondents stated that they conduct it as and when it is required.

Table 45. Frequency of graduate tracking using data mining

Frequency of data collection	Higher education institutions that conduct data mining	
	%	No.
Every year	70%	52
Every two years	3%	2
Every three years	5%	4
Every four years	0%	0
Every five years	1%	1
As and when required	20%	15
Total	100%	74

Source: ICF graduate tracking higher education institution survey (N= 74).

### 6.4.3 Stage at which tracking is first collected and follow-ups

Over three-quarters (76%) of survey respondents said their higher education institutions start collecting information about graduates through data mining within 18 months of graduation, and more than a quarter (28%) conduct it immediately after graduates complete their study. Only 2% of institutions start to collect tracking more than three years after study completion.

Table 46. Stage at which graduate information is first collected using data mining

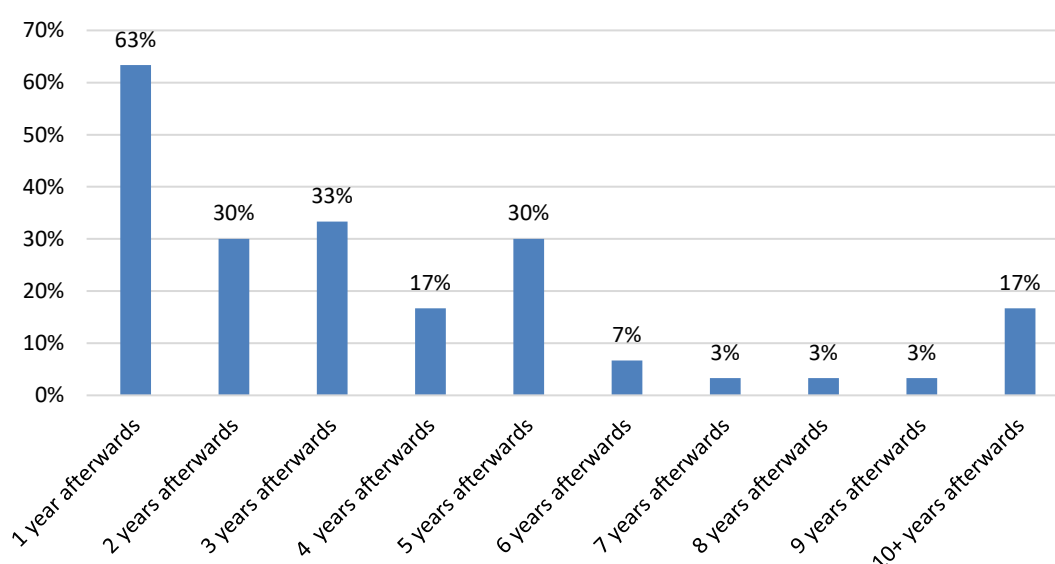
Period after completion when tracking information is collected	Higher education institutions that conduct data mining	
	%	No.
Immediately after completion	28%	20
Within three months	10%	7
After 3-6 months	14%	10
After 6-12 months	17%	12
After 12-18 months	7%	5
After 18 – 24 months	4%	3
After 2-3 years	3%	2
After 3-5 years	1%	1
After 5+ years	1%	1

Period after completion when tracking information is collected	Higher education institutions that conduct data mining	
	%	No.
Other <sup>89</sup>	14%	10
Total	100%	71

Source: ICF graduate tracking higher education institution survey (N = 71). Percentages may not sum to 100% due to rounding.

Just under half (49%) of higher education institutions conducting data mining collect follow up information on the same graduates over time. When they do follow-up with graduates, most collect data one year after the initial stage of tracking. Fourteen out of the 21 higher education institutions that conduct follow up tracking using data mining follow up over more than one time period.

Figure 13. Frequency of follow ups for data mining



Source: ICF graduate tracking higher education institution survey (N=30). Multiple choice question.

#### 6.4.4 The organisation, administration and management of data mining

The organisation and delivery of data mining is typically undertaken by in-house staff (reported by 92% of respondents). Only six respondents reported that they use an external organisation.

Similar to other institutional graduate tracking measures, data mining is commonly administered by alumni liaison teams (36%). About a third (29%) indicated that they use other institutions to manage it. 8 out of the 21 higher education institutions using other institutions stated that they used the careers service to administer surveys.

<sup>89</sup> Examples of responses in “other” include: as and when required, during their studies



## 6.5 Information collected in higher education institution graduate tracking measures

### 6.5.1 Data collected in surveys

Employment outcomes are most commonly collected in quantitative and qualitative surveys. This includes data on employment status, type of employment and matching between job and qualification. These variables are collected in over 80% of quantitative surveys and over 70% of qualitative surveys.

For quantitative surveys, other variables commonly collected include duration of employment, salary level, length of job search and satisfaction with job and higher education institution. Data on these variables is collected in around 65-75% of surveys. For qualitative surveys over half collect information on graduates' satisfaction with their job, the higher education institution (including the teaching in the institution), and duration of their employment.

Relatively few quantitative and qualitative graduate tracking surveys collect information on participation in volunteering or civic/community activities and reasons for pursuing further education.

Table 47. Data collected in surveys

Information collected	Higher education institutions that conduct quantitative surveys		Higher education institutions that conduct qualitative surveys	
	%	No.	%	No.
Employment status (employed/not employed)	99%	481	86%	64
Type of employment (permanent/temporary; part-time/full time; employment contract/self-employed, other)	89%	433	74%	55
Matching between job and qualification (job fits obtained qualification / job requires another qualification / job below qualification/skill set)	83%	404	73%	54
Salary level	77%	374	53%	39
Length of job search after graduation (first job/good job)	73%	358	39%	29
Duration of employment/unemployment (employed/unemployed since ...)	72%	352	58%	43
Satisfaction of graduates with current job	70%	341	59%	44
Satisfaction of individuals with the educational institution	64%	314	54%	40
Matching between position and level of education	64%	313	59%	44

Information collected	Higher education institutions that conduct <u>quantitative</u> surveys		Higher education institutions that conduct <u>qualitative</u> surveys	
	%	No.	%	No.
Participation in further education or training pathways	59%	289	35%	26
Satisfaction rate of individuals with instruction received (acquired skills/competences)	58%	285	53%	39
Further qualifications achieved	46%	225	41%	30
Satisfaction with income / salary level	41%	202	31%	23
Satisfaction of individuals with the form of delivery of curriculum	41%	200	39%	29
Other	40%	194	34%	25
Reasons for pursuing further education	36%	175	36%	27
Participation in volunteering or civic/community activities	23%	113	19%	14

Source: ICF graduate tracking higher education institution survey (quantitative survey N=488; qualitative survey N=74). Multiple choice question.

### 6.5.2 Data collected through administrative data matching

The most common indicators collected through data matching are employment status (reported by 93% of respondents) followed by type of employment and salary level. As might be expected, few higher education institutions' matching datasets on their graduates capture data to assess satisfaction of employers with skills/competences, satisfaction of individuals with the form of delivery of curriculum (unless they match survey responses), participation in volunteering or civic/community activities, and reasons for pursuing further education.

It is more common for survey methods across different higher education institutions to collect similar types of data than matching methods. The majority of surveys collect data on most of the indicators included in the above tables, whereas there is a wider discrepancy in the data collected in data matching. This could be due to variations in quality of the administrative data used to match graduate outcomes across countries and higher education institutions. It would also be more difficult to collect more subjective data on satisfaction rates using matching than with surveys.

Table 48. Data collected through data matching

What information is collected?	Higher education institutions that conduct data matching	
	%	No.
Employment status (employed/not employed)	93%	100
Type of employment (permanent/temporary; part-time/full time; employment contract/self-employed, other)	72%	77
Salary level	58%	61
Duration of employment/unemployment (employed/unemployed since ...)	55%	58
Matching between job and qualification (job fits obtained qualification / job requires another qualification / job below qualification/skill set)	48%	51
Length of job search after graduation (first job/good job)	41%	43
Matching between position and level of education	32%	34
Participation in further education or training pathways	30%	32
Satisfaction of individuals with the educational institution	26%	28
Further qualifications achieved	26%	28
Satisfaction of graduates with current job	25%	27
Satisfaction with income / salary level	23%	24
Satisfaction rate of individuals with instruction received (acquired skills/competences)	22%	23
Other	21%	22
Reasons for pursuing further education	12%	13
Satisfaction of individuals with the form of delivery of curriculum	11%	12
Participation in volunteering or civic/community activities	9%	10

Source: ICF graduate tracking higher education institution survey (N = 106). Multiple choice question.

### 6.5.3 Data collected through data mining

Data mining is mostly used to collect information on employment status (reported by 86% of respondents). Over a third of respondents said they collect information on graduates' type of employment and matching the fit between graduates' job and qualification. Less than a quarter of institutions collect any data on satisfaction with income/salary level, length of job search, and satisfaction rate of employers with acquired skills/competences. This information is collected far more frequently in the

surveys, which is to be expected given that those research methods are better suited to collecting these kinds of variables.

Table 49. Data collected through data mining

What information is collected?	Higher education institutions that conduct data mining	
	%	No.
Employment status (employed/not employed)	86%	59
Type of employment (permanent/temporary; part-time/full time; employment contract/self-employed, other)	54%	37
Matching between job and qualification (job fits obtained qualification / job requires another qualification / job below qualification/skill set)	43%	30
Duration of employment/unemployment (employed/unemployed since ...)	41%	28
Salary level	41%	28
Satisfaction of individuals with the educational institution	41%	28
Other	38%	26
Satisfaction of graduates with current job	36%	25
Further qualifications achieved	36%	25
Length of job search after graduation (first job/good job)	30%	21
Participation in further education or training pathways	30%	21
Matching between position and level of education	26%	18
Satisfaction rate of individuals with instruction received (acquired skills/competences)	26%	18
Satisfaction with income / salary level	25%	17
Satisfaction of individuals with the form of delivery of curriculum	25%	17
Participation in volunteering or civic/community activities	25%	17
Reasons for pursuing further education	19%	13

Source: ICF graduate tracking higher education institution survey (N = 69). Multiple choice question.

## 6.6 Main differences and commonalities between methods

Some key differences and commonalities between different methods higher education institutions use to track their graduates are summarised below.

**Graduate population coverage** of tracking measures: All methods focus on collecting data from ISCED levels 6 and 7. Across all methods, data mining is most likely to include graduates/former students who have migrated to another country after leaving their studies (53%).

**Timing and frequency** of graduate tracking measures: For all methods, tracking is most commonly conducted every year for a new cohort of graduates. For quantitative surveys and data matching, it is most likely for higher education institutions to initially collect graduate tracking information 12-18 months after completing their study. Data mining is mostly undertaken immediately after graduates complete their studies. For qualitative surveys, there is a relatively even distribution across the different time points for initially contacting graduates.

**Organisation, administration and management** of tracking measures: For all tracking methods, the majority of higher education institutions manage and deliver them in house. Across higher education institutions conducting quantitative surveys, qualitative surveys, and data matching, tracking methods are most commonly administered and managed in-house. While there is some variation by method, in-house staff responsible for managing and administering graduate tracking measures are often either quality assurance staff, alumni liaison staff or careers service staff.

**Content of data collected:** Quantitative and qualitative surveys are almost twice as likely to collect information on the satisfaction of graduates with their current job than data mining or data matching, which are less well suited to capturing such data unless surveys are part of the data matching. Quantitative surveys are also more likely to collect information on salary level and the length of job search after graduation than any other tracking method. Where tracking measures are conducted nationally at system level, matching administrative data may be a more reliable method to capture graduate salary data than self-reported survey results, but this analysis is typically not possible for individual higher education institutions to undertake. For all tracking methods, it is relatively uncommon for higher education institutions to collect data relating to graduate participation in volunteering or civic/community activities. This is surprising given the wider expectation of higher education institutions' education and graduate outcomes.

## 6.7 Availability and types of contact information held by higher education institutions

Private email addresses are the most common type of contact information held by higher education institutions, with four out of five higher education institutions who responded having these details available to contact graduates, as shown in the table below. Three quarters (74%) of respondents said their higher education institution store more than one type of contact detail.

Table 50. Contact details stored on graduates

Type of contact details	All higher education institutions	
	%	No.
Private e-mail addresses	80%	493
Telephone numbers	61%	378
Institutional e-mail addresses	54%	330
Home addresses	50%	309

Source: ICF graduate tracking higher education institution survey (N = 615). Multiple choice question.

Graduate contact details are most often collected/updated when students enrol in their higher education institution. Almost three quarters (72%) of respondents said their higher education institution collects contact information at this point, dropping to 50% of higher education institutions that collect information when students are about to graduate, and 38% that collect information after students graduate. Nearly half collect/update details at multiple time points.

## 6.8 How higher education institutions use graduate tracking data

More than four out of five (85%) higher education institutions use the results from their graduate tracking measures for internal quality assurance purposes, as shown in the table below. This is perhaps unsurprising given that quality assurance teams most commonly manage and administer the tracking measure. Over half of survey respondents also reported that the results are used to support strategic planning, in external inspections, for marketing purposes, and/or to inform curriculum planning.

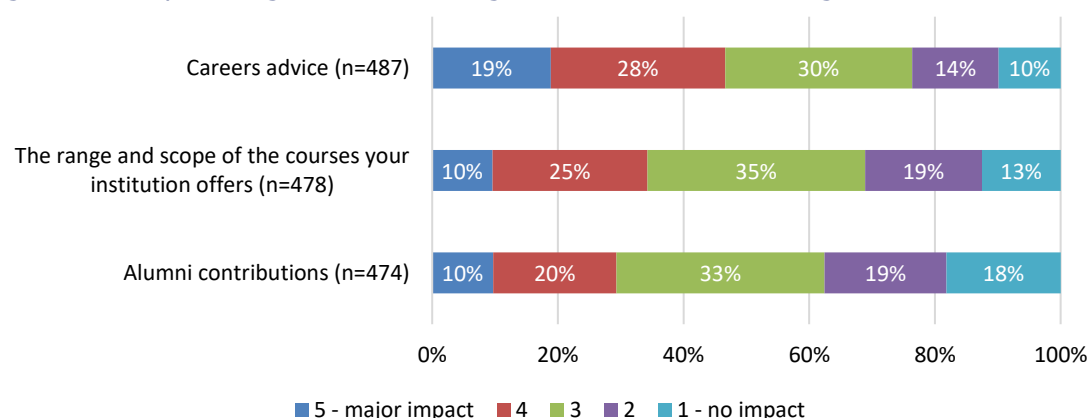
Table 51. How results are used across institutions

How higher education institutions use graduate tracking data	All higher education institutions that conduct graduate tracking	
	%	No.
For internal quality assurance	85%	464
To support strategic planning	74%	409
In external inspections, (re-)accreditation	74%	407
For marketing the institution to new students (e.g. promoting information on positive graduate outcomes and destinations)	73%	402
To inform curriculum planning	66%	364
To inform departmental reviews	38%	207
To inform staff performance reviews	17%	93
Other	7%	39

Source: ICF graduate tracking higher education institution survey (N = 549). Multiple choice question.

Higher education institutions were asked to rate the impact the results of their graduate tracking had on different areas of their institution between 1 (no impact) and 5 (major impact), as shown in the figure below. This found that graduate tracking has the greatest impact on careers advice higher education institutions offer their students, where 47% of respondents thought it had a large impact (grade 4 or 5). Around a third (35%) reported it had a large impact on the range and scope of the courses their institution offers and 30% reported it had a large impact on alumni contributions (e.g. financial donations to higher education institutions from former students).

Figure 14. Impact of graduate tracking on different areas of higher education institutions



Source: ICF graduate tracking higher education institution survey. N=number of respondents answering each question.

Higher education institutions were also asked about the methods they employed to benchmark the results of their graduate tracking measures. Three quarters of higher education institutions compare performance with previous years (77% of respondents) and half (52%) also compare the results of institutional tracking with national tracking survey data, while over a third (37%) compare their results with other higher education institutions or across different departments (44%).

Table 52. Benchmarking the results of graduate tracking measure

Benchmarking approach	All higher education institutions that conduct graduate tracking	
	%	No.
Compare performance with previous years	77%	392
Compare results with national tracking survey data	52%	263
Compare graduates in different departments	44%	224
Compare results with other individual higher education institutions	37%	189
Compare particular groups of programmes	35%	179
Other	11%	57
No comparison done	11%	57

Source: ICF graduate tracking higher education institution survey (N = 510). Multiple choice question.

## 6.9 Reasons for not undertaking graduate tracking

The most common reason why respondents reported that their higher education institutions does not conduct graduate tracking is a lack of available resources. In the survey, 14 of the 34 respondents for higher education institutions that do not conduct graduate tracking stated this was a high influence (rated 5 on a scale of 1-5). A further

10 stated a major reason why their institution does not do graduate tracking is because they could access relevant data from national organisations running national graduate tracking initiatives instead. Only three respondents stated that they do not conduct any institutional graduate tracking because they did not feel it would bring any value.

Table 53. Influence of factors in choosing to not conduct tracking

Factor	Higher education institutions that do not conduct graduate tracking				
	1 – no influence	2	3	4	5 – high influence
Can get the information from national organisations running national initiatives*	12	3	4	5	10
Do not believe there is a value in it**	26	0	2	1	2
We do not have the resources to do it***	5	2	4	8	14
We do not believe it provides good quality data****	25	1	4	0	2
Tutors are disinclined to participate*****	24	1	3	0	1

Source: ICF graduate tracking higher education institution survey (\*N=34, \*\*N=31, \*\*\*N=33, \*\*\*\*N=32, \*\*\*\*\*N=29)

## 6.10 Key summary points

**The survey has identified that graduate tracking is generally well-embedded in higher education institutions across EU and EEA countries:**

- Four out of five survey respondents said their higher education institution hold private email addresses for their graduates, while only half said they store home address contact details.
- More than nine out of ten survey respondents said their higher education institution undertakes some form of graduate tracking. The existence of good measures at national level appears to save resources for higher education institutions in some countries that are less likely to undertake institutional graduate tracking. Examples include the UK and Norway.

**Most higher education institutions reported that they undertook a questionnaire survey to which they invited cohorts of graduates for whom they had contact details to complete online.**

- Quantitative surveys are the most common form of graduate tracking and are used by more than four out of five higher education institutions, typically administered online. Smaller higher education institutions are more likely to conduct qualitative surveys such as interviews and focus groups.
- About three fifths of higher education institutions only use one tracking measure. Where higher education institutions use qualitative surveys or match administrative data this is often in addition to a quantitative survey of their graduates.



- Higher education institutions typically limit their tracking to former students who complete their studies and remain in the same country. Graduates from programmes at ISCED levels 6 and 7 are most commonly included.

**The quality of institutional tracking varies considerably.**

- For quantitative graduate tracking surveys, around two thirds of higher education institutions said they use some form of random sampling and nearly half said they achieve a response rate of 50% or more. However, around a third of those sampling use a convenience sample.
- Sampling may account for some of the poor level of response higher education institutions receive to their quantitative surveys. For around a third it is reported to be lower than 30%. Under half (43%) of higher education institutions graduate surveys obtain more favourable response rates above 50%. Around a quarter (25%) achieve a response rate of above 70%, which would provide sufficient data for detailed sub-group analysis (by programme and graduate characteristics).
- Higher education institutions that only distribute their graduate tracking survey online more often achieve a lower response rate compared to higher education institutions that use more than one survey method, particularly where the survey is administered via telephone too. Three quarters of higher education institutions using only online methods failed to achieve a 50% response rate compared to just under a third (28%) of those using online and telephone.
- A little over two thirds of higher education institutions implement their tracking measure within 18 months of graduation. The majority of higher education institutions do not track their graduates over more than one time period to collect longitudinal data.

**Tracking measures most commonly capture data on graduates' employment status, job level and salary.**

- Less than a quarter of higher education institutions using each type of tracking measure capture data on participation in volunteering or civic/community activities, and similarly reasons for pursuing further education was a measure much less commonly collected by individual higher education institutions.
- Overall, collected data typically has a larger impact on the careers' advice higher education institutions give their students than other areas, such as the range and scope of courses they offer or financial contributions from alumni.
- About three quarters of higher education institutions said they use their institutional graduate tracking data to inform strategic planning, internal quality assurance and/or external inspection.

## 7 Conclusions

In this final chapter, the first section considers what the findings of the study set out in chapters 2-6 indicate for each of the research questions. The second section draws out the implications for the work of the Expert Network and the Commission. This is followed by some potential recommendations for their consideration.

### 7.1 Addressing the research questions

#### 7.1.1 What is the general coverage of graduate tracking at system level, both of higher education and vocational education and training graduates?

***There is a strong policy driver and impetus in most but not all countries to implement graduate tracking. This has resulted in a range of recent and planned developments in many countries to improve their graduate tracking, although some are not at an advanced stage of implementation.***

Graduate tracking is a policy objective in 24 countries and a legal obligation in 16 countries, out of the 32 EU Member States and EEA countries. Countries where graduate tracking is a legal obligation, tend to have system-level tracking. For vocational education and training, this is the case in DK, EE, ES, FI, FR, HU, IT, NL, PT and SE. For higher education, this is the case in AT, DE, DK, EE, FI, FR, HU, IT, PL, SE and UK. In LV, there is a legal obligation covering both vocational education and training and higher education and graduate tracking measures are currently being developed for the two sectors. This is summarised in the tables below.

However, a legal background is not a necessary condition for regular graduate tracking. Countries where graduate tracking is among policy objectives, tend to have system-level tracking, even in the absence of a legal obligation to track. For vocational education and training, this is the case in AT, BE-FR, IE, LT, SK and UK. For higher education, this is the case in CZ, ES, IE, LT, NL, and SK. In BG graduate tracking is among policy objectives in vocational education and training, and a system-level measure covering vocational education and training graduates is currently being piloted. In BE-FR and SI graduate tracking is among policy priorities in higher education and system-level measures to track higher education graduates are under development. HR, MT and RO also refer to graduate tracking in their policy objectives but these countries have only conducted pilot studies or one-off initiatives.

In a few countries, system-level graduate tracking is an established practice even if not a legal obligation or policy priority. In vocational education and training, this is the case in BE-NL, CZ, DE, LU, and NO. In higher education, this is the case in BE-NL and NO.

*Table 54. Graduate tracking as policy objective and legal requirement. Vocational education and training (initial vocational education and training and/or continuing vocational education and training)*

	System level tracking	Policy objective	Legal obligation
<b>AT</b>	Yes	Yes	No
<b>BE-FR</b>	Yes	Yes	No
<b>BE-NL</b>	Yes	No	No
<b>BG</b>	No – ongoing pilot	Yes	No
<b>CY</b>	No	No	No

	<b>System level tracking</b>	<b>Policy objective</b>	<b>Legal obligation</b>
<b>CZ</b>	Yes	No	No
<b>DE</b>	Yes	No	No
<b>DK</b>	Yes	Yes	Yes
<b>EE</b>	Yes	Yes	Yes
<b>EL</b>	No	No	No
<b>ES</b>	Yes	Yes	Yes
<b>FI</b>	Yes	Yes	Yes
<b>FR</b>	Yes	Yes	Yes
<b>HR</b>	No	Yes	No
<b>HU</b>	Yes	Yes	No
<b>IE</b>	Yes	Yes	No
<b>IS</b>	No	No	No
<b>IT</b>	Yes	Yes	Yes
<b>LI</b>	No	No	No
<b>LT</b>	Yes	Yes	No
<b>LU</b>	Yes	No	No
<b>LV</b>	No - under development	Yes	Yes
<b>MT</b>	No	Yes	No
<b>NL</b>	Yes	Yes	Yes
<b>NO</b>	Yes	No	No
<b>PL</b>	No - under development	No	No
<b>PT</b>	Yes	No	Yes
<b>RO</b>	No - recent pilots	Yes	No
<b>SE</b>	Yes	Yes	Yes
<b>SI</b>	No	No	No
<b>SK</b>	Yes	Yes	No
<b>UK</b>	Yes	Yes	No

Source: mapping research conducted by ICF, 3s and CHEPS

Table 55. Graduate tracking as policy objective and legal requirement. Higher education

	<b>System level tracking</b>	<b>Policy objective</b>	<b>Legal obligation</b>
<b>AT</b>	Yes	Yes	Yes
<b>BE-FR</b>	No	Yes	No
<b>BE-NL</b>	Yes	No	No
<b>BG</b>	Yes	Yes	No

Mapping the state of graduate tracking policies and practices in the EU Member States and EEA countries

	System level tracking	Policy objective	Legal obligation
<b>CY</b>	No	No	No
<b>CZ</b>	Yes	Yes	No
<b>DE</b>	Yes	Yes	Yes
<b>DK</b>	Yes	Yes	Yes
<b>EE</b>	Yes	Yes	Yes
<b>EL</b>	No – participated in Eurograduate survey	No	No
<b>ES</b>	Yes	Yes	No
<b>FI</b>	Yes	Yes	Yes
<b>FR</b>	Yes	Yes	Yes
<b>HR</b>	No – participated in Eurograduate survey	Yes	No
<b>HU</b>	Yes	Yes	Yes
<b>IE</b>	Yes	Yes	No
<b>IS</b>	No	No	No
<b>IT</b>	Yes	No	Yes
<b>LI</b>	No	No	No
<b>LT</b>	Yes	Yes	No
<b>LU</b>	No <sup>90</sup>	No	No
<b>LV</b>	No – under development	Yes	Yes
<b>MT</b>	No – participated in Eurograduate survey	Yes	No
<b>NL</b>	Yes	Yes	No
<b>NO</b>	Yes	No	No
<b>PL</b>	Yes	Yes	Yes
<b>PT</b>	No	No	No
<b>RO</b>	No	Yes	No
<b>SE</b>	Yes	Yes	Yes
<b>SI</b>	No	Yes	No
<b>SK</b>	Yes	Yes	No
<b>UK</b>	Yes	Yes	Yes

Source: mapping research conducted by ICF, 3s and CHEPS

<sup>90</sup> Note: In Luxembourg no evidence has been found of higher education graduate tracking at system level. However, the only Luxembourgish higher education institution that falls within the scope of this study -the University of Luxembourg- conducts an annual survey to track its graduates. Therefore, it can be considered that the country does in fact track its graduates and has an established graduate tracking practice.

At present, system-level graduate tracking is in place for vocational education and training in 20 countries: AT, BE-FR, BE-NL, CZ, DE, DK, EE, ES, FI, FR, IE, IT, LT, LU, NL, NO, PT, SE, SK and UK. For higher education, it is in place in 20 countries: AT, BE-NL, BG, CZ, DE, DK, EE, ES, FI, FR, HU, IE, IT, LT, NL, NO, PL, SE, SK and UK.

Three countries are taking clear steps towards the implementation of systematic graduate tracking in vocational education and training (BG, LV) or higher education (LV, SI). In BE-FR a new measure to track higher education graduates was announced in 2014 but has not yet been launched. In LI and PL (vocational education and training) new measures have been announced or are currently under discussion but there is little evidence of concrete developments so far.

In HR, MT, RO, there have been pilot studies or one-off graduate tracking initiatives, but systematic tracking is not likely to be in place in the near future. In the remaining countries, there have been no recent efforts towards the development of system-level graduate tracking where it is unavailable: in higher education and vocational education and training (CY, EL, IS) or in higher education (PT).

### ***The abundance of tracking measures contrasts with their considerable differentiation and limited coordination***

Most countries have a variety and range of tracking measures which broadly divide between using either surveys or administrative data. There are as many as nine national measures at system-level in one country, covering different sectors and different graduate populations, and using different data collection approaches to cover the same sector or graduate population. In addition, several countries have measures at the regional level, and all countries have a multitude of measures at institutional level in both higher education and vocational education and training. However, there are often weak or no links between the design of tracking measures by different organisations. Mechanisms to ensure the complementarity of tracking measures have only been identified in ten countries.<sup>91</sup>

Having convergence of the different measures in a country is a precondition to enabling comparability. This can be done, for instance, by formulating key survey questions in the same way for higher education and vocational education and training graduates, or graduates in different programmes, higher education institutions or regions.

Complementary measures can also increase the efficiency of graduate tracking by avoiding the collection of similar information from the same individuals more than once e.g. through administrative data and surveys; or through surveys implemented at system and institutional level. In the case of surveys, redundant data collection contributes to 'survey fatigue' and lower response rates for repeated cycles of surveys which are widely reported.

Some countries have implemented mechanisms to enhance the complementarity of system-level measures, and the synergies of these measures with those undertaken at institutional or other levels. For instance, in the Netherlands, there is mutual consultation on the design of the main graduate surveys, resulting in a convergence of questions at national level. Several countries offer higher education institutions or other entities (trade unions, regional authorities) the opportunity to include their own questions in tracking surveys.<sup>92</sup> Such initiatives could be used as inspiration for other countries to increase coherence and efficiency in graduate tracking.

A specific case is that of the tracking measures of ESF-funded education and training, further discussed below.

### ***The quality of graduate tracking measures is variable***

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<sup>91</sup> DK, FI, FR, HU, IE, IT, LV, NL, RO and UK.

<sup>92</sup> DK, FI, HU, IT, NL, RO, UK.

There are different elements to the quality of tracking measures. The main key limitations include the lack of representativeness of the achieved sample due to low response rates and the use of convenience sampling with e-surveys;<sup>93</sup> a limited coverage of graduate groups; and a limited coverage of the data collected.

Low response rates are the most common difficulty faced in the implementation of graduate surveys and was identified in 18 system-level measures. Non-respondents may well be reluctant to participate if they have not obtained suitable employment or started an intended career. If they differ from those who participate in the survey, this has implications for the extent that they can infer from the sample to the target population. Also, low response rates hinder the analysis of disaggregated data for particular graduate subgroups (e.g. graduates from different programmes or with different socio-economic backgrounds).

The use of convenience sampling is relatively common in graduate tracking: it was used in 12 of the system-level measures identified. This approach can leave out harder-to-reach individuals and also limits the extrapolation of findings from the collected data to the full graduate population.

Many countries are using more robust sampling techniques and have developed strategies and devoted resources to ensure high response rates from samples and whole populations. Often, high response rates are linked to the use of short survey questionnaires. Combining surveys and administrative data by matching individuals can help keep questionnaires short without losing relevant information on individuals' trajectories after graduating. More factual data can be collected from administrative databases (e.g. on employment status, salary, etc.), and surveys can focus on the reasons behind career pathways and thus be kept shorter.

Regarding the coverage of different graduate groups, continuing vocational education and training graduates are less often covered by tracking measures than higher education and initial vocational education and training graduates. Also, measures may not comprehensively cover all continuing vocational education and training programmes and providers (e.g. only those receiving ESF-funded training).<sup>94</sup> Graduate tracking can however provide valuable data on continuing vocational education and training's contribution to upskilling adults, and the resulting individual benefits and social and economic impact. One of the key features of the Cedefop analytical framework for developing upskilling pathways, is the establishment of overarching monitoring and evaluation systems;<sup>95</sup> tracking data of continuing vocational education and training graduates could be a centrepiece of such systems.

Only a minority of the system-level measures identified include graduates who move to another country after graduation. Tracking migrant graduates may be particularly relevant for countries and regions with high levels of graduates moving abroad. A recent study identified as the main 'senders' of skilled workers among EU countries BG, EE, HR, LV, LT, PL, PT, RO and SK, and as both strong 'receivers' and 'senders' IE and LU.<sup>96</sup> Particularly relevant would be to understand the trajectories of migrant graduates from science, technology, engineering, and mathematics (STEM) or other disciplines in high demand in the graduates' country -or region- of origin. Such data could help

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<sup>93</sup> This topic is also discussed in European Commission (2017). Mapping of vocational education and training graduate tracking measures in EU Member States.

<sup>94</sup> See also European Commission (2017). Mapping of vocational education and training graduate tracking measures in EU Member States.

<sup>95</sup> See Cedefop. Analytical framework for developing upskilling pathways for adults (Key Area 4). Available at: [https://www.cedefop.europa.eu/files/cedefop\\_af\\_upskilling\\_pathways\\_20-21.05.2019.pdf](https://www.cedefop.europa.eu/files/cedefop_af_upskilling_pathways_20-21.05.2019.pdf) (accessed on 30/01/2020).

<sup>96</sup> European Commission (2018). Study on the movement of skilled labour. Available at <https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8156&furtherPubs=yes> (accessed 28/01/2020).

further understand what drives graduates to move and inform policy responses to brain flow.

Regarding topic coverage, most of the measures identified collected data on employment status, further education and training pathways, and socio-biographical and socioeconomic information. However, only around half of the measures collected information on the relevance of acquired skills at the workplace and graduates' satisfaction with the education received or the employment acquired. Such data is key to understand the match between graduates' skills and the needs of the labour market.

Also, only 13 out of 123 measures collected data on the participation of graduates in social and civic activities, including the Eurograduate survey and national measures from DE, FI and the UK.<sup>97</sup> Social and civic activities are not only learning experiences -thus contributing to the update and further development of graduates' skills- but also evidence the impact of education in society. Education at all levels has been considered key to the promotion of common values and social cohesion and the European Council has called Member States to improve 'evidence-informed policy making on the social and civic dimensions of education and training'.<sup>98</sup> Graduate tracking data can provide valuable insights into this dimension in vocational education and training and higher education but it seems this opportunity is rarely exploited. The module on social outcomes of the Eurograduate survey and the identified national examples could serve as inspiration to improve the measurement of the social impact of vocational education and training and higher education across the EU.

***Graduate tracking data is used to improve programmes' alignment with labour market needs through a variety of mechanisms. However, tracking data needs to be contextualised and used with other data.***

Graduate tracking information can bring valuable insights to the labour market relevance of different programmes. Programmes consistently linked to high employment over several years, are likely to be better aligned with labour market needs. Other programmes may need to be adapted to increase their quality and the employability of their graduates.

Over a third of the tracking measures identified in this study have been used to support curriculum design and improvement -including to ensure it is up to date- to improve graduate skills and employability (53 out of 123 measures). Education providers may receive support in this endeavour through external quality assurance. Graduate tracking results were part of external quality assurance in 26 measures. In this context, tracking results can also be used to prove that education programmes meet labour market needs for instance as part of (re)accreditation mechanisms.

Graduate tracking results can also be linked to guidance tools or incentive mechanisms, such as performance-based funding (including as part of funding formulae) or performance or development agreements, linked or not to funding.<sup>99</sup> Such mechanisms are used by governments to influence the policies of higher education institutions or vocational education and training providers and increase their performance in different areas, for instance, the labour market relevance of their programmes. Graduate tracking is used in these ways in 24 of the measures identified here.

Tracking data is also currently used by 15 countries as part of their planning of course offers. This typically involves limiting student intake in programmes or fields whose

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<sup>97</sup> DE (National Educational Panel Study NEPS, covering INITIAL vocational education and training and higher education), FI (Career monitoring for master's level graduates) and UK (Graduate Outcomes survey and College Leaver Destinations). Other examples include one-off measures or measures still under development.

<sup>98</sup> Council Recommendation of 22 May 2018 on promoting common values, inclusive education, and the European dimension of teaching (Official Journal of the European Union 7/6/2018, C 195/1).

<sup>99</sup> See discussion on the types of performance-based funding mechanisms in Claeys-Kulik & Estermann (2015). Define thematic report: Performance-based funding of universities in Europe.

graduates have historically and systematically experienced lower employment rates than those of graduates in general. Governments can put caps on the overall number of places offered in certain programmes or fields or the number of places that receive public funding. Public policies can also establish floors to encourage more graduates in certain areas.<sup>100</sup>

The analysis of graduates' employability needs to be contextualised, first and foremost by considering regional and local labour markets and the socio-economic background of student populations. For instance, benchmarking results of specific programmes and providers against local or regional averages can help contextualise and better understand results. However, from the 53 system-level measures examined that provided performance feedback to specific vocational education and training providers or higher education institutions, less than a third included other locally relevant benchmarking data. More information on how countries analyse and contextualise tracking results could help improve the use of tracking data across European countries.

***The EU is contributing to the development of graduate tracking at national level; strengthening synergies with national initiatives could increase the EU impact in this area.***

The European Structural and Investment Funds and Erasmus+ are co-funding some national graduate tracking measures, as well as pilots and one-off studies.<sup>101</sup> Erasmus+ is also funding the Eurograduate pilot survey which covers eight European countries.<sup>102</sup> The participation in the Eurograduate study of countries where tracking is currently poorly developed (HR, EL, MT), is a sign that some attention is being given to the topic at national level and should be expected to lead to the creation of a regular tracking measure of higher education graduates in these countries.<sup>103</sup>

Additionally, the ESF requires countries to follow up completers of ESF-funded education and training, to collect data on, at least, the employment status of participants six months after leaving the ESF-funded measure. Although there is some evidence that countries have started collecting this data, as required, in 2018, data collection seems to have run in parallel to other national-level tracking systems. The fact that it covers only the programmes and individuals who benefitted from ESF funds, may make its results of little relevance to national decision makers and it risks becoming a measure for the sole purpose of compliance with ESF requirements. Instead, having comparable data -based on linked tracking measures- on the employability of ESF-funded and other programmes, could provide valuable information on the impact of the programme. Furthermore, an ESF tracking system could potentially be used as a point of departure for more comprehensive tracking systems where these do not exist (CY and EL<sup>104</sup>).

### **7.1.2 To what extent do national graduate tracking systems meet the requirements of the Council Recommendation on tracking graduates?**

***Two thirds of countries have a relatively high level of compliance with the Recommendation to build on. Although only one country fully complies with it,***

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<sup>100</sup> See: OECD (2017), In-Depth Analysis of the Labour Market Relevance and Outcomes of Higher Education Systems: Analytical Framework and Country Practices Report, Enhancing Higher Education System Performance, OECD, Paris.

<sup>101</sup> The European Structural and Investment Funds are co-funding measure sin several countries (FI4, HR1, HU1, LT1, LT2, LV1). Erasmus+ is funding one pilot project in BG (BG1) and funded a one-off study in Malta (MT1).

<sup>102</sup> Eurograduate pilot study is being implemented in AT, HR, CZ, DE, EL, LT, MT and NO.

<sup>103</sup> Erasmus+ is also currently funding the project "OnTrack", started in 2018, that seeks to develop a tracking system for graduates of vocational education and training and higher education institutions with applied study programmes. It focuses on countries where administrative data is mostly not available to follow graduates in their development in employment or further education and will provide feedback for educational institutions. See <http://www.ontrack-project.eu>, 10.01.2020

<sup>104</sup> Note that only EU-28 countries are beneficiaries of the ESF.



***there is a vanguard of countries that have well established and robust systems and would be likely to be able to comply with limited fine-tuning.***

The assessment of countries' progress against the Council Recommendation on tracking graduates shows that:

- Only two countries (DE, FI) meet all the criteria set out by the Recommendation: graduate tracking measures cover all the sectors -initial vocational education and training, continuing vocational education and training and higher education- with the use of surveys and matching of administrative data. All groups of graduates are covered in the tracking measures, including people who move to another country after graduation and drop-outs. Longitudinal data on graduates are collected and all the types of data indicated in the Recommendation are covered.<sup>105</sup>
- Five countries (AT, DK, IE, SE and the UK) are very close to meeting the criteria in the Recommendation. In these countries, either tracking in some of the sectors is only done through one data collection approach (survey or administrative data matching) (AT), or the people who have moved to another country after graduation (DK, FI, IE, SE, UK) or drop-outs (FI) are not covered.
- Twelve countries have a good coverage of criteria in the Recommendation but there is scope for development (BE-NL, CZ, EE, FR, HU, IT, LT, NL, NO, PL, PT, ES). In these countries, it might be the case that one of the data collection approaches (survey/administrative data) is not used in any sector (BE-NL, FR), one sector is not (fully) covered (IT, PT) or is covered by a measure still in testing (PL). In some cases, there are several criteria that are not fully met (e.g. graduates who move to another country or drop-outs are not covered and/or longitudinal data is not available and/or data collected is not comprehensive).
- Ten countries have a lower level of compliance with the criteria in the Recommendation (BE-FR, BG, HR, LI, LV, LU, MT, RO, SK and SI) and three countries have no/hardly any coverage of the criteria (CY, EL and IS). These require more substantial development of their graduate tracking, for instance, to increase the regularity of tracking, to widen its coverage to all the education sectors, to collect longitudinal data on graduates or to include a wider range of indicators in existing measures.

***Graduate tracking generally has shortcomings in relation to the Recommendation than go beyond it***

There is room for improvement in all the criteria of the Recommendation. The main shortcomings include:

- Continuing vocational education and training is much less frequently covered than higher education and initial vocational education and training. The quality of the methodologies and data coverage is also lower in continuing vocational education and training.
- Administrative data is not used for tracking purposes in all the countries (it is missing in eight countries);
- Issues with the representativeness of the tracking data collected with achieved sample that are too small and biased, mainly in initial vocational education and training and continuing vocational education and training.
- The population covered by tracking measures often excludes graduates who moved to another country after graduating. This is critical in the case of initial vocational education and training and continuing vocational education and training

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<sup>105</sup> Socio-biographical and socioeconomic information, information on education and training, information on employment or further education and training, relevance of education and training to employment or life-long learning and career progression.

where migrant graduates are never covered. People who have left their studies without completing are also seldom covered by tracking measures.

- Longitudinal tracking is not commonplace: 17 countries follow graduates in the initial vocational education and training sector, 12 countries in continuing vocational education and training and 15 in higher education.

### **7.1.3 Are data collection practices based on administrative data, survey data or both?**

***There is a balance in the use of surveys and administrative data collection instruments at system-level. Over a quarter of the measures identified combine the two data collection approaches. There is only an incipient use of other techniques such as data mining.***

Robust graduate tracking benefits from the combination of surveys and administrative data matching so that qualitative data can be linked to quantitative data about individual graduates. From the 123 measures identified, 37 combine the two data collection approaches. This approach is used in 18 countries (AT, BE-FR, BG, DE, DK, ES, FI, HU, IE, IT, LT, LV, NL, NO, PL, PT, SE and UK) and it is more common in higher education (21 measures) followed by initial vocational education and training (17) and continuing vocational education and training (8).

Where combined approaches do not exist, quality of graduate tracking could be enhanced by ensuring that countries use both surveys and administrative data to track similar graduate populations and that the two approaches collect complementary, as opposed to redundant data. As discussed above, mechanisms to ensure the complementarity of tracking measures are currently not common.

Data collection for graduate tracking goes beyond surveys and administrative data matching. The Netherlands has gathered data directly from LinkedIn for tracking purposes in a recent pilot study.<sup>106</sup> Data mining is used by some higher education institutions across several countries.<sup>107</sup> New avenues in graduate tracking may involve further use of such data which can facilitate the coverage of graduates or former students who move to another country after leaving their studies, thus helping to overcome a common limitation in existing graduate tracking measures.

### **7.1.4 Where there are large discrepancies in graduate tracking practices notable between the countries and between the sectors, how could they pose a problem for comparability of data at EU level?**

***There is significant distance to travel before country graduate tracking information will be comparable.***

Most tracking measures across countries collect key indicators reflecting the areas which should be covered in graduate tracking stated in the Council Recommendation. However, there is considerable variability in the coverage of these and in the definitions used for each indicator which poses considerable difficulties for comparing results and for contextualising them. If tracking indicators are to be comparable and useful for benchmarking, there would need to be more convergence in the questions asked, the definition of indicators and their classification.

For instance, standard definitions for socioeconomic or biographical data and satisfaction questions could significantly enhance comparability. As an example of current differences, information on the satisfaction with the quality of education is covered by 27 measures but the way it is operationalised varies substantially (e.g. quality of university,

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<sup>106</sup> Insights into career outcomes and skills of Dutch graduates with LinkedIn data, [https://www.cbs.nl/-/media/\\_pdf/2019/12/sessie%201%20arbeidsmarkt.pdf?la=nl-nl](https://www.cbs.nl/-/media/_pdf/2019/12/sessie%201%20arbeidsmarkt.pdf?la=nl-nl)

<sup>107</sup> Data mining is not used in BE, HU, IS, IE, LI, LT, LU, MT, NO and SI.

perception of quality/relevance of education and training for finding employment and for current job, quality of teachers, quality of exams).

It is evident that the details collected on the level, field of study and provider make it difficult to compare because of the variation in approach across countries. It is reasonable to expect that the considerable differences in qualification spectrums in different countries -particularly in vocational education and training- will make it difficult to enable comparisons. The use of an international classification to code information on the level and fields of education can help overcome this difficulty. ISCED is in fact used by most of the measures identified to code information on the 'level of highest educational attainment and orientation' Also, ISCED classifications should be relatively easy to apply to any database as all the countries should have a mapping of their own classifications of education levels and fields of study against ISCED and ISCED-F.

Extending the use of international classifications (e.g. by using ESCO/ISCO and NACE) and standard definitions of indicators to all system measures would support convergence. Comparability is also enabled by similar periodicities for data collection; representativeness of the achieved sample or, in case of surveys, sufficient response rate; and data availability for comparative research.

Comparability is only possible if all tracking measures have robust approaches for their administration and sampling. For example, they need to have samples that are deemed to be representative and a suitable size for statistical analysis. Thirty of the 123 measures identified have limitations related to the representativeness of the sample due mainly to small response rates to surveys and to the use of convenience sampling. Some measures only cover part of the programmes or graduates (e.g. beneficiaries of ESF funds) and hence their results cannot be generalised to wider graduate populations.

The Commission could consider setting minimum standards for measures to be included in any comparisons and defining a standard set of indicators for comparison.

#### **7.1.5 To what extent are higher education institutions undertaking their own graduate tracking and how are they doing it?**

***The survey of higher education institutions undertaken for this study has found that they generally undertake graduate tracking of all cohorts although there is a considerable variety of practices some of which may devalue the results***

Before this study, it was generally reported that there was graduate tracking in higher education institutions in all countries but there was little information on its extensiveness within each country. The survey results show that it is a common practice across EU and EEA countries. In countries with well-established system-level graduate tracking measures, there is a tendency for fewer higher education institutions to do their own tracking (NO, UK), and this appears to save resources for higher education institutions.

At institutional level, over three-quarters of higher education institutions surveyed used the results from graduate tracking for internal quality assurance. Other common uses include support to strategic planning, marketing, and/or informing external inspections and curriculum planning. Graduate tracking data was considered to have the greatest impact on careers advice higher education institutions offer their students when compared to other areas such as the range and scope of courses they offer or financial contributions from alumni.

There are significant variations in the quality of institutional graduate tracking. Random sampling was used in around two thirds of higher education institutions using quantitative surveys and more than half failed to achieve a suitable response rate of 50% or more. For around a third it was under 30%. Around a third of higher education institutions who used sampling drew on a convenience sample which is likely to provide poorer response rates.

***Higher education institutions in some countries work with national authorities who manage system level graduate tracking to coordinate their activities, but this is not commonplace***

There is little evidence of coordination mechanisms between higher education institutions and system-level tracking. According to mapping data, only four countries offer higher education institutions the opportunity to include their own questions in system-level graduate tracking surveys (FI, HU, IT, UK) and other coordination mechanisms were generally not reported.

Finland is an exception as the government and higher education institutions share the responsibility for graduate tracking. Tracking based on administrative data is conducted by Education Statistics Finland (*Vipunen*). Universities - through the *Aarresaari* network of university career services - are responsible for the development and management of tracking surveys. Survey results are collated and aggregated at the national level. The universities of applied sciences are developing a similar approach.

At institutional level, higher education institutions most often compare their results with their performance in previous years and, secondly, with results at national level. Around one third of higher education institutions compared their results with other individual higher education institutions. However, comparability of institutional measures - developed independently and often without coordinating with other measures in the country- is likely to be low.

A way of overcoming this difficulty is by creating networks of higher education institutions with common approaches to graduate tracking. In Germany, 60 higher education institutions cooperate under the KOAB project, coordinated by the research institute of the University of Kassel, and currently apply a common tracking methodology and survey. In Iceland, public higher education institutions have also coordinated to use the same survey questionnaire and same approach data analysis.

## **7.2 Implications**

***The study's findings should give rise to further action to improve graduate tracking measures in all countries***

The results of the mapping should provide both the Commission and the Expert Group with up to date information about the state of play of graduate tracking. Most immediately, this should provide data for the report which the Expert Group is to draft this year on the progress against the Recommendation. Beyond this, it should show what gaps there are in graduate tracking, what differences exist which prevent comparison, and what coordination is needed to improve their effectiveness.

The analysis of measures to understand the extent they can be compared should provide data to the Commission and the Expert Network about the indicators that could be benchmarked among ten or so countries, the changes to measures that would be needed to enable this on a greater scale, and the extent of standardisation required. Increasing convergence could be challenging as it consists of improving different aspects of measures (sampling, data collected, and the classification of data).

The results of the higher education institution survey should provide the Commission and other bodies with up to date information on the state of play of graduate tracking within the higher education sector across the EU and EEA. This should provide data to consider how the sector might be better supported to undertake effective tracking and use the results for benchmarking.

***Countries some distance from meeting the Recommendation's requirements might benefit from support and guidance***

Other European initiatives in the field of education have benefited from opportunities for mutual learning and access to experts through meetings, training and guidance

publications. These have enabled national initiatives to progress and for greater convergence to be built into systems and approaches.

This could be through peer learning, expert support, self-organised consultancy/problem sharing between countries close to each other or with the same problems. A group of countries in Mid-Eastern Europe have similar problems (BG, CY, EL, HR, RO, SI, SK), for example, as do a group of small countries (CY, LU, LV, MT, SI, SK). Countries which have progressed furthest towards the Recommendation may have experience they can share.

### **7.3 Some recommendations**

The Commission should:

- Encourage Member States to increase the coverage of graduate tracking: introduce it where absent, particularly for continuing vocational education and training graduates, with all graduate cohorts tracked;
- Encourage Member States to work towards convergence: particularly in relation to survey questions, data collected, representative data, and longitudinal data;
- Consider providing additional capacity building support in the form of drawing together and spreading good practice in establishing and maintaining graduate tracking systems to overcome some of the gaps and deficiencies in implementation. This could be in the form of: peer learning opportunities, mutual learning country groups, task forces to support a specific country;
- Consider raising the bar by adding to/adjusting the Recommendation. This might include adding social and civic outcomes to the data collected, expecting coordination between measures and specifying minimum percentages of graduates in achieved samples;
- Encourage European bodies representing higher education institutions to increase the advice and guidance they provide on graduate tracking and reflect on the findings of this study's survey results about the quality/scope of surveys.

The Expert Network Group should:

- Continue its work on indicators for the Commission to take forward;
- Note the progress made and the state of play (at October 2019) in graduate tracking in its report on progress towards achieving the Council Recommendation in 2020.

Countries should, where this is not the case, in their work towards achieving the Council Recommendation:

- Include coverage of all the graduate population across higher education and vocational education and training in graduate tracking measures;
- Work towards greater convergence of measures in relation to survey questions, data collected, representative data and longitudinal data;
- Establish coordination between national and provider level graduate tracking activities to increase synergies and convergence;
- Establish national level coordination of system level measures including those for ESF completers.

## Annex 1. List of interviewees

Table 56. List of interviewees (anonymised)

Country	Nbr.	Institution	Function of interviewee
AT	1	University of Vienna.	Head of Quality Assurance.
BE (fr)	3	Académie de recherche et d'enseignement supérieur (ARES).	Project manager.
		Federation Wallonie-Brussels.	Project manager; statistical coordination and research.
		Brussels Formation.	Analyst, Service for Studies and Statistics.
BE (nl)	4	Flemish Department of Education and Training.	Data analyst.
		Ibid.	Researcher.
		SYNTRA Vlaanderen.*	Sociologist.*
		ESF-Agency Flanders.*	General Director.*
BG	3	Ministry of Education and Science.	Chief expert.
		National Agency for VET.	Secretary-General.
		Ministry of Education and Science.	Expert.
CY	2	Higher Education Department – MOEC.	Senior official.
		Secondary Technical Education Department – MOEC.	MIEEK (Public School of Higher Education and Training) Coordinator.
CZ	1	Centre for Higher Education Studies.	Director.
DE	1	Federal Institute for Vocational Education and Training (BIBB).	Researcher.
DK	3	Population and Education, Social Statistics, Statistics Denmark.	Chief consultant.
		Statistics Denmark.*	Chief consultant.*

Country	Nbr.	Institution	Function of interviewee
		The Danish Business Authority.	Special consultant.
		Ministry of Higher Education and Science.	Head of section.
		National Agency for IT and Learning, Ministry of Children and Education.	Senior consultant.
		Ministry of Children and Education.	Senior consultant.
EE		Ministry of Education and Research	Leading Analyst. Analysis Department.
		Ministry of Education and Research	Head of Department. Analysis Department.
EL	3	The Panteion University of Social and Political Sciences.	Sociologist and senior researcher.
		Demokritean University of Thrace.	Career officer.
		Ministry of Education and Religious Affairs.	General Secretary of Professional Training and Life-long learning.
ES	4	National Qualifications - Institute. General Directorate for VET.	Director.
		Secretariat General of Universities of the Ministry of Science, Innovation and Universities.	Ministerial adviser.
		Ibid.	Statistical officer.
		European Social Fund.	Head of service, Administration Unit.
FI	10	Ministry of Education and Culture.	Counsellor.
		Ibid.	Senior Officer.
		University of Helsinki.	Chair of the Aarresaari Network's career monitoring group.

Country	Nbr.	Institution	Function of interviewee
		University of Turku, Career Services.	Researcher.
		Turku University of Applied Sciences.	Quality specialist, Project manager.
		Ministry of Employment and the Economy.	Specialist, Regions and Growth Services, Cohesion Policy and Structural Funds.
		Ibid.	Ministerial Adviser.
		Ibid.	Conciliation Officer, Regions and Growth Services, Cohesion Policy and Structural Funds.
		Ministry of Education and Culture.	Senior ministerial adviser.
		Hämeen ELY-keskus.	Finance Manager.
FR	1	Ministry of National Education and Youth / Ministry of Higher Education and Research*	Head of the European and International Relations Unit, Directorate of Evaluation, Forward-Planning and Performance.*
HR	2	Institute for Social Research.	Junior lecturer, research assistant.
		University of Zagreb, Faculty of Law.	Professor.
HU	1	Educational Office.	Head of Department.
IE	7	SOLAS – Further Education and Training Authority	Manager. Active Inclusion. Manager. Operational Data Analytics Unit.
		Higher Education Authority	Head of Performance Valuation. Senior Manager, Performance Evaluation and Statistics. Senior Statistics Manager.
		Central Statistics Office (CSO)	Statistician. Senior statistician.
IS	8	Ministry of Education, Science and Culture*	Senior advisor. Department of Finance and Administration. Senior advisor. Department of Higher Education and Science.



Country	Nbr.	Institution	Function of interviewee
		Tækniskolinn (VET provider)*	Principal.
		Several HEI.	Director of Social Science Research Institute*. Director of Academic Affairs from the Icelandic Academy of Arts. Marketing manager at Reykjavik University. Director of UNAK Research Center at University of Akureyri. Assistant Professor at Bifrost University*.
IT	4	Service for education, training and work, ISTAT.	Researcher.
		Ibid.	Researcher.
		AlmaLaurea.	Responsible for the Unit surveys and statistics.
		National Agency for Active Labour Market Policies.	Responsible for the research structure 'monitoring and evaluation of employment services and employment policies'.
LI	1	National Office of Statistics.	Responsible for administrative data and surveys.
LT	2	Centre for Development of Qualifications and Vocational Education and Training.	Head of Qualifications Formation Unit.
		Government Strategic Analysis Centre.	Head of the Higher Education Policy and Career Analysis Unit.
LU	3	Ministère de l'Éducation nationale, de l'Enfance et de la Jeunesse	Statistician.
		National Institute for the Development of Continuing vocational training	Responsible Training Observatory. Research Analyst at the Training Observatory.
LV	3	Ministry of Education and Science.	Senior expert.

Country	Nbr.	Institution	Function of interviewee
		Ibid.	Deputy Director of Vocational Education and Lifelong Learning Development.
		Ibid.	(on the VET graduate tracking system is still in the planning phase).
MT	0	N/A	N/A
NO	3	Ministry of Education and Research, Department for Higher Education, Research and International Affairs.	Technical Director.
		NIFU.	Project leader Graduate Surveys in HE.
		Ibid.	Project leader VET surveys.
NL	6	ROA (Research Centre Education and Labour Market).	Project leader.
		Ibid.	Project leader.
		Association of Dutch Universities (VSNU).	Policy Advisor Institutional Research.
		Maastricht University.	Head BI organisation.
		Delft University of Technology.	Education & Student Affairs.
		Statistics Netherlands.	Senior researcher.
PL	2	University of Warsaw	Head of Unit, Laboratory for the Evaluation of Quality of Education at the University of Warsaw (UoW), involved in creating the ELA system.
		Ministry of Science and Higher Education (MoSHE).	Deputy Director, Department of Innovation and Development.
PT	3	DG Statistics of Education and Science (information on HE)	Sub-director General.
		DG Statistics of Education and Science (information on VET)	Officer at the division of studies and management of access to research data.
		Operational Programme Social Inclusion and Employment.	President of the Executive Committee.

Country	Nbr.	Institution	Function of interviewee
RO	2	National Center for the Development of Vocational and Technical Education (CNDIPT).	Specialised inspector, regional coordinator.
		Ministry of National Education.	Counsellor, General Directorate for HE.
SE	4	Swedish National Agency for Education.	Head of unit. Statistics.
		Ministry of Education and Research.	Desk Officer.
		Statistics Swede.	Analyst/Statistician.
		Svenska ESF-rådet/Swedish ESF-Council.	Deputy Director General.
SK	2	Ministry of Education, Research and Sport.	Economic Analyst.
		Slovak Centre of Scientific and Technical Information.	Analyst, Head of Department.
SL	3	University of Ljubljana, Faculty of Arts.	National expert of QA in HE, associate professor.
		Institute of the Republic of Slovenia for Vocational Education and Training.	Senior adviser.
		Ibid.	Senior adviser.
UK	0		
<b>TOTAL</b>	<b>92</b>		

Source: research ICF, 3s and CHEPS.

\* Input received by e-mail.

## Annex 2. Annexes to chapter 2

Table 57. Strategy/policy documents that refer to graduate tracking

Country	Policy focus	Sector	Strategy/policy document
AT	Yes	both	

Country	Policy focus	Sector	Strategy/policy document
BE-FR	Yes	both	Decree of 11 April 2014 on the development of a register of post-educational educational trajectories. <sup>108</sup>
BE-NL	No		
BG	Yes	both	VET: Strategy for the development of vocational education and training in the Republic of Bulgaria 2015-2020'.  HE: Strategy for higher education development in the Republic of Bulgaria (2014-2020). Bulgarian University Ranking System.
CY	No		
CZ	Yes	HE	Strategic plan for higher education development (2016-2020).
DE	Yes	HE	HE: Resolution of the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany, 2005, Quality Assurance in Higher Education. <sup>109</sup> Law on Higher Education Statistics: since 2016 including statistics on the course of studies.
DK	Yes	both	VET: A reform of the Danish VET system from 2014 established four goals, one of which linked to an indicator on the employment rates of VET graduates.  HE: dimensioning model in HE which limits the intake of students in HE programmes with systematic high unemployment rates amongst graduates. In 2017 funding to HE became dependent on graduates' employment rates.
EE	Yes		Estonian Lifelong Learning Strategy 2020
EL	No		
ES	Yes	both	
FI	Yes	both	VET: 2018 VET reform, policy recommendations to the VET providers, performance-based funding for VET.

<sup>108</sup> [https://www.gallilex.cfwb.be/document/pdf/40250\\_000.pdf](https://www.gallilex.cfwb.be/document/pdf/40250_000.pdf)

<sup>109</sup> [https://www.kmk.org/fileadmin/veroeffentlichungen\\_beschluesse/2005/2005\\_09\\_22-Qualitaetssicherung-Lehre.pdf](https://www.kmk.org/fileadmin/veroeffentlichungen_beschluesse/2005/2005_09_22-Qualitaetssicherung-Lehre.pdf)

Country	Policy focus	Sector	Strategy/policy document
			HE: 'Vision for higher education and science 2030' strategy: new funding allocation models for universities and UAS.
FR	Yes	both	VET: Order of 24 January 2013 creating an automated processing of data from two surveys: the Survey on active life insertion (IVA) and the Professional Insertion of Apprentices Survey (IPA)
HR	Yes	both	The National Programme for VET System Development 2016-2020.
HU	Yes	both	VET: Government Act 319/2014. Vocational Education and Training 4.0 policy strategy document, approved by Government decree 1168/2019. <sup>110</sup>
IE	Yes	VET	Ireland 2014-2019 Further Education and Training strategy.
IS	No		
			VET: 1) Art. 14 of D.P.C.M. (25 January 2008) of the 'Guidelines for the reorganisation of the education and training system and the constitution of higher technical institutes' <sup>111</sup> foresees a general monitoring of the system and of the employment outcomes. 2) The Agreement between the State and the Regions (24 September 2015) <sup>112</sup> establishes that regions and provinces should gather the data related to VET and link them to the compulsory communications that employers have to send to employment offices whenever a labour contract is started or discontinued in order to track the employment outcomes. 3) As regards the ITS pathways, the Agreement between Government, Regions ed Local authorities (5 August 2014) includes a reference to a monitoring and evaluation system of ITS pathways.
IT	Yes	VET	
LI	No		

<sup>110</sup> [https://www.nive.hu/index.php?option=com\\_content&view=article&id=1024:szakkepzes-40-strategia&catid=10:hirek&Itemid=166](https://www.nive.hu/index.php?option=com_content&view=article&id=1024:szakkepzes-40-strategia&catid=10:hirek&Itemid=166)

<sup>111</sup> [https://www.cliclavoro.gov.it/normative/d.p.c.m\\_25\\_gennaio\\_2008.pdf](https://www.cliclavoro.gov.it/normative/d.p.c.m_25_gennaio_2008.pdf)

<sup>112</sup> [http://www.sistemaduale.anpal.gov.it/documentazione/Documents/accordo\\_stato\\_regioni\\_24\\_settembre\\_2015.pdf](http://www.sistemaduale.anpal.gov.it/documentazione/Documents/accordo_stato_regioni_24_settembre_2015.pdf);

Country	Policy focus	Sector	Strategy/policy document
LT	Yes	both	Government programme 2012-2016
LU	No		
LV	Yes	both	'Guidelines for the Development of Education for 2014-2020'. <sup>113</sup> HE and VET monitoring will be part of the next education planning document (2021-2027).
MT	Yes	both	The National Vocational Education and Training Policy (2015). <sup>114</sup>
NL	Yes	both	Macro Efficiency policy. 2015 strategy for Higher Education.
NO	No		
PL	Yes	both	
PT	No		
RO	Yes	both	VET: Education and Training Strategy of Romania for the period 2016-2020 <sup>115</sup> HE: National Strategy for Tertiary Education 2015 - 2020 <sup>116</sup>
SE	Yes	both	Regulations tasking several agencies with graduate tracking: National Agency for Education (Skolverket); Swedish Higher Education Authority (Universitetskanslersämbetet (UKÄ)); and Swedish National Agency for Higher Vocational Education (Myndigheten för yrkeshögskolan).
SI	Yes	HE	Resolution on the National Higher Education Programme 2011-2020 (Ministry of Education, Science and Sport of the Republic of Slovenia, 2011).
SK	Yes	both	VET: VET Law from 2015, <sup>117</sup> Decree of the Ministry of Education, Science, Research and Sport from 2019 on determining the number of pupils. <sup>118</sup>

<sup>113</sup> <http://www.lsa.lv/wp-content/uploads/2013/03/lzglitibasattistibaspatnostadnes.pdf>

<sup>114</sup>

<https://ncfhe.gov.mt/en/resources/Documents/Strategy%20Documents/National%20Vocational%20Education%20and%20Training%20Policy.pdf>

<sup>115</sup>

[https://www.edu.ro/sites/default/files/\\_fi%C8%99iere/Minister/2016/strategii/Strategia\\_VET%2027%2004%202016.pdf](https://www.edu.ro/sites/default/files/_fi%C8%99iere/Minister/2016/strategii/Strategia_VET%2027%2004%202016.pdf)

<sup>116</sup> [https://www.edu.ro/sites/default/files/fisiere%20articole/Strategie\\_inv\\_tertiar\\_2015\\_2020.pdf](https://www.edu.ro/sites/default/files/fisiere%20articole/Strategie_inv_tertiar_2015_2020.pdf)

<sup>117</sup> <https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2015/61/>

<sup>118</sup> <https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2019/292/20191001>

Country	Policy focus	Sector	Strategy/policy document
			HE: Higher Education Act. <sup>119</sup>
UK	Yes	both	HE: Teaching Excellence and Student Outcomes Framework (TEF) (2017) (England and some universities from Scotland and Wales). <sup>120</sup>

Table 58. Purpose of graduate tracking: VET

Country	Purposes					
	Monitoring of education policies	Quality assurance	Access to funding	Provision of information and guidance	Strategic planning of course offer	Other
AT		x		x		
BE-NL	x			x	x	
BE-FR	x	x				x
BG	x	x				
CY						
CZ	x	x		x		
DE		x		x	x	x
DK	x	x		x	x	x
EE	x	x		x	x	x
EL						
ES	x			x	x	
FI	x	x	x	x	x	x
FR	x			x	x	
HR		x				
HU						x

<sup>119</sup> [zakonypreludi.sk/zz/2002-131](https://zakonypreludi.sk/zz/2002-131)

<sup>120</sup>

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/658490/Teaching\\_Excellence\\_and\\_Student\\_Outcomes\\_Framework\\_Specification.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/658490/Teaching_Excellence_and_Student_Outcomes_Framework_Specification.pdf) and [https://www.officeforstudents.org.uk/media/4013afd5-0943-4350-8d77-ee46a59af38b/ofs2018\\_45a.pdf](https://www.officeforstudents.org.uk/media/4013afd5-0943-4350-8d77-ee46a59af38b/ofs2018_45a.pdf)

Mapping the state of graduate tracking policies and practices in the EU Member States and EEA countries

Country	Purposes					
	Monitoring of education policies	Quality assurance	Access to funding	Provision of information and guidance	Strategic planning of course offer	Other
IE	x	x		x		
IS						
IT	x	x	x	x	x	
LI						x
LT	x	x	x	x	x	
LU		x				x
LV	x	x	x	x	x	x
MT	x	x		x		
NL	x	x	x	x	x	
NO	x	x		x		
PL				x		x
PT	x	x			x	
RO				x	x	
SE	x	x			x	x
SI				x		
SK	x	x	x	x		
UK	x		x		x	
	20	20	7	20	15	11

Source: research ICF and 3s

Table 59. Purpose of graduate tracking: HE

Country	Purposes					
	Monitoring of education policies	Quality assurance	Access to funding	Provision of information and guidance	Strategic planning of course offer	Other
AT		x		x	x	x



Mapping the state of graduate tracking policies and practices in the EU Member States and EEA countries

Country	Purposes					
	Monitoring of education policies	Quality assurance	Access to funding	Provision of information and guidance	Strategic planning of course offer	Other
BE-NL	x			x	x	
BE-FR	x	x				x
BG	x	x	x	x		x
CY						
CZ	x	x		x		
DE		x		x	x	x
DK	x	x		x	x	x
EE	x	x	x	x	x	x
EL		x	x	x	x	
ES	x			x		
FI			x			x
FR	x			x	x	
HR		x				x
HU		x		x		
IE	x	x				
IS		x		x	x	
IT	x	x		x	x	
LI						x
LT	x	x	x	x	x	
LU						
LV	x	x	x	x	x	x
MT	x	x		x	x	
NL	x	x	x	x	x	
NO	x	x		x		
PL	x			x		x
PT					x	

Country	Purposes					
	Monitoring of education policies	Quality assurance	Access to funding	Provision of information and guidance	Strategic planning of course offer	Other
RO		x		x	x	
SE						x
SI		x	x	x		
SK	x	x	x	x		
UK	x	x		x	x	
	18	22	9	23	16	12

Source: research ICF, 3s and CHEPS

Table 60. Main users of graduate tracking: VET

Country	Users					
	Government	VET providers	Students and graduates	Employers	Researchers	Others
AT	x	x			x	
BE-NL	x	x	x			x
BE-FR						
BG	x	x				x
CY						
CZ	x		x		x	x
DE	x	x			x	
DK	x	x	x	x	x	
EE	x	x	x	x	x	
EL						
ES	x		x			x
FI	x	x				
FR	x					
HR		x				

Country	Users					
	Government	VET providers	Students and graduates	Employers	Researchers	Other
HU	x	x			x	
IE	x	x			x	
IS						
IT	x	x	x	x	x	
LI						
LT	x	x	x	x	x	
LU	x					
LV	x	x	x	x	x	x
MT	x	x				
NL	x	x	x		x	
NO	x	x				x
PL	x		x	x		
PT	x				x	
RO	x	x				
SE	x	x				x
SI	x	x	x	x	x	x
SK	x		x		x	
UK	x		x		x	
	26	19	13	7	15	8

Source: research ICF, 3s and CHEPS.

Table 61. Main users of graduate tracking: HE

Country	Users					
	Government	HEIs	Students and graduates	Employers	Researchers	Other
AT	x	x	x		x	
BE-NL	x	x	x			x

Mapping the state of graduate tracking policies and practices in the EU Member States and EEA countries

Country	Users					
	Government	HEIs	Students and graduates	Employers	Researchers	Other
BE-FR						
BG	x	x	x			
CY						
CZ	x				x	
DE	x	x			x	
DK	x	x	x	x	x	
EE	x	x			x	
EL	x	x	x	x	x	
ES	x	x	x			
FI	x	x	x		x	x
FR	x					
HR		x			x	
HU	x	x	x	x	x	
IE	x	x			x	
IS		x				
IT	x	x	x	x	x	
LI	x	x			x	x
LT	x	x	x	x	x	
LU						
LV	x	x	x	x	x	x
MT	x	x	x	x	x	x
NL	x	x	x		x	
NO	x	x				x
PL	x	x	x	x	x	
PT	x					x
RO	x	x				
SE	x	x			x	

*Mapping the state of graduate tracking policies and practices in the EU Member States and EEA countries*

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Country	Users					
	Government	HEIs	Students and graduates	Employers	Researchers	Other
SI	x	x	x		x	
SK	x		x		x	
UK	x	x	x		x	
	27	25	17	8	21	7

*Source: research ICF, 3s and CHEPS*

### Annex 3. Annexes to chapter 3

Table 62. Graduate tracking measures identified in EU Member States

Nbr.	Country	Title of measure in English	Titel of measure in original language	System coverage <sup>1</sup>	General type/ Source <sup>2</sup>	Area/ level <sup>3</sup>	Basis (reference population) <sup>4</sup>
1	AT1	Education-related employment career monitoring (BibEr)	Bildungsbezogenes Erwerbskarrieremonitoring (BibEr)	IVET, CVET, HE	Administrative data collection instrument	national	total reference population
2	AT2	After graduation of dual VET: Training and professional success of graduates of dual VET in Austria. An empirical study on the basis of administrative individual- and registry-based data and a graduate survey	Nach der Lehre: Ausbildungs- und Berufserfolg von Lehrabsolventen und LehrabsolventInnen in Österreich. Eine empirische Untersuchung auf Basis von amtlichen Individual- / Registerdaten und persönlicher Befragung	IVET, Others	Survey, Administrative data collection instrument	national	sample
3	AT3	HRSM project: Graduate tracking	HRSM Projekt AbsolventInnentracking	HE	Administrative data collection instrument	national	total reference population
4	AT4	Student Social Survey	Studierenden-Sozialerhebung	HE	Survey	national	total reference population
5	AT5	Eurograduate Pilot Survey: This measure is a one-off pilot survey of recent graduates in 8 European countries	Eurograduate Pilot Survey	HE	Survey	national	sample
6	BE-FR1	Ulysse Survey. To be renamed in 2019: Survey on labour market insertion after professional training	Enquete Ulysse. A partir de 2019: ENQUÊTE INSERTION SUR LE MARCHÉ DU TRAVAIL À L'ISSUE DE LA FORMATION PROFESSIONNELLE	CVET	Survey, Administrative data collection instrument	federal/regional	sample

Nbr.	Country	Title of measure in English	Titel of measure in original language	System coverage <sup>1</sup>	General type/ Source <sup>2</sup>	Area/ level <sup>3</sup>	Basis (reference population) <sup>4</sup>
7	BE-FR2	Register of educational trajectories	Cadastre des parcours educatifs	IVET, CVET, HE, Others	Administrative data collection instrument	federal/regional	total reference population
8	BE-NL1	School leavers study	Schoolverlatersstudie	IVET, HE	Administrative data collection instrument	federal/regional	total reference population
9	BE-NL2	SYNTRA graduate tracking	SYNTRA graduate tracking	CVET	Administrative data collection instrument	federal/regional	total reference population
10	BE-NL3	European Social Fund (ESF) tracking in Flanders - no official name	Europees Social Fonds (ESF) in Vlaanderen	IVET, CVET, HE	Administrative data collection instrument	federal/regional	
11	BG1	Erasmus+ Project № 609397-EPP-1-2019-1-BG-EPPKA3-EQAVET-NRP 'Piloting Tracking' (2019-2021), Agreement № 2019-0485/001-001 (EACEA-MES)	Еразъм + проект, който пилотира механизъм за проследяване на завършилите ПОО (2019-2021)	IVET	Survey, Administrative data collection instrument	Federal/regional	sample
12	BG2	Bulgarian University Ranking System	РЕЙТИНГОВА СИСТЕМА НА ВИСШИТЕ УЧИЛИЩА В БЪЛГАРИЯ	HE	Administrative data collection instrument	national	total reference population
13	CY1	ESF-funded measures					
14	CZ1	Graduate 2018	Absolvent 2018	HE	Survey	national	sample
15	CZ2	Reflex 2006, 2010, 2013	Reflex 2006, 2010, 2013	HE	Survey	national	sample
16	CZ3	Eurograduate	Eurograduate	HE	Survey	national	sample
17	CZ4	Tracking of VET and HE graduates' unemployment through administrative data	Sledovani nezamestanosti absolventu skol a vysokych skol	IVET, HE	Administrative data collection instrument	national	total reference population

Nbr.	Country	Title of measure in English	Titel of measure in original language	System coverage <sup>1</sup>	General type/ Source <sup>2</sup>	Area/ level <sup>3</sup>	Basis (reference population) <sup>4</sup>
18	CZ5	Survey of school graduates regarding their transition from education into labour market (2009, 2015, 2017, 2018)	Dotazníkové šetření žáků posledních ročníků středních odborných škol (2009, 2015, 2017, 2018)	IVET	Survey	national	sample
19	DE1	National Educational Panel Study - NEPS	Nationales Bildungspanel - NEPS	IVET, CVET, HE	Survey, Administrative data collection instrument	national	sample
20	DE2	BIBB Transition Surveys 2006 and 2011	BIBB Übergangsstudien 2006 und 2011	IVET, HE, Others	Survey	national	sample
21	DE3	Integrated Employment Biographies Sample (SIAB)	Stichprobe der Integrierten Arbeitsmarktbiografien (SIAB)	IVET, CVET, HE	Administrative data collection instrument	national	sample
22	DE4	BIBB/BAuA Labour Force Survey - Changing labour and employment, attainment and utilisation of professional qualifications.	BIBB/BAuA Erwerbstätigenbefragung - Arbeit und Beruf im Wandel, Erwerb und Verwertung beruflicher Qualifikationen	IVET, CVET, HE	Survey	national	sample
23	DE5	Educational Panel Saarland	Das Ausbildungspanel Saarland	IVET	Administrative data collection instrument	federal/regional	total reference population
24	DE6	DZHW Graduate Panel - The DZHW conducts graduate surveys since 1989, since then every fourth examination cohort is surveyed several times. The newest graduate cohort from 2017 (AP2017) is the first nationwide project in graduate research in Germany to be carried out by a supra-regional group of research institutes (DZHW, INCHER, ISTAT). In the	DZHW Absolventenpanel	HE	Survey	national	sample



Nbr.	Country	Title of measure in English	Titel of measure in original language	System coverage <sup>1</sup>	General type/ Source <sup>2</sup>	Area/ level <sup>3</sup>	Basis (reference population) <sup>4</sup>
		following description the focus lies on the study of 2017.					
25	DE7	The cooperation project graduate studies (KOAB): This measure was first carried out between 2007 and 2017, since 2018, the research institute ISTAT is undertaking the survey.	Das Kooperationsprojekt Absolventenstudien (KOAB)	HE	Survey	national	sample
26	DE8	Bavarian Graduate Panel (BAP)	Das Bayerische Absolventenpanel (BAP)	HE	Survey	federal/regional	sample
27	DE9	DZHW Panel Study of School Leavers with a Higher Education Entrance Qualification	DZHW-Studienberechtigtenpanel	IVET, HE, Others	Survey	national	sample
28	DE10	Eurograduate Pilot Survey: This measure is a one-off pilot survey of recent graduates in 8 European countries	Eurograduate Pilot Survey	HE	Survey	national	sample
29	DE11	Saxon Alumni Study*	Sächsische Absolventenstudie	HE	Survey	federal/regional	sample
30	DK1	Statistics Denmark student register	Danmarks Statistiks elevregister	IVET, HE, Others	Administrative data collection instrument	national	total reference population
31	DK2	The cross-sectional course register	Det tværgående kursistregister	CVET	Administrative data collection instrument	national	total reference population
32	DK3	From education to the labour market	Fra uddannelse til arbejdsmarked	IVET, HE	Administrative data collection instrument	national	total reference population

Nbr.	Country	Title of measure in English	Titel of measure in original language	System coverage <sup>1</sup>	General type/ Source <sup>2</sup>	Area/ level <sup>3</sup>	Basis (reference population) <sup>4</sup>
33	DK4	Labour Market Account (LMA)	Arbejdsmarkedsregnskabet	Others	Administrative data collection instrument	national	total reference population
34	DK5	Implementation report	Årsrapport	IVET, CVET	Survey, Administrative data collection instrument	national	
35	DK6	EducationZOOM	UddannelsesZOOM	HE	Survey, Administrative data collection instrument	national	sample
36	DK7	Employment rates of VET graduates	Beskæftigelsesfrekvenser for EUD-dimittender	IVET	Administrative data collection instrument	national	
37	EE1	Labour Market Success of Vocational and Higher Education Graduates (2016, 2017, 2018)	Kutse- ja kõrghariduse omandanute edukus tööturul (2016, 2017, 2018)	IVET, HE	Administrative data collection instrument	national	total reference population
38	EE2	Estonian VET graduates` 2015-2016 research (2017)	Eesti kutseõppe 2015.-2016. aasta vilistlaste uuring (2017)	IVET, CVET	Survey	national	total reference population
39	EE3	Estonian HE graduates´ 2015 research (2017)	Eesti kõrgkoolide 2015. aasta vilistlaste uuring (2017)	HE	Survey	national	total reference population
40	EL1	ESF-funded training			Survey		
41	ES1	Continuous sample of working lives	Muestra continua de vidas laborales	IVET, CVET, HE, Others	Administrative data collection instrument	national	sample
42	ES2	Monthly/annual information of the labour market of graduates	Informacion mensual/annual de mercado de trabajo de personas tituladas	IVET, HE	Administrative data collection instrument	national	total reference population
43	ES3	Survey on education-training transitions and labour insertion	Encuesta de Transicion Educativo-Formativa e Insercion Laboral (ETEFIL)	IVET, Others	Survey	national	sample

Nbr.	Country	Title of measure in English	Titel of measure in original language	System coverage <sup>1</sup>	General type/ Source <sup>2</sup>	Area/ level <sup>3</sup>	Basis (reference population) <sup>4</sup>
44	ES4	Report on the labour market insertion. VET graduates from the education system (under development)	Informe de insercion en el mercado laboral. Titulados the FP del sistema educativo.	IVET	Survey, Administrative data collection instrument	national	sample
45	ES5	Long-term common output and result indicators for ESF investments	Indicadores Comunes Comunitarios de resultado a largo plazo	IVET, Others	Survey, Administrative data collection instrument	federal/regional	sample
46	ES6	Labour insertion of university graduates	Inserción laboral de los agresados universitarios	HE	Administrative data collection instrument	national	total reference population
47	ES7	Survey of the labour insertion of university graduates (EILU)	Encuesta de Inserción Laboral de los Titulados Universitarios (EILU)	HE	Survey, Administrative data collection instrument	national	sample
48	FI1	Transition from school to further education and work"	Sijoittuminen koulutuksen jalkeen	IVET, CVET, HE, Others	Administrative data collection instrument	national	total reference population
49	FI2	Career monitoring for master's level graduates (in universities)	Maistereiden uraseuranta (yliopistot)	HE	Survey, Administrative data collection instrument	national	total reference population
50	FI3	Career Monitoring for Doctor's Level Graduates	Tohtoreiden uraseuranta	HE	Survey, Administrative data collection instrument	national	total reference population
51	FI4	Career Monitoring in Universities of Applied Sciences	Ammattikorkeakoulujen uraseuranta	HE	Administrative data collection instrument	national	total reference population
52	FI5	Kandipalaute - the Finnish Bachelor Graduate Survey (university students)	Kandipalaute	HE	Survey, Administrative data collection instrument	national	total reference population
53	FI6	AVOP Graduate feedback questionnaire for UAS (graduating students)	Ammattikorkeakoulujen valmistumisvaiheen opiskelijapalaute AVOP	HE	Survey, Administrative data collection instrument	national	total reference population

Nbr.	Country	Title of measure in English	Titel of measure in original language	System coverage <sup>1</sup>	General type/ Source <sup>2</sup>	Area/ level <sup>3</sup>	Basis (reference population) <sup>4</sup>
54	FI7	Amis feedback from graduating VET students	Amispalaute valmistuvilla opiskelijoille	IVET, CVET	Survey, Administrative data collection instrument	national	total reference population
55	FI8	Placement after graduation	Tutkinnon suorittaneiden sijoittuminen	IVET, CVET, HE	Administrative data collection instrument	national	total reference population
56	FI9	Operational programme Sustainable Growth and Jobs 2014-2020: tracking of participants	Operationaalinen ohjelma Kestavaa kasvua ja työtä	IVET, CVET, HE, Others	Survey, Administrative data collection instrument	national	sample
57	FR1	Generation Survey (Cereq)	L'enquête Génération (Céreq)	IVET, CVET, HE, Others	Survey	national	sample
58	FR2	Survey on active life insertion	Enquête Insertion dans la vie active (IVA)	IVET	Survey	national	total reference population
59	FR3	Professional Insertion of Apprentices Survey	Enquete sur l'insertion professionnelle des apprentis (Enquete IPA)	IVET	Survey	national	total reference population
60	FR4	Employability survey for higher education degrees	Insertion professionnelle des diplômés de l'université	HE	Survey	national	total reference population
61	FR5	professional instertion of doctorate holders	"Insertion professionnelle des docteurs"	HE	Survey	national	total reference population
62	HR1	The Results of the Research of the Employability of Students Who Graduated in Academic Year 2015/2016	Rezultati istraživanja o zapošljivosti studenata koji su diplomirali akademske godine 2015./2016.	HE	Survey	national	total reference population
63	HU1	Graduate Tracking System	Diplomás Pályakövetés Rendszere	HE	Survey, Administrative data collection instrument	national	total reference population

Nbr.	Country	Title of measure in English	Titel of measure in original language	System coverage <sup>1</sup>	General type/ Source <sup>2</sup>	Area/ level <sup>3</sup>	Basis (reference population) <sup>4</sup>
64	HU2	Graduate Tracking Scheme in VET	Not yet available.	IVET, CVET		national	total reference population
65	HU3	Labor market situation of freshly graduated skilled workers	A pályakezdő szakmunkások munkaerő-piaci helyzete	IVET	Survey	national	sample
66	IE1	2016 Follow Up Surveys of FET Programme Participants	2016 Follow Up Surveys of FET Programme Participants	IVET, CVET	Survey	national	total reference population
67	IE2	School Leavers Survey	School Leavers Survey	IVET	Survey	national	sample
68	IE3	Graduate Outcomes Survey	Graduate Outcomes Survey	HE	Survey, Administrative data collection instrument	national	total reference population
69	IE4	Programme and Learner Support System	Programme and Learner Support System	IVET, CVET	Administrative data collection instrument, Other Source of discrete mass-data	national	total reference population
70	IE5	Further Education Outcomes	Further Education Outcomes	IVET, CVET	Administrative data collection instrument	national	total reference population
71	IE6	Higher Education Outcomes	Higher Education Outcomes	HE	Administrative data collection instrument	national	total reference population
72	IT1	ISTAT Inquiry into the study and work paths of diploma holders	Indagine sui percorsi di studio e di lavoro dei diplomati	IVET	Survey, Administrative data collection instrument	national	sample
73	IT2	AlmaDiploma - Choices of diploma holders: employment and education one year and three years after	Analisi delle Scelte dei diplomati ad uno e tre anni dal conseguimento del diploma.	IVET	Survey, Administrative data collection instrument	national	sample
74	IT3	National Registry of students	Anagrafe Nazionale Studenti	IVET, HE	Administrative data collection instrument	national	total reference population

Nbr.	Country	Title of measure in English	Titel of measure in original language	System coverage <sup>1</sup>	General type/ Source <sup>2</sup>	Area/ level <sup>3</sup>	Basis (reference population) <sup>4</sup>
75	IT4	ISTAT Inquiry on the professional integration of graduates	L'indagine campionaria sull'inserimento professionale dei laureati	HE	Survey, Administrative data collection instrument	national	sample
76	IT5	Graduates' Profile Survey (Alma Laurea Consortium)	Indagine - Profilo dei Laureati	HE	Survey, Administrative data collection instrument	national	total reference population
77	IT6	Graduates' employment condition (AlmaLaurea Consortium)	Condizione occupazionale dei Laureati	HE	Survey, Administrative data collection instrument, Census	national	total reference population
78	IT7	Inquiry on the professional integration of Phd holders after 4 and 6 years from the completion of their Phd	Inserimento professionale dei dottori di ricerca a 4 e 6 anni di distanza dal conseguimento del titolo.	HE	Survey, Administrative data collection instrument	national	sample
79	IT8	National Monitoring of the pathways ITS (Istituti Tecnici Superiori - Higher Technical Institutes )	Monitoraggio nazionale dei percorsi ITS	IVET	Administrative data collection instrument	national	total reference population
80	IT9	Youth Guarantee: Sample inquiry on the employment results of the participants (second report, 2019)	Garanzia Giovani: Indagine campionaria sugli esiti occupazionali dei giovani iscritti (second report, 2019)	IVET	Survey, Administrative data collection instrument	national	sample
81	IT10	Thematic assessment report - the results of PIPOL (Integrated Plan for the policies for occupation and work)	Rapporto tematico di valutazione - I risultati di PIPOL (Piano Integrato di Politiche per l'Occupazione ed il Lavoro)	IVET	Survey, Administrative data collection instrument	federal/regional	sample
82	LI1	Youth Study 2017	Jugendstudie 2017	HE	Survey	national	sample

Nbr.	Country	Title of measure in English	Titel of measure in original language	System coverage <sup>1</sup>	General type/ Source <sup>2</sup>	Area/ level <sup>3</sup>	Basis (reference population) <sup>4</sup>
83	LT1	Human resource demand forecasting system	Žmogiškųjų išteklių paklausos prognozavimo sistema	IVET, HE	Administrative data collection instrument	national	total reference population
84	LT2	National survey of higher education graduates in Lithuania executed in 2014	Lietuvos aukštųjų mokyklų absolventų apklausa, atlikta 2014 m.	HE	Survey, Administrative data collection instrument	national	sample
85	LU1	Transition School-Active Life (TEVA)	Transition École-Vie Active (TEVA)	IVET	Administrative data collection instrument	national	total reference population
86	LV1	Careers and Mobility of Doctorate Holders	Latvijas Zinātnu doktoru tālākās karjeras apsekojums	HE	Survey, Administrative data collection instrument	national	sample
87	LV2	"Higher education graduate monitoring" (This section is embedded in "Higher education quality monitoring system")	"Augstākās izglītības absolventu monitorings" (ši sadaļa ir integrēta augstākās kvalitātes monitoringa sistēmā)	HE	Administrative data collection instrument	national	total reference population
88	LV3	VET graduate tracking system	Profesionālās izglītības absolventu reģistrs.	IVET, CVET	Administrative data collection instrument	national	
89	MT1	Graduate Tracer Study	Graduate Tracer Study	IVET, CVET, HE	Survey	national	sample
90	MT2	EUROGRADUATE Pilot Survey	EUROGRADUATE Pilot Survey	HE	Survey	national	sample
91	NL1	HBO-Monitor (HBO = Dutch Universities of Applied Sciences (in Dutch: hogescholen))	HBO-Monitor	HE	Survey, Administrative data collection instrument	national	total reference population
92	NL2	National Alumni Survey	Nationale Alumni Enquête	HE	Survey	national	total reference population

Nbr.	Country	Title of measure in English	Titel of measure in original language	System coverage <sup>1</sup>	General type/ Source <sup>2</sup>	Area/ level <sup>3</sup>	Basis (reference population) <sup>4</sup>
93	NL3	Vocational Education and Adult Education Monitor / BVE-monitor / School Leavers Survey	Beroepsonderwijs en volwasseneneducatie Monitor / BVE-Monitor / Schoolverlatersonderzoek	IVET, CVET	Survey, Administrative data collection instrument	national	total reference population
94	NL4	SEO Study & Work (SEO = SEO Amsterdam Economics, economic research agency)	SEO Studie & Werk	HE	Administrative data collection instrument	national	total reference population
95	NL5	Fine Art Monitor	Kunsten-Monitor (KUO-Monitor)	HE, Others	Survey, Administrative data collection instrument	national	total reference population
96	NL6	Insights into career outcomes and skills of Dutch graduates with LinkedIn data	Inzicht in carrières en skills met LinkedIn data	HE	Administrative data collection instrument, Other Source of discrete mass-data	national	sample
97	NO1	National Education Data Base (part of Statistics Norway)	Arbeidskraftundersøkelsen	IVET, CVET, HE, Others	Administrative data collection instrument	national	sample
98	NO2	Graduate Survey (Master's)	Kandidatundersøkelsen	HE	Survey, Administrative data collection instrument	national	sample
99	NO3	Special Graduate Survey (Master's)	Spesialkandidatundersøkelsen	HE	Survey	national	sample
100	NO4	Upper-secondary vocational education (IVET) graduate survey	Fagarbeiderundersøkelsen	IVET	Survey	national	total reference population
101	NO5	Survey of graduates from Post-secondary vocational schools	Fagskolekandidatundersøkelsen	CVET	Survey	national	total reference population
102	PL1	Vocational school graduate tracking system (Polish)	Monitorowanie losów absolwentów szkół	IVET, CVET	Survey, Administrative data collection instrument	national	sample



Nbr.	Country	Title of measure in English	Titel of measure in original language	System coverage <sup>1</sup>	General type/ Source <sup>2</sup>	Area/ level <sup>3</sup>	Basis (reference population) <sup>4</sup>
		acronym: MLASZ) - the first round (graduates of vocational schools from the 2016/2017 school year: monitoring of vocational school graduates - the first round)	zawodowych - pierwsza runda (MLASZ) / Absolwenci szkół zawodowych z roku szkolnego 2016/2017: monitoring losów edukacyjnozawodowych absolwentów szkół zawodowych - pierwsza runda				
103	PL2	The Polish Graduate Tracking System (Polish acronym: ELA); hereafter referred to as ELA system.	Ekonomiczne Losy Absolwentów (ELA)	HE	Administrative data collection instrument	national	total reference population
104	PT1	Data and statistics on Higher Education courses: indicator on the percentage of recent graduates registered in the public employment service as unemployed	Dados e estatísticas de cursos superiores: indicador percentagem de recém-diplomados do curso que estão registados no IIEFP como desempregados	HE	Survey, Administrative data collection instrument	national	total reference population
105	PT2	Observatory of secondary students' trajectories. Youth in post-secondary survey.	Observatório dos Trajectos dos Estudantes do Ensino Secundário. Jovens no pós-secundário.	IVET	Survey, Administrative data collection instrument	national	total reference population
106	PT3	Long-term common output and result indicators for ESF investments	Indicadores Comuns Comunitários de resultado de longo prazo	IVET, CVET	Administrative data collection instrument	national	total reference population
107	RO1	Monitoring the socio-professional insertion of VET graduates at 6 and 12 months after graduation	Monitorizarea insertiei socio-profesionale a absolventilor IPT la 6 si la 12 luni de la absolvire	IVET, CVET	Survey	federal/regional	total reference population

Nbr.	Country	Title of measure in English	Titel of measure in original language	System coverage <sup>1</sup>	General type/ Source <sup>2</sup>	Area/ level <sup>3</sup>	Basis (reference population) <sup>4</sup>
108	RO2	National study of monitoring the labour market insertion of higher education graduates	Studiul național de monitorizare a inserției pe piața muncii a absolvenților din învățământul superior	HE	Survey	national	total reference population
109	SE1	Entrance on the labour market after upper secondary school	Inträdet på arbetsmarknaden bland gymnasieavgångna	IVET, Others	Survey, Administrative data collection instrument	national	sample
110	SE2	Establishment on the labour market - What young people do after upper secondary education	Vad ungdomar gör efter gymnasieskolan	IVET, Others	Administrative data collection instrument	national	total reference population
111	SE3	Entrance on the Labour Market after higher education	Inträdet på arbetsmarknaden efter högskolestudier	HE	Survey, Administrative data collection instrument	national	sample
112	SE4	Establishment on the labour market after higher education	Etablering på arbetsmarknaden efter hogskolestudier	HE	Administrative data collection instrument	national	total reference population
113	SE5	Entrance on the labour market after higher vocational education	Studerandes sysselsättning 2018 - Examinerade från yrkeshögskolan 2017	CVET	Survey	national	total reference population
114	SE6	Establishment on the labour market after higher vocational education	Etablering på arbetsmarknaden efter kvalificerade yrkesutbildningar och yrkeshögskoleutbildningar	CVET	Administrative data collection instrument	national	total reference population
115	SE7	Operational programme for investing in growth and employment 2012-2020	Operativt Program: Nationellt socialfondsprogram för investering för tillväxt och sysselsättning 2014-2020	IVET, CVET, Others		national	
116	SI1	Monitoring of employability of graduates of upper-secondary vocational and technical schools	Spremljanje zaposljivosti diplomantov srednjih poklicnih in strokovnih šol	IVET	Survey	national	sample

Nbr.	Country	Title of measure in English	Titel of measure in original language	System coverage <sup>1</sup>	General type/ Source <sup>2</sup>	Area/ level <sup>3</sup>	Basis (reference population) <sup>4</sup>
117	SI2	Records and analytical information system for higher education in the Republic of Slovenia (eVŠ)	Evidenčni in analitski informacijski sistem visokega šolstva v Republiki Sloveniji (eVŠ)	HE	Administrative data collection instrument	national	total reference population
118	SK1	Tracking of school and HE graduates' unemployment through administrative data	Uplatnenie absolventov strednych a vysokych skol v praxi	IVET, HE	Administrative data collection instrument	national	total reference population
119	SK2	Employment of university graduates	Uplatnenie absolventov vysokých škôl	HE	Survey	national	sample
120	UK1	Graduate Outcomes survey	Graduate Outcomes survey	HE	Survey	national	total reference population
121	UK2	Longitudinal Education Outcomes (LEO) study	Longitudinal Education Outcomes (LEO) study	IVET, CVET, HE	Administrative data collection instrument	national	total reference population
122	UK3	Survey of Further Education College Leavers	Survey of Further Education College Leavers	IVET	Survey	federal/regional	sample
123	UK4	College Leaver Destinations (CLD)	College Leaver Destinations (CLD)	IVET, CVET	Survey, Administrative data collection instrument	federal/regional	total reference population

Source: ICF/3s.

<sup>1</sup> System coverage: initial VET (IVET), continuing VET (CVET), higher education (HE), Others;

<sup>2</sup> General type/source: Survey, Administrative data collection instrument, Census, Other Source of discrete mass-data;

<sup>3</sup> Area/level of intervention: national, federal/regional;

<sup>4</sup> Basis: total reference population, sample;

<sup>5</sup> Reasons for tracking: policy, institutional, other.

\*Note: these measures are not strictly graduate tracking as data is collected at one point in time only.

## Annex 4. Annexes to chapter 4

In the following the methodology for the assessment of each country's progress towards meeting the Recommendation of the Council of the European Union is described in detail. The following considerations affected the analysis:

- Broad features of tracking systems enable the specific requirements in the Recommendation to be grouped and to remove some double counting; for example, not scoring aspects of coverage twice with separate assessments for groups covered and the approaches available.
- Weighting the criteria to reflect their importance in the achievement of the Recommendation. 'Inclusion' is critical so has over a third of the score to guide an overall assessment of data quality; longitudinality, quality of data and dissemination and use are given 20% each.
- As the Recommendation focuses on surveys and administrative data collection instruments, this focus is also reflected in this analysis. Surveys and administrative data are the most common methods used anyhow: 98% of the data collection approaches are either surveys (50%) or administrative data collection instruments (48%). Census is only used in one measure, other sources of discrete mass data are used in two measures.

The following table provides an overview about the benchmarking criteria which were defined on basis of the Recommendation, relevant elements of country system level graduate tracking measures which were taken into account for the analysis, the rating score and scale as basis for the qualitative assessment.

Table 63. Assessment of countries' progress towards meeting the Council Recommendation

Benchmarking criteria	Elements of country system level graduate tracking	Rating score out of 100	Qualitative assessment (broad five-point scale)
Inclusion of graduate programmes: coverage of the relevant graduate programmes in HE, IVET and CVET by regular survey and administrative data analysis	Inclusion of graduates from IVET (upper sec and work based/apprentices, CVET (work-based and provider based), HE (graduate and post grad)	Out of 25	Complete coverage (25) Nearly complete coverage (missing one group per method) (20) Good coverage (all groups covered by at least one method) (15) Limited coverage (missing groups by any method and other gaps) (10) (Nearly) no coverage apart from occasional one-off measures (5)

Benchmarking criteria	Elements of country system level graduate tracking	Rating score out of 100	Qualitative assessment (broad five-point scale)
Inclusion of graduates: coverage of the graduate population	Inclusion of all graduates in each cohort in surveys and administrative data analysis - so capturing graduates who have migrated (in surveys) and those who have dropped out (in surveys and admin data) and achieving responses to surveys from sufficient graduates representative of the total population to enable sub-analysis	Out of 15	<p>Complete coverage (15)</p> <p>Nearly complete coverage (missing one group) (12)</p> <p>Good coverage (missing two groups) (10)</p> <p>Limited coverage (missing cohorts and sub-groups, convenience samples, insufficient sample sizes) (8)</p> <p>(Nearly) no coverage except occasional one-off measures (5)</p>
Longitudinality: tracks graduates at different points after they have graduated	All graduates are tracked at regular specified intervals in both surveys and administrative data analysis	Out of 20	<p>Completely achieved (20)</p> <p>Nearly achieved (tracking at two or more points after graduation by at least one measure covering two sectors only) (16)</p> <p>Partially achieved (tracking at two or more points after graduation by at least one measure covering one sector only) (12)</p> <p>Limited achievement (only one/some sub-group/s tracked) (8)</p> <p>(Nearly) no evidence of longitudinal tracking (4)</p>

Benchmarking criteria	Elements of country system level graduate tracking	Rating score out of 100	Qualitative assessment (broad five-point scale)
Quality of data: provides quantitative and qualitative data which meets a wide variety of needs	Administrative data includes information on graduates' pay, employment, unemployment linked to educational achievement. Survey data includes information on further education and training, employment and career progression and relevance of education linked to educational achievement and socio-biographical information.	Out of 20	<p>Completely achieved (20)</p> <p>Nearly achieved (one information area missing for one group) (16)</p> <p>Partially achieved (several information areas missing for more than one group) (12)</p> <p>Limited achievement (all groups have only some areas of information collected) (8)</p> <p>(Nearly) no evidence of collecting relevant data (4)</p>
Dissemination and use of data: different users and forms of use of the data	Data is available in suitable formats for use by policy makers, providers and researchers to inform career guidance, curriculum development, skills needs assessments, employment and education planning at national as well as provider levels	Out of 20	<p>Complete coverage (20)</p> <p>Nearly complete coverage (missing one user group and one use) (16)</p> <p>Good coverage (evidence of policy or provider level use in several types of use) (12)</p> <p>Limited coverage (few users/uses, little availability of data) (8)</p> <p>(Nearly) no coverage except occasional use of one-off measures (4)</p>

Source: research ICF, 3s and CHEPS.

Each criterion is analysed in a separate section below. This is followed by a summarizing discussion of the results at the end.

### Benchmarking criterion 'Inclusion of graduate programmes'

The criterion 'Inclusion of graduate programmes' focuses on the coverage of the relevant graduate programmes in HE, IVET and CVET by regular survey and administrative data analysis. The following items were taken into account for the analysis of the coverage of the inclusion:

- Which education sectors are covered by the graduate tracking measures in a country? (IVET, CVET, HE)
- Which data collection approach and research design is applied? (Survey, Administrative data collection)

The results for these items were analysed for each individual measure and in summary per country. The qualitative assessment of the coverage of the inclusion of graduate programmes per country was based on the following criteria:

- Complete coverage (25 points): all parts of the education system are covered by all methods
- Nearly complete coverage (20 points): one education sector per method is missing
- Good coverage (15 points): all education sectors are covered by at least one method
- Limited coverage (10 points): more than one education sector is missing and/or one method is missing across all parts
- (Nearly) no coverage (5 points): (apart from occasional one-off measures) there is no coverage of the education sectors and methods

The results of the assessment can be found in the table below. Besides the assessment of the coverage, the table contains information on what education sectors are not covered via any of the graduate tracking measures, what tracking methods are not applied or what combinations of education sectors and methods are missing, in each country, as relevant.

Table 64. Inclusion of graduate programmes: Coverage of relevant graduate programmes in IVET, CVET and HE by survey and administrative data analyses

Country	Complete coverage (25 points)	Nearly complete coverage (20 points)	Good coverage (15 points)	Limited coverage (10 points)	(Nearly) no coverage (5 points)	Missing education sectors	Missing methods	Missing combination of education sectors and methods
Austria		20				-	-	CVET survey
Belgium (Flanders)			15			-	survey	-
Belgium (France)				10*		HE	-	IVET survey, HE admin data, HE survey
Bulgaria				10		CVET	-	CVET survey, CVET admin data, HE survey
Croatia				10		IVET, CVET	admin data	IVET survey, IVET admin data, CVET survey,

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Country	Complete coverage (25 points)	Nearly complete coverage (20 points)	Good coverage (15 points)	Limited coverage (10 points)	(Nearly) no coverage (5 points)	Missing education sectors	Missing methods	Missing combination of education sectors and methods
								CVET admin data, HE admin data
Cyprus					5	all	all	all
Czech Republic				10		CVET	-	CVET survey, CVET admin data
Denmark	25					-	-	-
Estonia		20				-	-	CVET admin data
Finland	25					-	-	-
France			15			-	admin data	-
Germany	25					-	-	-
Greece					5	all	all	all
Hungary				10		CVET	-	IVET admin data, CVET survey, CVET admin data
Iceland					5	all	all	all
Ireland	25					-	-	-
Italy				10		CVET	-	CVET survey, CVET admin data
Latvia			15			-	-	IVET survey, CVET survey
Liechtenstein				10		IVET, CVET	admin data	IVET survey, IVET admin data, CVET survey, CVET admin data, HE survey
Lithuania				10		CVET	-	IVET survey, CVET survey, CVET admin data
Luxembourg				10		CVET, HE	survey	IVET survey, CVET survey, CVET admin data, HE survey, HE admin data



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Country	Complete coverage (25 points)	Nearly complete coverage (20 points)	Good coverage (15 points)	Limited coverage (10 points)	(Nearly) no coverage (5 points)	Missing education sectors	Missing methods	Missing combination of education sectors and methods
Malta			15			-	admin data	IVET admin data, CVET admin data, HE admin data
Netherlands	25					-	-	-
Norway	25					-	-	-
Poland		20				-	-	HE survey
Portugal				10**		HE	admin data	IVET admin data, CVET admin data, CVET survey, HE admin data, HE survey
Romania			15			-	admin data	IVET survey, CVET survey, HE survey
Slovakia				10		CVET	-	IVET survey, CVET survey, CVET admin data
Slovenia				10		CVET	-	IVET admin, CVET survey, CVET admin data, HE survey
Spain		20				-	-	CVET survey
Sweden	25					-	-	-
United Kingdom	25					-	-	-

Source: research ICF, 3s and CHEPS.

\*) A new measure covering HE in Belgium (France) is expected for 2020 ('Cadastre des parcours éducatifs' / 'Register of educational trajectories').

\*\*) In Portugal, the government has developed an 'indicator on the percentage of recent graduates registered in the public employment service' covering HE graduates, but has not developed tracking as such for this level. VET graduates are, however, tracked through a survey covering all upper secondary graduates which has been conducted systematically since 2010.

Graduate tracking covers all the education sectors and methods in Germany, Denmark, Finland, Ireland, Netherlands, Norway, Sweden and UK. Coverage is nearly complete in Austria, Estonia, Spain, and Poland. In Cyprus, Greece, and Iceland there is no coverage on systemic level.

## Benchmarking criterion 'Inclusion of graduates'

The criterion 'Inclusion of graduates' relates to the coverage of the graduate population within each country, i.e. the inclusion of all graduates in each cohort in surveys and administrative data collection.

The following items were taken into account for the analysis of the coverage of the inclusion of graduates:

- Which graduate population is included by the graduate tracking measures in a country? (completers, people who have left without completing/drop-outs, people who migrate to another country after graduation)
- Are there limitations because of representativeness of the sample? (applies to administrative data collection instruments and surveys)
- Is a survey response rate too small or biased for sub analysis? (applies to surveys)

The qualitative assessment of the criterion 'Inclusion of graduates' was based on the following criteria:

- Complete coverage (15 points): all relevant population groups and representativeness of data
- Nearly complete coverage (12 points): one group of graduate population missing (migrants or drop-outs), representativeness of data
- Good coverage (10 points): two groups of graduate population missing, representativeness of data
- Limited coverage (8 points): missing cohorts and sub-groups, convenience samples, insufficient sample sizes
- (Nearly) no coverage (5 points): (apart from occasional one-off measures) there is no coverage of the different graduate population groups and no representativeness of data

Two measures have been excluded from this analysis, as they currently are not used for tracking graduates: AT4 refers to a student social survey which tracks students, not graduates. ES2 focuses on people registered at Public Employment Services; this measure includes also graduates, but does not focus on this population. For further information see the country factsheets.

The results of the assessment can be found in the table below. For each country, the assessment checks if there is at least one measure that covers all relevant population groups and provides representative data. Besides the assessment of the coverage the table contains information on which groups of graduate population are missing and what is the measure/s coverage in term of education sector/s.

Table 65. Inclusion of graduates: population covered and representativeness

Country	Complete coverage (15 points)	Nearly complete coverage (12 points)	Good coverage (10 points)	Limited coverage (8 points)	(Nearly) no coverage (5 points)	Relevant measure/s (highest coverage)	Missing group/s
Austria	15					AT1, AT2, AT3, AT5	-
Belgium (Flanders)		12				BE-NL1	Migrated graduates
Belgium (France)		12				BE-FR2	Migrated graduates
Bulgaria				8		-	Drop-outs, migrated graduates

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Country	Complete coverage (15 points)	Nearly complete coverage (12 points)	Good coverage (10 points)	Limited coverage (8 points)	(Nearly) no coverage (5 points)	Relevant measure/s (highest coverage)	Missing group/s
Croatia					5	-	Completers, drop-outs, migrated graduates
Cyprus					5	-	Completers, drop-outs, migrated graduates
Czech Republic		12				CZ4	Migrated graduates
Denmark		12				DK1, DK2	Migrated graduates
Estonia		12				EE1	Migrated graduates
Finland	15						-
France		12				FR1	Migrated graduates
Germany	15					DE3, DE4, DE5	-
Greece					5	-	Completers, drop-outs, migrated graduates
Hungary		12				-	-
Iceland					5	-	Completers, drop-outs, migrated graduates
Ireland			10			IE4	Migrated graduates
Italy			10			-	Drop-outs, migrated graduates
Latvia				8		-	Drop-outs, migrated graduates
Liechtenstein				8		-	Migrated graduates
Lithuania				8		-	Drop-outs, migrated graduates
Luxembourg				8		-	Migrated graduates
Malta				8		-	Drop-outs
Netherlands			10			NL4	Drop-outs
Norway			10			-	Drop-outs, migrated graduates

Country	Complete coverage (15 points)	Nearly complete coverage (12 points)	Good coverage (10 points)	Limited coverage (8 points)	(Nearly) no coverage (5 points)	Relevant measure/s (highest coverage)	Missing group/s
Poland		12				PL1, PL2	Migrated graduates
Portugal	15					PT2	-
Romania			10			-	Drop-outs, migrated graduates
Slovakia				8		-	Drop-outs, migrated graduates
Slovenia			10			SI2	Migrated graduates
Spain		12				ES3, ES7	-
Sweden		12				SE2, SE4	Migrated graduates
United Kingdom			10			UK2	Migrated graduates

Source: research ICF, 3s and CHEPS.

The main results of the assessment are described in the following:

- Only four measures (AT2, DE3, HU3, PT2) provide data for all relevant population groups and do provide representative data.
- The target group of persons who have left their studies without completing is included in 36 measures in Austria (AT1, AT2, AT3), Belgium (BE-FR2, BE-NL1), Czech Republic (CZ4), Germany (DE1, DE3, DE4, DE5), Denmark (DK1, DK2), Estonia (EE1), Spain (ES1, ES3, ES5), Finland (FI1), France (FR1, FR2, FR3), Hungary (HU3), Ireland (IE2, IE4), Liechtenstein (LI1), Luxembourg (LU1), Poland (PL1, PL2), Portugal (PT2, PT3), Sweden (SE1, SE2, SE3, SE4), Slovenia (SI1, SI2), and United Kingdom (UK2).
- The target group of persons who migrated to another country after graduation is only part of 13 measures within 8 countries: AT2 and AT 5 in Austria, DE3 and DE10 in Germany, ES7 in Spain, FI2 and FI3 in Finland, HU3 in Hungary, LV3 in Latvia, MT2 in Malta, NL4 and NL6 in the Netherlands as well as PT2 in Portugal.
- No limitations because of representativeness of the sample are reported for 63 measures. This information was not available for 29 measures.
- Survey response rates were considered adequate in 69 measures; in 20 measures the survey response rate was too small or biased for further sub analysis. This information was not available in 34 cases.

### Benchmarking criterion for 'Longitudinality'

The criterion 'Longitudinality' aims to determine if a country has longitudinal data on its graduates – that is if graduates are tracked at regular specified intervals through surveys and/or administrative-data based tools.

The following item was taken into account for the analysis:

- Is the cohort followed up (longitudinal study – i.e. the same individual is followed twice or more times)?

The qualitative assessment of the criterion 'Longitudinality' was based on the following criteria:

- Completely achieved (20 points): tracking at two points after graduation – or more – by at least one measure covering all the sectors: IVET, HE and CVET and using survey and administrative data matching
- Nearly achieved (16 points): tracking at two points after graduation – or more – by at least one measure in the country covering all the sectors (IVET, HE, CVET) and using either survey or admin data
- Partially achieved (12 points): tracking at two points after graduation – or more – by at least one measure in the country covering two sectors only
- Limited achieved (8 points): tracking at two points after graduation – or more – by at least one measure in the country covering one sector only
- Little or no evidence of longitudinal tracking (4 points)

The results of the assessment can be found in the table below. For each country, relevant measure/s with highest coverage are listed as well as missing sectors and/or other limitations

Table 66. Longitudinality of tracking

Country	Completely achieved (20 points)	Nearly achieved (16 points)	Partially achieved (12 points)	Limited achieved (8 points)	(Nearly) not achieved (4 points)	Relevant measure/s (highest coverage)	Missing sectors, methods and other limitations
Austria		16				AT1	-
Belgium (Flanders)				8		BE-NL2	Survey
Belgium (France)		16				BE-FR2	-
Bulgaria					4	-	CVET
Croatia					4	-	IVET, CVET; admin data
Cyprus					4	-	IVET, CVET, HE; survey, admin data
Czech Republic				8		CZ5	CVET
Denmark			12			DK1, DK3	-
Estonia					4	-	-
Finland		16				FI1, FI7, FI8	-
France		16				FR1	admin data
Germany	20					DE1	-
Greece					4	-	IVET, CVET, HE; admin data
Hungary			12			HU1	-

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Country	Completely achieved (20 points)	Nearly achieved (16 points)	Partially achieved (12 points)	Limited achieved (8 points)	(Nearly) not achieved (4 points)	Relevant measure/s (highest coverage)	Missing sectors, methods and other limitations
Iceland					4	-	-
Ireland			12			IE5	-
Italy			12			IT1, IT2, IT6, IT7	CVET
Latvia				8		LV2	-
Liechtenstein					4	-	IVET, CVET; admin data
Lithuania			12			LT2	CVET
Luxembourg				8		LU1	CVET, HE; survey
Malta					4	-	admin data
Netherlands					4	-	-
Norway					4	-	-
Poland				8		PL2	PL1: system at development stage
Portugal			12			PT2, PT3	-
Romania			12			RO1	admin data
Slovakia					4	-	CVET
Slovenia					4	-	CVET
Spain			12			ES5	-
Sweden				8		SE2	-
United Kingdom		16				UK2	-

*Source: research ICF, 3s and CHEPS.*

The only with complete coverage of longitudinal data, all sectors and methods is Germany. Countries which have nearly achieved full coverage are Austria, Belgium (France), Finland, France and UK. Countries with no coverage are Bulgaria, Cyprus, Estonia, Greece, Croatia, Iceland, Liechtenstein, Malta, Netherlands, Norway, Slovenia and Slovakia.

## Benchmarking criterion on the 'Quality of data'

The criterion 'Quality of data' aims to determine if quantitative and qualitative data which are collected in the graduate tracking measures within each country provide a variety of information (e.g. information on graduates' pay, employment, unemployment, information on further education and training, employment and career progression, etc.).

The following items were taken into account for the analysis:

- What are the main indicators covered by the instrument? (Focus on the following options: socio-biographical and socioeconomic information, employment status, further education and training pathways, satisfaction, relevance/utilisation of acquired skills at the workplace, link to level, field of study and provider)

The qualitative assessment of the criterion 'Quality of data' was based on the following criteria:

- Completely achieved (20 points): all relevant data are collected for all education sectors (IVET, HE and CVET)
- Nearly achieved (16 points): one data area missing for more than one education sector (IVET, HE or CVET)
- Partially achieved (12 points): several data areas missing for more than one education sector
- Limited achieved (8 points): all groups have only some areas of information collected
- (Nearly) not achieved (4 points): little or no evidence of collecting relevant data

The following table contains the results of the assessment and information about relevant measure/s within highest coverage within each country. Complete coverage of all data and education sectors within one measure is only given for Germany (DE1) and Malta (MT1).

Table 67. Quality of data of tracking

Country	Completely achieved (20 points)	Nearly achieved (16 points)	Partially achieved (12 points)	Limited achieved (8 points)	(Nearly) not achieved (4 points)	Relevant measure/s (highest coverage)	Education sector covered: IVET/CVET/HE
Austria		16				AT5	IVET, CVET, HE
Belgium (Flanders)			12			BE-NL1	IVET, CVET, HE
Belgium (France)			12			BE-FR1	IVET, CVET, HE
Bulgaria			12				IVET, HE
Croatia			12			HR1	HE
Cyprus					4	-	-
Czech Republic		16				CZ1, CZ2, CZ3, CZ5	IVET, HE
Denmark				8		DK6	IVET, CVET, HE
Estonia		16				EE2	IVET, CVET, HE

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Country	Completely achieved (20 points)	Nearly achieved (16 points)	Partially achieved (12 points)	Limited achieved (8 points)	(Nearly) not achieved (4 points)	Relevant measure/s (highest coverage)	Education sector covered: IVET/CVET/HE
Finland		16				FI2, FI3, FI4, FI7	IVET, CVET, HE
France		16				FR1	IVET, CVET, HE
Germany	20					DE1, DE4, DE10	IVET, CVET, HE
Greece					4	-	-
Hungary		16				HU1	IVET, HE
Iceland					4	-	-
Ireland		16				IE1	IVET, CVET, HE
Italy			12			IT2, IT3, IT6	IVET, HE
Latvia		16				LV2	IVET, CVET, HE
Liechtenstein			12			LI1	HE
Lithuania			12			LT1, LT2	IVET, HE
Luxembourg			12			LU1	IVET
Malta	20					MT1, MT2	IVET, CVET, HE
Netherlands		16				NL1, NL3, NL5	IVET, CVET, HE
Norway		16				NO2, NO3, NO4, NO5	IVET, CVET, HE
Poland		16				PL1	IVET, CVET, HE
Portugal			12			PT2	IVET, CVET, HE
Romania			12			RO1, RO2	IVET, CVET, HE
Slovakia			12			SK2	IVET, HE
Slovenia		16				SI1	IVET, HE
Spain			12			ES3, ES4	IVET, CVET, HE
Sweden		16				SE1, SE5	IVET, CVET, HE
United Kingdom			12			UK1, UK2	IVET, CVET, HE

Source: research ICF, 3s and CHEPS.



## **Benchmarking criterion on 'Dissemination and use of data'**

The criterion 'Dissemination and use of data' contains analyses if data of graduate tracking measures are available in suitable formats for different user groups (policy makers, providers, researchers) and for different forms of usage (e.g. to inform career guidance, curriculum development, skills needs assessments, employment and education planning).

The following items were taken into account for the analysis:

- Who uses the results? (including an analysis of open answers)
- Please indicate for what data are used (strengthen career guidance, support the design and current curriculum, improve skills matching, plan for employment, education and social needs, monitor and evaluate education policies, contribute to policy development at national level)

The qualitative assessment was based on the following criteria:

- Complete coverage (20 points): all user groups and forms of use covered, all sectors (IVET, CVET, HE) covered
- Nearly complete coverage (16 points): one user group and/or one use are missing, two or more sectors covered
- Good coverage (12 points): evidence of policy or provider level use in several types of use, two or more sectors covered
- Limited coverage (8 points): few user groups and/or forms of use, little availability of data, one or two sectors covered
- No coverage (4 points): apart from occasional one-off measures there is no coverage of the different user groups and user forms

The results of the assessment can be found in the table below. Besides the assessment of the coverage the table contains the information, which user groups and/or forms of usage are missing per country.

Table 68. Coverage of the dissemination and use of data in graduate tracking measures per country

Country	Coverage					Education sector covered: IVET, CVET, HE	Missing users *	Missing forms of use					
	Complete coverage (20 points)	Nearly complete coverage (16 points)	Good coverage (12 points)	Limited coverage (8 points)	(Nearly) no coverage (4 points)			Strengthen career guidance	Support design and current curriculum	Improve skills matching	Plan for employment, education and social needs	Monitor and evaluate education policies	Contribute to policy development at a national level
Austria		16				IVET, CVET, HE	-			X			
Belgium (Flanders)			12			IVET, CVET, HE	-			X	X		X
Belgium (France)				8		IVET, CVET, HE	-			X	X		X
Bulgaria			12			IVET	-		X	X	X		
Croatia					4	HE	-	X	X	X	X		X
Cyprus					4	-	n.i.	X	X	X	X	X	X
Czech Republic			12			IVET, HE	-		X	X	X		
Denmark	20					IVET, CVET, HE	-						
Estonia	20					IVET, CVET, HE	-						
Finland	20					IVET, CVET, HE	-						
France			12			IVET, CVET, HE	-	X		X	X		

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Country	Coverage					Education sector covered: IVET, CVET, HE	Missing users *	Missing forms of use						
	Complete coverage (20 points)	Nearly complete coverage (16 points)	Good coverage (12 points)	Limited coverage (8 points)	(Nearly) no coverage (4 points)			Strengthen career guidance	Support design and current curriculum	Improve skills matching	Plan for employment, education and social needs	Monitor and evaluate education policies	Contribute to policy development at a national level	
Germany	16					IVET, CVET, HE	-	X		X				
Greece					4	-	n.i.	X	X	X	X	X	X	X
Hungary	16					IVET, HE	-							
Iceland					4	-	n.i.	X	X	X	X	X	X	X
Ireland			12			IVET, CVET, HE	-	X		X	X			
Italy	16					IVET, HE	-							
Latvia	20					IVET, CVET, HE	-							
Liechtenstein				4		HE	-	X	X	X	X	X	X	X
Lithuania	16					IVET, HE	-							
Luxembourg				4		IVET	-	X		X	X	X	X	X
Malta			12			IVET, CVET, HE	-		X				X	
Netherlands			12			IVET, CVET, HE	-			X	X			

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Country	Coverage					Education sector covered: IVET, CVET, HE	Missing users *	Missing forms of use					
	Complete coverage (20 points)	Nearly complete coverage (16 points)	Good coverage (12 points)	Limited coverage (8 points)	(Nearly) no coverage (4 points)			Strengthen career guidance	Support design and current curriculum	Improve skills matching	Plan for employment, education and social needs	Monitor and evaluate education policies	Contribute to policy development at a national level
Norway	20					IVET, CVET, HE	-						
Poland			12			IVET, CVET, HE	-			X			X
Portugal				8		IVET, CVET, HE	-	X	X	X			X
Romania		16				IVET, CVET, HE	-				X		
Slovakia			12			IVET, HE	-		X				
Slovenia			12			IVET, HE	-			X			
Spain			12			IVET, CVET, HE	-		X	X			X
Sweden	20					IVET, CVET, HE	-						
United Kingdom			12			IVET, CVET, HE	-			X	X		

Source: research ICF, 3s and CHEPS.

\* *n.i.* = no information available.

Complete coverage (all user groups and forms of use) is given in Denmark, Estonia, Finland, Latvia, Norway and Sweden.

## Overview on results

The following table provides an overview about the assessment per benchmarking criterion and country as well as an average across the five benchmarking areas for each country.

Table 69. Inclusion of graduate programmes: Coverage of relevant graduate programmes in IVET, CVET and HE by survey and administrative data analyses

	Inclusion of graduate programmes (max. 25 points)	Inclusion of graduates (max. 15 points)	Longitudinality (max. 20 points)	Quality of data (max. 20 points)	Dissemination and use of data (max. 20 points)	Average across the benchmark areas
Austria	20	15	16	16	16	<b>17</b>
Belgium (Flanders)	15	12	8	12	12	<b>12</b>
Belgium (France)	10	12	16	12	8	<b>13</b>
Bulgaria	10	8	4	12	12	<b>9</b>
Croatia	10	5	4	12	4	<b>7</b>
Cyprus	5	5	4	4	4	<b>4</b>
Czech Republic	10	12	8	16	12	<b>12</b>
Denmark	25	12	12	8	20	<b>15</b>
Estonia	20	12	4	16	20	<b>14</b>
Finland	25	10	16	16	20	<b>17</b>
France	15	12	16	16	12	<b>14</b>
Germany	25	15	20	20	16	<b>19</b>
Greece	5	5	4	4	4	<b>4</b>
Hungary	10	12	12	16	16	<b>13</b>
Iceland	5	5	4	4	4	<b>4</b>
Ireland	25	10	12	16	12	<b>15</b>
Italy	10	10	12	12	16	<b>12</b>
Latvia	15	8	8	16	20	<b>12</b>
Liechtenstein	10	8	4	12	4	<b>9</b>
Lithuania	10	8	12	12	16	<b>11</b>
Luxembourg	10	8	8	12	4	<b>10</b>

	Inclusion of graduate programmes (max. 25 points)	Inclusion of graduates (max. 15 points)	Longitudinality (max. 20 points)	Quality of data (max. 20 points)	Dissemination and use of data (max. 20 points)	Average across the benchmark areas
Malta	15	8	4	20	12	<b>12</b>
Netherlands	25	10	4	16	12	<b>13</b>
Norway	25	10	4	16	20	<b>14</b>
Poland	20	12	8	16	12	<b>14</b>
Portugal	10	15	12	12	8	<b>12</b>
Romania	15	10	12	12	16	<b>12</b>
Slovakia	10	8	4	12	12	<b>9</b>
Slovenia	10	10	4	16	12	<b>10</b>
Spain	20	12	12	12	12	<b>14</b>
Sweden	25	12	8	16	20	<b>15</b>
United Kingdom	25	10	16	12	12	<b>16</b>

Source: research ICF, 3s and CHEPS.

The average is assessed as follows:

- 4–5 points: (nearly) no coverage (apart from occasional one-off measures)
- 6–10 points: limited coverage
- 11–14 points: good coverage
- 15–18 points: nearly complete coverage
- 19–20 points: complete coverage

### Methodology for assessing coverage of benchmarking criteria

The following table provides an overview about the coverage of the benchmarking criteria in the analysed measures as well as the coverage within each education sector: initial VET (IVET), continuing VET (CVET), higher education (HE). In each case, the countries to which the respective criterion and the respective education sector applies is listed.

Table 70. Country coverage of benchmarking criteria across IVET, CVET, HE sectors

Benchmarking criteria*		Overall coverage (from 32)	IVET coverage	CVET coverage	HE coverage
Inclusion of graduate programmes	Survey collection	AT, BE-FR, BG, CZ, DE, DK, EE, EL, ES, FI, FR, HR, HU, IE, IT, LI, LT, LV, MT, NL, NO, PL, PT, RO, SE, SI, SK, UK (28)	AT, BG, CZ, DE, DK, EE, ES, FI, FR, HU, IE, IT, MT, NL, NO, PL, PT, RO, SE, SI, UK (21)	BE-FR, DE, DK, EE, FI, FR, IE, MT, NL, NO, PL, RO, SE, UK (14)	AT, CZ, DE, DK, EE, ES, FI, FR, HR, HU, IE, IT, LI, LT, LV, MT, NL, NO, PT, RO, SE, SK, UK (23)
	Data administration	AT, BE-FR, BE-NL, BG, CZ, DE, DK, EE, ES, FI, HU, IE, IT, LT, LU, LV, NL, NO, PL, PT, SE, SI, SK, UK (24)	AT, BE-FR, BE-NL, BG, CZ, DE, DK, EE, ES, FI, IE, IT, LT, LU, LV, NL, NO, PL, PT, SE, SK, UK (22)	AT, BE-FR, BE-NL, DE, DK, ES, FI, IE, LV, NL, NO, PL, PT, SE, UK (15)	AT, BE-FR, BE-NL, BG, CZ, DE, DK, EE, ES, FI, HU, IE, IT, LT, LV, NL, NO, PL, PT, SE, SI, SK, UK (23)
	Periodicity of measures	AT, BE-FR, BE-NL, BG, CZ, DE, DK, EE, ES, FI, FR, HU, IE, IT, LT, LU, LV, NL, NO, PL, PT, RO, SE, SI, SK, UK (26)	AT, BE-NL, CZ, DE, DK, EE, ES, FI, FR, HU, IE, IT, LT, LU, NL, NO, PT, SE, SK, UK (20)	AT, BE-FR, BE-NL, DE, DK, ES, FI, FR, IE, NL, NO, PT, SE, UK (14)	AT, BE-NL, BG, CZ, DE, DK, EE, ES, FI, FR, HU, IE, IT, LT, LV, NL, NO, PL, PT, RO, SE, SI, SK, UK (24)
	Representativeness of data	AT, BE-FR, BE-NL, CZ, DE, DK, EE, ES, FI, FR, IE, IT, LT, LU, LV, NL, NO, PL, PT, RO, SE, SI, SK, UK (24)	AT, BE-FR, BE-NL, CZ, DE, DK, EE, ES, FI, FR, IE, IT, LT, LU, NL, NO, PL, PT, RO, SE, SK, UK (22)	BE-FR, BE-NL, DE, DK, EE, FI, FR, IE, NL, NO, PL, PT, RO, SE, UK (15)	AT, BE-FR, BE-NL, CZ, DE, DK, EE, ES, FI, FR, IE, IT, LT, LV, NL, NO, PL, RO, SE, SI, SK, UK (22)
	Sufficient response rate*	AT, BE-FR, CZ, DE, ES, FI, FR, HR, HU, IT, LV, MT, NL, NO, PL, PT, RO, SE, UK (19)	DE, ES, FI, FR, HU, IT, MT, NL, PL, RO, SE, UK (12)	BE-FR, DE, FI, FR, MT, NL, PL, RO, SE, UK (10)	AT, CZ, DE, ES, FI, FR, HR, HU, IT, LV, MT, NL, NO, PT, RO, SE, UK (17)
	Data availability	AT, BE-FR, BE-NL, BG, CZ, DE, DK, EE, ES, FI, FR, HR, HU, IE, IT, LI, LT, LU, LV, MT, NL, NO, PL, PT, RO, SE, SI, SK, UK (29)	AT, BE-FR, BE-NL, CZ, DE, DK, EE, ES, FI, FR, HU, IE, IT, LT, LU, LV, MT, NL, NO, PL, PT, RO, SE, SI, SK, UK (26)	AT, BE-FR, DE, DK, EE, ES, FI, FR, IE, LV, MT, NL, NO, PL, PT, RO, SE, UK (18)	AT, BE-FR, BE-NL, BG, CZ, DE, DK, EE, ES, FI, FR, HR, HU, IE, IT, LI, LT, LV, MT, NL, NO, PL, PT, RO, SE, SI, SK, UK (28)
Graduate population included	Completers	AT, BE-FR, BE-NL, BG, CZ, DE, DK, EE, ES, FI, FR, HR, HU, IE, IT, LI, LT, LU, LV, MT, NL, NO, PL, PT, RO, SE, SI, SK, UK (29)	AT, BE-FR, BE-NL, BG, CZ, DE, DK, EE, ES, FI, FR, HU, IE, IT, LT, LU, MT, NL, NO, PL, PT, RO, SE, SI, SK, UK (26)	AT, BE-FR, BE-NL, DE, DK, EE, ES, FI, FR, HU, IE, MT, NL, NO, PL, PT, RO, SE, UK (19)	AT, BE-FR, BG, CZ, DE, DK, EE, ES, FI, FR, HR, HU, IE, IT, LI, LT, LV, MT, NL, NO, PL, PT, RO, SE, SI, SK, UK (27)
	People who have left without completing	AT, BE-FR, BE-NL, CZ, DE, DK, EE, ES, FI, FR, HU, IE, LI, LU, PL, PT, SE, SI, UK (19)	AT, BE-FR, BE-NL, CZ, DE, DK, EE, ES, FI, FR, HU, IE, LU, PL, PT, SE, SI, UK (18)	AT, BE-FR, DE, DK, ES, FI, FR, IE, PL, PT (10)	AT, BE-FR, BE-NL, CZ, DE, DK, EE, ES, FI, FR, LI, PL, SE, SI, UK (15)

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Benchmarking criteria*		Overall coverage (from 32)	IVET coverage	CVET coverage	HE coverage
	Students (before completion)	AT, CZ, DE, DK, EE, FI, HU, IE, IT, LI, PL, PT, SI (13)	CZ, DE, DK, HU, IE, IT, FI, PL, PT (9)	DE, DK, IE, FI, PL (5)	AT, DE, DK, EE, FI, HU, IT, LI, SI (9)
	Residents in country	AT, BG, DE, ES, FI, FR, LI, LT, LV, MT, NL, NO, PT, SE, UK (15)	AT, BG, DE, ES, FR, LT, LV, NO, PT, SE, UK (11)	AT, DE, ES, FR, LV, NO, SE, UK (8)	AT, BG, DE, ES, FI, FR, LI, LT, MT, NL, NO, SE, UK (13)
	Migrants to another country after graduation	AT, DE, ES, FI, HU, LV, MT, NL, PT (9)	AT, DE, HU, LV, PT (5)	DE, LV (2)	AT, DE, ES, FI, MT, NL (6)
Longitudinality / Follow-up	Is the cohort followed-up?	AT, BE-FR, BE-NL, CZ, DE, DK, ES, FI, FR, HU, IE, IT, LT, LU, LV, PL, PT, RO, SE, UK (20)	AT, BE-FR, CZ, DE, DK, ES, FI, FR, HU, IE, IT, LU, PL, PT, RO, SE, UK (17)	AT, BE-FR, BE-NL, DE, DK, FI, FR, IE, PL, PT, RO, UK (12)	AT, BE-FR, DE, DK, ES, FI, FR, HU, IE, IT, LT, LV, PL, RO, UK (15)
Quality of data / main indicators covered	Socio-biographical and socioeconomic information	AT, BE-FR, BE-NL, CZ, DE, DK, EE, ES, FI, FR, HR, HU, IE, IT, LI, LT, LU, LV, MT, NL, NO, PL, PT, RO, SE, SI, SK, UK (28)	AT, BE-NL, CZ, DE, DK, EE, ES, FI, FR, HU, IE, IT, LT, LU, LV, MT, NL, NO, PL, PT, RO, SE, SI, SK, UK (25)	AT, BE-FR, DE, DK, EE, FI, IE, LV, MT, NL, NO, PL, RO, SE, UK (15)	AT, BE-NL, CZ, DE, DK, EE, ES, FI, FR, HR, HU, IE, IT, LI, LT, LV, MT, NL, NO, PL, RO, SE, SI, SK, UK (25)
	Employment status	AT, BE-FR, BE-NL, BG, CZ, DE, DK, EE, ES, FI, FR, HR, HU, IE, IT, LI, LT, LU, LV, MT, NL, NO, PL, PT, RO, SE, SI, SK, UK (29)	AT, BE-FR, BE-NL, BG, CZ, DE, DK, EE, ES, FI, FR, HU, IE, IT, LT, LU, LV, MT, NL, NO, PL, PT, RO, SE, SI, SK, UK (27)	AT, BE-FR, BE-NL, DE, DK, EE, ES, FI, FR, IE, LV, MT, NL, NO, PL, PT, RO, SE, UK (19)	AT, BE-FR, BE-NL, CZ, DE, DK, EE, ES, FI, FR, HR, HU, IE, IT, LI, LT, LV, MT, NL, NO, PL, PT, RO, SE, SK, UK (26)
	Further education and training pathways	AT, BE-FR, BG, CZ, DE, DK, EE, ES, FI, FR, HU, IE, IT, LT, LU, LV, MT, NL, NO, PL, SE, SI, SK, UK (24)	AT, BE-FR, BG, CZ, DE, DK, EE, ES, FI, FR, HU, IE, IT, LU, LV, MT, NL, NO, PL, PT, SE, SI, UK (23)	AT, BE-FR, DE, DK, EE, FI, FR, IE, LV, MT, NL, NO, PL, SE, UK (15)	AT, BE-FR, CZ, DE, DK, EE, ES, FI, FR, HU, IE, IT, LT, LV, MT, NL, NO, PL, SE, SI, SK, UK (22)
	Satisfaction*	AT, BE-FR, BG, CZ, DE, EE, ES, FI, FR, HR, HU, IE, IT, LI, LT, LV, MT, NL, NO, PL, PT, RO, SE, SI, UK (25)	AT, BG, CZ, DE, EE, FI, FR, HU, IE, IT, MT, NL, NO, PL, PT, RO, SI, UK (18)	BE-FR, DE, EE, FI, FR, IE, MT, NL, NO, PL, RO, SE (12)	AT, CZ, DE, EE, ES, FI, FR, HR, HU, IE, IT, LI, LT, LV, MT, NL, NO, RO, UK (19)
	Relevance/utilisation of acquired skills at the workplace*	AT, BE-FR, CZ, DE, DK, EE, ES, FI, FR, HR, HU, IE, IT, LT, LV, MT, NL, NO, PL, PT, RO, SE, SI, SK, UK (25)	AT, CZ, DE, DK, EE, ES, FI, FR, HU, IE, IT, LT, MT, NL, NO, PL, PT, RO, SE, SI, UK (21)	BE-FR, DE, EE, FI, FR, IE, MT, NL, NO, PL, RO, SE (12)	AT, CZ, DE, DK, EE, ES, FI, FR, HR, HU, IE, IT, LT, LV, MT, NL, NO, RO, SE, SK, UK (21)



Benchmarking criteria*		Overall coverage (from 32)	IVET coverage	CVET coverage	HE coverage
Link to level, field of study and provider		AT, BE-NL, BG, CZ, DE, EE, ES, FI, FR, HU, IE, IT, LI, LT, LV, MT, NL, NO, PL, RO, SE, SI, SK, UK (24)	AT, BE-NL, BG, CZ, DE, EE, ES, FI, FR, IE, IT, LT, LV, MT, NL, NO, PL, SE, SI, UK (20)	AT, BE-NL, DE, EE, FI, FR, IE, LV, MT, NL, NO, PL, SE, UK (14)	AT, BE-NL, CZ, DE, EE, ES, FI, FR, HU, IE, IT, LI, LT, LV, MT, NL, NO, RO, SE, SI, SK, UK (22)
	Place of residence / migration to other countries	AT, BE-FR, BE-NL, CZ, DE, DK, EE, ES, FI, FR, HU, IE, IT, LI, LT, LV, MT, NL, NO, RO, SE, SI, SK, UK (24)	AT, BE-NL, DE, DK, ES, FI, FR, HU, IE, IT, LT, MT, NL, NO, SE, SI (16)	AT, BE-FR, DE, FI, FR, IE, MT, NL, NO, SE (10)	AT, BE-NL, CZ, DE, DK, EE, ES, FI, FR, HU, IE, IT, LI, LT, LV, MT, NL, NO, RO, SI, SK, UK (22)
Dissemination and use of data / Missing forms of use	All forms of use (6-7 options)	EE, FI, HU, LT, LV, NO, SE (7)	EE, FI, LT, LV, NO, SE (6)	FI, LV, NO, SE (4)	EE, FI, HU, LT, LV, NO (6)
	Good coverage of forms of use (4-5 options)	AT, DE, DK, FI, HU, IT, LT, MT, NL, PL, RO, SE, SI, SK, UK (15)	AT, DE, DK, FI, HU, IT, MT, NL, PL, SE, SK (11)	AT, DE, DK, FI, MT, NL, PL, SE (8)	AT, DE, DK, FI, IT, LT, MT, NL, RO, SE, SI, SK, UK (13)
	Limited forms of use (2-3 options)	AT, BE-FR, BE-NL, BG, CZ, DE, DK, EE, ES, FI, FR, HR, IE, IT, LV, NO, PL, PT, RO, SI, SK, UK (22)	BE-NL, CZ, DE, DK, EE, ES, FR, IE, IT, NO, PT, RO, SI, UK (14)	BE-FR, BE-NL, EE, FR, IE, NO, PT, RO, UK (9)	AT, BE-NL, BG, CZ, DE, DK, EE, ES, FI, FR, HR, IE, IT, LV, PL, PT, SK, UK (18)
	(Nearly) no forms of use (0-1 options)	AT, BE-FR, BE-NL, BG, CY, CZ, DE, DK, EL, ES, FI, FR, HU, LI, LU, MT, NL, SE (18)	AT, BE-FR, BE-NL, BG, DE, DK, ES, FI, FR, HU, LU, SE (12)	BE-FR, BE-NL, DE, DK, ES, FI, HU, SE (8)	AT, BE-FR, BE-NL, CZ, DE, DK, ES, FI, FR, LI, MT, NL (12)

Source: Mapping research conducted by ICF, 3s and CHEPS. \* Evaluated only for countries with survey-based measures (n=28), as these indicators usually are not collected via administrative data instruments.

The coverage is assessed as follows for 31 countries:

- 0–4 countries: (nearly) no coverage
- 5–16 countries: limited coverage
- 17–27 countries: good coverage
- 28–30 countries: nearly complete coverage
- 31–32 countries: complete coverage

The coverage for indicators only relevant for countries with survey measures was assessed as follows for 28 countries:

- 0–4 countries: (nearly) no coverage
- 5–14 countries: limited coverage
- 15–23 countries: good coverage
- 24–26 countries: nearly complete coverage
- 27–28 countries: complete coverage

## Methodology for assessing the timeline for countries to meet the Council Recommendation

Table 71. Assessment of timeline for countries to meet the Council Recommendation\*\*

Average assessment against Recommendation	Timeline in months, based on coverage	Country	Country Population *	Population in clusters	Factor for country size	Timeline in years (rounded up)
nearly complete coverage	24	<b>Austria</b>	8858775	6-15 mio.	1,25	3
good coverage	36	<b>Belgium (Flanders)</b>	11467923 (Belgium)	6-15 mio.	1,25	4
limited coverage	48	<b>Belgium (French-speaking)</b>	11467923 (Belgium)	6-15 mio.	1,25	5
limited coverage	48	<b>Bulgaria</b>	7000039	6-15 mio.	1,25	5
limited coverage	48	<b>Croatia</b>	4076246	1-5 mio.	1	4
(nearly) no coverage	60	<b>Cyprus</b>	875898	up to 1 mio.	0,75	4
good coverage	36	<b>Czechia</b>	10649800	6-15 mio.	1,25	4
nearly complete coverage	24	<b>Denmark</b>	5806081	6-15 mio.	1,25	3
good coverage	36	<b>Estonia</b>	1324820	1-5 mio.	1	3
nearly complete coverage	24	<b>Finland</b>	5517919	6-15 mio.	1,25	3
good coverage	36	<b>France</b>	67028048	above 50 mio.	1,75	5
complete coverage	12	<b>Germany</b>	83019213	above 50 mio.	1,75	2
(nearly) no coverage	60	<b>Greece</b>	10722287	6-15 mio.	1,25	6
good coverage	36	<b>Hungary</b>	9772756	6-15 mio.	1,25	4
nearly complete coverage	24	<b>Iceland</b>	356991	up to 1 mio.	0,75	2
nearly complete coverage	24	<b>Ireland</b>	4904226	1-5 mio.	1	2

Average assessment against Recommendation	Timeline in months, based on coverage	Country	Country Population *	Population in clusters	Factor for country size	Timeline in years (rounded up)
good coverage	36	<b>Italy</b>	60359546	above 50 mio.	1,75	5
limited coverage	48	<b>Latvia</b>	1919968	1-5 mio.	1	4
limited coverage	48	<b>Liechtenstein</b>	38378	up to 1 mio.	0,75	3
good coverage	36	<b>Lithuania</b>	2794184	1-5 mio.	1	3
limited coverage	48	<b>Luxembourg</b>	613894	up to 1 mio.	0,75	3
limited coverage	48	<b>Malta</b>	493559	up to 1 mio.	0,75	3
nearly complete coverage	24	<b>Netherlands</b>	17282163	16-50 mio.	1,5	3
good coverage	36	<b>Norway</b>	5328212	1-5 mio.	1	3
good coverage	36	<b>Poland</b>	37972812	16-50 mio.	1,5	5
good coverage	36	<b>Portugal</b>	10276617	6-15 mio.	1,25	4
limited coverage	48	<b>Romania</b>	19401658	16-50 mio.	1,5	6
limited coverage	48	<b>Slovakia</b>	5450421	1-5 mio.	1	4
limited coverage	48	<b>Slovenia</b>	2080908	1-5 mio.	1	4
good coverage	36	<b>Spain</b>	46934632	16-50 mio.	1,5	5
nearly complete coverage	24	<b>Sweden</b>	10230185	6-15 mio.	1,25	3
nearly complete coverage	24	<b>United Kingdom</b>	66647112	above 50 mio.	1,75	4

Source: Mapping research conducted by ICF, 3s and CHEPS.

\* Population in EU and EEA Member States on 1 January 2020, <https://europa.eu/webtools/rest/charts/export/html/> and <https://countryeconomy.com/countries/groups/european-economic-area>

\*\* The timeline is estimated on basis of the average assessment of each country against the Council Recommendation (see chapter 4.1.1), set in relation to each country's size, operationalized by a size factor.

## Annex 5. Annexes to chapter 5

Table 72. Collection of different outcome indicators by graduate tracking measures for initial VET (IVET), continuing VET (CVET) and higher education (HE)

Indicator	IVET	CVET	HE	Others	Number of measures
Employment status	AT1, AT2, BE-FR2, BE-NL1, BG1, CZ4, CZ5, DE1, DE2, DE3, DE4, DE5, DK3, DK5, DK6, DK7, EE1, EE2, ES1, ES2, ES3, ES4, ES5, FI1, FI7, FI8, FI9, FR1, FR2, FR3, HU3, IE1, IE5, IT1, IT2, IT8, IT9, IT10, LT1, LU1, LV3, MT1, NL3, NO1, NO4, PL1, PT2, PT3, RO1, SE1, SE2, SE7, SI1, SK1, UK2, UK3, UK4 (57)	AT1, BE-FR1, BE-FR2, BE-NL2, DE1, DE3, DE4, DK5, EE2, ES1, FI1, FI7, FI8, FI9, FR1, IE1, IE5, LV3, MT1, NL3, NO1, NO5, PL1, PT3, RO1, SE5, SE6, SE7, UK2, UK4 (30)	AT1, AT3, AT4, AT5, BE-FR2, BE-NL1, CZ1, CZ2, CZ3, CZ4, DE1, DE2, DE3, DE4, DE6, DE7, DE8, DE10, DE11, DK3, DK6, EE1, EE3, ES1, ES2, ES6, ES7, FI1, FI2, FI3, FI4, FI5, FI8, FI9, FR1, FR4, FR5, HR1, HU1, IE3, IE6, IT4, IT5, IT6, IT7, LI1, LT1, LT2, LV1, LV2, MT1, MT2, NL1, NL2, NL4, NL5, NL6, NO1, NO2, NO3, PL2, PT1, RO2, SE3, SE4, SK1, SK2, UK1, UK2 (69)	AT2, BE-FR2, DE2, DK4, ES1, ES3, ES5, FI1, FI9, FR1, NL5, NO1, SE1, SE2, SE7 (15)	110
Sustainability of employment	AT1, AT2, CZ5, DE1, DE2, DE4, DE5, DE9, ES3, ES4, FI1, FI7, FI8, FR1, FR2, FR3, HU3, IE1, IE2, IT1, IT2, IT8, LT1, LU1, LV3, MT1, NL3, NO1, NO4, PT2, RO1, SE1, SE2, SI1, UK3 (35)	AT1, BE-FR1, BE-NL2, DE1, DE4, FI1, FI7, FI8, FR1, IE1, LV3, MT1, NL3, NO1, NO5, RO1, SE6 (17)	AT1, AT3, AT4, AT5, CZ3, DE1, DE2, DE4, DE6, DE8, DE9, ES6, ES7, FI1, FI2, FI3, FI8, FR1, FR4, IT4, IT5, IT6, IT7, LT1, LV1, MT1, MT2, NL1, NL2, NL4, NL5, NO1, NO2, RO2, SE3, SE4, UK1 (37)	AT2, DE2, DE9, ES3, FI1, FR1, NL5, NO1, SE1, SE2 (10)	65
Salary	AT1, AT2, DE1, DE4, DE5, DE9, DK6, EE1, EE2, ES3, FR1, IE1, IT1, IT2, LT1, LV3, MT1, NL3, RO1, SE2, UK2, UK3 (22)	AT1, DE1, DE4, EE2, FR1, IE1, LV3, MT1, NL3, RO1, SE6, UK2 (12)	AT1, AT3, AT4, CZ1, CZ2, DE1, DE4, DE8, DE9, DK6, EE1, EE3, FI4, FR1, FR4, HR1, HU1, IE3, IE6, IT4, IT6, LT1, LT2, LV2, MT1, MT2, NL1, NL2, NL4, NL5, NO2, RO2, SE4, SK2, UK1, UK2 (36)	AT2, DE9, ES3, FR1, NL5, SE2 (6)	49
Further education and training pathways	AT1, BE-FR2, BG1, CZ5, DE1, DE2, DE3, DE4, DE5, DE9, DK1, DK3, DK5, EE1, EE2, ES3, FI1, FI7, FI8, FI9, FR1, HU3, IE1, IE5, IT1, IT2, IT3, LU1, LV3, MT1, NL3, NO1, NO4, PL1, PT2, SE1, SE2, SE7, SI1, UK2, UK3, UK4 (27)	AT1, BE-FR1, BE-FR2, DE1, DE3, DE4, DK2, DK5, EE2, FI1, FI7, FI8, FI9, FR1, IE1, IE5, LV3, MT1, NL3, NO1, NO5, PL1, SE5, SE6, SE7, UK2, UK4 (27)	AT1, AT3, AT5, BE-FR2, CZ1, CZ2, CZ3, DE1, DE2, DE3, DE4, DE6, DE7, DE8, DE9, DE10, DE11, DK1, DK3, EE1, ES7, FI1, FI2, FI3, FI4, FI8, FI9, FR1, FR5, HU1, IE3, IE6, IT3, IT4, IT5, IT6, LT2, LV2, MT1, MT2, NL1, NL2, NL4, NL5, NL6, NO1, NO2, NO3, (36)	BE-FR2, DE2, DE9, ES3, FI1, FI9, FR1, NL5, NO1, SE1, SE2, SE7 (12)	84

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Indicator	IVET	CVET	HE	Others	Number of measures
	(42)		PL2, SE3, SE4, SI2, SK2, UK1, UK2 (55)		
Satisfaction (in general)	AT2, BG1, CZ5, DE1, DE2, DE4, DE9, EE2, FI7, FR1, HU3, IE1, IT1, IT2, IT9, IT10, MT1, NL3, NO4, PL1, PT2, RO1, SI1, UK3 (24)	BE-FR1, DE1, DE4, EE2, FI7, FR1, IE1, MT1, NL3, NO5, PL1, RO1, SE5 (13)	AT4, AT5, CZ1, CZ2, CZ3, DE1, DE2, DE4, DE7, DE8, DE9, DE10, DE11, EE3, ES7, FI2, FI3, FI4, FI5, FI6, FR1, HR1, HU1, IE3, IT5, IT6, IT7, LI1, LT2, LV1, LV2, MT1, MT2, NL1, NL2, NL5, NO2, NO3, RO2, UK1 (40)	AT2, DE2, DE9, FR1, NL5 (5)	61
Satisfaction with study program/training	CZ5, DE4, DE9, EE2, FI7, HU3, IE1, IT1, IT2, IT9, IT10, MT1, NL3, NO4, PT2, RO1, SI1, UK3 (18)	BE-FR1, DE4, EE2, FI7, IE1, MT1, NL3, NO5, RO1, SE5 (10)	AT4, AT5, CZ1, CZ2, CZ3, DE4, DE7, DE8, DE9, EE3, ES7, FI2, FI4, FI5, FI6, HU1, IE3, IT5, IT6, IT7, LT2, LV2, MT1, NL1, NL2, NL5, NO2, RO2, UK1 (29)	DE9, NL5 (2)	47
Satisfaction with current job	AT2, CZ5, DE1, DE2, DE4, EE2, FR1, HU3, IE2, MT1, NL3, RO1 (12)	DE1, DE4, EE2, FR1, MT1, NL3, RO1 (7)	CZ1, CZ2, DE1, DE2, DE4, EE3, FI2, FI3, FI4, FR1, HR1, LI1, LV1, MT1, MT2, NL1, NL2, UK1 (18)	AT2, DE2, FR1 (3)	25
Relevance of acquired skills at the workplace	AT2, CZ5, DE1, DE4, DK6, EE2, ES3, ES4, FI7, FR1, FR2, FR3, HU3, IE1, IT2, IT10, LT1, MT1, NL3, NO4, PL1, PT2, RO1, SE1, SI1, UK3 (26)	BE-FR1, DE1, DE4, EE2, FI7, FR1, IE1, MT1, NL3, NO5, PL1, RO1, SE5 (13)	AT5, CZ1, CZ2, CZ3, DE1, DE4, DE10, DK6, EE3, ES7, FI2, FI3, FI4, FI5, FI6, FR1, HR1, HU1, IE3, IT6, LT1, LT2, LV1, LV2, MT1, MT2, NL1, NL2, NL4, NL5, NL6, NO2, NO3, RO2, SE3, SK2, UK1 (37)	AT2, ES3, FR1, NL5, SE1 (5)	60
Social and civic activities and participation in these	DE1, EE2, MT1, PL1, UK4 (5)	DE1, EE2, MT1, PL1, UK4 (5)	AT5, CZ3, DE1, DE10, FI2, LI1, LV2, MT1, MT2, UK1 (10)	-	13

Source: research ICF, 3s and CHEPS.

Table 73. Collection of other indicators for comparability in graduate tracking measures for IVET, CVET and HE

Indicator	IVET	CVET	HE	Others	Sum
Socio-biographical and	AT1, AT2, BE-NL1, CZ4, CZ5, DE1, DE4, DE5, DE9, DK6, EE1,	AT1, BE-FR1, DE1, DE4, DK2, EE2, FI1, FI7, FI8, FI9, IE1,	AT1, AT3, AT4, AT5, BE-NL1, CZ1, CZ2, CZ3, CZ4, DE1, DE4,	AT2, DE9, DK4, ES3, FI1, FI9,	94

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<b>Indicator</b>	<b>IVET</b>	<b>CVET</b>	<b>HE</b>	<b>Others</b>	<b>Sum</b>
socioeconomic information	EE2, ES3, ES4, FI1, FI7, FI8, FI9, FR2, FR3, HU3, IE1, IE5, IT1, IT2, IT3, IT8, IT10, LT1, LU1, LV3, MT1, NL3, NO1, NO4, PL1, PT2, RO1, SE1, SE2, SE7, SI1, SK1, UK2, UK4 (45)	IE5, LV3, MT1, NL3, NO1, NO5, PL1, RO1, SE5, SE6, SE7, UK2, UK4 (24)	DE6, DE8, DE9, DE10, DE11, DK6, EE1, EE3, ES7, FI1, FI2, FI3, FI4, FI5, FI6, FI8, FI9, FR4, FR5, HR1, HU1, IE3, IE6, IT3, IT4, IT5, IT6, IT7, LI1, LT1, LT2, LV1, LV2, MT1, MT2, NL1, NL4, NL5, NO1, NO2, NO3, PL2, RO2, SE3, SE4, SI2, SK1, UK1, UK2 (60)	NL5, NO1, SE1, SE2, SE7 (11)	
Age	AT1, AT2, DE4, DE5, DE9, EE1, ES3, ES4, FI7, FI9, IE1, IE5, IT2, IT8, LT1, LU1, MT1, NL3, NO1, NO4, PT2, RO1, SE1, SE2, SI1, SK1, UK2 (27)	AT1, DE4, FI7, FI9, IE1, IE5, MT1, NL3, NO1, NO5, RO1, SE5, UK2 (13)	AT1, AT4, AT5, CZ1, CZ2, CZ3, DE4, DE8, DE9, EE1, EE3, FI2, FI3, FI4, FI5, FI6, FI9, HR1, IE3, IE6, IT4, IT5, IT7, LT1, LT2, LV1, LV2, MT1, MT2, NL1, NL4, NL5, NO1, NO2, RO2, SE3, SI2, SK1, UK2 (39)	AT2, DE9, DK4, ES3, FI9, NL5, NO1, SE1, SE2 (9)	59
Gender	AT1, AT2, BE-NL1, CZ4, DE4, DE5, DE9, EE1, ES3, ES4, FI7, FI9, FR2, FR3, IE1, IE2, IE5, IT2, IT3, IT8, IT10, LT1, LU1, MT1, NL3, NO1, NO4, PT2, RO1, SE1, SE2 (31)	AT1, DE4, FI7, FI9, IE1, IE5, MT1, NL3, NO1, NO5, RO1, SE5, SE6 (13)	AT1, AT3, AT4, AT5, BE-NL1, CZ1, CZ2, CZ3, CZ4, DE4, DE6, DE8, DE9, EE1, FI2, FI3, FI4, FI5, FI6, FI9, FR4, HR1, IE3, IE6, IT3, IT4, IT5, IT7, LT1, LT2, LV1, LV2, MT1, MT2, NL1, NL4, NL5, NO1, NO2, RO2, SE4 (41)	AT2, DE9, DK4, ES3, FI9, NL5, NO1, SE1, SE2 (9)	65
Nationality	AT1, AT2, DE4, DE5, DE9, ES3, ES4, FI8, IE1, IE5, IT8, LU1, MT1, NO1, PT2, RO1, SE1, SE2, SI1 (19)	AT1, DE4, FI8, IE1, IE5, MT1, NO1, RO1, SE5, SE6 (10)	AT1, AT3, AT4, AT5, CZ1, CZ2, CZ3, DE4, DE6, DE8, DE9, FI2, FI3, FI8, IE6, IT6, IT7, LI1, MT1, NL1, NL4, NL5, NO1, NO2, RO2, SE3, SI2, UK1 (28)	AT2, DE9, ES3, NL5, NO1, SE1, SE2 (7)	43
Social background	DE4, DE9, ES3, FI9, HU3, IE2, IT1, IT3, LU1, PT2, SI1, UK2 (12)	DE4, FI9, UK2 (3)	AT3, AT4, AT5, CZ1, CZ2, CZ3, DE4, DE6, DE8, DE9, FI9, IE3, IT3, IT4, IT5, IT6, IT7, LI1, LV1, UK2 (20)	DE9, ES3, FI9 (3)	27
Link to level, field of study and provider	AT1, BE-NL1, BG1, CZ5, DE1, DE2, DE5, EE2, ES3, ES4, FI1, FI7, FI8, FI9, FR1, FR2, FR3, IE1, IE5, IT3, LT1, LV3, MT1, NL3, NO4, PL1, SE1, SE7, SI1, UK2 (30)	AT1, BE-NL2, DE1, EE2, FI1, FI7, FI8, FI9, FR1, IE1, IE5, LV3, MT1, NL3, NO5, PL1, SE5, SE6, SE7, UK2 (20)	AT1, AT3, AT4, AT5, BE-NL1, CZ1, CZ2, CZ3, DE1, DE2, DE8, DE10, EE3, ES7, FI1, FI2, FI3, FI4, FI5, FI6, FI8, FI9, FR1, FR4, HU1, IE6, IT3, LI1, LT1, LV1, LV2, MT1, MT2, NL1, NL2, NL4, NL5, NL6, NO2, NO3,	DE2, ES3, FI1, FI9, FR1, NL5, SE1, SE7 (8)	68

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<b>Indicator</b>	<b>IVET</b>	<b>CVET</b>	<b>HE</b>	<b>Others</b>	<b>Sum</b>
			RO2, SE3, SE4, SI2, SK2, UK2 (46)		
Place of residence / migration to other countries	AT1, BE-NL1, DE1, DK6, ES3, FI1, FI8, FR1, HU3, IE1, IT2, IT3, LT1, MT1, NL3, NO4, SE7, SI1 (18)	AT1, BE-FR1, DE1, FI1, FI8, FR1, IE1, MT1, NL3, NO5, SE7 (11)	AT1, AT3, AT4, AT5, BE-NL1, CZ1, CZ2, CZ3, DE1, DE10, DK6, EE3, ES7, FI1, FI2, FI3, FI4, FI5, FI6, FI8, FR1, FR4, HU1, IE3, IT3, IT5, IT7, LI1, LT1, LV1, LV2, MT1, MT2, NL1, NL2, NL4, NL5, NL6, NO2, NO3, RO2, SI2, SK2, UK1 (44)	ES3, FI1, FR1, NL5, SE7 (5)	54

*Source: research ICF, 3s and CHEPS.*



Table 74. Assessment of the measures – Initial VET

Code				Residents in country	Migrants to another country after graduation	ISCED or ISCED-F	ILO-STAT, ESCO, ISCO or NACE	Representative	Sufficient survey response rate	Periodicity	Follow up of cohort	ISCED levels covered	Data availability
	Completers	Drop-outs	Students										
AT1	X	X		X		X	X			X	X	3-8	X*
AT2	X	X		X	X			X			X	4	X*
BE-FR2	X	X					X	X			X	2-8	X
BE-NL1	X	X				X		X		X		3	X*
BE-NL3												n.a.	
BG1	X			X			X	X	X			2-4	
CZ4	X	X				X		X		X		3, 6-8	X
CZ5	X		X			X	X			X	X	3	X*
DE1	X	X	X	X		X			X	X	X	0-8	X*
DE2	X			X		X	X	X	X		X	3-4, 6-8	X*
DE3	X	X	X	X	X		X					1-8	X*
DE4	X	X	X	X		X	X	X	X	X		1-8	X*
DE5	X	X		X		X						3	X*

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Code	Completers	Drop-outs	Students	Residents in country	Migrants to another country after graduation	ISCED or ISCED-F	ILO-STAT, ESCO, ISCO or NACE	Representative	Sufficient survey response rate	Periodicity	Follow up of cohort	ISCED levels covered	Data availability
DE9	X		X			X	X			X	X	3-8	X*
DK1	X	X	X			X		X		X	X	0-8	X*
DK3	X					X	X	X		X	X	n.a.	X*
DK5										X		n.a.	
DK6	X					X				X		n.a.	X
DK7	X									X		n.a.	
EE1	X	X				X	X	X		X		0-8	X*
EE2	X					X	X	X				0-5	X*
ES1	X	X		X						X		0-8	X*
ES2										X		3, 5-8	X
ES3	X	X						X	X	X		2-3, 5	X
ES4	X						X					3, 5	
ES5	X	X				X			X	X	X	2-3, 5	X
FI1	X	X	X			X	X	X		X	X	3-8	X*
FI7	X					X			X	X	X	3-5	X*

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Code				Residents in country	Migrants to another country after graduation	ISCED or ISCED-F	ILO-STAT, ESCO, ISCO or NACE	Representative	Sufficient survey response rate	Periodicity	Follow up of cohort	ISCED levels covered	Data availability
	Completers	Drop-outs	Students										
FI8	X					X	X	X		X	X	3-8	X
FI9	X					X				X		1-8	
FR1	X	X		X		X	X	X	X	X	X	3-8	X*
FR2	X	X				X	X			X		3, 5	
FR3	X	X				X	X			X		3-5	
HU2	X											n.a.	
HU3	X	X	X		X	X	X		X	X	X	3-4	X
IE1	X					X	X	X		X		1-4	X
IE2	X	X					X			X		3	X
IE4	X	X	X			X				X		1-4	
IE5	X					X	X			X	X	1-4	X
IT1	X					X	X		X	X	X	3	X*
IT2	X					X	X			X	X	3	X*
IT3	X		X					X		X		3-6	X
IT8	X					X				X		4	X*

Mapping the state of graduate tracking policies and practices in the EU Member States and EEA countries

Code				Residents in country	Migrants to another country after graduation	ISCED or ISCED-F	ILO-STAT, ESCO, ISCO or NACE	Representative	Sufficient survey response rate	Periodicity	Follow up of cohort	ISCED levels covered	Data availability
	Completers	Drop-outs	Students										
IT9	X					X		X	X	X		3	X*
IT10	X					X						3	
LT1	X			X		X	X	X		X		2-4, 6-8	X
LU1	X	X				X	X	X		X	X	0-4	X*
LV3				X	X	X	X					2-4	X*
MT1	X					X			X			1-7	X*
NL3	X					X	X	X	X	X		2-4	X*
NO1				X		X	X	X		X		0-8	X
NO4	X					X	X			X		3	X
PL1	X	X	X			X	X	X	X		X	3	X
PT2	X	X	X	X	X			X		X	X	3	X
PT3	X	X				X		X		X	X	n.a.	X
RO1	X							X	X		X	n.a.	X*
SE1	X	X		X		X			X	X		3	X
SE2	X	X		X		X	X	X		X	X	2-3	X
SE7	X											n.a.	

Code				Residents in country	Migrants to another country after graduation	ISCED or ISCED-F	ILO-STAT, ESCO, ISCO or NACE	Representative	Sufficient survey response rate	Periodicity	Follow up of cohort	ISCED levels covered	Data availability
	Completers	Drop-outs	Students										
SI1	X	X										3	X*
SK1	X					X	X	X		X		6-9	X*
UK2	X	X		X		X		X		X	X	3-4, 6	X
UK3	X			X		X				X		1-3	
UK4	X			X		X		X	X	X		2-5	

Source: research ICF, 3s and CHEPS. \* Regular measure, in contrast to one-off measures, measures which were conducted two or three times, but were then no longer carried out, or measures which were not conducted yet.

Table 75. Assessment of the measures – Continuing VET

Code				Residents in country	Migrants to another country after graduation	ISCED or ISCED-F	ILO-STAT, ESCO, ISCO or NACE	Representative	Sufficient survey response rate	Periodicity	Follow up of cohort	ISCED levels covered	Data availability
	Completers	Drop-outs	Students										
AT1	X	X		X		X	X			X	X	3-8	X*
BE-FR1	X							X	X	X		0-4	X*
BE-FR2	X	X					X	X			X	2-8	X

Mapping the state of graduate tracking policies and practices in the EU Member States and EEA countries

Code	Completers	Drop-outs	Students	Residents in country	Migrants to another country after graduation	ISCED or ISCED-F	ILO-STAT, ESCO, ISCO or NACE	Representative	Sufficient survey response rate	Periodicity	Follow up of cohort	ISCED levels covered	Data availability
BE-NL2	X							X		X	X	4	
BE-NL3												n.a.	
DE1	X	X	X	X		X			X	X	X	0-8	X*
DE3	X	X	X	X	X		X					1-8	X*
DE4	X	X	X	X		X	X	X	X	X		1-8	X*
DK2	X	X	X			X		X		X	X	n.a.	X*
DK5										X		n.a.	
EE2	X					X	X	X				0-5	X*
ES1	X	X		X						X		0-8	X*
FI1	X	X	X			X	X	X		X	X	3-8	X*
FI7	X					X			X	X	X	3-5	X*
FI8	X					X	X	X		X	X	3-8	X
FI9	X					X				X		1-8	
FR1	X	X		X		X	X	X	X	X	X	3-8	X*
HU2	X											n.a.	

Mapping the state of graduate tracking policies and practices in the EU Member States and EEA countries

Code				Residents in country	Migrants to another country after graduation	ISCED or ISCED-F	ILO-STAT, ESCO, ISCO or NACE	Representative	Sufficient survey response rate	Periodicity	Follow up of cohort	ISCED levels covered	Data availability
	Completers	Drop-outs	Students										
IE1	X					X	X	X		X		1-4	X
IE4	X	X	X			X				X		1-4	
IE5	X					X	X			X	X	1-4	X
LV3				X	X	X	X					2-4	X*
MT1	X					X			X			1-7	X*
NL3	X					X	X	X	X	X		2-4	X*
NO1				X		X	X	X		X		0-8	X
NO5	X					X	X	X		X		4-5	X
PL1	X	X	X			X	X	X	X		X	3	X
PT3	X	X				X		X		X	X	n.a.	X
RO1	X							X	X		X	n.a.	X*
SE5	X			X		X		X	X	X		4-6	X
SE6	X			X		X	X	X				4-6	X
SE7	X											n.a.	
UK2	X	X		X		X		X		X	X	3-4, 6	X
UK4	X			X		X		X	X	X		2-5	

Source: research ICF, 3s and CHEPS. \* Regular measure, in contrast to one-off measures, measures which were conducted two or three times, but were then no longer carried out, or measures which were not conducted yet.

Table 76. Assessment of the measures – HE

Code	Completers	Drop-outs	Students	Residents in country	Migrants to another country after graduation	ISCED or ISCED-F	ILO-STAT, ESCO, ISCO or NACE	Representative	Sufficient survey response rate	Periodicity	Follow up of cohort	ISCED levels covered	Data availability
AT1	X	X		X		X	X			X	X	3-8	X*
AT3	X	X		X		X	X			X	X	6-8	X*
AT4			X			X		X	X	X		6-7	X*
AT5	X			X	X	X	X					5-7	X*
BE-FR2	X	X					X	X			X	2-8	X
BE-NL1	X	X				X		X		X		3	X*
BE-NL3												n.a.	
BG2	X			X		X				X		6-8	X
CZ1	X					X	X	X	X			6-8	
CZ2	X					X	X					6-8	
CZ3	X					X	X					6-7	
CZ4	X	X				X		X		X		3, 6-8	X



Mapping the state of graduate tracking policies and practices in the EU Member States and EEA countries

Code	Completers	Drop-outs	Students	Residents in country	Migrants to another country after graduation	ISCED or ISCED-F	ILO-STAT, ESCO, ISCO or NACE	Representative	Sufficient survey response rate	Periodicity	Follow up of cohort	ISCED levels covered	Data availability
DE1	X	X	X	X		X			X	X	X	0-8	X*
DE2	X			X		X	X	X	X		X	3-4, 6-8	X*
DE3	X	X	X	X	X		X					1-8	X*
DE4	X	X	X	X		X	X	X	X	X		1-8	X*
DE6	X									X	X	6-8	X*
DE7	X					X				X	X	6-8	X*
DE8	X					X				X	X	6-8	X*
DE9	X		X			X	X			X	X	3-8	X*
DE10	X			X	X	X	X					5-7	X*
DE11	X					X	X			X	X	6-8	X*
DK1	X	X	X			X		X		X	X	0-8	X*
DK3	X					X	X	X		X	X	n.a.	X*
DK6	X					X	X			X		n.a.	X
EE1	X	X				X	X	X		X		0-8	X*
EE3	X		X			X	X	X				5-8	X*

Mapping the state of graduate tracking policies and practices in the EU Member States and EEA countries

Code	Completers	Drop-outs	Students	Residents in country	Migrants to another country after graduation	ISCED or ISCED-F	ILO-STAT, ESCO, ISCO or NACE	Representative	Sufficient survey response rate	Periodicity	Follow up of cohort	ISCED levels covered	Data availability
ES1	X	X		X						X		0-8	X*
ES2										X		3, 5-8	X
ES6	X			X		X		X		X	X	6	X
ES7	X			X	X	X	X	X	X	X		6-7	X
FI1	X	X	X			X	X	X		X	X	3-8	X*
FI2	X			X	X	X	X	X	X	X		6-7	X*
FI3	X			X	X	X	X	X	X	X		8	X*
FI4	X					X	X	X		X		6-7	X*
FI5	X					X		X	X	X		6	X*
FI6	X					X		X	X	X	X	6-7	X*
FI8	X					X	X	X		X	X	3-8	X
FI9	X					X				X		1-8	
FR1	X	X		X		X	X	X	X	X	X	3-8	X*
FR4	X					X	X	X		X	X	5-7	X
FR5	X					X	X			X	X	8	
HR1	X					X			X			6-7	X

Mapping the state of graduate tracking policies and practices in the EU Member States and EEA countries

Code	Completers	Drop-outs	Students	Residents in country	Migrants to another country after graduation	ISCED or ISCED-F	ILO-STAT, ESCO, ISCO or NACE	Representative	Sufficient survey response rate	Periodicity	Follow up of cohort	ISCED levels covered	Data availability
HU1	X		X			X	X		X	X	X	6-8	X*
IE3	X					X	X			X		5-8	X*
IE6	X					X	X	X		X	X	6-8	X
IT3	X		X					X		X		3-6	X
IT4	X					X	X		X	X		5	X*
IT5	X					X	X	X	X	X		5	X*
IT6	X					X	X	X	X	X	X	5	X*
IT7	X					X	X		X	X	X	6	X*
LI1	X	X	X	X								n.a.	X
LT1	X			X		X	X	X		X		2-4, 6-8	X
LT2	X			X		X	X				X	6	X
LV1	X					X	X		X	X		8	X*
LV2	X					X	X	X		X	X	5-8	X*
MT1	X					X			X			1-7	X*
MT2	X			X	X	X						5-7	
NL1	X						X	X	X	X		5-7	X

Mapping the state of graduate tracking policies and practices in the EU Member States and EEA countries

Code	Completers	Drop-outs	Students	Residents in country	Migrants to another country after graduation	ISCED or ISCED-F	ILO-STAT, ESCO, ISCO or NACE	Representative	Sufficient survey response rate	Periodicity	Follow up of cohort	ISCED levels covered	Data availability
NL2	X					X			X	X		7-8	X*
NL4	X				X			X		X		6-7	
NL5	X						X	X	X	X		6-7	X
NL6	X			X	X							7	
NO1				X		X	X	X		X		0-8	X
NO2	X					X	X			X		7	X
NO3	X					X	X	X	X	X		6-7	
PL2	X	X				X	X	X		X	X	6-8	X
PT1	X					X			X	X		6-7	X
RO2	X							X	X	X	X	6	X*
SE3	X	X		X		X			X	X		5-7	X
SE4	X	X		X		X	X	X		X		5-7	X
SI2	X	X	X			X		X		X		6-8	X*
SK1	X					X	X	X		X		6-9	X*
SK2	X					X	X	X		X		7-9	
UK1	X						X	X	X	X		5-8	X*

Code	Completers	Drop-outs	Students	Residents in country	Migrants to another country after graduation	ISCED or ISCED-F	ILO-STAT, ESCO, ISCO or NACE	Representative	Sufficient survey response rate	Periodicity	Follow up of cohort	ISCED levels covered	Data availability
UK2	X	X		X		X		X		X	X	3-4, 6	X

Source: research ICF, 3s and CHEPS. \* Regular measure, in contrast to one-off measures, measures which were conducted two or three times, but were then no longer carried out, or measures which were not conducted yet.

Table 77. Country coverage of graduate groups with potential for comparability (in measures using ISCED/ISCED-F classification, representativeness and/or sufficient response rate, periodicity of measure, data availability) in IVET (25 measures)

Indicator	Completers	People who have left without completing	Students (before completion)	Residents in country	Migrants to another country after graduation
Employment status	BE-NL, CZ, DE, DK, EE, ES, FI, FR, HU, IE, IT, LT, LU, NL, PT, SE, SK, UK (18)	BE-NL, CZ, DE, EE, ES, FI, FR, HU, LU, PT, SE, UK (12)	DE, FI, HU (3)	DE, FR, LT, NO, SE, UK (6)	HU (1)
Sustainable employment	DE, FI, FR, HU, IE, IT, LT, LU, NL, SE (10)	DE, FI, FR, HU, LU, SE (6)	DE, FI, HU (3)	DE, FR, LT, NO, SE (5)	HU (1)
Salary	DE, EE, FR, IE, IT, LT, NL, SE, UK (9)	DE, EE, FI, FR, HU, SE, UK (7)	DE, FI (2)	DE, FR, LT, SE, UK (5)	HU (1)
Further education	DE, DK, EE, FI, FR, HU, IE, IT, LU, NL, SE, UK (12)	DE, DK, EE, FI, FR, LU, SE, UK (8)	DE, DK, FI, HU (4)	DE, FR, NO, SE, UK (5)	-
Satisfaction (general)	DE, FI, FR, IE, IT, NL (6)	DE, FR, HU (3)	DE (1)	DE, FR (2)	HU (1)
Relevance of acquired skills	DE, FI, FR, HU, IE, LT, NL, SE (8)	DE, FR, HU, SE (4)	DE, HU (2)	DE, FR, LT, SE (4)	HU (1)
Social/civic activities	DE (1)	DE (1)	DE (1)	DE (1)	-
Socio-biographical information	BE-NL1, CZ4, DE, EE, FI, IE, IT, LT, LU, NL, SE, SK, UK (13)	BE-NL, CZ, DE, EE, FI, HU, LU, SE, UK (9)	DE, FI (2)	DE, LT, NO, SE, UK (5)	HU (1)
Age	DE, EE, ES, FI, IE, LT, LU, NL, SE, SK, UK (11)	DE, EE, ES, FI, LU, SE, UK (7)	DE, FI (2)	DE, LT, NO, SE, UK (5)	-

Indicator	Completers	People who have left without completing	Students (before completion)	Residents in country	Migrants to another country after graduation
Gender	BE-NL, CZ, DE, EE, ES, FI, IE, LT, LU, NL, SE (11)	BE-NL, CZ, DE, EE, ES, FI, LU, SE (8)	DE, FI (2)	DE, LT, NO, SE (4)	-
Nationality	DE, ES, FI, IE, LU, SE (6)	DE, ES, FI, LU, SE (5)	DE, FI (2)	DE, NO, SE (3)	-
Social background	DE, IT, LU, UK (4)	DE, FI, HU, LU, UK (5)	DE, FI (2)	DE, UK (2)	HU (1)
Level, field of study, provider	BE-NL, DE, FI, FR, IE, LT, NL, SE, UK (9)	BE-NL, DE, FI, FR, SE, UK (6)	DE, FI (2)	DE, FR, LT, SE, UK (5)	-
Place of residence/migration	BE-NL, DE, FI, FR, HU, IE, LT, NL (8)	BE-NL, DE, FI, FR, HU (5)	DE, FI, HU (3)	DE, FR, LT (3)	HU (1)

Source: Mapping research conducted by ICF, 3s and CHEPS.

Table 78. Country coverage of graduate groups with potential for comparability (in measures using ISCED/ISCED-F classification, representativeness and/or sufficient response rate, periodicity of measure, data availability) in CVET (14 measures)

Indicator	Completers	People who have left without completing	Students (before completion)	Residents in country	Migrants to another country after graduation
Employment status	DE, FI, FR, IE, NL, NO, PT, SE, UK (9)	DE, FI, FR, PT, UK (5)	DE, FI (2)	DE, FR, NO, SE, UK (5)	-
Sustainable employment	DE, FI, FR, IE, NL, NO (6)	DE, FI, FR (3)	DE, FI (2)	DE, FR, NO (3)	-
Salary	DE, FR, IE, NL, UK (5)	DE, FI, FR, UK (4)	DE, DK, FI (3)	DE, FR, UK (3)	-
Further education	DE, DK, FI, FR, IE, NL, NO, SE, UK (9)	DE, DK, FI, FR, UK (5)	DE, FI (2)	DE, FR, NO, SE, UK (5)	-
Satisfaction (general)	DE, FI, FR, IE, NL, NO, SE (7)	DE, FR (2)	DE (1)	DE, FR, SE (3)	-
Relevance of acquired skills	DE, FI, FR, IE, NL, NO, SE (7)	DE, FR (2)	DE (1)	DE, FR, SE (3)	-
Social/civic activities	DE (1)	DE (1)	DE (1)	DE (1)	-
Socio-biographical information	DE, DK, FI, IE, NL, NO, SE, UK (8)	DE, DK, FI, UK (4)	DE, DK, FI (3)	DE, NO, SE, UK (4)	-
Age	DE, FI, IE, NL, NO, SE, UK (7)	DE, FI, UK (3)	DE, FI (2)	DE, NO, SE, UK (4)	-



Indicator	Completers	People who have left without completing	Students (before completion)	Residents in country	Migrants to another country after graduation
Gender	DE, FI, IE, NL, NO, SE (6)	DE, FI (2)	DE, FI (2)	DE, NO, SE (3)	-
Nationality	DE, FI, IE, SE (4)	DE, FI(2)	DE, FI (2)	DE, NO, SE (3)	-
Social background	DE, UK (2)	DE, FI, UK (3)	DE, FI (2)	DE, UK (2)	-
Level, field of study, provider	DE, FI, FR, IE, NL, NO, SE, UK (8)	DE, FI, FR, UK (4)	DE, FI (2)	DE, FR, SE, UK (4)	-
Place of residence/migration	DE, FI, FR, IE, NL, NO (6)	DE, FI, FR (3)	DE, FI (2)	DE, FR (2)	-

Source: Mapping research conducted by ICF, 3s and CHEPS.

Table 80. Country coverage of graduate groups with potential for comparability (in measures using ISCED/ISCED-F classification, representativeness and/or sufficient response rate, periodicity of measure, data availability) in HE (37 measures)

Indicator	Completers	People who have left without completing	Students (before completion)	Residents in country	Migrants to another country after graduation
Employment status	BE-NL, CZ, DE, DK, EE, ES, FI, FR, HU, IE, IT, LT, LV, NL, PL, PT, SE, SK, UK (19)	BE-NL, CZ, DE, EE, FI, FR, PL, SE, UK (9)	AT, DE, FI, HU (4)	DE, ES, FI, FR, LT, NO, SE, UK (8)	ES, FI (2)
Sustainable employment	DE, ES, FI, FR, IT, LT, LV, NL, SE (9)	DE, FI, FR, SE (4)	AT, DE, FI (3)	DE, ES, FI, FR, LT, NO, SE (7)	ES, FI (2)
Salary	DE, EE, FI, FR, HU, IE, IT, LT, LV, NL, SE, UK (12)	DE, EE, FI, FR, SE, UK (6)	AT, DE, FI, HU (4)	DE, FI, FR, LT, SE, UK (6)	FI (1)
Further education	DE, DK, EE, ES, FI, FR, HU, IE, IT, LV, NL, PL, SE, SI, UK (15)	DE, DK, EE, FI, FR, PL, SE, SI, UK (9)	DE, DK, FI, HU, SI (5)	DE, ES, FI, FR, NO, SE, UK (7)	ES, FI (2)
Satisfaction (general)	DE, ES, FI, FR, HU, IT, LV, NL (8)	DE, FR (2)	AT, DE, HU (3)	DE, ES, FI, FR (4)	ES, FI (2)
Relevance of acquired skills	DE, ES, FI, FR, HU, IT, LT, LV, NL, SE (10)	DE, FR, SE (3)	DE, HU (2)	DE, ES, FI, FR, LT, SE (6)	ES, FI (2)
Social/civic activities	DE, FI, LV (3)	DE (1)	DE (1)	DE, FI (2)	FI (1)
Socio-biographical information	BE-NL, CZ, DE, EE, ES, FI, FR, HU, IE, IT, LT, LV, PL, SE, SI, SK, UK (17)	BE-NL, CZ, DE, EE, FI, PL, SE, SI, UK (9)	AT, DE, FI, HU, SI (5)	DE, ES, FI, LT, NO, SE, UK (7)	ES, FI (2)
Age	DE, EE, FI, IE, IT, LT, LV, SE, SI, SK, UK (11)	DE, EE, FI, SE, SI, UK (6)	AT, DE, FI, SI (4)	DE, FI, LT, NO, SE, UK (6)	FI (1)

Indicator	Completers	People who have left without completing	Students (before completion)	Residents in country	Migrants to another country after graduation
Gender	BE-NL, CZ, DE, EE, FI, FR, IE, IT, LT, LV, SE (11)	BE-NL, CZ, DE, EE, FI, SE (6)	AT, DE, FI (3)	DE, FI, LT, NO, SE (5)	FI (1)
Nationality	DE, FI, IE, IT, SE, SI (6)	DE, FI, SE, SI (4)	AT, DE, FI, SI (4)	DE, FI, NO, SE (4)	FI (1)
Social background	DE, IT, LV, UK (4)	DE, FI, UK (3)	AT, DE, FI (3)	DE, FI, UK (3)	FI (1)
Level, field of study, provider	BE-NL, DE, ES, FI, FR, HU, IE, LT, LV, NL, SE, SI, UK (13)	BE-NL, DE, FI, FR, SE, SI, UK (7)	AT, DE, FI, HU, SI (5)	DE, ES, FI, FR, LT, SE, UK (7)	ES, FI (2)
Place of residence/migration	BE-NL, DE, ES, FI, FR, HU, IT, LT, LV, NL, SI (11)	BE-NL, DE, FI, FR, SI (5)	AT, DE, FI, HU, SI (5)	DE, ES, FI, FR, LT (5)	ES, FI (2)

Source: Mapping research conducted by ICF, 3s and CHEPS.

Table 81. Country coverage of graduate groups with potential for comparability (in measures with ISCED/ISCED-F classification, periodicity) in IVET (39 measures)

Indicator	Completers	People who have left without completing	Students (before completion)	Residents in country	Migrants to another country after graduation
Employment status	AT, BE-NL, CZ, DE, DK, EE, ES, FI, FR, HU, IE, IT, LT, LU, NL, NO, PT, SE, SK, UK (20)	AT, BE-NL, CZ, DE, EE, ES, FI, FR, HU, LU, PT, SE, UK (13)	CZ, DE, FI, HU (4)	AT, DE, FR, LT, NO, SE, UK (7)	HU (1)
Sustainable employment	AT, CZ, DE, FI, FR, HU, IE, IT, LT, LU, NL, NO, SE (13)	AT, DE, FI, FR, HU, LU, SE (7)	CZ, DE, FI, HU (4)	AT, DE, FR, LT, NO, SE (6)	HU (1)
Salary	AT, DE, DK, EE, FR, IE, IT, LT, NL, SE, UK (11)	AT, DE, EE, FI, FR, HU, SE, UK (8)	DE, FI (2)	AT, DE, FR, LT, SE, UK (6)	HU (1)
Further education	AT, CZ, DE, DK, EE, FI, FR, HU, IE, IT, LU, NL, NO, SE, UK (15)	AT, DE, DK, EE, FI, FR, LU, SE, UK (9)	CZ, DE, DK, FI, HU (5)	AT, DE, FR, NO, SE, UK (6)	-
Satisfaction (general)	CZ, DE, FI, FR, IE, IT, NL, NO (8)	DE, FR, HU (3)	CZ, DE (2)	DE, FR (2)	HU (1)
Relevance of acquired skills	CZ, DE, DK, FI, FR, HU, IE, IT, LT, NL, NO, SE (12)	DE, FR, HU, SE (4)	CZ, DE, HU (3)	DE, FR, LT, SE (4)	HU (1)
Social/civic activities	DE (1)	DE (1)	DE (1)	DE (1)	-
Socio-biographical information	AT, BE-NL1, CZ4, DE, DK, EE, FI, FR, IE, IT, LT, LU, NL, NO, SE, SK, UK (17)	AT, BE-NL, CZ, DE, EE, FI, FR, HU, LU, SE, UK (11)	CZ, DE, FI (3)	AT, DE, LT, NO, SE, UK (6)	HU (1)
Age	AT, DE, EE, ES, FI, IE, LT, LU, NL, NO, SE, SK, UK (13)	AT, DE, EE, ES, FI, LU, SE, UK (8)	DE, FI (2)	AT, DE, LT, NO, SE, UK (6)	-

Indicator	Completers	People who have left without completing	Students (before completion)	Residents in country	Migrants to another country after graduation
Gender	AT, BE-NL, CZ, DE, EE, ES, FI, FR, IE, LT, LU, NL, NO, SE (14)	AT, BE-NL, CZ, DE, EE, ES, FI, FR, LU, SE (10)	DE, FI (2)	AT, DE, LT, NO, SE (5)	-
Nationality	AT, DE, ES, FI, IE, IT, LU, SE (8)	AT, DE, ES, FI, LU, SE (6)	DE, FI (2)	AT, DE, NO, SE (4)	-
Social background	DE, FI, IT, LU, UK (5)	DE, FI, HU, LU, UK (5)	DE, FI (2)	DE, UK (2)	HU (1)
Level, field of study, provider	AT, BE-NL, CZ, DE, FI, FR, IE, LT, NL, NO, SE, UK (12)	AT, BE-NL, DE, FI, FR, SE, UK (7)	CZ, DE, FI (3)	AT, DE, FR, LT, SE, UK (6)	-
Place of residence/migration	AT, BE-NL, DE, DK, FI, FR, HU, IE, IT, LT, NL, NO (12)	AT, BE-NL, DE, FI, FR, HU (6)	DE, FI, HU (3)	AT, DE, FR, LT (4)	HU (1)

Source: Mapping research conducted by ICF, 3s and CHEPS.

Table 82. Country coverage of graduate groups with potential for comparability (in measures with ISCED/ISCED-F classification, periodicity) in CVET (19 measures)

Indicator	Completers	People who have left without completing	Students (before completion)	Residents in country	Migrants to another country after graduation
Employment status	AT, DE, FI, FR, IE, NL, NO, PT, SE, UK (10)	AT, DE, FI, FR, PT, UK (6)	DE, FI(2)	AT, DE, FR, NO, SE, UK (6)	-
Sustainable employment	AT, DE, FI, FR, IE, NL, NO (7)	AT, DE, FI, FR (4)	DE, FI (2)	AT, DE, FR, NO (4)	-
Salary	AT, DE, FR, IE, NL, UK (6)	AT, DE, FI, FR, UK (5)	DE, DK, FI(3)	AT, DE, FR, UK (4)	-
Further education	AT, DE, DK, FI, FR, IE, NL, NO, SE, UK (10)	AT, DE, DK, FI, FR, UK (6)	DE, FI (2)	AT, DE, FR, NO, SE, UK (6)	-
Satisfaction (general)	DE, FI, FR, IE, NL, NO, SE (7)	DE, FR (2)	DE (1)	DE, FR, SE (3)	-
Relevance of acquired skills	DE, FI, FR, IE, NL, NO, SE (7)	DE, FR (2)	DE (1)	DE, FR, SE (3)	-
Social/civic activities	DE (1)	DE (1)	DE (1)	DE (1)	-
Socio-biographical information	AT, DE, DK, FI, IE, NL, NO, SE, UK (9)	AT, DE, DK, FI, UK (5)	DE, DK, FI (3)	AT, DE, NO, SE, UK (5)	-
Age	AT, DE, FI, IE, NL, NO, SE, UK (8)	AT, DE, FI, UK (4)	DE, FI (2)	AT, DE, NO, SE, UK (5)	-
Gender	AT, DE, FI, IE, NL, NO, SE (7)	AT, DE, FI (3)	DE, FI (2)	AT, DE, NO, SE (4)	-

Indicator	Completers	People who have left without completing	Students (before completion)	Residents in country	Migrants to another country after graduation
Nationality	AT, DE, FI, IE, SE (5)	AT, DE, FI(3)	DE, FI (2)	AT, DE, NO, SE (4)	-
Social background	DE, FI, UK (3)	DE, FI, UK (3)	DE, FI (2)	DE, UK (2)	-
Level, field of study, provider	AT, DE, FI, FR, IE, NL, NO, SE, UK (9)	AT, DE, FI, FR, UK (5)	DE, FI (2)	AT, DE, FR, SE, UK (5)	-
Place of residence/migration	AT, DE, FI, FR, IE, NL, NO (7)	AT, DE, FI, FR (4)	DE, FI (2)	AT, DE, FR (3)	-

Source: Mapping research conducted by ICF, 3s and CHEPS.

Table 84. Country coverage of graduate groups with potential for comparability (in measures with ISCED/ISCED-F classification, periodicity) in HE (51 measures)

Indicator	Completers	People who have left without completing	Students (before completion)	Residents in country	Migrants to another country after graduation
Employment status	AT, BE-NL, CZ, DE, DK, EE, ES, FI, FR, HU, IE, IT, LT, LV, NL, NO, PL, PT, SE, SK, UK (21)	AT, BE-NL, CZ, DE, EE, FI, FR, PL, SE, UK (10)	AT, DE, FI, HU (4)	AT, DE, ES, FI, FR, LT, NO, SE, UK (9)	ES, FI (2)
Sustainable employment	AT, DE, ES, FI, FR, IT, LT, LV, NL, NO, SE (11)	AT, DE, FI, FR, SE (5)	AT, DE, FI (3)	AT, DE, ES, FI, FR, LT, NO, SE (8)	ES, FI (2)
Salary	AT, DE, DK, EE, FI, FR, HU, IE, IT, LT, LV, NL, NO, SE, SK, UK (16)	AT, DE, EE, FI, FR, SE, UK (7)	AT, DE, FI, HU (4)	AT, DE, FI, FR, LT, SE, UK (7)	FI (1)
Further education	AT, DE, DK, EE, ES, FI, FR, HU, IE, IT, LV, NL, NO, PL, SE, SI, SK, UK (18)	AT, DE, DK, EE, FI, FR, PL, SE, SI, UK (10)	DE, DK, FI, HU, SI (5)	AT, DE, ES, FI, FR, NO, SE, UK (8)	ES, FI (2)
Satisfaction (general)	DE, ES, FI, FR, HU, IE, IT, LV, NL, NO (10)	DE, FR (2)	AT, DE, HU (3)	DE, ES, FI, FR (4)	ES, FI (2)
Relevance of acquired skills	DE, DK, ES, FI, FR, HU, IE, IT, LT, LV, NL, NO, SE, SK (14)	DE, FR, SE (3)	DE, HU (2)	DE, ES, FI, FR, LT, SE (6)	ES, FI (2)
Social/civic activities	DE, FI, LV (3)	DE (1)	DE (1)	DE, FI (2)	FI (1)
Socio-biographical information	AT, BE-NL, CZ, DE, DK, EE, ES, FI, FR, HU, IE, IT, LT, LV, NO, PL, SE, SI, SK, UK (20)	AT, BE-NL, CZ, DE, EE, FI, PL, SE, SI, UK (10)	AT, DE, FI, HU, SI (5)	AT, DE, ES, LT, NO, SE, UK (7)	ES, FI (2)
Age	AT, DE, EE, FI, IE, IT, LT, LV, NO, SE, SI, SK, UK (13)	AT, DE, EE, FI, SE, SI, UK (7)	AT, DE, FI, SI (4)	AT, DE, FI, LT, NO, SE, UK (7)	FI (1)



Indicator	Completers	People who have left without completing	Students (before completion)	Residents in country	Migrants to another country after graduation
Gender	AT, BE-NL, CZ, DE, EE, FI, FR, IE, IT, NO, LT, LV, SE (13)	AT, BE-NL, CZ, DE, EE, FI, SE (7)	AT, DE, FI (3)	AT, DE, FI, LT, NO, SE (6)	FI (1)
Nationality	AT, DE, FI, IE, IT, NO, SE, SI (8)	AT, DE, FI, SE, SI (5)	AT, DE, FI, SI (4)	AT, DE, FI, NO, SE (5)	FI (1)
Social background	AT, DE, IE, IT, LV, UK (6)	AT, DE, FI, UK (4)	AT, DE, FI (3)	AT, DE, FI, UK (4)	FI (1)
Level, field of study, provider	AT, BE-NL, DE, ES, FI, FR, HU, IE, LT, LV, NL, NO, SE, SI, SK, UK (16)	AT, BE-NL, DE, FI, FR, SE, SI, UK (8)	AT, DE, FI, HU, SI (5)	AT, DE, ES, FI, FR, LT, SE, UK (8)	ES, FI (2)
Place of residence/migration	AT, BE-NL, DE, DK, ES, FI, FR, HU, IE, IT, LT, LV, NL, NO, SI, SK (16)	AT, BE-NL, DE, FI, FR, SI (6)	AT, DE, FI, HU, SI (5)	AT, DE, ES, FI, FR, LT (6)	ES, FI (2)

Source: Mapping research conducted by ICF, 3s and CHEPS.

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